



Henvey Inlet Wind LP

## **Henvey Inlet Wind**

Henvey Inlet Wind Energy Centre

# **Natural Heritage Assessment: Evaluation of Importance Report**

Final

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## **Natural Heritage Assessment: Evaluation of Importance Report – Final**

**Prepared by:**

AECOM

105 Commerce Valley Drive West, Floor 7

Markham, ON, Canada L3T 7W3

[www.aecom.com](http://www.aecom.com)

905 886 7022

tel

905 886 9494

fax

**Project Number:**

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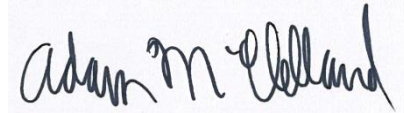
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# AECOM Signatures

**Report Prepared By:**

---

Olga Hropach, (Hon) B.Sc.  
Terrestrial Ecologist



---

Adam McClelland, B.Sc.  
Ecology Technician



---

Johanna Perz, M.Sc.  
Terrestrial Ecologist



---

Kristan Washburn, MES  
Terrestrial Ecologist



---

Julie Ellis, (Hon) B.Sc.  
Terrestrial Ecologist

**Report Reviewed By:**

---

Jill deMan, H.B.Sc  
Terrestrial and Wetland Ecologist



---

James Kamstra, B.Sc., M.E.S  
Senior Ecologist



---

Jessica MacKay Ward, Ph.D.  
Senior Ecologist

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## List of Acronyms and Glossary

<b>ANSI</b>	Area of Natural and Scientific Interest
<b>Candidate Important Wildlife Habitat</b>	Potential area of wildlife habitat that may be considered important using procedures established or accepted by the Ministry of Natural Resources and Forestry.
<b>Confirmed Important Wildlife Habitat</b>	Area of important wildlife habitat verified using procedures established or accepted by the Ministry of Natural Resources and Forestry.
<b>COSEWIC</b>	Committee on the Status of Endangered Wildlife in Canada
<b>COSSARO</b>	Committee on the Status of Species at Risk in Ontario
<b>CLI</b>	Canada Land Inventory
<b>DFO</b>	Fisheries and Oceans Canada
<b>Dripline</b>	The area defined by the outermost circumference of a tree canopy.
<b>EC-CWS</b>	Environment Canada – Canadian Wildlife Service
<b>EIS</b>	Environmental Impact Study
<b>ELC</b>	Ecological Land Classification; refers to ecological units defined on the basis of bedrock, climate (temperature, precipitation), physiography (soils, slope, aspect) and corresponding vegetation.
<b>ESA</b>	Environmental Sensitive Area
<b>Feathering of blades</b>	Pitching of turbine blades out of the wind so the turbine does not capture the wind and will not produce power.
<b>Federal SAR</b>	Species listed as Endangered or Threatened under Schedule 1 of the federal <i>Species at Risk Act</i> , 2002.
<b>Frac-out</b>	Escape of drilling mud into the environment as a result of a spill, tunnel collapse or the rupture of mud to the surface.
<b>Generalized Candidate Important Wildlife Habitat</b>	Potential wildlife habitats listed in Appendix D of the Natural Heritage Assessment Guide for Renewable Energy Projects (MNR, 2012a), which are not required to be identified for a particular HIWEC component, but may exist within 120 m of that component and are assumed to exist.
<b>GIS</b>	Geographic Information System
<b>HIFN</b>	Henvey Inlet First Nation
<b>HIWEC</b>	Henvey Inlet Wind Energy Centre
<b>HIWEC Location</b>	The area encompassing all construction activities and HIWEC components.
<b>Important</b>	Natural feature that (1) the Ministry of Natural Resources and Forestry has identified as important, or (2) has been determined to be important using applicable evaluation criteria or procedures established or accepted by the Ministry of Natural Resources and Forestry.

<b>IWH</b>	Important Wildlife Habitats
<b>LIO</b>	Land Information Ontario
<b>MNRF</b>	Ontario Ministry of Natural Resources and Forestry
<b>MOECC</b>	Ontario Ministry of Environment and Climate Change
<b>Natural Feature</b>	One of the following: (1) an Area of Natural and Scientific Interest (earth science or life science), (2) a wetland, (3) a wildlife habitat, (4) a woodland, (5) a provincial park, or (6) a conservation reserve.
<b>NHIC</b>	Natural Heritage Information Centre
<b>NRVIS</b>	Natural Resource Value and Information System
<b>NTS</b>	National Topographic System
<b>OGS</b>	Ontario Geological Survey
<b>OGSR</b>	Oil, Gas and Salt Resources
<b>OPA</b>	Ontario Power Authority
<b>OWES</b>	Ontario Wetland Evaluation System
<b>PIW</b>	Provincially Important Wetland
<b>Provincial SAR</b>	Species listed as Endangered or Threatened under the provincial Endangered Species Act, 2007 but not listed as Endangered or Threatened under Schedule 1 of the federal <i>Species at Risk Act</i> , 2002.
<b>REA</b>	Renewable Energy Approval
<b>SAR</b>	Species at Risk, including both Federal SAR (species listed as Endangered or Threatened under Schedule 1 of the federal <i>Species at Risk Act</i> , 2002) and Provincial SAR (species listed as Endangered or Threatened under the provincial Endangered Species Act, 2007 but not listed as Endangered or Threatened under Schedule 1 of the federal <i>Species at Risk Act</i> , 2002).
<b>SARA</b>	Federal Species at Risk Act, 2002
<b>SARO</b>	Species at Risk In Ontario
<b>SOCC</b>	Species of Conservation Concern, including (a) provincially rare species ranked by the Natural Heritage Information Centre (NHIC) as S1 (critically imperiled), S2 (imperiled) or S3 (vulnerable) in the province of Ontario but not listed as Endangered or Threatened under Schedule 1 of the federal <i>Species at Risk Act</i> , 2002 (SARA) or the provincial Endangered Species Act, 2007 (ESA); (b) species listed as Special Concern under Schedule 1 of SARA; (c) species evaluated by the Committee on the Status of Endangered Wildlife in Canada (COSEWIC) as Special Concern, Threatened or Endangered but not listed as Endangered or Threatened under Schedule 1 of SARA or the ESA; and (d) species listed as Special Concern under the ESA.
<b>SWHTG</b>	Significant Wildlife Habitat Technical Guide

<b>UTM</b>	Universal Transverse Mercator
<b>Wetland</b>	Land such as a swamp, marsh, bog or fen, other than land that is being used for agricultural purposes and no longer exhibits wetland characteristics, that (a) is seasonally or permanently covered by shallow water or has the water table close to or at the surface, and (b) has hydric soils and vegetation dominated by hydrophytic or water-tolerant plants.
<b>Wildlife Habitat</b>	Area where plants, animals and other organisms live or have the potential to live and find adequate amounts of food, water, shelter and space to sustain their population, including an area where a species concentrates at a vulnerable point in its annual or life cycle and an area that is important to a migratory or non-migratory species.
<b>Woodland</b>	Treed area, woodlot or forested area, other than a cultivated fruit or nut orchard or a plantation established for the purpose of producing Christmas trees, that is located south and east of the Canadian Shield.

# 1. Introduction

## 1.1 Project Overview

The HIFN EA Guidance document includes a requirement to complete a Natural Heritage Assessment (NHA) having regard to the provincial process. Under the provincial process, a proponent who proposes to engage in a renewable energy project is required to conduct a NHA, consisting of the following:

- A Records Review;
- A Site Investigation; and
- An Evaluation of Importance (EOI).

Through this process, proponents identify natural features near the proposed HIWEC location and determine if prohibitions and setbacks apply. In instances where the HIWEC location is proposed within such a setback, the proponent must prepare an Environmental Impact Study (EIS) Report to identify and assess the potential negative environmental effects that may result from the proposed HIWEC, identify appropriate mitigation measures and describe how the potential effects will be addressed through the Environmental Effects Monitoring Plan (EEMP) and Construction Plan Report.

This document is intended to address the EOI requirements of the NHA for the HIWEC, including documenting the following with respect to each natural feature identified within 120 m of the HIWEC location through the Site Investigation:

- Making a determination of whether each natural feature is ecologically important, having regard to:
  - Whether the natural feature is a VEC;
  - Any additional input from the HIFN;
  - Federal and provincial law and guidance including the *Ontario Natural Heritage Reference Manual* (MNR, 2010a) and the *Ontario Wetland Evaluation System – Northern Manual* (MNR, 2014a); and
  - Any other source(s) considered relevant, such as scientific or academic publications or input from the public;
- A summary of the evaluation criteria or procedures used to make the determinations of importance;
- The name and qualifications of any person who applied the evaluation criteria or procedures;
- The dates of the beginning and completion of the evaluation; and
- In evaluating the importance of a natural feature, the person conducting the evaluation shall take into account any information available to the person relating to the natural feature, including:
  - All information obtained through the Records Review;
  - All information obtained through the Site Investigation or Alternative Site Investigation; and
  - All information received from the community, the public, and public bodies or agencies.

Throughout this NHA, the term “significant” or “significance” as per provincial requirements has been changed to “important” or “importance” as the term “significance” has specific meaning in the Federal EA process which is different from the meaning in the provincial process. Therefore, the term in the provincial process has been changed to avoid confusion. The meaning of “significance” in the provincial process is carried over to the term “importance” for the purpose of the NHA. The term “significance” is not changed if it is in the title of a reference document.

## 1.2 Summary of Natural Features Carried Forward from the Site Investigation

**Table 1-1** summarizes the natural features identified through the Site Investigation as occurring or potentially occurring within 120 m of the HIWEC location; these are the features that were carried forward to the Evaluation of Importance (EOI). The EOI was conducted to determine whether each natural feature is ecologically important in accordance with the HIFN EA Guidance document.

**Table 1-1: Summary of Natural Features Carried Forward to the Evaluation of Importance**

Feature	Results of Site Investigation
<b>Conservation Reserves</b>	The North Georgian Bay Shoreline and Islands Conservation Reserve is located within 120 m of the HIWEC location and was carried forward to the EOI.
<b>Wetlands</b>	All wetlands features that were confirmed in or within 120 m of the HIWEC location and were carried forward to the EOI.
<b>Woodlands</b>	All woodland features that were confirmed in or within 120 m of the HIWEC location and were carried forward to the EOI.
<b>Important Wildlife Habitat</b>	<p>The following Candidate or Generalized Candidate IWH types were identified within 120 m of the HIWEC location and were carried forward to EOI:</p> <ul style="list-style-type: none"> <li>• Waterfowl Stopover and Staging Areas (Aquatic);</li> <li>• Shorebird Migratory Stopover Areas;</li> <li>• Bat Hibernacula;</li> <li>• Bat Maternity Colonies;</li> <li>• Turtle Wintering Areas;</li> <li>• Reptile Hibernacula;</li> <li>• Colonially-Nesting Bird Breeding Habitat (Trees / Shrubs);</li> <li>• Deer Yarding Areas;</li> <li>• Cliffs and Talus Slopes;</li> <li>• Precambrian Rock Barren;</li> <li>• Sand Barren;</li> <li>• Old-growth Forest;</li> <li>• Bog;</li> <li>• Waterfowl Nesting Areas;</li> <li>• Bald Eagle and Osprey Nesting, Foraging and Perching Habitat;</li> <li>• Woodland Raptor Nesting Habitat;</li> <li>• Turtle and Lizard Nesting Areas;</li> <li>• Seeps and Springs;</li> <li>• Aquatic Feeding Habitat;</li> <li>• Amphibian Breeding Habitat (Woodland and Wetland);</li> <li>• Mast Producing Areas;</li> <li>• Marsh Bird Breeding Habitat;</li> <li>• Black Tern Habitat;</li> <li>• Eastern Wood-peewee Habitat;</li> <li>• Prairie Warbler Habitat;</li> <li>• Wood Thrush Habitat;</li> <li>• Yellow Rail Habitat;</li> <li>• Mottled Darner Habitat;</li> <li>• Horned Clubtail Habitat;</li> <li>• Pine Imperial Moth Habitat;</li> <li>• Common Five-lined Skink Habitat;</li> <li>• Eastern Ribbonsnake Habitat;</li> <li>• Milksnake Habitat;</li> <li>• Northern Map Turtle Habitat; and</li> <li>• Snapping Turtle Habitat.</li> </ul>

**Table 1-1: Summary of Natural Features Carried Forward to the Evaluation of Importance**

Feature	Results of Site Investigation
<b>Federal Species At Risk</b>	Potential habitat for the following Federal Species at Risk <sup>1</sup> was identified during the Site Investigation: <ul style="list-style-type: none"> <li>• Western Chorus Frog;</li> <li>• Canada Warbler;</li> <li>• Chimney Swift;</li> <li>• Common Nighthawk;</li> <li>• Eastern Whip-poor-will;</li> <li>• Golden-winged Warbler;</li> <li>• Least Bittern;</li> <li>• Olive-sided Flycatcher;</li> <li>• Little Brown Bat;</li> <li>• Northern Myotis;</li> <li>• Tri-coloured Bat;</li> <li>• Branched Bartonia;</li> <li>• Blanding’s Turtle;</li> <li>• Eastern Foxsnake;</li> <li>• Eastern Hog-nosed Snake;</li> <li>• Eastern Musk Turtle;</li> <li>• Massasauga Rattlesnake; and</li> <li>• Kirtland’s Warbler.</li> </ul>

1. Records of Species At Risk considered to be restricted are not being made public due to the threat of poaching experienced by these species. These records will be provided under a separate cover to the Ministry of Natural Resources and Forestry (MNRF) and / or Environment Canada – Canadian Wildlife Service (EC-CWS) for permitting purposes.

## 2. Methods

The following is a description of the evaluation criteria and procedures used to make a determination regarding the importance of features carried forward from the Records Review and Site Investigation to the EOI phase of this NHA. The qualifications of the biologists who completed these evaluations are provided in **Appendix A**.

### 2.1 Conservation Reserves

The North Georgian Bay Shoreline and Islands Conservation Reserve is located within 19 m of a proposed WTG, along the south side of the HIFN I.R. #2 lands. This Conservation Reserve was established in 2012 (MNRF, 2015) and is protected and managed under the *Provincial Parks and Conservation Reserves Act, 2006*; therefore, it does not require an EOI. This feature was considered to be important and was carried forward to the EIS phase of this NHA, to identify potential effects of the HIWEC and appropriate mitigations measures.

### 2.2 Wetlands

There are no known Provincially Important Wetlands (PIWs) located within the HIWEC study area (MNRF, 2014b). However, a total of four (4) unevaluated wetland features were identified within 120 m of the HIWEC location through the Site Investigation and were carried through to the EOI.

The OWES manual for Northern Ontario (MNRF, 2014a), outlines rules for the complexing of wetlands. Complexing is a desk-top practice of combining individual wetlands that are geographically close into one large wetland complex. The intent of complexing is to recognize the ecological, hydrological, and hydrogeological relationships between wetlands that are in close proximity to one another. Wetland features within 120 m of the HIWEC location were delineated by complexing wetland units located within 750 m of each other and in the same subwatershed. Subwatersheds were determined using existing Quaternary watershed data obtained from Land Information Ontario (LIO, 2015) as well as LIDAR data of the HIWEC area. This information was used to determine drainage direction and to delineate subwatershed boundaries.

In the context of the provincial process, the importance of wetland features can be evaluated in two ways: (1) by undertaking a full evaluation according to the OWES manual for Northern Ontario (MNRF, 2014a), or (2) by treating any unevaluated wetland within 120 m of the HIWEC location (but not within the HIWEC location itself) as if it is Provincially Important. More details regarding these two (2) approaches are provided below.

#### 2.2.1 Ontario Wetland Evaluation System

Wetland features that were identified through the Site Investigation and that are overlapped by the HIWEC location include the following four (4) wetland features: WET-001, WET-002, WET-003 and WET-004.

PIWs are those areas identified by OWES as being the most valuable within the landscape. Wetlands are scored using a point-based ranking system found in the Ontario Wetland Evaluation System (OWES) (MNRF, 2014a). Points are based on four (4) components: biological, hydrological, social, and special features. A PIW is defined as any OWES-evaluated wetland which scores a total of 600 or more points or 200 or more points in either the biological component or the special features component. Wetlands identified by OWES as not meeting the requirements for PIWs may still play an important role in the local landscape and are considered to be Locally Important Wetlands (LIWs).



Field data required to complete these evaluations were collected during the Site Investigation. The wetland evaluations were undertaken by an AECOM OWES certified biologist, Kristan Washburn (refer to **Appendix A** for qualifications) between July 6 and 31, 2015. The results of these evaluations are provided in **Section 3.2** below.

**2.2.2 Treatment of Unevaluated Wetlands as Important without a Full OWES**

Within the provincial process (MNRF, 2012a), unevaluated wetlands can be treated as PIWs for the purposes of the NHA if they occur within 120 m of the HIWEC, but are located outside the HIWEC location. However, all four (4) unevaluated wetland features identified through the Site Investigation occur at least partially within the HIWEC location. As such, all wetland features have undergone a full OWES evaluation as described in **Section 2.2.1** above.

**2.3 Woodlands**

A total of 72 woodland features were identified through the Site Investigation and were carried forward to the EOI. Each of these woodland features was evaluated following the criteria and standards set out in Table 11: Significant Woodland Evaluation Criteria and Standards, in the *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNRF, 2012a). The following table (**Table 2-1**) presents the criteria used to evaluate each woodland feature along with a description of the information sources used.

This evaluation system is based on the percentage of woodland cover found within the corresponding municipality where a project is located; however, the HIFN I.R. #2 is not located within the boundaries of a lower tier municipality. The woodland cover percentage within HIFN I.R. #2 was calculated by dividing the area of the Land Information Ontario Wooded Areas data layer (MNRF, 2010b) by the total area. HIFN I.R. #2 has approximately 81.9% woodland cover.

Details regarding woodland size, age, species composition, ecological function and uncommon characteristics were collected through a combination of vegetation community surveys and GIS analysis. Groundwater recharge and discharge areas were defined by the use of surficial geology maps produced by MNFR (Kor and Delorme, 1989). Groundwater recharge areas were identified as areas where coarse grained deposits (gravel, sand, silt and bedrock) were mapped to be at or close to the surface. These sediments lack a relatively impermeable barrier between groundwater and the surface environment. Groundwater discharge areas were identified where changes in surface elevation produced the potential to intersect local groundwater aquifers, such as in river valleys. Groundwater discharge areas were also identified through observation of seeps, iron staining, and groundwater discharge indicator species during field site visits and mapped accordingly.

The Evaluation of Importance for woodlands was undertaken by Kasey McKenzie, staff qualifications are provided in **Appendix A**. The results of this evaluation are provided in **Section 3.3** below.

**Table 2-1: Woodland Evaluation Criteria**

Criterion	Sources of Information and Methods	Criteria
1 <b>Woodland Size</b>	Completed through a combination of: <ul style="list-style-type: none"> <li>• Aerial photograph interpretation;</li> <li>• Boundary confirmation during field investigations; and</li> <li>• GIS interpretation and calculations.</li> </ul>	NA (woodland cover within HIFN I.R. #2 is too high to have any features that are important)
2 <b>a) Woodland Interior (100 m from edge)</b>	Completed through: <ul style="list-style-type: none"> <li>• GIS calculations for contiguous woodland features (interior forest being 100 m from edge).</li> </ul>	Must have woodland interior area of at least 20 ha

**Table 2-1: Woodland Evaluation Criteria**

Criterion	Sources of Information and Methods	Criteria
b) Proximity to Other Important Woodland or Habitats	Completed through a combination of: <ul style="list-style-type: none"> <li>• Important Wildlife Habitat and Important Wetlands data; and</li> <li>• Input from Biologists undertaking the <i>Henvey Inlet Wind Energy Centre Water Assessment and Water Body Report</i> (AECOM, 2015a); and</li> <li>• GIS interpretation and calculations.</li> </ul>	Must be within 30 m of an important natural feature or fish habitat and be at least 50 ha in size
c) Linkages	Completed through a combination of: <ul style="list-style-type: none"> <li>• Important Wildlife Habitat and Important Wetlands data; and</li> <li>• GIS interpretation and calculations.</li> </ul>	Must be located between two other important features, each of which are not greater than 120 m apart, and be at least 50 ha in size
d) Water Protection	Completed through a combination of: <ul style="list-style-type: none"> <li>• Geological interpretation;</li> <li>• Data collected through the Site Investigation on surface water features, including fish habitat information from Biologists undertaking the <i>Henvey Inlet Wind Energy Centre Water Assessment and Water Body Report</i> (AECOM, 2015a);</li> <li>• GIS interpretation and calculations; and</li> <li>• Groundwater indicator species observed during field investigations.</li> </ul>	Must be located within 50 m of a sensitive groundwater discharge, recharge, headwater, watercourse or fish habitat and be at least 4 ha in size
e) Woodland Diversity Representation	Completed through: <ul style="list-style-type: none"> <li>• ELC and vascular plant data collected during the Site Investigation; and</li> <li>• Inferences on larger woodland composition based on data collected.</li> </ul>	Must be dominated singly or in combination by native naturally occurring Sugar Maple, Black Maple, Silver Maple, Red Maple, Yellow Birch, Hickory, Beech, Black Ash, Walnut, Tamarack, Spruce, Pine, Oak, Basswood, or Hemlock, and be at least 20 ha in size
3 Uncommon Characteristics	Completed through a combination of: <ul style="list-style-type: none"> <li>• NHIC database for provincially rare vegetation types (S1-S3 ranks);</li> <li>• Data collected through the Site Investigation regarding composition and attributes; and</li> <li>• NHIC database for Coefficient of Conservatism.</li> </ul>	Must have rare vegetation community (S1, S2, S3) and be more than 0.5 ha in size, OR habitat of a rare, uncommon, or restricted woodland plant species with ten individual stems or 100 m <sup>2</sup> of leaf coverage and be more than 0.5 ha in size, OR characteristics of older woodlands with larger tree size structure in native species and be more than 10 ha in size

## 2.4 Important Wildlife Habitat

The following types of Candidate IWH were identified within 120 m of qualifying HIWEC infrastructure and carried forward to the EOI from the Site Investigation phase of this NHA:

- Waterfowl Stopover and Staging Areas (Aquatic);
- Shorebird Migratory Stopover Areas;
- Bat Hibernacula;
- Bat Maternity Colonies;
- Turtle Wintering Areas;
- Reptile Hibernacula;
- Colonially-Nesting Bird Breeding Habitat (Trees / Shrubs);
- Deer Yarding Areas;
- Cliffs and Talus Slopes;
- Precambrian Rock Barren;
- Sand Barren;
- Old-growth Forest;
- Bog;
- Waterfowl Nesting Areas;
- Bald Eagle and Osprey Nesting, Foraging and Perching Habitat;

- Woodland Raptor Nesting Habitat;
- Turtle and Lizard Nesting Areas;
- Seeps and Springs;
- Aquatic Feeding Habitat;
- Amphibian Breeding Habitat (Woodland and Wetland);
- Mast Producing Areas;
- Marsh Bird Breeding Habitat;
- Habitat for Species of Conservation Concern (SOCC), including:
  - Black Tern;
  - Eastern Wood-peewee;
  - Prairie Warbler;
  - Wood Thrush;
  - Yellow Rail;
  - Horned Clubtail;
  - Mottled Darner;
  - Pine Imperial Moth;
  - Common Five-Lined Skink;
  - Eastern Ribbonsnake;
  - Milksnake;
  - Northern Map Turtle; and
  - Snapping Turtle.

As described in Appendix D of the *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNRF, 2012a), Candidate IWH features must be evaluated to determine their importance or treated as important and carried forward to the EIS.

The following methods have or may be used to evaluate the importance of these Candidate IWH features. These protocols are based on the evaluation criteria outlined in the *Significant Wildlife Habitat Technical Guide (SWHTG)* (MNR, 2000) and the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b). All field studies have or will be conducted by qualified Biologists. The qualifications of the persons who completed the determinations of importance are provided in **Appendix A**.

In addition to the EOI field studies completed by AECOM in 2015, LGL conducted the following field studies in 2011 and 2012 for the HIWEC study area, as per their *Work plan for the Nigig Power Wind Farm Project Background Ecological Studies* (LGL Limited, 2011):

- Raptor Migration;
- Passerine Migration;
- Breeding Birds;
- Herpetological Surveys; and
- Bat Acoustic Monitoring.

In addition, Stantec conducted the following field studies in 2013 for the HIWEC study area as per their *2013 Terrestrial Survey Work Program* (Stantec Consulting Ltd., 2013):

- Raptor Migration;
- Passerine Migration;
- Waterfowl Migration;
- Breeding Birds;
- Herpetological Surveys;
- Bat Acoustic Monitoring;
- Ecosite Classification and Rare Flora; and
- Incidental Wildlife Observations.

Stantec provided raw field and GIS data collected during the 2013 field season to AECOM in October 2014. WSP provided field data summaries and GIS data collected by LGL during the 2011 and 2012 field season to AECOM in May 2015. The following technical reports (hereafter collectively referred to as the “Technical Reports”) were prepared by AECOM, which summarize the data provided by Stantec and LGL:

- *Summary of 2011, 2012 and 2013 Raptor Migration Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015b);
- *Summary of 2011, 2012 and 2013 Passerine Migration Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015c);

- *Summary of 2013 Waterfowl Migration Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015d);
- *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e);
- *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f);
- *Summary of 2011, 2012 and 2013 Bat Acoustic Monitoring Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015g);
- *Summary of 2013 Ecosite Classification and Rare Flora Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015h); and
- *Summary of 2013 Incidental Wildlife Observations – Henvey Inlet Wind Energy Centre and Route A and Route B Transmission Line Study Areas* (AECOM, 2015i).

The Technical Reports were reviewed to further supplement the EOI of Candidate IWH. These Technical Reports are provided in Appendix A of the Records Review Report (AECOM, 2015j; hereafter referred to as the Records Review).

## 2.4.1 Seasonal Concentration Areas of Animals

### 2.4.1.1 Waterfowl Stopover and Staging Areas (Aquatic)

A total of 32 Candidate Waterfowl Stopover and Staging Areas (Aquatic) features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of extensive areas of shallow standing water.

Information collected from the spring and fall waterfowl migration surveys completed in 2013 by Stantec, as described in the *Summary of 2013 Waterfowl Migration Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015d; refer to Appendix A of the Records Review), in conjunction with the spring and fall waterfowl migration surveys completed by AECOM in 2014 and 2015, was used to evaluate the importance of these features. The methods by which these pre-construction EOI surveys were conducted are described in the following sections.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), a Candidate Waterfowl Stopover and Staging Area feature is confirmed as IWH where mixed aggregations of 100 or more of the target species are recorded at the feature for seven (7) days, resulting in >700 waterfowl use days. Target species for this IWH type include the following:

- Canada Goose (*Branta Canadensis*);
- Cackling Goose (*Branta hutchinsii*);
- Snow Goose (*Chen caerulescens*);
- American Black Duck (*Anas rubripes*);
- Northern Pintail (*Anas acuta*);
- Northern Shoveler (*Anas clypeata*);
- American Wigeon (*Anas Americana*);
- Gadwall (*Anas strepera*);
- Green-winged Teal (*Anas crecca*);
- Blue-winged Teal (*Anas discors*);
- Hooded Merganser (*Lophodytes cucullatus*);
- Common Merganser (*Mergus merganser*);
- Lesser Scaup (*Aythya affinis*);
- Greater Scaup (*Aythya marila*);
- Long-tailed Duck (*Clangula hyemalis*);
- Surf Scoter (*Melanitta perspicillata*);
- White-winged Scoter (*Melanitta fusca*);
- Ring-necked Duck (*Aythya collaris*);
- Common Goldeneye (*Bucephala clangula*);
- Bufflehead (*Bucephala albeola*);
- Redhead (*Aythya Americana*);
- Ruddy Duck (*Oxyura jamaicensis*);
- Red-breasted Merganser (*Mergus serrator*);
- Brant (*Branta bernicla*); and
- Canvasback (*Aythya valisineria*).

Also, areas where staging by Ruddy Ducks, Canvasbacks, and Redheads are observed are to be confirmed as important (MNR, 2012b). The number and density of waterfowl observed during the 2013 and 2015 surveys were calculated to determine whether any of the Candidate Waterfowl Stopover and Staging Area (Aquatic) features satisfy these criteria for importance.

#### 2.4.1.1.1 2013 Spring and Fall Waterfowl Migration Surveys

The following is a description of methods for the waterfowl migration surveys completed by Stantec in 2013. This description is taken from the *Summary of 2013 Waterfowl Migration Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015d; refer to Appendix A of the Records Review).

##### **“Spring Waterfowl Migration Work Plan**

*Spring monitoring for migrating waterfowl will be focused along Henvey Inlet and will consist of four bi-weekly surveys undertaken by boat in April and May. Surveys will include waterfowl counts to record species and number of individuals observed along the inlet, as well as characteristics of the wetlands to support migrating waterfowl (e.g., size, vegetation, permanence, etc.).*

*The use of scattered wetlands and ponds throughout the Project Location by staging waterfowl will be assessed through the spring passerine surveys.”*

A total of five (5) spring waterfowl migration surveys were conducted in April 2013 across various locations within Henvey Inlet. Surveys were generally conducted between 10 a.m. and 4 p.m. throughout Henvey Inlet. The final survey conducted on April 30, 2013 was recorded as taking place over one hour rather than from 10 a.m. to 4 p.m.

The date, weather conditions, start time and end time were recorded. When migratory waterfowl were observed, the observation was marked on the field map with a flock number. On the field sheets, the flock number, time of observation, four (4) letter species code, number of individuals, location and behaviour were recorded.

##### **“Fall Waterfowl Migration Work Plan**

*Fall monitoring for migrating waterfowl will be focused along Henvey Inlet and will consist of four bi-weekly surveys undertaken by boat in September through October. Surveys will include waterfowl counts to record species and number of individuals observed along the inlet, as well as characteristics of the wetlands to support migrating waterfowl (e.g., size, vegetation, permanence, etc.).*

*The use of scattered wetlands and ponds throughout the Project Location by staging waterfowl will be assessed through the fall passerine surveys.”*

A total of six (6) fall waterfowl migration surveys were conducted in September, October and November of 2013 across various locations within Henvey Inlet and along the shorelines of Georgian Bay and the Key River. Some surveys took place over several days.

The date, weather conditions, start time and end time were recorded. When migratory waterfowl were observed, the observation was marked on the field map with a flock number. On the field sheets, the flock number, time of observation, four (4) letter species code, number of individuals, location and behaviour were recorded.

#### 2.4.1.1.2 2014 Fall Waterfowl Migration Survey

An aerial survey by helicopter was conducted by an Avian Biologist on November 14, 2014. A Bell 206L-1 Long Ranger helicopter from Central Helicopters in Parry Sound flew over the entire HIWEC study area which included the Key River, the shores of Georgian Bay, Henvey Inlet, and multiple ice-free inland lakes. All Candidate IWH features were examined for habitat use by waterfowl. One (1) observer sat within the cockpit and looked out of either

side scanning all open water for the presence of waterfowl. When necessary the helicopter pilot would turn around wherever waterfowl were spotted so that the observer could identify and count the birds. The pilot recorded UTM co-ordinates of observations on the helicopter's GPS device. From this survey it was possible to see all areas of open water suitable for waterfowl. The helicopter flew at an average altitude of approximately 1,000 m but varied throughout the survey in order to increase visibility as needed.

The survey was conducted during calm weather conditions (little to no precipitation, and calm winds between 1 to 3 on the Beaufort scale). The following information was recorded:

- Date, start and end times;
- Weather conditions including temperature (°C), precipitation (i.e., snow, rain, none), wind (according to the Beaufort scale), and % cloud cover;
- Waterfowl species observed and approximate numbers;
- Behaviour of individuals observed (i.e., foraging, staging, flying over);
- Direction and distance from observer;
- Height and direction of flight, if applicable;
- UTM co-ordinates of observations or flocks;
- Times of observations;
- Description of habitat, if applicable;
- Habitat photos taken and numbers recorded; and
- Other birds (not waterfowl) encountered during the survey.

The survey was conducted in mid-November at the recommendation of a member of the HIFN (Joe Herbert), who informed AECOM that the greatest numbers of waterfowl are typically observed at that time of year.

#### 2.4.1.1.3 2015 Spring Waterfowl Migration Surveys

Two (2) aerial surveys by helicopter were conducted by an Avian Biologist on April 1 and May 31, 2015. These surveys were completed following the same protocols described above for the 2014 fall waterfowl migration survey.

#### **2.4.1.2 Shorebird Migratory Stopover Areas**

A total of seven (7) Candidate Shorebird Migratory Stopover Area features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of unvegetated shorelines and mudflats of rivers, lakes, and / or wetlands.

Pre-construction EOI surveys to evaluate the importance of Candidate Shorebird Migratory Stopover Area features were completed by AECOM in 2015. These surveys were conducted on two (2) separate occasions between May and June 10, 2015, roughly two weeks apart. Surveys were conducted during calm weather conditions (i.e., little to no precipitation, calm winds between 1 and 3 on the Beaufort Scale). A pre-determined route by boat that followed along the shorelines of the Key River, Henvey Inlet, Sandy Bay and Georgian Bay was selected. All Candidate IWH features were examined for habitat use by shorebirds. At least one (1) observer sat in the boat and looked out of either side, scanning all shorelines for the presence of shorebirds through binoculars. When necessary the boat was slowed down wherever shorebirds were spotted so that the observer could identify and count the birds. The following information was recorded during the shorebird migratory stopover surveys:

- Date, start and end times;
- Weather conditions including temperature (°C), precipitation (i.e., snow, rain, none), wind (according to the Beaufort scale), and % cloud cover;

- Waterfowl species observed and approximate numbers;
- Behaviour of individual observed (i.e., foraging, staging, flying over);
- Direction and distance from observer;
- Height and direction of flight, if applicable;
- UTM co-ordinates of observations or flocks;
- Times of observations;
- Description of habitat, if applicable;
- Habitat photos taken and numbers recorded; and
- Other incidental birds encountered during the survey.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), a candidate shorebird migratory stopover area feature is to be confirmed as IWH where three (3) or more of the target species and > 1,000 shorebird use days during spring or fall migration period are confirmed. Shorebird use days are defined as the accumulated number of shorebirds counted per day over the course of the fall or spring migration period. Target species for this IWH type include the following:

- Greater Yellowlegs (*Tringa melanoleuca*);
- Lesser Yellowlegs (*Tringa flavipes*);
- Hudsonian Godwit (*Limosa haemastica*);
- Marbled Godwit (*Limosa fedoa*);
- American Golden-plover (*Pluvialis dominica*);
- Black-bellied Plover (*Pluvialis squatarola*);
- Semipalmated Plover (*Charadrius semipalmatus*);
- Solitary Sandpiper (*Tringa solitaria*);
- Spotted Sandpiper (*Actitis macularius*);
- Semipalmated Sandpiper (*Calidris pusilla*);
- Pectoral Sandpiper (*Calidris melanotos*);
- White-rumped Sandpiper (*Calidris fuscicollis*);
- Baird's Sandpiper (*Calidris bairdii*);
- Least Sandpiper (*Calidris minutilla*);
- Purple sandpiper (*Calidris maritima*);
- Stilt Sandpiper (*Calidris himantopus*);
- Short-billed Dowitcher (*Limnodromus griseus*);
- Red-necked Phalarope (*Phalaropus lobatus*);
- Whimbrel (*Numenius phaeopus*);
- Ruddy Turnstone (*Arenaria interpres*);
- Sanderling (*Calidris alba*); and
- Dunlin (*Calidris alpina*).

Candidate Shorebird Migratory Stopover Area features with confirmed 100 day use by Whimbrel for at least three (3) years are also considered important. The number and density of shorebirds observed during the 2015 shorebird migratory stopover surveys were calculated to determine if any of the Candidate Shorebird Migratory Area features satisfy these criteria for importance.

### 2.4.1.3 Bat Hibernacula

One (1) Candidate Bat Hibernaculum feature was carried forward to the EOI due to its proximity to proposed HIWEC infrastructure and habitat suitability for hibernating bats.

Pre-construction acoustic monitoring was completed by AECOM to confirm use of the Candidate Bat Hibernacula feature between August 1 and August 31, 2015 in accordance with the *Bats and Bat Habitat Guidelines for Wind Power Projects* (MNR, 2011). The area around the Candidate Bat Hibernaculum feature was thoroughly searched for any additional entrances / openings to the hibernaculum that were not previously identified during the Site Investigation. These entrances / openings were also searched for evidence of potential bat use (e.g. presence of guano). Acoustic monitoring stations were established wherein acoustic monitors (Song Meter SM3BAT, Wildlife Acoustics) were installed within 10 m of each entrance / opening to the candidate bat hibernaculum feature identified to have potential for bat use. Ultrasonic microphones (SM3-U1) were positioned to maximize bat detection by

situating the microphones away from nearby obstacles and adjusting the angles so that they point slightly away from prevailing wind in order to minimize wind noise. Field personnel were prohibited to enter the potential hibernaculum to install any equipment due to safety issues and disturbance risk to bats.

The acoustic monitors used a two-channel full spectrum recorder to determine the frequency impulse signals of bat species passing by. The zero-crossing method was not used due its limitations to obtain appropriate information, including accurate species identification.

The following information was recorded for each acoustic monitor used:

- Information on all adjustable settings (e.g. gain level);
- Position of the microphones;
- Dates and times of each acoustic monitor deployment and retrieval; and
- Location (UTM coordinates) of each acoustic monitor deployment.

The presence and condition of any additional entrances / openings potentially used by bats to enter the candidate bat hibernaculum feature were also noted.

Acoustic monitors were programmed to start recording at dusk for five (5) hours continuously on every night until they were removed at least ten (10) days after they were deployed. Acoustic data were recorded on SD cards within the monitor. This data will be downloaded, transcribed and analyzed for a total of ten (10) nights, using the Kaleidoscope Pro 3 Analysis Software from Wildlife Acoustics. Nights selected for analysis will meet the timing and weather criteria in accordance with the *Bats and Bat Habitat Guidelines for Wind Power Projects* (MNRF, 2011) as follows. Analysis of acoustic data will be completed on warm / mild nights (i.e., ambient temperature above approximately 10°C) with low winds (< 6 m/s) and no precipitation, to the extent possible. The Weather Network's historical weather data for HIFN I.R. #2 will be reviewed to select appropriate nights for analysis.

The Kaleidoscope Pro 3 Analysis Software is designed to convert files, sort, and categorize bat data by species. Bat species will be identified wherever possible. Unidentified species will also be included as part of the analysis. Species identification will be spot checked by a qualified Biologist who is experienced in bat identification and monitoring to confirm the calls recorded are consistent with the typical characteristics of calls for each bat species. According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRF, 2012b), the Candidate Bat Hibernaculum feature will be confirmed as IWH upon confirmation of use by any hibernating bats.

Visual monitoring completed by human visual observations or exist surveys was not conducted due to the health and safety concerns for field staff conducting evening surveys given the remoteness of the HIWEC study area, the hazardous terrain and dangerous wildlife which may be encountered at night.

#### 2.4.1.4 Bat Maternity Colonies

A total of 64 Candidate Bat Maternity Colony features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of sufficient snag / cavity tree densities (i.e., ≥ ten (10) snags / cavity trees per hectare of trees with DBH ≥ 25 cm) in deciduous and / or mixed forest vegetation communities.

In order to evaluate the importance of these Candidate Bat Maternity Colony features, pre-construction EOI surveys may be completed in June 2016, or the features may be treated as important. Pre-construction EOI surveys would be conducted in accordance with the survey protocols outlined in the *Bats and Bat Habitat Guidelines for Wind Power Projects* (MNRF, 2011), which are described as follows.



Exit surveys would be conducted at each of the 64 identified Candidate Bat Maternity Colony features to confirm habitat use by roosting bats. The level of effort required for each feature (i.e., the number of trees selected to be monitored) is based on the following criteria:

- A minimum of ten (10) snags / cavity trees will be surveyed for features that are  $\leq 10$  ha in size;
- One snag / cavity tree will be surveyed for each hectare in features that are  $\leq 30$  ha in size; and
- A maximum of 30 snags / cavity trees will be surveyed for features that are  $\geq 30$  ha in size.

The number of trees selected to be monitored will depend on the level of effort required, as outlined above, as well as the number of cavity trees available. Snags / cavity trees that exhibit the following characteristics (in order of importance) will be selected for monitoring in each feature:

- Tallest snag / cavity tree;
- Exhibits cavities or crevices most often originating as cracks, scars, knot holes or woodpecker cavities;
- Has the largest diameter breast height;
- Is within the highest density of snags / cavity trees (e.g., clusters of snags);
- Has a large amount of loose, peeling bark;
- Cavity or crevice is high in snag / cavity tree ( $> 10$  m);
- Tree species that provide good cavity habitat (e.g., White Pine, Maple, Aspen, Ash and Oak);
- Canopy is more open; and
- Exhibits early stages of decay (decay Class 1 to 3; refer to Watt and Caceres, 1999).

Each cavity opening or crevice in the selected snag / cavity tree would be monitored from 30 minutes before dusk until 60 minutes after dusk for evidence of bats exiting. Each snag / cavity tree selected would have a single exist survey completed during the month of June in 2016 prior to construction.

Exist surveys would be completed using low light, night vision or infrared video cameras (suitable camera models would be determined) in conjunction with full spectrum acoustic monitors (Song Meter SM3Bat, Wildlife Acoustics). Cameras and acoustic monitors would be installed prior to the evening that a monitoring event is scheduled and would be programmed to record from 30 minutes before dusk until 60 minutes after dusk. A camera would be installed at each viewing station to visually record any existing bats and would be positioned so that it has a clear view of the snag / cavity tree's cavity opening or crevice. For snags / cavity trees that have more than one (1) suitable cavity opening or crevice, multiple viewing stations may be established. An acoustic monitor would be installed at each selected snag / cavity tree. The ultrasonic microphones (SM3-U1) would be positioned to maximize bat detection by situating the microphones away from nearby obstacles and adjusting the angles so that they point slightly away from prevailing winds in order to minimize wind noise. Acoustic monitors would be programmed record from 30 minutes before dusk until 60 minutes after dusk. The following information would be recorded for each acoustic monitor used:

- Information on all adjustable settings (e.g., gain level);
- Position of the microphones;
- Dates and times of each acoustic monitor installation and retrieval; and
- UTM co-ordinates of each acoustic monitor installation.

The cameras and acoustic monitors would be collected simultaneously after each monitoring event is completed. The video footage of each camera would be analyzed for evidence of bats exiting the cavity opening(s) or crevice(s) of selected snags / cavity trees. The acoustic monitoring data would be analyzed using the Kaleidoscope Pro 3 Analysis Software from Wildlife Acoustics in order to determine the bat species recorded by the camera(s). This software is designed to convert files, sort, and categorize bat data by species. Bat species would be identified

wherever possible. Unidentified species would be included as part of the analysis. Species identification would be spot checked by a qualified Biologist who is experienced in bat identification and monitoring to confirm the calls recorded are consistent with the typical characteristics of calls for each bat species.

For each monitoring event, the following information would be recorded:

- Date, and start and end times;
- Weather conditions including temperature (°C), precipitation (i.e., snow, rain, none), wind (according to the Beaufort scale), and % cloud cover;
- UTM co-ordinates, descriptions and photographs of snag / cavity tree surveyed;
- Number of cameras used per snag / cavity tree surveyed;
- UTM co-ordinates of viewing station(s);
- Name(s) of qualified Biologists conducting field work; and
- Bat species and number of existing bats recorded.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), a candidate bat maternity colony is to be confirmed as IWH upon confirmation of use by at least 20 Northern Myotis Bats (*Myotis septentrionalis*) or Little Brown Bats (*Myotis lucifugus*), ten (10) Big Brown Bats (*Eptesicus fuscus*), or five (5) adult, female, Silver-haired Bats (*Lasiurus noctivagans*). The number of individuals observed exiting or entering candidate trees, combined with species recorded and their representation of total calls recorded at each snag / cavity tree, will be used to determine the number of individuals of each species utilizing a candidate tree.

Exist surveys completed by human visual observations will not be conducted due to the health and safety concerns for field staff conducting evening surveys given the remoteness of the HIWEC study area, and the hazardous terrain and dangerous wildlife which may be encountered at night.

#### 2.4.1.5 Turtle Wintering Areas

A total of 65 Candidate Turtle Wintering Area features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of deep water and soft mud substrates.

Information collected from the herpetofaunal incidental observations recorded by LGL and Stantec in 2011, 2012 and 2013, as described in *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review), in conjunction with turtle basking surveys completed by AECOM in 2015 and those that may be completed in 2016, will be used to evaluate importance of these features. The protocols by which these pre-construction EOI surveys were and / or may be conducted are described in the following sections.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), a Candidate Turtle Wintering Area feature is to be confirmed as IWH where use by five (5) over-wintering Midland Painted Turtles (*Chrysemys picta marginata*), or one (1) or more Northern Map Turtle (*Graptemys geographica*) or Snapping Turtle (*Chelydra serpentina*) is confirmed. In addition, any Candidate Turtle Wintering Area feature confirmed to be used by a turtle Species at Risk (SAR) will be considered important.

##### 2.4.1.5.1 2011 and 2012 Herpetological Surveys

According to the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review), LGL recorded incidental observations of

important herpetofauna between May 1 and July 5, 2011, and in 2012. UTM co-ordinates of these incidental observations were provided to AECOM and mapped. The locations where turtle species were observed by LGL in 2011 and 2012 will be compared to the locations of the Candidate Turtle Wintering Area features through a desktop analysis to determine the potential presence / absence of target turtle species and habitat use in these features.

#### 2.4.1.5.2 2013 Herpetological Surveys

According to the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review), Stantec recorded incidental observations of important herpetofauna between April 22 and September 23, 2013. UTM co-ordinates of these incidental observations were provided to AECOM and mapped. The locations where turtle species were observed by Stantec in 2013 will be compared to the locations of the Candidate Turtle Wintering Area features through a desktop analysis to determine presence / absence of target turtle species and habitat use in these features.

#### 2.4.1.5.3 2015 Turtle Basking Surveys

Turtle basking surveys were conducted by AECOM Biologists between April 20 and June 15, 2015 on five (5) separate visits. A total of 26 sites (including several with multiple vantage points) were selected in order to cover representative habitats across the HIWEC study area, with a focus on locations that were overlapped by the proposed HIWEC location.

The methods for these pre-construction EOI surveys generally followed the Visual Encounter Survey protocol developed by the MNRF for Blanding's Turtle (MNRF, 2013). Each turtle basking survey was completed when temperatures were above 10°C, for 20 minutes at each site on calm, clear or partly cloudy days, to the extent possible. Qualified Biologists slowly approached and scanned each site for the presence of turtles with binoculars from several metres away. The perimeter of the site was slowly walked while scanning the ground for turtles and evidence of turtles.

The following information was recorded during each survey:

- Date, start and end times;
- Weather conditions including temperature (°C), precipitation (i.e., snow, rain, none), wind (according to the Beaufort scale), and % cloud cover;
- Species, number of individuals, their approximate length estimated, and other visible characteristics or observed behaviour (where possible) of any encountered turtles; and
- Observations of any predated eggs (i.e., shape, size, number, etc.) or other signs of turtles.

The results from these surveys will be analyzed to evaluate importance of Candidate Turtle Wintering Area features. In addition, any incidental observations of turtles recorded by AECOM in 2014 and 2015 will also be used to evaluate the importance of Candidate Turtle Wintering Area.

#### 2.4.1.5.4 2016 Turtle Basking Surveys

Pre-construction EOI surveys may be completed in 2016 to evaluate importance of the remaining Candidate Turtle Wintering Area features which cannot be evaluated based on surveys completed to date, or the features may be treated as important. These pre-construction EOI surveys would follow the same methods described for the 2015 turtle basking surveys.

### 2.4.1.6 Reptile Hibernacula

A total of 98 Candidate Reptile Hibernacula features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of rock piles, fissures or crevices in exposed bedrock, or Sphagnum moss hummocks.

Information collected from the herpetofauna incidental observations recorded by LGL and Stantec in 2011, 2012 and 2013, as described in *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review), in conjunction with snake basking surveys completed by AECOM in 2015 and those that may be completed in 2016, will be used to evaluate importance of these features. The protocols by which these pre-construction EOI surveys were and / or may be conducted are described in the following sections.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), a Candidate Reptile Hibernacula feature is to be confirmed as IWH where use by five (5) or more individuals of one (1) species, or any number of individuals of two (2) or more species of the following target snake and lizard species is confirmed:

- Eastern Gartersnake (*Thamnophis sirtalis sirtalis*);
- Northern Watersnake (*Nerodia sipedon sipedon*);
- Red-bellied Snake (*Storeria occipitomaculata*);
- DeKay's Brownsnake (*Storeria dekayi*);
- Smooth Greensnake (*Opheodrys vernalis*);
- Ring-necked Snake (*Phasianus colchicus*);
- Eastern Milksnake (*Lampropeltis Triangulum*);
- Eastern Ribbonsnake (*Thamnophis sauritus*); and
- Common Five-lined Skink (*Plestiodon fasciatus*).

In addition, any Candidate Reptile Hibernacula feature confirmed to be used by a snake SAR will also be considered important.

#### 2.4.1.6.1 2011 and 2012 Herpetological Surveys

According to the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review), LGL recorded incidental observations of important herpetofauna between May 1 and July 5, 2011, and in 2012. UTM co-ordinates of these incidental observations were provided to AECOM and mapped. The locations where snake and lizard species were observed by LGL in 2011 and 2012 will be compared to the locations of the Candidate Reptile Hibernacula features through a desktop analysis to determine the potential presence / absence of target snake and lizard species, and habitat use in these features.

#### 2.4.1.6.2 2013 Herpetological Surveys

According to the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review), Stantec recorded incidental observations of important herpetofauna between April 22 and September 23, 2013. UTM co-ordinates of these incidental observations were provided to AECOM and mapped. The locations where snake and lizard species were observed by Stantec in 2013 will be compared to the locations of the Candidate Reptile Hibernacula features through a desktop analysis to determine presence / absence of target snake and lizard species, and habitat use in these features.

#### 2.4.1.6.3 2015 Snake Basking Surveys

Snake basking surveys were conducted between mid-April and June 15, 2015 on five (5) separate visits. A total of 24 sites, including snake gestational and hibernacula habitats, were selected in order to cover representative habitats across the HIWEC study area, with a focus on locations that were overlapped by the proposed HIWEC location.

Each snake basking survey was completed when temperatures were above 10°C, for 20 minutes at each location on calm, clear or partly cloudy days, to the extent possible. Qualified Biologists slowly approached each site and visually scanned for the presence of snakes with binoculars from several metres away. The perimeter of the locations was slowly walked while visually scanning the ground for snakes and evidence of snakes (e.g., shed snakeskin). No objects were overturned during the surveys for health and safety reasons, to prevent snake bites.

The following information was recorded during each survey:

- Date, start and end times;
- Weather conditions including temperature (°C), precipitation (i.e., snow, rain, none), wind (according to the Beaufort scale), and % cloud cover;
- Species, number of individuals, their approximate length estimated, and other visible characteristics or observed behaviour (where possible) of any encountered snakes; and
- Observations of any other signs of snakes (i.e., shed snakeskin).

The results from these surveys will be analyzed to evaluate importance of Candidate Reptile Hibernacula features. In addition, any incidental observations of snakes recorded by AECOM in 2014 or 2015 will also be used to evaluate the importance of Candidate Reptile Hibernacula features.

#### 2.4.1.6.4 2016 Snake Basking Surveys

Pre-construction EOI surveys may be completed in 2016 to evaluate importance of the remaining Candidate Reptile Hibernacula features which cannot be evaluated based on surveys completed to date, or the features may be treated as important. These pre-construction EOI surveys would follow the same methods described for the 2015 snake basking surveys.

#### 2.4.1.7 **Colonially-Nesting Bird Breeding Habitat (Trees / Shrubs)**

A total of eight (8) Candidate Colonially-nesting Bird Breeding Habitat (Trees / Shrubs) features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of stick nests potentially used by Great Blue Herons.

Information collected during the aerial surveys completed by AECOM during the 2014 and 2015 waterfowl migration surveys described in **Section 2.4.1.1** above, as well as incidental observations recorded during the 2014 and 2015 Site Investigation, were used to evaluate importance of these features. Stick nests were searched for in conjunction with the waterfowl migration surveys and Site Investigation. Where a stick nest was identified, the following information was recorded:

- UTM co-ordinates;
- Number of stick nests present at each observed location; and
- Number and species of herons occupying the stick nests, if any.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), a Candidate Colonially-Nesting Bird Breeding Habitat (Trees / Shrubs) feature is to be confirmed as IWH where ten (10) or more active nests of Great Blue Heron (*Ardea herodias*) or one (1) or more active nests of Black-crowned Night-heron (*Nycticorax nycticorax*) are confirmed.

#### 2.4.1.8 Deer Yarding Areas

A total of four (4) Candidate Deer Yarding Area features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of coniferous forest, mixed forest and mixed swamp communities greater than 100 ha in size.

Deer Yarding Areas consist of two strata: Stratum I (A), also known as the ‘core’ of the deer year, where deer are concentrated during the most severe times of the winter, and Stratum II (C) which encompasses the ‘core’ and is a larger area where deer spend the rest of the winter (MNR, 1997a). Stratum II habitat is typically mixed or deciduous forest with plenty of browse available for food; however, agricultural lands may potentially provide suitable habitat (MNR, 1997b). Deer move to these areas in early winter, before snow depths reach 20 cm (MNR, 1997a). Deer will remain in these areas unless conditions become severe (snow depths reach the critical value of 30 cm), at which time they will move to Stratum I habitat (MNR, 1997b). Stratum I habitat is typically coniferous forest (pine, hemlock, cedar, and / or spruce) with a canopy cover greater than 60%; this habitat provides much greater cover and is critical for deer survival when winter conditions become severe (MNR, 1997a; MNR, 1997b).

The MNR typically conducts aerial surveys to identify deer tracks within potential deer yards. In cases where an aerial survey is not possible, or does not provide the deer track density data required to distinguish deer yards from the surrounding landscape, ground surveys that record deer sign (including tracks and pellets) can provide the information needed to identify and delineate Deer Yarding Areas. Areas that show a high concentration of deer sign in the winter months could also be considered Deer Yarding Areas.

Pre-construction EOI surveys to evaluate importance of Candidate Deer Yarding Areas may be completed in 2015 or 2016 using the following methods, or the features may be treated as important. One (1) visit would be completed during the winter season, generally when snow cover is greater than 30 cm and approximately 5 days after snowfall. Within 120 m of the HIWEC location, transects spaced 50 m to 100 m apart, depending on the size of the area, would be searched for evidence of deer use. The following information would be recorded, quantified and mapped:

- Pellet groups;
- Evidence of deer browsing;
- Tracks and trails;
- Conifer shelter; and
- Canopy cover, species composition, and structure of the stand.

Winter habitats are a limiting factor throughout the White-tailed Deer range within central Ontario. Core or Stratum I habitats may even be considered “critical” for winter deer survival. Therefore, any Deer Yarding Area that shows evidence of concentrated deer use during the winter would be considered IWH, given its importance for deer survival through the winter.

## 2.4.2 Rare Vegetation Communities

### 2.4.2.1 Cliffs and Talus Slopes

A total of six (6) Candidate Cliff and Talus Slope features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of sparsely vegetated vertical bedrock and / or rock rubble at the base of a cliff. One (1) feature, CL-008, was located on the north side of the Key River. Permission to enter private property was not granted at this location and therefore, a pre-construction EOI survey could not be completed. As a result, this feature was treated as important and carried forward to the EIS.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), a Candidate Cliff and Talus Slope feature was confirmed as IWH based on the presence of Rock Tripe Lichen (*Umbilicaria sp.*) and at least three (3) of the other characteristic species for this IWH type, including:

- Rock Polypody (*Polypodium virginianum*);
- Brittle Bladder-fern (*Cystopteris fragilis*);
- Oblong Woodsia (*Woodsia ilvensis*);
- Fragile Rockbrake (*Cryptogramma stelleri*);
- Alpine Woodsia (*Woodsia alpina*); and,
- White Mountain Saxifrage (*Saxifraga paniculata*).

In addition, any Cliff or Talus Slope feature with Fragrant Cliff Fern (*Dryopteris fragrans*) or Rocky Mountain Woodsia (*Woodsia scopulina ssp. laurentiana*) was also considered important. This is attributed to the fact that Fragrant Cliff Fern is rare in Ecoregion 5E and that Ecoregion 5E represents a significant portion of the species global range for Rocky Mountain Woodsia.

Pre-construction EOI surveys to evaluate the importance of the five (5) Candidate Cliff and Talus Slope features were completed by qualified AECOM Biologists on October 6 and 7, 2015. Each identified feature was visited on a single occasion to confirm the presence / absence of the characteristic plant species for this IWH type. Field personnel were trained on how to identify the characteristic plant species and searched the feature for the presence of these species. The presence of any of the characteristic plant species was recorded.

### 2.4.2.2 Precambrian Rock Barren

A total of 86 Candidate Precambrian Rock Barren features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of open, shrub or treed rock barren vegetation communities.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), a Candidate Precambrian Rock Barren features is to be confirmed as IWH if it is relatively undisturbed and contains four (4) or more of the following characteristic plant species:

- Lichens and mosses (*Polytrichum spp.*);
- Poverty Grass (*Danthonia spicata*);
- Wavy-hair Grass (*Deschampsia flexuosa*);
- Common Juniper (*Juniperus communis*);
- Lowbush Blueberry (*Vaccinium angustifolium*);
- Sweet Fern (*Comptonia peregrina*);
- White Oak (*Quercus alba*);
- Red Oak (*Quercus rubra*);
- White Pine (*Pinus strobus*);
- Bristly Sarsaparilla (*Aralia hispida*);
- Case's Ladies'-tresses (*Spiranthes casei*);
- Early Saxifrage (*Saxifraga virginensis*);
- Black Huckleberry (*Gaylussacia baccata*);
- Pink Corydalis (*Corydalis sempervirens*); and,
- Bastard Toadflax (*Comandra umbellata*).

Open, shrub and treed rock barrens are the predominant vegetation communities within the HIWEC study area. All of these rock barren vegetation communities are relatively undisturbed and generally contain at least four (4) of the characteristic plant species listed above for this IWH type. Therefore, all 86 Candidate Precambrian Rock Barren features were confirmed to be important. No additional field studies are required to evaluate the importance of these features. These features were carried forward to the EIS of this NHA.

### 2.4.2.3 Sand Barrens

A total of two (2) Candidate Sand Barren features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of open or shrub sand barren vegetation communities.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRF, 2012b), Candidate Sand Barren features are to be confirmed as IWH if they contain any of the following characteristic plant species:

- Reindeer Lichens (*Cladina* spp.);
- Houghton's Sedge (*Carex houghtoniana*);
- Fernald's Sedge (*Carex merritt-fernaldii*);
- Sweetfern (*Comptonia peregrina*);
- Northern Dewberry (*Rubus flagellaris*);
- Rock spike-moss (*Selaginella rupestris*);
- Alpine Dog Violet (*Viola labradorica*);
- Coastal Jointweed (*Polygonella articulata*); and
- Procupine Grass (*Stipa spartea*).

Plant inventories were completed in conjunction with the ELC field surveys during the Site Investigation. As described in the Site Investigation Report, both features contain at least one (1) characteristic plant species for sand barrens. Therefore, both features are confirmed as important and carried forward to the EIS phase of this NHA.

### 2.4.2.4 Old-growth Forests

A total of six (6) Candidate Old-growth Forest features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and as they are at least 30 ha in size, contain mature long-lived species and are structurally complex.

Of these six (6) Candidate Old-growth Forest Features, one (1) feature (FO-001) was eliminated from further consideration and was not evaluated for importance. This was due to it overlapping with the On-reserve portions of the Route A Transmission Line, which is no longer being considered.

Pre-construction EOI surveys to evaluate the importance of these features were completed on October 14 to 16, 2015. The survey methods described below were adapted from the following three (3) documents:

- *Private Native Forestry Code of Practice Guideline No.2. Protocol for re-evaluating old-growth forest on private property* (NSW, 2007);
- *A Preliminary Survey of Old- Growth Forest Landscapes on the West Side of Algonquin Provincial Park, Ontario* (Henry and Quinby, 2006); and
- *A silvicultural guide for the Great Lakes – St. Lawrence conifer forest in Ontario* (MNRF, 1998).

Field surveys were conducted for Candidate Old-growth Forest features located within the HIWEC location to confirm approximate stand age and disturbance level. However, one (1) feature (FO-006) was located within 120 m of the HIWEC location but not overlapped by it and as such was not included as part of these surveys. Since it was not surveyed it was instead treated as important and carried forward to the EIS. Within the remaining four (4)



features, transects with survey points were placed at a minimum distance of 50 m apart. If these surveys identified old-growth forest stands within the HIWEC location, additional surveys in the entire feature would occur to determine the extent of the old-growth forest boundaries.

At each survey point, the following information was recorded:

- Unique old-growth plot identifier;
- Date, and start and end times;
- Weather conditions, including temperature (°C), precipitation, wind (Beaufort scale) and % cloud cover; and
- UTM co-ordinates of the centre of the plot.

At each survey point, the following was performed and recorded in addition to the above:

- A prism sweep was completed at each plot centroid to characterize the diameter of trees in representative portions of each stand;
- Within each prism sweep, for all stems with a diameter breast height (DBH) of  $\geq 40$  cm, as measured using DBH tape, the following was recorded: UTM co-ordinates, DBH, tree height and tree species.
- Within a 15 m radius of the plot centroid tree height and a tree core taken at 1.3 m (breast height) was collected from one dominant canopy tree (the largest tree within the prism sweep) using an increment borer in accordance with the protocols by Rubino and McCarthy (2002) and teaching instruction from Dendrochronologist, Matt Scoular.
- Disturbance indicators noted at each plot were also recorded. Disturbance indicators included evidence of logging, exotic species, fire etc.
- Annual rings were counted using a dissection scope and / or hand lens to determine approximate pith age. Samples with indistinct rings or fine annual rings were mounted and sanded prior to counting rings. A true age was determined by adding the number of annual rings at breast height (approximate pith age) and a species-specific growth factor  $s$ . Growth factors were determined by selecting the most conservative values available in MNRFP reports (MNRFP, 1995; MNRFP, 1998) and peer-reviewed journal articles (Henery and Quinby 2006; Vasiliauskas, 1995; Fraver, *et al.* 2011; Wong and Lertzman, 2001). Where species specific growth factors were unavailable, a conservative estimate of 20 years was applied (Fraver, *et al.* 2011; Wong and Lertzman, 2001).
- Where approximate pith age could not be determined due to heartrot or where piths were not reached, the pith age for the incomplete cores were estimated by comparing complete cores (i.e. those without heartrot and complete piths) with other samples with similar DBH to the incomplete core, of the same species.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRFP, 2012b), a Candidate Old-growth Forest feature is to be confirmed as IWH if the dominant tree species of the Ecosite are  $> 140$  years old, and the feature has no recognizable forestry activity (i.e., no evidence of cut stumps).

#### 2.4.2.5 Bog

A total of 70 Candidate Bog features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of open, shrub or treed bog vegetation communities.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), candidate bog features are to be confirmed as IWH based on the ELC classification, which was determined during the Site Investigation. Therefore, all 70 Candidate Bog features are confirmed to be important. No additional field studies are required to evaluate the importance of these features. These features were carried forward to the EIS of this NHA.

## 2.4.3 Specialized Habitats for Wildlife

### 2.4.3.1 Waterfowl Nesting Areas

A total of 21 Candidate Waterfowl Nesting Area features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of suitable upland habitats surrounding (i.e., within 120 m of) wetland habitats which may support nesting waterfowl.

Information collected during the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013, as described in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review), in conjunction with breeding bird surveys completed by AECOM in 2015 and those that may be completed in 2016, will be used to evaluate the importance of the Candidate Waterfowl Nesting Area features. The methods by which these pre-construction EOI surveys were and / or may be conducted are described in the following sections.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), a Candidate Waterfowl Nesting Area feature is to be confirmed as IWH where three (3) or more nesting pairs for the following species, excluding mallards, are confirmed:

- American Black Duck (*Anas rubripes*);
- Northern Pintail (*Anas acuta*);
- Northern Shoveler (*Anas clypeata*);
- Gadwall (*Anas strepera*);
- Blue-winged Teal (*Anas discors*);
- Green-winged Teal (*Anas crecca*);
- Wood Duck (*Aix sponsa*);
- Hooded Merganser (*Lophodytes cucullatus*);
- Common Merganser (*Mergus merganser*);
- Red-breasted Merganser (*Mergus serrator*);
- Mallard (*Anas platyrhynchos*);
- Canada Goose (*Branta Canadensis*);
- America Widgeon (*Anas Americana*);
- Bufflehead (*Bucephala albeola*); and
- Common Goldeneye (*Bucephala clangula*).

In addition, any Candidate Waterfowl Nesting Area features where ten (10) or more nesting pairs of the species listed above, including Mallards, or any nesting sites of an American Black Duck are found will also be considered important.

#### 2.4.3.1.1 2011 and 2012 Daytime Breeding Bird Surveys

The following is a description of methods for daytime breeding bird surveys completed by LGL in 2011 and 2012. This description is taken from the *Summary of 2011, 2012, and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review).

**“Waterfowl** – incidental observations were made by field staff while in the study area during the 2011 breeding bird season.

**Passerines** – Point counts and incidental observations will be used as the effective means for developing a species list for the site. Point counts followed EC guidelines, and will be used for the purpose of contributing to existing knowledge of the use of the site by birds during the breeding season, and to facilitate

comparisons with the post-construction breeding bird community. Surveys were undertaken twice during the breeding season. Points were placed in representative habitats and distributed across the landscape to capture any habitat gradient which may be present across the study area.

Monitored Species / Behaviour	Sampling Method	Timing and Frequency
Waterfowl	Incidental observations from ground and aerial surveys	Throughout breeding season
Passerines	A series of point counts established across the study area	Each point surveyed twice between May 30 and July 7, at least 10 days apart

Based on the data provided for the 2011 and 2012 daytime breeding bird surveys, a total of 398 breeding bird surveys were completed at 148 point count locations distributed across 17 transects in 2011 and 2012. Each point count location was surveyed between one (1) and four (4) times. Surveyors recorded the date, point count survey station, time, whether conditions, bird species observed and whether they were within 50 m, 50 m to 100 m, or more than 100 m from the station. Observers recorded all birds seen or heard at a station over two (2) consecutive five (5)-minute intervals.

**2.4.3.1.2 2013 Daytime Breeding Bird Surveys**

The following is a description of methods for the daytime breeding bird surveys completed by Stantec in 2013. This description is taken from the *Summary of 2011, 2012, and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review).

**“Daytime breeding birds (Two surveys, late May to early July):**

*Two rounds of Breeding Bird Surveys will be conducted in each major habitat type with the Study Area (woodland, rock barren and wetland). Surveys will consist of ten-minute point counts, in conjunction with area searches (wandering transects) between point count locations. The area searches will allow for collection a comprehensive species list, whereas point counts will provide information on species density.*

*Surveys would take place starting 30 minutes before sunrise and continue until approximately 10 a.m. As per Environment Canada guidance, a minimum of 20 point counts will be sited in each major habitat type. However, given the variability of habitat types that occur within the Study Area, it is anticipated that many point counts may cover more than one habitat type.*

*In marsh habitat, play-back call surveys for marsh breeding birds will be conducted following the ten-minute point count, to assist in detection or more secretive marsh bird species, specifically, the threatened Least Bittern.*

*Location of all species at risk observations will be geo-referenced using a hand-held GPS unit, mapped and compared to ecosite classification to develop habitat mapping for each species.”*

Based on the field notes provided for the 2013 daytime breeding bird point count surveys, a total of 178 surveys were conducted at 89 point count stations distributed across six (6) areas within the HIWEC study area between June 4 and 28, 2013. Two (2) point count surveys were conducted at each station. In addition, a total of 22 area searches were conducted over six (6) areas between June 4 and 28, 2013. The area searches were conducted as wandering transects and UTM co-ordinates were not recorded therefore the routes of the area searches could not be mapped. The general locations of the area searches are assumed to correspond with the point count transect locations.

In general, Stantec field staff recorded the breeding bird point count data in the following manner. The date and daily weather conditions were recorded. For each point count the station, UTM co-ordinates, start time, end time, habitat and direction the observer was facing were also recorded. When a bird was observed or heard, the four (4) letter

species code was recorded within the circles representing the distance between the bird and the observer. Bird observations were also recorded in a table that indicates the distance between the bird and the observer. Height and flyovers were also recorded in this table.

In addition, Stantec field staff recorded the breeding bird area search data in the following manner. The date, daily weather conditions, start time, end time and each habitat type surveyed were recorded. Each habitat was given a habitat number and a habitat description. When a bird was observed or heard, the habitat number and breeding evidence of the observation were recorded.

#### 2.4.3.1.3 2015 Breeding Bird Surveys

Breeding bird surveys were conducted at a total of 30 representative sites within the HIWEC study area in 2015. An analysis of the locations of breeding bird surveys completed in 2011, 2012 and 2013, together with the results of Site Investigation field surveys completed in 2014 and a desktop review of aerial photography, was undertaken to identify representative survey locations across a variety of suitable habitats. An effort was made to select sites outside areas previously surveyed in 2011, 2012 and 2013 in order to fill gaps in the spatial coverage across the HIWEC study area. Specific sites were spaced at least 250 m apart with a focus on locations that were overlapped by the proposed HIWEC location.

Breeding bird surveys were conducted in accordance with the Forest Bird Monitoring Protocol developed by Environment Canada – Canadian Wildlife Service (EC-CWS, 2009). Two (2) point count surveys at each station were conducted between May 24 and July 10, 2015. Each point count was ten (10) minutes in duration, and conducted at least ten days apart at a given station. Data collected during each full ten (10) minute point count was also recorded in smaller intervals of the first three (3) minutes and first five (5) minutes to allow for comparison to other relatively common survey methods, including the North American Breeding Bird Survey, a long-term volunteer bird monitoring program. Surveys were conducted during calm weather conditions (i.e., little to no precipitation, calm winds of 1 to 3 on the Beaufort scale), to the extent possible, between 30 minutes after sunrise and 10 a.m. The following information was recorded during each survey:

- Date, start and end times;
- Weather conditions including temperature (°C), precipitation (i.e., snow, rain, none), wind (according to the Beaufort scale), and % cloud cover;
- Unique ID of survey location;
- Species observed and approximate numbers;
- Highest breeding evidence of individuals species observed (i.e., singing male, suitable habitat);
- UTM co-ordinates of point count locations;
- Details of any encountered SAR or Species of Conservation Concern (SOCC) observations; and
- Habitat descriptions including vegetation types.

The results from these surveys will be analyzed to evaluate importance of Candidate Waterfowl Nesting Area features. In addition, any incidental observations of breeding birds recorded by AECOM in 2015 will also be used to evaluate the importance of Candidate Waterfowl Nesting Area features.

#### 2.4.3.1.4 2016 Breeding Bird Surveys

Pre-construction EOI Surveys may be completed in 2016 to evaluate importance of the remaining Candidate Waterfowl Nesting Area features which cannot be evaluated based on surveys completed to date, or the features may be treated as important. Pre-construction EOI surveys would follow the same protocols described for the 2015 breeding bird surveys.

### 2.4.3.2 Bald Eagle and Osprey Nesting, Foraging and Perching Habitat

A total of two (2) Candidate Bald Eagle and Osprey Nesting, Foraging and Perching Habitat features (BIRD-03 and BIRD-013) were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of Osprey nests. Both features were assumed to be Osprey stick nests based on the size, shape and position of the stick nest on the dead tree / snag. No Bald Eagle (*Haliaeetus leucocephalus*) nests were identified through the Site Investigation.

Osprey activity assessment surveys may be completed to evaluate the importance of the Candidate Bald Eagle and Osprey Nesting, Foraging and Perching Habitat features. These surveys would include the following:

- Surveys would be conducted on three (3) occasions between April 25 and June 30, 2016 to determine if the nest is active;
- Surveys would be conducted during daylight hours from a suitable vantage point to the candidate nest location;
- On each occasion, the nest would be observed for a minimum of 30 minutes;
- The GPS co-ordinates of the vantage point would be collected on the first visit to ensure that the remaining surveys are conducted from the same location;
- Surveys would be conducted under calm, clear weather conditions, to the extent possible;
- Weather conditions (wind, cloud cover, temperature, and precipitation), start time and end time would be recorded during each survey; and
- During each survey, all observed Ospreys would be recorded along with their approximate location, age and behaviour (e.g., courtship, nest building, incubation, flight path).

If a nest is confirmed to be active through the above survey methods, the Candidate Bald Eagle and Osprey Nesting, Foraging and Perching Habitat feature will be considered important.

### 2.4.3.3 Woodland Raptor Nesting Habitat

A total of 44 Candidate Woodland Raptor Nesting Habitat features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of potentially suitable woodland raptor nesting habitat.

- Information collected during the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013, as described in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review), in conjunction with breeding bird surveys completed by AECOM in 2015 and those that may be completed in 2016, will be used to evaluate the importance of the Candidate Woodland Raptor Nesting Habitat features. The methods by which these pre-construction EOI surveys were conducted are described in **Section 2.4.3.1**. In addition, any incidental observations of active raptor nests recorded by AECOM during the 2014 and 2015 Site Investigation field surveys will also be used to evaluate the importance of Candidate Woodland Raptor Nesting Habitat features.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), a Candidate Woodland Raptor Nesting Habitat feature is to be confirmed as IWH upon confirmation of one or more active nest of the following target species:

- Red-tailed Hawk (*Buteo jamaicensis*);
- Great Horned Owl (*Bubo virginianus*);

- Broad-winged Hawk (*Bufo platypterus*);
- Sharp-shinned Hawk (*Accipiter striatus*);
- Merlin (*Falco columbarius*);
- Barred Owl (*Stix varia*);
- Red-shouldered Hawk (*Bufo lineatus*);
- Cooper's Hawk (*Accipiter cooperii*); and
- Northern Goshawk (*Accipiter gentilis*).

If an active nest of a target species is confirmed, a habitat buffer is to be applied around the nest location. The radius of the buffer varies in size and is species-dependent, as follows:

- A 400 m radius buffer is to be applied around an active Red-shouldered Hawk or Northern Goshawk nest;
- A 200 m radius buffer is to be applied around an active Barred Owl nest;
- A 100 m radius buffer is to be applied around an active Broad-winged Hawk, Cooper's Hawk, Great Horned Owl or Red-tailed Hawk nest; and
- A 50 m radius buffer is to be applied around an active Merlin or Sharp-shinned Hawk nest.

#### 2.4.3.4 Turtle and Lizard Nesting Areas

A total of 86 Candidate Precambrian Rock Barren features were carried forward to the EOI as suitable lizard nesting habitat. Given that Five-lined Skink nest sites are commonly found within or beneath cover objects (e.g., decaying logs, trees, stumps or rocks), searches for nests will not be completed due to health and safety concerns for field staff associated with turning over objects and risk of snake bites (COSEWIC, 2007). In addition, given the size and extent of the rock barrens, it would not be feasible to search everywhere for Five-lined Skink nests. Therefore, all Candidate Precambrian Rock Barren features were treated as important for lizard nesting habitat and carried forward to the EIS phase of this NHA.

A total of 33 Candidate Turtle Nesting Area features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of meadow marsh vegetation communities or areas containing sandy substrates and / or confirmed turtle nests.

Information pertaining to evidence of turtle nests (e.g., predated eggs) collected from the herpetofauna incidental observations recorded by LGL in 2011 and 2012, as described in *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review), in conjunction with turtle nest surveys that may be conducted in 2016, will be used to evaluate importance of Candidate Turtle Nesting Area features. The protocols by which these pre-construction EOI surveys were and / or would be conducted are described below.

Although the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRF, 2012b) states that a Candidate Turtle Nesting Area feature is to be confirmed as IWH if five (5) or more nesting Midland Painted Turtles (*Chrysemys picta marginata*) or one (1) or more nesting Northern Map Turtle (*Graptemys geographica*) or Snapping Turtle (*Chelydra serpentina*) are confirmed, the probability of finding turtle nests in the field is generally low unless they have been predated. Therefore, any feature where evidence of at least one (1) nest of Midland Painted Turtle, Northern Map Turtle or Snapping Turtle is found will be confirmed as important, as it is likely that there are other nests nearby that were not detected. In addition, any features where turtle SAR nests are found will be considered important. The area or collection of sites within an area of exposed mineral soils where turtles are found to nest, as well as a radius of 30 to 100 m around the nesting area dependent on slope, riparian vegetation and adjacent land use, is to be considered part of the IWH feature (MNRF, 2012b).

#### 2.4.3.4.1 2011 and 2012 Surveys

According to the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review), LGL recorded incidental observations of important herpetofauna between May 1 and July 5, 2011, and in 2012. UTM co-ordinates of these incidental observations were provided to AECOM and mapped. The locations where turtle nests or predated turtle eggs were observed by LGL in 2011 and 2012 will be compared to the locations of the Candidate Turtle Nesting Area features through a desktop analysis to determine the potential presence / absence of target turtle species in these features.

#### 2.4.3.4.2 2016 Turtle Nesting Surveys

Pre-construction EOI surveys to evaluate the importance of the remaining Candidate Turtle Nesting Area features which cannot be evaluated based on surveys completed to date, or the features may be treated as important.

During the pre-construction EOI surveys, the vicinity of each feature would be examined on three (3) occasions between late May and late June, 2016 (approximately May 31, June 15, and June 30). On each occasion, the feature would be approached slowly and scanned for the presence of still nesting turtles with binoculars from several metres back. An area search would be conducted by slowly walking around the perimeter of feature while scanning the ground for turtles and evidence of turtle nesting (e.g., predated eggs or nest depressions). The feature would be searched for a minimum of 20 minutes. Any turtles found would be visually identified, approximate length estimated, and other visible characteristics recorded (where possible). This would be done to identify individuals. All necessary data (i.e., shape, colour, size, etc.) on any predated eggs found would be collected in the field in order to assist in the identification of turtle species. The following information would also be recorded during each survey:

- Date, start and end times;
- Weather conditions including temperature (°C), precipitation (i.e., snow, rain, none), wind (according to the Beaufort scale), and % cloud cover; and
- UTM co-ordinates of any turtle nesting evidence observed.

If turtle species identification cannot be confirmed, the feature will be assumed to be important.

#### 2.4.3.5 **Seeps and Springs**

A total of ten (10) Candidate Seeps and Springs features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of possible seeps or springs.

Pre-construction EOI surveys to evaluate the importance of these features may be completed in 2015 or 2016, or the features may be treated as important. During the preconstruction EOI surveys, each Candidate Seeps and Springs features would be searched for additional seeps or seep indicators on one (1) occasion in November and, to the extent possible, when ambient air temperature is between 0°C and 5°C. If possible, water quality and quantity parameters including water temperature, pH, conductivity, and estimate flow rate would be recorded at any seep or spring encountered. These parameters would be used to determine whether the water quality and quantity are indicative of groundwater discharge. The following information would also be recorded during each survey:

- Date, start and end times;
- Weather conditions including temperature (°C), precipitation (i.e., snow, rain, none), wind (according to the Beaufort scale), and % cloud cover; and
- UTM co-ordinates of seeps or seep indicators observed.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), a Candidate Seeps and Springs feature is to be confirmed as IWH if the presence of two (2) or more seeps or springs are confirmed within a forested vegetation community.

#### 2.4.3.6 Aquatic Feeding Habitat

A total of 36 Candidate Aquatic Feeding Habitat features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of conifer or mixed forest within 120 m of a wetland containing an abundance of submerged aquatic vegetation.

Pre-construction EOI surveys to evaluate the importance of these features may be completed in 2016, or the features may be treated as important. During the preconstruction EOI surveys, each Candidate Aquatic Feeding Habitat feature would be surveyed on one (1) occasion between June 15 and July 31. Upon arrival, each feature would first be approached quietly and scanned with binoculars for the presence of moose in the water. The composition of submerged aquatic plant cover present in shallow aquatic vegetation communities (i.e., SAS, SAF or SAM) would be documented. Features would be searched for the following species which are favoured by Moose: water lilies (*Nuphar* or *Nymphaea* spp.), pondweeds (*Potamogeton* spp.), water milfoils (*Myriophyllum* spp.), Mare's Tail (*Hippurus vulgaris*) and bur-reeds (*Sparganium* spp.) (Ranta, 1997). Those features confirmed to contain  $\geq 50\%$  cover of submerged and / or floating aquatic plants, of which at least 50 % of plants are species favoured by Moose, would then be searched around the perimeter for tracks which indicate that Moose have entered and / or left the feature. This level of assessment would require direct access to wetland edges and may require the use of chest waders or a canoe. Those features that do not contain  $\geq 50\%$  cover of submerged and / or floating aquatic plants of which at least 50 % of plants are species favoured by Moose would not be considered further.

The following information would be recorded during each survey:

- Date, start and end times;
- Weather conditions including temperature (°C), precipitation (i.e., snow, rain, none), wind (according to the Beaufort scale), and % cloud cover;
- UTM co-ordinates and description of any Moose observed;
- Percent (%) cover of submerged plants;
- Percent (%) cover of floating plants;
- Floating and submerged plant species and abundance; and
- UTM co-ordinates, description and photographs of any Moose tracks or scat observed.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), a Candidate Aquatic Feeding Habitat feature is to be confirmed as IWH if there is any evidence of Moose use in the aquatic areas with suitable aquatic vegetation cover.

#### 2.4.3.7 Amphibian Breeding Habitat (Woodland and Wetland)

A total of 76 Candidate Amphibian Breeding Habitat (Woodland and Wetland) features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of standing water or vernal pools which may support breeding amphibians.

Information collected during Western Chorus Frog (*Pseudacris triseriata*) and salamander surveys completed by Stantec in 2013, as described in the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review), in conjunction with the amphibian surveys completed by AECOM in 2015 and those that may be completed in 2016, will be used to



evaluate the importance of these features. The methods by which these surveys were and / or will be conducted are described the following sections below.

The HIWEC study area is covered by an unfragmented network of connecting woodlands and wetlands that contain a variety of potentially suitable amphibian breeding habitats. Treed rock barrens (RBT) were considered as part of woodlands, which cover the majority of the HIWEC study area and provide connections between wetland and forest communities. Given this landscape connectivity, woodland and wetland breeding amphibians likely breed in the same habitats even though the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRF, 2012b) provides criteria that make amphibian woodland breeding habitats and amphibian wetland breeding habitats mutually exclusive (i.e., an area can be either a wetland or a woodland amphibian breeding habitat but not both). The main criterion that separates these two habitats from each other is that wetland amphibian breeding habitats are identified as being more than 120 m away from wooded or forest habitats (MNRF, 2012b). However, in the context of the HIWEC study area, this criterion is less applicable since most wetlands, lakes, ponds or pools are surrounded by wooded or forested areas. Therefore, the criteria for evaluating the importance for woodland and wetland breeding amphibians as described in the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRF, 2012b) were combined into one Amphibian Breeding Habitat (Woodland and Wetland) IWH type for the purpose of this NHA.

The EOI criteria for Amphibian Breeding Habitat (Woodlands) and Amphibian Breeding Habitat (Wetland) as described in the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRF, 2012b), respectively, state the following:

**“Amphibian Breeding Habitat (Woodland)**

*Presence of breeding population of one (1) or more of the listed salamander species; or two (2) or more of the frogs or toads with at least 100 individuals (adults, juveniles, eggs / larval masses) is significant.”*

**“Amphibian Breeding Habitat (Wetland)**

*Presence of breeding population of one (1) or more of the listed salamander species; or three (3) or more of the listed frog or toad species with at least 20 breeding individuals (adults, juveniles, eggs / larval masses) or; Wetlands with confirmed breeding Bullfrogs is significant.”*

For the purposes of determining the EOI criteria for Amphibian Breeding Habitat (Woodland and Wetland) features, the target species of both habitat types were considered. A threshold of three (3), rather than two (2), or more of the combined target frog and toad species will be used to evaluate the importance of these features because the higher species threshold identifies those features that support higher amphibian biodiversity and therefore require more specific mitigation measures and monitoring proposed at the EIS stage to avoid or minimize potential effects. In addition, the distinction between 20 and 100 calling individuals of an amphibian species is very difficult to audibly detect when all of the individuals are calling together in a chorus, therefore any chorus is assumed to represent at least 20 calling individuals.

A Candidate Amphibian Breeding Habitat (Woodland and Wetland) feature will therefore be confirmed as IWH if the presence of a breeding population of one (1) or more of the target salamander species, or three (3) or more of the target frog and /or toad species with at least 20 breeding individuals (adults, juveniles, eggs / larval masses) is confirmed to be present. Target salamander species for this IWH type include the following:

- Eastern Newt (*Notophthalmus viridescens*);
- Spotted Salamander (*Ambystoma maculatum*);
- Four-toed Salamander (*Hemidactylium scutatum*);
- Blue-Spotted Salamander (*Ambystoma laterale*); and
- Northern Two-lined Salamander (*Eurycea bislineata*).

Target frog or toad species for this IWH type include the following:

- Spring Peeper (*Pseudacris crucifer*);
- Wood Frog (*Lithobates sylvaticus*);
- American Toad (*Anaxyrus americanus*);
- Gray Treefrog (*Hyla versicolor*);
- Western Chorus Frog (*Pseudacris triseriata*);
- Northern Leopard Frog (*Lithobates pipiens*);
- Pickerel Frog (*Lithobates palustris*);
- Green Frog (*Rana clamitans*);
- Mink Frog (*Lithobates septentrionalis*); and
- Bullfrog (*Rana catesbeiana*).

In addition, any features containing a breeding population of Bullfrogs will be considered important.

#### 2.4.3.7.1 2013 Amphibian Surveys

The following is a description of methods for the Western Chorus Frog and salamander surveys completed by Stantec in 2013. This description is taken from *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review).

##### **“Western Chorus Frog and Salamanders (April):**

*Western Chorus Frog surveys will consist of 3-minute call counts at potential breeding habitat conducted in April, during appropriate weather conditions. This species breeds in small or shallow aquatic habitats associated with moist, open terrestrial habitat (COSEWIC, 2008c). Males call from the water and are typically active when air temperatures are above 5°C, although calls have been detected at air temperatures as low as -1°C (COSEWIC, 2008c).*

*Unlike many anurans, Western Chorus Frogs are generally very active throughout the day. As such, daytime survey will be used to cover larger portions of the Study Area than evening call surveys would permit.*

*Surveys for amphibian egg masses will take place concurrent with calling surveys. These will consist of perimeter surveys of suitable breeding ponds by trained field personnel. Egg masses of different species are often characteristic based on features such as where they are laid, how many eggs are in the mass, density of the egg mass, and whether or not the eggs are encased in jelly.”*

Based on the data provided by Stantec, Western Chorus Frog and salamander surveys were completed at a total of 28 stations within the HIWEC study area in 2013. Some of the surveys were conducted on April 22 and 30, 2013 while the remaining surveys were conducted on May 7 and 8, 2013. The majority of amphibian surveys were conducted during the day, while some occurred at night and a small number occurred at an unspecified time. A total of 17 stations (61%) were surveyed during the day, six (6; 21%) were conducted night, and five (5; 18%) occurred at an unspecified time.

Salamander egg mass surveys were completed in conjunction with the Western Chorus Frog surveys. On February 26, 2015, Stantec provided confirmation that these surveys were completed.

The locations of the surveys stations were compared to the locations of the Candidate Amphibian Breeding Habitat (Woodland and Wetland) features through a desktop analysis to confirm amphibian use of those features.

#### 2.4.3.7.2 2015 Amphibian Surveys

Breeding amphibian surveys were conducted at a total of 20 representative sites within the HIWEC study area in 2015. An analysis of the results of amphibian surveys completed in 2013, as well as Site Investigation field surveys completed in 2014 and a desktop review of aerial photography, was undertaken to select survey locations in order to cover representative habitats across the HIWEC study area, with a focus on locations that are overlapped by the proposed HIWEC location.

Generally, three (3) types of pre-construction EOI surveys were completed at each of the 20 site to evaluate importance, including, egg mass surveys, larval surveys and nocturnal survey targeting vocalizing amphibians (i.e., frogs and toads). The protocols for these surveys are described below. During each survey, the following information was recorded:

- Date, start and end times;
- Weather conditions including temperature (°C), precipitation (i.e., snow, rain, none), wind (according to the Beaufort scale), and % cloud cover;
- UTM co-ordinates of the survey location; and
- Amphibian species observed and approximate numbers.

#### Adult Salamander and Egg Mass Surveys

Surveys for adult salamanders were completed in April 2015 at the same time that the acoustic monitors were deployed, when weather conditions were appropriate. Surveys for egg masses were completed in May 2015 at each of the representative sites during the maintenance check of the acoustic monitors. Generally, both surveys were conducted during daylight hours in early spring. Area searches generally included walking within or along the perimeter of the vernal pool / wetland looking for adult salamanders or egg masses, carefully checking any submerged sticks or shrubs standing in the water to which eggs may be attached. The number of individuals or egg masses of each amphibian species observed was recorded and the life stage (e.g., egg mass or adult) noted.

#### Larval Surveys

Larval surveys were conducted in late June or early July 2015 to search for presence of larvae of salamanders. A D-ring dipnet was used to scoop sample leaf litter on the bottom of ponds or vernal pools. Ten (10) representative scoops were taken at each site. The litter in each scoop was placed into a bucket and carefully searched for the presence of salamander larvae. Any larvae found were identified, measured and released. Any other encountered amphibians were recorded and released. Area searches for adult or transformed salamanders were also conducted by overturning logs and walking along the perimeter of the vernal pool or pond. Water depth and other relevant characteristics of the vernal pools or ponds were also recorded.

#### Nocturnal Surveys Targeting Vocalizing Amphibians (i.e., Frogs and Toads)

Nocturnal surveys targeting vocalizing amphibians (i.e., frogs and toads) were conducted during the months of April, May and June 2015. The protocol for these surveys generally followed that developed by Bird Studies Canada and Environment Canada for the Marsh Monitoring Program (BSC *et al.* 2008); however, these surveys were conducted using acoustic monitors.

An acoustic monitor (Song Meter SM3BAT, Wildlife Acoustics) was installed at each of the 20 representative sites and was programmed to start recording 30 minutes after sunset for a duration of 30 minutes. Acoustic monitors were deployed in conjunction with the first salamander survey in April 2015 and were removed following the second

salamander survey in late June or early July 2015, with a maintenance check in May 2015 to download the data cards for data entry and analysis.

The habitat suitability of these sites was confirmed during the first or second salamander survey through a completion of a detailed vernal pool assessment. The following characteristics were recorded:

- Maximum water depth;
- Presence of emergent and submergent vegetation (type and amount);
- Presence of fringing shrubs (type and amount);
- Presence of logs (size, quantity) within or near vernal pools;
- Apparent water quality (visual observations only);
- Disturbance nearby; and
- Any amphibian observations.

Sites identified to have vernal pools that were too shallow, small or degraded to support amphibian breeding (i.e., did not have potential to hold water until at least July in most years) were removed from further EOI study or consideration.

Acoustic data were recorded on SD cards within the monitor. These data were downloaded, transcribed and analyzed. Since acoustic monitors were monitoring continuously during the spring, the nights selected for analysis were based on a review of weather conditions recorded using The Weather Network's historical weather data for HIFN I.R. #2 during the monitoring period. Nights selected for analysis met the timing and weather criteria in accordance with the Marsh Monitoring Program (BSC *et al.* 2008) as follows.

Acoustic data recordings were analyzed using Song Scope. Each site was surveyed three (3) times during the spring and early summer, spaced at least 15 days apart. Analysis of acoustic data was conducted on nights that had minimum air temperatures of 5°C for the first survey, 10°C for the second and 17°C for the third survey, to the extent possible. For each survey, a three (3)-minute segment of the 30 minute acoustic data recording was analyzed to determine whether frogs and / or toads are present, identify the species and count the number of individuals per species heard calling.

Acoustic surveys conducted by human observers were not possible due to the health and safety concerns for field staff conducting evening surveys given the remoteness of the HIWEC study area, hazardous terrain and dangerous wildlife that could be encountered at night. However, acoustic monitors were calibrated to confirm that the acoustic data recorded by the monitors were comparable to the data recorded by a human observer conducting these surveys. To facilitate calibration of these acoustic monitors, calibration stations were established and consisted of a sub-set of chosen monitoring locations that were the most easily accessible by field staff. Field personnel stood by the acoustic monitor at the chosen calibration stations and conducted the survey as described above at the same time that the acoustic monitor was recording. Field personnel noted the time of when they started their surveys, and the time of each amphibian heard calling. This information was later used to identify the exact same time in the acoustic data recording and compare the results between what was recorded by the acoustic monitor and the human observer.

#### 2.4.3.7.3 2016 Amphibian Surveys

Pre-construction EOI surveys may be completed in 2016 to evaluate importance of the remaining Candidate Amphibian Breeding Habitat features which cannot be evaluated based on surveys completed to date, or the features may be treated as important. Pre-construction EOI surveys would follow the same methods described for the 2015 amphibian surveys.

### 2.4.3.8 Mast Producing Areas

A total of four (4) Candidate Mast Producing Area features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of forested communities > 1 ha in size with an abundance of mast producing species.

Of these four (4) Candidate Mast Producing Area features, one (1) feature (MPA-001) was eliminated from further consideration and was not evaluated for importance. This was due to it overlapping with the On-reserve portions of the Route A Transmission Line, which is no longer being considered.

Pre-construction EOI surveys to evaluate the importance of the remaining three (3) features (MPA-002, MPA-003 and MPA-004) were completed on October 15 to 16, 2015. During the pre-construction EOI surveys, each Candidate Mast Producing Area feature was surveyed on one (1) occasion in autumn. Surveys were conducted in the autumn when masting could be observed. The canopies of the Candidate Mast Producing Area features were examined for the presence of American Beech and / or Red Oak. Three prism sweeps were taken in each Candidate Mast Producing Area feature, unless there was clearly less than 50% cover of American Beech (*Fagus americana*) and / or Red Oak (*Quercus rubra*). The diameter at breast height (DBH) of the ten (10) largest trees in the feature were also measured and recorded, and the average DBH of the stand was estimated. Finally, representative photographs were taken of the stand.

The following information was also recorded during each survey:

- Date, start and end times; and
- Weather conditions including temperature (°C), precipitation, wind speed (Beaufort scale), and % cloud cover.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRF, 2012b), a Candidate Mast Producing Areas feature is to be confirmed as IWH if it contains a composition of approximately 50% or more of American Beech and / or Red Oak. Features must also contain numerous large mast producing trees; therefore, the Candidate Mast Producing Area feature was considered important if it contained at least ten (10) American Beech and / or Red Oak trees in the 40 cm to 65 cm DBH range. A Candidate Mast Producing Area was also confirmed as IWH if the feature was found to contain > 50% ground cover of mast producing shrubs, including wild blackberry, serviceberry, raspberry, blueberry and Beaked Hazel (*Corylus counuta*).

## 2.4.4 Habitat for Species of Conservation Concern

### 2.4.4.1 Marsh Bird Breeding Habitat

A total of 49 Candidate Marsh Bird Breeding Habitat features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of marshes, open fens and shallow water vegetation communities > 2 ha in size that may support marsh breeding birds.

Information collected during the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013, as described in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review), in conjunction with breeding bird surveys completed by AECOM in 2015 and those that may be completed in 2016, will be used to evaluate the importance of Candidate Marsh Bird Breeding Habitat features. The methods by which these pre-construction EOI surveys were and / or will be conducted are described in **Section 2.4.3.1**.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b), a Candidate Marsh Bird Breeding Habitat feature is to be confirmed as IWH upon confirmation of five (5) or more nesting pairs of Sedge Wren (*Cistothorus platensis*) or Marsh Wren (*Cistothorus palustris*) or one (1) pair of Sandhill Cranes (*Grus canadensis*) or breeding by any combination of five (5) or more of the following species:

- American Bittern (*Botaurus lentiginosus*);
- Sora (*Porzana carolina*);
- Red-necked Grebe (*Podiceps grisegena*);
- Pie-billed Grebe (*Podilymbus podiceps*);
- Redhead (*Aythya Americana*);
- Ring-necked Duck (*Aythya collaris*);
- Lesser Scaup (*Aythya affinis*);
- Ruddy Duck (*Oxyura jamaicensis*);
- Common Moorhen (*Gallinula chloropus*);
- American Coot (*Fulica americana*);
- Wilson's Phalarope (*Phalaropus tricolor*);
- Common Loon (*Gavia immer*);
- Sandhill Crane (*Grus canadensis*);
- Green Heron (*Butorides virescens*);
- Sedge Wren (*Cistothorus platensis*);
- Marsh Wren (*Cistothorus palustris*);
- Trumpeter Swan (*Cygnus buccinators*);
- Yellow Rail (*Coturnicops noveboracensis*); and
- Black Tern (*Chlidonias niger*).

In addition, any feature in which breeding of one (1) or more Trumpeter Swan, Black Tern, Green Heron or Yellow Rail is confirmed will also be considered important.

#### 2.4.4.2 Habitat for Specific Species of Conservation Concern (SOCC)

##### 2.4.4.2.1 Black Tern (*Chlidonias niger*)

A total of seven (7) Candidate Black Tern Habitat features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of marsh breeding bird habitat greater than 20 ha in size.

Candidate Black Tern Habitat features will be evaluated as part of Marsh Bird Breeding Habitat as described in **Section 2.4.4.1**. Any feature with confirmed breeding of Black Tern will be considered important.

##### 2.4.4.2.2 Eastern Wood-pewee (*Contopus virens*)

A total of 29 Candidate Eastern Wood-pewee Habitat features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of open, deciduous, mixed or coniferous forests > 3 ha in size.

Information collected during the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013, as described in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review), in conjunction with breeding bird surveys completed by AECOM in 2015 and those that may be completed in 2016, will be used to evaluate the importance of Candidate Eastern Wood-pewee Habitat features. The methods by which these pre-construction EOI surveys were and / or may be conducted are described in **Section 2.4.3.1**. Any feature with confirmed breeding of Eastern Wood-pewee will be considered important.

##### 2.4.4.2.3 Prairie Warbler (*Setophaga discolor*)

A total of 86 Candidate Precambrian Rock Barren features were identified as suitable habitat for Prairie Warbler and carried forward to the EOI due to their proximity to proposed HIWEC infrastructure.

Information collected during the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013, as described in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study*

Area (AECOM, 2015e; refer to Appendix A of the Records Review), in conjunction with breeding bird surveys completed by AECOM in 2015 and those that may be completed in 2016, will be used to evaluate the importance of Candidate Prairie Warbler Habitat features. The methods by which these pre-construction EOI surveys were and / or may be conducted are described in **Section 2.4.3.1**. Any Candidate Precambrian Rock Barren Feature with confirmed breeding of Prairie Warbler will be considered important.

#### 2.4.4.2.4 Wood Thrush (*Hylocichla mustelina*)

A total of 29 Candidate Wood Thrush Habitat features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of moist, mature deciduous or mixed forests > 3 ha in size.

Information collected during the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013, as described in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review), in conjunction with breeding bird surveys completed by AECOM in 2015 and those that may be completed in 2016, will be used to evaluate the importance of Candidate Eastern Wood-pewee Habitat features. The methods by which these pre-construction EOI surveys were and / or may be conducted are described in **Section 2.4.3.1**. Any feature with confirmed breeding of Wood Thrush will be considered important.

#### 2.4.4.2.5 Yellow Rail (*Coturnicops noveboracensis*)

A total of 49 Candidate Marsh Bird Breeding Habitat features were identified as suitable habitat for Yellow Rail and carried forward to the EOI due to their proximity to proposed HIWEC infrastructure.

Candidate Yellow Rail Habitat features will be evaluated as part of Marsh Bird Breeding Habitat as described in **Section 2.4.4.1**. Any feature with confirmed breeding of Yellow Rail will be considered important.

#### 2.4.4.2.6 Dragonfly SOCC – Horned Clubtail (*Arigomphus cornutus*) and Mottled Darner (*Aeshna clepsydra*)

A total of 72 Candidate Dragonfly SOCC Habitat features were identified as suitable habitat for Horned Clubtail and / or Mottled Darner and were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of bogs, open fens, shallow marshes and / or open aquatic vegetation communities.

Pre-construction surveys to evaluate the importance of these features may be conducted in 2016, or the features may be treated as important. During the pre-construction EOI surveys, each feature would be surveyed on one (1) occasion between mid-June and mid-July to capture the respective flight paths for each dragonfly species. The flight path for Horned Clubtail is from early June to mid-July (Wisconsin Odonata Survey, date unknown) and the flight path for Mottled Darner is from mid-June to mid-September (Wisconsin Odonata Survey, date unknown). Surveys would be completed between 9:00 a.m. and 6:00 p.m. on sunny days with minimal wind. On each survey, qualified Biologists would approach the feature slowly and scan for dragonflies with binoculars. An area search would be conducted by slowly walking around the perimeter of the pond or riparian feature while swinging an aerial net to capture dragonfly species. Each feature would be searched for a minimum of 20 minutes. A net would be used to catch dragonflies for close examination to confirm species identification. Any dragonflies found will be visually identified using a hand lens where necessary, and the following field guides:

- *Dragonflies through Binoculars: A Field Guide to Dragonflies of North America* (Dunkle, 2000);
- *Dragonflies of Algonquin Park* (Holder, et al. 2008); and
- *Damselflies of the Northeast: A Guide to the Species of Eastern Canada & the Northeastern United States* (Lam, 2004).

The following information would be recorded:

- Date, start and end time;
- Weather conditions including temperature (°C), precipitation, wind speed (Beaufort scale), and % cloud cover;
- Habitat conditions;
- Co-ordinates and numbers of encountered dragonflies; and
- List of all dragonfly species observed.

Any features where Horned Clubtail or Mottled Darner is confirmed will be considered important.

#### 2.4.4.2.7 Pine Imperial Moth (*Eacles imperialis pini*)

The Ontario population of Imperial Moth consists entirely of the *pini* subspecies (Beadle, 2015). The non-feeding Pine Imperial Moth adults emerge from pupa in the soil to breed once a year, depositing eggs on needles of White Pine or Red Pine (Michigan Natural Features Inventory, 2007; NBII, date unknown). There are a number of difficulties associated with surveys targeting this species within the HIWEC study area. Moth communities are typically sampled using black light traps, but safety concerns prevent the application of this technique in suitable habitat with the HIWEC study area. Furthermore, larvae that may be present occur high in the canopy. Finally, forests dominated by the subspecies' host plants are not limiting to its populations in central Ontario. Therefore, EOI surveys for this species will not be completed. Candidate IWH features for Pine Imperial Moth were treated as important and carried forward to the EIS.

#### 2.4.4.2.8 Common Five-lined Skink (*Plestiodon inexpectatus*; Southern Shield population)

A total of 86 Candidate Precambrian Rock Barren features were identified as suitable nesting habitat for Five-lined Skink and carried forward to the EOI due to their proximity to proposed HIWEC infrastructure.

Candidate Common Five-lined Skink Habitat features were treated as important and carried forward to the EIS phase of this NHA as described above in **Section 2.4.3.4**.

#### 2.4.4.2.9 Eastern Ribbonsnake (*Thamnophis sauritus sauritus*)

A total of 98 Candidate Reptile Hibernacula features were identified as potentially suitable habitat for Eastern Ribbonsnake and carried forward to the EOI due to their proximity to HIWEC infrastructure.

Candidate Eastern Ribbonsnake Habitat features will be evaluated as part of Reptile Hibernacula as described in **Section 2.4.1.6**. Any feature with confirmed presence of Eastern Ribbonsnake will be considered important.

#### 2.4.4.2.10 Milksnake (*Lampropeltis triangulum*)

A total of 98 Candidate Reptile Hibernacula features were identified as potentially suitable habitat for Milksnake and carried forward to the EOI due to their proximity to HIWEC infrastructure.

Candidate Milksnake Habitat features will be evaluated as part of Reptile Hibernacula as described in **Section 2.4.1.6**. Any feature with confirmed presence of Milksnake will be considered important.



#### 2.4.4.2.11 *Northern Map Turtle (Graptemys geographica)*

A total of 65 Candidate Turtle Wintering Area features and 33 Candidate Turtle Nesting Area features were identified as potentially suitable habitat for Northern Map Turtle and carried forward to the EOI due to their proximity to HIWEC infrastructure.

Candidate Northern Map Turtle Habitat features will be evaluated as part of Turtle Wintering Areas and Turtle and Lizard Nesting Areas as described in **Sections 2.4.1.5** and **Section 2.4.3.4**, respectively. Any feature with confirmed presence of Northern Map Turtle will be considered important.

#### 2.4.4.2.12 *Snapping Turtle (Chelydra serpentina)*

A total of 65 Candidate Turtle Wintering Area Features and 34 Candidate Turtle Nesting Area features were identified as potentially suitable habitat for Snapping Turtle and carried forward to the EOI due to their proximity to HIWEC infrastructure.

Candidate Snapping Turtle Habitat features will be evaluated as part of Turtle Wintering Areas and Turtle and Lizard Nesting Areas as described in **Sections 2.4.1.5** and **Section 2.4.3.4**, respectively. Any feature with confirmed presence of Snapping Turtle will be considered important.

### 2.4.5 **Generalized Candidate Important Wildlife Habitat**

The following potential IWH features were identified within 120 m of the HIWEC location but not within 120 m of qualifying HIWEC infrastructure, and were therefore carried forward to the EOI as Generalized Candidate IWH:

- Shorebird Migratory Stopover Areas;
- Bat Maternity Colonies;
- Turtle Wintering Areas;
- Reptile Hibernacula;
- Precambrian Rock Barren;
- Bog;
- Waterfowl Nesting Areas;
- Woodland Raptor Nesting Habitat;
- Turtle and Lizard Nesting Areas;
- Seeps and Springs;
- Amphibian Breeding Habitat (Woodland and Wetland);
- Mast Producing Areas;
- Marsh Bird Breeding Habitat; and
- Habitat for Specific SOCC, including:
  - Eastern Wood-pewee;
  - Prairie Warbler;
  - Wood Thrush;
  - Yellow Rail;
  - Horned Clubtail;
  - Mottled Darner;
  - Pine Imperial Moth;
  - Eastern Ribbonsnake;
  - Milksnake;
  - Northern Map Turtle;
  - Snapping Turtle.

In accordance with provincial guidance (MNR, 2012a), all Generalized Candidate IWH features were treated as important and carried forward to the EIS.

## 2.5 Federal Species at Risk

Species listed as Endangered and Threatened under Schedule 1 of SARA are protected and may require permits and / or authorization administered by EC-CWS if the proposed HIWEC negatively affects the species or its habitat. Permit requirements, if any, will be determined in consultation with EC-CWS. There is no provincial requirement or guidance for completing an NHA on Federal Species at Risk, however these species are included in the NHA to be complete in providing the information obtained for these species.

A total of 19 Federal Species at Risk, including one restricted species<sup>2</sup>, were identified as potentially occurring within the HIWEC study area through the Records Review and Site Investigation. Surveys targeting specific Federal SAR are described below. There are no provincial guidelines to determine the importance of SAR observations; therefore, all SAR observed were considered important and carried forward to the EIS.

### 2.5.1 *Western Chorus Frog (Pseudacris triseriata) (Great Lakes / St. Lawrence – Canadian Shield Population)*

Species-specific surveys to confirm the presence / absence, abundance and distribution of this species in the HIWEC study area were conducted as part of Amphibian Breeding Habitat (Woodlands and Wetlands) as described in **Section 2.4.3.7**. The results of these surveys were analyzed for observations of Western Chorus Frog.

### 2.5.2 *Canada Warbler (Cardellina canadensis)*

Species-specific surveys to confirm the presence / absence, abundance and distribution of this species in the HIWEC study area were conducted as part of the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013, in conjunction with breeding bird surveys completed by AECOM in 2015. The methods by which these surveys were conducted are described in **Section 2.4.3.1**. The results from these surveys were analyzed for observations of Canada Warbler, and the locations where Canada Warbler was observed were identified and mapped.

### 2.5.3 *Chimney Swift (Chaetura pelagica)*

Species-specific surveys to confirm the presence / absence, abundance and distribution of this species in the HIWEC study area were conducted as part of the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013, in conjunction with breeding bird surveys completed by AECOM in 2015. The methods by which these surveys were conducted are described in **Section 2.4.3.1**. The results from these surveys were analyzed for observations of Chimney Swift, and the locations where Chimney Swift was observed were identified and mapped.

### 2.5.4 *Common Nighthawk (Chordeiles minor)*

Crepuscular breeding bird survey to confirm the presence / absence, abundance and distribution of this species were completed by LGL and Stantec in 2011 and 2013, as described in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review), and by AECOM in 2015. The methods by which these surveys were conducted are described in the following sections. The results from these surveys were analyzed for observations of Common Nighthawk.

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2. *Records of Species At Risk considered to be restricted are not being made public due to the threat of poaching experienced by these species. These records will be provided under a separate cover to the Ministry of Natural Resources and Forestry (MNRF) and / or Environment Canada – Canadian Wildlife Service (EC-CWS) for permitting purposes.*

### 2.5.4.1 2011 Surveys

As described in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review), surveys for Common Nighthawk and Eastern Whip-poor-will were conducted by LGL in accordance with Bird Studies Canada's Eastern Whip-poor-will Roadside Survey Protocol; however, instead of along a roadside, surveys were conducted along a transect of point counts from a boat along Henvey Inlet on the night of June 14, 2011. Based on the data tables provided by LGL, a total of 14 surveys were conducted across seven (7) stations within the HIWEC study area. Each unlimited-radius point count location was placed a minimum of 1 km apart and consisted of two (2) three (3)-minute listening periods, where the total number of individual Eastern Whip-poor-will and Common Nighthawk heard from the surrounding area was recorded. To maximize the probability of hearing peak calling activity, the 2011 survey window was conducted so as to coincide with the period when the moon was bright and visible just after sunset, one (1) day before the full moon. There were no clouds, and both the winds and the water surface were calm. The survey began 30 minutes after sunset.

### 2.5.4.2 2013 Surveys

The following is a description of methods for crepuscular breeding bird surveys completed by Stantec in 2013. This description is taken from the *Summary of 2011, 2012, and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review).

***“Crepuscular breeding birds (Two surveys, May and June):***

*Eastern Whip-poor-will surveys will be conducted in suitable open habitat within forested areas. Surveys will be conducted in May and June and will consist of six-minute point counts at stations spaced within the Project Location and Transmission Line corridor. Due to the remote location of much of the Study Area, survey locations may be selected with consideration to access and surveyor safety.*

*Surveys will begin approximately 30 minutes after sunset within appropriate weather conditions (not in high winds, persistent rain or an overcast sky) and will, if possible, coincide with the full moon. All individuals heard will be recorded, with an estimated direction and distance from the observer.”*

Based on the notes provide for the 2013 crepuscular breeding bird surveys, a total of 26 crepuscular breeding bird point count surveys were conducted by Stantec at 14 stations within the HIWEC study area between May 27 and June 18, 2013. In general, Stantec field staff recorded the crepuscular breeding bird survey data in the following manner. The date, sunset time, full moon date, current moon phase, moon above horizon, weather conditions, station, habitat, UTM co-ordinates of station, start time, end time, background noise and direction the observer was facing were recorded for each station. When a bird was observed or heard, the four (4) letter species code was recorded.

### 2.5.4.3 2015 Surveys

Crepuscular breeding bird surveys were conducted at 32 representative sites within or immediately adjacent to suitable habitat in the HIWEC study area. Specific sites were selected in order to cover representative suitable habitats across the HIWEC study area, with a focus on locations that are overlapped by the proposed HIWEC location.

The protocol for these surveys generally followed that developed by the MNRF as of May 2012 (MNRF, 2012c); however, these surveys were conducted using acoustic monitoring equipment.

Acoustic monitors (Song Meter SM3BAT, Wildlife Acoustics) were deployed in mid- to late-May, 2015 in order to capture data during the two (2) primary survey windows for Eastern Whip-poor-will and Common Nighthawk in 2015,

at times where the moon is greater than 50% illuminated and is visible after sunset. For the 2015 field season, these windows were from May 25 through June 9, and June 24 through July 8. The monitors were collected in late June and early July 2015. The acoustic monitors were programmed for crepuscular activity and to record for one hour at dusk and one hour before sunrise. Detectors were mounted on tree trunks at an average height of 1.6 m. Acoustic microphones were attached to the monitor using 3 m recording cables.

Crepuscular acoustic data was recorded on SD cards within the monitor. These data were downloaded, transcribed and analyzed for a total of five (5) days (3 minute listening period each morning and dusk) to determine whether Common Nighthawk was present / calling, using the Wildlife Acoustics Kaleidoscope Pro 3 Analysis Software. Common Nighthawk makes a characteristic nasal “peent” call while flying (The Cornell Laboratory of Ornithology, 2015a). When male Common Nighthawks engage in courtship or territorial displays, a booming sound, caused by air rushing through a male’s primary feathers while diving, is also produced (The Cornell Laboratory of Ornithology, 2015a). In addition, courting males also produce a croaking “auk” or “kit” call (The Cornell Laboratory of Ornithology, 2015a). These sounds were listened for during crepuscular surveys to determine the presence / absence of calling individuals.

Crepuscular breeding bird surveys by human observers were not possible due to the health and safety concerns for field staff conducting evening surveys given the remoteness of the HIWEC study area, hazardous terrain and dangerous wildlife that may be encountered at night. However, a sub-set of monitoring locations were surveyed by Biologists as well as the acoustic monitoring equipment to calibrate the data and ensure that acoustic monitoring results were consistent with human surveys. The locations chosen for calibration surveys were located along Bekanon Road, based on safety concerns related to accessing interior sites at dusk. Acoustic data recorded by the monitors were compared to the data recorded by human observers as described in **Section 2.4.3.7.2**.

### **2.5.5 Eastern Whip-poor-will (*Antrostomus vociferus*)**

Crepuscular breeding bird surveys to confirm presence / absence, abundance and distribution of this species were completed by LGL and Stantec in 2011 and 2013, as described in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review), and by AECOM in 2015. The methods by which these surveys were conducted are described in **Section 2.5.4**.

Crepuscular acoustic data were analyzed for presence of calling Eastern Whip-poor-will individuals detected by the male’s characteristic and consistently repeated call “Whip-poor-will” during the breeding season (The Cornell Laboratory of Ornithology, 2015b). These sounds were listened for during crepuscular surveys to determine the presence / absence of calling individuals.

### **2.5.6 Golden-winged Warbler (*Vermivora chrysoptera*)**

Species-specific surveys to confirm the presence / absence, abundance and distribution of this species were conducted as part of the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013, in conjunction with breeding bird surveys completed by AECOM in 2015. The methods by which these surveys were conducted are described in **Section 2.4.3.1**. The results from these surveys were analyzed for observations of Golden-winged Warbler, and the locations where Golden-winged Warbler was observed were identified and mapped.

### **2.5.7 Least Bittern (*Ixobrychus exilis*)**

Species-specific surveys targeting Least Bittern, which used call-back methods, were conducted by AECOM qualified biologists at four (4) representative sites (including one site with two (2) vantage points) within suitable habitat in the HIWEC study area. Specific sites were selected in order to cover representative suitable habitats

across the HIWEC study area, with a focus on locations that were overlapped by or immediately adjacent to the proposed HIWEC location. One (1) site, located south of the junction of the south HIWEC access road and Highway 69, was selected because it was thought to represent suitable habitat where Least Bittern could be found given that its geographic range overlaps within the HIWEC study area.

Two visits to each survey location, spaced at least ten days apart, were completed between May 24 and July 10, 2015. Surveys followed the Marsh Monitoring Program (BSC *et al.* 2009) and the *National Least Bittern Survey Protocol* (Jobin, *et al.* 2011). Surveys were conducted from 30 minutes before sunrise to 10:00 a.m., and were always conducted in the same station order. Preferred weather conditions included good visibility with warm temperatures of at least 16°C, no precipitation, and calm conditions with wind speeds measuring three (3) or less on the Beaufort wind scale. Surveys occurred in conditions that did not meet all preferred weather criteria; however efforts were made to survey during preferred conditions, whenever possible. Point counts were 15 minutes in length, consisting of five (5) minutes of passive listening, five (5) minutes of call broadcasts where each minute consisted of 30 seconds of the Least Bittern call followed by 30 seconds of silence, then another five (5) minutes of passive listening. The Least Bittern “coo” call was used, broadcast by an audio player with speakers at a volume that could be heard at a distance of 100 m. Speaker direction was fixed throughout the point count and recorded in field forms to ensure repeatability between survey visits. The following information was recorded:

- Date, start and end time of survey;
- Visit number;
- Weather conditions including temperature (°C), precipitation, wind speed (Beaufort scale), and % cloud cover;
- Unique ID of survey location;
- UTM co-ordinates and direction of speaker broadcast;
- Level of background noise;
- Habitat description;
- All Least Bittern heard or seen during the entire survey period, as well as type of call, and whether detection was through sight or sound;
- The direction from the surveyor in which the Least Bittern was observed, and approximate distance;
- If flying, approximate height; and
- Species and number of any other marsh birds encountered.

### **2.5.8 Olive-sided Flycatcher (*Contopus cooperi*)**

Species-specific surveys to confirm the presence / absence, abundance and distribution of this species were conducted as part of the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013, in conjunction with breeding bird surveys completed by AECOM in 2015. The methods by which these surveys were conducted are described in **Section 2.4.3.1**. The results from these surveys were analyzed for observations of Olive-sided Flycatcher, and the locations where Olive-sided Flycatcher was observed were identified and mapped.

### **2.5.9 Little Brown Bat (*Myotis lucifugus*)**

Bat acoustic monitoring surveys to confirm the presence / absence and abundance of Little Brown Bat were completed by LGL and Stantec in 2011, 2012 and 2013, as described in the *Summary of 2011, 2012 and 2013 Bat Acoustic Monitoring Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015g; refer to Appendix A of the Records Review). The methods by which these surveys were conducted are described in the following sections. The results from these surveys were analyzed for observations of Little Brown Bat.

### 2.5.9.1 2011 and 2012 Bat Surveys

The following is a description of methods for the bat surveys completed by LGL in 2011 and 2012. This description is taken from the *Summary of 2011, 2012 and 2013 Bat Acoustic Monitoring Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015g; refer to Appendix A of the Records Review).

#### ***“Acoustic Monitoring of Bats***

*GENIVAR and LGL have initiated preliminary acoustic monitoring in June and July 2011 to attempt to identify the relative levels of bat activity across the study area during the late spring and early summer. These surveys are not focused on any anticipated turbine layout, but were intended to achieve broad geographical coverage of the study area, utilizing the established breeding bird routes for logistical efficiency. This preliminary data will contribute to a landscape-level understanding of bat distribution throughout the study area. The work plan includes:*

- *Deployment of 10 automatic acoustic monitors (Wildlife Acoustics SM2BAT units) at sites throughout the study area;*
- *Deployment and retrieval along or adjacent to existing breeding bird study routes for logistical efficiency;*
- *Shifting monitors to a number of locations to increase coverage; and,*
- *Incidental observations of bats during field surveys.*

#### ***Bat Migration Monitoring***

*Bat migration will be investigated concurrently with bird migration with the use of visual observations augmented by the use of passive IR camera. The fall migratory study period from August to October is intended to capture peak bat activity in August.”*

In 2011, a total of 20 bat survey locations in the HIWEC study area were provided by LGL. In 2012, a total of eight (8) bat survey locations in the HIWEC study area were provided by LGL. In addition, two (2) acoustic monitors were deployed by LGL in 2012. While location information was not provided by LGL for these two sites, they are assumed to have been deployed at the meteorological towers. The 2011 and 2012 bat acoustic monitoring data provided by LGL was analyzed by AECOM in July 2015 using the Kaleidoscope Pro 3 Analysis Software from Wildlife Acoustics in order to identify the bat species present. This software is designed to convert files, sort and categorize bat data by species. Species identifications were spot checked by a qualified Biologist to confirm the calls recorded were consistent with the typical characteristics of call for each species.

### 2.5.9.2 2013 Bat Surveys

The following is a description of methods for the bat surveys completed by Stantec in 2013. This description is taken from the *Summary of 2011, 2012 and 2013 Bat Acoustic Monitoring Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015g; refer to Appendix A of the Records Review).

#### ***“Bat Surveys (Two Surveys, June)***

*Bat surveys will be conducted in conjunction with Whip-poor-will surveys. A portable, hand-held broad band acoustic monitor will be used to detect bat calls. Recorded bat calls will be analyzed to guild or species, where possible, following completion of the field program. The goal of the bat surveys will be to determine the presence and relative abundance of bat species at risk.”*

A total of 11 bat survey locations in the HIWEC study area were provided by Stantec. The 2013 Anabat-compatible acoustic data files provided by Stantec were analyzed by Natural Resources Solution Inc. (NRSI) in May 2015 in order to identify the bat species present. Because the zero cross method was used to collect these data, identification to the species level was not always possible.

### **2.5.10 Northern Myotis (*Myotis septentrionalis*)**

Bat acoustic monitoring surveys to confirm the presence / absence and abundance of Northern Bat were completed by LGL and Stantec in 2011, 2012 and 2013, as described in the *Summary of 2011, 2012 and 2013 Bat Acoustic Monitoring Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015g; refer to Appendix A of the Records Review). The methods by which these surveys were conducted are described in **Section 2.5.9**. The results from these surveys were analyzed for observations of Northern Myotis.

### **2.5.11 Tri-colored Bat (*Perimyotis subflavus*)**

Bat acoustic monitoring surveys to confirm the presence / absence and abundance of Tri-coloured Bat were completed by LGL and Stantec in 2011, 2012 and 2013, as described in the *Summary of 2011, 2012 and 2013 Bat Acoustic Monitoring Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015g; refer to Appendix A of the Records Review). The methods by which these surveys were conducted are described in **Section 2.5.9**. The results from these surveys were analyzed for observations of Tri-colored Bat.

### **2.5.12 Branched Bartonian (*Bartonia paniculata ssp. paniculata*)**

Species-specific surveys to confirm the presence / absence, abundance and distribution of Branched Bartonian were completed in the fall of 2015. The methods for these surveys were adapted from the following four (4) documents as well as discussions with EC-CWS:

- *Information Bulletin: Alberta Native Plant Council (ANPC) Guidelines for Rare Plant Surveys in Alberta* (ANPC, 2000);
- *Guidelines for Rare Plant Surveys* (NPSS, 1998);
- *Occupancy Survey Guidelines for Prairie Plant Species at Risk* (Henderson, 2009); and
- *Protocols for Surveying and evaluating Impacts to Special Status native Plant Populations and Natural Communities* (California Natural Resources Agency, 2009).

According to the *COSEWIC Assessment and Update Status Report on Branched Bartonian in Canada* (COSEWIC, 2003), the habitat of Branched Bartonian is open graminoid or low shrub Sphagnum bog or fens with peat substrates and scattered Larch (*Larix laricina*) and Black Spruce (*Picea mariana*). Reznicek & Whiting (1976) further describe Branched Bartonian habitat in Ontario as very wet Sphagnum bogs on the Canadian Shield between low ridges of granitized rock.

Branched Bartonian is often associated with the following species (COSEWIC, 2003; Reznicek and Whiting, 1976):

- White-Fringed Orchid (*Platanthera blephariglottis*);
- Black Chokeberry (*Aronia melanocarpa*);
- Virginia Cotton-grass (*Eriophorum virginicum*);
- Tamarack (*Larix laricina*);
- Mountain-holly (*Nemopanthus mucronatus*);
- Rose Pogonia (*Pogonia ophioglossoides*);

- White Beak-rush (*Rhynchospora alba*);
- Virginia Chain Fern (*Woodwardia virginica*);
- Leatherleaf (*Chamaedaphne calyculata*); and
- Rannoch-rush (*Scheuchzeria palustris*).

According Lee *et al.* (1998) Chokeberry, Leatherleaf, Mountain-holly and Tamarack can be associated with either Fen or Bog Ecosites. Observations of these plants were made in both fens and bogs throughout the HIWEC study area. As Reznicek & Whiting (1976) have identified Bogs as confirmed habitat of Branched Bartonina in Ontario, this Ecosite type was searched for the species. There was a total of 52 Bog features identified as being overlapped by the HIWEC location and were searched for Branched Bartonina.

Prior to conducting this pre-construction survey, the surveyors became familiar with the identification characteristics of Branched Bartonina provided in **Table 2-2**.

**Table 2-2: Identification Characteristics of Branched Bartonina**

Structure	Characteristics
<b>General</b>	<ul style="list-style-type: none"> <li>• Branched Bartonina, is an annual herb 10 cm to 40 cm tall with a green or purple angled and occasionally twining stem (COSEWIC, 2003). The plant often appears shorter in size as it grows nestled within Sphagnum (COSEWIC, 2003).</li> </ul>
<b>Stem</b>	<ul style="list-style-type: none"> <li>• Green or purple, angled, occasionally twining (climbing) (COSEWIC, 2003);</li> <li>• Stems very slender (MNFI, 2000); and</li> <li>• Stems erect, scrambling or twining (USDA Forest Service, 2003).</li> </ul>
<b>Leaves</b>	<ul style="list-style-type: none"> <li>• Reduced to minute scales arranged in an essentially alternate fashion (COSEWIC, 2003);</li> <li>• Very small scale-like leaves (MNFI, 2000); and</li> <li>• Lower most leaves always alternate (USDA Forest Service, 2003).</li> </ul>
<b>Inflorescence / Flowers</b>	<ul style="list-style-type: none"> <li>• Usually a panicle of few to numerous small white 4-lobed flowers and divergent or curved ascending branches (COSEWIC, 2003);</li> <li>• Open flowers whitish to pinkish 3-4 mm across (pers. comm. Burke Korol);</li> <li>• Tiny (2.5 to 4 mm) flowers with lanceolate petals that taper to a sharp apex (MNFI, 2000);</li> <li>• Flower cluster is a raceme or panicle that is usually 5 to 10 cm long (USDA Forest Service, 2003);</li> <li>• Flower stalks are 2 to 25 mm long slender and ascending or arched and divergent (USDA Forest Service, 2003); and</li> <li>• Flowers with four sepals and petals, flowers greenish-white, cream-white or pale pink (USDA Forest Service, 2003).</li> </ul>
<b>Seeds / Fruit</b>	<ul style="list-style-type: none"> <li>• Capsule tapers to a blunt tip and averages 4.2 mm long (COSEWIC, 2003) and</li> <li>• The seeds average 0.19 mm long and 0.12 mm wide with 1000 to 1500 per capsule (Gillett, 1959; Gillett, 1963).</li> </ul>
<b>Flowering / Fruiting Period</b>	<ul style="list-style-type: none"> <li>• August to October (MNFI, 2000).</li> </ul>

Prior to surveys, field team leaders also visited a location recommended by EC-CWS with a known population of Branched Bartonina (hereafter referred to as the reference site) to become familiar with the species' characteristics, and the microhabitats occupied by this species. Representative photos of Branched Bartonina encountered at the reference site as well as the microhabitat where it was found were taken. Branched Bartonina in the reference site was observed in areas of sparse sedge (*Carex sp.*) and Virginia Chain Fern cover and in direct sunlight.

Each of the identified bogs was searched for Branched Bartonina on one (1) occasion by qualified Biologists between September 14 and 17, 2015. White-fringed Orchid is a strong indicator of the presence of Branched Bartonina (pers. comm. Burke Korol) and was actively searched for as well. Qualified Biologists walked slow meandering transects along the length of each bog in search of Branched Bartonina. Wherever, tall vegetation was present in a bog, it was pushed aside while walking to appropriately search for the species amongst the ground layer. Several stops were made while walking in order to thoroughly search the ground within a 1 m to 2 m visual radius of the surveyor given



the inconspicuous nature of the plant. Fifteen minutes per two (2) person team walking separate transects were required to adequately determine presence / absence per hectare of bog habitat (Adapted from: Henderson, 2009; California Natural Resources Agency, 2009). However, the survey effort varied based on the size of each bog. Field staff were notified not to collect any samples of Branched Bartonia or species thought to be Branched Bartonia if these were encountered during their searches. Instead, photographs of any suspect specimens were taken.

The following information was recorded during each survey:

- Date, start and end times;
- Weather conditions including temperature (°C), precipitation (i.e., snow, rain, none), wind (according to the Beaufort scale), and % cloud cover;
- Surveyor(s) full name(s);
- Bog feature ID;
- Representative photographs (minimum of three) and co-ordinates of the bog;
- Habitat conditions of the bog including presence of peat or Sphagnum substrate, presence and abundance of associate species, and % open water; and
- Plant inventory of the bog.

If Branched Bartonia had been found at any of the identified bogs, a more detailed survey would have been completed to assess population density for that bog. Searches along linear transects, spaced roughly 2 m apart in tall vegetation and 5 m apart in short and open vegetation, would have been conducted to identify all occurrences of the plant.

The following information would be recorded if Branched Bartonia was found:

- Location of the plant, including exact UTM co-ordinates;
- Conditions and description of the plant including identification features, whether the was plant in flower or in seed;
- Plant height;
- Measurements of characteristic features including leaves, flowers, panicle and / or seeds;
- Number of plants observed, if in a group;
- Description of immediate surroundings including slope, aspect, elevation, description of drainage, habitat, substrate, and associate plant species;
- Light levels on the plant (i.e., morning sun, afternoon sun, full shade); and
- Representative photographs of the plant and identification characteristics including stem, leaves, flowers and inflorescence (minimum of three (3) each).

### **2.5.13 Blanding's Turtle (*Emydoidea blandingii*)**

Species-specific surveys to confirm the presence / absence, abundance and distribution of this species were conducted as part of Turtle Wintering Areas and Turtle and Lizard Nesting Areas as described in **Sections 2.4.1.5** and **Section 2.4.3.4**, respectively. The results from these surveys were analyzed for observations of Blanding's Turtle, and the locations where Blanding's Turtle was observed were identified and mapped.

### **2.5.14 Eastern Foxsnake (*Pantherophis gloydi*) (Georgian Bay Population)**

Species-specific surveys to confirm the presence / absence, abundance and distribution of this species were conducted as part of Reptile Hibernacula as described in **Sections 2.4.1.6**. The results from these surveys were analyzed for observations of Eastern Foxsnake, and the locations where Eastern Foxsnake was observed were identified and mapped.

### **2.5.15 Eastern Hog-nosed Snake (*Heterodon platirhinos*)**

Species-specific surveys to confirm the presence / absence, abundance and distribution of this species were conducted as part of Reptile Hibernacula described in **Sections 2.4.1.6**. The results from these surveys were analyzed for observations of Eastern Hog-nosed snake, and the locations where Eastern Hog-nosed snake was observed were identified and mapped.

### **2.5.16 Eastern Musk Turtle (*Sternotherus odouratus*)**

Species-specific surveys to confirm the presence / absence, abundance and distribution of this species were conducted as part of Turtle Wintering Areas and Turtle and Lizard Nesting Areas as described in **Sections 2.4.1.5** and **Section 2.4.3.4**, respectively. The results from these surveys were analyzed for observations of Eastern Musk Turtle, and the locations where Eastern Musk Turtle was observed were identified and mapped.

### **2.5.17 Massasauga Rattlesnake (*Sistrurus catenatus*; Great Lakes / St. Lawrence Population)**

Species-specific surveys to confirm the presence / absence, abundance and distribution of this species were conducted as part of Reptile Hibernacula described in **Sections 2.4.1.6**. The results from these surveys were analyzed for observations of Massasauga Rattlesnake, and the locations where Massasauga Rattlesnake was observed were identified and mapped.

### **2.5.18 Kirtland's Warbler (*Setophaga kirtlandii*)**

In addition to the breeding bird surveys completed in 2015 as described in **Section 2.4.3.1**, additional breeding bird surveys targeting Kirtland's Warbler were completed on June 26, 2015 after this species was incidentally observed during Site Investigation surveys. A total of 14 point count stations were selected in suitable habitat for this species within the HIWEC study area. The surveys followed the same methods described for the 2015 breeding bird surveys in **Section 2.4.3.1**.

## **2.6 Raptor Migration Surveys**

The *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNRF, 2012a) does not require raptor migration surveys to be completed as part of the NHA process; however, *Wind Turbines and Birds: A Guidance Document for Environmental Assessment* (EC-CWS, 2007a) includes a recommendation to identify migration corridors when completing an environmental assessment for a wind power project. Raptor migration surveys were completed by LGL and Stantec in 2011, 2012 and 2013, as described in the *Summary of 2011, 2012 and 2013 Raptor Migration Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015b; refer to Appendix A of the Records Review). Additional raptor migration surveys were completed by AECOM in the spring of 2015. The methods by which these surveys were completed are described below. The total number of raptor individuals recorded was calculated to determine the migration volume and compared to previous years.

### **2.6.1 2015 Raptor Migration Surveys**

Raptor migration surveys were completed by AECOM at three (3) stations along Henvey Inlet between April 15 and May 21, 2015 by qualified Avian Biologists. Two (2) point count stations, one (1) at Flowerpot Bay and one (1) at Marker Island, were selected with a third alternative station at the Boat Launch that was used when access by boat

to Marker Island was not possible because of the ice conditions within Henvey Inlet. These surveys were completed in accordance with the Passage Migration Counts protocol as described in the *Recommended Protocols for Monitoring Impacts of Wind Turbines on Birds* (EC-CWS, 2007b).

Six surveys were conducted at two (2) point count stations each week, totaling 12 surveys, between mid-April and late May, under calm, clear weather conditions to the extent possible. Following Environment Canada's recommended protocol (Environment Canada, 2007b), each survey was conducted approximately ten (10) days apart within the peak migration period, with each survey lasting for six (6) hours, beginning at approximately 9:00 am. The following information was recorded during each survey:

- Date, start and end times;
- Weather conditions including temperature (°C), precipitation (i.e., snow, rain, none), wind (according to the Beaufort scale), and % cloud cover;
- Unique ID of survey location;
- Raptor species and numbers observed;
- Behaviour of individual raptor species observed (i.e., foraging, flying);
- Details of any encountered SAR observations;
- UTM coordinates of observations; and
- Date and time of observations.

## 3. Results

The following sections summarize the results of the evaluation of importance (EOI) for natural features carried forward from the Site Investigation. Features evaluated and confirmed to be important, or features treated as important, were carried forward to the Environmental Impact Study (EIS) phase of this Natural Heritage Assessment (NHA), to identify potential impacts of the HIWEC and appropriate mitigations measures.

### 3.1 Conservation Reserves

The North Georgian Bay Shoreline and Islands Conservation Reserve is protected and managed under the *Provincial Parks and Conservation Reserves Act, 2006* and therefore does not require an EOI. This feature was considered to be important and carried forward to the EIS.

### 3.2 Wetlands

A total of four (4) unevaluated wetland features were identified within 120 m of the HIWEC location through the Site Investigation. Of these, four (4) unevaluated wetland features are overlapped by the HIWEC location and required a full OWES. The OWES evaluations were undertaken by an AECOM OWES certified Biologist, Kristan Washburn (refer to **Appendix A** for qualifications). Detailed results of the OWES evaluations are presented in **Appendix B**. Based on these evaluations, all four (4) wetland features were confirmed to be PIWs and carried forward to the EIS.

### 3.3 Woodlands

An assessment of each woodland feature occurring within 120 m of the HIWEC location was undertaken using the criteria and standards described in the *Natural Heritage Assessment Guide for Renewable Energy Projects* (MNR, 2012). As described therein, woodlands meeting any one of the evaluation criteria are to be considered important provided they meet minimum width requirements (e.g., be located between two other important features each of which are 120 m apart and be at least 50 ha in size). The results of these woodland evaluations are documented in **Table 3-1**.

A total of 72 woodlands occurring in or within 120 m of the HIWEC location were identified and evaluated following the criteria described in **Section 2.3** above. Of the identified features, 35 woodlands are considered important based on meeting at least one of the criteria used in the evaluation process. These woodlands were therefore carried forward to the EIS phase of this NHA. Details regarding the specific criteria/criterion met by each woodland unit are provided in **Table 3-1** (shaded rows identify important woodlands).

**Table 3-1: Determination of Importance for Woodlands**

Woodland Feature ID	Evaluation Criteria and Standards <i>(Based on 81.9% woodland cover within HIFN I. R. #2)</i>														# of Criteria Met	Determination of Importance
	1. Woodland Size		2.a) Woodland Interior		2.b) Proximity to Other Important Woodlands / Habitats		2.c) Linkages		2.d) Water Protection		2.e) Woodland Diversity Representation (Composition)		3. Uncommon Characteristics			
	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met		
	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description		
WOOD-004	NA	177.0 ha in size	No	8.5 ha of interior forest	Yes	0 m from other important feature	Yes	Located between two other important features	Yes	Within 50 m of groundwater	Yes	Dominated by Jack Pine, White Pine, Tamarack and Black Ash	No	Does not meet criterion	4	Important
WOOD-005	NA	275.5 ha in size	Yes	95.4 ha of interior forest	Yes	0 m from other important feature	Yes	Located between two other important features	Yes	Within 50 m of groundwater	Yes	Dominated by Jack Pine, White Pine, Tamarack and Black Ash	Yes	Characteristics of an older woodland	6	Important
WOOD-006	NA	0.9 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-007	NA	1.8 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-008	NA	3.3 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-010	NA	437.7 ha in size	Yes	69.2 ha of interior forest	Yes	0 m from other important feature	Yes	Located between two other important features	Yes	Within 50 m of groundwater	Yes	Dominated by Jack Pine, White Pine, Tamarack and Black Spruce	Yes	Characteristics of an older woodland	6	Important
WOOD-011	NA	2.0 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-013	NA	1.5 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-015	NA	1.5 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-017	NA	0.6 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-018	NA	6.0 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
WOOD-020	NA	0.5 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important

3. According to input received from Biologists undertaking the *Henvey Inlet Wind Energy Centre Water Assessment and Water Body Report* (AECOM, 2015).

**Table 3-1: Determination of Importance for Woodlands**

Woodland Feature ID	Evaluation Criteria and Standards <i>(Based on 81.9% woodland cover within HIFN I. R. #2)</i>														# of Criteria Met	Determination of Importance
	1. Woodland Size		2.a) Woodland Interior		2.b) Proximity to Other Important Woodlands / Habitats		2.c) Linkages		2.d) Water Protection		2.e) Woodland Diversity Representation (Composition)		3. Uncommon Characteristics			
	Criteria Met		Criteria Met		Criteria Met		Criteria Met		Criteria Met		Criteria Met		Criteria Met			
	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description		
	NA		Must have woodland interior at least <b>20 ha</b> in size		Must be within 30 m of an important natural feature or fish habitat <sup>3</sup> and be at least <b>50 ha</b> in size		Must be located between two other important features each of which are 120 m apart and be at least <b>50 ha</b> in size		Must be located within 50 m of a sensitive groundwater discharge <sup>3</sup> , recharge, headwater, watercourse or fish habitat and be at least <b>4 ha</b> in size		Must be dominated singly or in combination by native naturally occurring Ms, Mb, Msi, Mr, By, H, Ba, Ab, Wb, Ta, Sp, Pi, Oa, Ba, He, and be at least <b>20 ha</b> in size		Must have rare vegetation community (S1, S2, S3) and be more than 0.5 ha in size. OR Habitat of a rare, uncommon, or restricted woodland plant species with ten individual stems or 100 m <sup>2</sup> of leaf coverage and be more than 0.5 ha in size. OR Characteristics of older woodlands with larger tree size structure in native species and be more than <b>10 ha</b> in size			
<b>WOOD-021</b>	NA	3.9 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-023</b>	NA	27.5 ha in size	No	0.5 ha of interior forest	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Dominated by Poplar	No	Does not meet criterion	1	Important
<b>WOOD-025</b>	NA	1.2 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-026</b>	NA	5.1 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
<b>WOOD-029</b>	NA	5.8 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
<b>WOOD-030</b>	NA	0.6 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-031</b>	NA	3.6 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-034</b>	NA	99.7 ha in size	No	7.4 ha of interior forest	Yes	0 m from other important feature	Yes	Located between two other important features	Yes	Within 50 m of groundwater	Yes	Dominated by Sugar Maple, Red Maple, Oak, Beech, Black Ash, Jack Pine, Tamarack and Black Spruce	No	Does not meet criterion	4	Important
<b>WOOD-035</b>	NA	9.7 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
<b>WOOD-036</b>	NA	6.8 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
<b>WOOD-038</b>	NA	1.1 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-039</b>	NA	5.5 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
<b>WOOD-040</b>	NA	4.3 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important

**Table 3-1: Determination of Importance for Woodlands**

Woodland Feature ID	Evaluation Criteria and Standards <i>(Based on 81.9% woodland cover within HIFN I. R. #2)</i>														# of Criteria Met	Determination of Importance
	1. Woodland Size		2.a) Woodland Interior		2.b) Proximity to Other Important Woodlands / Habitats		2.c) Linkages		2.d) Water Protection		2.e) Woodland Diversity Representation (Composition)		3. Uncommon Characteristics			
	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met	Criteria Met		
	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description		
	NA		Must have woodland interior at least <b>20 ha</b> in size		Must be within 30 m of an important natural feature or fish habitat <sup>3</sup> and be at least <b>50 ha</b> in size		Must be located between two other important features each of which are 120 m apart and be at least <b>50 ha</b> in size		Must be located within 50 m of a sensitive groundwater discharge <sup>3</sup> , recharge, headwater, watercourse or fish habitat and be at least <b>4 ha</b> in size		Must be dominated singly or in combination by native naturally occurring Ms, Mb, Msi, Mr, By, H, Ba, Ab, Wb, Ta, Sp, Pi, Oa, Ba, He, and be at least <b>20 ha</b> in size		Must have rare vegetation community (S1, S2, S3) and be more than 0.5 ha in size. OR Habitat of a rare, uncommon, or restricted woodland plant species with ten individual stems or 100 m <sup>2</sup> of leaf coverage and be more than 0.5 ha in size. OR Characteristics of older woodlands with larger tree size structure in native species and be more than <b>10 ha</b> in size			
<b>WOOD-042</b>	NA	1.7 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-043</b>	NA	1.9 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-045</b>	NA	26.4 ha in size	No	0.5 ha of interior forest	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	Yes	Dominated by Jack Pine and Black Ash	No	Does not meet criterion	2	Important
<b>WOOD-046</b>	NA	1.1 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-047</b>	NA	4.9 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
<b>WOOD-048</b>	NA	12.1 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
<b>WOOD-050</b>	NA	6.1 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
<b>WOOD-051</b>	NA	2425.5 ha in size	Yes	840.7 ha of interior forest	Yes	0 m from other important feature	Yes	Located between two other important features	Yes	Within 50 m of groundwater	Yes	Dominated by White Pine, Jack Pine, Hemlock, Oak, Red Maple, Sugar Maple, Black Ash, Black Spruce and Tamarack	Yes	Characteristics of an older woodland	6	Important
<b>WOOD-052</b>	NA	2.1 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-057</b>	NA	10.4 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
<b>WOOD-058</b>	NA	11.9 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
<b>WOOD-059</b>	NA	0.7 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important

**Table 3-1: Determination of Importance for Woodlands**

Woodland Feature ID	Evaluation Criteria and Standards <i>(Based on 81.9% woodland cover within HIFN I. R. #2)</i>														# of Criteria Met	Determination of Importance
	1. Woodland Size		2.a) Woodland Interior		2.b) Proximity to Other Important Woodlands / Habitats		2.c) Linkages		2.d) Water Protection		2.e) Woodland Diversity Representation (Composition)		3. Uncommon Characteristics			
	Criteria Met		Criteria Met		Criteria Met		Criteria Met		Criteria Met		Criteria Met		Criteria Met			
	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description		
WOOD-063	NA	56.9 ha in size	No	16.0 ha of interior forest	Yes	0 m from other important feature	Yes	Located between two other important features	Yes	Within 50 m of groundwater	Yes	Dominated by Jack Pine	No	Does not meet criterion	4	Important
WOOD-066	NA	1.2 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-068	NA	1.9 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-069	NA	7.1 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
WOOD-070	NA	198.3 ha in size	Yes	66.6 ha of interior forest	Yes	0 m from other important feature	Yes	Located between two other important features	Yes	Within 50 m of groundwater	Yes	Dominated by Sugar Maple, Hemlock, Red Maple, White Pine, Oak, Jack Pine	No	Does not meet criterion	5	Important
WOOD-071	NA	125.5 ha in size	No	17.7 ha of interior forest	Yes	0 m from other important feature	Yes	Located between two other important features	Yes	Within 50 m of groundwater	Yes	Dominated by White Pine, Jack Pine, Tamarack and Black Spruce	No	Does not meet criterion	4	Important
WOOD-074	NA	4.1 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
WOOD-075	NA	22.7 ha in size	No	0.6 ha of interior forest	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	Yes	Dominated by Hemlock, Jack Pine and Black Ash	No	Does not meet criterion	2	Important
WOOD-076	NA	1.8 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-087	NA	11.2 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
WOOD-088	NA	34.2 ha in size	No	1.3 ha of interior forest	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	Yes	Dominated by Jack Pine and Black Spruce	Yes	Characteristics of an older woodland	3	Important



**Table 3-1: Determination of Importance for Woodlands**

Woodland Feature ID	Evaluation Criteria and Standards <i>(Based on 81.9% woodland cover within HIFN I. R. #2)</i>														# of Criteria Met	Determination of Importance
	1. Woodland Size		2.a) Woodland Interior		2.b) Proximity to Other Important Woodlands / Habitats		2.c) Linkages		2.d) Water Protection		2.e) Woodland Diversity Representation (Composition)		3. Uncommon Characteristics			
	Criteria Met		Criteria Met		Criteria Met		Criteria Met		Criteria Met		Criteria Met		Criteria Met			
	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description		
	NA		Must have woodland interior at least <b>20 ha</b> in size		Must be within 30 m of an important natural feature or fish habitat <sup>3</sup> and be at least <b>50 ha</b> in size		Must be located between two other important features each of which are 120 m apart and be at least <b>50 ha</b> in size		Must be located within 50 m of a sensitive groundwater discharge <sup>3</sup> , recharge, headwater, watercourse or fish habitat and be at least <b>4 ha</b> in size		Must be dominated singly or in combination by native naturally occurring Ms, Mb, Msi, Mr, By, H, Ba, Ab, Wb, Ta, Sp, Pi, Oa, Ba, He, and be at least <b>20 ha</b> in size		Must have rare vegetation community (S1, S2, S3) and be more than 0.5 ha in size. OR Habitat of a rare, uncommon, or restricted woodland plant species with ten individual stems or 100 m <sup>2</sup> of leaf coverage and be more than 0.5 ha in size. OR Characteristics of older woodlands with larger tree size structure in native species and be more than <b>10 ha</b> in size			
<b>WOOD-091</b>	NA	3.1 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-093</b>	NA	0.7 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-097</b>	NA	2.2 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-101</b>	NA	3.3 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-103</b>	NA	1.5 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-107</b>	NA	95.2 ha in size	No	3.6 ha of interior forest	Yes	0 m from other important feature	Yes	Located between two other important features	Yes	Within 50 m of groundwater	Yes	Dominated by Jack Pine, Tamarack and Black Spruce	No	Does not meet criterion	4	Important
<b>WOOD-109</b>	NA	1.6 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-111</b>	NA	7.8 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
<b>WOOD-113</b>	NA	0.5 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-114</b>	NA	17.1 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
<b>WOOD-115</b>	NA	0.7 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-125</b>	NA	1.6 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-126</b>	NA	0.6 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
<b>WOOD-127</b>	NA	380.1 ha in size	Yes	52.0 ha of interior forest	Yes	0 m from other important feature	Yes	Located between two other important features	Yes	Within 50 m of groundwater	Yes	Dominated by White Pine, Jack Pine, Tamarack and Black Spruce	No	Does not meet criterion	5	Important

**Table 3-1: Determination of Importance for Woodlands**

Woodland Feature ID	Evaluation Criteria and Standards <i>(Based on 81.9% woodland cover within HIFN I. R. #2)</i>														# of Criteria Met	Determination of Importance
	1. Woodland Size		2.a) Woodland Interior		2.b) Proximity to Other Important Woodlands / Habitats		2.c) Linkages		2.d) Water Protection		2.e) Woodland Diversity Representation (Composition)		3. Uncommon Characteristics			
	NA		Must have woodland interior at least <b>20 ha</b> in size		Must be within 30 m of an important natural feature or fish habitat <sup>3</sup> and be at least <b>50 ha</b> in size		Must be located between two other important features each of which are 120 m apart and be at least <b>50 ha</b> in size		Must be located within 50 m of a sensitive groundwater discharge <sup>3</sup> , recharge, headwater, watercourse or fish habitat and be at least <b>4 ha</b> in size		Must be dominated singly or in combination by native naturally occurring Ms, Mb, Msi, Mr, By, H, Ba, Ab, Wb, Ta, Sp, Pi, Oa, Ba, He, and be at least <b>20 ha</b> in size		Must have rare vegetation community (S1, S2, S3) and be more than 0.5 ha in size. OR Habitat of a rare, uncommon, or restricted woodland plant species with ten individual stems or 100 m <sup>2</sup> of leaf coverage and be more than 0.5 ha in size. OR Characteristics of older woodlands with larger tree size structure in native species and be more than <b>10 ha</b> in size			
	Criteria Met		Criteria Met		Criteria Met		Criteria Met		Criteria Met		Criteria Met		Criteria Met			
Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description	Y/N	Description			
WOOD-128	NA	10.2 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
WOOD-129	NA	6.0 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
WOOD-130	NA	2.6 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-131	NA	2.7 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-132	NA	1.8 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-134	NA	2.3 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-135	NA	6.4 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
WOOD-137	NA	0.8 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important
WOOD-138	NA	6.0 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	Yes	Within 50 m of groundwater	No	Does not meet size criteria	No	Does not meet criterion	1	Important
WOOD-139	NA	1.2 ha in size	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet size criteria	No	Does not meet criterion	0	Not Important

### 3.4 Important Wildlife Habitat

The presence of Candidate IWH features within 120 m of the HIWEC location was confirmed through the Site Investigation. A description of how a determination was made of the importance of each Candidate IWH feature is provided in the sections that follow. These evaluations were undertaken by qualified Biologists, Olga Hropach, Johanna Perz, Adam McClelland, Julie Ellis and James Kamstra (refer to **Appendix A** for qualifications) between August 11 and November 5, 2015. Field notes for the EOI surveys completed in 2011, 2012 and 2013 are provided in the Technical Reports (refer to Appendix A of the Records Review). Field notes for the EOI surveys completed in 2015 are provided in **Appendix C**.

#### 3.4.1 Seasonal Concentration Areas of Animals

##### 3.4.1.1 Waterfowl Stopover and Staging Areas (Aquatic)

The results of the pre-construction EOI surveys used to evaluate the importance of Candidate Waterfowl Stopover and Staging Areas (Aquatic) features are summarized below.

###### 3.4.1.1.1 2013 Spring Waterfowl Migration Surveys

The results of the 2013 spring waterfowl migration surveys are summarized below in **Table 3-2**. Detailed results and field notes are presented in the *Summary of 2013 Waterfowl Migration Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015d; refer to Appendix A of the Records Review).

**Table 3-2: 2013 Waterfowl Migration Surveys Results**

Survey Number	Pre-construction EOI Survey Results		Determination of Importance
	Date, Survey Start and End Times, and Weather Conditions	Results: Target species recorded (total number of individuals)	
<b>Survey 1</b>	April 9, 2013 10:00 – 16:00 Wind (Beaufort scale): 2-3 Cloud Cover: 50-80% Temperature: 3-5°C Precipitation: N / A Precipitation (24h): Rain	American Black Duck (2) Bufflehead (8) Canada Goose (14) Common Goldeneye (8) Common Merganser (6) Hooded Merganser (8)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.
<b>Survey 2</b>	April 16, 2013 10:40 – 11:25 Wind (Beaufort scale): 1-4 Cloud Cover: 100% Temperature: 5 to 7°C Precipitation: N / A Precipitation (24h) : Rain	American Black Duck (18) Bufflehead (11) Canada Goose (9) Common Goldeneye (2) Common Merganser (2)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.
<b>Survey 3</b>	April 17, 2013 10:00 – 16:00 Wind (Beaufort scale): 4 Cloud Cover: 0% Temperature: 0°C Precipitation: None Precipitation (24h): None	American Black Duck (10) Bufflehead (39) Canada Goose (6) Common Goldeneye (7) Common Merganser (4)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.

**Table 3-2: 2013 Waterfowl Migration Surveys Results**

Survey Number	Pre-construction EOI Survey Results		Determination of Importance
	Date, Survey Start and End Times, and Weather Conditions	Results: Target species recorded (total number of individuals)	
<b>Survey 4</b>	April 23, 2013 10:00 – 16:30 Wind (Beaufort scale): 4-5 Cloud Cover: 30% Temperature: 6 to 15°C Precipitation: None Precipitation (24h): None	American Black Duck (12) Bufflehead (62) Canada Goose (7) Common Goldeneye (4) Common Merganser (12) Hooded Merganser (2) Scaup species (75) Ring-necked Duck (8)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.
<b>Survey 5</b>	April 30, 2013 14:25 – 15:25 Wind (Beaufort scale): 3 Cloud Cover: 0-15% Temperature: 18°C Precipitation: None Precipitation (24h): 4-5 mm	Bufflehead (108) Canada Goose (2) Common Merganser (4) Green-winged Teal (2) Lesser Scaup (250) Scaup species (17)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.  A flock of 250 Lesser Scaup was observed at one (1) site located on the south side of Henvey Inlet, but not within 120 m of the HIWEC location or in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.

#### 3.4.1.1.2 2013 Fall Waterfowl Migration Surveys

The results of the 2013 fall waterfowl migration surveys are summarized below in **Table 3-3**. Detailed results and field notes are presented in the *Summary of 2013 Waterfowl Migration Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015d; refer to Appendix A of the Records Review).

**Table 3-3: 2013 Fall Waterfowl Migration Surveys Results**

Survey Number	Pre-construction EOI Survey Results		Determination of Importance
	Date, Survey Start and End Times, and Weather Conditions	Results: Target species recorded (total number of individuals)	
<b>Survey 1</b>	September 11-14, 2013 8:00 – 11:15 Other details not recorded.	Blue-winged Teal (3) Canada Goose (14) Common Merganser (10)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.
<b>Survey 2</b>	September 23-26, 2013 9:50 – 16:10 Other details not recorded.	Canada Goose (37) Common Goldeneye (4) Hooded Merganser (3)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.
<b>Survey 3</b>	October 8-11, 2013 7:40 – 13:44 Other details not recorded	Canada Goose (28) Common Merganser (7) Hooded Merganser (1) Lesser Scaup (29) Ring-necked Duck (4) Surf Scoter (26)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.

**Table 3-3: 2013 Fall Waterfowl Migration Surveys Results**

Survey Number	Pre-construction EOI Survey Results		Determination of Importance
	Date, Survey Start and End Times, and Weather Conditions	Results: Target species recorded (total number of individuals)	
<b>Survey 4</b>	October 24, 2013 10:20 Wind (Beaufort scale): 4 Cloud Cover: 90-100% Temperature: 3 to 4°C Precipitation: Snow pellets	Bufflehead (5) Canada Goose (2) Common Merganser (2) Scaup species (3) Surf Scoter (8)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.
<b>Survey 5</b>	October 29, 2013 10:00 – 15:45 Wind (Beaufort scale): 1-4 Cloud Cover: 10% Temperature: -3-5°C Precipitation: None	Bufflehead (21) Common Goldeneye (20) Common Merganser (12) Hooded Merganser (2) White-winged Scoter (2)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.
<b>Survey 6</b>	November 8, 2013 9:00 – 16:00 Wind (Beaufort Scale): 4 Cloud Cover: 30% Temperature: -3-5°C Precipitation: Rain / Flurries	Canada Goose (30) Common Merganser (2) White-winged Scoter (1)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.

3.4.1.1.3 2014 Fall Waterfowl Migration Survey

A fall waterfowl migration survey was completed by AECOM on November 14, 2014. The survey was conducted across the entire HIWEC study area and along the shores of Georgian Bay, Henvey Inlet and Key River. The survey was conducted between 11:30 a.m. and 12:30 p.m. The results of this survey are summarized below in **Table 3-4**.

In total, 150 waterfowl comprising six (6) species were observed during the survey across the HIWEC study area. Common species observed included Bufflehead, Common Merganser, and Hooded Merganser, with 57, 52, and 36 individuals observed, respectively. A large flock of Bufflehead (35) and a large flock of Common Merganser (32 individuals) were observed. Additionally, three (3) Bald Eagles and one Red-tailed Hawk were observed in the southern portion of the HIWEC study area.

**Table 3-4: 2014 Fall Waterfowl Migration Survey**

Survey Number	Pre-construction EOI Survey Results		Determination of Importance
	Date, Survey Start and End Times, and Weather Conditions	Results: Target species recorded (total number of individuals)	
<b>Survey 1</b>	November 14, 2014 11:30 – 12:30 Wind (Beaufort scale): 2-3 Cloud Cover: overcast Temperature: -6°C Precipitation: Recent snow	Bufflehead (57) Common Goldeneye (2) Common Merganser (52) Hooded Merganser (36)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.

3.4.1.1.4 2015 Spring Waterfowl Migration Surveys

Spring waterfowl migration surveys were completed by AECOM on April 24 and May 13, 2015. The surveys were conducted across the entire HIWEC study area and along the shores of Georgian Bay, Henvey Inlet and Key River.

The surveys were conducted between 10 a.m. and 2 p.m. The results of these surveys are summarized below in **Table 3-5**. Detailed observations from these surveys are presented in **Appendix C**.

In total, 779 waterfowl comprising of 10 species were observed during the 2015 spring waterfowl migration surveys. The most common species observed were Bufflehead, Ring-necked Duck, Canada Goose, and Common Merganser, with 265, 172, 155, and 128 individuals observed across the HIWEC study area, respectively. A flock of 100 Common Mergansers was observed at a site that was located more than 120 m of HIWEC location and not within any Candidate Waterfowl Stopover and Staging (Aquatic) Features.

In addition to waterfowl, incidental observations of other species were recorded. Double-crested Cormorant (*Phalacrocorax auritus*) was often encountered, with a total of 203 individuals, including a flock of 100 observed near Sandy Bay and more than 120 m from the HIWEC location. Double-crested Cormorant is not a target species for this IWH type. Other notable sightings included one (1) Bald Eagle, one (1) Trumpeter Swan (*Cygnus buccinator*), four (4) Sandhill Cranes (*Grus canadensis*), and one (1) Spotted Sandpiper (*Actitis macularius*).

**Table 3-5: 2015 Spring Waterfowl Migration Surveys**

Survey Number	Pre-construction EOI Survey Results		Determination of Importance
	Date, Survey Start and End Times, and Weather Conditions	Results: Target species recorded (total number of individuals)	
<b>Survey 1</b>	April 24, 2015 9:50 – 14:00 Wind (Beaufort scale): 2-3 Cloud Cover: 50% Temperature: 2°C Precipitation: none	American Black Duck (1) Bufflehead (256) Common Goldeneye (2) Canada Goose (129) Common Merganser (110) Hooded Merganser (3) Ring-necked Duck (168)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.  A flock of 100 Common Mergansers was observed at a site near Sandy Bay, but not within 120 m of HIWEC location or in any Candidate Waterfowl Stopover and Staging (Aquatic) Area features.
<b>Survey 2</b>	May 13, 2015 10:39 – 12:40 Wind (Beaufort scale): 2-3 Cloud Cover: 0% Temperature: 6-10°C Precipitation: none	American Black Duck (1) Bufflehead (9) Canada Goose (26) Common Merganser (18) Ring-necked Duck (4)	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Waterfowl Stopover and Staging Areas (Aquatic) features.

In summary, none of the 32 identified Candidate Waterfowl Stopover and Staging Area (Aquatic) features were deemed to be IWH, as they did not meet the criterion of aggregations of 100 or more individuals of the target species for 7 days resulting in more than 700 waterfowl use days as identified in the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b). Therefore, no IWH features were carried forward to the EIS for this IWH type.

**3.4.1.2 Shorebird Migratory Stopover Areas**

Pre-construction EOI surveys for Candidate Shorebird Migratory Stopover Areas features were completed by AECOM on May 15 and June 3, 2015. Surveys were conducted by boat along the shoreline of Key River, Henvey Inlet, Sandy Bay, and Georgian Bay. The results from these surveys are summarized in **Table 3-6**. No shorebirds were observed during these surveys; however, one (1) Spotted Sandpiper was observed in flight during the waterfowl migration aerial survey completed on May 13, 2015. Incidental observations of non-shorebird species made during the surveys are presented in **Appendix C**.

**Table 3-6: 2015 Shorebird Migratory Survey Results**

Round Number	Pre-construction EOI Survey Results		Determination of Importance
	Date, Survey Start and End Times, and Weather Conditions	Results: Target species recorded (total number of individuals)	
<b>Round 1</b>	May 15, 2015 7:58 – 11:26 Wind (Beaufort Scale): 0 Cloud Cover: 90 % Temperature: 13°C Precipitation: None	No shorebirds observed. The water level was very high and most beaches were submerged.	No IWH confirmed.  Target species were not present in sufficient numbers in any Candidate Shorebird Migratory Stopover Areas features.
<b>Round 2</b>	June 3, 2015 10:00 – 17:00 Wind (Beaufort Scale): 2 Cloud Cover: 25 % Temperature: 15°C Precipitation: None	No shorebirds observed.	

None of the seven (7) identified Candidate Shorebird Migratory Stopover Area features were deemed to be IWH, as they did not meet the criterion of (3) or more target species and > 1,000 shorebird use days during spring or fall migration period as identified in the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRF, 2012b). The general lack of shorebirds observed indicates that the HIWEC study area does not support this type of habitat. Therefore, no IWH features were carried forward to the EIS for this IWH type.

**3.4.1.3 Bat Hibernacula**

An acoustic monitor was deployed within 10 m of the opening of Feature BH-004. The results of the pre-construction acoustic monitoring are summarized in **Table 3-7**. Results are shown for all days that the acoustic monitor was deployed for, rather than just for ten (10) days, to get a better understanding of bat activity at or near this feature. On each date, the acoustic monitor started to record at dusk for 5 hours.

Analysis of the data revealed the presence of Big Brown Bat (*Eptesicus fuscus*), Eastern Red Bat (*Lasiurus borealis*), Hoary Bat (*Lasiurus cinereus*), Silver-haired Bat (*Lasionycteris noctivagans*), Eastern Small-footed Myotis (*Myotis leibii*), Little Brown Myotis (*Myotis lucifugus*), and Northern Long-eared Myotis (*Myotis septentrionalis*) in the vicinity of the feature. Of these species, Little Brown Myotis, Eastern Small-footed Bat, Northern Long-eared Myotis, and Big Brown Bat overwinter and hibernate in Ontario (Gerson, 1984). In late summer or autumn, bats exhibit “swarming” behaviour as they congregate in large numbers and fly in and out of the hibernacula (Gerson, 1984). Mating occurs at this time, and bats will eventually retreat in large numbers to overwinter in hibernacula (COSEWIC, 2013).

**Table 3-7: Pre-construction Acoustic Monitoring Results for Candidate Bat Hibernaculum Feature BH-004**

Start Date	Minimum Historical Temperature (°C) <sup>1</sup>	Total Individual Passes for each Bat Species Recorded						
		Big Brown	Eastern Red	Hoary Bat	Silver-haired Bat	Eastern Small-footed Myotis	Little Brown Myotis	Northern Long-eared Myotis
12-Aug-15	15.3	-	6	-	21	-	8	-
13-Aug-15	18.2	1	-	4	52	-	11	1
14-Aug-15	17.2	-	1	15	35	-	12	2
15-Aug-15	18.2	-	2	70	48	1	9	17
16-Aug-15	20.2	2	1	4	35	-	-	-
17-Aug-15	20	-	3	3	51	-	9	-

**Table 3-7: Pre-construction Acoustic Monitoring Results for Candidate Bat Hibernaculum Feature BH-004**

Start Date	Minimum Historical Temperature (°C) <sup>1</sup>	Total Individual Passes for each Bat Species Recorded						
		Big Brown	Eastern Red	Hoary Bat	Silver-haired Bat	Eastern Small-footed Myotis	Little Brown Myotis	Northern Long-eared Myotis
18-Aug-15	20.6	-	2	64	16	-	1	-
19-Aug-15	16	2	-	127	47	-	4	-
20-Aug-15	14.8	3	1	10	43	-	6	-
21-Aug-15	15.6	3	-	9	23	-	4	-
22-Aug-15	20.7	3	1	7	71	-	13	-
23-Aug-15	13.5	2	-	3	77	-	7	-
24-Aug-15	13.3	4	2	4	42	-	15	-
25-Aug-15	12	-	2	-	24	-	6	-
26-Aug-15	11.4	2	2	3	2	-	9	-
27-Aug-15	14.4	-	-	6	44	-	6	-
28-Aug-15	16.5	-	5	6	34	-	8	-
29-Aug-15	16.1	4	4	11	24	-	6	-
30-Aug-15	17.7	4	6	4	44	-	8	-
31-Aug-15	17.7	-	-	5	49	-	10	4
1-Sep-15	18.4	-	-	-	21	-	-	-
2-Sep-15	20	-	-	-	25	-	3	1
3-Sep-15	18.9	-	-	-	-	-	-	-
4-Sep-15	15.3	-	-	-	-	-	-	-

Note: 1. Historical minimum temperatures were taken from the Weather Network's historical weather data for HIFN I.R. #2; however, no precipitation report was available.

Based on these results, the numbers of total passes for each species were not constant, and did not increase over the survey period as would be expected if bats were swarming over a bat hibernaculum closer to the end of August and autumn. On some nights, some species were not observed at all. It would also be expected that only overwintering bats would be recorded swarming over a hibernaculum but migratory bats species such as Eastern Red Bat, Hoary Bat and Silver-haired Bat were also recorded. This suggests that bats may not be using the feature as a hibernaculum, but were likely just passing through and foraging in the area. The low and inconsistent numbers of several bat species and presence of migratory species observed show that swarming did not occur at Feature BH-004 during the survey period. Therefore, Feature BH-004 was determined to not be a bat hibernaculum and was not carried forward to the EIS phase of this NHA.

### 3.4.1.4 Bat Maternity Colonies

A total of 64 Candidate Bat Maternity Colony features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS. Pre-construction EOI surveys may be completed in 2016 to evaluate the importance of these features as described in **Section 2.4.1.4**.

### 3.4.1.5 Turtle Wintering Areas

A total of 65 Candidate Turtle Wintering Area features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.1.5**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.



### 3.4.1.6 Reptile Hibernacula

A total of 98 Candidate Reptile Hibernacula features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.1.6**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.

### 3.4.1.7 Colonially-Nesting Bird Breeding Habitat (Trees / Shrubs)

A total of eight (8) Candidate Colonially-nesting Bird Breeding Habitat (Trees / Shrubs) features were identified through the Site Investigation and carried forward to the EOI. Pre-construction EOI surveys for these Candidate IWH were completed through the aerial surveys conducted on November 14, 2014, and on April 24 and May 13, 2015. The results from these surveys are summarized in **Table 3-8**.

All of the nests observed at these features were assumed to be of Great Blue Herons and not of Black-crowned Night-heron because no breeding evidence for the latter species was recorded in the vicinity of HIWEC study area (Cadman *et al.*, 2007) or during the breeding bird surveys completed in 2011, 2012 or 2013 (AECOM, 2015e). Furthermore, Black-crowned Night-herons generally build their nests under canopy cover such as in low shrubs, small trees, stands of tall, fast-growing trees or in wetlands among emergent plants and herbaceous vegetation, and bare rocks on islands (Cadman *et al.*, 2007). All of the stick nests at each of the features were located on snags and isolated in open water, which are more characteristic of Great Blue Herons.

None of the Candidate IWH features were confirmed to be IWH, as the number of Great Blue Heron nests observed at each feature did not meet the criterion of ten (10) or more active nests as identified in the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b). Therefore, no IWH features were carried forward to the EIS for this IWH type.

### 3.4.1.8 Deer Yarding Areas

A total of four (4) Candidate Deer Yarding Area features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS. Pre-construction EOI surveys may be completed in 2015 or 2016 to evaluate the importance of these features as described in **Section 2.4.1.8**.

**Table 3-8: Pre-construction EOI Survey Results for Candidate Colonially-nesting Bird Breeding Habitat (Trees / Shrubs) Features**

Feature ID	Date, Survey Start and End Times, and Weather Conditions	2014 Fall Aerial Surveys	2015 Spring Aerial Surveys		2014 and 2015 Site Investigations	Species and Number of Nests	Determination of Importance
		November 14, 2014 11:30 – 12:30 Wind (Beaufort Scale): 2-3 Temperature: -6°C Cloud Cover: high	April 24, 2015 9:50 – 14:00 Wind (Beaufort Scale): N/A Temperature: 2°C Cloud Cover: 50 %	May 13, 2015 9:54 – 12:40 Wind (Beaufort Scale): 2 Temperature: 6 to 10°C Cloud Cover: 0 %			
<b>BIRD-01</b>	<i>Results</i>	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	One (1) Great Blue Heron nest observed, occupied by one (1) individual.	Not applicable.	One (1) active Great Blue Heron nest.	Not IWH.  Presence of Great Blue Heron nests is not in sufficient numbers (<10).
<b>BIRD-02</b>	<i>Results</i>	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	Two (2) stick nests observed. Activity was not confirmed.	Same two (2) stick nests observed from April 24, 2015. Activity was not confirmed.	April 15, 2015: field staff recorded two (2) visible stick nests with three (3) pairs of adults, suggesting likely a third nest is present nearby that was not visible.  June 2, 2015: field staff recorded two (2) stick nests.	Two (2), possibly three (3), active Great Blue Heron nests.	Not IWH.  Presence of Great Blue Heron nests is not in sufficient numbers (<10).
<b>BIRD-05</b>	<i>Results</i>	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	Two (2) Great Blue Heron nests observed, occupied by adults.	Not applicable.	Two (2) active Great Blue Heron nests.	Not IWH.  Presence of Great Blue Heron nests is not in sufficient numbers (<10).
<b>BIRD-07</b>	<i>Results</i>	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	Three (3) large stick nests observed. One (1) Great Blue Heron observed nearby.	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	Not applicable.	Three (3) unoccupied stick nests.	Not IWH.  Presence of Great Blue Heron nests is not in sufficient numbers (<10).
<b>BIRD-08</b>	<i>Results</i>	One (1) large stick nest observed. Activity was not confirmed.	One (1) Great Blue Heron nest observed, occupied by one (1) individual. Four (4) individuals observed nearby.	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	Not applicable.	One (1) active Great Blue Heron nest.	Not IWH.  Presence of Great Blue Heron nests is not in sufficient numbers (<10).
<b>BIRD-09</b>	<i>Results</i>	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	Not applicable.	No stick nests observed at location identified by MNR during Records Review.	Not IWH.  Presence of Great Blue Heron nests is not in sufficient numbers (<10).

**Table 3-8: Pre-construction EOI Survey Results for Candidate Colonially-nesting Bird Breeding Habitat (Trees / Shrubs) Features**

Feature ID	Date, Survey Start and End Times, and Weather Conditions	2014 Fall Aerial Surveys	2015 Spring Aerial Surveys		2014 and 2015 Site Investigations	Species and Number of Nests	Determination of Importance
		November 14, 2014 11:30 – 12:30 Wind (Beaufort Scale): 2-3 Temperature: -6°C Cloud Cover: high	April 24, 2015 9:50 – 14:00 Wind (Beaufort Scale): N/A Temperature: 2°C Cloud Cover: 50 %	May 13, 2015 9:54 – 12:40 Wind (Beaufort Scale): 2 Temperature: 6 to 10°C Cloud Cover: 0 %			
<b>BIRD-10</b>	<i>Results</i>	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	Not applicable.	No stick nests observed at location identified by MNRFP during Records Review.	Not IWH.  Presence of Great Blue Heron nests is not in sufficient numbers (<10).
<b>BIRD-11</b>	<i>Results</i>	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	No Great Blue Herons, Black Crowned Night-herons or their nests observed.	May 13, 2015: field staff recorded one (1) stick nest observed in a snag.  Date not recorded, 2015: field staff recorded one (1) Great Blue Heron on stick nest.  June 6, 2015: field staff recorded one (1) Great Blue Heron on stick nest.	One (1) active Great Blue Heron nest.	Not IWH.  Presence of Great Blue Heron nests is not in sufficient numbers (<10).

### 3.4.2 Rare Vegetation Communities

#### 3.4.2.1 Cliffs and Talus Slopes

A total of six (6) Candidate Cliff and Talus Slope features were identified through the Site Investigation and carried forward to the EOI. Of these, one (1) feature (CL-008) was located on the north side of the Key River where permission to enter private property was not granted. For this reason, Feature CL-008 was treated as important and carried forward to the EIS. Pre-construction EOI surveys were completed by qualified AECOM Biologists on October 6 and 7, 2015 to evaluate the importance of the remaining five (5) Candidate Cliff and Talus Slopes features as described in **Section 2.4.2.1**. The results of this pre-construction EOI survey is summarized in **Table 3-9** and the field notes for these Pre-construction EOI surveys are provided in **Appendix C**.

Feature CL-007 was confirmed as IWH based on the presence of Rock Tripe Lichen (*Umbilicaria sp.*) and three (3) of the other characteristic species for this IWH type, including Rock Polypody (*Polypodium virginianum*), Brittle Bladder-fern (*Cystopteris fragilis*) and Oblong Woodsia (*Woodsia ilvensis*). The remaining four (4) features did not meet the criteria for importance as outlined in the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNR, 2012b) and therefore were not carried forward to the EIS. Therefore, a total of two (2) features (CL-007 and CL-008) were carried forward to the EIS phase of this NHA.

**Table 3-9: Pre-construction EOI Survey Results for Candidate Cliff and Talus Slope Features**

Feature ID	Date, Survey Start and End Times, Weather Condition	Habitat Description	Species Characteristic of Cliff and Talus Slopes	Determination of Importance
CL-001	October 6, 2015 11:22 – 11:56 Wind (Beaufort Scale): 3 Cloud Cover: 15 % Temperature: 15°C Precipitation: None	Feature is a talus (not a slope) - broken bedrock on gradual slope of rock barren.	Two (2) Rock Tripe Lichen species ( <i>Umbilicaria deusta</i> and <i>Umbilicaria muehlenbergii</i> ); and Rock Polypody	Confirmed as not IWH.  Below threshold of three (3) or more species, in addition to Rock Tripe Lichen, characteristic of cliff and talus slopes in feature.
CL-003	October 6, 2015 9:17 – 9:37 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 6°C Precipitation: None	East-facing cliff approximately 3 m tall. Face of rock cliff is approximately 15 m long at the base. Cracks and ledges scarce. Small amount of Rock Tripe Lichen; no other associate species present.	Frosted Rock Tripe ( <i>Umbilicaria americana</i> ); Smooth Rock Tripe ( <i>Umbilicaria mammulata</i> ); and Rock Tripe Lichen species ( <i>Umbilicaria deusta</i> ).	Confirmed as not IWH.  Below threshold of three (3) or more species, in addition to Rock Tripe Lichen, characteristic of cliff and talus slopes in feature.
CL-004	October 7, 2015 10:26 – 10:50 Wind (Beaufort Scale): 3 Cloud Cover: 10 % Temperature: 8°C Precipitation: None	West-facing cliff; 2 rock faces; mean height is 3 m; total length at base is approximately 30 m. Cracks and crevices abundant.	Rock Polypody; and Smooth Rock Tripe.	Confirmed as not IWH.  Below threshold of three (3) or more species, in addition to Rock Tripe Lichen, characteristic of cliff and talus slopes in feature.
CL-005	October 7, 2015 12:02 – 12:45 Wind (Beaufort Scale): 2 Cloud Cover: 50 % Temperature: 15°C Precipitation: None	West-facing cliff; height is approximately 10 m; length of base is > 100 m.	Smooth Rock Tripe; and Rock Polypody.	Confirmed as not IWH.  Below threshold of three (3) or more species, in addition to Rock Tripe Lichen, characteristic of cliff and talus slopes in feature.

Feature ID	Date, Survey Start and End Times, Weather Condition	Habitat Description	Species Characteristic of Cliff and Talus Slopes	Determination of Importance
CL-007	October 6, 2015 12:51 – 13:20 Wind (Beaufort Scale): 4 Cloud Cover: 90 % Temperature: 15°C Precipitation: None	South-facing cliff; height is approximately 3 m; length at base is approximately 30 m. Cracks and crevices on rock face. Lichen and mosses are abundant.	Rock Polypody; Smooth Rock Tripe; Brittle Bladder-fern; and Oblong Woodsia.	Confirmed as IWH.  Presence of Rock Tripe Lichen and three (3) species characteristic of Cliff and Talus Slopes (Rock Polypody, Brittle Bladder-fern and Oblong Woodsia) confirmed

### 3.4.2.2 Precambrian Rock Barren

A total of 86 Candidate Precambrian Rock Barren features were identified through the Site Investigation and carried forward to the EOI. No additional pre-construction EOI surveys are required to evaluate the importance of these features. All 86 of these IWH features were carried forward to the EIS.

### 3.4.2.3 Sand Barrens

A total of two (2) Candidate Sand Barren features were identified through the Site Investigation and carried forward to the EOI. Both features were confirmed to contain at least one (1) characteristic plant species for this IWH type and therefore were confirmed as important and carried forward to the EIS as described in **Section 2.4.2.3**.

### 3.4.2.4 Old-growth Forest

A total of six (6) Candidate Old-growth Forest features were identified through the Site Investigation and carried forward to the EOI. Of these six (6) features, one (1) feature (FO-001) was not evaluated because it was located on the On-reserve portions of the Route A Transmission Line, which is no longer being considered. For this reason, this feature was eliminated from further consideration in the NHA. In addition, feature FO-006 was not surveyed because it was located outside of the HIWEC location but within 120 m of it and therefore was treated as important and carried forward to the EIS phase of this NHA.

For the remaining four (4) Candidate Old-growth Forest features, pre-construction EOI surveys were completed by qualified AECOM Biologists on October 14 to 16, 2015. A summary of the results of the Candidate Old-growth Forest surveys and analysis conducted in the four (4) Candidate Old-growth Forest features where vegetation removal is proposed in association with the construction of HIWEC infrastructure (FO-002, FO-057, FO-061 and FO-138) is provided in **Table 3-10**. The field notes for these Pre-construction EOI surveys are provided in **Appendix C**. These features did not contain stands of trees greater than 140 years old and are consequently confirmed as not IWH and were not carried forward to the EIS phase of this NHA.

### 3.4.2.5 Bogs

A total of 70 Candidate Bog features were identified through the Site Investigation and carried forward to the EOI. No additional pre-construction EOI surveys are required to evaluate the importance of these features. All 70 of these IWH features were carried forward to the EIS.

**Table 3-10: Pre-construction EOI Survey Results for Candidate Old-growth Forest Features**

Feature ID	Date, Survey Start and End Times, Weather Condition	Stand Age	Evidence of Forestry Activities	Determination of Importance
FO-002	October 14, 2015 08:49 – 17:07 Wind (Beaufort Scale): 4 Cloud Cover: 25 % Temperature: 11°C Precipitation: None	Average and median age of trees in FO-002 was found to be 95 and 96 years respectively.	Evidence of roads and / or trails was noted in FO-002; however, this was not considered evidence of forestry activities.	Confirmed as not IWH.  The dominate tree species in FO-002 do not meet or exceed the age requirement of 140 years.
FO-057	October 15, 2015 09:46 – 13:34 Wind (Beaufort Scale): 2 Cloud Cover: 85 % Temperature: 7°C Precipitation: None	Average and median age of trees in FO-057 was found to be 97 and 101 years respectively.	A single cut stump was noted in FO-057; however, this was not considered strong evidence of forestry activities.	Confirmed as not IWH.  The dominate tree species in FO-057 do not meet or exceed the age requirement of 140 years.
FO-061	October 14-16, 2015 11:25 – 16:19, 10:17 – 17:20, 10:42 – 14:35, Wind (Beaufort Scale): 3,4,1 Cloud Cover: 0%, 100% and 100%. Temperature: 14°C, 10°C and 11°C Precipitation: None, Heavy Rain and Heavy Rain.	The average and median age of trees in FO-061 was found to be 102 and 101 years respectively.	Cut stumps were noted in six (6) locations within FO-061, this was considered evidence of forestry activities.	Confirmed as not IWH.  The dominate tree species in FO-061 do not meet or exceed the age requirement of 140 years. Additionally evidence of forestry activities was noted in the feature.
FO-138	October 14, 2015 10:20 – 17:07 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 7°C Precipitation: None	Average and median age of trees in FO-138 was found to be 100 and 111 years respectively.	No evidence of disturbance was noted within FO-138.	Confirmed as not IWH.  The dominate tree species in FO-138 do not meet or exceed the age requirement of 140 years.

### 3.4.3 Specialized Habitats for Wildlife

#### 3.4.3.1 Waterfowl Nesting Areas

A total of 21 Candidate Waterfowl Nesting Area features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.3.1**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.

#### 3.4.3.2 Bald Eagle and Osprey Nesting, Foraging and Perching Habitat

A total of two (2) Candidate Bald Eagle and Osprey Nesting, Foraging and Perching Habitat features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS. Pre-construction EOI surveys may be completed in 2016 to evaluate the importance of these features as described in **Section 2.4.3.2**.

### 3.4.3.3 Woodland Raptor Nesting Habitat

A total of 44 Candidate Woodland Raptor Nesting Habitat features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.3.3**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.

### 3.4.3.4 Turtle and Lizard Nesting Areas

A total of 86 Candidate Precambrian Rock Barren features were carried forward to the EOI as suitable lizard nesting habitat. All of these features were treated as important for lizard nesting habitat and carried forward to the EIS. No additional pre-construction EOI surveys are required to evaluate importance of these features.

A total of 34 Candidate Turtle Nesting Area features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS. Pre-construction EOI surveys may be completed in 2016 to evaluate the importance of these features as described in **Section 2.4.3.4**.

### 3.4.3.5 Seeps and Springs

A total of ten (10) Candidate Seeps and Springs features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS. Pre-construction EOI surveys may be completed in 2016 to evaluate the importance of these features as described in **Section 2.4.3.5**.

### 3.4.3.6 Aquatic Feeding Habitat

A total of 36 Candidate Aquatic Feeding Habitat features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS. Pre-construction EOI surveys may be completed in 2016 to evaluate the importance of these features as described in **Section 2.4.3.6**.

### 3.4.3.7 Amphibian Breeding Habitat (Woodland and Wetland)

A total of 76 Candidate Amphibian Breeding Habitat (Woodland and Wetland) features were carried forward to the EOI. The results of pre-construction EOI surveys completed to date are described below.

#### 3.4.3.7.1 2013 Amphibian Surveys

Stantec surveyed a total of 28 stations for Western Chorus Frog and salamanders in 2013. The results of these surveys are described in the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review). Stantec provided confirmation that salamander surveys were completed; however, no field notes were provided and therefore it is assumed that no salamanders were found.

The results of these surveys provide evidence that feature ABH-001 is confirmed IWH due to the presence of an American Bullfrog heard calling at Station 13. Therefore, feature ABH-001 was confirmed as IWH and carried forward to the EIS.

A Western Chorus Frog was possibly heard calling, but not confirmed, at station 127. This station is located > 120 m from the HIWEC location. There are no records of Western Chorus Frogs in the *Ontario Reptile and Amphibian Breeding Atlas* (Ontario Nature, 2014) this far north, so the record of this species here is questionable.

The presence of calling amphibians was recorded at 16 other stations. The number of species and individuals observed at these stations did not satisfy the MNR (2012a) criteria for this IWH type. However, because each station was surveyed only once, primarily in the daytime, from April 22 to May 8, 2013, the results of these surveys cannot reliably be used to rule out the importance of any of the remaining 75 Candidate IWH features.

#### 3.4.3.7.2 2015 Amphibian Surveys

Pre-construction Evaluation of Importance surveys for 19 Candidate Amphibian Breeding Habitat (Woodland and Wetland) features was conducted at 20 stations (two (2) stations were located in feature ABH-001) between April 20 and July 2, 2015. The locations of the amphibian survey stations are mapped on **Figure 3-1**. A summary of the results of these surveys is provided in **Table 3-11** and field notes for vernal pool assessments and salamander surveys are provided in **Appendix C**. The protocol as described in **Section 2.4.3.7** was followed to the extent possible; however, some deviations were made when equipment malfunction prevented conducting surveys during optimal conditions. Equipment malfunction at a few stations resulted in no data for some nights; in this situation, alternative sampling dates within the recommended windows and temperature criteria were chosen when possible. Furthermore, the Weather Network's historical weather data for HIFN I.R. #2 was used to review weather conditions and select appropriate nights to conduct the surveys. It should be noted that only minimum temperatures were provided from this source for each day as historical data.

A total of 13 Candidate Amphibian Breeding Habitat (Woodland and Wetland) features were confirmed to be IWH based on the results of the 2015 amphibian surveys (ABH-001, ABH-007, ABH-014, ABH-045, ABH-060, ABH-084, ABH-085, ABH-090, ABH-098, ABH-108, ABH-109, ABH-115 and ABH-160). These features were carried forward to the EIS. In addition, a total of six (6) Candidate Amphibian Breeding Habitat (Woodland and Wetland) features were evaluated and determined not to be important (ABH-003, ABH-006, ABH-058, ABH-059, ABH-095, and ABH-192).

For the purpose of this submission, the remaining 58 Candidate Amphibian Breeding Habitat (Woodland and Wetland) features were treated as important and carried forward to the EIS. Pre-construction EOI surveys may be completed in 2016 to evaluate the importance of these features as described in **Section 2.4.3.7**.

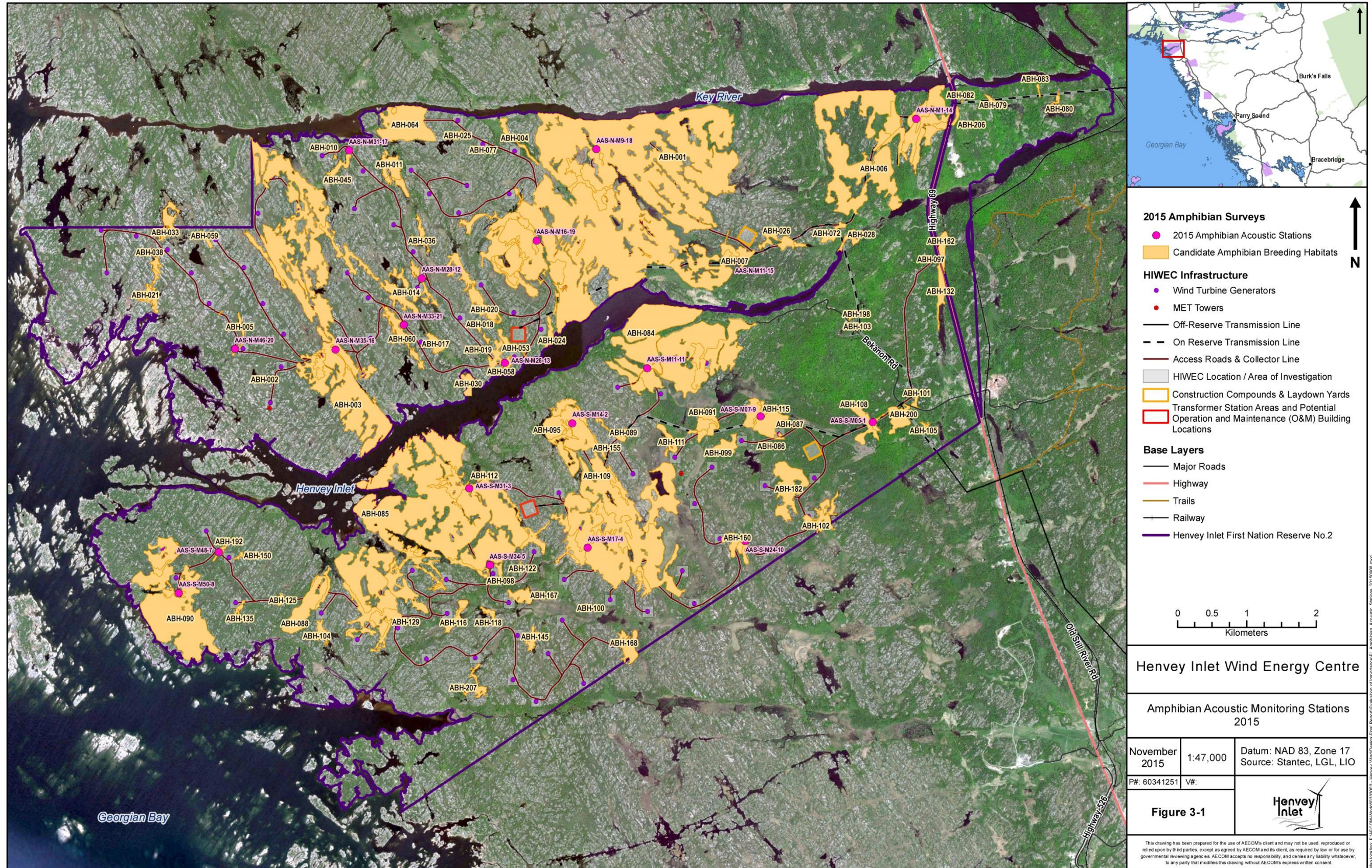
#### 3.4.3.8 Calibration of Acoustic Monitoring Equipment

A total of three (3) acoustic monitoring stations were selected to be calibrated on June 24, 2015 as described in **Section 2.4.3.7.2**. However, two (2) of the selected acoustic monitors had an equipment malfunctions that were not apparent at the time of the calibration and no acoustic data was recorded to compare; acoustic data from the remaining site were analyzed. Field notes from the calibration are provided in **Appendix C**.

Generally, both the human observer and the acoustic monitor did not detect any amphibians calling in the near vicinity of the station; however, the human observer heard amphibian calls in the far distance that were not detected in the acoustic data. Regardless, the results from the acoustic recordings are considered sufficient for the purposes of this study to detect calling amphibians within the feature. Given the health and safety risks for field staff conducting evening surveys within the HIWEC study area, the use of acoustic monitors is the best available method.



Figure 3-1: 2015 Amphibian Acoustic Monitoring Stations



**Table 3-11: 2015 Pre-construction EOI Survey Results for Candidate Amphibian Breeding Habitat (Wetland and Woodland) Features**

Feature ID	Habitat Assessment		Nocturnal Call Surveys Targeting Vocalizing Amphibians			Salamander Surveys		Determination of Importance
			Round 1	Round 2	Round 3	Adult and Egg Mass Surveys	Larval Survey	
<b>ABH-001</b> (Station AAS-N-M9-18)	Site is 100 m by 2 m in size, and 1 m deep. Narrow creek flowing through alder thicket and sedge fen. Area is surrounded by mixed forest.  Water was found to be very shallow upon first visit. The water was dark (tannins present) and algae was abundant. Stonewort ( <i>Charales</i> sp.) also present.	<i>Date, Time and Weather Conditions</i>	April 28, 2015 21:20 – 21:23 Background Noise: 1 Minimum Temperature: 5.4 °C Precipitation: None	May 27, 2015 21:30 – 21:33 Background Noise: 1 Minimum Temperature: 10 °C Precipitation: None	June 15 – 30, 2015 Background Noise: N / A Minimum Temperature: N / A Precipitation: N / A	May 14, 2015 15:43 – 15:54 Cloud Cover: 15% Temperature: 15°C Precipitation: None	July 1, 2015 12:52 – 13:05 Cloud Cover: 50% Temperature: 13°C Precipitation: None	Confirmed IWH.  Presence of breeding populations of three (3) or more target frog / toad species (Spring Peeper, Gray Treefrog, Green Frog and American Bullfrog) with at least 20 individuals confirmed, including American Bullfrog(s) recorded by Stantec in 2013.
		<i>Results</i>	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.	Choruses of Spring Peepers (> 20 individuals) and Gray Treefrogs (> 20 individuals) heard calling in feature.	Equipment malfunction; no data recorded during third survey window.	No amphibians observed. Water was found to be very shallow; no pools present.	No amphibians observed.	
<b>ABH-001</b> (Station AAS-N-M16-19)	Site is 5 m by 5 m in size, and water depth was 0.10 to 0.25 m. Small cluster of pools within a bog; very little open water. Vegetation dominated by sphagnum moss, shrubs and sedges present. Site is adjacent to treed rock barren.  Location was found to be dry when visited on May 14, 2015.	<i>Date, Time and Weather Conditions</i>	April 30, 2015 21:23 – 21:26 Background Noise: 1 Minimum Temperature: 6.6 °C Precipitation: None	May 18, 2015 21:21 – 21:24 Background Noise: 2 Minimum Temperature: 10 °C Precipitation: None	June 16, 2015 21:45 – 21:48 Background Noise: 1 Minimum Temperature: 15.3 °C Precipitation: None	April 29, 2015 10:22 – 10:35 Cloud Cover: 40% Temperature: 7°C Precipitation: None	July 1, 2015 11:20 – 11:39 Cloud Cover: 100% Temperature: 14°C Precipitation: None	
		<i>Results</i>	No amphibians heard calling in feature.  Chorus of Spring Peepers (> 20 individuals) heard calling in the far distance away from feature.	One (1) Gray Treefrog heard calling in feature.  Also heard chorus of Spring Peepers (> 20 individuals) calling in the far distance away from feature.	One (1) Green Frog heard calling in the near distance within feature.  One (1) American Bullfrog heard calling in the far distance away from feature.	No amphibians observed – no water present.	No amphibians observed – no water present.	
<b>ABH-003</b> (Station AAS-N-M35-16)	Stream flowing south between two high rock barrens into a fen; no pools present. Vegetation includes Sphagnum moss (dominant), sedges, leatherleaf, alder, and emergent species. Stream is approximately 1.5 m wide and 2 m deep.	<i>Date, Time and Weather Conditions</i>	April 28, 2015 21:20 – 21:23 Background Noise: 1 Minimum Temperature: 5.4°C Precipitation: None	May 27, 2015 21:30 – 21:33 Background Noise: 2 Minimum Temperature: 10 °C Precipitation: None	June 16, 2015 21:45 – 21:48 Background Noise: 1 Minimum Temperature: 15.3°C Precipitation: None	April 28, 2015 13:06 – 13:16 Cloud Cover: 0% Temperature: 12°C Precipitation: None  May 14, 2015 12:20 – 13:52 Cloud Cover: 0% Temperature: 12°C Precipitation: None	July 1, 2015 11:35 – 11:54 Cloud Cover: 75% Temperature: 18°C Precipitation: None	Confirmed as not IWH.  Below threshold of 20 breeding individuals of three (3) or more target species and no American Bullfrogs or salamanders observed in feature.
		<i>Results</i>	No amphibians heard calling in feature.  Chorus of Spring Peepers (> 20 individuals) heard calling in the far distance away from feature.	One (1) Spring Peeper heard calling in feature.  Chorus of Spring Peepers (> 20) also heard calling in the far distance away from feature.	Three (3) Green Frogs heard calling in feature.  Also heard one (1) Gray Treefrog calling in the far distance away from feature.	No amphibians observed on April 28, 2015.  One (1) Green Frog adult observed on May 14, 2015.	One (1) Green Frog adult heard calling in feature.	
<b>ABH-006</b> (Station AAS-N-M11-14)	Vernal pool 50 m by 10 m in size, and 0.40 m deep. Located in alder ( <i>Alnus</i> sp.) thicket, with substrate of Sphagnum moss and leaf litter. Abundant deadfall within pool.  Site was found to be dry during visit on July 1, 2015.	<i>Date, Time and Weather Conditions</i>	April 28, 2015 21:20 – 21:23 Background Noise: 2 Minimum Temperature: 5.4 °C Precipitation: None	May 16, 2015 21:18 – 21:21 Background Noise: 1 Minimum Temperature: 7 °C Precipitation: None	June 15 – 30, 2015 Background Noise: N / A Minimum Temperature: N / A Precipitation: N / A	May 13, 2015 14:30 – 14:52 Cloud Cover: 0% Temperature: 13°C Precipitation: None	July 1, 2015 14:17 – 14:26 Cloud Cover: 100% Temperature: 15°C Precipitation: None	Confirmed as not IWH.  Below threshold of 20 breeding individuals of three (3) or more target species and no American Bullfrogs or salamanders observed in feature.
		<i>Results</i>	No amphibians heard calling in feature.  Chorus of Spring Peepers (> 20 individuals) heard calling in the far distance away from feature.	No amphibians heard calling in feature.  Chorus of Spring Peepers (> 20 individuals) heard calling in the far distance away from feature.	Equipment malfunction; no data recorded during third survey window.	No amphibians observed.	No amphibians observed; location found to be dry.	
<b>ABH-007</b> (Station AAS-N-M11-15)	Vernal pool. On first visit, found to be 3 m by 10 m in size, and 0.50 m deep; on second visit, found to be 6 m by 25 m in size, and 0.25 m deep. Vegetation dominated by sedges; Water- arum ( <i>Calla</i> sp.) and marsh marigold ( <i>Caltha palustris</i> ) also present. Vegetation cover of 50%.	<i>Date, Time and Weather Conditions</i>	April 28, 2015 21:20 – 21:23 Background Noise: 0 Minimum Temperature: 5.4 °C Precipitation: None	May 27, 2015 21:30 – 21:33 Background Noise: 2 Minimum Temperature: 10 °C Precipitation: None	June 16, 2015 21:45 – 21:48 Background Noise: 1 Minimum Temperature: 15.3 °C Precipitation: None	May 14, 2015 10:39 – 10:58 Cloud Cover: 0% Temperature: 10°C Precipitation: None	July 1, 2015 9:40 – 10:10 Cloud Cover: 100% Temperature: 14°C Precipitation: Light rain	Confirmed IWH.  Presence of breeding populations of three (3) or more target frog / toad species (American Bullfrog, Green Frog, Spring Peeper) with at least 20 individuals confirmed.
		<i>Results</i>	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.	Three (3) Green Frogs, four (4) Spring Peepers, and one (1) American Bullfrog heard calling in feature.  Also heard chorus of Gray Treefrogs (> 20) calling in the far distance away from feature.	Spring Peeper adults (> 40 individuals) observed calling / basking.	One adult (1) Leopard Frog observed.	

**Table 3-11: 2015 Pre-construction EOI Survey Results for Candidate Amphibian Breeding Habitat (Wetland and Woodland) Features**

Feature ID	Habitat Assessment	Date, Time and Weather Conditions	Nocturnal Call Surveys Targeting Vocalizing Amphibians			Salamander Surveys		Determination of Importance
			Round 1	Round 2	Round 3	Adult and Egg Mass Surveys	Larval Survey	
ABH-014 (Station AAS-N-M28-12)	Sedge marsh / thicket swamp below beaver dam; area was approximately 20 m by 20 m in size. Surrounded by rock barrens. Water level fluctuated between visits (0.5 to 2 m depth). Isolated pools found on final visit. Aquatic insects observed.		April 28, 2015 21:20 – 21:23 Background Noise: 0 Minimum Temperature: 5.4 °C Precipitation: None	May 27, 2015 21:30 – 21:33 Background Noise: 1 Minimum Temperature: 10 °C Precipitation: None	June 16, 2015 21:45 – 21:48 Background Noise: 1 Minimum Temperature: 15.3 °C Precipitation: None	April 23, 2015 11:36 – 11:48 Cloud Cover: 100% Temperature: 0°C Precipitation: None  May 14, 2015 10:52 – 11:01 Cloud Cover: 5% Temperature: 12°C Precipitation: None	July 1, 2015 9:37 – 10:48 Cloud Cover: 100% Temperature: 19°C Precipitation: None	Confirmed IWH.  Presence of breeding populations of three (3) or more target frog / toad species (Gray Treefrog, Green Frog, Spring Peeper) with at least 20 individuals confirmed.
			Results	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.  Also heard one (1) Gray Tree Frog calling in the far distance away from feature.	Ten (10) Gray Treefrogs and one (1) Green Frog heard calling in feature.	No amphibians observed.	
ABH-045 (Station AAS-N-M31-17)	Beaver pond / fen with dams at both ends; site is 250 m by 20 m in size. Site is adjacent to rock barren. Emergent vegetation covered 30% of pond; dominated by Leatherleaf. Milfoil ( <i>Myriophyllum</i> sp.) and White Water Lily ( <i>Nymphaea</i> sp.) also present. Several fallen logs (DBH of 20 to 25 cm). Maximum water depth of approximately 2 m. Water was dark; tannins and organic matter present. One (1) fish was netted during the final visit.		April 28, 2015 21:20 – 21:23 Background Noise: 1 Minimum Temperature: 5.4 °C Precipitation: None	May 27, 2015 21:30 – 21:33 Background Noise: 1 Minimum Temperature: 10 °C Precipitation: None	June 16, 2015 21:45 – 21:48 Background Noise: 1 Minimum Temperature: 15.3 °C Precipitation: None	April 23, 2015 9:48 – 9:56 Cloud Cover: 100% Temperature: 0°C Precipitation: None  May 14, 2015 9:23 – 9:42 Cloud Cover: 0% Temperature: 5°C Precipitation: None	July 1, 2015 10:02 – 10:20 Cloud Cover: 100% Temperature: 13°C Precipitation: None	Confirmed IWH.  Presence of breeding populations of three (3) or more target frog / toad species (American Bullfrog, Gray Treefrog, Green Frog, Spring Peeper) with at least 20 individuals confirmed.
			Results	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.	Chorus of Spring Peepers (> 20 individuals) and Gray Treefrog (1) heard calling in feature.	Chorus of Green Frogs (> 20 individuals), ten (10) Gray Treefrogs and three (3) American Bullfrogs heard calling in feature.	No amphibians observed on April 23, 2015.  One (1) adult American Bullfrog observed on May 14 2015.	
ABH-058 (Station AAS-N-M26-13)	Tamarack and Black Spruce swamp adjacent to open rock barren. Ground cover dominated by Sphagnum moss (95%). Leatherleaf and Speckled Alder ( <i>Alnus incana</i> ) present. Standing water present in small scattered pools. Water was dark and clear, with depth of 0.20 m.		April 30, 2015 21:23 – 21:26 Background Noise: 0 Minimum Temperature: 6.6 °C Precipitation: None	May 15, 2015 21:17-21:15 Background Noise: 3 Minimum Temperature: 7°C Precipitation: None	June 15 – 30, 2015 Background Noise: N / A Minimum Temperature: N / A Precipitation: N / A	April 28, 2015 14:45 – 14:50 Cloud Cover: 0% Temperature: 12°C Precipitation: None	July 1, 2015 12:14 – 12:19 Cloud Cover: 90% Temperature: 19°C Precipitation: None	Confirmed as not IWH.  Below threshold of 20 breeding individuals of three (3) or more target species and no American Bullfrogs or salamanders observed in feature.
			Results	No amphibians observed.	No amphibians observed in feature.  Chorus of Spring Peepers (> 20 individuals) heard calling in the far distance away from feature.	Equipment malfunction; no data recorded during third survey window.	No amphibians observed.	
ABH-059 (Station AAS-N-M46-20)	Wetland with dense mats of Sphagnum moss. Area was approximately 200 m by 15 m in size. Vegetation also includes sedges, cotton grass ( <i>Eriophorum</i> sp.), Leatherleaf, Tamarack, and Jack Pine ( <i>Pinus banksiana</i> ). Channel present; no pools. Maximum water depth of approximately 1 m.		April 28, 2015 21:20 – 21:23 Background Noise: 1 Minimum Temperature: 5.4 °C Precipitation: None	May 27, 2015 21:30 – 21:33 Background Noise: 1 Minimum Temperature: 10 °C Precipitation: None	June 15 – June 30, 2015 Background Noise: N / A Minimum Temperature: N / A Precipitation: N / A	April 28, 2015 10:24 – 10:29 Cloud Cover: 5% Temperature: 12°C Precipitation: None  May 14, 2015 14:59 – 15:16 Cloud Cover: 0% Temperature: 13°C Precipitation: None	July 1, 2015 9:30 – 10:00 Cloud Cover: 100% Temperature: 18°C Precipitation: None	Confirmed as not IWH.  Below threshold of 20 breeding individuals of three (3) or more target species and no American Bullfrogs or salamanders observed in feature.
			Results	No amphibians observed in feature.  Chorus of Spring Peepers (> 20 individuals) heard calling in the far distance away from feature.	Two (2) American Toads heard calling.  Chorus of Spring Peepers (> 20) heard calling in the far distance away from feature.	Equipment malfunction; no data recorded during third survey window.	No amphibians observed.	

**Table 3-11: 2015 Pre-construction EOI Survey Results for Candidate Amphibian Breeding Habitat (Wetland and Woodland) Features**

Feature ID	Habitat Assessment	Date, Time and Weather Conditions	Nocturnal Call Surveys Targeting Vocalizing Amphibians			Salamander Surveys		Determination of Importance
			Round 1	Round 2	Round 3	Adult and Egg Mass Surveys	Larval Survey	
<b>ABH-060</b> (Station AAS-N-M33-21)	Very large pond with open water, approximately 500 m by 200 m in size. Site is adjacent to marsh and rock barren. Vegetation cover of 10%; floating and submergent vegetation present; scattered logs. Maximum water depth approximately 2 m. Minnows observed during first visit.		April 28, 2015 21:20 – 21:23 Background Noise: 0 Minimum Temperature: 5.4 °C Precipitation: None	May 18, 2015 21:21 – 21:24 Background Noise: 3 Minimum Temperature: 10 °C Precipitation: None	June 16, 2015 21:45 – 21:48 Background Noise: 0 Minimum Temperature: 15.3 °C Precipitation: None	April 23, 2015 13:47 – 14:01 Cloud Cover: 100% Temperature: 2°C Precipitation: None  May 14, 2015 13:42 – 14:07 Cloud Cover: 5% Temperature: 13°C Precipitation: None	July 1, 2015 13:50 – 14:07 Cloud Cover: 20% Temperature: 25°C Precipitation: None	Confirmed IWH.  Presence of breeding populations of three (3) or more target frog / toad species (American Bullfrog, Gray Treefrog, Green Frog, Spring Peeper) with at least 20 individuals confirmed.
			Results	Five (5) Spring Peepers heard calling near station.  Chorus of Spring Peepers (> 20) heard calling in the near distance within feature.	Chorus of Spring Peepers (> 20 individuals) and one (1) Gray Treefrog heard calling in feature.	Chorus of Gray Treefrogs (> 20 individuals), two (2) Green Frogs and two (2) American Bullfrogs heard calling in feature.	No amphibians observed.	
<b>ABH-084</b> (Station AAS-S-M11-11)	Tamarack and Black Spruce swamp surrounded by woodlands. Open pool surrounded by alder, with sedges and cattails ( <i>Typha</i> sp.); approximately 15 m by 3 m in size. Abundant deadfall. Water depth of approximately 0.20 m.		April 28, 2015 21:20 – 21:23 Background Noise: 0 Minimum Temperature: 5.4 °C Precipitation: None	May 15 – 30, 2015 Background Noise: N / A Minimum Temperature: N / A Precipitation: N / A	June 15 – 30, 2015 Background Noise: N / A Minimum Temperature: N / A Precipitation: N / A	May 13, 2015 9:24 – 10:19 Cloud Cover: 0% Temperature: 8°C Precipitation: none	July 1, 2015 13:30 – 15:00 Cloud Cover: 30% Temperature: 18°C Precipitation: none	Confirmed IWH.  Presence of breeding populations of three (3) or more target frog / toad species (American Toad, Green Frog, Leopard Frog, Spring Peeper, Wood Frog) with at least 20 individuals confirmed.  Presence of breeding population of target salamander species (Spotted Salamander) confirmed.
			Results	Choruses of Wood Frogs (> 20 individuals) and Spring Peepers (> 20 individuals) heard calling.	Equipment malfunction; no data recorded during second survey window.	Equipment malfunction; no data recorded during third survey window.	A total of 15 American Toad larvae and one (1) adult American Toad, three (3) egg masses of Spotted Salamander, four (4) unidentified egg masses and five (5) unidentified larvae were observed.	
<b>ABH-085</b> (Station AAS-S-M31-3)	Large open wetland; vegetated areas dominated by grasses / sedges. Site is adjacent to conifer swamp and rock barren. Highly vegetated creek inputting into area of open water. Small hummocks present. Scattered fallen logs. Vegetation includes sedges, Bullrush species ( <i>Scirpus</i> sp.), grasses, milfoil, White Water Lily, Sheep Laurel ( <i>Kalmia angustifolia</i> ), and Winterberry ( <i>Ilex verticillata</i> ). Pool area surveyed was approximately 10 m by 45 m in size, with depth of 0.50 to 1.0 m. Water was dark (tannins present) and clear.		April 28, 2015 21:20 – 21:23 Background Noise: 1 Minimum Temperature: 5.4 °C Precipitation: None	May 28, 2015 22:01 – 22:04 Background Noise: 0 Minimum Temperature: 11°C Precipitation: None	June 27, 2015 22:17 – 22:20 Background Noise: 1 Minimum Temperature: 14.9°C Precipitation: None	April 27, 2015 15:09 – 15:20 Cloud Cover: 75% Temperature: 8°C Precipitation: None  May 13, 2015 14:15 – 14:32 Cloud Cover: 0% Temperature: 14°C Precipitation: None	July 2, 2015 12:08 – 12:54 Cloud Cover: 10% Temperature: 15°C Precipitation: None	Confirmed IWH.  Presence of breeding populations of three (3) or more target frog / toad species (American Bullfrog, Gray Treefrog, Green Frog, Spring Peeper) with at least 20 individuals confirmed.
			Results	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.  Also heard three (3) Gray Treefrogs calling in the near distance within feature.	Two (2) American Bullfrogs, Two (2) Green Frogs and one (1) Gray Treefrog heard calling in feature.	No amphibians observed.	
<b>ABH-090</b> (Station AAS-S-M50-8)	Speckled alder swamp bordering beaver pond and meadow marsh. Sedges, grasses, water lilies, and <i>Equisetum</i> sp. present. Abundant fallen woody debris (mostly branches). Site is 150 m by 50 m in size; water depth of 0.55 m upon first visit, but had reached 2 m by final visit.		April 28, 2015 21:20 – 21:23 Background Noise: 2 Minimum Temperature: 5.4 °C Precipitation: None	May 27, 2015 21:30 – 21:33 Background Noise: 2 Minimum Temperature: 10 °C Precipitation: None	June 16, 2015 21:45 – 21:48 Background Noise: 3 Minimum Temperature: 15.3 °C Precipitation: None	April 27, 2015 12:30 – 12:35 Cloud Cover: 65% Temperature: 8°C Precipitation: None  May 13, 2015 13:05 – 13:35 Cloud Cover: 0% Temperature: 15°C Precipitation: None	July 2, 2015 10:36 – 10:59 Cloud Cover: 0% Temperature: 20°C Precipitation: None	Confirmed IWH.  Presence of breeding populations of three (3) or more target frog / toad species (American Bullfrog, Gray Treefrog, Green Frog, Spring Peeper) with at least 20 individuals confirmed.  Presence of breeding population of American Bullfrog confirmed.
			Results	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.	Chorus of Gray Treefrogs (> 20 individuals), five (5) Green Frogs, and two (2) American Bullfrogs heard calling in feature.	No amphibians observed.	

**Table 3-11: 2015 Pre-construction EOI Survey Results for Candidate Amphibian Breeding Habitat (Wetland and Woodland) Features**

Feature ID	Habitat Assessment		Nocturnal Call Surveys Targeting Vocalizing Amphibians			Salamander Surveys		Determination of Importance
			Round 1	Round 2	Round 3	Adult and Egg Mass Surveys	Larval Survey	
ABH-095 (Station AAS-S-M14-2)	Wetland dominated by sedges and pond lily. Water depth is between 0.20 and 0.50 m.	Date, Time and Weather Conditions	April 28, 2015 21:20 – 21:23 Background Noise: 1 Minimum Temperature: 5.4°C Precipitation: None	May 27, 2015 21:30 – 21:33 Background Noise: 2 Minimum Temperature: 10°C Precipitation: None	June 15 – June 30, 2015 Background Noise: N / A Minimum Temperature: N / A Precipitation: N / A	May 13, 2015 15:02 – 15:32 Cloud Cover: 0% Temperature: 12°C Precipitation: None	July 2, 2015 11:21 – 11:45 Cloud Cover: 0% Temperature: 23°C Precipitation: None	Confirmed as not IWH.  Below threshold of 20 breeding individuals of three (3) or more target species and no American Bullfrogs or salamanders observed in feature.
		Results	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.  Also heard one (1) Gray Treefrog calling in the far distance away from feature.	Equipment malfunction; no data recorded during third survey window.	No amphibians observed.	No amphibians observed.	
ABH-098 (Station AAS-S-M34-5)	Wetland dominated by Sphagnum moss and submergent / emergent vegetation; part of larger wetland system. Vegetation included Common Beaked Sedge ( <i>Carex utriculata</i> ), Bullrush species, Sweet Gale ( <i>Myrica gale</i> ), watershield ( <i>Brasenia</i> spp.) and milfoil. Some deadfall present. Survey area was approximately 85 m by 20 m in size; water depth was 1 to 1.50 m. One (1) minnow was netted during the final survey.	Date, Time and Weather Conditions	April 28, 2015 21:20 – 21:23 Background Noise: 0 Minimum Temperature: 5.4°C Precipitation: None	May 18, 2015 21:21 – 21:24 Background Noise: 2 Minimum Temperature: 10°C Precipitation: None	June 15 – 30, 2015 Background Noise: N / A Minimum Temperature: N / A Precipitation: N / A	May 13, 2015 12:59 – 13:10 Cloud Cover: 0% Temperature: 15°C Precipitation: None	July 2, 2015 10:07 – 10:38 Cloud Cover: 10% Temperature: 15°C Precipitation: None	Confirmed IWH.  Presence of breeding populations of three (3) or more target frog / toad species (Gray Treefrog, Spring Peeper, Wood Frog) with at least 20 individuals confirmed.
		Results	Choruses of Wood Frogs (> 20 individuals) and Spring Peepers (> 20 individuals) heard calling in the near distance within feature.	Chorus of Spring Peepers (> 20 individuals) and one (1) Gray Treefrog heard calling in feature.	Equipment malfunction; no data recorded during third survey window.	One (1) adult Wood Frog heard calling in feature.	Three (3) Green Frog adults observed.	
ABH-108 (Station AAS-S-M05-1)	Swamp dominated by Black Ash ( <i>Fraxinus nigra</i> ), with Balsam Fir ( <i>Abies balsamea</i> ) and Trembling Aspen ( <i>Populus tremuloides</i> ). Shrub layer dominated by Speckled Alder ( <i>Alnus incana</i> ) and Wild Raisin ( <i>Viburnum nudum</i> ). Herbaceous species include Sensitive Fern ( <i>Onoclea sensibilis</i> ) and Marsh Marigold. Dragonfly and damselfly larvae observed in water. Water depth was 0.10 to 0.20 m. Very little standing water remained upon second visit. Area was approximately 10 m by 5 m in size.	Date, Time and Weather Conditions	April 28, 2015 21:20 – 21:23 Background Noise: 1 Minimum Temperature: 5.4 °C Precipitation: None	May 18, 2015 21:21 – 21:24 Background Noise: 3 Minimum Temperature: 10°C Precipitation: None	June 15 – 30, 2015 Background Noise: N / A Minimum Temperature: N / A Precipitation: N / A	May 13, 2015 9:27 – 9:57 Cloud Cover: 0% Temperature: 9°C Precipitation: None	July 1, 2015 13:49 – 14:10 Cloud Cover: 40% Temperature: 20°C Precipitation: None	Confirmed IWH.  Presence of breeding population of target salamander species (unidentified salamander sp.) confirmed.
		Results	No amphibians heard calling in feature.  Choruses of Spring Peepers (> 20) and Wood Frogs (> 20) heard calling in the far distance away from feature.	No amphibians heard calling in feature.  Chorus of Spring Peepers (> 20) heard calling in the far distance away from feature.	Equipment malfunction; no data recorded during third survey window.	One (1) unidentified salamander observed.	No amphibians observed.	
ABH-109 (Station AAS-S-M17-4)	Wetland dominated by grasses, with Narrow-leaved Meadowsweet ( <i>Spirea alba</i> ). Yellow Pond Lilies ( <i>Nuphar lutea</i> ) and White Pond Lilies present in pool. Size was approximately 5 m by 0.70 m, with a depth of 0.50 m. Pool was dry upon second visit; survey was completed in nearby watercourse.	Date, Time and Weather Conditions	April 28, 2015 21:20 – 21:23 Background Noise: 3 Minimum Temperature: 5.4 °C Precipitation: None	May 27, 2015 21:30 – 21:33 Background Noise: 3 Minimum Temperature: 10°C Precipitation: None	June 16, 2015 21:45 – 21:48 Background Noise: 3 Minimum Temperature: 15.3°C Precipitation: None	May 13, 2015 12:52 – 13:23 Cloud Cover: 5% Temperature: 13°C Precipitation: None	July 2, 2015 9:41 – 10:00 Cloud Cover: 0% Temperature: 18°C Precipitation: None	Confirmed IWH.  Presence of breeding populations of three (3) or more target frog / toad species (American Bullfrog, Gray Treefrog, Spring Peeper) with at least 20 individuals confirmed.  Presence of breeding population of American Bullfrog confirmed.
		Results	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.	Chorus of Spring Peepers (> 20 individuals) and two (2) Gray Treefrogs heard calling in the near distance within feature.	Five (5) American Bullfrogs heard calling in the near distance within feature.	One (1) adult Leopard Frog observed.	No amphibians observed.	
ABH-115 (Station AAS-S-M07-9)	Sedge marsh with open water; approximately 35 m by 20 m in size. Scattered emergent vegetation present. Water depth of approximately 1 m.	Date, Time and Weather Conditions	April 28, 2015 21:20 – 21:23 Background Noise: 1 Minimum Temperature: 5.4 °C Precipitation: None	May 27, 2015 21:30 – 21:33 Background Noise: 3 Minimum Temperature: 10°C Precipitation: None	June 29, 2015 22:17 – 22:20 Background Noise: 1 Minimum Temperature: 14.2°C Precipitation: None	May 13, 2015 16:15 – 16:45 Cloud Cover: 0% Temperature: 14°C Precipitation: None	July 2, 2015 12:17 – 13:19 Cloud Cover: 0% Temperature: 16°C Precipitation: None	Confirmed IWH.  Presence of breeding populations of three (3) or more target frog / toad species (American Bullfrog, Green Frog, Spring Peeper) with at least 20 individuals confirmed.  Presence of breeding population of American Bullfrog confirmed.
		Results	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.	Chorus of Spring Peepers (> 20 individuals) heard calling in feature.	Two (2) Green Frogs and three (3) American Bullfrog heard calling in feature.  Also heard one (1) Gray Treefrog calling in the far distance away from feature.	Five (5) adult Spring Peepers and one (1) Green Frog adult heard calling.	No amphibians observed.	
ABH-160 (Station AAS-S-M24-10)	Fen dominated by Lakebank Sedge ( <i>Carex lacustris</i> ), with Tamarack present; approximately 250 m by 50 m in size. Adjacent to alder thicket swamp. Standing water depth of 0.60 m upon first visit, but was reduced to 0.15 m by second visit.	Date, Time and Weather Conditions	April 28, 2015 21:20 – 21:23 Background Noise: 0 Minimum Temperature: 5.4 °C Precipitation: None	May 27, 2015 21:30 – 21:33 Background Noise: 0 Minimum Temperature: 10 °C Precipitation: None	June 15 – June 30, 2015 Background Noise: N / A Minimum Temperature: N / A Precipitation: N / A	May 13, 2015 12:07 – 12:38 Cloud Cover: 0% Temperature: 16°C Precipitation: None	July 2, 2015 9:49 – 10:25 Cloud Cover: 0% Temperature: 14°C Precipitation: None	Confirmed IWH.  Presence of breeding populations of three (3) or more target frog / toad species (Wood Frog, Spring Peeper, and Green Frog) with at least 20 individuals confirmed.
		Results	Choruses of Wood Frogs (> 20 individuals) and Spring Peepers (> 20 individuals) heard calling.	Chorus of Spring Peepers (> 20 individuals) heard calling in the near distance within feature.	Equipment malfunction; no data recorded during third survey window.	Two (2) adult Green Frogs and one (1) adult Spring Peeper observed.	One (1) Spring Peeper larva observed.	

**Table 3-11: 2015 Pre-construction EOI Survey Results for Candidate Amphibian Breeding Habitat (Wetland and Woodland) Features**

Feature ID	Habitat Assessment		Nocturnal Call Surveys Targeting Vocalizing Amphibians			Salamander Surveys		Determination of Importance
			Round 1	Round 2	Round 3	Adult and Egg Mass Surveys	Larval Survey	
ABH-192 (Station AAS-S- M48-7)	Swamp dominated by alder and Sphagnum moss; White Spruce ( <i>Picea glauca</i> ), White Pine ( <i>Pinus strobus</i> ), sedges, and Canada Bluejoint ( <i>Calamagrostis canadensis</i> ) also present. Site is adjacent to rock barren. Area surveyed was approximately 35 m by 10 m in size; water depth of 0.25 m. Pool surveyed upon final visit was 5 m by 5 m, with depth of 1 m. Some fallen branches within pool.	<i>Date, Time and Weather Conditions</i>	April 28, 2015 21:20 – 21:23 Background Noise: 1 Minimum Temperature: 5.4°C Precipitation: None	May 15-30, 2015 Background Noise: N / A Minimum Temperature: N / A Precipitation: N / A	June 15-30, 2015 Background Noise: N / A Minimum Temperature: N / A Precipitation: N / A	April 27, 2015 10:45 – 10:50 Cloud Cover: 35% Temperature: 6°C Precipitation: None  May 13, 2015 14:49 – 15:10 Cloud Cover: 0% Temperature: 12°C Precipitation: None	July 2, 2015 9:48 – 9:59 Cloud Cover: 0% Temperature: 20°C Precipitation: None	Confirmed as not IWH.  Below threshold of 20 breeding individuals of three (3) or more target species and no American Bullfrogs or salamanders observed in feature.
		<i>Results</i>	One (1) Wood Frog and chorus of Spring Peepers (> 20 individuals) heard calling in the near distance within feature.	Equipment malfunction; no data recorded during second survey window.	Equipment malfunction; no data recorded during third survey window.	No amphibians observed.	No amphibians observed.	

### 3.4.3.9 Mast Producing Areas

A total of four (4) Candidate Mast Producing Area features were identified through the Site Investigation and carried forward to the EOI. Of these, one (1) feature (MPA-001) was not evaluated for importance because it was located on the On-reserve portions of the Route A Transmission Line, which is no longer being considered. For this reason, this feature was eliminated from further consideration in the NHA. For the remaining three (3) Candidate Mast Producing Area features, pre-construction EOI surveys were completed on October 15 and 16, 2015. A summary of the results from these surveys are provided in **Table 3-12**. Field notes for these pre-construction EOI surveys are provided in **Appendix C**. Feature MPA-002 was confirmed as IWH as it contained > 50% of mast producing shrubs and was carried forward to the EIS phase of this NHA. The remaining two (2) features (MPA-003 and MPA-004) did not meet the criteria for importance as outlined in the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRF, 2012b) and therefore were not carried forward to the EIS.

**Table 3-12: Pre-construction EOI Survey Results for Candidate Mast Producing Areas**

Feature ID	Date, Survey Start and End Times, Weather Condition	Vegetation Composition	Prism Sweep Results	Determination of Importance
MPA-002	October 16, 2015 10:18 – 11:23 Wind (Beaufort Scale): 1 Cloud Cover: 100 % Temperature: 6°C Precipitation: Heavy rain	Feature FO-129 was composed of White Pine, Red Maple, Trembling Aspen, Spruce ( <i>Picea sp.</i> ), and Black Ash ( <i>Fraxinus nigra</i> ). No mast-producing tree species were present, but the shrub layer was dominated by Beaked Hazel, which also produces mast.	No prism sweeps were conducted because the feature did not contain mast producing trees.	Confirmed as IWH.  Ground layer was composed of >50% of mast-producing shrub species.
MPA-003	October 15, 2015 13:58 – 15:32 Wind (Beaufort Scale): 2 Cloud Cover: 100 % Temperature: 10°C Precipitation: Light rain	Feature FO-057 was dominated by White Pine ( <i>Pinus strobus</i> ) and Red Maple ( <i>Acer rubrum</i> ), with some Red Oak and Red Pine ( <i>Pinus resinosa</i> ) present. There were few Red Oak in the canopy with a DBH of 40 cm or greater. Red Oak primarily occupied the sub-canopy and shrub layers.	Neither Red Oak nor American Beech meet or exceed 50% of the trees in prism sweeps.	Confirmed as not IWH.  Feature lacked required composition of >50% Red Oak and/ or American Beech. Additionally, the feature did not include at least ten (10) American Beech and / or Red Oak trees in the 40 cm to 65 cm DBH range.
MPA-004	October 16, 2015 10:14 – 10:16 Wind (Beaufort Scale): 0 Cloud Cover: 100% Temperature: 5°C Precipitation: Light rain	Feature FO-067 was dominated by White Pine, Red Maple, and Trembling Aspen ( <i>Populus tremuloides</i> ).	No prism sweeps were conducted because the feature did not contain mast producing trees.	Confirmed as not IWH.  Feature did not contain mast producing species.

### 3.4.4 Habitat for Species of Conservation Concern

#### 3.4.4.1 Marsh Bird Breeding Habitat

A total of 49 Candidate Marsh Bird Breeding Habitat features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.4.1**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.

### 3.4.4.2 Habitats of Specific Species of Conservation Concern (SOCC)

#### 3.4.4.2.1 Black Tern

A total of seven (7) Candidate Black Tern Habitat features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.4.2.1**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.

#### 3.4.4.2.2 Eastern Wood-pewee

A total of 29 Candidate Eastern Wood-pewee Habitat features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.4.2.2**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.

#### 3.4.4.2.3 Prairie Warbler

A total of 86 Candidate Precambrian Rock Barren Features were identified as suitable habitat for Prairie Warbler through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.4.2.3**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.

#### 3.4.4.2.4 Wood Thrush

A total of 29 Candidate Wood Thrush Habitat features were identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.4.2.4**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.

#### 3.4.4.2.5 Yellow Rail

A total of 49 Candidate Marsh Bird Breeding Habitat Features were identified as potentially suitable habitat for Yellow Rail through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.4.2.5**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.

#### 3.4.4.2.6 Dragonfly SOCC – Horned Clubtail and Mottled Darner

A total of 72 Candidate SOCC Dragonfly Habitat features were identified as potentially suitable habitat for Horned Clubtail and Mottled Darner through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS. Pre-construction EOI surveys may be completed in 2016 to evaluate the importance of these features as described in **Section 2.4.4.2.6**.



#### 3.4.4.2.7 Pine Imperial Moth

A total of 61 Candidate IWH features for Pine Imperial Moth were identified through the Site Investigation and carried forward to the EOI. No pre-construction EOI surveys are required as all of these features were treated as important. All 61 of these IWH features were carried forward to the EIS.

#### 3.4.4.2.8 Common Five-lined Skink (Southern Shield population)

A total of 86 Candidate Precambrian Rock Barren features were identified as potentially suitable nesting habitat for Five-lined Skink through the Site Investigation and carried forward to the EOI. All of these features were treated as important for lizard nesting habitat and carried forward to the EIS. No additional pre-construction EOI surveys are required to evaluate importance of these features.

#### 3.4.4.2.9 Eastern Ribbonsnake

A total of 98 Candidate Reptile Hibernacula features were identified as potentially suitable habitat for Eastern Ribbonsnake through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.4.2.9**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.

#### 3.4.4.2.10 Milksnake

A total of 98 Candidate Reptile Hibernacula Features were identified as potentially suitable habitat for Milksnake through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.4.2.10**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.

#### 3.4.4.2.11 Northern Map Turtle

A total of 65 Candidate Turtle Wintering Area features and 34 Candidate Turtle Nesting Area features were identified as potentially suitable habitat for Northern Map Turtle through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.4.2.11**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.

#### 3.4.4.2.12 Snapping Turtle

A total of 65 Candidate Turtle Wintering Area features and 34 Candidate Turtle Nesting Area features were identified as potentially suitable habitat for Snapping Turtle through the Site Investigation and carried forward to the EOI. For the purposes of this submission, these Candidate IWH features were treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI surveys as described in **Section 2.4.4.2.12**. As described therein, pre-construction EOI surveys may also be completed in 2016 to evaluate the importance of the remaining features which cannot be evaluated based on surveys completed to date.

### 3.4.5 Generalized Candidate Important Wildlife Habitat

The following potential IWH features were identified within 120 m of the HIWEC location but not within 120 m of qualifying HIWEC infrastructure, and were therefore carried forward to the EOI as Generalized Candidate IWH:

- Shorebird Migratory Stopover Areas;
- Bat Maternity Colonies;
- Turtle Wintering Areas;
- Reptile Hibernacula;
- Precambrian Rock Barren;
- Bog;
- Waterfowl Nesting Areas;
- Woodland Raptor Nesting Habitat;
- Turtle and Lizard Nesting Areas;
- Seeps and Springs;
- Amphibian Breeding Habitat (Woodland and Wetland);
- Mast Producing Areas;
- Marsh Bird Breeding Habitat; and
- Habitat for Specific SOCC, including:
  - Eastern Wood-pewee;
  - Prairie Warbler;
  - Wood Thrush;
  - Yellow Rail;
  - Horned Clubtail;
  - Mottled Darner;
  - Pine Imperial Moth;
  - Eastern Ribbonsnake;
  - Milksnake;
  - Northern Map Turtle; and
  - Snapping Turtle.

In accordance with provincial guidance (MNR, 2012a), all Generalized Candidate IWH features were treated as important and carried forward to the EIS.

## 3.5 Federal Species at Risk

Species listed as Endangered and Threatened under Schedule 1 of SARA are protected and may require permits and / or authorization administered by EC-CWS if the proposed HIWEC negatively affects the species or its habitat. Permit requirements, if any, will be determined in consultation with EC-CWS. There is no provincial requirement or guidance for completing an NHA on Federal Species at Risk, however these species are included in the NHA to be complete in providing the information obtained for these species.

A total of 19 Federal Species at Risk, including one restricted species<sup>4</sup>, were identified as potentially occurring within the HIWEC study area through the Records Review and Site Investigation. The results of surveys targeting specific Federal SAR are summarized below.

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4. *Records of Species At Risk considered to be restricted are not being made public due to the threat of poaching experienced by these species. These records will be provided under a separate cover to the Ministry of Natural Resources and Forestry (MNR) and / or Environment Canada – Canadian Wildlife Service (EC-CWS) for permitting purposes.*

### 3.5.1 Western Chorus Frog (Great Lakes / St. Lawrence – Canadian Shield Population)

The presence / absence, abundance and distribution of this species was assessed as part of Amphibian Breeding Habitat (Woodland and Wetland). The results of amphibian surveys are described in **Section 3.4.3.7**. No confirmed evidence of breeding Western Chorus Frog was recorded within the HIWEC study area. Consequently, this species was not carried forward to the EIS.

### 3.5.2 Canada Warbler

Breeding bird surveys to confirm the presence / absence, abundance and distribution of this species in the HIWEC study area were completed in 2011, 2012, 2013 and 2015. The results of the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013 are provided in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review). The results of breeding bird surveys completed in 2015 are summarized in **Appendix C**.

A total of 34 Canada Warblers were recorded through the breeding bird surveys and incidental wildlife observations in 2015. The locations where Canada Warbler was observed within the HIWEC study area in 2011, 2012, 2013 and 2015 are mapped on **Figure 3-2**. This species is relatively common and has a wide distribution across the HIWEC study area and therefore was carried forward to the EIS.

### 3.5.3 Chimney Swift

Breeding bird surveys to confirm the presence / absence, abundance and distribution of this species within the HIWEC study area were completed in 2011, 2012, 2013 and 2015. The results of the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013 are provided in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review). The results of breeding bird surveys completed in 2015 are summarized in **Appendix C**.

Three (3) Chimney Swifts were recorded during the spring passerine migration surveys completed by LGL in 2012 as described in the *Summary of 2011, 2012 and 2013 Passerine Migration Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015c; refer to Appendix A of the Records Review); however, Chimney Swift was not recorded during any of the breeding bird surveys. Since there is no breeding evidence for this species within the HIWEC study area and the three (3) individuals recorded were likely just migrating through, Chimney Swift was not carried for the EIS phase of this NHA.

### 3.5.4 Common Nighthawk

Crepuscular breeding bird surveys to confirm the presence / absence, abundance and distribution of this species within the HIWEC study area were completed in 2011, 2013 and 2015. The results of the crepuscular breeding bird surveys completed by LGL and Stantec in 2011 and 2013, respectively, are provided in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review). Incidental observations of Common Nighthawk were also recorded in 2012 during breeding bird surveys (AECOM, 2015e; refer to Appendix A of the Records Review).

The results of the crepuscular breeding bird surveys completed in 2015 are summarized in **Table 3-13**. Various levels of breeding evidence for Common Nighthawk were detected at 17 of the 32 stations. At ten (10) stations, no Common Nighthawk calls were detected. Equipment malfunction at some stations resulted in no data for some nights; in this situation, alternative sampling dates within the recommended or secondary survey windows were chosen and the data analyzed, when possible. Five (5) stations had no data for any dates within recommended or secondary survey windows and therefore no available data could be analyzed.

Figure 3-2: Canada Warbler Observations 2011-2013, 2015



**Table 3-13: 2015 Pre-construction Crepuscular Breeding Bird Survey Results for Common Nighthawk**

Station		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence
CR-N-M38-29	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	None detected.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least three (3) individuals.	Detected "peent" calls produced by at least one (1) individual.	Detected at least two (2) simultaneously produced "peent" calls at dusk.	
CR-N-M19-27	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	None detected.	Detected infrequent "peent" calls and booming noise of a territorial or courtship flight display produced from likely the same one (1) individual.	No data available due to equipment malfunction.	None detected.	Detected "peent" calls and booming noise of a territorial or courtship flight display at dusk. Vocalizations produced by at least one (1) individual.	
CR-N-M50-21	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 5, 2015 5:01-5:04; 21:38-21:41 Min. Temp. (°C): 10 Total Precip. (mm): 4.3 Past full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	Detected a few "peent" calls at dusk; likely from the same one (1) individual.	
CR-N-M49-22	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 5, 2015 5:01-5:04; 21:38-21:41 Min. Temp. (°C): 10 Total Precip. (mm): 4.3 Past full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	None detected.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls likely produced by the same one (1) individual at dusk.	
CR-N-M9-18	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 5, 2015 5:01-5:04; 21:38-21:41 Min. Temp. (°C): 10 Total Precip. (mm): 4.3 Past full-moon visible before sunrise.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least one (1) individual.	Detected a few "peent" calls produced by at least one (1) individual at dusk.	None detected.	Detected "peent" calls produced by at least one (1) individual at dusk.	None detected.	
CR-N-M07-25	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	No data available due to equipment malfunction.	No data available due to equipment malfunction.	Detected almost simultaneous "peent" calls produced by at least four (4) individuals (one pair was near the acoustic monitor while the other pair was calling from a greater distance). Booming noise of a territorial or courtship flight display also detected.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least three (3) individuals.	
CR-N-M04-26	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Common Nighthawks detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected at morning. No data at dusk available due to equipment malfunction.	

**Table 3-13: 2015 Pre-construction Crepuscular Breeding Bird Survey Results for Common Nighthawk**

Station		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence
CR-S-M40-28	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 5, 2015 5:01-5:04; 21:38-21:41 Min. Temp. (°C): 10 Total Precip. (mm): 4.3 Past full-moon visible before sunrise.	June 8, 2015 5:00-5:03; 21:41-21:44 Min. Temp. (°C): 12 Total Precip. (mm): None Half-moon visible before sunrise.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	Detected "peent" calls and booming noise of a territorial or courtship flight display at dusk. Vocalizations produced by at least one (1) individual.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least one (1) individual.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least one (1) individual.	Detected "peent" calls produced by at least one (1) individual detected at morning.	None detected.	
CR-S M50-8	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Common Nighthawks detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M14-2	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 5, 2015 5:01-5:04; 21:38-21:41 Min. Temp. (°C): 10 Total Precip. (mm): 4.3 Past full-moon visible before sunrise.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	Detected "peent" calls of at least one (1) individual at dusk.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least one (1) individual.	Detected "peent" calls and booming noise of a territorial or courtship flight display at morning. Vocalizations produced by at least one (1) individual.	Detected "peent" calls produced by at least one (1) individual at morning.	None detected; high wind conditions at dusk may have reduced detectability.	
CR-S-M17-4	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Common Nighthawks detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-N-35-16	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	Detected variety of vocalizations / sounds including "peent" calls, kit notes, and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least one (1) individual.	Detected "peent" calls produced by at least one (1) individual.	None detected.	Detected "peent" calls produced by at least one (1) individual at dusk.	
CR-N-M46-20	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 4.3 Past full-moon visible before sunrise.	June 5, 2015 5:01-5:04; 21:38-21:41 Min. Temp. (°C): 10 Total Precip. (mm): 4.3 Past full-moon visible before sunrise.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	None detected.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least one (1) individual.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least one (1) individual.	
CR-N-M16-19	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	Detected "peent" calls produced by at least one (1) individual.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least one (1) individual.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least one (1) individual.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (1) individuals.	

**Table 3-13: 2015 Pre-construction Crepuscular Breeding Bird Survey Results for Common Nighthawk**

Station		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence
CR-N-M33-21	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least one (1) individual.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least one (1) individual.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	
CR-N-M11-15	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Common Nighthawks detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-N-M31-17	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	Detected "peent" calls produced by at least one (1) individual.	Detected "peent" calls produced by at least one (1) individual.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least three (3) individuals.	
CR-N-M28-12	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	
CR-N-M26-13	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	<i>Results</i>						
CR-N-M1-14	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	<i>Results</i>						
CR-S-M11-11	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	<i>Results</i>						
CR-S-M04-1	<i>Date, Survey Start and End Times, and Weather Conditions</i>	June 26, 2015 5:01-5:04; 21:47-21:50 Min. Temp. (°C): 13 Total Precip. (mm): None Past half-moon visible after sunset.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 28, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): 1.8 Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): 0 Near full moon after sunset.	June 30, 2015 5:03-5:06; 21:46-21:49 Min. Temp (°C): 15 Total Precip. (mm): 2.5 Full moon visible after sunset.	No Common Nighthawks detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M07-9	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Common Nighthawks detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	

**Table 3-13: 2015 Pre-construction Crepuscular Breeding Bird Survey Results for Common Nighthawk**

Station		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence
CR-S-M24-10	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 26, 2015 5:07-5:10; 21:29-21:32 Min. Temp. (°C): 9 Total Precip. (mm): 2.7 Half-moon visible after sunset.	May 27, 2015 5:06-5:09; 21:30-21:33 Min. Temp. (°C): 10 Total Precip. (mm): 0.8 Past half-moon visible after sunset.	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	May 30, 2015 5:04-5:07; 21:33-21:36 Min. Temp. (°C): 9 Total Precip. (mm): 1.6 Near full-moon visible after sunset.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	None detected.	None detected.	Detected "peent" calls produced by at least one (1) individual at morning.	None detected.	Detected "peent" calls produced by at least one (1) individual at dusk.	
CR-S-M31-3	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp. (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp. (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	None detected.	Detected "peent" calls produced by at least one individual at morning.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	Detected "peent" calls and booming noise of a territorial or courtship flight display. Vocalizations produced by at least two (2) individuals.	
CR-S-M34-5	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
CR-S-M01-23	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp. (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp. (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Common Nighthawks detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M46-24	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp. (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp. (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Common Nighthawk confirmed.
	<i>Results</i>	None detected.	Detected "peent" calls produced by at least one (1) individual at morning.	None detected.	Detected "peent" calls produced by at least one (1) individual at dusk.	None detected.	
CR-S-M48-7	<i>Date, Survey Start and End Times, Weather Condition and Moon Phase</i>	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
CR-A-M1-89	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp. (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp. (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Common Nighthawks detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-A-M1-90	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp. (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp. (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Common Nighthawks detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-A-M2-91	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp. (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp. (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Common Nighthawks detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	



The locations where Common Nighthawk was observed within the HIWEC study area in 2011, 2013 and 2015 are mapped on **Figure 3-3**. Across all surveyed years, numerous Common Nighthawks were recorded across the HIWEC study area and therefore this species was carried forward to the EIS.

A total of three (3) acoustic monitoring stations were selected to be calibrated on June 24, 2015. However two (2) of the selected acoustic monitors had an equipment malfunctions that were not apparent at the time of the calibration and no acoustic data was recorded to compare; acoustic data from the remaining site were analyzed. Field notes from the calibration are provided in **Appendix C**.

Generally, both the human observer and the acoustic monitor did not detect any crepuscular birds calling in the near vicinity of the station; however, the human observer heard Common Nighthawk and Eastern Whip-poor-will calls in the far distance that were not detected in the acoustic recordings. Regardless, the results from the acoustic recordings are considered sufficient for the purposes of this study to detect calling crepuscular birds. Given the health and safety risks for field staff conducting evening surveys within the HIWEC study area, the use of acoustic monitors is the best available method.

### 3.5.5 Golden-winged Warbler

Breeding bird surveys to confirm the presence / absence, abundance and distribution of this species within the HIWEC study area were completed in 2011, 2012, 2013, and 2015. The results of the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013 are provided in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review). The results of breeding bird surveys completed in 2015 are summarized in **Appendix C**. Golden-winged Warbler was not recorded in any of the breeding bird surveys and therefore this species was not carried forward to the EIS.

### 3.5.6 Least Bittern

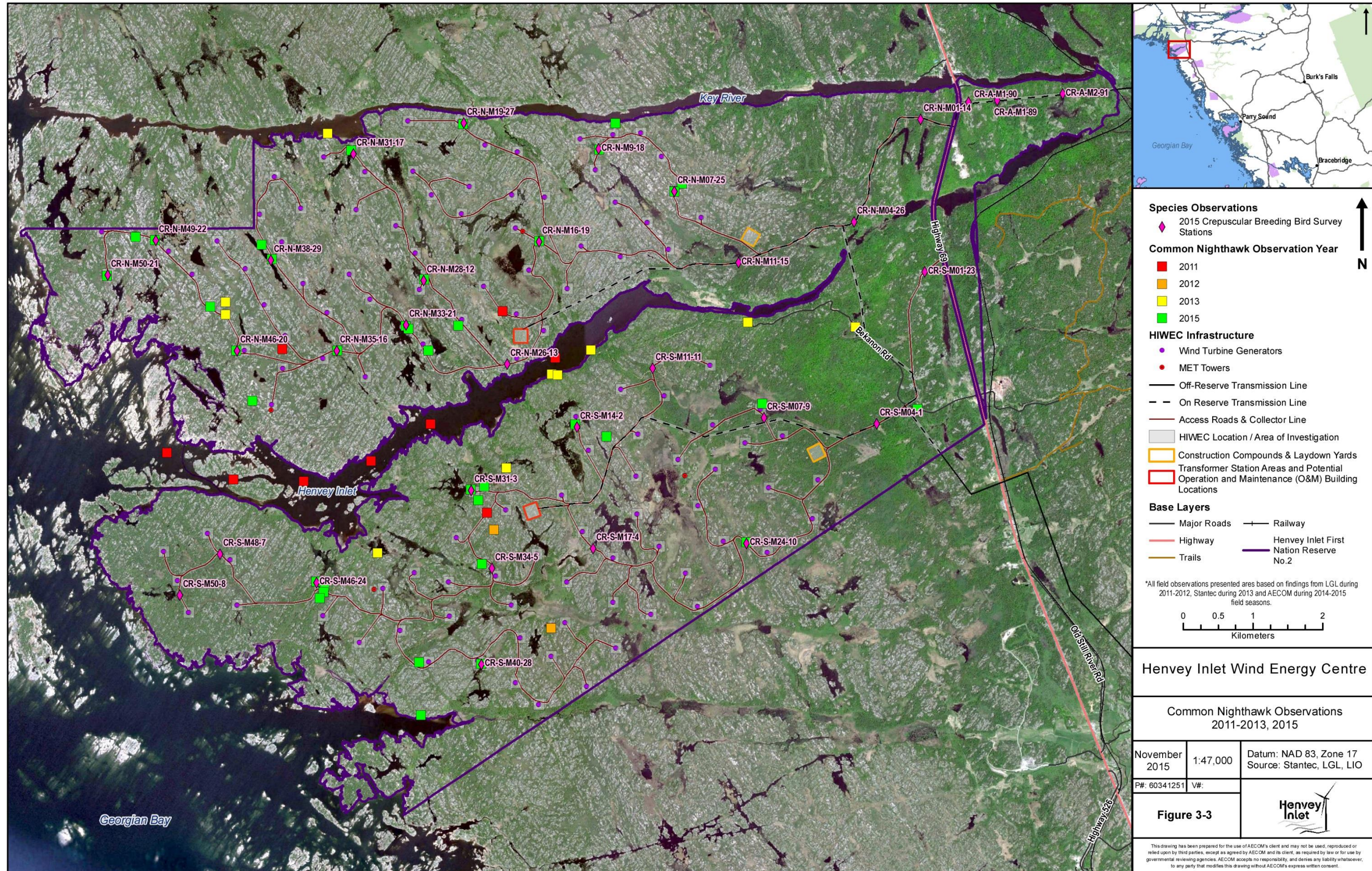
Breeding bird surveys to confirm the presence / absence, abundance and distribution of this species within the HIWEC study area were completed in 2011, 2012, 2013, and 2015. The results of the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013 are provided in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review). The results of breeding bird surveys completed in 2015 are summarized in **Appendix C**. Least Bittern was not recorded during any of the breeding bird surveys.

In addition, species-specific surveys for Least Bittern, which used call-playback methods, were completed at four (4) representative sites (including one (1) site with two (2) vantage points) within suitable habitat in the HIWEC study area on May 28 and 29, 2015. The results of these surveys are summarized in **Table 3-14**. Field notes for these surveys are provided in **Appendix C**. Least Bittern was not recorded during these targeted surveys therefore this species was not carried forward to the EIS.

### 3.5.7 Olive-sided Flycatcher

Breeding bird surveys to confirm the presence / absence, abundance and distribution of this species within the HIWEC study area were completed in 2011, 2012, 2013, and 2015. The results of the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013 are provided in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review). The results of breeding bird surveys completed in 2015 are summarized in **Appendix C**.

Figure 3-3: Common Nighthawk Observations 2011-2013, 2015



**Table 3-14: Pre-construction Species-specific Survey Results for Least Bittern**

Station	Habitat Description		Round 1	Round 2	Presence / Absence
LB-N-M25-1	Marsh dominated by cattails and <i>Carex aquatilis</i> . Some areas of open water.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 29, 2015 7:15 – 7:30 Wind (Beaufort Scale): 0 Cloud Cover: 30 % Temperature: 18°C Precipitation: None	June 29, 2015 11:03 – 11:18 Wind (Beaufort Scale): 2 Cloud Cover: 60% Temperature: 16°C Precipitation: None	No Least Bitterns detected at this station.
		<i>Results</i>	No Least Bittern heard calling.	No Least Bittern heard calling.	
LB-S-M2-6	Dense cattail marsh with interspersed areas of open water. Traffic from Highway 69 is loud.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 29, 2015 6:18 – 6:41 Wind (Beaufort Scale): 2 Cloud Cover: 60 % Temperature: 12°C Precipitation: None	July 2, 2015 Start and end time not recorded Wind (Beaufort Scale): not recorded Cloud Cover: not recorded Temperature: not recorded Precipitation: not recorded	No Least Bitterns detected at this station.
		<i>Results</i>	No Least Bittern heard calling.	No Least Bittern heard calling.	
LB-S-M33-3	Shallow aquatic marsh dominated by Lakebank Sedge.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 28, 2015 8:43 – 9:00 Wind (Beaufort Scale): 3 Cloud Cover: 40 % Temperature: 16°C Precipitation: None	June 29, 2015 8:35 – 8:50 Wind (Beaufort Scale): 1 Cloud Cover: 80 % Temperature: 14°C Precipitation: None	No Least Bitterns detected at this station.
		<i>Results</i>	No Least Bittern heard calling.	No Least Bittern heard calling.	
LB-S-M35-4	Fen dominated by Leatherleaf, Sweet Gale and graminoids. Occasional snags.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 28, 2015 7:30 – 7:45 Wind (Beaufort Scale): 0 Cloud Cover: 80 % Temperature: 18°C Precipitation: None	June 29, 2015 7:35 – 7:50 Wind (Beaufort Scale): 2 Cloud Cover: 75 % Temperature: 14°C Precipitation: None	No Least Bitterns detected at this station.
		<i>Results</i>	No Least Bittern heard calling.	No Least Bittern heard calling.	
LB-S-M35-5	Shrub fen dominated by Leatherleaf and Sweet Gale. Some graminoids present. Some areas of open water. Abundant snags.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 28, 2015 7:00 – 7:15 Wind (Beaufort Scale): 1 Cloud Cover: 80 % Temperature: 16°C Precipitation: None	June 29, 2015 7:05 – 7:20 Wind (Beaufort Scale): 1 Cloud Cover: 75 % Temperature: 14°C Precipitation: None	No Least Bitterns detected at this station.
		<i>Results</i>	No Least Bittern heard calling.	No Least Bittern heard calling.	

Several observations of Olive-sided Flycatcher were recorded through the breeding bird surveys conducted in 2011, 2012 and 2013 as well as incidental observations from all surveyed years, including 2015 (refer to **Figure 3-4** for locations). The distribution of this species is sparse and appears to be limited to the eastern half of the HIWEC study area. Given that there are several records of Olive-sided Flycatcher within the HIWEC study area, this species was carried forward to the EIS.

### 3.5.8 Eastern Whip-poor-will

Crepuscular breeding bird surveys to confirm the presence / absence, abundance and distribution of this species within the HIWEC study area were completed in 2011, 2013 and 2015. The results of the crepuscular breeding bird surveys completed by LGL and Stantec in 2011 and 2013, respectively, are provided in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review). Incidental observations of Eastern Whip-poor-will were also recorded in 2011, 2012 and 2013 (AECOM, 2015e; refer to Appendix A of the Records Review).

The results of the crepuscular breeding bird surveys completed in 2015 are summarized in **Table 3-15**. Various levels of breeding evidence for Eastern Whip-poor-will were detected at 19 of the 32 stations. At eight (8) stations, no Eastern Whip-poor-will calls were detected. Equipment malfunction at some stations resulted in no data for some nights; in this situation, alternative sampling dates within the recommended or secondary survey windows were chosen and the data analyzed, when possible. Five (5) stations had no data for any dates within recommended or secondary survey windows and therefore no available data could be analyzed.

The locations where Eastern Whip-poor-will was observed within the HIWEC study area in 2011, 2013 and 2015 are mapped on **Figure 3-5**. Across all surveyed years, numerous Eastern Whip-poor-will were recorded across the HIWEC study area and therefore this species was carried forward to the EIS.

The results from the acoustic monitor calibration for Eastern Whip-poor-will are summarized in **Section 3.4.3.8**.

### 3.5.9 Little Brown Bat

Bat acoustic monitoring surveys to confirm the presence / absence and abundance of Little Brown Bat were completed by LGL and Stantec in 2011, 2012 and 2013, as described in the *Summary of 2011, 2012 and 2013 Bat Acoustic Monitoring Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015g; refer to Appendix A of the Records Review). The presence of Little Brown Bat was confirmed during the 2011 and 2012 surveys, and possible during the 2013 surveys. Therefore, this species was carried forward to the EIS.

### 3.5.10 Northern Myotis

Bat acoustic monitoring surveys to confirm the presence / absence and abundance of Northern Myotis were completed by LGL and Stantec in 2011, 2012 and 2013, as described in the *Summary of 2011, 2012 and 2013 Bat Acoustic Monitoring Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015g; refer to Appendix A of the Records Review). The presence of Northern Myotis was confirmed during the 2011 and 2012 surveys, and possible during the 2013 surveys. Therefore, this species was carried forward to the EIS.

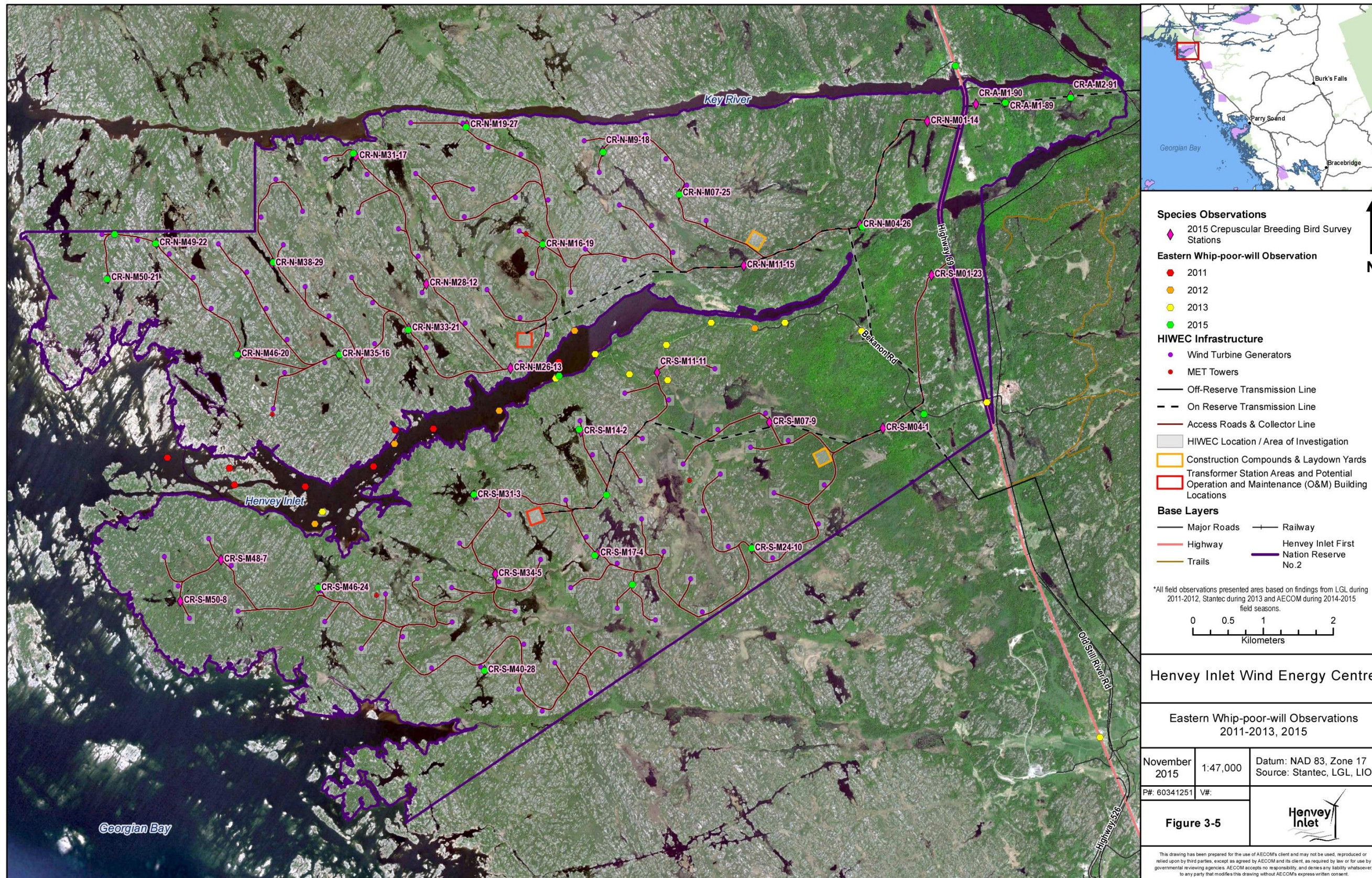
### 3.5.11 Tri-colored Bat

Bat acoustic monitoring surveys to confirm the presence / absence and abundance of Tri-colored Bat were completed by LGL and Stantec in 2011, 2012 and 2013, as described in the *Summary of 2011, 2012 and 2013 Bat Acoustic Monitoring Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015g; refer to Appendix A of the Records Review). The presence of Tri-colored Bat was confirmed during the 2011 and 2012 surveys, and possible during the 2013 surveys. Therefore, this species was carried forward to the EIS.

Figure 3-4: Olive-sided Flycatcher Observations 2011-2013, 2015



Figure 3-5: Eastern Whip-poor-will Observations 2011-2013, 2015



**Table 3-15: 2015 Pre-construction Crepuscular Breeding Bird Survey Results for Eastern Whip-poor-will**

Station		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence
CR-N-M38-29	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	None detected.	Detected at least one (1) individual singing at dusk.	Detected at least one (1) individual singing at dusk.	None detected.	None detected.	
CR-N-M19-27	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	Detected at least one (1) individual singing.	Detected at least two (2) individuals singing simultaneously.	No data available due to equipment malfunction.	Detected at least two (2) individuals singing simultaneously.	Detected at least one (1) individual singing.	
CR-N-M50-21	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 5, 2015 5:01-5:04; 21:38-21:41 Min. Temp. (°C): 10 Total Precip. (mm): 4.3 Past full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	Detected at least one (1) individual singing at dusk.	Detected at least one (1) individual singing.	Detected at least one (1) individual singing.	Detected at least one (1) individual singing at dusk.	None detected.	
CR-N-M49-22	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 5, 2015 5:01-5:04; 21:38-21:41 Min. Temp. (°C): 10 Total Precip. (mm): 4.3 Past full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	Detected at least one (1) individual singing at dusk.	Detected at least two (2) individuals singing.	Detected at least one (1) individual singing.	None detected.	None detected.	
CR-N-M09-18	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 5, 2015 5:01-5:04; 21:38-21:41 Min. Temp. (°C): 10 Total Precip. (mm): 4.3 Past full-moon visible before sunrise.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	None detected.	None detected.	Detected at least two (2) individuals singing.	Detected at least one (1) distant singing individual at dusk.	Detected at least one (1) individual singing.	
CR-N-M07-25	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	No data available due to equipment malfunction.	No data available due to equipment malfunction.	Detected at least one (1) individual singing at dusk.	Detected at least one (1) individual singing at morning.	Detected at least one (1) individual singing at dusk.	
CR-N-M04-26	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	Detected at least one (1) individual singing at dusk.	Detected at least one (1) singing individual.	Detected at least one (1) individual singing near acoustic monitor.	Detected at least two (2) individuals singing at dusk.	None detected at morning. No data at dusk available due to equipment malfunction.	
CR-S-M40-28	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 5, 2015 5:01-5:04; 21:38-21:41 Min. Temp. (°C): 10 Total Precip. (mm): 4.3 Past full-moon visible before sunrise.	June 8, 2015 5:00-5:03; 21:41-21:44 Min. Temp. (°C): 12 Total Precip. (mm): None Half-moon visible before sunrise.	Presence of Whip-poor-will confirmed.
	<i>Results</i>	Detected at least one (1) individual singing at dusk.	Detected at least one (1) individual singing at dusk	Detected at least one (1) individual singing.	None detected; however, high wind conditions at dusk.	Detected at least one (1) individual singing at dusk.	

**Table 3-15: 2015 Pre-construction Crepuscular Breeding Bird Survey Results for Eastern Whip-poor-will**

Station		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence
CR-S-M50-8	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Eastern Whip-poor-wills detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M14-2	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 5, 2015 5:01-5:04; 21:38-21:41 Min. Temp. (°C): 10 Total Precip. (mm): 4.3 Past full-moon visible before sunrise.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	Detected at least one (1) individual singing.	Detected at least one (1) individual singing at dusk.	Detected at least two (2) individuals singing at dusk.	Detected at least one (1) individual singing.	Detected at least one (1) individual singing at morning.	
CR-S-M17-4	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	None detected.	Detected at least one (1) individual singing during morning survey.	Detected at least one (1) individual singing at dusk.	Detected at least one (1) individual singing.	Detected at least one (1) individual singing.	
CR-N-35-16	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	None detected.	None detected.	Detected at least one (1) individual singing at dusk.	None detected.	Detected at least one (1) individual singing.	
CR-N-M46-20	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 5, 2015 5:01-5:04; 21:38-21:41 Min. Temp. (°C): 10 Total Precip. (mm): 4.3 Past full-moon visible before sunrise.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	Detected at least one (1) individual singing at morning.	Detected at least one (1) individual singing at dusk.	Detected at least one (1) individual singing at dusk.	None detected.	None detected; high wind conditions at dusk may have reduced detectability.	
CR-N-M16-19	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	Detected at least one (1) individual singing.	Detected at least one (1) individual singing.	Detected at least one (1) individual singing.	None detected.	None detected.	
CR-N-M33-21	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	None detected.	Faint song detected at morning.	None detected.	None detected.	None detected.	
CR-N-M11-15	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	None detected.	None detected.	None detected.	Detected at least one (1) individual singing.	Detected at least one (1) individual singing at morning.	
CR-N-M31-17	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	Detected at least one (1) individual singing at morning.	Detected at least one (1) individual singing at morning.	None detected.	Detected at least one (1) individual singing at night.	None detected.	



**Table 3-15: 2015 Pre-construction Crepuscular Breeding Bird Survey Results for Eastern Whip-poor-will**

Station		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence
CR-N-M28-12	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Eastern Whip-poor-wills detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-N-M26-13	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	<i>Results</i>						
CR-N-M1-14	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	<i>Results</i>						
CR-S-M11-11	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	<i>Results</i>						
CR-S-M04-1	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	June 26, 2015 5:01-5:04; 21:47-21:50 Min. Temp. (°C): 13 Total Precip. (mm): None Past half-moon visible after sunset.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 28, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): 1.8 Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon after sunset.	June 30, 2015 5:03-5:06; 21:46-21:49 Min. Temp (°C): 15 Total Precip. (mm): 2.5 Full moon visible after sunset.	No Eastern Whip-poor-wills detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M07-9	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Eastern Whip-poor-wills detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M24-10	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 26, 2015 5:07-5:10; 21:29-21:32 Min. Temp. (°C): 9 Total Precip. (mm): 2.7 Half-moon visible after sunset.	May 27, 2015 5:06-5:09; 21:30-21:33 Min. Temp. (°C): 10 Total Precip. (mm): 0.8 Past half-moon visible after sunset.	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	May 30, 2015 5:04-5:07; 21:33-21:36 Min. Temp (°C): 9 Total Precip. (mm): 1.6 Near full-moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	None detected.	Detected at least one (1) individual singing.	None detected.	None detected.	None detected.	
CR-S-M31-3	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	Detected at least one (1) individual singing at morning.	None detected.	Detected at least one (1) individual singing.	None detected.	None detected.	
CR-S-M34-5	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	<i>Results</i>						
CR-S-M01-23	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Eastern Whip-poor-wills detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M46-24	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 4, 2015 5:02-5:05; 21:38-21:41 Min. Temp. (°C): 11 Total Precip. (mm): 12.6 Full-moon visible before sunrise.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	Presence of Eastern Whip-poor-will confirmed.
	<i>Results</i>	None detected.	Detected at least one (1) individual singing.	Detected at least two (2) individuals singing at dusk.	Detected at least one (1) individual singing.	None detected.	

**Table 3-15: 2015 Pre-construction Crepuscular Breeding Bird Survey Results for Eastern Whip-poor-will**

Station		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence
CR-S-M48-7	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	<i>Results</i>						
CR-A-M1-89	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Eastern Whip-poor-wills detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-A-M1-90	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Eastern Whip-poor-wills detected at this station.
	<i>Results</i>	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-A-M2-91	<i>Date, Survey Start and End Times, Weather Conditions and Moon Phases</i>	May 28, 2015 5:06-5:09; 21:31-21:34 Min. Temp. (°C): 11 Total Precip. (mm): None Near full-moon visible after sunset.	May 29, 2015 5:05-5:08; 21:32-21:35 Min. Temp. (°C): 11 Total Precip. (mm): 4 Near full-moon visible after sunset.	June 2, 2015 5:03-5:06; 21:36-21:39 Min. Temp. (°C): 10 Total Precip. (mm): None Full-moon visible before sunrise and after sunset.	June 27, 2015 5:01-5:04; 21:47-21:50 Min. Temp (°C): 15 Total Precip. (mm): None Near full moon visible after sunset.	June 29, 2015 5:02-5:05; 21:47-21:50 Min. Temp (°C): 14 Total Precip. (mm): None Near full moon visible after sunset.	No Eastern Whip-poor-wills detected at this station.
		None detected.	None detected.	None detected.	None detected.	None detected.	

### 3.5.12 Branched *Bartonia*

A total of 52 bog vegetation communities were searched to confirm the presence / absence, abundance and distribution of Branched *Bartonia* within the HIWEC location. These surveys were completed by qualified AECOM Biologists from September 14-17, 2015. The results of the Branched *Bartonia* surveys completed in 2015 are summarized in **Table 3-16** and the field notes for these species specific surveys are provided in **Appendix C**.

Based on the NHIC element occurrences, there are 17 records of Branched *Bartonia* in Ontario within the Muskoka and Parry Sound Districts. The northern-most record is > 80 km south of the HIWEC study area. During the 2015 Branched *Bartonia* surveys, approximately 50 hours were spent between three (3) to five (5) teams, each consisting of two field staff members, searching for Branched *Bartonia* in the 52 bog features identified within the HIWEC location. This species was not recorded at any of the identified bog features; nor was Branched *Bartonia* identified during previous ELC surveys conducted in 2013 by Stantec in the HIWEC study area as described in the *Summary of 2013 Ecosite Classification and Rare Flora Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015h). Furthermore, according to Jeremy Rouse, Management Biologist at the MNR Parry Sound District, Branched *Bartonia* does not occur north of Parry Sound (Jeremy Rouse, personal communication, November 5, 2015). Taking this into consideration in addition to the results of the rare flora surveys conducted in 2013 and the Branched *Bartonia* surveys in 2015, there is sufficient evidence to confirm the absence of Branched *Bartonia* from the HIWEC location. Therefore, this species was not carried forward to the EIS phase of this NHA.

### 3.5.13 Blanding's *Turtle*

Species-specific surveys to confirm the presence / absence, abundance and distribution of this species within the HIWEC study area were completed in 2011, 2012, 2013 and 2015. The results of the herpetological surveys completed by LGL and Stantec in 2011, 2012 and 2013 are provided in the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review).

The results of the turtle basking surveys completed in 2015 are summarized in **Table 3-17**. Field notes for the turtle basking surveys are provided in **Appendix C**. A total of 26 stations were surveyed, of which 20 had confirmed presence of basking Blanding's *Turtles*.

The locations where Blanding's *Turtles* were observed in 2011, 2012, 2013 and 2015 through either targeted surveys or incidental wildlife observation are mapped on **Figure 3-6**. There are numerous records of this species across the HIWEC study area, therefore this species was carried forward to the EIS.

### 3.5.14 Eastern *Foxsnake* (Georgian Bay Population)

Herpetological surveys to confirm the presence / absence, abundance and distribution of this species within the HIWEC study area were completed in 2011, 2012, 2013 and 2015. The results of the herpetological surveys completed by LGL and Stantec in 2011, 2012 and 2013 are provided in the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review). Snake basking surveys were completed in 2015. The results of the 2015 snake basking surveys are summarized in **Table 3-18** below; no Eastern *Foxsnakes* were observed during these surveys.

One (1) Eastern *Foxsnake* was recorded near the shoreline of the Key River in 2011, one (1) was recorded along the shoreline of Georgian Bay in 2013 and one (1) was recorded on Sandy Bay along the shoreline of Georgian Bay in 2015. The exact locations of these observations are mapped on **Figure 3-7**. Field notes for the snake basking surveys are provided in **Appendix C**. The 2011 and 2013 observations are also mapped in figure 3-1 and 3-3 of the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review). This species was not recorded in the HIWEC study area in 2014. This species was carried forward to the EIS.

**Table 3-16: Vegetation Composition and Species Associates Observed in Bogs Surveyed for the Presence / Absence of Branched *Bartonia* within the HIWEC Location**

Feature ID	Date, Survey Start and End Times, Weather Condition	Vegetation Composition	Associate Species Found	Suitable Micro-habitat Present (Yes/No)	Branched <i>Bartonia</i> Found (Yes / No)
BO-010	September 16, 2015 13:37 – 14:00 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	North east arm of the feature consisted of Black Huckleberry ( <i>Gaylussacia baccata</i> ) and Leatherleaf which dominated the shrub layer and shaded ground species. Dry, crunchy <i>Sphagnum</i> moss was present. Further south of the feature was very shrubby and shaded by Mountain-holly and alder ( <i>Alnus</i> sp.).	<ul style="list-style-type: none"> <li>• Black Chokeberry;</li> <li>• Tamarack;</li> <li>• Leatherleaf; and,</li> <li>• Mountain-holly.</li> </ul>	No	No
BO-011	September 17, 2015 13:45 – 14:06 Wind (Beaufort Scale): 0 Cloud Cover: 0 % Temperature: 24°C Precipitation: None	Shrub bog located in between rock barrens. Shrub cover was > 60%. <i>Sphagnum</i> moss was present but lacked many associate species and water. The soil may have been saturated earlier in the season, as indicated by the presence of Small Cranberry, but had since dried out.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Virginia Chain Fern;</li> <li>• Mountain-holly; and ,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-012	September 17, 2015 14:55 – 15:05 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	Feature had <i>Sphagnum</i> moss and a dense shrub layer. Heavy canopy and shrub cover were present.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Black Chokeberry; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-013	September 16, 2015 11: 57 – 12:22 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 22°C Precipitation: None	Bog was heavily treed and dry.	<ul style="list-style-type: none"> <li>• Tamarack; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-014	September 17, 2015 13:26 – 14:01 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	Shrub bog was bordered by bedrock barren. The canopy and shrub cover was higher than ideal with only approximately 15% open areas. Conditions were dry at time of survey, including <i>Sphagnum</i> moss that was also dry.	<ul style="list-style-type: none"> <li>• Virginia Chain Fern; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-015	September 16, 2015 12:33 – 13:53 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	Heavy tree and shrub cover was present. Small areas of suitable microhabitat (open cover with associate species) were present but sparse. Conditions were dry at time of survey and <i>Sphagnum</i> moss was yellow and brittle.	<ul style="list-style-type: none"> <li>• Black Chokeberry;</li> <li>• Tamarack;</li> <li>• Mountain-holly; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-016	September 16, 2015 11:46 – 12:46 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 28°C Precipitation: None	Habitat would be potentially suitable for Branched <i>Bartonia</i> if more water was available. Ideal fern and shrub cover.	<ul style="list-style-type: none"> <li>• Virginia Chain Fern;</li> <li>• Tamarack;</li> <li>• Mountain-holly; and,</li> <li>• Pitcher Plant.</li> </ul>	Yes (provided wetter conditions)	No

**Table 3-16: Vegetation Composition and Species Associates Observed in Bogs Surveyed for the Presence / Absence of Branched Bartonina within the HIWEC Location**

Feature ID	Date, Survey Start and End Times, Weather Condition	Vegetation Composition	Associate Species Found	Suitable Micro-habitat Present (Yes/No)	Branched Bartonina Found (Yes / No)
BO-017	September 16, 2015 13:59 – 14:26 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 27°C Precipitation: None	Majority of feature was dry. Approximately 60-70% shrub cover was present and <i>Sphagnum</i> moss was brown. Only patches of associated species were present.	<ul style="list-style-type: none"> <li>• Virginia Chain Fern;</li> <li>• Mountain-holly; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-018	September 17, 2015 12:37 – 12:55 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 24°C Precipitation: None	Treed bog; thick understory of Speckled Alder ( <i>Alnus incana</i> ), sedges and ferns. Site was dry.	<ul style="list-style-type: none"> <li>• Virginia Chain Fern;</li> <li>• Tamarack; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-019	September 16, 2015 10:58 – 11:37 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 23°C Precipitation: None	Small bog was present but conditions were dry. <i>Sphagnum</i> moss was yellow and brittle. Suitable microhabitat was present but in general shrub cover was higher (40-50%) than ideal.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Mountain-holly; and,</li> <li>• Leatherleaf.</li> </ul>	Yes	No
BO-020	September 16, 2015 9:48 – 10:49 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	The feature was a shrub bog (shrub cover is > 80%). There was only a small amount of suitable microhabitat present. Feature did not contain open water but pockets of cattails were present. Conditions at the time of survey were dry ( <i>Sphagnum</i> moss was dry).	<ul style="list-style-type: none"> <li>• Tamarack</li> </ul>	No	No
BO-021	September 16, 2015 13:10 – 13:41 Wind (Beaufort Scale): 5 Cloud Cover: 0 % Temperature: 28°C Precipitation: None	The feature was very dry ( <i>Sphagnum</i> moss is brown). Dense shrub cover with the exception of the bog edges.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Leatherleaf;</li> <li>• Mountain-holly; and,</li> <li>• Virginia Chain Fern.</li> </ul>	No	No
BO-022	September 16, 2015 13:04 – 14:22 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	All associates, except Virginia Chain Fern, were present. This feature compared favorably with reference site.	<ul style="list-style-type: none"> <li>• Virginia Cotton-grass;</li> <li>• Rose Pogonia;</li> <li>• White Beak-rush;</li> <li>• Leatherleaf; and,</li> <li>• Tamarack.</li> </ul>	Yes	No
BO-023	September 16, 2015 14:56 – 15:10 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	Feature consisted of Black Spruce and was surrounded by bedrock. This feature was heavily shaded.	<ul style="list-style-type: none"> <li>• Black Chokeberry;</li> <li>• Tamarack;</li> <li>• Leatherleaf; and,</li> <li>• Mountain-holly.</li> </ul>	No	No

**Table 3-16: Vegetation Composition and Species Associates Observed in Bogs Surveyed for the Presence / Absence of Branched Bartonia within the HIWEC Location**

Feature ID	Date, Survey Start and End Times, Weather Condition	Vegetation Composition	Associate Species Found	Suitable Micro-habitat Present (Yes/No)	Branched Bartonia Found (Yes / No)
BO-024	September 16, 2015 12:52 – 13:32 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	Feature consisted of Black Spruce surrounded by treed and open rock barren. Black Chokeberry and Leatherleaf dominated the extensive shrub layer (> 80%). Some Labrador Tea ( <i>Ledum groelandicum</i> ) was present, which indicated moist, organic material substrate at one time. No open areas receiving direct sunlight were present. Not a suitable habitat for Branched Bartonia.  Further south, but within feature, there were open areas receiving direct sunlight that were more suitable for Branched Bartonia but still very dry. Associated species were present included Virginia Chain Fern, Bog Laurel ( <i>Kalmia polifolia</i> ) and cotton-grass. In this same area, restricted to a 5 m radius, 10-12 possible White-fringed Orchids recorded.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Black Chokeberry;</li> <li>• Leatherleaf;</li> <li>• Virginia Chain Fern;</li> <li>• Virginia Cotton-grass;</li> <li>• White Beak-rush; and,</li> <li>• White-fringed Orchid.</li> </ul>	No (within HIWEC location)  Yes (outside of HIWEC location)	No
BO-025	September 16, 2015 12:36 – 12:42 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	Feature was between rock barrens with > 60% cover. No open spaces receiving direct sunlight. Dominant species were Black Chokeberry and Mountain-holly, which shaded out ground species. Conditions at time of survey were dry.	<ul style="list-style-type: none"> <li>• Black Chokeberry;</li> <li>• Leatherleaf; and,</li> <li>• Mountain-holly.</li> </ul>	No	No
BO-026	September 16, 2015 15:10 – 15:23 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	Feature was located west of access trail. Species included Black Spruce, White Spruce and some Tamarack and White Pine ( <i>Pinus strobus</i> ). Shrub cover was > 80%. Black Chokeberry, Labrador Tea, Bog Laurel and Leatherleaf were present. <i>Sphagnum</i> moss was very dry.  Further west into feature, <i>Carex oligosperma</i> dominated as well as Leatherleaf. White-beaked Rush, Pitcher Plant and Cotton-grass were present as well. This area was good potential habitat for Branched Bartonia but ground was still very dry and brittle.	<ul style="list-style-type: none"> <li>• Black Chokeberry;</li> <li>• Leatherleaf;</li> <li>• Virginia Cotton-grass;</li> <li>• White-beaked Rush;</li> <li>• Virginia Chain Fern; and,</li> <li>• Tamarack.</li> </ul>	No (within HIWEC location)  Yes (outside of HIWEC location)	No
BO-027	September 16, 2015 11:48 – 11:59 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	Feature with > 60% cover dominated by Black Spruce and Tamarack. <i>Sphagnum</i> moss dominated the ground layer. Shrub layer was abundant with Black Chokeberry. Ground condition was dry.	<ul style="list-style-type: none"> <li>• Black Chokeberry; and,</li> <li>• Tamarack.</li> </ul>	No	No

**Table 3-16: Vegetation Composition and Species Associates Observed in Bogs Surveyed for the Presence / Absence of Branched Bartonia within the HIWEC Location**

Feature ID	Date, Survey Start and End Times, Weather Condition	Vegetation Composition	Associate Species Found	Suitable Micro-habitat Present (Yes/No)	Branched Bartonia Found (Yes / No)
BO-030	September 16, 2015 10:12 – 10:39 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 22°C Precipitation: None	Majority of feature was treed rock barren dominated by Black Spruce, Tamarack and Jack Pine ( <i>Pinus banksiana</i> ) and open bedrock. In small depression between rock barrens where there was <i>Sphagnum</i> mosses, Bog Laurel was dominant, as well as Lowbush Blueberry. Soils, where present, were very dry. On the most northern portion of feature of the bog there were cotton-grass, Pitcher Plant, Leatherleaf and White-beaked Rush dominating. Ground was wet. This area extended beyond the feature but contained more suitable habitat for Branched Bartonia.	<ul style="list-style-type: none"> <li>• Leatherleaf;</li> <li>• Black Chokeberry; and,</li> <li>• Tamarack.</li> </ul>	No (within HIWEC location)  Potentially Yes (outside of HIWEC location)	No
BO-031	September 17, 2015 11:38 – 12:34 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	Feature was a treed bog with few associate plant species present. Canopy and shrub cover was higher than ideal; only approximately 15% of open areas. Feature did not contain open water and conditions were dry. <i>Sphagnum</i> moss was pale and brittle.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Mountain-holly; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-032	September 17, 2015 13:04 – 13:17 Wind (Beaufort Scale): 5 Cloud Cover: 0 % Temperature: 22°C Precipitation: None	Open bog between rock barrens. Potentially suitable habitat for Branched Bartonia with relatively low vegetative cover. <i>Sphagnum</i> moss / peat substrate and Virginia Chain Fern were present but conditions were dry at time of survey. Dominated by Common Beaked Sedge.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Leatherleaf; and,</li> <li>• Virginia Chain Fern.</li> </ul>	Yes (provided wetter conditions)	No
BO-033	September 17, 2015 12:21 – 12:51 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 22°C Precipitation: None	Open bog located between rock barrens. Extensive area had high Virginia Chain Fern cover. Good potential habitat in some patches with relatively low vegetative cover. <i>Sphagnum</i> moss / peat substrate was present. Soils were saturated but no open water was present and most of the area was dry.	<ul style="list-style-type: none"> <li>• Virginia Cotton-grass;</li> <li>• Tamarack;</li> <li>• White Beak-rush;</li> <li>• Virginia Chain Fern; and,</li> <li>• Leatherleaf</li> </ul>	Yes	No
BO-034	September 16, 2015 9:23 – 9:38 Wind (Beaufort Scale): 1 Cloud Cover: 10 % Temperature: 20°C Precipitation: None	Thick treed and sedge bog. Feature was dry.	<ul style="list-style-type: none"> <li>• Tamarack</li> </ul>	No	No
BO-035	September 16, 2015 12:22 – 12:36 Wind (Beaufort Scale): 5 Cloud Cover: 0 % Temperature: 23°C Precipitation: None	Compared favorably with the Branched Bartonia reference site.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Virginia Chain Fern;</li> <li>• Leatherleaf;</li> <li>• And,</li> <li>• Virginia Cotton-grass.</li> </ul>	Yes	No

**Table 3-16: Vegetation Composition and Species Associates Observed in Bogs Surveyed for the Presence / Absence of Branched Bartonia within the HIWEC Location**

Feature ID	Date, Survey Start and End Times, Weather Condition	Vegetation Composition	Associate Species Found	Suitable Micro-habitat Present (Yes/No)	Branched Bartonia Found (Yes / No)
BO-037	September 16, 2015 13:44 – 13:52 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	Feature contained portions of an open marsh aquatic.	<ul style="list-style-type: none"> <li>• Virginia Cotton-grass;</li> <li>• White Beak-rush; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-038	September 14, 2015 15:14 – 15:44 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 22°C Precipitation: None	Feature had Leatherleaf, cranberry and cotton-grass present. There was extensive cover of <i>Sphagnum</i> moss and many open areas receiving direct sunlight, However, the water table was very low and the ground was dry.	<ul style="list-style-type: none"> <li>• Virginia Cotton-grass;</li> <li>• Tamarack;</li> <li>• Leatherleaf; and,</li> <li>• Virginia Chain Fern.</li> </ul>	Yes (provided wetter conditions)	No
BO-041	September 14, 2015 9:49 – 10:23 Wind (Beaufort Scale): 1 Cloud Cover: 10 % Temperature: 20°C Precipitation: None	Substrate of feature was peat / <i>Sphagnum</i> moss. Feature did not contain open water.	<ul style="list-style-type: none"> <li>• Virginia Cotton-grass; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-042	September 14, 2015 14:29 – 15:00 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 22°C Precipitation: None	North and east of the feature was forested habitat, dominated by White Pine, Jack Pine and junipers. West of the feature was an open water pond with White Pond Lily. Narrow strip of <i>Sphagnum</i> moss and dense grasses / sedges cover bordered the open water pond and forest. Majority of feature was pine forest.	<ul style="list-style-type: none"> <li>• Leatherleaf;</li> <li>• Virginia Cotton-grass; and,</li> <li>• Mountain-holly.</li> </ul>	No	No
BO-043	September 16, 2015 9:57 – 10:05 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 18°C Precipitation: None	Feature had high percentage of Tamarack, White Birch ( <i>Betula papyrifera</i> ) and White Pine.	<ul style="list-style-type: none"> <li>• Virginia Chain Fern;</li> <li>• Tamarack;</li> <li>• Leatherleaf; and,</li> <li>• Virginia Cotton-grass.</li> </ul>	No	No
BO-044	September 14, 2015 12:31 – 13:12 Wind (Beaufort Scale): 2 Cloud Cover: 10 % Temperature: 22°C Precipitation: None	Feature was an open bog. The ground cover was dominated by <i>Sphagnum</i> moss, a cotton-grass species ( <i>Eriophorum</i> sp.) and a few sedge species. The shrub layer was dominated by Viburnum Sp. with some Leatherleaf.	<ul style="list-style-type: none"> <li>• Leatherleaf; and,</li> <li>• Tamarack.</li> </ul>	No	No
BO-045	September 14, 2015 12:18 – 12:25 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 23°C Precipitation: None	Feature had tree cover > 25% and dense shrub and fern cover.	<ul style="list-style-type: none"> <li>• Tamarack; and,</li> <li>• Leatherleaf.</li> </ul>	No	No



**Table 3-16: Vegetation Composition and Species Associates Observed in Bogs Surveyed for the Presence / Absence of Branched Bartonia within the HIWEC Location**

Feature ID	Date, Survey Start and End Times, Weather Condition	Vegetation Composition	Associate Species Found	Suitable Micro-habitat Present (Yes/No)	Branched Bartonia Found (Yes / No)
BO-046	September 14, 2015 12:02 – 12:17 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	Feature was dominated by White Pine, Jack Pine and Velvetleaf Blueberry ( <i>Vaccinium myrtilloides</i> ). Ground cover with <i>Sphagnum</i> moss and Three-leaf Solomon's-seal ( <i>Maianthemum trifolium</i> ). Feature contained rock barren as well.	<ul style="list-style-type: none"> <li>• Leatherleaf; and,</li> <li>• Mountain-holly.</li> </ul>	No	No
BO-049	September 14, 2015 13:11 – 13:11 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	No plant associates were observed.	<ul style="list-style-type: none"> <li>• None.</li> </ul>	No	No
BO-050	September 14, 2015 11:02 – 12:05 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	Bog dominated by Virginia Cotton-grass and <i>Sphagnum</i> moss.	<ul style="list-style-type: none"> <li>• Leatherleaf; and,</li> <li>• Virginia Cotton-grass.</li> </ul>	Yes	No
BO-051	September 15, 2015 15:31 – 15:39 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 22°C Precipitation: None	Dominant species in feature was Black Spruce; Labrador Tea was dominant in the shrub layer; <i>Sphagnum</i> moss. Dominated the ground layer; Three-leaf Solomon's-seal was present.	<ul style="list-style-type: none"> <li>• Tamarack; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-052	September 14, 2015 14:16 – 14:53 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 23°C Precipitation: None	Feature was a lowland bog dominated by high cover of Virginia Chain Fern .	<ul style="list-style-type: none"> <li>• Virginia Chain Fern; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-057	September 14, 2015 12:03 – 12:25 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 23°C Precipitation: None	Dominant species of the feature was Leatherleaf. Tree cover was approximately 15%. Substrate of the feature consisted of <i>Sphagnum</i> moss / peat and there was no open water.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Leatherleaf;</li> <li>• And,</li> <li>• Virginia Cotton-grass.</li> </ul>	Yes	No
BO-058	September 15, 2015 11:43 – 12:50 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	Only occasional patches of suitable and open habitat. A significant portion of the area was thicket (mostly Winterberry Holly). Ground conditions of the feature were dry (dry <i>Sphagnum</i> moss). Feature contained some associate species but generally, was not a suitable habitat for Branched Bartonia (too much cover and it was dry at time of survey).	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Virginia Chain Fern;</li> <li>• Leatherleaf;</li> <li>• White Beak-rush; and,</li> <li>• Virginia Cotton-grass.</li> </ul>	No	No

**Table 3-16: Vegetation Composition and Species Associates Observed in Bogs Surveyed for the Presence / Absence of Branched Bartonia within the HIWEC Location**

Feature ID	Date, Survey Start and End Times, Weather Condition	Vegetation Composition	Associate Species Found	Suitable Micro-habitat Present (Yes/No)	Branched Bartonia Found (Yes / No)
BO-059	September 14, 2015 10:58 – 11:25 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 21°C Precipitation: None	Feature was a treed bog. The ground was dominated by <i>Sphagnum</i> moss with some Leatherleaf, a cotton-grass species ( <i>Eriophorum sp.</i> ), and Pitcher Plant. The sub-canopy consisted of Jack Pine and Black Spruce.	<ul style="list-style-type: none"> <li>• Tamarack; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-060	September 14, 2015 13:01 – 13:36 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 22°C Precipitation: None	Small portion of the feature had vegetation associated with Branched Bartonia. Ground conditions were very dry. Most of the feature was dominated and shaded by Jack Pine, White Pine, White Birch and alder thickets. Feature was bordered by bedrock.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Virginia Cotton-grass;</li> <li>• Leatherleaf;</li> <li>• Virginia Chain Fern; and,</li> <li>• Mountain-holly.</li> </ul>	No	No
BO-061	September 14, 2015 9:53 – 11:52 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	Species associated with Branched Bartonia were present and there were occasional areas of suitable habitat; however, conditions were dry and the cover throughout most of the feature was unsuitable (dense cover by Virginia Chain Fern). Southern half of feature included rock barren with wet pockets but high cover by conifers and <i>Nemopanthus sp.</i> / <i>Alnus sp.</i> thickets.	<ul style="list-style-type: none"> <li>• Virginia Cotton-grass;</li> <li>• Tamarack;</li> <li>• Black Chokeberry;</li> <li>• Virginia Chain Fern;</li> <li>• Leatherleaf; and,</li> <li>• Mountain-holly.</li> </ul>	Yes	No
BO-062	September 15, 2015 10:09 – 10:31 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	Feature was dominated by Leatherleaf. Sphagnum moss and Virginia Chain Fern were present.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Virginia Chain Fern; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-063	September 15, 2015 9:58 – 11:07 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	The feature was dominated by cotton-grass and contained little low-lying shrub cover. Substrate of feature was <i>Sphagnum</i> moss / peat. Feature did not contain standing water but there were a few live trees and snags present. Feature may have been suitable habitat for Branched Bartonia but was dry and lacked Virginia Chain Fern.	<ul style="list-style-type: none"> <li>• Virginia Cotton-grass;</li> <li>• Tamarack;</li> <li>• White Beak-rush; and,</li> <li>• Leatherleaf.</li> </ul>	Yes (provided wetter conditions)	No
BO-064	September 15, 2015 9:59 – 10:13 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	This feature was dominated by Leatherleaf, which shaded out much of the groundcover plants. Tree cover was > 40% of total feature and consisted of mostly White Pine and Jack Pine. In areas where there was some open cover and direct sunlight, the ground and mosses were very dry.	<ul style="list-style-type: none"> <li>• Black Chokeberry;</li> <li>• Leatherleaf;</li> <li>• Tamarack; and,</li> <li>• Virginia Cotton-grass.</li> </ul>	No	No
BO-065	September 15, 2015 10:24 – 10:40 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 18°C Precipitation: None	The western portion of the feature was bog habitat dominated by Leatherleaf, which shaded out many other plants. Middle and eastern portion of the feature were more dominated by trees. The ground in the bog areas of the feature was very dry.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Leatherleaf; and,</li> <li>• Virginia Cotton-grass.</li> </ul>	No	No

**Table 3-16: Vegetation Composition and Species Associates Observed in Bogs Surveyed for the Presence / Absence of Branched Bartonia within the HIWEC Location**

Feature ID	Date, Survey Start and End Times, Weather Condition	Vegetation Composition	Associate Species Found	Suitable Micro-habitat Present (Yes/No)	Branched Bartonia Found (Yes / No)
BO-066	September 15, 2015 13:08 – 13:31 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 24°C Precipitation: None	Ground conditions of the feature were very dry. Leatherleaf cover was too high.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Leatherleaf; and,</li> <li>• Virginia Cotton-grass.</li> </ul>	No	No
BO-067	September 15, 2015 13:17 – 13:53 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 27°C Precipitation: None	The feature was dry and dominated by high cover of Leatherleaf. Most of the <i>Sphagnum</i> moss was brown.	<ul style="list-style-type: none"> <li>• Tamarack; and</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-068	September 15, 2015 10:54 – 11:50 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 27°C Precipitation: None	The feature was very dry; <i>Sphagnum</i> moss was brown and dry. The feature contained no open water and moisture was apparent in the substrate at a depth of approximately 10-15 cm. High vegetation cover was present and lack of open areas.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Virginia Chain Fern;</li> <li>• Mountain-holly; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-069	September 15, 2015 11:22 – 11:40 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	Leatherleaf dominated the feature with > 60% cover. Shrub layer was very dense. Ground conditions and mosses were dry.	<ul style="list-style-type: none"> <li>• Tamarack;</li> <li>• Virginia Chain Fern;</li> <li>• Mountain-holly; and,</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-070	September 15, 2015 10:50 – 10:58 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 22°C Precipitation: None	Feature had high cover of Tamarack and spruce and also dense shrub cover.	<ul style="list-style-type: none"> <li>• Tamarack; and</li> <li>• Leatherleaf.</li> </ul>	No	No
BO-071	September 15, 2015 13:55 – 14:01 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	Sedge species dominated feature with > 60% cover. Ground conditions of feature were dry. Feature surrounded by forest containing Jack Pine, Tamarack and White Birch. There were no extensive open areas with direct sunlight and wet ground typical of Branched Bartonia microhabitats.	<ul style="list-style-type: none"> <li>• Tamarack</li> </ul>	No	No
BO-072	September 15, 2015 12:04 – 12:52 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 27°C Precipitation: None	The feature was dry at the time of survey. The <i>Sphagnum</i> moss had very little moisture and had turned brown. In some parts of the HIWEC location, cover by <i>Carex sp.</i> was very thick.	<ul style="list-style-type: none"> <li>• Leatherleaf</li> </ul>	No	No

**Table 3-17: 2015 Pre-construction Turtle Basking Survey Results for Turtle Species at Risk**

Station	Habitat Assessment		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence of Blanding's Turtle
TU-N-M2-18	Large beaver pond with active beaver lodge. A dam separates the pond into two water bodies. Water depth approximately 1 m. Numerous basking logs present. Mix of open water and emergent / floating vegetation cover.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 30, 2015 13:55 – 14:15 Wind (Beaufort Scale): 3 Cloud Cover: 10 % Temperature: 22°C Precipitation: None	May 13, 2015 11:51 – 12:15 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 10°C Precipitation: None	May 19, 2015 12:15 – 12:35 Wind (Beaufort Scale): 2 Cloud Cover: 95 % Temperature: 13°C Precipitation: Light rain	June 3, 2015 14:55 – 15:25 Wind (Beaufort Scale): 3 Cloud Cover: 5 % Temperature: 22°C Precipitation: None	June 16, 2015 12:04 – 12:24 Wind (Beaufort Scale): 1 Cloud Cover: 50 % Temperature: 25°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	Two (2) Midland Painted Turtles observed.	No turtles observed.	No turtles observed.	One (1) Blanding's Turtle observed.	Ten (10) Midland Painted Turtles observed.	
TU-N-M11-8(1)	Meadow marsh with shallow water (depth < 45 cm). Several dead trees and snags present. Muddy substrate.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 27, 2015 9:35 – 9:57 Wind (Beaufort Scale): 2 Cloud Cover: 15 % Temperature: 8°C Precipitation: None	May 14, 2015 9:38 – 10:02 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 10°C Precipitation: None	May 20, 2015 15:23 – 15:24 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 15°C Precipitation: None	N / A	N / A	No Blanding's Turtle observed.
		<i>Results</i>	No turtles observed.	No turtles observed.	Not completed; site was dry.	Survey not required.	Survey not required.	
TU-N-M11-8(2)	Meadow marsh with shallow water (depth < 45 cm). Several dead trees and snags present. Muddy substrate.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 27, 2015 10:05 – 10:30 Wind (Beaufort Scale): 3 Cloud Cover: 25 % Temperature: 10°C Precipitation: None	May 14, 2015 N / A Wind (Beaufort Scale): N / A Cloud Cover: N / A Temperature: N / A Precipitation: N / A	N / A	N / A	N / A	No Blanding's Turtle observed.
		<i>Results</i>	One (1) Midland Painted Turtle observed.	Not completed; site was dry.	Survey not required.	Survey not required.	Survey not required.	
TU-N-M15-15	Large wetland surrounded by treed fens and rock barrens. Open water with some floating vegetation mats. Vegetated shorelines with some areas of muddy substrate.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 27, 2015 13:15 – 13:38 Wind (Beaufort Scale): 4 Cloud Cover: 100 % Temperature: 10°C Precipitation: None	May 14, 2015 14:05 – 14:25 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 14°C Precipitation: None	May 20, 2015 10:00 – 10:26 Wind (Beaufort Scale): 5 Cloud Cover: 0 % Temperature: 8°C Precipitation: None	June 3, 2015 8:55 – 9:18 Wind (Beaufort Scale): 4 Cloud Cover: 30 % Temperature: 14°C Precipitation: None	June 17, 2015 15:09 – 15:30 Wind (Beaufort Scale): 2 Cloud Cover: 75 % Temperature: 21°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	No turtles observed.	One (1) Blanding's Turtle observed.	No turtles observed.	No turtles observed.	One (1) Midland Painted Turtle observed	
TU-N-M21-9	Pond with abundant emergent and floating vegetation. Sedges and shrubs (Leatherleaf) also present. Several rock outcrops. Variable water depth. Some small basking logs present.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 27, 2015 14:27 – 14:47 Wind (Beaufort Scale): 4 Cloud Cover: 95 % Temperature: 10°C Precipitation: None	May 19, 2015 10:42 – 10:56 Wind (Beaufort Scale): 4 Cloud Cover: 100 % Temperature: 11°C Precipitation: None	May 20, 2015 11:15 – 11:36 Wind (Beaufort Scale): 0 Cloud Cover: 80 % Temperature: 26°C Precipitation: None	June 15, 2015 14:50 – 15:10 Wind (Beaufort Scale): 0 Cloud Cover: 80 % Temperature: 26°C Precipitation: None	June 19, 2015 12:46 – 13:06 Wind (Beaufort Scale): 3 Cloud Cover: 25 % Temperature: 18°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	One (1) Blanding's Turtle observed.	No turtles observed.	No turtles observed.	One (1) Blanding's Turtle and two (2) Midland Painted Turtles observed.	No turtles observed.	
TU-N-M28-10	Large beaver pond / wetland with numerous snags and some floating logs. Grassy hummocks and floating vegetation mats also provide basking sites. Much of the shoreline is steep rock barrens. Several beaver lodges present.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 28, 2015 9:51 – 10:16 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 10°C Precipitation: None	May 14, 2015 10:05 – 10:27 Wind (Beaufort Scale): 1 Cloud Cover: 10 % Temperature: 12°C Precipitation: None	May 29, 2015 9:42 – 10:03 Wind (Beaufort Scale): 2 Cloud Cover: 20 % Temperature: 20°C Precipitation: None	June 2, 2015 12:12 – 12:46 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 16°C Precipitation: None	June 17, 2015 13:10 – 13:31 Wind (Beaufort Scale): 3 Cloud Cover: 95 % Temperature: 21°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	No turtles observed.	One (1) Blanding's Turtle and four (4) Midland Painted Turtles observed.	No turtles observed.	Two (2) Blanding's Turtles and three (3) Midland Painted Turtles observed.	Ten (10) Blanding's Turtles and three (3) Midland Painted Turtles observed.	
TU-N-M30-16	Large wetland adjacent to lake. Some emergent vegetation (sedges and grasses) present. Floating logs, grass mats and grass / Sphagnum hummocks provide basking sites. Water depth of approximately 1 m.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 27, 2015 9:45 – 10:44 Wind (Beaufort Scale): 5 Cloud Cover: 60 % Temperature: 5°C Precipitation: None	May 14, 2015 11:20 – 11:42 Wind (Beaufort Scale): 4 Cloud Cover: 5 % Temperature: 12°C Precipitation: None	May 20, 2015 14:16 – 14:38 Wind (Beaufort Scale): 5 Cloud Cover: 10 % Temperature: 14°C Precipitation: None	June 2, 2015 10:25 – 10:45 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 13°C Precipitation: None	June 15, 2015 9:28 – 9:57 Wind (Beaufort Scale): 0 Cloud Cover: 100 % Temperature: 16°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	Two (2) Midland Painted Turtles observed.	Two (2) Blanding's Turtle, five (5) Midland Painted Turtles and one (1) unconfirmed turtle species observed.	One (1) Blanding's Turtle and three (3) Midland Painted Turtles observed.	Ten (10) Blanding's Turtles observed.	No turtles observed.	

**Table 3-17: 2015 Pre-construction Turtle Basking Survey Results for Turtle Species at Risk**

Station	Habitat Assessment		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence of Blanding's Turtle
TU-N-M31-11	Large open water pond with some emergent vegetation. Floating grass mats present. Several rock outcrops and logs provide basking sites. Water depth 1-2 m.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 27, 2015 11:17 – 12:12 Wind (Beaufort Scale): 3 Cloud Cover: 70 % Temperature: 10°C Precipitation: None	May 14, 2015 9:54 – 10:15 Wind (Beaufort Scale): 4 Cloud Cover: 5 % Temperature: 10°C Precipitation: None	May 20, 2015 13:24 – 13:45 Wind (Beaufort Scale): 5 Cloud Cover: 10 % Temperature: 14°C Precipitation: None	June 2, 2015 9:08 – 9:28 Wind (Beaufort Scale): 0 Cloud Cover: 0 % Temperature: 12°C Precipitation: None	June 16, 2015 8:37 – 9:57 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	One (1) Blanding's Turtle and one (1) Midland Painted Turtle observed.	Four (4) Blanding's Turtles observed.	One (1) Blanding's Turtle observed.	Two (2) Blanding's Turtles observed.	One (1) Blanding's Turtle and one (1) Midland Painted Turtle observed.	
TU-N-M33-3	Large open water wetland with several snags. Emergent and floating vegetation present along shorelines, which are primarily bedrock. Few logs or vegetation mats present for basking sites.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 28, 2015 14:00 – 14:30 Wind (Beaufort Scale): 5 Cloud Cover: 0 % Temperature: 15°C Precipitation: None	May 14, 2015 13:44 – 14:07 Wind (Beaufort Scale): 4 Cloud Cover: 5 % Temperature: 13°C Precipitation: None	June 11, 2015 11:32 – 12:57 Wind (Beaufort Scale): 5 Cloud Cover: 15 % Temperature: 18°C Precipitation: None	June 17, 2015 10:03 – 10:23 Wind (Beaufort Scale): 2 Cloud Cover: 95 % Temperature: 18°C Precipitation: None	June 19, 2015 11:40 – 12:00 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	One (1) Blanding's Turtle observed.	No turtles observed.	Two (2) Blanding's Turtles and seven (7) Midland Painted Turtles observed.	One (1) Blanding's Turtle observed.	Two (2) Blanding's Turtles observed and eight (8) Midland Painted Turtles observed.	
TU-N-M38-12	Shrub fen with an area of open water in the centre. No logs present; some floating vegetation mats provide suitable basking sites. Water appears deep.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 30, 2015 13:37 – 14:18 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 18°C Precipitation: None	May 14, 2015 11:00 – 11:21 Wind (Beaufort Scale): 4 Cloud Cover: 10 % Temperature: 12°C Precipitation: None	May 20, 2015 13:45 – 14:02 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 14°C Precipitation: None	June 3, 2015 12:50 – 13:15 Wind (Beaufort Scale): 4 Cloud Cover: 25 % Temperature: 18°C Precipitation: None	June 16, 2015 15:32 – 15:52 Wind (Beaufort Scale): 2 Cloud Cover: 15 % Temperature: 20°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	Nine (9) Blanding's Turtles and ten (10) Midland Painted Turtles observed.	Two (2) Blanding's Turtles observed.	Six (6) Midland Painted Turtles observed.	Five (5) Blanding's Turtles and one (1) Midland Painted Turtle observed.	Two (2) Blanding's Turtles observed.	
TU-N-M46-14	Area of deep open water bordered by wetlands. Vegetation along shoreline characteristic of peatlands (Black Spruce, Tamarack, Pitcher Plant ( <i>Sarracenia purpurea</i> ), Labrador Tea ( <i>Rhododendron groenlandicum</i> )). No logs present, few vegetation mats along shoreline.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 29, 2015 13:18 – 13:50 Wind (Beaufort Scale): 3 Cloud Cover: 10 % Temperature: 15°C Precipitation: None	May 14, 2015 11:00 – 11:25 Wind (Beaufort Scale): 2 Cloud Cover: 5 % Temperature: 13°C Precipitation: None	May 20, 2015 10:10 – 10:41 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 12°C Precipitation: None	June 2, 2015 10:28 – 10:48 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 13°C Precipitation: None	June 16, 2015 11:09 – 11:29 Wind (Beaufort Scale): 3 Cloud Cover: 30 % Temperature: 18°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	Two (2) Blanding's Turtles observed.	One (1) Blanding's Turtle observed.	One (1) Midland Painted Turtle and three (3) Snapping Turtles observed.	No turtles observed.	No turtles observed.	
TU-N-M48-13	Large open water pond with numerous snags. Floating mats of vegetation (Sphagnum, Sheep Laurel) present. Shoreline is rocky with shrub vegetation. Surrounded by rock barrens.  Site was also visited June 16, 2015; no turtles observed.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 29, 2015 11:28 – 11:50 Wind (Beaufort Scale): 3 Cloud Cover: 5 % Temperature: 15°C Precipitation: None	May 14, 2015 13:15 – 13:46 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 13°C Precipitation: None	May 20, 2015 12:07 – 12:24 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 13°C Precipitation: None	May 29, 2015 10:18 – 10:52 Wind (Beaufort Scale): 6 Cloud Cover: 5 % Temperature: 22°C Precipitation: None	June 2, 2015 11:34 – 11:55 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	No Blanding's Turtle observed.
		<i>Results</i>	No turtles observed.	No turtles observed.	No turtles observed.	Two (2) Midland Painted Turtles and one (1) Snapping Turtle observed.	No turtles observed.	
TU-S-M7-17	Beaver pond with active lodge. Some areas of open water. Hummocks, emergent vegetation and floating vegetation mats present. Some tree (conifer) and shrub cover. Floating mats and logs provide basking sites. Water depth of approximately 1 m.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 30, 2015 9:51 – 10:12 Wind (Beaufort Scale): 3 Cloud Cover: 50% Temperature: 13°C Precipitation: None	May 13, 2015 16:05 – 16:25 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 12°C Precipitation: None	May 29, 2015 10:00 – 10:20 Wind (Beaufort Scale): 0 Cloud Cover: 50 % Temperature: 15°C Precipitation: None	June 2, 2015 13:35 – 13:55 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 17°C Precipitation: None	June 9, 2015 14:54 – 15:14 Wind (Beaufort Scale): 2 Cloud Cover: 25 % Temperature: 22°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	One (1) Blanding's Turtle observed.	No turtles observed.	No turtles observed.	One (1) Blanding's Turtle and two (2) Snapping Turtles observed.	One (1) Snapping Turtle observed.	
TU-S-M14-2	Large open wetland with a mosaic of emergent vegetation, floating vegetation mats, hummocks, snags, and logs. Numerous basking sites. Variable water depth.  Note: two (2) vantage points at same wetland surveyed on May 20, 2015.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 28, 2015 12:45 – 13:36 Wind (Beaufort Scale): 4 Cloud Cover: 0% Temperature: 15°C Precipitation: None	May 13, 2015 14:34 – 15:01 Wind (Beaufort Scale): 2 Cloud Cover: 0% Temperature: 12°C Precipitation: None	May 20, 2015 12:59 – 13:19 (1) 14:24 – 14:42 (2) Wind (Beaufort Scale): 5 Cloud Cover: 0% Temperature: 10-11°C Precipitation: None	June 3, 2015 8:34 – 8:56 Wind (Beaufort Scale): 5 Cloud Cover: 30% Temperature: 12°C Precipitation: None	June 9, 2015 9:05 – 9:25 Wind (Beaufort Scale): 1 Cloud Cover: 7% Temperature: 16°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	Eight (8) Blanding's Turtles, three (3) Midland Painted Turtles and one (1) Snapping Turtle observed.	One (1) Blanding's Turtle, one (1) Midland Painted Turtle and one (1) Snapping Turtle observed.	No turtles observed.	No turtles observed.	One (1) Midland Painted Turtle observed.	

**Table 3-17: 2015 Pre-construction Turtle Basking Survey Results for Turtle Species at Risk**

Station	Habitat Assessment		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence of Blanding's Turtle
TU-S-M17-4(1)	Deep beaver pond with open water. Floating vegetation (water lilies) present. Some snags and basking logs present. Mix of muddy and rocky shorelines. Original site visited on April 29, 2015; broken dam at location created unsuitable conditions for turtles.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 13, 2015 10:33 – 10:54 Wind (Beaufort Scale): 5 Cloud Cover: 0% Temperature: 10°C Precipitation: None	May 20, 2015 11:20 – 11:40 Wind (Beaufort Scale): 3 Cloud Cover: 0% Temperature: 10°C Precipitation: None	June 9, 2015 10:13 – 10:53 Wind (Beaufort Scale): 1 Cloud Cover: 20% Temperature: 20°C Precipitation: None	June 17, 2015 12:30 – 13:07 Wind (Beaufort Scale): 2 Cloud Cover: 50% Temperature: 18°C Precipitation: None	June 19, 2015 11:45 – 12:11 Wind (Beaufort Scale): 3 Cloud Cover: 10% Temperature: 20°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	No turtles observed.	One (1) Midland Painted Turtle observed.	No turtles observed.	One (1) Blanding's Turtle observed.	Two (2) Midland Painted Turtles observed.	
TU-S-M17-4(2)	Large meadow marsh dominated by graminoids. Some basking logs present.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 29, 2015 10:45 – 11:05 Wind (Beaufort Scale): 2 Cloud Cover: 10% Temperature: 18°C Precipitation: None	May 13, 2015 11:00 – 11:20 Wind (Beaufort Scale): 2 Cloud Cover: 5% Temperature: 10°C Precipitation: None	May 20, 2015 11:50 – 12:10 Wind (Beaufort Scale): 4 Cloud Cover: 0% Temperature: 12°C Precipitation: None	June 9, 2015 13:31 – 13:53 Wind (Beaufort Scale): 3 Cloud Cover: 50% Temperature: 20°C Precipitation: None	June 17, 2015 13:00 – 13:20 Wind (Beaufort Scale): 2 Cloud Cover: 50% Temperature: 18°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	Two (2) Blanding's Turtles observed.	One (1) Blanding's Turtle observed.	One (1) Snapping Turtle and two (2) unconfirmed turtle species observed.	No turtles observed.	No turtles observed.	
TU-S-M17-5	Wetland with a mosaic of open water, emergent vegetation, floating vegetation mats, and Sphagnum hummocks. Some basking logs present. Variable water depth.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 29, 2015 11:30 – 11:51 Wind (Beaufort Scale): 0 Cloud Cover: 10% Temperature: 18°C Precipitation: None	May 13, 2015 12:10 – 12:34 Wind (Beaufort Scale): 2 Cloud Cover: 5% Temperature: 12°C Precipitation: None	May 20, 2015 13:38 – 13:58 Wind (Beaufort Scale): 3 Cloud Cover: 0% Temperature: 14°C Precipitation: None	June 9, 2015 11:47 – 12:30 Wind (Beaufort Scale): 1 Cloud Cover: 15% Temperature: 20°C Precipitation: None	June 17, 2015 13:36 – 13:56 Wind (Beaufort Scale): 4 Cloud Cover: 90% Temperature: 16°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	No turtles observed.	No turtles observed.	One (1) Midland Painted Turtle observed.	One (1) Blanding's Turtle and three (3) Midland Painted Turtles observed.	No turtles observed.	
TU-S-M31-1(1)	Large beaver pond with emergent vegetation cover along shorelines. Numerous fallen logs, banks, and rocks provide basking sites.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 28, 2015 9:10 – 9:30 Wind (Beaufort Scale): 1 Cloud Cover: 10% Temperature: 15°C Precipitation: None	May 13, 2015 14:22 – 14:42 Wind (Beaufort Scale): 4 Cloud Cover: 0% Temperature: 14°C Precipitation: None	May 20, 2015 10:07 – 10:27 Wind (Beaufort Scale): 4 Cloud Cover: 0% Temperature: 7°C Precipitation: None	June 3, 2015 11:10 – 11:31 Wind (Beaufort Scale): 5 Cloud Cover: 60% Temperature: 15°C Precipitation: None	June 9, 2015 9:08 – 9:28 Wind (Beaufort Scale): 1 Cloud Cover: 10% Temperature: 15°C Precipitation: None	No Blanding's Turtle observed.
		<i>Results</i>	No turtles observed.	No turtles observed.	No turtles observed.	No turtles observed.	Two (2) Midland Painted Turtles observed.	
TU-S-M31-1(2)	Large beaver pond with emergent vegetation cover along shorelines. Numerous fallen logs, banks, and rocks provide basking sites.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 28, 2015 9:32 – 9:53 Wind (Beaufort Scale): 1 Cloud Cover: 5% Temperature: 15°C Precipitation: None	May 13, 2015 15:18 – 15:46 Wind (Beaufort Scale): 3 Cloud Cover: 0% Temperature: 14°C Precipitation: None	May 20, 2015 9:26 – 9:46 Wind (Beaufort Scale): 4 Cloud Cover: 0% Temperature: 7°C Precipitation: None	June 3, 2015 10:29 – 10:50 Wind (Beaufort Scale): 4 Cloud Cover: 35% Temperature: 15°C Precipitation: None	June 9, 2015 9:32 – 9:57 Wind (Beaufort Scale): 1 Cloud Cover: 10% Temperature: 15°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	No turtles observed.	One (1) Blanding's Turtle, one (1) snapping turtle and six (6) Midland Painted Turtles observed.	Two (2) Blanding's Turtle, three (3) Midland Painted Turtles and one (1) unconfirmed turtle species observed.	Three (3) Blanding's Turtles and one (1) Midland Painted Turtle observed.	No turtles observed.	
TU-S-M33-20	Large beaver pond with a mosaic of grass hummocks, rock outcrops, and fallen logs. Shorelines dominated by grasses. Muddy substrate. Water depth greater than 2 m. Site was also surveyed June 9, 2015. One (1) Blanding's Turtle observed.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 30, 2015 10:15 – 10:52 Wind (Beaufort Scale): 2 Cloud Cover: 75% Temperature: 12°C Precipitation: None	May 19, 2015 13:54 – 14:13 Wind (Beaufort Scale): 4 Cloud Cover: 100% Temperature: 9°C Precipitation: None	May 20, 2015 11:29 – 11:49 Wind (Beaufort Scale): 2 Cloud Cover: 0% Temperature: 14°C Precipitation: None	May 28, 2015 9:33 – 9:58 Wind (Beaufort Scale): 3 Cloud Cover: 60% Temperature: 17°C Precipitation: None	June 3, 2015 13:37 – 13:59 Wind (Beaufort Scale): 4 Cloud Cover: 60% Temperature: 20°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	No turtles observed.	No turtles observed.	One (1) Blanding's Turtle, one (1) Midland Painted Turtle and one (1) Snapping Turtle observed.	One (1) Blanding's Turtle observed.	Two (2) Blanding's Turtles observed.	
TU-S-M34-6	Wetland with a mosaic of open water, hummocks, vegetation cover, and snags. Emergent, submergent, and floating vegetation present. Few basking logs present. Muddy substrate. Site was also surveyed June 9, 2015. No turtles observed.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 28, 2015 10:30 – 10:56 Wind (Beaufort Scale): 1 Cloud Cover: 5% Temperature: 20°C Precipitation: None	May 13, 2015 12:27 – 12:48 Wind (Beaufort Scale): 2 Cloud Cover: 0% Temperature: 14°C Precipitation: None	May 19, 2015 14:59 – 15:19 Wind (Beaufort Scale): 4 Cloud Cover: 90% Temperature: 9°C Precipitation: None	May 28, 2015 11:54 – 12:15 Wind (Beaufort Scale): 1 Cloud Cover: 100% Temperature: 16°C Precipitation: None	June 3, 2015 12:26 – 12:47 Wind (Beaufort Scale): 4 Cloud Cover: 80% Temperature: 15°C Precipitation: None	No Blanding's Turtle observed.
		<i>Results</i>	No turtles observed.	Four (4) Midland Painted Turtles observed.	No turtles observed.	No turtles observed.	No turtles observed.	

**Table 3-17: 2015 Pre-construction Turtle Basking Survey Results for Turtle Species at Risk**

Station	Habitat Assessment		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence of Blanding's Turtle
TU-S-M40-19	Wetland with open water and patches of emergent and floating vegetation. Some snags present. Few logs suitable for basking present.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 30, 2015 11:56 – 12:22 Wind (Beaufort Scale): 0 Cloud Cover: 15% Temperature: 18°C Precipitation: None	May 14, 2015 14:00 – 14:20 Wind (Beaufort Scale): 4 Cloud Cover: 0% Temperature: 10°C Precipitation: None	May 29, 2015 9:18 – 9:38 Wind (Beaufort Scale): 2 Cloud Cover: 60% Temperature: 16°C Precipitation: None	June 4, 2015 10:11 – 10:33 Wind (Beaufort Scale): 2 Cloud Cover: 20% Temperature: 15°C Precipitation: None	June 16, 2015 9:53 – 10:13 Wind (Beaufort Scale): 1 Cloud Cover: 0% Temperature: 21°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	One (1) Blanding's Turtle and three (3) Midland Painted Turtles observed.	Three (3) Blanding's Turtles observed.	No turtles observed.	No turtles observed.	No turtles observed.	
TU-S-M50-7	Wetland split into three (3) sections by two (2) beaver dams. Some areas of open water. Vegetation cover includes Speckled Alder, ferns, and emergent species. Some hummocks and vegetation mats present. Few logs present. Water depth less than 2 m.  Two vantage points surveyed on June 15, 2015.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 1, 2015 10:49 – 11:18 Wind (Beaufort Scale): 1 Cloud Cover: 0% Temperature: 16°C Precipitation: None	May 13, 2015 12:37 – 12:57 Wind (Beaufort Scale): 3 Cloud Cover: 0% Temperature: 15°C Precipitation: None	May 19, 2015 15:09 – 15:28 Wind (Beaufort Scale): 5 Cloud Cover: 90% Temperature: 11°C Precipitation: None	June 4, 2015 10:08 – 10:28 Wind (Beaufort Scale): 3 Cloud Cover: 20% Temperature: 15°C Precipitation: None	June 15, 2015 14:33 – 15:06 (1) 15:06 – 15:21 (2) Wind (Beaufort Scale): 0-1 Cloud Cover: 100% Temperature: 18-20°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	No turtles observed.	No turtles observed.	No turtles observed.	No turtles observed.	Four (4) Blanding's Turtles, one (1) Midland Painted Turtle and one (1) Snapping Turtle observed.	
TU-A-M1-21	Very large beaver pond with a mosaic of open water, snags, logs, and emergent / submergent / floating vegetation. Many logs suitable for basking.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 7, 2015 11:10 – 11:31 Wind (Beaufort Scale): 3 Cloud Cover: 5% Temperature: 17°C Precipitation: None	May 19, 2015 10:47 – 11:08 Wind (Beaufort Scale): 2 Cloud Cover: 80% Temperature: 14°C Precipitation: None	May 28, 2015 12:10 – 12:30 Wind (Beaufort Scale): 1 Cloud Cover: 100% Temperature: 23°C Precipitation: None	June 2, 2015 11:00 – 11:18 Wind (Beaufort Scale): 2 Cloud Cover: 0% Temperature: 16°C Precipitation: None	June 19, 2015 10:10 – 10:30 Wind (Beaufort Scale): 3 Cloud Cover: 25% Temperature: 18°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	One (1) Blanding's Turtle and ten (10) Midland Painted Turtles observed.	No turtles observed.	One (1) Blanding's Turtle and 15 Midland Painted Turtles observed.	Two (2) Blanding's Turtles and 11 Midland Painted Turtles observed.	One (1) Blanding's Turtle and five (5) Midland Painted Turtle.	
TU-A-M1-22	Pond in old quarry; appears deep. Eastern shoreline vegetated with juniper. Some rocks provide suitable basking sites. No logs.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 7, 2015 10:12 – 10:32 Wind (Beaufort Scale): 2 Cloud Cover: 0% Temperature: 16°C Precipitation: None	May 19, 2015 11:35 – 11:55 Wind (Beaufort Scale): 3 Cloud Cover: 80% Temperature: 14°C Precipitation: None	May 28, 2015 11:06 – 11:26 Wind (Beaufort Scale): 1 Cloud Cover: 100% Temperature: 21°C Precipitation: None	June 2, 2015 10:22 – 10:42 Wind (Beaufort Scale): 1 Cloud Cover: 0% Temperature: 14°C Precipitation: None	June 19, 2015 11:14 – 11:34 Wind (Beaufort Scale): 3 Cloud Cover: 25% Temperature: 18°C Precipitation: None	No Blanding's Turtle observed.
		<i>Results</i>	No turtles observed.	No turtles observed.	No turtles observed.	No turtles observed.	No turtles observed.	
TU-A-M2-23	Large beaver pond with scattered floating vegetation mats. Numerous snags present. Some rock outcrops and logs provide basking sites.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 7, 2015 13:45 – 14:07 Wind (Beaufort Scale): 4 Cloud Cover: 0% Temperature: 20°C Precipitation: None	May 19, 2015 9:10 – 9:30 Wind (Beaufort Scale): 2 Cloud Cover: 40% Temperature: 11°C Precipitation: None	May 28, 2015 13:50 – 14:10 Wind (Beaufort Scale): 1 Cloud Cover: 100% Temperature: 24°C Precipitation: None	June 2, 2015 12:00 – 12:20 Wind (Beaufort Scale): 1 Cloud Cover: 0% Temperature: 18°C Precipitation: None	June 19, 2015 9:15 – 9:35 Wind (Beaufort Scale): 3 Cloud Cover: 25% Temperature: 18°C Precipitation: None	Presence of Blanding's Turtle confirmed.
		<i>Results</i>	One (1) Blanding's Turtle and six (6) Midland Painted Turtles observed.	No turtles observed.	Two (2) Blanding's Turtles and two (2) Midland Painted Turtles observed.	One (1) Blanding's Turtle and one (1) Midland Painted Turtle observed.	Four (4) Midland Painted Turtles observed.	

**Table 3-18: 2015 Pre-construction Snake Basking Survey Results**

Station	Habitat Assessment		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence of Massasauga Rattlesnake
SN-N-M2-18	Treed rock barren adjacent to large wetland and deciduous forest. Rock outcrops with deep cracks face south. Suitable shrub cover available.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 30, 2015 14:19 – 14:41 Wind (Beaufort Scale): 4 Cloud Cover: 10 % Temperature: 22°C Precipitation: None	May 13, 2015 11:50 – 12:10 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 12°C Precipitation: None	May 19, 2015 12:35 – 12:55 Wind (Beaufort Scale): 2 Cloud Cover: 90 % Temperature: 13°C Precipitation: Light rain	June 3, 2015 15:15 – 15:35 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 22°C Precipitation: None	June 16, 2015 12:28 – 12:48 Wind (Beaufort Scale): 1 Cloud Cover: 50 % Temperature: 25°C Precipitation: None	Presence of Massasauga Rattlesnake confirmed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	One (1) Massasauga Rattlesnake observed.	
SN-N-M9-18	Rock barren with abundant shrub cover (Common Juniper, Lowbush Blueberry). Some deadfall present. Several crevices in bedrock; one may extend below the frost line. Some trees present (jack pine, large tooth aspen, red maple).	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 7, 2015 9:41 – 10:02 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	May 14, 2015 14:58 – 15:18 Wind (Beaufort Scale): 4 Cloud Cover: 5 % Temperature: 15 °C Precipitation: None	May 29, 2015 10:22 – 10:45 Wind (Beaufort Scale): 3 Cloud Cover: 40 % Temperature: 17°C Precipitation: None	June 11, 2015 10:25 – 10:45 Wind (Beaufort Scale): 2 Cloud Cover: 5 % Temperature: 20°C Precipitation: None	June 15, 2015 14:10 – 14:30 Wind (Beaufort Scale): 4 Cloud Cover: 50 % Temperature: 18°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	
SN-N-M14-1	Jack Pine treed rock barren adjacent to Lakebank Sedge fen. Common Juniper also present. Occasional deadfall and small boulders. Several crevices in bedrock.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 27, 2015 12:24 Wind (Beaufort Scale): 4 Cloud Cover: 100 % Temperature: 10°C Precipitation: None	May 14, 2015 12:35 – 12:51 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 14°C Precipitation: None	May 20, 2015 11:29 – 11:50 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 10°C Precipitation: None	June 3, 2015 9:50 – 10:10 Wind (Beaufort Scale): 4 Cloud Cover: 25 % Temperature: 14°C Precipitation: None	June 16, 2015 14:50 – 15:10 Wind (Beaufort Scale): 3 Cloud Cover: 50 % Temperature: 25°C Precipitation: None	Presence of Massasauga Rattlesnake confirmed.
		<i>Results</i>	One (1) Massasauga Rattlesnake observed.	No snakes observed.	One (1) Massasauga Rattlesnake observed.	No snakes observed.	No snakes observed.	
SN-N-M19-19	Jack Pine treed rock barren with complex of wet depressions lined with Sphagnum. Rolling landscape with scattered boulders. Abundant shrub cover (Common Juniper, Sheep Laurel). Abundant deadfall. Rolling landscape with scattered boulders.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 7, 2015 12:35 – 12:55 Wind (Beaufort Scale): 2 Cloud Cover: 20 % Temperature: 18°C Precipitation: None	May 13, 2015 16:05 – 16:28 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 12 °C Precipitation: None	May 20, 2015 10:15 – 10:36 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 11°C Precipitation: None	June 11, 2015 9:38 – 9:58 Wind (Beaufort Scale): 2 Cloud Cover: 10 % Temperature: 18 °C Precipitation: None	June 15, 2015 13:22 – 13:42 Wind (Beaufort Scale): 0 Cloud Cover: 100 % Temperature: 25°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	
SN-N-M27-01	Rock barren with rolling topography adjacent to bog. Occasional Jack Pine and Common Juniper cover. Abundant deadfall. Occasional boulders and fissures in bedrock. Several small wet depressions.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 28, 2015 10:36 – 11:00 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 12°C Precipitation: None	May 14, 2015 11:23 – 11:42 Wind (Beaufort Scale): 3 Cloud Cover: 5 % Temperature: 14°C Precipitation: None	May 29, 2015 9:15 – 9:35 Wind (Beaufort Scale): 1 Cloud Cover: 25 % Temperature: 20°C Precipitation: None	June 2, 2015 11:24 – 11:47 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 15°C Precipitation: None	June 17, 2015 12:37 – 21:57 Wind (Beaufort Scale): 2 Cloud Cover: 75 % Temperature: 21°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	
SN-N-M27-02	Jack Pine treed rock barren adjacent to bog. Abundant cover from shrubs (Common Juniper) and deadfall. Occasional boulders and fissures in bedrock.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 28, 2015 11:07 – 11:30 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 15°C Precipitation: None	May 14, 2015 12:37 – 12:57 Wind (Beaufort Scale): 3 Cloud Cover: 5 % Temperature: 15 °C Precipitation: None	May 29, 2015 8:38 – 8:58 Wind (Beaufort Scale): 1 Cloud Cover: 25 % Temperature: 18°C Precipitation: None	June 2, 2015 10:32 – 10:53 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 14°C Precipitation: None	June 17, 2015 12:05 – 12:25 Wind (Beaufort Scale): 2 Cloud Cover: 75 % Temperature: 20°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	
SN-N-M33-01	Jack Pine treed rock barren adjacent to bog. Abundant shrub cover (Common Juniper, Lowbush Blueberry). Scattered rocks and small crevices.  Site also visited on June 11, 2015; no snakes observed.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 28, 2015 12:08 – 12:30 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 15°C Precipitation: None	May 14, 2015 14:37 – 14:57 Wind (Beaufort Scale): 3 Cloud Cover: 5 % Temperature: 14°C Precipitation: None	June 1, 2015 17:06 – 17:18 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 18°C Precipitation: None	June 17, 2015 8:57 – 9:17 Wind (Beaufort Scale): 1 Cloud Cover: 100 % Temperature: 17°C Precipitation: None	June 19, 2015 9:35 – 9:56 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 18°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	One (1) Northern Watersnake observed.	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	
SN-N-M33-03	Jack Pine treed rock barren adjacent to active beaver pond. Abundant shrub (Common Juniper) cover, deadfall, and rubble. Site faces south, slopes down into pond. Several crevices may extend below the frost line.  Site was also visited on June 11, 2015; no snakes observed.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 28, 2015 12:36 – 12:58 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 15°C Precipitation: None	May 14, 2015 14:16 – 14:35 Wind (Beaufort Scale): 4 Cloud Cover: 5 % Temperature: 14°C Precipitation: None	June 1, 2015 16:52 – 17:13 Wind (Beaufort Scale): 2 Cloud Cover: 5 % Temperature: 20°C Precipitation: None	June 17, 2015 9:23 – 9:43 Wind (Beaufort Scale): 0 Cloud Cover: 98 % Temperature: 18°C Precipitation: None	June 19, 2015 10:10 – 10:30 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	



**Table 3-18: 2015 Pre-construction Snake Basking Survey Results**

Station	Habitat Assessment		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence of Massasauga Rattlesnake
SN-N-M40-20	Jack Pine treed rock barren. Abundant shrub (Common Juniper) cover. Occasional rubble and deadfall. Several crevices may extend below the frost line.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 7, 2015 14:51 – 15:12 Wind (Beaufort Scale): 0 Cloud Cover: 0 % Temperature: 24°C Precipitation: None	May 14, 2015 13:34 – 13:54 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 14°C Precipitation: None	May 29, 2015 9:00 – 9:22 Wind (Beaufort Scale): 4 Cloud Cover: 30 % Temperature: 15°C Precipitation: None	June 11, 2015 8:39 – 8:59 Wind (Beaufort Scale): 2 Cloud Cover: 10 % Temperature: 14°C Precipitation: None	June 15, 2015 11:35 – 11:55 Wind (Beaufort Scale): 0 Cloud Cover: 100 % Temperature: 20°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.		
SN-N-M46-14	Jack Pine treed rock barren adjacent to bog. Occasional shrub (Common Juniper) and rock cover. Occasional deadfall. Several crevices in bedrock. Site faces south.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 29, 2015 14:09 – 14:30 Wind (Beaufort Scale): 4 Cloud Cover: 20 % Temperature: 16°C Precipitation: None	May 14, 2015 10:18 – 10:34 Wind (Beaufort Scale): 2 Cloud Cover: 15 % Temperature: 13°C Precipitation: None	May 20, 2015 9:41 – 9:55 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 11°C Precipitation: None	June 2, 2015 10:08 – 10:30 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 12°C Precipitation: None	June 16, 2015 10:27 – 10:47 Wind (Beaufort Scale): 2 Cloud Cover: 20 % Temperature: 18°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.		
SN-N-M48-13	Jack Pine treed rock barren adjacent to bog. Abundant shrub cover (Common Juniper, Lowbush Blueberry). Occasional rock cover. Several crevices in bedrock.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 29, 2015 12:16 – 12:39 Wind (Beaufort Scale): 3 Cloud Cover: 5 % Temperature: 15°C Precipitation: None Type: Hibernaculum	May 14, 2015 12:31 – 12:51 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 13°C Precipitation: None Type: Hibernaculum	May 20, 2015 11:16 – 11:43 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 13°C Precipitation: None Type: Hibernaculum	June 2, 2015 11:15 – 11:35 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 20°C Precipitation: None Type: Hibernaculum	June 16, 2015 11:58 – 12:18 Wind (Beaufort Scale): 3 Cloud Cover: 25 % Temperature: 20°C Precipitation: None Type: Hibernaculum	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.		
SN-S-M7-2	Rock barren adjacent to conifer swamp. Abundant shrub cover (Common Juniper, Bracken Fern, Lowbush Blueberry). Numerous crevices in bedrock.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 30, 2015 10:58 – 11:18 Wind (Beaufort Scale): 4 Cloud Cover: 75 % Temperature: 15 °C Precipitation: None	May 13, 2015 14:45 – 15:10 Wind (Beaufort Scale): 2 Cloud Cover: 5 % Temperature: 17°C Precipitation: None	May 29, 2015 9:06 – 9:24 Wind (Beaufort Scale): 1 Cloud Cover: 60 % Temperature: 15°C Precipitation: None	June 2, 2015 12:26 – 12:44 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	June 9, 2015 13:49 – 14:00 Wind (Beaufort Scale): 3 Cloud Cover: 20% Temperature: 22°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	One (1) Smooth Greensnake observed.	No snakes observed.	No snakes observed.		
SN-S-M7-17	Open rock barren adjacent to conifer swamp. Some deadfall. Partial shrub cover (Bracken Fern, Common Juniper, Lowbush Blueberry). Several fissures in bedrock. Boulder pile faces south.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 30, 2015 10:30 – 10:54 Wind (Beaufort Scale): 2 Cloud Cover: 75 % Temperature: 13°C Precipitation: None	May 13, 2015 15:20 – 15:45 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 12°C Precipitation: None	May 29, 2015 9:30 – 9:45 Wind (Beaufort Scale): 1 Cloud Cover: 70 % Temperature: 16°C Precipitation: None	June 2, 2015 12:55 – 13:15 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 25°C Precipitation: None	June 9, 2015 14:03 – 14:15 Wind (Beaufort Scale): 1 Cloud Cover: 20 % Temperature: 22°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.		
SN-S-M14-2	Jack Pine treed rock barren with abundant deadfall. Abundant shrub cover (Common Juniper). Scattered boulders. Several crevices in bedrock. Site faces south.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 28, 2015 12:32 – 12:54 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 18°C Precipitation: None	May 13, 2015 14:10 – 14:30 Wind (Beaufort Scale): 2 Cloud Cover: 5 % Temperature: 13°C Precipitation: None	May 20, 2015 13:44 – 14:03 Wind (Beaufort Scale): 5 Cloud Cover: 0 % Temperature: 10°C Precipitation: None	June 3, 2015 9:08 – 9:28 Wind (Beaufort Scale): 5 Cloud Cover: 35 % Temperature: 12°C Precipitation: None	June 9, 2015 9:49 – 10:09 Wind (Beaufort Scale): 1 Cloud Cover: 5 % Temperature: 16°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.		
SN-S-M17-5	Jack Pine treed rock barren adjacent to wetland. Occasional shrub and rock cover. Occasional deadfall. Several crevices in bedrock. Site is elevated.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 29, 2015 11:46 – 12:07 Wind (Beaufort Scale): 1 Cloud Cover: 10 % Temperature: 18°C Precipitation: None	May 13, 2015 12:10 – 12:37 Wind (Beaufort Scale): 2 Cloud Cover: 5 % Temperature: 12°C Precipitation: None	June 9, 2015 13:07 – 13:47 Wind (Beaufort Scale): 3 Cloud Cover: 25 % Temperature: 20°C Precipitation: None	June 11, 2015 12:53 – 13:03 Wind (Beaufort Scale): 1 Cloud Cover: 20 % Temperature: 22°C Precipitation: None	June 15, 2015 10:33 – 10:53 Wind (Beaufort Scale): 0 Cloud Cover: 100 % Temperature: 15 °C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.		
SN-S-M17-7	Treed rock barren (White / Jack Pine) adjacent to wetland. Abundant shrub cover (Lowbush Blueberry, Sheep Laurel, Common Juniper). Occasional deadfall. Deep crevice in bedrock may extend below frost line.  Site also visited on June 9, 2015; no snakes observed.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 29, 2015 11:10 – 11:30 Wind (Beaufort Scale): 2 Cloud Cover: 15 % Temperature: 18°C Precipitation: None	May 13, 2015 11:40 – 12:00 Wind (Beaufort Scale): 3 Cloud Cover: 5 % Temperature: 10°C Precipitation: None	May 20, 2015 12:45 – 13:05 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 13°C Precipitation: None	June 11, 2015 13:25 – 13:41 Wind (Beaufort Scale): 1 Cloud Cover: 30 % Temperature: 22°C Precipitation: None	June 15, 2015 9:57 – 10:18 Wind (Beaufort Scale): 1 Cloud Cover: 100 % Temperature: 14°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	One (1) Northern Watersnake observed.	No snakes observed.	No snakes observed.		

**Table 3-18: 2015 Pre-construction Snake Basking Survey Results**

Station	Habitat Assessment		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence of Massasauga Rattlesnake
SN-S-M31-2	Rock barren adjacent to conifer swamp. Abundant shrub cover (Common Juniper); White Pine also present. Occasional large deadfall. Several deep crevices in bedrock. Scattered rubble. Site faces south.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 30, 2015 9:07 – 9:27 Wind (Beaufort Scale): 2 Cloud Cover: 75 % Temperature: 12°C Precipitation: None	May 13, 2015 14:46 – 15:07 Wind (Beaufort Scale): 5 Cloud Cover: 0 % Temperature: 14°C Precipitation: None	May 20, 2015 10:38 – 10:58 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 8°C Precipitation: None	June 3, 2015 10:18 – 10:38 Wind (Beaufort Scale): 4 Cloud Cover: 50 % Temperature: 15°C Precipitation: None	June 9, 2015 10:10 – 10:27 Wind (Beaufort Scale): 1 Cloud Cover: 15 % Temperature: 15°C Precipitation: None	Presence of Massasauga Rattlesnake confirmed.
		<i>Results</i>	No snakes observed.	No snakes observed.	One (1) Massasauga Rattlesnake observed.	No snakes observed.	No snakes observed.	
SN-S-M33-20	Jack Pine treed rock barren adjacent to beaver pond. Abundant shrub cover (Juniper) and deadfall. Occasional crevices in bedrock.  Site also visited on June 9, 2015; no snakes observed.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 30, 2015 10:52 – 11:12 Wind (Beaufort Scale): 2 Cloud Cover: 75 % Temperature: 12°C Precipitation: None	May 19, 2015 14:15 – 14:35 Wind (Beaufort Scale): 5 Cloud Cover: 100 % Temperature: 9°C Precipitation: None	May 20, 2015 11:56 – 12:16 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 14°C Precipitation: None	May 28, 2015 9:33 – 9:53 Wind (Beaufort Scale): 1 Cloud Cover: 50 % Temperature: 12°C Precipitation: None	June 3, 2015 14:00 – 14:10 Wind (Beaufort Scale): 4 Cloud Cover: 40 % Temperature: 20°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	
SN-S-M34-1	White / Jack Pine rock barren adjacent to pond. Occasional shrub cover (Common Juniper) and deadfall. Numerous crevices in bedrock; some may extend below frost line. Site faces south.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 28, 2015 11:33 – 11:55 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 18°C Precipitation: None	May 13, 2015 10:55 – 11:16 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 12°C Precipitation: None	May 20, 2015 10:05 – 10:25 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 13°C Precipitation: None	May 28, 2015 11:00 – 11:20 Wind (Beaufort Scale): 1 Cloud Cover: 95 % Temperature: 16°C Precipitation: None	June 3, 2015 13:04 – 13:25 Wind (Beaufort Scale): 4 Cloud Cover: 80 % Temperature: 18°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	One (1) Five-lined Skink observed.	No snakes observed.	
SN-S-M40-19	Jack Pine treed rock barren adjacent to graminoid marsh. Occasional shrub cover (Juniper, Sweet Fern). Occasional deadfall. Occasional rock cover. Several crevices in bedrock.  Site also visited on June 19, 2015; no snakes observed.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	April 30, 2015 11:45 – 12:05 Wind (Beaufort Scale): 3 Cloud Cover: 15 % Temperature: 18°C Precipitation: None	May 14, 2015 14:00 – 14:25 Wind (Beaufort Scale): 4 Cloud Cover: 0 % Temperature: 10°C Precipitation: None	May 29, 2015 10:45 – 11:04 Wind (Beaufort Scale): 2 Cloud Cover: 50 % Temperature: 16°C Precipitation: None	June 4, 2015 10:45 – 11:04 Wind (Beaufort Scale): 1 Cloud Cover: 20 % Temperature: 15°C Precipitation: None	June 16, 2015 10:21 – 10:34 Wind (Beaufort Scale): 2 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	
SN-S-M50-7	Rock barren in forest opening adjacent to wetlands. Occasional shrub / herbaceous cover. Abundant deadfall and rock cover.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 1, 2015 10:19 – 10:39 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 14°C Precipitation: None	May 13, 2015 14:01 – 14:21 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 12°C Precipitation: None	May 19, 2015 15:02 – 15:25 Wind (Beaufort Scale): 5 Cloud Cover: 90 % Temperature: 11°C Precipitation: None	June 4, 2015 9:38 – 9:58 Wind (Beaufort Scale): 2 Cloud Cover: 15 % Temperature: 14°C Precipitation: None	June 15, 2015 14:10 – 14:30 Wind (Beaufort Scale): 0 Cloud Cover: 100 % Temperature: 16°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	One (1) Eastern Gartersnake observed.	One (1) Eastern Gartersnake observed.	No snakes observed.	No snakes observed.	No snakes observed.	
SN-A-M01-1	Juniper shrub rock barren within mixed forest adjacent to small wetland. Abundant shrub cover. Occasional deadfall and rock cover. Several crevices in bedrock that may extend below frost line.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 7, 2015 9:28 – 9:48 Wind (Beaufort Scale): 3 Cloud Cover: 0 % Temperature: 15°C Precipitation: None	May 19, 2015 11:02 – 11:35 Wind (Beaufort Scale): 3 Cloud Cover: 80 % Temperature: 14°C Precipitation: None	May 28, 2015 11:29 – 11:49 Wind (Beaufort Scale): 2 Cloud Cover: 90 % Temperature: 18°C Precipitation: None	June 2, 2015 10:32 – 10:52 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 15°C Precipitation: None	June 19, 2015 10:59 – 11:20 Wind (Beaufort Scale): 3 Cloud Cover: 25 % Temperature: 18°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	
SN-A-M02-2	Juniper shrub rock barren adjacent to beaver pond and mixed forest. Abundant shrub cover. Scattered rubble. Site faces southeast.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 7, 2015 13:25 – 13:45 Wind (Beaufort Scale): 4 Cloud Cover: 5 % Temperature: 20°C Precipitation: None	May 19, 2015 9:40 – 10:00 Wind (Beaufort Scale): 2 Cloud Cover: 40 % Temperature: 11°C Precipitation: None	May 28, 2015 13:50 – 14:10 Wind (Beaufort Scale): 2 Cloud Cover: 85 % Temperature: 20°C Precipitation: None	June 2, 2015 12:00 – 12:21 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 18°C Precipitation: None	June 19, 2015 9:33 – 9:53 Wind (Beaufort Scale): 3 Cloud Cover: 25 % Temperature: 18°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	
SN-A-M03-3	Large Juniper shrub rock barren. Abundant shrub cover (Common Juniper, Lowbush Blueberry). Occasional rock cover and crevices in bedrock. Site is elevated above surrounding forest.	<i>Date, Survey Start and End Times, and Weather Conditions</i>	May 7, 2015 14:48 – 15:08 Wind (Beaufort Scale): 4 Cloud Cover: 5 % Temperature: 21°C Precipitation: None	May 19, 2015 10:01 – 10:27 Wind (Beaufort Scale): 2 Cloud Cover: 80 % Temperature: 11°C Precipitation: None	May 28, 2015 14:25 – 14:50 Wind (Beaufort Scale): 2 Cloud Cover: 75 % Temperature: 20°C Precipitation: None	June 2, 2015 12:40 – 12:58 Wind (Beaufort Scale): 1 Cloud Cover: 0 % Temperature: 20°C Precipitation: None	June 19, 2015 8:38 – 8:58 Wind (Beaufort Scale): 2 Cloud Cover: 10 % Temperature: 18°C Precipitation: None	No Massasauga Rattlesnake observed.
		<i>Results</i>	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	

Figure 3-6: Blanding's Turtle Observations 2011-2013, 2015

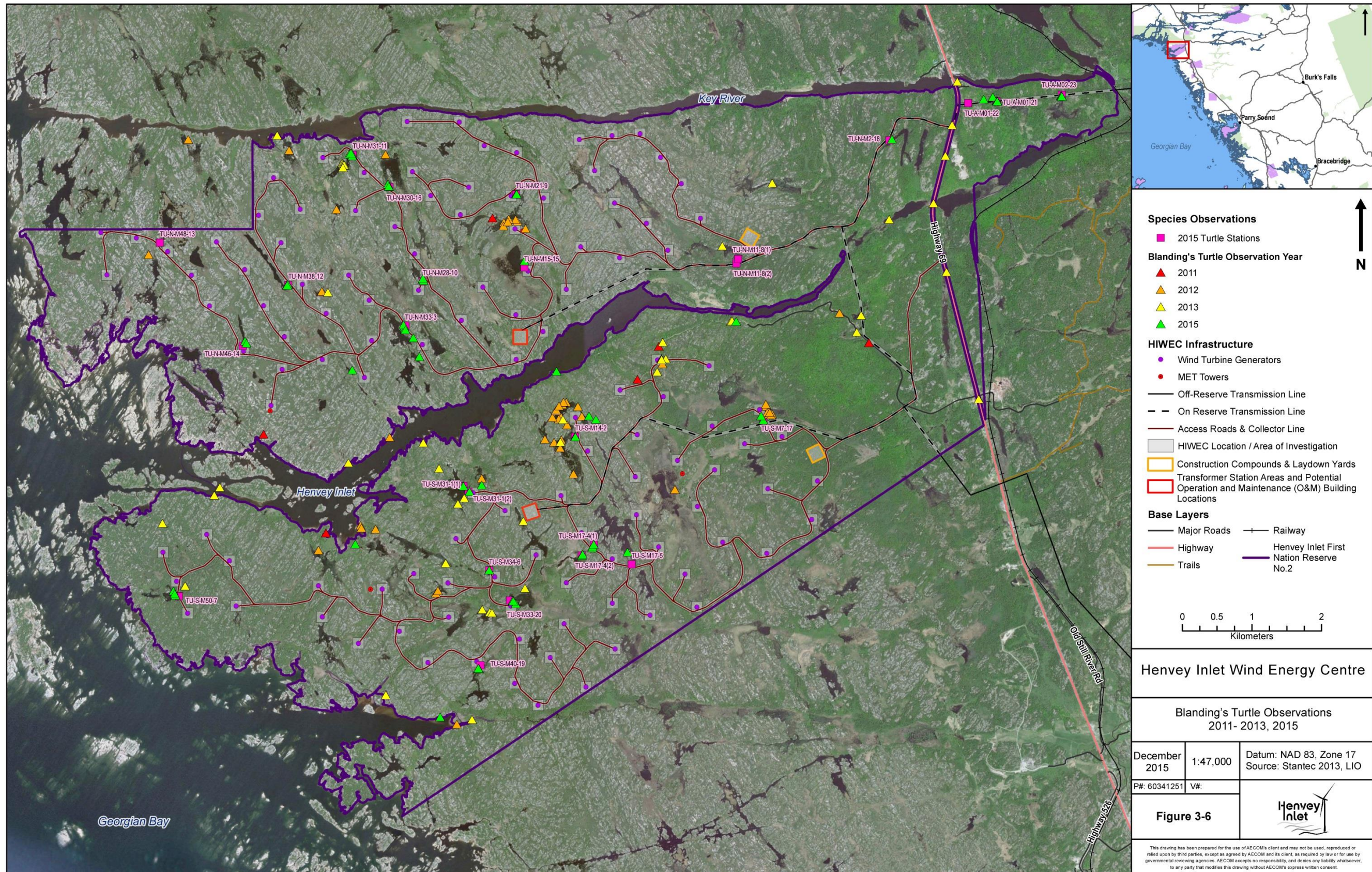
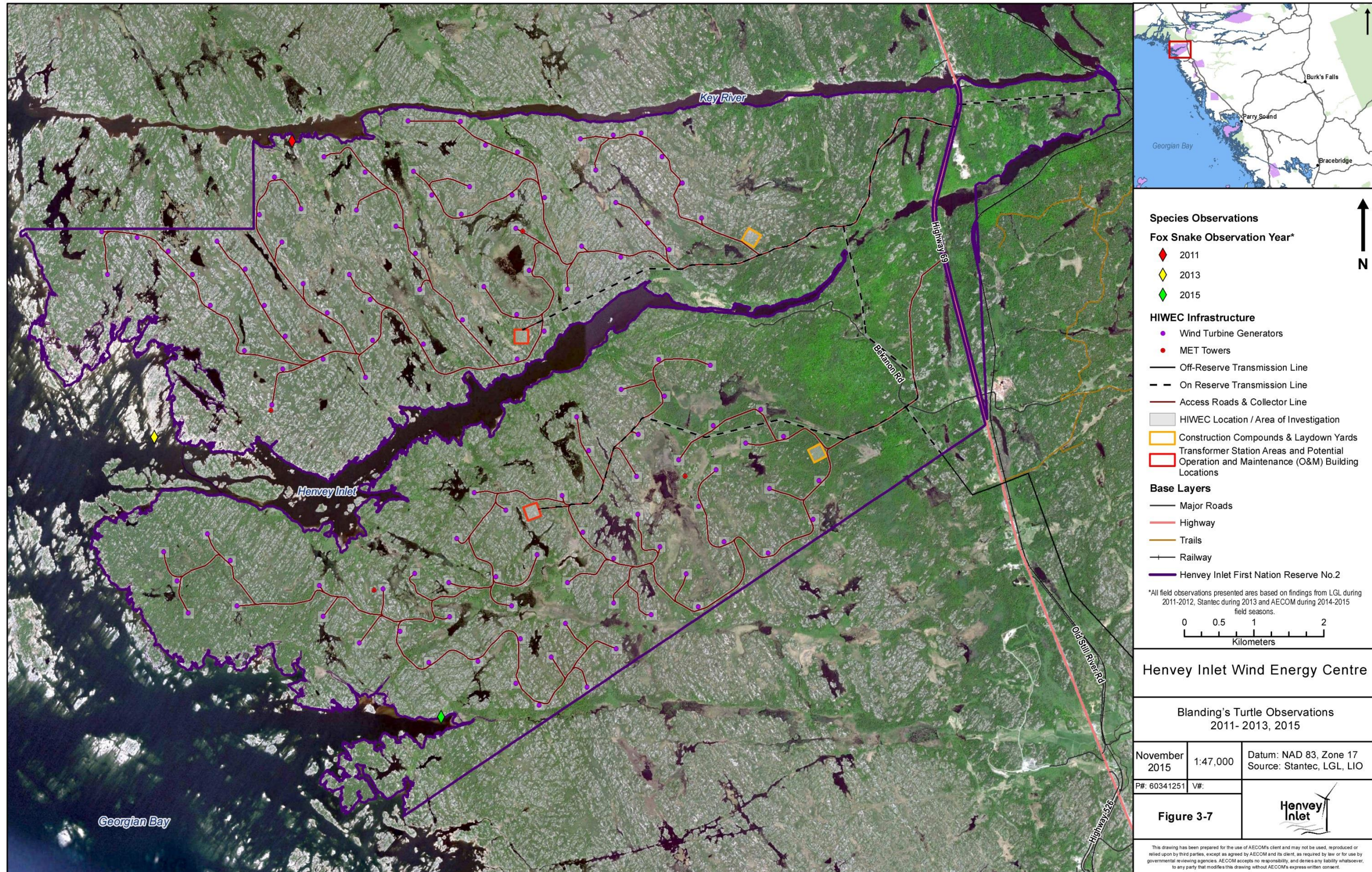


Figure 3-7: Eastern Foxsnake Observations 2011, 2013, 2015



### 3.5.15 Eastern Hog-nosed Snake

Herpetological surveys to confirm the presence / absence, abundance and distribution of this species within the HIWEC study area were completed in 2011, 2012, 2013 and 2015. The results of the herpetological surveys completed by LGL and Stantec in 2011, 2012 and 2013 are provided in the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review). Snake basking surveys were completed in 2015. The results of the 2015 snake basking surveys are summarized in **Table 3-18**. Field notes for the snake basking surveys are provided in **Appendix C**. No Eastern Hog-nosed Snakes were observed during these surveys. This species was not observed in the HIWEC study in any surveyed year, however Eastern Hog-nosed Snake is very difficult to find through targeted surveys even when present; therefore, it was carried forward to the EIS.

### 3.5.16 Eastern Musk Turtle

Herpetological surveys to confirm the presence / absence, abundance and distribution of this species within the HIWEC study area were completed in 2011, 2012, 2013 and 2015. The results of the herpetological surveys completed by LGL and Stantec in 2011, 2012 and 2013 are provided in the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review). The results of the 2015 turtle basking surveys are summarized in **Table 3-17** above.

There is only one (1) record of Eastern Musk Turtle within the HIWEC study area across all of the surveyed years. In 2011, an empty shell of an individual Eastern Musk Turtle was observed (AECOM, 2015f). The co-ordinates for this record were not provided to AECOM and therefore it could not be mapped; however, based on correspondence with Sarah Richer (a biologist who conducted surveys on behalf of LGL in 2011), it was found along the shoreline of the Key River. This species was carried forward to the EIS.

### 3.5.17 Massasauga Rattlesnake (Great Lakes / St. Lawrence Population)

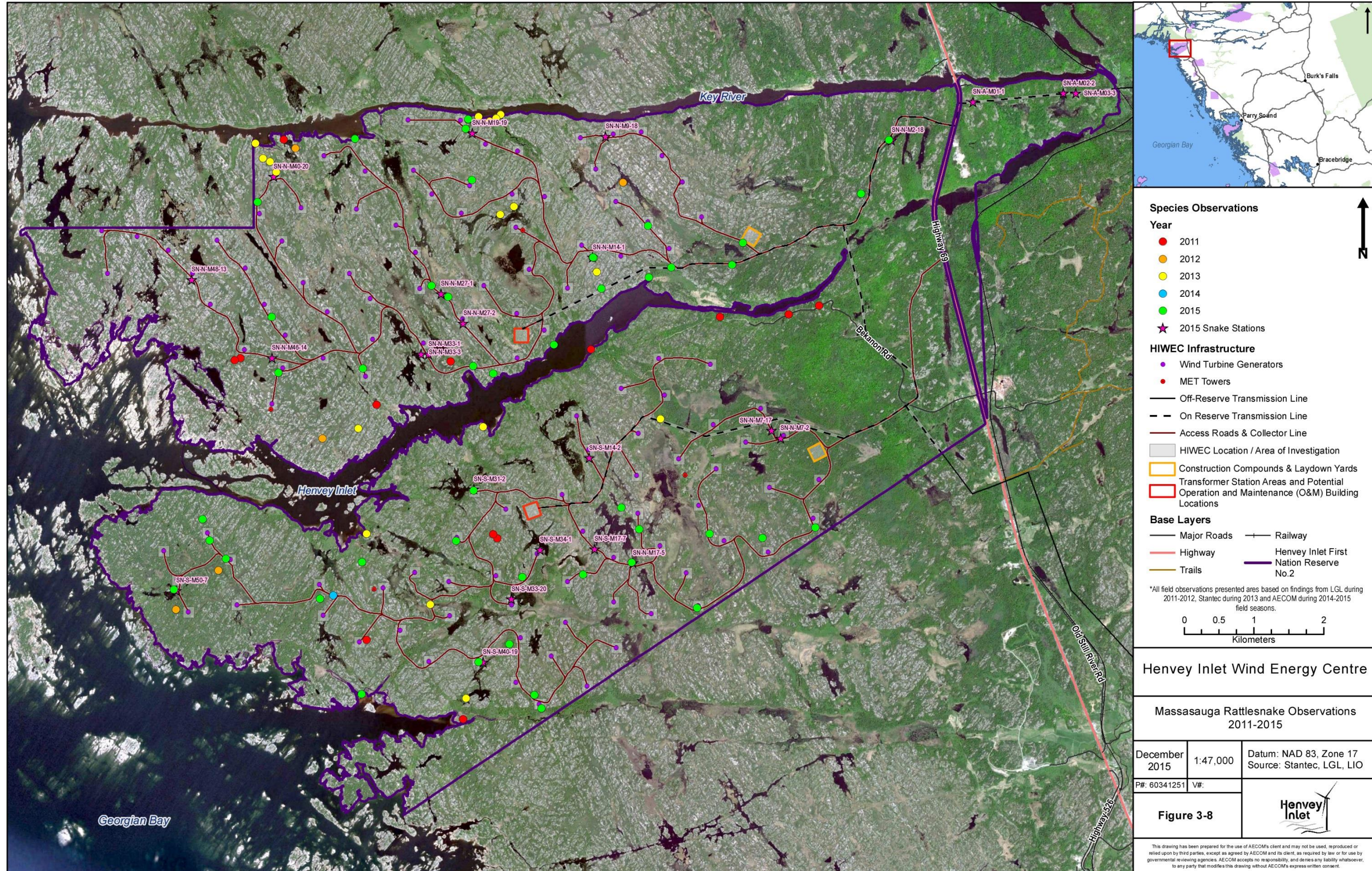
Herpetological surveys to confirm the presence / absence, abundance and distribution of this species within the HIWEC study area were completed in 2011, 2012, 2013 and 2015. The results of the herpetological surveys completed by LGL and Stantec in 2011, 2012 and 2013 are provided in the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015f; refer to Appendix A of the Records Review). The results of the 2015 snake basking surveys are summarized in **Table 3-18**. Field notes for the snake basking surveys are provided in **Appendix C**.

Massasauga Rattlesnakes were observed at three (3) of the 24 stations surveyed in 2015. The locations where Massasauga Rattlesnake was observed between 2011 and 2015, including incidental observations, are mapped on **Figure 3-8**. This species is relatively common and widespread throughout the HIWEC study area and therefore it was carried forward to the EIS.

### 3.5.18 Kirtland's Warbler

Breeding bird surveys to confirm the presence / absence, abundance and distribution of this species within the HIWEC study area were completed in 2011, 2012, 2013, and 2015. The results of the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013 are provided in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review). The results of breeding bird surveys completed in 2015, including targeted surveys for this species as described in **Section 2.5.18**, are summarized in **Appendix C**. Kirtland's Warbler was not recorded during any of the breeding bird surveys; however, it was incidentally recorded on three (3) separate occasions by three (3) Expert Avian Biologists while walking in between sites for various other surveys. On June 15, 2015, a

Figure 3-8: Massasauga Rattlesnake Observations 2011-2015



male and female Kirtland’s Warblers were observed. The male was singing repeatedly and responded to a call broadcast. On June 19, 2015, a male was observed singing. On June 26, 2015, a singing male was observed before flying off and then returning after five (5) minutes. These three (3) observations all occurred within the same general location and habitat in the northern part of the HIWEC study area on different dates. It is therefore assumed all observations were of the same Kirtland’s Warblers, whether it was just the male or both the male and female together. This species was carried to the EIS.

### 3.6 Raptor Migration Surveys

The results of the following raptor migration surveys completed by LGL and Stantec in 2011, 2012 and 2013 are summarized in the *Summary of 2013 Raptor Migration Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015b; refer to Appendix A of the Records Review):

- 2011 Spring Raptor Migration Surveys;
- 2011 Fall Raptor Migration Surveys;
- 2012 Spring Migration Surveys;
- 2012 Spring Hawk Call Playback Surveys;
- 2013 Spring Raptor Migration Surveys; and
- 2013 Fall Raptor Migration Surveys.

During the 2015 spring raptor migration surveys, a total of 205 raptors comprised of 13 species and one (1) unidentified *Accipiter* species were observed. The most commonly observed raptor was Turkey Vulture, with 88 individuals recorded. This species was often seen flying over or circling Henvey Inlet in every direction, which created difficulty in determining whether individuals were migrating or foraging. Several kettles of Turkey Vulture were also observed. Other raptor observations included American Kestrel (5 individuals), Bald Eagle (29 individuals), Broad-winged Hawk (19 individuals), Cooper’s Hawk (5 individuals), Merlin (22 individuals), Northern Goshawk (3 individuals), Northern Harrier (1 individual), Northern Saw-whet Owl (1 individual), Osprey (8 individuals), Peregrine Falcon (2 individuals), Red-tailed Hawk (5 individuals), Sharp-shinned Hawk (10 individuals), and unidentified *Accipiter* species (7 individuals). Raptors were observed flying in many directions, but the majority of individuals were observed to be flying in a northerly direction.

In addition to raptors, incidental observations of other avian species were also recorded. Notable observations included three (3) American White Pelican, which were seen to be flying southeast. Field notes from the 2015 spring raptor migration surveys are provided in **Appendix C**. Detailed results from the 2015 Spring Raptor Migration Surveys are also summarized in **Appendix C**.

**Table 3-19** below provides a brief summary of results with regard to the total number of raptors recorded during each survey conducted in 2011, 2012, 2013 and 2015.

**Table 3-19: Summary of Raptor Migration Volumes from 2011, 2012, 2013 and 2015 Surveys**

Survey	Total Number of Raptors Recorded	Survey Period
2011 Spring Raptor Migration Surveys	44	May 9 to 18, 2011
2011 Fall Raptor Migration Surveys	426	September 5 to October 28, 2011
2012 Spring Migration Surveys	351	April 5 to May 16, 2012
2012 Spring Hawk Call Playback Surveys	11	April 30 to May 16, 2012
2013 Spring Raptor Migration Surveys	>201	March 18 to May 1, 2013
2013 Fall Raptor Migration Surveys	265	September 5 to November 12, 2013
2015 Spring Raptor Migration Surveys	205	April 15 to May 21, 2015

### 3.7 Summary of Features Carried Forward to the Environmental Impact Study

Table 3-20 provides a summary of the natural features either treated as important or confirmed to be important during the Evaluation of Importance. These features were carried forward to the Environmental Impact Study (EIS) phase of this Natural Heritage Assessment (NHA), to identify potential impacts of the HIWEC and appropriate mitigations measures.

**Table 3-20: Summary of Natural Features Carried Forward to the EIS**

Feature	Natural Features Carried Forward to the EIS
<b>Conservation Reserves</b>	The North Georgian Bay Shoreline and Islands Conservation Reserve was carried forward to the EIS.
<b>Important Wetlands</b>	Four (4) wetland features were evaluated and confirmed to be important, and carried forward to the EIS.
<b>Important Woodlands</b>	A total of 35 woodland features were evaluated and confirmed to be important, and carried forward to the EIS.
<b>Important Wildlife Habitat</b>	<p>The following Candidate IWH features were either evaluated and determined to be IWH, or were treated as IWH for the purpose of this submission, and carried forward to the EIS (in some cases, a determination as to whether the mitigation measures described in the EIS will be applied may be made based on the outcome of pre-construction surveys):</p> <ul style="list-style-type: none"> <li>• Bat Maternity Colonies;</li> <li>• Turtle Wintering Areas;</li> <li>• Reptile Hibernacula;</li> <li>• Deer Yarding Areas;</li> <li>• Cliffs and Talus Slopes;</li> <li>• Precambrian Rock Barrens;</li> <li>• Sand Barrens;</li> <li>• Old-growth Forest;</li> <li>• Bogs;</li> <li>• Waterfowl Nesting Areas;</li> <li>• Bald Eagle and Osprey Nesting, Foraging and Perching Habitat;</li> <li>• Woodland Raptor Nesting Habitat;</li> <li>• Turtle Lizard and Nesting Areas;</li> <li>• Seeps and Springs;</li> <li>• Aquatic Feeding Habitat;</li> <li>• Amphibian Breeding Habitat (Woodland and Wetland);</li> <li>• Mast producing Areas;</li> <li>• Marsh Bird Breeding Habitat;</li> <li>• Habitat for Specific SOCC, including:               <ul style="list-style-type: none"> <li>– Black Tern;</li> <li>– Eastern Wood-pewee;</li> <li>– Prairie Warbler;</li> <li>– Wood Thrush;</li> <li>– Yellow Rail;</li> <li>– Horned Clubtail;</li> <li>– Mottled Darner;</li> <li>– Pine Imperial Moth;</li> <li>– Common Five-linked Skink;</li> <li>– Eastern Ribbonsnake;</li> <li>– Milksnake;</li> <li>– Northern Map Turtle; and</li> <li>– Snapping Turtle.</li> </ul> </li> </ul> <p>The following IWH features were evaluated and determined not to be IWH. These were not carried forward to the EIS:</p> <ul style="list-style-type: none"> <li>• Waterfowl Stopover and Staging Areas (Aquatic);</li> <li>• Shorebird Migratory Stopover Areas; and</li> <li>• Colonially-Nesting Bird Breeding Habitat (Trees / Shrubs).</li> </ul> <p>The following Generalized Candidate IWH features were carried forward to the EIS:</p> <ul style="list-style-type: none"> <li>• Shorebird Migratory Stopover Areas;</li> <li>• Bat Maternity Colonies;</li> <li>• Turtle Wintering Areas;</li> </ul>



**Table 3-20: Summary of Natural Features Carried Forward to the EIS**

Feature	Natural Features Carried Forward to the EIS
	<ul style="list-style-type: none"> <li>• Reptile Hibernacula;</li> <li>• Precambrian Rock Barren;</li> <li>• Bog;</li> <li>• Waterfowl Nesting Areas;</li> <li>• Woodland Raptor Nesting Habitat;</li> <li>• Turtle and Lizard Nesting Areas;</li> <li>• Seeps and Springs;</li> <li>• Amphibian Breeding Habitat (Woodland and Wetland);</li> <li>• Mast Producing Areas;</li> <li>• Marsh Bird Breeding Habitat; and</li> <li>• Habitat for Specific SOCC, including:               <ul style="list-style-type: none"> <li>– Eastern Wood-pewee;</li> <li>– Prairie Warbler;</li> <li>– Wood Thrush;</li> <li>– Yellow Rail;</li> <li>– Horned Clubtail;</li> <li>– Mottled Darner;</li> <li>– Pine Imperial Moth;</li> <li>– Eastern Ribbonsnake;</li> <li>– Milksnake;</li> <li>– Northern Map Turtle; and</li> <li>– Snapping Turtle.</li> </ul> </li> </ul>
<p><b>Federal Species at Risk</b></p>	<p>The following Federal Species At Risk were carried forward to the EIS:</p> <ul style="list-style-type: none"> <li>• Canada Warbler;</li> <li>• Common Nighthawk;</li> <li>• Olive-sided Flycatcher;</li> <li>• Eastern Whip-poor-will;</li> <li>• Little Brown Bat;</li> <li>• Northern Bat;</li> <li>• Tri-coloured Bat;</li> <li>• Branched Bartonina;</li> <li>• Blanding’s Turtle;</li> <li>• Eastern Foxsnake;</li> <li>• Eastern Hog-nosed Snake;</li> <li>• Eastern Musk Turtle;</li> <li>• Massausaga Rattlesnake; and</li> <li>• Kirtland’s Warbler.</li> </ul> <p>The following Federal Species at Risk were not carried forward to the EIS:</p> <ul style="list-style-type: none"> <li>• Western Chorus Frog;</li> <li>• Chimney Swift;</li> <li>• Golden-winged Warbler; and</li> <li>• Least Bittern.</li> </ul>

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# Appendix A

## Staff Qualifications

# Appendix A

## Staff Qualifications

### Jillian deMan, BSc

Ms. deMan is a terrestrial ecologist with 10 years of experience, including environmental, engineering and waste management projects. She is certified in both ELC (2003) and OWES (2004). Ms. deMan is involved with numerous projects across Canada that incorporate natural heritage issues / planning and restoration. She has familiarity with the Mixedwood Plains, Boreal Shield, Taiga Shield, Atlantic Maritime and Hudson Plains ecozones of Canada. Her technical skills include wetland boundary delineation, evaluation, monitoring and restoration, soils identification, air-photo interpretation, multi-scale floral inventories, amphibian surveys, woodland evaluations and biomass fish sampling through seine net, minnow trap or electrofishing methods. Ms. deMan assists with the preparation of environmental impact studies, constraints and opportunity reports, subject land status reports, environmental assessment evaluations, restoration plans, monitoring reports and peer reviews

### Julie Ellis, BSc (Hons)

Ms. Ellis is an ELC certified terrestrial biologist with knowledge of Natural Heritage Assessment (NHA) requirements under the Renewable Energy Approval (REA) process, as described in Ontario Regulation 359/09 (O.Reg. 359/09) under the *Environmental Protection Act*. While at AECOM, Ms. Ellis has contributed to numerous renewable energy projects in southern and central Ontario. Her involvement in these projects has included terrestrial field work coordination, terrestrial fieldwork, data analysis and writing the significant wildlife habitat components of Natural Heritage Assessment (NHA) reports and amendments, and development of post-construction environmental effects monitoring plans in accordance with the most recent Ministry of Natural Resources and Forestry guidelines. Ms. Ellis has also assisted in performing ecological land classification field work, species at risk permitting, tree inventories, benthic macroinvertebrate sampling, herpetofaunal survey, avian and species at risk surveys.

In addition, Ms. Ellis was an environmental monitor for the Bluewater and Jericho Wind Energy Centre projects during the construction phases of these projects.

### Olga Hropach, BSc (Hons)

Ms. Hropach is an ELC certified terrestrial ecologist with expertise in Natural Heritage Assessment (NHA) requirements under the Renewable Energy Approval (REA) process, as described in Ontario Regulation 359/09 (O.Reg. 359/09) under the *Environmental Protection Act*. While at AECOM, Ms. Hropach has contributed to many wind energy projects in southern Ontario. Her involvement in these projects has included terrestrial field work, data analysis and writing the significant wildlife habitat components of Natural Heritage Assessment (NHA) reports, Species at Risk permitting, construction environmental compliance monitoring, and development of post-construction environmental effects monitoring plans (EEMPs) and operational mitigation plans in accordance with the most recent Ministry of Natural Resources and Forestry guidelines. Ms. Hropach has also conducted ecological land classification field work, herpetofauna surveys and avian surveys as well as assisted in preparing environmental impact assessments on numerous projects. She has also assisted in 24/7 environmental monitoring for frac-outs.



Prior to joining AECOM, Ms. Hropach worked as a Species at Risk Assistant Biologist with the Ministry of Natural Resources and Forestry. As a result, she has experience with Species at Risk in Ontario and has an extensive knowledge of the *Ontario Endangered Species Act, 2007*.

### James Kamstra, MES

Mr. Kamstra has 25 years of experience conducting environmental impact studies, biophysical inventories, and ecological restoration projects. Through his extensive field experience, he has become a recognized expert in identifying flora and fauna, assessing ecological significance, and understanding the function of ecosystems. Mr. Kamstra has completed numerous studies on the impact of a wide variety of developments on natural heritage features including wind energy, residential housing, industrial sites, landfills, gravel pits, mines, golf courses, highways, pipelines, and hydroelectric dams with experience in Ontario, British Columbia, United Arab Emirates, and Belize. He is highly experienced with vegetation mapping, quantified vegetation sampling, wildlife population surveys, and habitat evaluations. Mr. Kamstra is ELC certified and is a qualified wetland evaluator that has evaluated several wetlands in southern Ontario. He has particular expertise in the fields of herpetology, ornithology, and botany, and has worked with many of Ontario's Species at Risk. Mr. Kamstra has extensive Species at Risk experience in Ontario. He sat on advisory panel which assisted MNRF in developing the *Ontario Endangered Species Act, 2007* and currently sits on COSSARO, which determines species on the official list in Ontario. He sits on two recovery teams and has written status reports and recovery strategies for several species. In addition, Mr. Kamstra has first-hand field experience with many Species at Risk through environmental impact studies and has prepared several Overall Benefit Permits.

### Adam McClelland, BSc

Mr. McClelland is an ecology technician, with a particular interest in reptiles, amphibians, and insects. He has 1.5 years of experience conducting wildlife and vegetation surveys for private and non-profit organizations. While with AECOM, Mr. McClelland's contributions have focused primarily on wind energy projects in central Ontario; he has conducted a variety of wildlife and vegetation surveys targeting Species at Risk, significant wildlife habitat, and rare vegetation communities, as defined by Ministry of Natural Resources and Forestry protocols. He has also been involved in the analysis of the resulting data and the writing of environmental assessments.

### Johanna Perz, MSc

Ms. Perz is a terrestrial ecologist with AECOM. She graduated from Trent University with an MSc in ecology and conservation biology. Ms. Perz is certified in the Ecological Land Classification system for southern Ontario. For the past three years, Ms. Perz has worked on projects investigating shorebird breeding success and survival in the subarctic. She has also worked as a research assistant with University of Toronto and Trent University and as a field monitoring technician with a conservation authority. Ms. Perz's experience includes field studies throughout Ontario, database management, data analysis, and proposal and report preparation.

### Jessica M. Ward, PhD

Dr. Ward is an ecologist specializing in ecological impact assessment with 11 years of experience in the study of aquatic and terrestrial ecosystems. Since joining AECOM, she has completed numerous studies on the environmental impacts of various development activities, including renewable energy (wind, solar and bio-fuel), water and waste water infrastructure, transportation and mining projects. Dr. Ward is currently focused on the management and technical review of environmental deliverables for large-scale wind energy development projects in southern Ontario, including Natural Heritage Assessments as required by O. Reg. 359/09 under the *Environmental Protection Act*, development of post-construction environmental effects monitoring plans in

accordance with the most recent Ministry of Natural Resources and Forestry guidelines, and permitting under the *Endangered Species Act* and *Fish and Wildlife Conservation Act*. She was also AECOM's project manager for environmental monitoring and site inspection services during construction of the Bluewater, Goshen and Jericho Wind Energy Centres, as well as post-construction monitoring at the Bluewater Wind Energy Centre. Dr. Ward has experience designing, completing and providing technical oversight and review of environmental assessments, environmental impact studies, and environmental effects monitoring programs. Her involvement in these projects has been in the areas of ecology discipline co-ordination, agency and public consultation, technical review, research and report writing, statistical analysis and interpretation of ecological data, and environmental impact interpretation and analysis. Prior to joining AECOM, Dr. Ward completed a PhD on the ecological impacts of invasive species and worked as a science writer for Fisheries and Oceans Canada.

### Kristan Washburn, MES

Ms. Washburn is an ELC and OWES certified terrestrial ecologist with AECOM's Water and Natural Resources Team. Ms. Washburn has over 5 years of working experience in the ecological and environmental services industry. She is experienced with leading ecological land classification field work, evaluating wetlands, Species at Risk assessments, flora and fauna identification and various species- and wildlife-specific surveys.

# Appendix B

## OWES Evaluations

## Henvey Inlet Wetland WET-001

Wetland Evaluation Edition

1st

July 29, 2015

### Comments

The following evaluation was conducted using field studies completed by: AECOM in 2015, Stantec in 2013, and LGL in 2011 and 2012. Wetland polygons were identified through fieldwork completed in 2013 and 2015 using colour orthoairal photography from 2013. This wetland complex is approximately 1159 ha in size and composed of a mosaic of bog, fen, marsh and swamp wetland types. All four site types were found within this wetland complex with lacustrine wetlands influenced by Henvey Inlet and Georgian Bay, riverine wetlands influenced by the Key River, isolated bogs relying on atmospheric moisture, and palustrine wetlands influenced by surface flow and watercourses. Swamps were the most abundant wetland type observed within the wetland complex (35% coverage). These wetlands consisted of dominant: Black Spruce (*Picea mariana*), Tamarack (*Larix laricina*), Speckled Alder (*Alnus incana*), American Mountain Ash (*Nemopanthus mucronatus*), Leatherleaf (*Chamaedaphne calyculata*), Labrador Tea (*Ledum groenlandicum*), Canada Mayflower (*Mainthemum canadense*), Three-leaved Solomon's Seal (*Mainthemum trifolium*) and Sphagnum (*Sphagnum spp.*). Fen wetland types were also abundant (34% coverage). Dominant plant species within these wetlands included: Tamarack, Sheep Laurel (*Kalmia angustifolia*), Leatherleaf, a variety of sedge species (*Carex spp.*) and Sphagnum. Marsh wetland comprised 26% of the wetlands within the complex. Marshes, including open water marshes, contained a dominant mixture of: Sedge species as well as robust emergent plants (*Typha latifolia*), floating (*Nuphar variegatum*) and free floating (*Lemna minor*) species. Bogs also occurred within this wetland complex although not abundant (5% coverage). Bogs within this complex were composed of dominant: Leatherleaf, a variety of Sedge species and Spahgnum Mosses. Migration, feeding and hibernation habitat for endangered and threatened species was identified within this complex as well as provincially significant species.

### Additional Information

*Include relevant information that can not be entered in the wetland data record( Ex. Sections that have not been completed.)*

<b>Official Name:</b>	Henvey Inlet Wetland WET-001		
<b>Evaluation Edition:</b>	1st	<b>Version:</b>	1.3
<b>Wetland ID.:</b>	WET-001		
<b>Wetland Significance:</b>	Year/Month Last Evaluated	Not Evaluated	
	Year/Month Last Updated		
<b>Special Planning Considerations:</b>	Federal Land		<b>Scores</b>
<b>Wetland Area:</b>	1158.82		Biological: 207
<b>Dentention Area:</b>	NA/Coastal Wetlands		Social: 158
<b>Catchment Area:</b>	NA/Coastal Wetlands		Hydrological: 86
<b>Coastal Unit Area:</b>	1159.00		Special Features: 250
<b>OMNR Source</b>	Parry Sound District MNR		Overall: 701
<b>Information Source</b>	Field Observation: AECOM, 2015		
<b>Submitted by:</b>	Kristan Washburn		<b>Date</b> 30-Jul-15

**WETLAND EVALUATION DATA  
AND SCORING RECORD**

i) Wetland Name: Henvey Inlet Wetland WET-001

ii) MNR Administrative Region: Southern  
MNR District: Parry Sound  
MNR Area Office: Parry Sound

iii) Conservation Authority Jurisdiction: N/A

iv) County of Regional Municipality: Henvey Inlet 2 Indian Reserve

v) Township/Geographic Twp and/or Local Municipality: Key Harbour Area

vi) Lots & Concessions: N/A

vii) Ecodistrict/Ecoregion: 5 E-7

viii) Map and Air Photo References:

a) Latitude: 45.869129 Longitude: -80.647686

b) UTM grid reference:  
Zone: 17T Block: N/A E: 527118 N: 5079829

c) National Topographic Series:  
Map name(s): NTS Map - Key Harbour  
Map number(s): 41H/15  
Edition: 5  
Scale: 1: 50,000

d) Aerial photographs:  
Date(s) photo taken: 2013 Scale: 1:2500  
Flight & plate numbers: 2013 Colour Orthophotography

e) Ontario Base Map numbers & scale: Ontario Base Mapping 1:20000  
17 52005080, 52005070, 53005080, 53005070

## Data Summary Form

Wetland Name:

Henvey Inlet Wetland WET-001

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	m	Fen	mF	4	0.94	Palustrine	Fibric	m	1	5	0.05		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	m	Fen	mF	4	3.91	Palustrine	Fibric	m	1	5	0.20		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ls	Fen	lsF	5	3.63	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.38	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ls	Fen	lsF	5	2.93	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ls	Fen	lsF	5	7.11	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ls	Fen	lsF	5	6.44	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ne	Marsh	neM	6	1.61	Palustrine	Fibric	ne, re	2	50	0.81	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
1	c	Swamp	cS	10	3.53	Palustrine	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthimum trifolium</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
1	m	Fen	mF	4	0.37	Palustrine	Fibric	m	1	5	0.02		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	m	Fen	mF	4	0.19	Palustrine	Fibric	m	1	5	0.01		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ls	Fen	lsF	5	2.23	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ls	Fen	lsF	5	6.10	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	m	Fen	mF	4	1.91	Palustrine	Fibric	m	1	5	0.10		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	c	Swamp	cS	18	0.00	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
1	c	Swamp	cS	18	0.41	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
1	c	Swamp	cS	18	0.98	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.26	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	c	Swamp	cS	18	1.35	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
1	c	Swamp	cS	18	2.27	Lacustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
1	c	Swamp	cS	18	2.15	Lacustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.70	Lacustrine with barrier beach	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	m	Fen	mF	4	3.37	Lacustrine with barrier beach	Fibric	m	1	5	0.17		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	m	Fen	mF	4	13.55	Lacustrine with barrier beach	Fibric	m	1	5	0.68		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	su	Marsh	suW	1	4.03	Palustrine	Fibric	su*, gc	2	90	3.63	LM	su- <i>Utricularia</i> spp., <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	m	Fen	mF	4	0.37	Palustrine	Fibric	m	1	5	0.02		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	f	Marsh	fW	1	2.44	Palustrine	Fibric	f	1	90	2.20	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
1	su	Marsh	suW	1	1.37	Palustrine	Fibric	su*, gc	2	90	1.23	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
1	su	Marsh	suW	1	0.35	Palustrine	Fibric	su*, gc	2	90	0.32	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
1	m	Fen	mF	4	0.66	Palustrine	Fibric	m	1	5	0.03		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	m	Fen	mF	4	0.16	Palustrine	Fibric	m	1	5	0.01		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	m	Fen	mF	4	0.08	Palustrine	Fibric	m	1	5	0.00		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	m	Fen	mF	4	0.36	Palustrine	Fibric	m	1	10	0.04	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.09	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	c	Swamp	cS	18	0.41	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
1	ls	Fen	lsF	19	1.68	Palustrine	Fibric	ls*,gc,m	3	0	-		ls- <i>Kalmia angustifolia</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	su	Marsh	suW	1	1.75	Palustrine	Fibric	su*, gc	2	90	1.58	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
1	m	Fen	mF	4	1.48	Palustrine	Fibric	m	1	10	0.15	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.43	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.06	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.04	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ts	Swamp	tsS	3	3.14	Palustrine	Fibric	ts*, ls, gc, m	4	0	-		ts- <i>Alnus incana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum canadense</i> , m- <i>Mainthemum</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	3	5.00	Palustrine	Fibric	ts*, ls, gc, m	4	0	-		ts- <i>Alnus incana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum canadense</i> , m- <i>Mainthemum</i>	see attached flora and fauna lists	
1	c	Swamp	cS	16	2.52	Palustrine	Fibric	c*, ls, m	3	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
1	ne	Bog	neB	2	7.60	Isolated	Fibric	ne	1	0	-		ne- <i>Carex</i> spp.	see attached flora and fauna lists	
1	c	Swamp	cS	16	0.56	Palustrine	Fibric	c*, ls, m	3	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
2	m	Fen	mF	4	1.24	Palustrine	Fibric	m	1	10	0.12	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
2	m	Fen	mF	4	1.48	Palustrine	Humic-Mesic	m	1	10	0.15	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
2	m	Fen	mF	4	1.14	Palustrine	Fibric	m	1	10	0.11	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
2	c	Bog	cB	3	0.18	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
2	m	Fen	mF	4	5.50	Palustrine	Humic-Mesic	m	1	5	0.27		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
2	ls	Fen	lsF	12	0.21	Palustrine	Fibric	ls*, ne, m	3	0	-		ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex spp.</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
2	m	Fen	mF	4	0.55	Palustrine	Fibric	m	1	5	0.03		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
2	c	Swamp	cS	1	0.10	Palustrine	Clay-Loam	c*,ts,ls,m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
2	c	Bog	cB	2	3.16	Isolated	Fibric	c*, ls, ne, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex spp.</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
2	m	Bog	mB	1	0.36	Isolated	Fibric	ls, ne, m*	3	0	-		ne- <i>Carex utriculata</i> , ls- <i>vaccinium oxycoccos</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
2	ls	Fen	lsF	2	0.32	Palustrine	Fibric	ls*, ne, m	3	0	-		ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
2	ls	Bog	lsB	1	0.43	Isolated	Fibric	ls*, gc, m	3	0	-		ls- <i>Chamaedaphne calyculata</i> , <i>Kalmia angulatifolium</i> , gc- <i>Mainthemum trifolium</i> , m-	see attached flora and fauna lists	
2	ls	Swamp	lsS	1	1.72	Palustrine	Fibric	ls*,gc,ne	3	0	-		ls- <i>Chamaedaphne calyculata</i> , gc- <i>Osmunda regalis</i> , ne- <i>Carex spp.</i>	see attached flora and fauna lists	
2	ls	Fen	lsF	15	0.18	Palustrine	Fibric	ls*, gc, m	3	0	-		ls- <i>Chamaedaphne calyculata</i> , gc- <i>mainthemum trifolium</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	3.33	Palustrine	Clay-Loam	su*, gc	2	90	3.00	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.67	Palustrine	Silt-Marl	ne, re	2	50	0.33	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	7	0.91	Palustrine	Silt-Marl	re,ne*,m	3	50	0.46	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	2.55	Palustrine	Fibric	m	1	5	0.13		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.78	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.37	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	3.97	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	10	2.66	Palustrine	Silt-Marl	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	c	Swamp	cS	10	5.83	Palustrine	Humic-Mesic	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.95	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.44	Palustrine	Fibric	ne, re	2	50	0.22	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.13	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	m	Fen	mF	4	0.08	Palustrine	Humic-Mesic	m	1	5	0.00		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.71	Palustrine	Humic-Mesic	m	1	5	0.04		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.08	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ne	Marsh	neM	6	1.90	Palustrine	Humic-Mesic	ne, re	2	50	0.95	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.51	Palustrine	Fibric	ne, re	2	50	0.26	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	



Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	ts	Swamp	tsS	13	0.39	Palustrine	Fibric	ts*, ls, m	3	0	-		ts- <i>Alnus incana</i> , ls- <i>Kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.23	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.00	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.51	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	2.42	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ne	Marsh	neM	6	2.06	Palustrine	Humic-Mesic	ne, re	2	50	1.03	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.62	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.95	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	m	Fen	mF	4	2.13	Palustrine	Humic-Mesic	m	1	5	0.11		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	2.84	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	m	Fen	mF	4	0.95	Palustrine	Humic-Mesic	m	1	5	0.05		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	1.40	Palustrine	Humic-Mesic	m	1	5	0.07		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.53	Palustrine	Humic-Mesic	m	1	5	0.03		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.68	Palustrine	Humic-Mesic	m	1	5	0.03		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.27	Palustrine	Fibric	m	1	5	0.01		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.81	Palustrine	Fibric	m	1	5	0.04		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.10	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.74	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	m	Fen	mF	4	0.04	Palustrine	Humic-Mesic	m	1	5	0.00		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	3.61	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	7.44	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.61	Palustrine	Fibric	m	1	5	0.03		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.51	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	2.48	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	f	Marsh	fW	1	1.38	Palustrine	Fibric	f	1	90	1.24	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	3.36	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	c	Swamp	cS	18	0.95	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.07	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.77	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.08	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.00	Palustrine	Sand	re,ne*,m	3	50	0.00	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	6	2.21	Palustrine	Clay-Loam	ne, re	2	50	1.11	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.08	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	2.87	Palustrine	Humic-Mesic	f	1	90	2.59	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	3.24	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.85	Palustrine	Humic-Mesic	re,ne*,m	3	50	0.43	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.01	Palustrine	Fibric	ne, re	2	50	0.00	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	6	2.54	Palustrine	Clay-Loam	ne, re	2	50	1.27	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.02	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.88	Palustrine	Humic-Mesic	su*, gc	2	90	0.79	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	14.91	Palustrine	Fibric	f	1	90	13.42	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	1.57	Palustrine	Sand	f	1	90	1.41	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.62	Palustrine	Clay-Loam	f	1	90	0.56	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.55	Palustrine	Fibric	m	1	5	0.03		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.00	Palustrine	Fibric	m	1	5	0.00		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.01	Palustrine	Humic-Mesic	f	1	90	0.01	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	4.56	Palustrine	Humic-Mesic	f	1	90	4.10	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	6.46	Palustrine	Fibric	f	1	90	5.82	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.21	Palustrine	Fibric	m	1	5	0.01		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.11	Palustrine	Fibric	su*, gc	2	90	0.10	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.62	Palustrine	Fibric	su*, gc	2	90	0.56	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	1.13	Palustrine	Fibric	m	1	5	0.06		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	su	Marsh	suW	1	0.07	Palustrine	Humic-Mesic	su*, gc	2	90	0.07	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	4.66	Palustrine	Fibric	su*, gc	2	90	4.20	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.11	Palustrine	Fibric	su*, gc	2	90	0.10	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.10	Palustrine	Fibric	su*, gc	2	90	0.09	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	h	Swamp	hS	2	0.07	Lacustrine	Fibric	h*,ts, ls, gc	4	0	-		h- <i>Fraxinus nigra</i> , ts- <i>Alnus incana</i> , ls- <i>Rubus pubescens</i> , gs- <i>Mainthum candense</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.61	Palustrine	Humic-Mesic	ne, re	2	50	0.31	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	c	Bog	cB	3	0.42	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Bog	cB	3	0.43	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.19	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	m	Fen	mF	4	0.79	Lacustrine with barrier beach	Humic-Mesic	m	1	5	0.04		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Bog	cB	3	0.42	Lacustrine with barrier beach	Humic-Mesic	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.75	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.57	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.07	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ne	Marsh	neM	6	1.28	Palustrine	Silt-Marl	ne, re	2	50	0.64	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	9.34	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	f	Marsh	fW	1	9.10	Palustrine	Fibric	f	1	90	8.19	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	ts	Swamp	tsS	13	0.84	Lacustrine	Fibric	ts*, ls, m	3	25	0.21	HM	ts- <i>Alnus incana</i> , ls- <i>Kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ne	Marsh	neM	7	2.01	Palustrine	Silt-Marl	re,ne*,m	3	50	1.01	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ts	Swamp	tsS	13	1.03	Palustrine	Silt-Marl	ts*, ls, m	3	0	-		ts- <i>Alnus incana</i> , ls- <i>Kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.74	Palustrine	Fibric	m	1	10	0.07	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	4.96	Palustrine	Fibric	m	1	10	0.50	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.91	Riverine	Sand	ne, re	2	50	0.45	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	7	1.01	Riverine	Sand	re,ne*,m	3	50	0.51	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	2.16	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	m	Fen	mF	4	1.65	Lacustrine	Fibric	m	1	10	0.16	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	su	Marsh	suW	1	0.79	Palustrine	Humic-Mesic	su*, gc	2	90	0.71	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.49	Palustrine	Humic-Mesic	m	1	10	0.05	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.40	Palustrine	Humic-Mesic	m	1	10	0.04	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.94	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.42	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.19	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.23	Palustrine	Humic-Mesic	m	1	10	0.02	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.29	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.79	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	m	Fen	mF	4	0.23	Palustrine	Fibric	m	1	10	0.02	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.75	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	m	Fen	mF	4	2.54	Palustrine	Fibric	m	1	10	0.25	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.14	Palustrine	Fibric	m	1	10	0.01	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.69	Palustrine	Fibric	m	1	10	0.07	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.55	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.48	Palustrine	Fibric	su*, gc	2	90	0.43	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.44	Palustrine	Fibric	su*, gc	2	90	0.39	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	1.67	Palustrine	Fibric	f	1	90	1.50	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	3.40	Palustrine	Fibric	f	1	90	3.06	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.01	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.81	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	m	Fen	mF	4	2.46	Palustrine	Fibric	m	1	10	0.25	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ne	Marsh	neM	6	1.59	Palustrine	Humic-Mesic	ne, re	2	50	0.80	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.65	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.77	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ts	Swamp	tsS	13	0.95	Lacustrine	Sand	ts*, ls, m	3	25	0.24	HM	ts- <i>Alnus incana</i> , ls- <i>kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	ne	Marsh	neM	7	5.48	Palustrine	Sand	re,ne*,m	3	50	2.74	HM	ne-Carex aquatilis, re-Typha latifolia, m-Sphagnum spp.	see attached flora and fauna lists	
3	ne	Marsh	neM	6	2.08	Palustrine	Clay-Loam	ne, re	2	50	1.04	HM	ne-Carex aquatilis, re- Typha latifolia	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.26	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- Picea mariana, ts- Nemopanthus mucronatus, ls- Ledum groenlandicum, m-	see attached flora and fauna lists	
3	f	Marsh	fW	1	1.36	Palustrine	Sand	f	1	90	1.22	LM	f- Nuphar variegatum, Nymphaea odorata, Brasenia schreberi	see attached flora and fauna lists	
3	m	Fen	mF	4	0.44	Palustrine	Fibric	m	1	10	0.04	HM	m- Sphagnum spp.	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.18	Palustrine	Fibric	su*, gc	2	90	0.16	LM	su- Utricularia spp, Potamogeton spp., gc- Triadenum fraseria	see attached flora and fauna lists	
3	c	Swamp	cS	18	2.30	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- Picea mariana, ts- Nemopanthus mucronatus, ls- Ledum groenlandicum, m-	see attached flora and fauna lists	
3	f	Marsh	fW	1	1.05	Palustrine	Fibric	f	1	90	0.95	LM	f- Nuphar variegatum, Nymphaea odorata, Brasenia schreberi	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.36	Palustrine	Fibric	f	1	90	0.33	LM	f- Nuphar variegatum, Nymphaea odorata, Brasenia schreberi	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.02	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- Larix laricina, ts- Kalmia angustifolia, ne-Carex utriculata, m- Sphagnum spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.34	Palustrine	Fibric	m	1	10	0.03	HM	m- Sphagnum spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.04	Palustrine	Humic-Mesic	m	1	10	0.00	HM	m- Sphagnum spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.19	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- Picea mariana, ts- Nemopanthus mucronatus, ls- Ledum groenlandicum, m-	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.59	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- Picea mariana, ts- Nemopanthus mucronatus, ls- Ledum groenlandicum, m-	see attached flora and fauna lists	
3	ne	Marsh	neM	6	3.61	Lacustrine at rivermouth	Fibric	ne, re	2	50	1.81	HM	ne-Carex aquatilis, re- Typha latifolia	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.00	Palustrine	Clay-Loam	ne, re	2	50	0.00	HM	ne-Carex aquatilis, re- Typha latifolia	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.68	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- Picea mariana, ts- Nemopanthus mucronatus, ls- Ledum groenlandicum, m-	see attached flora and fauna lists	
3	su	Marsh	suW	1	1.46	Palustrine	Fibric	su*, gc	2	90	1.32	LM	su- Utricularia spp, Potamogeton spp., gc- Triadenum fraseria	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.68	Riverine	Sand	su*, gc	2	90	0.61	LM	su- Utricularia spp, Potamogeton spp., gc- Triadenum fraseria	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.19	Palustrine	Fibric	su*, gc	2	90	0.17	LM	su- Utricularia spp, Potamogeton spp., gc- Triadenum fraseria	see attached flora and fauna lists	
3	m	Fen	mF	4	0.20	Palustrine	Fibric	m	1	10	0.02	HM	m- Sphagnum spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.21	Palustrine	Fibric	m	1	10	0.02	HM	m- Sphagnum spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.99	Palustrine	Fibric	m	1	10	0.10	HM	m- Sphagnum spp.	see attached flora and fauna lists	
3	f	Marsh	fW	1	1.33	Palustrine	Humic-Mesic	f	1	90	1.20	LM	f- Nuphar variegatum, Nymphaea odorata, Brasenia schreberi	see attached flora and fauna lists	
3	m	Fen	mF	4	0.28	Palustrine	Fibric	m	1	10	0.03	HM	m- Sphagnum spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.73	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- Larix laricina, ts- Kalmia angustifolia, ne-Carex utriculata, m- Sphagnum spp.	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	ls	Fen	lsF	5	0.60	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.20	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.25	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.30	Palustrine	Fibric	m	1	10	0.03	HM	m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.15	Palustrine	Clay-Loam	f	1	90	0.14	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.99	Palustrine	Fibric	m	1	10	0.10	HM	m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.15	Palustrine	Fibric	m	1	10	0.02	HM	m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.17	Palustrine	Fibric	m	1	10	0.02	HM	m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.12	Palustrine	Humic-Mesic	su*, gc	2	90	0.11	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.25	Palustrine	Humic-Mesic	m	1	10	0.02	HM	m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.60	Riverine	Fibric	su*, gc	2	90	0.54	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	7.55	Palustrine	Fibric	f	1	90	6.79	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	1.45	Palustrine	Fibric	m	1	10	0.14	HM	m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.65	Palustrine	Humic-Mesic	m	1	10	0.07	HM	m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.39	Palustrine	Fibric	m	1	10	0.04	HM	m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	1.83	Palustrine	Clay-Loam	f	1	90	1.64	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.49	Lacustrine	Humic-Mesic	f	1	90	0.44	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.31	Riverine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.55	Palustrine	Fibric	f	1	90	0.49	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	8.09	Palustrine	Silt-Marl	f	1	90	7.28	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.39	Palustrine	Fibric	m	1	10	0.04	HM	m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.65	Palustrine	Silt-Marl	f	1	90	0.59	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	3.74	Lacustrine	Humic-Mesic	su*, gc	2	90	3.37	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.51	Palustrine	Clay-Loam	su*, gc	2	90	0.46	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.61	Palustrine	Clay-Loam	su*, gc	2	90	0.55	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.08	Palustrine	Fibric	su*, gc	2	90	0.07	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	su	Marsh	suW	1	0.11	Palustrine	Fibric	su*, gc	2	90	0.10	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.10	Palustrine	Silt-Marl	su*, gc	2	90	0.09	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	7	1.47	Palustrine	Clay-Loam	re,ne*,m	3	50	0.74	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.36	Palustrine	Fibric	m	1	10	0.04	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	f	Marsh	fW	1	1.75	Palustrine	Fibric	f	1	90	1.57	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	1.31	Palustrine	Fibric	m	1	10	0.13	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ne	Marsh	neM	7	0.56	Riverine	Sand	re,ne*,m	3	50	0.28	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	1.08	Riverine	Fibric	m	1	10	0.11	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.31	Palustrine	Fibric	m	1	10	0.03	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ne	Marsh	neM	7	0.59	Lacustrine	Sand	re,ne*,m	3	50	0.30	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	1.15	Palustrine	Fibric	m	1	10	0.11	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.23	Palustrine	Fibric	su*, gc	2	90	0.21	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	1.20	Palustrine	Fibric	m	1	10	0.12	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ne	Marsh	neM	7	1.01	Palustrine	Fibric	re,ne*,m	3	50	0.51	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.49	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.24	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.75	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.10	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ts	Swamp	tsS	13	0.16	Palustrine	Fibric	ts*, ls, m	3	0	-		ts- <i>Alnus incana</i> , ls- <i>kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	6.30	Lacustrine	Fibric	m	1	10	0.63	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	0.93	Lacustrine	Fibric	m	1	10	0.09	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	1.04	Lacustrine	Fibric	m	1	10	0.10	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	1.21	Lacustrine	Fibric	m	1	10	0.12	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	2.76	Lacustrine	Humic-Mesic	m	1	10	0.28	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Bog	cB	3	0.07	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.08	Palustrine	Sand	ne, re	2	50	0.04	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	h	Swamp	hS	2	0.84	Lacustrine	Fibric	h*,ts, ls, gc	4	0	-		h- <i>Fraxinus nigra</i> , ts- <i>Alnus incana</i> , ls- <i>Rubus pubescens</i> , gs- <i>Mainthemum candense</i>	see attached flora and fauna lists	
3	ts	Swamp	tsS	13	0.03	Palustrine	Humic-Mesic	ts*, ls, m	3	0	-		ts- <i>Alnus incana</i> , ls- <i>Kalmia angustifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.40	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	c	Bog	cB	3	0.34	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Bog	cB	3	2.21	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.05	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	m	Fen	mF	4	0.36	Lacustrine with barrier beach	Humic-Mesic	m	1	10	0.04	HM	m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Bog	cB	3	0.36	Lacustrine with barrier beach	Humic-Mesic	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.02	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.50	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	8	1.26	Palustrine	Humic-Mesic	c*,h,ts,gc, m	5	0	-		c- <i>Pinus strobus</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	7	0.71	Lacustrine	Sand	re,ne*,m	3	50	0.36	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	7	0.52	Lacustrine	Sand	re,ne*,m	3	50	0.26	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	7	0.42	Riverine	Fibric	re,ne*,m	3	50	0.21	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	m	Bog	mB	2	0.55	Isolated	Fibric	m	1	0	-		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Bog	cB	3	0.34	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.38	Palustrine	Fibric	m	1	10	0.04	HM	m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.19	Palustrine	Fibric	m	1	10	0.02	HM	m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	2.45	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	6	2.09	Lacustrine	Sand	ne, re	2	50	1.04	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	3.69	Palustrine	Fibric	su*, gc	2	90	3.32	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	15.98	Palustrine	Fibric	m	1	5	0.80		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	6	7.30	Lacustrine	Fibric	ne, re	2	50	3.65	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	2.63	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	4.53	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.94	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	



Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	ls	Fen	lsF	5	0.12	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.98	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.60	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	9.96	Palustrine	Fibric	m	1	5	0.50		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.04	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.67	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ls	Fen	lsF	5	2.59	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	2.24	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.85	Palustrine	Clay-Loam	ne, re	2	50	0.43	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.78	Palustrine	Silt-Marl	ne, re	2	50	0.39	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	4.14	Palustrine	Fibric	m	1	5	0.21		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	3.67	Palustrine	Fibric	f	1	90	3.31	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.74	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	4.96	Palustrine	Fibric	f	1	90	4.46	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.01	Palustrine	Humic-Mesic	su*, gc	2	90	0.01	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.09	Palustrine	Humic-Mesic	su*, gc	2	90	0.08	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	2.66	Riverine	Fibric	f	1	90	2.40	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.05	Palustrine	Humic-Mesic	su*, gc	2	90	0.05	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.00	Palustrine	Humic-Mesic	su*, gc	2	90	0.00	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	m	Fen	mF	4	0.26	Palustrine	Fibric	m	1	5	0.01		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	3.41	Palustrine	Fibric	f	1	90	3.07	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.54	Palustrine	Clay-Loam	su*, gc	2	90	0.49	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.10	Palustrine	Humic-Mesic	f	1	90	0.09	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.11	Palustrine	Humic-Mesic	f	1	90	0.10	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.05	Palustrine	Humic-Mesic	f	1	90	0.05	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.34	Palustrine	Humic-Mesic	f	1	90	0.31	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	

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3	su	Marsh	suW	1	0.27	Palustrine	Fibric	su*, gc	2	90	0.25	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	2.27	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	7.27	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ne	Fen	neF	1	1.66	Palustrine	Fibric	ls, ne*	2	0	-		ls- <i>Kalmia polifolia</i> , ne- <i>Carex aquatilis</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	13	2.01	Palustrine	Fibric	ls*, ne, m	3	0	-		ls- <i>Ledum groenlandicum</i> , ne- <i>Carex</i> spp., m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.03	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.02	Palustrine	Fibric	f	1	90	0.02	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	1	0.88	Palustrine	Fibric	ne,m	2	25	0.22	HM	ne- <i>Carex</i> spp. , m- <i>Sphagnum</i> spp	see attached flora and fauna lists	
3	ts	Swamp	tsS	11	1.32	Palustrine	Fibric	ts*, ls, gc, m	4	0	-		ts- <i>Alnus incana</i> , ls- <i>Spiraea alba</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ts	Swamp	tsS	13	2.57	Palustrine	Fibric	ts*, ls, m	3	0	-		ts- <i>Alnus incana</i> , ls- <i>kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ts	Swamp	tsS	6	0.86	Palustrine	Fibric	ts*,ls, ne, m	4	0	-		ts- <i>Alnus incana</i> , ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex</i> spp. , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.82	Palustrine	Sand	ne, re	2	50	0.41	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	1	2.99	Lacustrine	Fibric	ne*,m	2	25	0.75	HM	ne- <i>Carex aquatilis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ts	Swamp	tsS	12	3.79	Lacustrine	Fibric	ts*, ls, gc,	3	25	0.95	HM	ts- <i>Alnus incana</i> , ls- <i>Rubus idaeus</i> , gc- <i>Mainthemum canadensis</i>	see attached flora and fauna lists	
3	ne	Fen	neF	3	3.38	Palustrine	Humic-Mesic	ne	1	0	-		ne- <i>Carex</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	6	2.47	Palustrine	Fibric	c*, ls, gc	3	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	10	0.88	Palustrine	Fibric	ls*, m	2	0	-		ls- <i>Myrica gale</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	1	1.46	Palustrine	Fibric	ls, ne, m*	3	5	0.07		ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex</i> spp. , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	13	1.00	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
3	c	Swamp	cS	12	1.32	Palustrine	Sand	c*, ls, gc,m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i>	see attached flora and fauna lists	
3	ts	Swamp	tsS	8	5.87	Palustrine	Fibric	c, ts*, gc, m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>Mainthemum canadense</i> , m - <i>Sphagnum</i>	see attached flora and fauna lists	
3	c	Fen	cF	1	2.62	Palustrine	Fibric	c*,ls, ne	3	0	-		c- <i>Larix laricina</i> , ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex utriculata</i>	see attached flora and fauna lists	
3	c	Swamp	cS	8	1.52	Palustrine	Fibric	c*,h,ts,gc, m	5	0	-		c- <i>Pinus strobus</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	c	Swamp	cS	8	0.36	Palustrine	Fibric	c*,h,ts,gc, m	5	0	-		c- <i>Pinus strobus</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	9	0.48	Palustrine	Fibric	ls*, ne, m	3	0	-		ls- <i>Chamaedaphne calyculata</i> , ne- <i>Eriophorum virginicum</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	ts	Swamp	tsS	4	0.69	Palustrine	Fibric	ts*, ls, ne	3	0	-		ts- <i>Alnus incana</i> , ls- <i>Spiraea alba</i> , ne- <i>Carex lacustris</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	m	Fen	mF	2	8.89	Palustrine	Fibric	ne, be, m*	3	5	0.44		ne- <i>Carex oligosperma</i> , be- <i>Menyanthes trifoliata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	su	Marsh	suW	1	3.13	Palustrine	Fibric	su,f	2	90	2.82	LM	su- <i>Potamogeton spp.</i> , f- <i>Nuphar variegatum</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.00	Palustrine	Clay-Loam	f	1	90	0.00	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.55	Riverine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	f	Marsh	fW	1	1.66	Palustrine	Fibric	f	1	90	1.49	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	ne	Fen	neF	2	0.44	Palustrine	Fibric	ls, ne*	2	0	-		ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	16	0.22	Palustrine	Fibric	c*, ls, m	3	0	-		c- <i>Picea mariana</i> , ls- <i>Ledum groenlandicum</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Bog	cB	4	1.71	Isolated	Humic-Mesic	c*, ts, ls, gc	4	0	-		c- <i>Picea mariana</i> , ts- <i>Viburnum cassinoides</i> , ls- <i>Ledum groenlandicum</i> , gc- <i>Woodwardia</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	18	0.17	Palustrine	Fibric	ls*, m	2	0	-		ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum spp</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	7	0.32	Palustrine	Fibric	re,ne*,m	3	50	0.16	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.34	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	18	0.20	Palustrine	Fibric	ls*, m	2	0	-		ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum spp</i>	see attached flora and fauna lists	
3	c	Bog	cB	3	0.10	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Bog	cB	3	0.72	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	7	0.03	Palustrine	Fibric	re,ne*,m	3	50	0.01	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	15	1.84	Palustrine	Sand	c*, ts, gc, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>Mainthemum trifolium</i> , m-	see attached flora and fauna lists	
3	c	Swamp	cS	7	2.40	Palustrine	Fibric	c*, ls, m	3	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia angustifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	13	1.40	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
3	ts	Fen	tsF	1	3.34	Palustrine	Fibric	c, ts*, ls, gc	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Vaccinium angustifolium</i> , gc-	see attached flora and fauna lists	
3	ls	Fen	lsF	12	1.48	Palustrine	Fibric	ls*, ne, m	3	25	0.37	HM	ls- <i>Myrica gale</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	13	2.19	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
3	c	Swamp	cS	10	0.75	Palustrine	Silt-Marl	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	4	0.83	Palustrine	Fibric	ls*, ne, be, gc, m	5	0	-		ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex lacustris</i> , be- <i>Menyanthes trifolata</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ts	Swamp	tsS	9	2.07	Palustrine	Fibric	ts*, ne, m	3	0	-		ts- <i>Alnus incana</i> , ne- <i>Carex spp.</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.61	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	ls	Fen	lsF	18	0.04	Palustrine	Fibric	ls*, m	2	0	-		ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum spp</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.00	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.01	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.53	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ne	Marsh	neM	3	3.09	Lacustrine	Clay-Loam	ne	1	25	0.77	HM	ne- <i>Carex aquatilis</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	3	0.13	Lacustrine	Clay-Loam	ne	1	25	0.03	HM	ne- <i>Carex aquatilis</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.01	Palustrine	Fibric	ne, re	2	50	0.01	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
3	c	Swamp	cS	4	10.37	Palustrine	Sand	c*,ls,gc,m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , <i>Ledum groenlandicum</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum spp</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	17	2.77	Palustrine	Fibric	c, ls*, ne, m	4	0	-		c- <i>Larix laricina</i> , ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex aquatilis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Swamp	lsS	2	8.93	Palustrine	Fibric	ts, ls*, ne, be	4	0	-		ts- <i>Alnus incana</i> , ls- <i>myrica gale</i> , ne- <i>Carex lacustris</i> , be- <i>Calla palustris</i>	see attached flora and fauna lists	
3	ls	Bog	lsB	1	0.09	Isolated	Fibric	ls*, gc, m	3	0	-		ls- <i>Chamaedaphne calyculata</i> , <i>Kalmia angulatifolium</i> , gc- <i>Mainthemum trifolium</i> , m-	see attached flora and fauna lists	
3	ts	Fen	tsF	2	10.96	Palustrine	Humic-Mesic	ts*, ls, ne, gc, m	5	0	-		ts- <i>Picea mariana</i> , ls- <i>Ledum groenlandicum</i> , ne- <i>Carex lacustris</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.00	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	8	0.00	Palustrine	Fibric	c*,h,ts,gc, m	5	0	-		c- <i>Pinus strobus</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	ts	Swamp	tsS	2	1.95	Palustrine	Fibric	ts*, gc, ne, m	4	0	-		ts- <i>Alnus incana</i> , ls- <i>Vaccinium angustifolium</i> , gc- <i>Mainthemum canadense</i> , ne- <i>Carix lacustris</i>	see attached flora and fauna lists	
3	c	Swamp	cS	11	3.02	Palustrine	Humic-Mesic	c*, ls, ne, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex spp.</i> , m- <i>Sphagnum spp</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	7	6.67	Lacustrine	Humic-Mesic	re,ne*,m	3	50	3.33	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	ne	Bog	neB	1	6.04	Isolated	Humic-Mesic	ne*, m	2	0	-		ne- <i>Carex aquatilis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	13	5.58	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
3	c	Swamp	cS	9	0.65	Palustrine	Humic-Mesic	c*, ls,gc,m	4	0	-		c- <i>Larix laricina</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	9	1.77	Palustrine	Clay-Loam	c*, ls,gc,m	4	0	-		c- <i>Larix laricina</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	9	1.43	Palustrine	Sand	c*, ls, gc, m	4	0	-		c- <i>Larix laricina</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	6	4.69	Palustrine	Fibric	c*, ls, gc	3	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i>	see attached flora and fauna lists	
3	ls	Bog	lsB	3	2.04	Isolated	Humic-Mesic	ls*, gc, m	3	0	-		ls- <i>Kalmia angustifolia</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.45	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	c	Swamp	cS	18	1.33	Palustrine	Clay-Loam	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ne	Marsh	neM	5	14.59	Lacustrine	Clay-Loam	ts, ne*	2	25	3.65	HM	ts- <i>Alnus incana</i> , ne- narrow leaved emergent	see attached flora and fauna lists	
3	ls	Fen	lsF	12	0.81	Palustrine	Humic-Mesic	ls*, ne, m	3	0	-		ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex</i> spp., m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	5	2.78	Palustrine	Sand	c*,ls,m	3	0	-		c- <i>Picea mariana</i> , ls- <i>Ledum groenlandicum</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	7	0.57	Palustrine	Fibric	c*, ls, m	3	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	3	0.15	Palustrine	Fibric	c*, ts,ls,ne	4	0	-		c- <i>Larix laricina</i> , ts- <i>Larix laricina</i> , ls- <i>Ledum groenlandicum</i> , ne- <i>Carex</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	3	0.67	Palustrine	Fibric	c*, ts,ls,ne	4	0	-		c- <i>Larix laricina</i> , ts- <i>Larix laricina</i> , ls- <i>Ledum groenlandicum</i> , ne- <i>Carex</i> spp.	see attached flora and fauna lists	
3	ne	Fen	neF	1	5.13	Palustrine	Fibric	ls, ne*	2	0	-		ls- <i>Kalmia polifolia</i> , ne- <i>Carex</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	17	3.86	Palustrine	Fibric	c*, ls, gc, m	4	0	-		c- <i>Larix laricina</i> , ls- <i>Ledum groenlandicum</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	19	6.30	Palustrine	Fibric	c*, ts, m	3	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	10	4.88	Palustrine	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	c	Swamp	cS	6	5.16	Palustrine	Fibric	c*, ls, gc	3	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.22	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ls	Fen	lsF	16	4.15	Palustrine	Humic-Mesic	ls*, re, ne, m	4	0	-		ls- <i>Chaemaedaphne calyculata</i> , re- typha latifolia, ne- <i>Phragmites</i> spp., m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	12	11.89	Palustrine	Humic-Mesic	ls*, ne m	3	0	-		ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex</i> spp., m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	12	14.16	Palustrine	Fibric	c*, ls, gc,m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i>	see attached flora and fauna lists	
3	ls	Fen	lsF	8	2.33	Palustrine	Fibric	ls*, m	2	0	-		ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	7	5.55	Palustrine	Sand	c*, ls, m	3	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	15	7.62	Palustrine	Humic-Mesic	c*, ts, gc, m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>mainthemum canadense</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	c	Swamp	cS	12	8.54	Palustrine	Humic-Mesic	c*, ls, gc,m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i>	see attached flora and fauna lists	
3	c	Bog	cB	1	6.13	Isolated	Humic-Mesic	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	13	0.11	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
3	c	Swamp	cS	12	2.11	Palustrine	Fibric	c*, ls, gc,m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i>	see attached flora and fauna lists	
3	c	Swamp	cS	13	2.53	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
3	ts	Fen	tsF	2	7.83	Palustrine	Fibric	ts*, ls, ne, gc, m	5	0	-		ts- <i>Picea mariana</i> , ls- <i>Ledum groenlandicum</i> , ne- <i>Carex lacustris</i> , gc- <i>Mainthemum trifolium</i> ,	see attached flora and fauna lists	
3	c	Swamp	cS	2	7.44	Palustrine	Fibric	c*, ts, ls	3	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Kalmia angustifolia</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	c	Swamp	cS	13	11.73	Palustrine	Clay-Loam	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
3	c	Swamp	cS	18	2.09	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	c	Swamp	cS	2	0.23	Palustrine	Sand	c*, ts, ls	3	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
3	m	Fen	mF	1	10.90	Palustrine	Fibric	ls, ne, m*	3	5	0.55		ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum</i> spp. Ne- <i>Carex utriculata</i>	see attached flora and fauna lists	
3	ls	Bog	lsB	4	0.00	Isolated	Fibric	ls*, m	2	0	-		ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	14	0.01	Palustrine	Fibric	ls*, m	2	0	-		ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Bog	lsB	4	0.00	Isolated	Fibric	ls, m	2	0	-		ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	f	Marsh	fW	1	9.54	Palustrine	Humic-Mesic	f	1	90	8.59	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
3	ls	Swamp	lsS	2	2.04	Palustrine	Clay-Loam	ts, ls*, ne, be	4	0	-		ts- <i>Alnus incana</i> , ls- <i>myrica gale</i> , ne- <i>Carex lacustris</i> , be- <i>Calla palustris</i>	see attached flora and fauna lists	
3	c	Swamp	cS	5	1.20	Palustrine	Humic-Mesic	c*, ls, m	3	0	-		c- <i>Picea mariana</i> , ls- <i>Ledum groenlandicum</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Bog	lsB	3	4.38	Isolated	Fibric	ls*, gc, m	3	0	-		ls- <i>Kalmia angustifolia</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	18	2.19	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
3	ne	Marsh	neM	4	0.39	Palustrine	Sand	ls, ne	2	25	0.10	HM	ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex</i> spp.	see attached flora and fauna lists	
3	ls	fen	lsF	7	4.69	Palustrine	Humic-Mesic	ls*, m	2	0	-		ls- <i>Ledum groenlandicum</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	15	2.08	Palustrine	Fibric	c*, ts, gc, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>Mainthemum trifolium</i> , m-	see attached flora and fauna lists	
3	c	Swamp	cS	3	1.30	Palustrine	Humic-Mesic	c*, ts, ls, ne	4	0	-		c- <i>Larix laricina</i> , ts- <i>Larix laricina</i> , ls- <i>Ledum groenlandicum</i> , ne- <i>Carex</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	10	1.49	Palustrine	Sand	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	ts	Swamp	tsS	5	7.99	Palustrine	Fibric	ts*, gc, ne	3	0	-		ts- <i>Alnus incana</i> , gc- <i>Onoclea sensibilis</i> , ne- <i>Carex lacustris</i>	see attached flora and fauna lists	
3	ne	Fen	neF	3	0.15	Palustrine	Humic-Mesic	ne	1	0	-		ne- <i>Carex</i> spp.	see attached flora and fauna lists	
3	ne	Fen	neF	3	0.61	Palustrine	Humic-Mesic	ne	1	0	-		ne- <i>Carex</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	6	1.34	Palustrine	Fibric	c*, ls, gc	3	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i>	see attached flora and fauna lists	
3	c	Swamp	cS	6	0.29	Palustrine	Humic-Mesic	c*, ls, gc	3	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i>	see attached flora and fauna lists	
3	c	Swamp	cS	13	1.93	Palustrine	Clay-Loam	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
3	c	Swamp	cS	8	0.32	Palustrine	Fibric	c*, h, ts, gc, m	5	0	-		c- <i>Pinus strobus</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	ts	Swamp	tsS	10	1.08	Palustrine	Fibric	ts*, ls, ne	3	0	-		ts- <i>Alnus incana</i> , ls- <i>Spiraea alba</i> , ne- <i>Carex</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	10	0.61	Palustrine	Silt-Marl	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	c	Swamp	cS	10	0.92	Palustrine	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
3	c	Bog	cB	1	0.60	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Bog	lsB	2	0.19	Isolated	Fibric	ls*, ne, m	3	0	-		ls- <i>Chamedaphne calyculata</i> , ne- <i>Carex</i> spp. , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	ls	Bog	lsB	2	0.65	Isolated	Fibric	ls*, ne, m	3	0	-		ls- <i>Chamedaphne calyculata</i> , ne- <i>Carex</i> spp. , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	m	Fen	mF	3	0.95	Palustrine	Humic-Mesic	ne, m*	2	5	0.05		ne- <i>Eriophorum viridicarinatum</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	14	1.37	Palustrine	Humic-Mesic	c*, gc, m	3	0	-		c- <i>Picea mariana</i> , gc- <i>Mainthemem canadense</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	14	7.93	Palustrine	Fibric	c*, gc, m	3	0	-		c- <i>Picea mariana</i> , gc- <i>Mainthemem canadense</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
3	c	Swamp	cS	6	3.19	Palustrine	Fibric	c*, ls, gc	3	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i>	see attached flora and fauna lists	
3	c	Swamp	cS	12	2.20	Palustrine	Fibric	c*, ls, gc,m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i>	see attached flora and fauna lists	
3	ne	Marsh	neM	6	1.46	Lacustrine	Fibric	ne, re	2	50	0.73	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
4	h	Swamp	hS	3	0.72	Palustrine	Fibric	h*, c, ts, ls, gc, ne, m	7	0	-		h- <i>Populus tremuloides</i> , c- <i>Pinus bankisaina</i> , ts- <i>Alnus incana</i> , ls- <i>Spiraea alba</i> , gc- <i>Mainthemum canadense</i> , ne- <i>Grass</i> spp. , m-	see attached flora and fauna lists	
5	ne	Marsh	neM	7	0.61	Palustrine	Fibric	re,ne*,m	3	50	0.31	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
5	ne	Marsh	neM	7	0.58	Palustrine	Humic-Mesic	re,ne*,m	3	50	0.29	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
6	c	Bog	cB	3	0.46	Isolated	Humic-Mesic	c*, ts, ne, gc, m	5	0	-		c- <i>Picea mariana</i> , ts- <i>Alnus incana</i> , ne- <i>Carex</i> spp., gc- <i>Mainthemum canadense</i> , m-	see attached flora and fauna lists	
7	c	Swamp	cS	8	1.67	Palustrine	Fibric	c*,h,ts,gc, m	5	0	-		c- <i>Pinus strobus</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
7	ls	Fen	lsF	5	2.02	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
7	c	Bog	cB	3	0.09	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
7	c	Bog	cB	3	1.14	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
7	c	Bog	cB	3	0.71	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
7	ls	Fen	lsF	5	0.78	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
7	f	Marsh	fW	1	0.39	Palustrine	Sand	f	1	90	0.35	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
7	c	Bog	cB	3	0.26	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
7	c	Bog	cB	3	0.12	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
7	c	Bog	cB	3	0.48	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
7	ne	Marsh	neM	7	0.82	Palustrine	Sand	re,ne*,m	3	50	0.41	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
7	ts	Swamp	tsS	14	0.93	Palustrine	Sand	ts*,m	2	0	-		ts- <i>Alnus incana</i> , m- <i>sphagnum spp.</i>	see attached flora and fauna lists	
7	ls	Bog	lsB	5	1.07	Isolated	Fibric	ls*, ne, m	3	0	-		ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex utriculatai</i> , m- <i>Sphagnum sp.</i>	see attached flora and fauna lists	
7	ne	Marsh	neM	7	0.00	Palustrine	Sand	re,ne*,m	3	50	0.00	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
7	c	Swamp	cS	24	6.20	Palustrine	Sand	c*	1	0	-		c- <i>Pinus strobus</i>	see attached flora and fauna lists	
7	c	Swamp	cS	20	5.21	Palustrine	Sand	c*,h, ls	3	0	-		c- <i>Picea mariana</i> ,h- <i>Betula papyrifera</i> ls- <i>Gaylussachia buccata</i>	see attached flora and fauna lists	
7	c	Swamp	cS	21	0.22	Palustrine	Sand	c*,m	2	0	-		c- <i>Picea mariana</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
7	ls	Fen	lsF	3	2.48	Palustrine	Fibric	c, ls*,gc, ne, m	5	0	-		c- <i>Larix laricina</i> ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum trifolium</i> , ne- <i>Carex spp</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
8	c	Bog	cB	3	1.16	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
8	c	Swamp	cS	8	6.76	Palustrine	Sand	c*,h,ts,gc, m	5	0	-		c- <i>Pinus strobus</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
9	c	Swamp	cS	18	10.78	Palustrine	Silt-Marl	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
9	ls	Fen	lsF	5	0.72	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
9	ls	Fen	lsF	5	4.34	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
9	ts	Swamp	tsS	13	1.78	Palustrine	Fibric	ts*, ls, m	3	0	-		ts- <i>Alnus incana</i> , ls- <i>kalmia angustifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
9	c	Swamp	cS	18	15.09	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
10	c	Swamp	cS	18	0.02	Palustrine	Silt-Marl	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
10	f	Marsh	fW	1	1.33	Palustrine	Silt-Marl	f	1	90	1.19	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
10	f	Marsh	fW	1	2.42	Palustrine	Fibric	f	1	90	2.18	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
10	c	Swamp	cS	18	2.25	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
10	h	Swamp	hS	2	0.34	Palustrine	Clay-Loam	h*,ts, ls, gc	4	0	-		h- <i>Fraxinus nigra</i> , ts- <i>Alnus incana</i> , ls- <i>Rubus pubescens</i> , gs- <i>Mainthemum candense</i>	see attached flora and fauna lists	
10	f	Marsh	fW	1	1.71	Palustrine	Fibric	f	1	90	1.54	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
10	su	Marsh	suW	1	0.05	Palustrine	Clay-Loam	su*, gc	2	90	0.05	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
10	ne	Marsh	neM	6	0.39	Palustrine	Clay-Loam	ne, re	2	50	0.20	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
10	ne	Marsh	neM	6	0.36	Palustrine	Fibric	ne, re	2	50	0.18	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
10	f	Marsh	fW	1	3.33	Palustrine	Sand	f	1	90	2.99	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
10	f	Marsh	fW	1	0.32	Palustrine	Silt-Marl	f	1	90	0.29	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	



Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
10	c	Swamp	cS	18	0.63	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
10	c	Swamp	cS	18	0.00	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
10	c	Swamp	cS	20	2.62	Palustrine	Sand	c*, h, ts, gc, be	5	0	-		ts- <i>Thuja occidentalis</i> , h- <i>Fraxinus nigra</i> , ts- <i>Acer rubrum</i> , gc- <i>Mainthemum canadense</i> , be- <i>Calla palustris</i>	see attached flora and fauna lists	
10	c	Swamp	cS	21	1.48	Palustrine	Clay-Loam	c*, h, ts, gc, m	5	0	-		c- <i>Thuja occidentalis</i> , h- <i>Betula allegheniensis</i> , ts- <i>Abies balsamea</i> , gc- <i>Trientalis borealis</i> , m- <i>Sphagnum spp</i>	see attached flora and fauna lists	
11	ne	Marsh	neM	7	5.06	Riverine	Sand	re,ne*,m	3	50	2.53	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
11	su	Marsh	suW	1	0.01	Palustrine	Sand	su*, gc	2	90	0.01	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
11	ne	Marsh	neM	7	0.43	Riverine	Sand	re,ne*,m	3	50	0.21	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
11	su	Marsh	suW	1	2.08	Riverine	Sand	su*, gc	2	90	1.87	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
11	ne	Marsh	neM	7	0.92	Riverine	Sand	re,ne*,m	3	50	0.46	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
11	ne	Marsh	neM	7	0.75	Riverine	Sand	re,ne*,m	3	50	0.38	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
11	ne	Marsh	neM	7	0.00	Palustrine	Sand	re,ne*,m	3	50	0.00	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
11	su	Marsh	suW	1	0.00	Palustrine	Sand	su*, gc	2	90	0.00	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
11	ts	Swamp	tsS	1	0.19	Riverine	Sand	ts*, ne	2	25	0.05	HM	ts- <i>Alnus incana</i> , ne- <i>Carex crinita</i>	see attached flora and fauna lists	
11	su	Marsh	suW	1	0.02	Riverine	Sand	su*, gc	2	90	0.02	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	ls	Fen	lsF	5	0.69	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
12	ne	Marsh	neM	6	1.30	Palustrine	Humic-Mesic	ne, re	2	50	0.65	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
12	h	Swamp	hS	2	9.45	Palustrine	Humic-Mesic	h*,ts, ls, gc	4	0	-		h- <i>Fraxinus nigra</i> , ts- <i>Alnus incana</i> , ls- <i>Rubus pubescens</i> , gs- <i>Mainthemum candense</i>	see attached flora and fauna lists	
12	h	Swamp	hS	2	6.11	Palustrine	Fibric	h*,ts, ls, gc	4	0	-		h- <i>Fraxinus nigra</i> , ts- <i>Alnus incana</i> , ls- <i>Rubus pubescens</i> , gs- <i>Mainthemum candense</i>	see attached flora and fauna lists	
12	h	Swamp	hS	2	0.55	Palustrine	Humic-Mesic	h*,ts, ls, gc	4	0	-		h- <i>Fraxinus nigra</i> , ts- <i>Alnus incana</i> , ls- <i>Rubus pubescens</i> , gs- <i>Mainthemum candense</i>	see attached flora and fauna lists	
12	m	Fen	mF	4	7.26	Palustrine	Fibric	m	1	5	0.36		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
12	ls	Fen	lsF	5	1.34	Riverine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
12	ne	Marsh	neM	6	1.85	Palustrine	Fibric	ne, re	2	50	0.93	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
12	ts	Swamp	tsS	13	2.58	Palustrine	Fibric	ts*, ls, m	3	0	-		ts- <i>Alnus incana</i> , ls- <i>kalmia angustifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
12	m	Fen	mF	4	0.18	Palustrine	Fibric	m	1	5	0.01		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
12	m	Fen	mF	4	1.68	Palustrine	Fibric	m	1	5	0.08		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
12	m	Fen	mF	4	0.16	Palustrine	Fibric	m	1	5	0.01		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	0.54	Palustrine	Fibric	m	1	5	0.03		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	c	Swamp	cS	8	5.86	Palustrine	Fibric	c*,h,ts,gc, m	5	0	-		c- <i>Pinus strobus</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
12	ne	Marsh	neM	6	1.81	Palustrine	Fibric	ne, re	2	50	0.91	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
12	ne	Marsh	neM	6	3.81	Palustrine	Fibric	ne, re	2	50	1.90	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.46	Palustrine	Humic-Mesic	su*, gc	2	90	0.42	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.33	Palustrine	Humic-Mesic	su*, gc	2	90	0.30	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	m	Fen	mF	4	1.02	Palustrine	Fibric	m	1	5	0.05		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	0.57	Palustrine	Fibric	m	1	5	0.03		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	0.06	Palustrine	Fibric	m	1	5	0.00		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.61	Palustrine	Fibric	su*, gc	2	90	0.54	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	su	Marsh	suW	1	1.00	Palustrine	Fibric	su*, gc	2	90	0.90	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	m	Fen	mF	4	0.68	Palustrine	Fibric	m	1	5	0.03		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	1.77	Palustrine	Fibric	m	1	5	0.09		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	1.46	Palustrine	Fibric	m	1	5	0.07		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	f	Marsh	fW	1	3.59	Palustrine	Fibric	f	1	90	3.23	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
12	h	Swamp	hS	2	2.42	Palustrine	Fibric	h*,ts, ls, gc	4	0	-		h- <i>Fraxinus nigra</i> , ts- <i>Alnus incana</i> , ls- <i>Rubus pubescens</i> , gs- <i>Mainthemum candense</i>	see attached flora and fauna lists	
12	ne	Marsh	neM	6	0.02	Palustrine	Fibric	ne, re	2	50	0.01	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
12	ts	Swamp	tsS	13	1.13	Palustrine	Humic-Mesic	ts*, ls, m	3	0	-		ts- <i>Alnus incana</i> , ls- <i>kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	h	Swamp	hS	2	0.30	Palustrine	Humic-Mesic	h*,ts, ls, gc	4	0	-		h- <i>Fraxinus nigra</i> , ts- <i>Alnus incana</i> , ls- <i>Rubus pubescens</i> , gs- <i>Mainthemum candense</i>	see attached flora and fauna lists	
12	c	Bog	cB	3	0.59	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	ts	Swamp	tsS	13	1.46	Riverine	Fibric	ts*, ls, m	3	25	0.37	HM	ts- <i>Alnus incana</i> , ls- <i>kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	c	Swamp	cS	18	1.11	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
12	ne	Marsh	neM	6	3.97	Palustrine	Fibric	ne, re	2	50	1.99	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
12	m	Fen	mF	4	0.45	Palustrine	Fibric	m	1	5	0.02		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	0.81	Palustrine	Fibric	m	1	10	0.08	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
12	m	Fen	mF	4	0.77	Palustrine	Fibric	m	1	10	0.08	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	c	Bog	cB	3	3.41	Isolated	Humic-Mesic	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	ls	Fen	lsF	5	1.76	Riverine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	4.04	Riverine	Fibric	m	1	10	0.40	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	ne	Marsh	neM	6	1.33	Riverine	Humic-Mesic	ne, re	2	50	0.67	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.56	Palustrine	Humic-Mesic	su*, gc	2	90	0.51	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	m	Fen	mF	4	1.02	Palustrine	Fibric	m	1	10	0.10	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	ls	Fen	lsF	5	1.01	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	ls	Fen	lsF	5	6.64	Riverine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	1.30	Riverine	Fibric	m	1	10	0.13	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	c	Bog	cB	3	1.42	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	ne	Marsh	neM	7	3.92	Riverine	Fibric	re,ne*,m	3	50	1.96	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	ls	Fen	lsF	5	0.52	Riverine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.63	Palustrine	Humic-Mesic	su*, gc	2	90	0.57	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.16	Palustrine	Humic-Mesic	su*, gc	2	90	0.14	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	f	Marsh	fW	1	2.81	Riverine	Sand	f	1	90	2.53	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.31	Palustrine	Humic-Mesic	su*, gc	2	90	0.28	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	f	Marsh	fW	1	1.31	Riverine	Fibric	f	1	90	1.18	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
12	m	Fen	mF	4	0.40	Palustrine	Humic-Mesic	m	1	10	0.04	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	0.26	Riverine	Fibric	m	1	10	0.03	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	0.42	Riverine	Fibric	m	1	10	0.04	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.19	Palustrine	Sand	su*, gc	2	90	0.18	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	f	Marsh	fW	1	1.05	Riverine	Fibric	f	1	90	0.95	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
12	f	Marsh	fW	1	4.70	Riverine	Fibric	f	1	90	4.23	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.54	Palustrine	Fibric	su*, gc	2	90	0.48	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	f	Marsh	fW	1	2.80	Riverine	Humic-Mesic	f	1	90	2.52	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
12	su	Marsh	suW	1	0.26	Palustrine	Clay-Loam	su*, gc	2	90	0.23	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.03	Palustrine	Fibric	su*, gc	2	90	0.03	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	h	Swamp	hS	2	0.18	Palustrine	Fibric	h*,ts, ls, gc	4	0	-		h- <i>Fraxinus nigra</i> , ts- <i>Alnus incana</i> , ls- <i>Rubus pubescens</i> , gs- <i>Mainthemum candense</i>	see attached flora and fauna lists	
12	ts	Swamp	tsS	13	0.36	Riverine	Fibric	ts*, ls, m	3	25	0.09	HM	ts- <i>Alnus incana</i> , ls- <i>kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	ne	Marsh	neM	6	0.59	Lacustrine at rivermouth	Fibric	ne, re	2	50	0.30	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
12	c	Bog	cB	3	0.43	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	0.57	Palustrine	Fibric	m	1	10	0.06	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	0.40	Palustrine	Fibric	m	1	10	0.04	HM	m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	c	Swamp	cS	8	1.24	Riverine	Clay-Loam	c*,h,ts,gc, m	5	0	-		c- <i>Pinus strobus</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
12	ts	Swamp	tsS	13	1.53	Riverine	Fibric	ts*, ls, m	3	25	0.38	HM	ts- <i>Alnus incana</i> , ls- <i>kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	ts	Swamp	tsS	13	0.00	Palustrine	Humic-Mesic	ts*, ls, m	3	0	-		ts- <i>Alnus incana</i> , ls- <i>kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	1.02	Riverine	Fibric	m	1	5	0.05		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	c	Bog	cB	3	1.26	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	c	Bog	cB	3	1.03	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	c	Bog	cB	3	3.24	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	ne	Marsh	neM	6	0.06	Palustrine	Humic-Mesic	ne, re	2	50	0.03	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
12	ne	Marsh	neM	6	0.00	Palustrine	Humic-Mesic	ne, re	2	50	0.00	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	
12	ls	Fen	lsF	5	1.78	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	m	Fen	mF	4	2.73	Riverine	Fibric	m	1	5	0.14		m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	ls	Fen	lsF	18	1.95	Palustrine	Fibric	ts, ls*, m	3	0	-		ts- <i>Alnus incana</i> , ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum</i> moss	see attached flora and fauna lists	
12	ts	Swamp	tsS	13	3.88	Palustrine	Fibric	ts*, ls, m	3	0	-		ts- <i>Alnus incana</i> , ls- <i>kalmia angustifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	ne	Marsh	neM	7	3.74	Riverine	Fibric	re,ne*,m	3	50	1.87	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	c	Swamp	cS	16	1.83	Palustrine	Fibric	c*, ls, m	3	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	ne	Marsh	neM	8	0.04	Palustrine	Fibric	dc,ls, re, ne*, m	5	50	0.02	HM	dc, ls- <i>Chamaedaphne calyculata</i> , re- <i>Typha latifolia</i> , ne- <i>Carex</i> spp., m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.08	Palustrine	Clay-Loam	su*, gc	2	90	0.07	LM	su- <i>Utricularia</i> spp, <i>Potamogeton</i> spp., gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	ls	Fen	lsF	11	0.30	Palustrine	Fibric	ls*, ne, m	3	0	-		ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex</i> spp., m- <i>Sphagnum</i> spp.	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
12	m	Swamp	mS	1	0.23	Palustrine	Fibric	ls, ne, gc, m*	4	0	-		ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex spp.</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum spp</i>	see attached flora and fauna lists	
12	c	Bog	cB	4	0.20	Isolated	Fibric	c*, ts, ls, gc	4	0	-		c- <i>Picea mariana</i> , ts- <i>Viburnum cassinoides</i> , ls- <i>Ledum groenlandicum</i> , gc- <i>Woodwardia</i>	see attached flora and fauna lists	
12	c	Swamp	cS	19	0.23	Palustrine	Fibric	c*, ts, gc,m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , gc- <i>Gaultheria procumbens</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
12	ne	Marsh	neM	7	0.36	Palustrine	Sand	re,ne*,m	3	50	0.18	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
12	h	Swamp	hS	4	1.47	Lacustrine at rivermouth	Fibric	h*, ts, gc	3	0	-		h- <i>Populus tremuloides</i> , ts- <i>Alnus incana</i> , gc- <i>Mainthemum canadense</i>	see attached flora and fauna lists	
12	ts	Swamp	tsS	7	1.26	Palustrine	Fibric	ts*, ne	2	0	-		ts- <i>Alnus incana</i> , ne- <i>Calmagrostis canadensis</i>	see attached flora and fauna lists	
12	ls	Bog	lsB	5	1.22	Isolated	Humic-Mesic	ls	1	0	-		ls- <i>Chamaedaphne calyculata</i>	see attached flora and fauna lists	
12	ls	Fen	lsF	6	0.33	Palustrine	Fibric	c,ls*,m	3	0	-		c- <i>Larix laricina</i> ., ls- <i>Ledum groenlandicum</i> , m- <i>Sphangum spp.</i>	see attached flora and fauna lists	
12	c	Swamp	cS	22	2.89	Palustrine	Humic-Mesic	c*, m	2	0	-		c- <i>Picea mariana</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
12	ts	Swamp	tsS	1	5.51	Riverine	Fibric	ts*, ne	2	25	1.38	HM	ts- <i>Alnus incana</i> , ne- <i>Carex spp.</i>	see attached flora and fauna lists	
12	ne	Fen	neF	4	0.22	Palustrine	Fibric	ts, ls, ne*, m	4	0	-		ts- <i>Nemopanthus mucronatus</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum spp</i>	see attached flora and fauna lists	
12	ls	Bog	lsB	4	2.60	Isolated	Fibric	ls, m	2	0	-		ls- <i>Chamaedaphne calyculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
12	h	Swamp	hS	2	6.11	Riverine	Fibric	h*,ts, ls, gc	4	0	-		h- <i>Fraxinus nigra</i> , ts- <i>Alnus incana</i> , ls- <i>Rubus pubescens</i> , gs- <i>Mainthemum candense</i>	see attached flora and fauna lists	
12	ne	Fen	neF	4	2.74	Palustrine	Humic-Mesic	ts, ls, ne*, m	4	0	-		ts- <i>Nemopanthus mucronatus</i> , ls- <i>Chamaedaphne calyculata</i> , gc- <i>Mainthemum canadense</i> , m- <i>Sphagnum spp</i>	see attached flora and fauna lists	
12	m	Swamp	mS	1	1.09	Palustrine	Humic-Mesic	ls, ne, gc, m*	4	0	-		ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex spp.</i> , gc- <i>Mainthemum trifolium</i> , m- <i>Sphagnum spp</i>	see attached flora and fauna lists	
12	h	Swamp	hS	1	2.55	Palustrine	Fibric	h*,ts,ls, gc	4	0	-		h- <i>Fraxinus nigra</i> , ts- <i>Acer Spicatum</i> , ls- <i>Rubus pubescens</i> gc- <i>Aralia nudicaulis</i>	see attached flora and fauna lists	
12	ls	Fen	lsF	5	1.79	Riverine	Fibric	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.23	Palustrine	Sand	su*, gc	2	90	0.20	LM	su- <i>Utricularia spp.</i> , <i>Potamogeton spp.</i> , gc- <i>Triadenum fraseria</i>	see attached flora and fauna lists	
12	c	Swamp	cS	17	1.20	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Chaemadaphne calyculata</i> , m-	see attached flora and fauna lists	
12	ts	Swamp	tsS	2	0.31	Palustrine	Sand	ts*, gc, ne, m	4	0	-		ts- <i>Alnus incana</i> , ls- <i>Vaccinium angustifolium</i> , gc- <i>Mainthemum canadense</i> , ne- <i>Carix lacustris</i>	see attached flora and fauna lists	
12	ne	Marsh	neM	2	0.29	Palustrine	Fibric	ls, re, ne*,m	4	50	0.14	HM	ls- <i>Spiraea alba</i> , re- <i>Thypha latifolia</i> , ne- <i>Carex spp.</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
12	ne	Marsh	neM	2	1.31	Palustrine	Sand	ls, re, ne*,m	4	50	0.65	HM	ls- <i>Spiraea alba</i> , re- <i>Thypha latifolia</i> , ne- <i>Carex spp.</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
12	c	Swamp	cS	11	0.08	Palustrine	Humic-Mesic	c*, ls, ne, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Chamaedaphne calyculata</i> , ne- <i>Carex aquatica</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
13	f	Marsh	fW	1	6.85	Palustrine	Sand	f	1	90	6.16	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
13	ne	Marsh	neM	6	2.75	Palustrine	Sand	ne, re	2	50	1.38	HM	ne- <i>Carex aquatilis</i> , re- <i>Typha latifolia</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	We land Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
13	f	Marsh	fW	1	2.13	Palustrine	Sand	f	1	90	1.92	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
13	c	Bog	cB	3	0.83	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
13	c	Bog	cB	3	1.06	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
13	c	Bog	cB	3	0.56	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
13	ts	Swamp	tsS	15	4.28	Palustrine	Fibric	c,ts*, ls, gc	4	0	-		c- <i>Picea mariana</i> , ts- <i>Viburnum cassinoides</i> , ls- <i>Vaccinium angustifolium</i> , gs-Cornus canadensis	see attached flora and fauna lists	
13	c	Swamp	cS	23	0.72	Palustrine	Fibric	c*,ts,m	3	0	-		c- <i>Picea mariana</i> , ts- <i>Abies balsamea</i> , m- <i>Sphagnum</i>	see attached flora and fauna lists	
13	f	Marsh	fW	1	1.09	Palustrine	Sand	f	1	90	0.98	LM	f- <i>Nuphar variegatum</i> , <i>Nymphaea odorata</i> , <i>Brasenia schreberi</i>	see attached flora and fauna lists	
14	ls	Fen	lsF	5	0.13	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
14	ls	Fen	lsF	5	1.27	Palustrine	Humic-Mesic	c,ls*,ne,m	4	0	-		c- <i>Larix laricina</i> , ts- <i>Kalmia angustifolia</i> , ne- <i>Carex utriculata</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
15	m	Fen	mF	4	0.69	Palustrine	Humic-Mesic	m	1	5	0.03		m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
15	c	Bog	cB	3	0.63	Isolated	Humic-Mesic	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
16	c	Swamp	cS	18	1.36	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- <i>Picea mariana</i> , ts- <i>Nemopanthus mucronatus</i> , ls- <i>Ledum groenlandicum</i> , m-	see attached flora and fauna lists	
16	c	Bog	cB	3	0.57	Isolated	Humic-Mesic	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	
16	c	Bog	cB	3	1.98	Isolated	Humic-Mesic	c*, ls, gc, m	4	0	-		c- <i>Picea mariana</i> , ls- <i>Kalmia polifolia</i> , gc- <i>Mainthemum canadensis</i> , m- <i>Sphagnum spp.</i>	see attached flora and fauna lists	

ix) Wetland Size

(circle appropriate category, a or b)

a) Single contiguous wetland area:

Total wetland size = 1159 hectares

b) Wetland complex comprised of 16 individual wetlands:

Wetland Unit No.	1	104.91
Wetland Unit No.	2	16.55
Wetland Unit No.	3	741.10
Wetland Unit No.	4	0.72
Wetland Unit No.	5	1.19
Wetland Unit No.	6	0.46
Wetland Unit No.	7	24.59
Wetland Unit No.	8	7.92
Wetland Unit No.	9	32.72
Wetland Unit No.	10	17.25
Wetland Unit No.	11	9.45
Wetland Unit No.	12	175.06
Wetland Unit No.	13	20.27
Wetland Unit No.	14	1.39
Wetland Unit No.	15	1.32
Wetland Unit No.	16	3.91
Wetland Unit Totals:		<u>1158.82</u>

(Attach additional sheets if necessary)

Total Wetland Size = 1158.82 hectares (add together size of each unit)

Documentation requirements for evaluated wetland complexes (attach additional sheet if necessary):

- : a statement of rationale for identifying a wetland complex;
- : a statement of rationale for identifying any wetland complex less than 2 ha in total size;
- : a statement of rationale for any vegetation community less than 0.5 ha in size;
- : adherence to the wetland complexing rules (750 m; "watershed rule"; lacustrine wetlands); and
- : written documentation of the reasons for including wetland units smaller than 2 ha.

The wetland units complexed within the WET-001 wetland complex were all within 750m straight line distance of another wetland unit. All complexed wetlands fall within the same sub watershed. Given the abundance of species at risk and rare species within the study area, and the high potential for these species to occur within any wetland within this area 5, wetland units (4, 5, 6, 14, 15) less than 2ha were included within this wetland complex. Also given the complexity and size of this wetland complex accurate determination of hydrological connectivity or discontinuity could not be determined for all wetlands. To ensure accurate coverage of the wetlands within the study area and the potential habitat for SAR and rare species, these wetland units were complexed. As wetland boundaries and vegetation communities were compiled and delineated from several years of data a number of vegetation communities less than 0.5ha were included within the wetland complex. This is primarily due to vegetation data for multiple portions of a wetland polygon being assessed over a number of years.

Wetland Size (ha):

1158.82

Vegetation Form	Fractional Area (FA)
h	0.03
c	0.29
dh	0.00
dc	0.00
ts	0.08
ls	0.18
ds	0.00
gc	0.00
m	0.15
ne	0.13
be	0.00
re	0.00
ff	0.00
f	0.12
su	0.04
u (unvegetated)	0.00

Total = 100%

1.00



## 1.0 BIOLOGICAL COMPONENT

### 1.1 PRODUCTIVITY

#### 1.1.1 Growing Degree-Days/Soils (max: 30 pts)

Refer to page 43 of manual for further explanation.

1. Determine the correct GDD value for your wetland (use Figure 5).
2. Circle the appropriate GDD value from the evaluation table below.
3. Determine the Fractional Area (FA) of the wetland for each soil type.
4. Multiply the fractional area of each soil type by the applicable score-factor in the evaluation table.
5. Sum the scores for each soil type to obtain the final score (maximum score is 30 points).

*Note In wetland complexes the evaluator should aim at determining the fractional area occupied by the categories for the complex as a whole.*

Growing Degree-Days	Clay-Loam	Silt-Marl	Limestone	Sand	Humic-Mesic	Fibric	Granite
	<2800	12	11	9	7	7	6
1600-2000	15	13	11	9	8	7	5
2000-2400	18	15	13	11	9	8	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

Soil Type	FA of wetland soil type	in	Enter appropriate score-factor from above table	=	
clay/loam:	0.05	X	26	=	1.3
silt/marl:	0.03	X	21	=	0.6
limestone:	0.00	X	18	=	0.0
sand:	0.11	X	15	=	1.7
humic/mesic:	0.19	X	13	=	2.5
fibric:	0.62	X	10	=	6.2
granite:	0.00	X	8	=	0.0
Total					12.3

GDD/Soils score (maximum 30 points)	12
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### 1.1.2 Wetland Type

(Fractional Area = area of wetland type/total wetland area)

	Fractional Area				Score
Bog	0.06	X	3	=	0.2
Fen	0.34	X	6	=	2.0
Swamp	0.35	X	8	=	2.8
Marsh	0.26	X	15	=	3.9
Total				=	8.9

Wetland type score (maximum 15 points)	<b>9</b>
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### 1.1.3 Site Type

(Fractional Area = area of site type/total wetland area)

	Fractional Area				Score
Isolated	0.06	x	1	=	0.06
Palustrine (permanent or intermittent flow)	0.79	x	2	=	1.58
Riverine	0.07	x	4	=	0.28
Riverine (at rivermouth)	0.00	x	5	=	0.00
Lacustrine (at rivermouth)	0.00	x	5	=	0.00
Lacustrine (on enclosed bay, with barrier beach)	0.02	x	3	=	0.06
Lacustrine (exposed to lake)	0.06	x	2	=	0.12
Total				=	2.10

Site Type Score (maximum 5 points)	<b>2</b>
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## 1.2 BIODIVERSITY

### 1.2.1 Number of Wetland Types

(Check only one)

	one	=	9	points
	two	=	13	
	three	=	20	
<b>X</b>	four	=	30	

Number of Wetland Types Score (maximum 30 points)	<b>30</b>
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### 1.2.2. Vegetation Communities

Use the data sheet provided in Appendix 4 to record and score vegetation communities (the completed form must be attached to this data record)

Scoring (circle only one option for each of the columns below)

Total # of communities with 1-3 forms	
1 =	1.5 pts
2 =	2.5
3 =	3.5
4 =	4.5
5 =	5
6 =	5.5
7 =	6
8 =	6.5
9 =	7
10 =	7.5
11 =	8
+ 0.5 for each additional community	
=	<b>32.5</b>

Total # of communities with 4 -5 forms	
1 =	2 pts
2 =	3.5
3 =	5
4 =	6.5
5 =	7.5
6 =	8.5
7 =	9.5
8 =	10.5
9 =	11.5
10 =	12.5
11 =	13
+ 0.5 for each additional community	
=	<b>26.5</b>

Total # of communities with 6 or more forms	
1 =	3 pts
2 =	5
3 =	7
4 =	9
5 =	10.5
6 =	12
7 =	13.5
8 =	15
9 =	16.5
10 =	18
11 =	19
+ 0.5 for each additional community	
=	<b>3.0</b>

SubTotal: **62**

Vegetation Communities Score  
(maximum 45 points) **45**

### 1.2.3 Diversity of Surrounding Habitat

Check all appropriate items. Only habitat within 1.5 km of the wetland boundary and at least 0.5 ha in size are to be scored.

	recent burn (<5yrs)	* "Mixed forest" is defined as either 25% coniferous trees distributed singly or in clumps in deciduous forest, or 25% deciduous trees distributed singly or in clumps in coniferous forest. Note that Forest Resource Inventory (FRI) maps can be misleading since 25% conifer within a unit could be entirely concentrated around a lake.
	abandoned agricultural land	
	utility corridor	
1	deciduous forest	
	recent cutover or clearcut (<5yrs)	
1	coniferous forest	
1	*mixed forest	
	crops	
1	abandoned pits and quarries	
	pasture	
1	ravine	
	fencerows	
1	open lake or deep river	
1	creek floodplain	
1	rock outcrop	
8	Subtotal	
<p>Score 1 point for each feature checked, up to a maximum of 7 points.</p>		<p>Diversity of Surrounding Habitat Score (maximum 7 points) <b>7</b></p>

### 1.2.4 Proximity to Other Wetlands

Check highest appropriate category. (Note if the wetland is lacustrine, score option #1 at 8 points).

		points
8	Hydrologically connected by surface water to other wetlands (different dominant wetland type) or to open lake or deep river within 1.5 km	8
	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or to open lake or deep river from 1.5 to 4 km away	5
	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
	Within 0.75 km of other wetlands (different dominant wetland type) or open water body, but not hydrologically connected by surface water	5
	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
	No wetland within 1 km	0

Name and distance (from wetland) of wetlands/waterbodies scored above:

Key River and Henvey Inlet are both directly adjacent to the wetland complex.

Proximity to other Wetlands Score (maximum 8 points) <b>8</b>
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### 1.2.5 Interspersion

Number of Intersections = 500

	Number of Intersections (Check only one)	Points
	26 or less	= 3
	27 to 40	= 6
	41 to 60	= 9
	61 to 80	= 12
	81 to 100	= 15
	101 to 125	= 18
	126 to 150	= 21
	151 to 175	= 24
	176 to 200	= 27
<b>30</b>	>200	= 30

Interspersion Score (maximum 30 points)	<b>30</b>
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### 1.2.6 Open Water Types

*Note this attribute is only to be scored for permanently flooded open water within the wetland (adjacent lakes do not count). Check one option only.*

	Open Water Type	Characteristic	Points
	type 1	Open water occupies < 5 % of wetland area	8
	type 2	Open water occupies 5-25% of wetland (occurring in central area)	8
<b>14</b>	type 3	Open water occupies 5-25% (occurring in various-sized ponds, dense patches of vegetation or vegetation in diffuse stands)	14
	type 4	Open water occupies 26-75% of wetland (occurring in a central area)	20
	type 5	Open water occupies 26-75% of wetlands (small ponds and embayments are common)	30
	type 6	Open water occupies 76%-95% of wetland (occurring in large central area; vegetation is peripheral)	8
	type 7	Open water occupies 76-95% of wetland (vegetation in patches or diffuse open stands)	14
	type 8	Open water occupies more than 95% of wetland area	3
	no open water		0

Open Water Type Score (maximum 30 points)	<b>14</b>
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### 1.3 SIZE

#### (BIOLOGICAL COMPONENT)

Total Size of Wetland = **1158.8** ha

Sum of scores from Biodiversity Subcomponent

1.2.1

+1.2.2

+1.2.3

+1.2.4

+1.2.5

+1.2.6

**134**

		Total Score for Biodiversity Subcomponent									
		<37	37-48	49-60	61-72	73-84	85-96	97- 108	109-120	121- 132	>132
Wetland size (ha)	<20 ha	1	5	7	8	9	17	25	34	43	50
	20-40	5	7	8	9	10	19	28	37	46	50
	41-60	6	8	9	10	11	21	31	40	49	50
	61-80	7	9	10	11	13	23	34	43	50	50
	81-100	8	10	11	13	15	25	37	46	50	50
	101-120	9	11	13	15	18	28	40	49	50	50
	121-140	10	13	15	17	21	31	43	50	50	50
	141-160	11	15	17	19	23	34	46	50	50	50
	161-180	13	17	19	21	25	37	49	50	50	50
	181-200	15	19	21	23	28	40	50	50	50	50
	201-400	17	21	23	25	31	43	50	50	50	50
	401-600	19	23	25	28	34	46	50	50	50	50
	601-800	21	25	28	31	37	49	50	50	50	50
	801-1000	23	28	31	34	40	50	50	50	50	50
	1001-1200	25	31	34	37	43	50	50	50	50	50
	1201-1400	28	34	37	40	46	50	50	50	50	50
	1401-1600	31	37	40	43	49	50	50	50	50	50
	1601-1800	34	40	43	46	50	50	50	50	50	50
	1801-2000	37	43	47	49	50	50	50	50	50	50
>2000	40	46	50	50	50	50	50	50	50	50	

Size Score (Biological Component) (maximum 50 points)	<b>50</b>
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## 2.0 SOCIAL COMPONENT

### 2.1 ECONOMICALLY VALUABLE PRODUCTS

#### 2.1.1 Wood Products

Check the option that best reflects the total area (ha) of forested wetland (i.e., areas where the dominant vegetation form is h or c). Note that this is the area of all the forested vegetation communities, not total wetland size. Do not include areas where harvest is not permitted. Check only one option.

Area of wetland used for scoring 2.1.1:

h: 31.13 c: 335.24

	<5 ha =	0
	5 -25 ha =	3
	26 -50 ha =	6
	51- 100 ha =	9
	101-200 ha =	12
<b>18</b>	>200 ha =	18

Source of information:

Field Observation: AECOM, 2014,2015

Wood Products Score **14**  
(maximum 14 points)

#### 2.1.2 Lowbush Cranberry

Check only one.

<b>2</b>	Present (minimum size 0.5 ha) =	2 pts
	Absent =	0
	Harvest not permitted =	0

Source of information:

Field Observation: AECOM, 2014,2015

Wild Rice Score **2**  
(maximum 6 points)

#### 2.1.3 Wild Rice

Check only one.

	Present (minimum size 0.5 ha) =	6 pts
<b>0</b>	Absent =	0
	Harvest not permitted =	0

Source of information:

Field Observation: AECOM, 2014,2015

Wild Rice Score **0**  
(maximum 10 points)

### 2.1.4 Commercial Bait Fish

Check only one.

<b>12</b>	Present	=	12 pts
	Absent	=	0
	Fishing not permitted	=	0

Source of information:

Field Observation; A. Ingriselli, 2015

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Commercial Fish Score (maximum 12 points)	<b>12</b>
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### 2.1.5 Furbearers

Only species recognized as furbearers under the Fish & Wildlife Conservation Act may be scored here. Score 3 points for each furbearer species listed, up to a maximum of 12 points.

Name of furbearer			Source of information
1	<b>3</b>	Beaver ( <i>Castor canadensis</i> )	Field Observation: AECOM 215, Stantec, 2013
2	<b>3</b>	Long-tailed Weasel ( <i>Mustela fenata</i> )	Field Observation: Stantec, 2013
3	<b>3</b>	Muskrat ( <i>Ondatra zibethicus</i> )	Field Observation: Stantec, 2013
4	<b>3</b>	North American River Otter ( <i>Lontra canadensis</i> )	Field Observation: AECOM 2015, Stantec, 2013
5	<b>3</b>	Northern Raccoon ( <i>Procyon lotor</i> )	Field Observation: Stantec, 2013
6	<b>3</b>	Red fox ( <i>Vulpes vulpes</i> )	Field Observation: AECOM 2015, Stantec, 2013
7	<b>3</b>	Red Squirrel ( <i>Tamiasciurus hudsonicus</i> )	Field Observation: AECOM 215, Stantec, 2013
<b>21</b>	<b>Subtotal</b>		

Furbearer Score (maximum 12 points)	<b>12</b>
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## 2.2 RECREATIONAL ACTIVITIES

Circle one score for each of the activities listed. Score is cumulative – add score for hunting, nature enjoyment and fishing together for final score.

		Type of Wetland-Associated Use				
		Hunting		Nature Enjoyment/ Ecosystem Study	Fishing	
Intensity of Use	High	40 points		40 points		40 points
	Moderate	20	20	20		20
	Low	8		8		8
	Not possible/ No evidence	0		0		0
	<b>Totals</b>		20		0	
						<b>28</b>

Sources of information (include evidence/criteria forming basis for score and any relevant reference used to obtain that information)

- e.g., Hunting scored at 20 points 5 hunting blinds observed; hunters using area frequently monitored for compliance (source D. Black, MNR Conservation Officer)

Hunting: Personal Communication: Henvey Inlet First Nation, 2015  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Nature: Not known  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Fishing: Not Known  
Field Observation: Kristan Washburn, 2013,2015  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Recreational Activities Score (maximum 80 points)	<b>28</b>
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## 2.3 LANDSCAPE AESTHETICS

### 2.3.1 Distinctness

Check only one.

<b>3</b>	Clearly distinct	=	3	pts
	Indistinct	=	0	

Landscape Distinctness Score (maximum 3 points)	<b>3</b>
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### 2.3.2 Absence of Human Disturbance

Check only one.

<b>7</b>	Human disturbances absent or nearly so	=	7	pts
	One or several localized disturbances	=	4	
	Moderate disturbance; localized water pollution	=	2	
	Wetland intact but impairment of ecosystem quality intense in some areas	=	1	
	Extreme ecological degradation, or water pollution severe and widespread	=	0	

Details regarding type, extent and location of disturbance scored:

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Source of information:

Kristan Washburn, 2015

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Absence of Human Disturbance Score (maximum 7 points)	<b>7</b>
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## 2.4 EDUCATION AND PUBLIC AWARENESS

### 2.4.1 Educational Uses

Check highest appropriate category.

	Frequent	=	20	pts
	Infrequent	=	12	
0	No visits	=	0	

Details regarding the type and frequency of education uses scored above:

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Source of information:

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Educational Uses Score (maximum 20 points)	0
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### 2.4.2 Facilities and Programs

Check all appropriate options, score highest category checked.

	Staffed interpretation centre	=	8	pts
	No interpretation centre or staff but a system of self-guiding trails or brochures available	=	4	
	Facilities such as maintained paths (e.g., woodchips) boardwalks, boat launches or observation towers but no brochures or other interpretation	=	2	
0	No facilities or programs	=	0	

Additional Notes/Comments:

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Source of information:

Field Observation: Kristan Washburn, 2015

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Facilities and Programs Score (maximum 8 points)	0
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### 2.4.3 Research and Studies

Check all that apply; score highest category checked.

	Long term research has been done	=	12	pts
	Research papers published in refereed scientific journal or as a thesis	=	10	
<b>5</b>	One or more (non-research) reports have been written on some aspect of the wetland's flora, fauna, hydrology etc.	=	5	
	No research or reports	=	0	
<b>5</b>	Subtotal:			

List of reports, publications, research studies etc. scored above:

Georgian Bay Biosphere Reserve (2013). Ecosystem Health Report for Eastern Georgian Bay. Background

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Research and Studies Score **5**  
(maximum 12 points)

### 2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT

Name of Settlement: Henvey Inlet First Nation

Distance of wetland from settlement: 160m from wetland areas adjacent to Highway 69.

Population of settlement: 170 (Source: First Nations Market Hc)

Circle only the highest score applicable

Distance of wetland to settlement	population >10,000		population 2,500-10,000		population or <2,500 cottage community	
	40 points		26 points		16 points	
Within or adjoining settlement	40 points		26 points		16 points	<b>16</b>
0.5 to 10 km from settlement	26		16		10	
10 to 60 km from settlement	12		8		4	
60-100 km from nearest settlement	5		2		0	
100 km from nearest settlement	0		0		0	
		<b>0</b>		<b>0</b>		<b>16</b>

Proximity to Human Settlement Score **16**  
(maximum 40 points)

Additional Reports  
No additional reports.

## 2.6 OWNERSHIP

FA of wetland held by or held under a legal contract by a conservation body (as defined by the Conservation Land Act) for wetland protection	<b>0.92</b>	x	10	=	<b>9.20</b>
FA of wetland occurring in provincially or nationally protected areas (e.g., parks and conservation reserves)		x	10	=	<b>0.00</b>
FA of wetland area in Crown/public ownership, not as above	<b>0.08</b>	x	8	=	<b>0.64</b>
FA of wetland area in private ownership, not as above		x	4	=	<b>0.00</b>

Source of information:

Henvey Inlet First Nation Land Owner. NW corner of wetland is Provincial Crown Land.

Ownership Score (maximum 10 points)	<b>10</b>
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## 2.7 SIZE (SOCIAL COMPONENT)

Total Size of Wetland = **1158.8** ha

Sum of scores from Subcomponents 2.1, 2.2, and 2.5 =

**84**

Circle the appropriate score from the table below.

Total for Size Dependent Social Features										
	<31	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
<2 ha	1	2	4	8	10	12	14	14	14	15
2 - 4ha	1	2	4	8	12	13	14	14	15	16
5 - 8ha	2	2	5	9	13	14	15	15	16	16
9 - 12ha	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	18	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	<b>19</b>	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	20	20

Total Size Score (Social Component)	<b>19</b>
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## 2.8 ABORIGINAL VALUES AND CULTURAL HERITAGE

Either or both Aboriginal or Cultural Values may be scored. However, the maximum score permitted for 2.8 is 30 points.

Full documentation of sources must be attached to the data record.

### 2.8.1 Aboriginal Values

<b>30.0</b>	Significant	=	30 pts
	Not Significant	=	0
	Unknown	=	0
<b>30</b>	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Natio, 2015

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### 2.8.2 Cultural Heritage

	Significant	=	30 pts
	Not Significant	=	0
<b>0.0</b>	Unknown	=	0
<b>0</b>	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

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Aboriginal Values/Cultural Heritage Score <i>(maximum 30 points)</i>	<b>30.0</b>
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### 3.0 HYDROLOGICAL COMPONENT

#### 3.1 FLOOD ATTENUATION

Check one of the following four options.

- If wetland is a single contiguous coastal wetland, → score 0 points for this section.
- If the wetland is a single contiguous lacustrine wetland where the ratio of wetland area to lake area is less than 0.1, → score 0 points for this section
- If all wetland units of the wetland complex are coastal wetland units, or if all wetland units are all lacustrine and the ratio of the wetland area (total area of all wetland units) to the lake areas is less than 0.1, →score 0 points for this section
- If wetland or wetland complex is entirely isolated in site type, →score 100 points automatically.
- Wetland not as above – proceed through 'steps' A through L below.

- (A) Total wetland area =  ha
- (B) Size of wetland's catchment =  ha
- (C) Size of other detention areas in catchment =  ha
- (D) Size of 'isolated' portions of wetland =  ha (FA = )
- (E) Size of coastal units of wetland complex =  ha (FA = )
- (F) Size of small lacustrine units of a wetland complex =  ha = (FA= )  
(when wetland area: lake area <0.1)

Wetland Surface Form (select the form which best describes the non-coastal units of the wetland):

- flooded with little or no aquatic vegetation
- flooded but with submergent, emergent, or floating vegetation = 0.2
- flat (lawn) vegetation (typical of fens)=0.5
- hummock-depression microtopography=0.7
- patterned (e.g. string bod, ribber fens)=0.5

- (G) Wetland Surface Form Factor =  (maximum 1.0)

Points for Isolated Wetland Unit(s) (if not applicable, enter '0')

- (H) (FA of D)x 100 pts =  pts

Points for Coastal Wetland Unit(s) (if not applicable, enter '0')

- (I) (FA of E) x 100 pts =  pts

Points for Small Lacustrine Wetland Unit(s) (If not applicable enter '0'):

- (J) (FA of F) x100 pts =  pts

- (K) Size of wetland minus isolated, coastal and small lacustrine portions= (A-D-E-F)=  ha

- (L) number of points availblt to score 'rest' of wetland = {100-H-I-J}=  pts

- (M) Total are of upstream detnetion areas\*= {A+C}=  ha

- (N) Upstream Detention Factor= {(K/M)x2}=  (maximum 1.0)

- (O) Attenuation Factor = {(K/B)x 10}=  (maximum 1.0)

- (P) Surface Form Factor =  (maximum 1.0)

Flood Attenuation Score (maximum 100 points)	0
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## 3.2 GROUNDWATER RECHARGE

### 3.2.1 Site Type

Wetland > 50% lacustrine (by area) or located on the St. Mary's River	=			=	<b>0</b>
Wetland not as above. Calculate final score as follows:					
FA of isolated or palustrine wetland	=	<b>0.85</b>	x	20	= <b>17.00</b>
FA of riverine wetland	=	<b>0.07</b>	x	5	= <b>0.35</b>
FA of lacustrine wetland (when wetland is <50% lacustrine)	=	<b>0.08</b>	x	0	= <b>0.00</b>
Sub Total:					<b>17.35</b>

Groundwater Recharge/Wetland Site Type Score  
(Maximum 20 points) **17**

### 3.2.2 Soil Recharge Potential

Select only one choice that **best** describes the soils in **the area surrounding the wetland** being evaluated (the soils with the wetland are not scored here).

Dominant Wetland Type	Group A, B, C (sands, gravels, loams)	Group D (clays, substrates in high water tables, shallow substrates over impervious materials such as bedrock)
	Lacustrine or on St. Mary's River	0
Isolated	10	5
Palustrine	7	4
Riverine (not on a major river)	5	2

Groundwater Recharge/Wetland Soil Recharge Potential Score  
(maximum 10 points) **4**

### 3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

#### 3.2.1 Watershed Improvement Factor

Calculation of Watershed Improvement Score is based upon the fractional area (FA) of each site type within the wetland.

FA= area of site type/total area of the wetland

					Improvement Factor (IF)
FA of isolated wetland	=	0.06	x 0.5	=	0.03
FA of riverine wetland	=	0.07	x 1	=	0.07
FA of palustrine wetland with no inflow	=	0.26	x 0.7	=	0.18
FA of palustrine wetland with inflows	=	0.53	x 1	=	0.53
FA of lacustrine on lake shoreline	=	0.02	x 0.2	=	0.00
FA of lacustrine at lake inflow or outflow	=	0.00	x 1	=	0.00
Sub Total :					0.82
IF x 30 :					24.45

Watershed Improvement Score (maximum=30)	24
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#### 3.3.2 Adjacent and Watershed Land Use

##### Step 1: Determination of maximum initial score

x	Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)
	All other wetlands (Go through Steps 2, 3, 4, and 5B)

##### Step 2: Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

Choose one

>50% of catchment basin	=	20.0
20-50% of catchment basin	=	14
<20% of catchment basin	=	4

Score for BLU

##### Step 3: Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

Choose the highest only

	Score
Major Corridor	15
Secondary corridor	11
Tertiary corridor	6
Temporary or abandoned	3
None	0

Score for LUU

##### Step 4: Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits used for local road construction), etc. Score as 'present' only if a point source land use is located less than 1km upstream from the wetland.

Present	15
Not present	0

Score for PS

**Step 5. Calculation of total score for Ajacent and Watershed Land Use**

		Score
<input checked="" type="checkbox"/>	a) Wetland on the Great Lakes or St. Mary's River	0
<input type="checkbox"/>	b) All other wetlands, calculate as follows: BLU+LUU+PS	0
		Final Score <input type="text" value="0"/>

**3.3.3 Vegetation Form**

*Choose the category that best describes the vegetation of the wetland*

		Score
<input checked="" type="checkbox"/>	Trees, shrubs or herbs (h,c, ts, ls, gc)	8.0
<input type="checkbox"/>	Emergents, submergenets (ne, re, be, f, ff, su)	10
<input type="checkbox"/>	Little or no vegetation (u)	0
		Dominant Vegetation form Score (maximum 10 points) <input type="text" value="8"/>

**3.4 CARBON SINK**

*Check only one of the following*

<input type="checkbox"/>	Bog or fen with more than 50% coverage by organic soil	=	15 pts
<input type="checkbox"/>	Wetland with between 10-50% coverage by organic soil (ie. Mainly mineral or undersignated soils, any wetland type)	=	6
<input checked="" type="checkbox"/>	Marshes and swamps with more than 50% coverage by organic soil	=	9
<input type="checkbox"/>	Wetland with less than 10% soils organic	=	0
		Carbon Sink Score (maximum 5 points)	<input type="text" value="9"/>

### 3.5 SHORELINE EROSION CONTROL

From the wetland vegetation map determine the **Dominant** vegetation type within the erosion zone for **lacustrine and riverine site type areas only**. Score according to the factors listed below.

**Step 1:**

	Wetland entirely isolated or palustrine	=	0 pts
x	Any part of the Wetland riverine or lacustrine	=	Go to step 2

**Step 2:** Choose the one characteristic that best describes the shoreline vegetation see page 112 for description of “shoreline”.)

	Trees and shrubs	=	15 pts
8	Emergent vegetation	=	8
	Submergent vegetation	=	6
	Other shoreline vegetation	=	3
	No vegetation	=	0

Shoreline Erosion Control Score (maximum 15 points)	<b>8</b>
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### 3.6 GROUNDWATER DISCHARGE

Circle the characteristics that best describe the wetland being evaluated and then sum the scores. If the sum exceeds 30 points, assign the maximum score of 30). Note for wetland type, wetland type scored does not have to be the dominant type in the wetland.

		Potential for Discharge					
		None to Little		Some		High	
Wetland Characteristics	Wetland type Presence/Absence	Bog = 0		Swamp/Marsh = 2	2	Fen = 5	
	Basin Topography	Flat/rolling = 0	0	Hilly = 2		Steep = 5	
	Wetland area: Upslope catchment area	Large (>50%) = 0	0	Moderate (5-50%) = 2		Small (<5%) = 5	
	Lagg Development	None found = 0		Minor = 2	2	Extensive = 5	
	Seeps	None = 0		≤ 3 seeps = 2	2	> 3 seeps = 5	
	Iron precipitates	None = 0		≤ 3 sites = 2	2	> 3 sites = 5	
	Surface marl deposits	None = 0	0	≤ 3 sites = 2		> 3 sites = 5	
	Wetland pH	Low < 4.2 = 0		Moderate 4.2-5.7 = 5	5	High > 5.7 = 10	
	Catchment soil coverage	Patchy = 0	0	Thin (<20cm) = 2		Thick = 5	
	Catchment soil permeability	Low = 0		Moderate = 2	2	High = 5	
	Totals		0		15		0

Additional Comments/Notes:

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Groundwater Discharge Score (maximum 30 points)	<b>15</b>
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## 4.0 SPECIAL FEATURES

### COMPONENT

## 4.1 RARITY

### 4.1.1 Wetland Types

Wetland type (Check one or more)

<input checked="" type="checkbox"/>	Bog
<input checked="" type="checkbox"/>	Fen
<input checked="" type="checkbox"/>	Swamp
<input checked="" type="checkbox"/>	Marsh

Ecoregion/Ecodistrict		Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	Big Trout Lake	20	20	0	10
3E	Lake Abitibi	20	20	10	0
3W	Lake Nipigon	20	20	10	0
3S	Lake St. Joseph	20	20	10	0
4E	Lake temagami	20	20	10	0
4W	Pigeon River	20	10	20	0
4S	Wabigoon Lake	20	10	20	0
5E-1	Thessalon	10	0	30	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tom ko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E13	Western Sault Ste. Marie-Lake Superior Coast	20	0	10	30
5-S	Lake of the Wood	10	10	20	10

Score (maximum 70 points)

**70**

## 4.1.2 Species

### 4.1.2.1 Reproductive Habitat for an Endangered or Threatened Species

Under the "Activity" column, when scoring animal species, record what the animal was doing when observed (e.g., nesting, courtship, singing, etc).

	Common Name	Scientific Name	Activity	Date Observed	Info Source
		#N/A			
		#N/A			
		#N/A			
		#N/A			
		#N/A			
		#N/A			
		#N/A			
<b>0</b>	Total				

For each species score 250 points. (Score is cumulative, no maximum score)

Additional Notes/Comments:

None observed. Field observation: AECOM, 2014-2015

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Reproductive Habitat for Endangered or Threatened Species (no maximum)	<b>0</b>
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#### 4.1.2.2 Traditional Migration or Feeding Habitat for an Endangered or Threatened Species

Under the "Activity" column, when scoring animal species, record what the animal was doing when observed (e.g., nesting, courtship, singing, feeding, resting etc). Dates that species has been recorded using the wetland must be included in the table below.

	Common Name	Scientific Name	Activity	Date Observed	Info Source
150	Blanding's Turtle	<i>Emydoidea blandingii</i>	Basking	Numerous 2011-2015	AECOM, 2015
75	Massasauga	<i>Sistrurus catenatus</i>	Basking	Numerous 2011-2015	AECOM, 2015
75	██████████	██████████	Basking	Numerous 2011-2015	AECOM, 2015
		#N/A			
		#N/A			
		#N/A			
		#N/A			
300	Total				

For one species score 150 points; for each additional species score 75 points. (Score is cumulative)

Additional Notes/Comments:

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Traditional Habitat for Endangered or Threatened Species (no maximum)	<b>300</b>
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#### 4.1.2.3 Provincially Significant Animal Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
Olive-sided Flycatcher	Contopus cooperi			AECOM, 2015
Canada Warbler	Cardellina pusilla			AECOM, 2015
Snapping Turtle	Chelydra serpentina			AECOM, 2015
Milksnake	Lampropeltis triangulum			AECOM, 2015
	#N/A			
	#N/A			
	#N/A			

Additional Notes/Comments:

None observed. Field observation; J.deMan, 2011

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One species = 50 pts	9 species = 140	17 species = 160
2 species = 80	10 species = 143	18 species = 162
3 species = 95	11 species = 146	19 species = 164
4 species = 105	12 species = 149	20 species = 166
5 species = 115	13 species = 152	21 species = 168
6 species = 125	14 species = 154	22 species = 170
7 species = 130	15 species = 156	23 species = 172
8 species = 135	16 species = 158	24 species = 174
		25 species = 176

*Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)*

Provincially Significant Plant Species (no maximum)	<b>105</b>
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#### 4.1.2.4 Provincially Significant Plant Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			

Additional Notes/Comments:

None observed

1 species = 50 pts	9 species = 140	17 species = 160
2 species = 80	10 species = 143	18 species = 162
3 species = 95	11 species = 146	19 species = 164
4 species = 105	12 species = 149	20 species = 166
5 species = 115	13 species = 152	21 species = 168
6 species = 125	14 species = 154	22 species = 170
7 species = 130	15 species = 156	23 species = 172
8 species = 135	16 species = 158	24 species = 174
		25 species = 176

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species (no maximum)	<b>0</b>
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#### 4.1.2.5 Regionally Significant Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			

One species = 20 pts	4 species = 45	7 species = 58 pts
2 species = 30	5 species = 50	8 species = 61
3 species = 40	6 species = 55	9 species = 64
		10 species = 67

For each significant species over 10 in wetland, add 1 point.

Regionally Significant Species Score (no maximum score)	<b>0</b>
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#### 4.1.2.6 Locally Significant Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			

One species = 10 pts	4 species = 31 pts	7 species = 43 pts
2 species = 17	5 species = 38	8 species = 45
3 species = 24	6 species = 41	9 species = 47
		10 species = 49

For each significant species over 10 in wetland, add 1 point.

Locally Significant Species Score (no maximum score)	<b>0</b>
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#### 4.1.2.7 Species of Special Status

##### Black Duck

Suitable breeding habitat present and within assessment range (Figure 25)

Assessment Category	Check One	Points
20-40 Indicated Pairs/100km sq		= 20
10-20 Indicated Pairs/100 km sq	x	= 15
5-10 Indicated Pairs/100 km sq		= 10
1-5 Indicated Pairs/100km sq		= 5
Habitat not suitable		= 0
Out of assessment range		= 0

Black Duck Score (no maximum score)	<b>15</b>
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## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<b>PTERIDOPHYTES</b>		<b>FERNS &amp; ALLIES</b>						
<i>Woodwardia virginica</i>	Virginia Chain Fern	10	-5	0	S4	G5	-	-
<i>Pteridium aquilinum var. latiusculum</i>	Eastern Bracken-fern	2	3	0	S5	G5T	-	-
<i>Dryopteris marginalis</i>	Marginal Wood Fern	5	3	0	S5	G5	-	-
<i>Dryopteris cristata</i>	Crested Wood Fern	7	-5	0	S5	G5	-	-
<i>Onoclea sensibilis</i>	Sensitive Fern	4	-3	0	S5	G5	-	-
<i>Athyrium filix-femina</i>	Lady Fern						-	-
<i>Gymnocarpium dryopteris</i>	Oak Fern	7	0	0	S5	G5	-	-
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	5	-2	0	S5	G5	-	-
<i>Matteuccia struthiopteris</i>	Ostrich Fern	5	-3	0	S5	G5	-	-
<i>Dryopteris sp.</i>	Wood Fern						-	-
<i>Equisetum sylvaticum</i>	Wood Horsetail	7	-3	0	S5	G5	-	-
<i>Equisetum arvense</i>	Field Horsetail	0	0	0	S5	G5	-	-
<i>Equisetum fluviatile</i>	Water Horsetail	7	-5	0	S5	G5	-	-
<i>Equisetum hyemale var. affine</i>	Scouring-rush	2	-2	0	S5	G5T5	-	-
<i>Lycopodium dendroideum</i>	Prickly Tree Club-moss	7	0	0	S5	G5	-	-
<i>Lycopodiella inundata</i>	Nothern Bog Club-moss	9	-5	0	S5	G5	-	-
<i>Huperzia lucidula</i>	Shining Fir-moss	7	-1	0	S5	G5	-	-
<i>Osmunda regalis var. spectabilis</i>	Royal Fern	7	-5	0	S5	G5T	-	-
<i>Osmunda cinnamomea</i>	Cinnamon Fern	7	-3	0	S5	G5	-	-
<i>Osmunda claytoniana</i>	Interrupted Fern	7	-1	0	S5	G5	-	-
<i>Polypodium virginianum</i>	Rock Polypody Fern	6	5	0	S5	G5	-	-
<i>Thelypteris palustris var. pubescens</i>	Marsh Fern	5	-4	0	S5	G5T?	-	-
<i>Phegopteris connectilis</i>	Northern Beech Fern	8	5	0	S5	G5	-	-
<b>GYMNOSPERMS</b>		<b>CONIFERS</b>						
<i>Juniperus communis</i>	Common Juniper	4	3	0	S5	G5	-	-
<i>Thuja occidentalis</i>	Eastern White Cedar	4	-3	0	S5	G5	-	-
<i>Larix laricina</i>	Tamarack	7	-3	0	S5	G5	-	-
<i>Picea mariana</i>	Black Spruce	8	-3	0	S5	G5	-	-
<i>Pinus banksiana</i>	Jack Pine	9	3	0	S5	G5	-	-
<i>Pinus strobus</i>	Eastern White Pine	4	3	0	S5	G5	-	-
<i>Picea glauca</i>	White Spruce	6	3	0	S5	G5	-	-
<i>Abies balsamea</i>	Balsam Fir	5	-3	0	S5	G5	-	-
<b>DICOTYLEDONS</b>		<b>DICOTS</b>						
<i>Acer rubrum</i>	Red Maple	4	0	0	S5	G5	-	-
<i>Acer spicatum</i>	Mountain Maple	6	3	0	S5	G5	-	-
<i>Rhus typhina</i>	Staghorn Sumac				S5	G5	-	-
<i>Toxicodendron radicans ssp. negundo</i>	Poison-ivy	5	-1	0	S5	G5T	-	-
<i>Sium suave</i>	Hemlock Water-parsnip	4	-5	0	S5	G5	-	-
<i>Apocynum androsaemifolium ssp. androsaemifolium</i>	Spreading Dogbane	3	5	0	S5	G5T?	-	-
<i>Nemopanthus mucronatus</i>	Mountain-holly	8	-5	0	S5	G5	-	-
<i>Ilex verticillata</i>	Winterberry	5	-4	0	S5	G5	-	-
<i>Ilex mucronata</i>	Catberry				S5	G5	-	-
<i>Ilex sp.</i>							-	-
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	4	3	0	S5	G5	-	-
<i>Eurybia macrophylla</i>	Large-leaved Aster	5	5	0	S5	G5	-	-
<i>Lactuca biennis</i>	Biennial Lettuce	6	0	0	S5	G5	-	-
<i>Solidago rugosa ssp. rugosa</i>	Rough Goldenrod	4	-1	0	S5	G5T?	-	-
<i>Symphotrichum umbellatus var. umbellatus</i>	Flat-top White Aster	6	-3	0	S5	G5T?	-	-
<i>Eupatorium maculatum</i>	Spotted Joe-pye-weed	3	-5	0	S5	G5T5	-	-
<i>Euthamia graminifolia</i>	Flat-topped Bushy Goldenrod	2	-2	0	S5	G5	-	-
<i>Solidago canadensis</i>	Canada Goldenrod	1	3	0	S5	G5	-	-
<i>Symphotrichum puniceum var. puniceum</i>	Purple-stemmed Aster	0	0	0	S5	G5T?	-	-
<i>Hieracium aurantiacum</i>	Devil's Paintbrush	0	5	-2	SE5	G?	-	-
<i>Arctium minus</i>	Common Burdock						-	-
<i>Solidago sp.</i>	Goldenrod						-	-
<i>Aster sp.</i>	Aster						-	-
<i>Eupatorium perfoliatum</i>	Perfoliate Thoroughwort/Boneset	2	-4	0	S5	G5	-	-
<i>Leucanthemum vulgare</i>	Ox-eye Daisy	0	5	-1	SE5	G?	-	-

## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Symphotrichum</i> sp.							-	-
<i>Eutrochium maculatum</i>	Spotted Joe Pye Weed						-	-
<i>Symphotrichum borealis</i>	Rush Aster	10	-5	0	S5	G5	-	-
<i>Bidens cernua</i>	Stick-tight	2	-5	0	S5	G5	-	-
<i>Anaphalis margaritacea</i>	Pearly Everlasting	3	5	0	S5	G5	-	-
<i>Impatiens capensis</i>	Spotted Touch-me-not	4	-3	0	S5	G5	-	-
<i>Alnus incana</i> spp. <i>rugosa</i>	Speckled Alder	6	-5	0	S5	G5T5	-	-
<i>Betula papyrifera</i>	White Birch	0	2	0	S5	G5	-	-
<i>Corylus cornuta</i>	Beaked Hazel	5	5	0	S5	G5T	-	-
<i>Cardamine diphylla</i>	Two-leaved Toothwort	7	5	0	S5	G5	-	-
<i>Armoracia lacustris</i>	Lake-cress						-	-
<i>Brasenia schreberi</i>	Water-shield	7	-5	0	S5	G5	-	-
<i>Diervilla lonicera</i>	Bush Honeysuckle	5	5	0	S5	G5	-	-
<i>Viburnum nudum</i> var. <i>cassinoides</i>	Northern Wild Raisin						-	-
<i>Sambucus nigra</i> ssp. <i>canadensis</i>	Common Elderberry						-	-
<i>Sambucus canadensis</i>	American Elderberry						-	-
<i>Symphoricarpos albus</i>	Snowberry	7	4	0	S5	G5	-	-
<i>Viburnum lentago</i>	Nannyberry	4	-1	0	S5	G5	-	-
<i>Sambucus</i> sp.	Elderberry						-	-
<i>Cornus canadensis</i>	Bunchberry	7	0	0	S5	G5	-	-
<i>Cornus stolonifera</i>	Red-osier Dogwood				S5	G5	-	-
<i>Cornus racemosa</i>	Red Panicked Dogwood/Gray dogwood	2	-2	0	S5	G5?	-	-
<i>Cornus sericea</i>	Red-osier Dogwood	2	-3	0	S5	G5	-	-
<i>Drosera rotundifolia</i>	Round-leaved Sundew	7	-5	0	S5	G5	-	-
<i>Arctostaphylos uva-ursi</i>	Common Bearberry	8	5	0	S5	G5	-	-
<i>Chamaedaphne calyculata</i>	Leatherleaf	9	-5	0	S5	G5	-	-
<i>Gaultheria procumbens</i>	Wintergreen	6	3	0	S5	G5	-	-
<i>Kalmia angustifolia</i>	Sheep Laurel	9	0	0	S5	G5	-	-
<i>Kalmia polifolia</i>	Bog Laurel	10	-5	0	S5	G5	-	-
<i>Ledum groenlandicum</i>	Labrador-tea	9	-5	0	S5	G5	-	-
<i>Vaccinium angustifolium</i>	Low Sweet Blueberry	6	3	0	S5	G5	-	-
<i>Vaccinium oxycoccos</i>	Small Cranberry	10	-5	0	S5	G5	-	-
<i>Vaccinium myrtilloides</i>	Velvet-leaf Blueberry	7	-2	0	S5	G5	-	-
<i>Andromeda polifolia</i> ssp. <i>glaucophylla</i>	Bog Rosemary	10	-5	0	S5	G5T5	-	-
<i>Gaylussacia baccata</i>	Black Huckleberry	8	3	0	S4	G5	-	-
<i>Andromeda polifolia</i> ssp. <i>polifolia</i>	Wild Rosemary	0	0	0	S4	G5T5	-	-
<i>Vaccinium macrocarpon</i>	Large Cranberry	10	-5	0	S4S5	G4	-	-
<i>Quercus rubra</i>	Red Oak	6	3	0	S5	G5	-	-
<i>Corydalis</i> sp.	Corydalis						-	-
<i>Geranium bicknellii</i>	Bicknell's Crane's-bill	5	5	0	S4	G5	-	-
<i>Ribes glandulosum</i>	Skunk Currant	6	-3	0	S5	G5	-	-
<i>Ribes triste</i>	Wild Red Currant	6	-5	0	S5	G5	-	-
<i>Ribes americanum</i>	Wild Black Currant	4	-3	0	S5	G5	-	-
<i>Ribes lacustre</i>	Swamp Black Currant	7	-3	0	S5	G5	-	-
<i>Ribes</i> sp.							-	-
<i>Ribes cynosbati</i>	Prickly Gooseberry	4	5	0	S5	G5	-	-
<i>Ribes hirtellum</i>	Smooth Gooseberry	6	-3	0	S5	G5	-	-
<i>Triadenum fraseri</i>	Fraser's St. John's-wort	7	-5	0	S5	G4G5	-	-
<i>Hypericum perforatum</i>	Common St. John's-wort	0	5	-3	SE5	G?	-	-
<i>Myriophyllum sibiricum</i>	Pale Water-milfoil	0	-5	0	S5	G5	-	-
<i>Myriophyllum</i> sp.							-	-
<i>Proserpinaca palustris</i>	Field Mermaid-weed	7	-5	0	S4	G5	-	-
<i>Myriophyllum verticillatum</i>	Whorled Water-milfoil	7	-5	0	S5	G5	-	-
<i>Mentha arvensis</i>	American Wild Mint	3	-3	0	S5		-	-
<i>Lycopus uniflorus</i>	Northern Water-horehound	5	-5	0	S5	G5	-	-
<i>Utricularia intermedia</i>	Flat-leaved Bladderwort	8	-5	0	S5	G5	-	-
<i>Utricularia vulgaris</i>	Greater Bladderwort	4	-5	0	S5	G5	-	-
<i>Menyanthes trifoliata</i>	Three-leaved Buckbean	9	-5	0	S5	G5	-	-
<i>Myrica gale</i>	Sweet Gale	6	-5	0	S5	G5	-	-
<i>Comptonia peregrina</i>	Sweetfern	7	5	0	S5	G5	-	-
<i>Nymphaea odorata</i>	Fragrant Water-lily	0	0	0	S5	G5	-	-

## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Nuphar variegata</i>	Bulhead Pond-lily	4	-5	0	S5	G5	-	-
<i>Nymphaea sp.</i>	Water-lily						-	-
<i>Nuphar sp.</i>	Pond-lily						-	-
<i>Nuphar lutea ssp. pumila</i>	Yellow Pond-lily						-	-
<i>Fraxinus nigra</i>	Black Ash	7	-4	0	S5	G5	-	-
<i>Circaea lutetiana ssp. canadensis</i>	Enchanter's Nightshade	3	3	0	S5	G5T5	-	-
<i>Epilobium ciliatum</i>	Hairy Willow-herb				S5	G5	-	-
<i>Epilobium angustifolium</i>	Fireweed						-	-
<i>Polygonum cilinode</i>	Fringed Black Bindweed	2	5	0	S5	G5	-	-
<i>Polygonum sp.</i>							-	-
<i>Polygonum amphibium</i>	Water Smartweed	5	-5	0	S5	G5	-	-
<i>Trientalis borealis ssp. borealis</i>	Star-flower	6	-1	0	S5	G5T?	-	-
<i>Lysimachia thyrsoiflora</i>	Tufted Loosestrife	7	-5	0	S5	G5	-	-
<i>Lysimachia terrestris</i>	Swamp Loosestrife	6	-5	0	S5	G5	-	-
<i>Lysimachia ciliata</i>	Fringed Loosestrife	4	-3	0	S5	G5	-	-
<i>Lysimachia sp.</i>	Loosestrife						-	-
<i>Pyrola asarifolia</i>	Pink Pyrola	7	-3	0	S5	G5	-	-
<i>Chimaphila umbellata</i>	Common Pipsissewa				S5	G5	-	-
<i>Aquilegia canadensis</i>	Wild Columbine	5	1	0	S5	G5	-	-
<i>Coptis trifolia</i>		7	-3	0	S5	G5T5	-	-
<i>Caltha palustris</i>	Marsh-marigold	5	-5	0	S5	G5	-	-
<i>Actaea rubra</i>	Red Baneberry	5	5	0	S5	G5	-	-
<i>Clematis virginiana</i>	Virgin's-bower	3	0	0	S5	G5	-	-
<i>Ranunculus abortivus</i>	Kidney-leaf Buttercup	2	-2	0	S5	G5	-	-
<i>Ranunculus recurvatus var. recurvatus</i>	Hooked Buttercup	4	-3	0	S5	G5	-	-
<i>Thalictrum pubescens</i>	Tall Meadow-rue	5	-2	0	S5	G5	-	-
<i>Ranunculus pensylvanicus</i>	Bristly Buttercup	3	-5	0	S5	G5	-	-
<i>Anemone canadensis</i>	Canada Anemone	3	-3	0	S5	G5	-	-
<i>Ranunculus acris</i>	Tall Buttercup	0	0	-2	SE5	G5	-	-
<i>Thalictrum dasycarpum</i>	Purple Meadow-rue	8	-2	0	S4?	G5	-	-
<i>Amelanchier arborea</i>	Downy Juneberry	0	3	0	S5	G5	-	-
<i>Aronia melanocarpa</i>	Black chokeberry	7	-3	0	S5	G5	-	-
<i>Fragaria vesca ssp. americana</i>	Woodland Strawberry	4	4	0	S5	G5T?	-	-
<i>Prunus pumila</i>	Sand Cherry						-	-
<i>Rubus idaeus</i>	Red Raspberry	0	0	0	SE1	G5T5	-	-
<i>Rubus pubescens</i>	Dwarf Raspberry	4	-4	0	S5	G5	-	-
<i>Prunus virginiana</i>	Choke Cherry						-	-
<i>Rubus flagellaris</i>	Prickly Raspberry	4	4	0	S4	G5	-	-
<i>Spiraea latifolia</i>	Broad-leaved Meadow-sweet				S5	G5	-	-
<i>Amelanchier laevis</i>	Smooth Juneberry	5	5	0	S5	G4G5Q	-	-
<i>Spiraea alba</i>	Narrow-leaved Meadow-sweet	3	-4	0	S5	G5	-	-
<i>Geum aleppicum</i>	Yellow Avens	2	-1	0	S5	G5	-	-
<i>Rubus allegheniensis</i>	Alleghany Blackberry	2	2	0	S5	G5	-	-
<i>Rubus hispida</i>	Trailing Blackberry	6	-3	0	S4S5	G5	-	-
<i>Spiraea tomentosa</i>	Tomentose Meadow-sweet	5	-3	0	S4S5	G5	-	-
<i>Comarum palustre</i>	Marsh Cinquefoil						-	-
<i>Spiraea sp.</i>	Meadow-sweet						-	-
<i>Fragaria virginiana</i>	Virginia Strawberry						-	-
<i>Prunus serotina</i>	Black Cherry	3	3	0	S5	G5	-	-
<i>Rosa palustris</i>	Marsh Rose	7	-5	0	S5	G5	-	-
<i>Sorbus americana</i>	American Mountain-ash	8	-1	0	S5	G5	-	-
<i>Potentilla norvegica</i>	Norwegian cinquefoil				S5	G5	-	-
<i>Potentilla arguta</i>	Tall Cinquefoil	7	5	0	S4	G5	-	-
<i>Galium aparine</i>	Cleavers	4	3	0	S5	G5	-	-
<i>Galium triflorum</i>	Sweet-scented Bedstraw	4	2	0	S5	G5	-	-
<i>Galium palustre</i>	Marsh Bedstraw	5	-5	0	S5	G5	-	-
<i>Populus tremuloides</i>	Trembling Aspen	2	0	0	S5	G5	-	-
<i>Salix sp.</i>	Willow						-	-
<i>Salix petiolaris</i>	Slender Willow	3	-4	0	S5	G4	-	-
<i>Populus grandidentata</i>	Large-tooth Aspen	5	3	0	S5	G5	-	-
<i>Salix bebbiana</i>	Long-beaked Willow	4	-4	0	S5	G5	-	-
<i>Salix discolor</i>	Pussy Willow	3	-3	0	S5	G5	-	-

## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX WEEDINESS INDEX		PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Salix pyrifolia</i>	Balsam Willow	10	-4	0	S5	G5	-	-
<i>Comandra umbellata</i>	Bastard Toad-flax	6	3	0	S5	G5	-	-
<i>Sarracenia purpurea</i>	Pitcher-plant	10	-5	0	S5	G5	-	-
<i>Ulmus americana</i>	White Elm	3	-2	0	S5	G5?	-	-
<i>Urtica dioica</i> ssp. <i>dioica</i>	European Stinging Nettle	0	-1	-1	SE2	G5T?	-	-
<i>Laportea canadensis</i>	Wood Nettle	6	-3	0	S5	G5	-	-
<i>Viola macloskeyi</i>	Smooth White Violet				S5	G5	-	-
<i>Viola cucullata</i>	Marsh Blue Violet	5	-5	0	S5	G4G5	-	-
<i>Viola canadensis</i>	Canada Violet	6	5	0	S5	G5	-	-
<i>Viola palustris</i>	Marsh Violet	0	0	0	SU	G5	-	-
<b>MONOCOTYLEDONS</b>	<b>MONOCOTS</b>							
<i>Arisaema triphyllum</i>	Small Jack-in-the-pulpit	5	-2	0	S5	G5T5	-	-
<i>Calla palustris</i>	Wild Calla	8	-5	0	S5	G5	-	-
<i>Eriophorum</i> sp.	Cotton-grass						-	-
<i>Scirpus cyperinus</i>	Wool-grass	4	-5	0	S5	G5	-	-
<i>Carex</i> sp.							-	-
<i>Carex aquatilis</i>	Aquatic Sedge	7	-5	0	S5	G5	-	-
<i>Carex deweyana</i>	Dewey's Sedge	6	4	0	S5	G5	-	-
<i>Carex stricta</i>	Tussock Sedge	4	-5	0	S5	G5	-	-
<i>Carex blanda</i>	Woodland Sedge	3	0	0	S5	G5?	-	-
<i>Carex crinita</i>	Fringed Sedge	6	-4	0	S5	G5	-	-
<i>Carex gracillima</i>	Graceful Sedge	4	3	0	S5	G5	-	-
<i>Carex intumescens</i>	Bladder Sedge	6	-4	0	S5	G5	-	-
<i>Carex lacustris</i>	Lake-bank Sedge	5	-5	0	S5	G5	-	-
<i>Carex arctata</i>	Drooping Wood Sedge	5	5	0	S5	G5?	-	-
<i>Eriophorum virginicum</i>	Virginia Cotton-grass	10	-5	0	S5	G5	-	-
<i>Scirpus</i> sp.	Bulrush						-	-
<i>Carex utriculata</i>	Beaked Sedge	7	-5	0	S5	G5	-	-
<i>Eriophorum vaginatum</i> ssp. <i>spissum</i>	Sheathed Cotton-grass	10	-5	0	S5	G5T5	-	-
<i>Dulichium arundinaceum</i>	Reed-like Three-way Sedge	7	-5	0	S5	G5	-	-
<i>Scirpus atrovirens</i>	Dark-green Bulrush	3	-5	0	S5	G5?	-	-
<i>Eriophorum viridi-carinatum</i>	Thin-leaved Cotton-grass	9	-5	0	S5	G4	-	-
<i>Carex magellanica</i> ssp. <i>irrigua</i>	Stunted Sedge	10	-5	0	S5	G5T?	-	-
<i>Carex oligosperma</i>	Few-seeded Sedge	10	-5	0	S4	G4	-	-
<i>Carex tenuiflora</i>	Sparse-flowered Sedge	10	-5	0	S5	G5	-	-
<i>Carex canescens</i> ssp. <i>canescens</i>	Silvery Sedge	7	-5	0	S5	G5T?	-	-
<i>Carex disperma</i>	Soft-leaved Sedge	8	-5	0	S5	G5	-	-
<i>Scirpus microcarpus</i>	Small-fruited Bulrush	4	-5	0	S5	G5	-	-
<i>Carex interior</i>	Inland Sedge	6	-5	0	S5	G5	-	-
<i>Carex lasiocarpa</i>	Slender Sedge	8	-5	0	S5	G5	-	-
<i>Carex brunnescens</i> ssp. <i>brunnescens</i>	Brownish Sedge	7	-3	0	S5	G5T?	-	-
<i>Carex echinata</i> ssp. <i>echinata</i>	Prickly Sedge	7	-5	0	S5	G5T5	-	-
<i>Carex scoparia</i>	Pointed Broom Sedge	5	-3	0	S5	G5	-	-
<i>Carex pellita</i>	Woolly Sedge	4	-5	0	S5	G5	-	-
<i>Carex stipata</i>	Awl-fruited Sedge	3	-5	0	S5	G5	-	-
<i>Carex lupulina</i>	Hop Sedge	6	-5	0	S5	G5	-	-
<i>Carex siccata</i>	Silvery-flowered Hay Sedge	0	0	0	S5	G5	-	-
<i>Iris versicolor</i>	Multi-coloured Blue-flag	5	-5	0	S5	G5	-	-
<i>Iris</i> sp.	Iris						-	-
<i>Sisyrinchium montanum</i>	Montane Blue-eyed-grass	0	-1	0	S5	G5	-	-
<i>Juncus effusus</i>	Common rush	0	0	0			-	-
<i>Juncus bufonius</i>	Toad Rush	1	-4	0	S5	G5	-	-
<i>Juncus validus</i>	Roundhead Rush						-	-
<i>Juncus</i> sp.	Rush						-	-
<i>Lemna minor</i>	Lesser Duckweed	2	-5	0	S5	G5	-	-
<i>Maianthemum canadense</i>	Wild Lily-of-the-valley	5	0	0	S5	G5	-	-
<i>Maianthemum trifolium</i>	Three-leaved Solomon's Seal	10	-5	0	S5	G5	-	-
<i>Polygonatum pubescens</i>	Hairy Solomon's Seal	5	5	0	S5	G5	-	-
<i>Clintonia borealis</i>	Bluebead-lily	7	-1	0	S5	G5	-	-
<i>Trillium erectum</i>	Purple Trillium	6	1	0	S5	G5	-	-
<i>Trillium grandiflorum</i>	White Trillium	5	5	0	S5	G5	-	-
<i>Cypripedium acaule</i>	Moccasin Flower	7	-3	0	S5	G5	-	-

## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Poa sp.</i>							-	-
<i>Calamagrostis canadensis</i>	Blue-joint Grass	4	-5	0	S5	G5	-	-
<i>Deschampsia flexuosa</i>	Common Hairgrass	8	5	0	S5	G5	-	-
<i>Brachyelytrum erectum</i>	Bearded Short-husk	7	5	0	S4S5	G5	-	-
<i>Glyceria striata</i>	Fowl Meadow Grass	3	-5	0	S5	G5	-	-
<i>Cinna latifolia</i>	Broad-leaved Reed Grass	7	-4	0	S5	G5	-	-
<i>Phragmites australis</i>	Common Reed	0	-4	0	S5	G5	-	-
<i>Poa palustris</i>	Fowl Meadow Grass	5	-4	0	S5	G5	-	-
<i>Phalaris arundinacea</i>	Reed Canary Grass	0	-4	0	S5	G5	-	-
<i>Poa annua</i>	Annual Blue Grass	0	1	-2	SE5	G?	-	-
<i>Bromus inermis</i>	Awnless Brome				SNA	G5TNR	-	-
<i>Agrostis stolonifera</i>	Redtop	0	-3	0	S5	G5	-	-
<i>Pontederia cordata</i>	Heart-leaved Pickerel-weed	7	-5	0	S5	G5	-	-
<i>Sparganium emersum ssp. acaule</i>	Stemless Bur-reed	0	0	0	SU		-	-
<i>Sparganium angustifolium</i>	Narrow-leaved Bur-reed	9	-5	0	S4?	G5	-	-
<i>Sparganium fluctuans</i>	Floating Bur-reed	9	-5	0	S4?	G5	-	-
<i>Sparganium eurycarpum</i>	Broad-fruited Bur-reed	3	-5	0	S5	G5	-	-
<i>Typha latifolia</i>	Broad-leaved Cattail	3	-5	0	S5	G5	-	-
<i>Typha angustifolia</i>	Narrow-leaved Cattail	3	-5	0	S5	G5	-	-
<i>Typha sp.</i>	Cattail						-	-
<b>ASCOMYCETES</b>	<b>LICHENS</b>							
<i>Cladonia rangiferina</i>	Grey Reindeer Lichen				S5	G5	-	-
<b>BRYOPSIDA</b>	<b>MOSSES</b>							
<i>Aulacomnium palustre</i>	Glow Moss				S5	G5	-	-
<i>Dicranum polysetum</i>	Wavy Moss				S5	G5	-	-
<i>Dicranum montanum</i>	Montane Dicranum Moss				S5	G5	-	-
<i>Dicranum ontariense</i>	Ontario Dicranum Moss				S5	G4G5	-	-
<i>Polytrichum sp.</i>	Haircap Moss						-	-
<i>Polytrichum commune</i>	Common Haircap Moss				S5	G5	-	-
<i>Polytrichum strictum</i>	Bog Haircap Moss				S5	G4	-	-
<b>SPHAGNOPSIDA</b>	<b>MOSSES</b>							
<i>Sphagnum sp.</i>	Peat Moss						-	-
<i>Sphagnum girgensohnii</i>	Common Green Peat Moss				S5	G5	-	-
<i>Sphagnum capillifolium</i>	Northern Peat Moss				S5	G5	-	-
<i>Sphagnum angustifolium</i>	Cuspidate Peat Moss				S5	G5	-	-
<i>Sphagnum squarrosum</i>	Squarrose Peat Moss				S5	G5	-	-
<i>Sphagnum fuscum</i>	Common Brown Sphagnum				S5	G5	-	-
<b>AVIFAUNA</b>								
<i>Corvus brachyrhynchos</i>	American Crow				S5B	G5	-	-
<i>Picoides dorsalis</i>	American Three-toed Woodpecker				S4	G5	-	-
<i>Scolopax minor</i>	American Woodcock				S4B	G5	-	-
<i>Haliaeetus leucocephalus</i>	Bald Eagle				S2N, S4B	G5	SC	-
<i>Strix varia</i>	Barred Owl				S5	G5	-	-
<i>Setophaga castanea</i>	Bay-breasted Warbler				S5B	G5	-	-
<i>Mniotilta varia</i>	Black-and-white Warbler				S5B	G5	-	-
<i>Picoides arcticus</i>	Black-backed Woodpecker				S4	G5	-	-
<i>Poecile atricapillus</i>	Black-capped Chickadee				S5	G5	-	-
<i>Setophaga virens</i>	Black-throated Green Warbler				S5B	G5	-	-
<i>Cyanocitta cristata</i>	Blue Jay				S5	G5	-	-
<i>Buteo platypterus</i>	Broad-winged Hawk				S5B	G5	-	-
<i>Bucephala albeola</i>	Bufflehead				S4	G5	-	-
<i>Branta canadensis</i>	Canada Goose				S5	G5	-	-
<i>Cardellina pusilla</i>	Canada Warbler				S4B	G5	THR	THR
<i>Setophaga pensylvanica</i>	Chestnut-sided Warbler				S5B	G5	-	-
<i>Gavia immer</i>	Common Loon				S5B, S5N	G5	-	-
<i>Chordeiles minor</i>	Common Nighthawk				S4B	G4	SC	THR
<i>Geothlypis trichas</i>	Common Yellowthroat				S5B	G5	-	-
<i>Junco hyemalis</i>	Dark-eyed Junco				S5	G5	-	-
<i>Picoides pubescens</i>	Downy Woodpecker				S5	G5	-	-
<i>Sayornis phoebe</i>	Eastern Pheobe				S5B	G5	-	-
<i>Caprimulgus vociferus</i>	Eastern Whip-poor-will				S4B	G5	THR	THR
<i>Contopus virens</i>	Eastern Wood-Pewee				S4B	G5	-	-



## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WETNESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Regulus satrapa</i>	Golden-crowned Kinglet				S5B	G5	-	-
<i>Perisoreus canadensis</i>	Gray Jay				S5	G5	-	-
<i>Ardea herodias</i>	Great blue Heron				S4	G5	-	-
<i>Tringa melanoleuca</i>	Greater Yellowlegs				S4B, S4N	G5	-	-
<i>Picoides villosus</i>	Hairy Woodpecker				S5	G5	-	-
<i>unknown</i>	Hawk Sp.				-	-	-	-
<i>Catharus guttatus</i>	Hermit Thrush				S5B	G5	-	-
<i>Charadrius vociferus</i>	Killdeer				S5B, S5N	G5	-	-
<i>Setophaga kirtlandii</i>	Kirtland's Warbler				S1B	G1	END	END
<i>Anas platyrhynchos</i>	Mallard				S5	G5	-	-
<i>Oreothlypis ruficapilla</i>	Nashville Warbler				S5B	G5	-	-
<i>Colaptes auratus</i>	Northern Flicker				S4B	G5	-	-
<i>Accipiter gentilis</i>	Northern Goshawk				S4	G5	-	-
<i>Parkesia noveboracensis</i>	Northern Waterthrush				S5B	G5	-	-
<i>Contopus cooperi</i>	Olive-sided Flycatcher				S4B	G4	SC	THR
<i>Pandion haliaetus</i>	Osprey				S5B	G5	-	-
<i>Seiurus aurocapilla</i>	Ovenbird				S4B	G5	-	-
<i>Hylatomus pileatus</i>	Pileated Woodpecker				S5	G5	-	-
<i>Pinicola enucleator</i>	Pine Grosbeak				S4B	G5	-	-
<i>Corvus corax</i>	Common Raven				S5	G5	-	-
<i>Sitta canadensis</i>	Red-breasted Nuthatch				S5	G5	-	-
<i>Vireo olivaceus</i>	Red-eyed Vireo				S5B	G5	-	-
<i>Buteo jamaicensis</i>	Red-tailed Hawk				S5	G5	-	-
<i>Aythya collaris</i>	Ring-neck Duck				S5	G5	-	-
<i>Bonasa umbellus</i>	Ruffed Grouse				S4	G5	-	-
<i>Euphagus carolinus</i>	Rusty Blackbird				S4B	G4	-	SC
<i>Grus canadensis</i>	Sandhill Crane				S5B	G5	-	-
<i>Falci pennis canadensis</i>	Spruce Grouse				S5	G5	-	-
<i>Picoides dorsalis</i>	Three-toed Woodpecker				S4	G5	-	-
<i>Cathartes aura</i>	Turkey Vulture				S5B	G5	-	-
<i>Zonotrichia albicollis</i>	White-throated Sparrow				S5B	G5	-	-
<i>Troglodytes troglodytes</i>	Winter Wren				S5B	G5	-	-
<i>Aix sponsa</i>	Wood Duck				S5	G5	-	-
<i>Hylocichla mustelina</i>	Wood Thrush				S4B	G5	-	THR
<i>Setophaga petechia</i>	Yellow Warbler				S5B	G5	-	-
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker				S5B	G5	-	-
<i>Setophaga coronata</i>	Yellow-rumped Warbler				S5B	G5	-	-
<b>HERPETOFAUNA</b>								
<i>Lithobates catesbeianus</i>	American Bullfrog				S4	G5	-	-
<i>Anaxyrus americanus</i>	American Toad				S5	G5	-	-
<i>Emydoidea blandingii</i>	Blanding's Turtle				S3	G4	THR	THR
<i>Plestiodon fasciatus pop. 2</i>	Common Five-lined Skink (Southern Shield population)				S3	G5T3	SC	SC
<i>Thamnophis sirtalis sirtalis</i>	Eastern Gartersnake				S5	G5T5	-	-
<i>Hemidactylium scutatum</i>	Four-toed Salamander				S4	G5	-	-
<i>Lithobates clamitans</i>	Green Frog				S5	G5	-	-
<i>Hyla versicolor</i>	Gray Treefrog				S5	G5	-	-
<i>Sistrurus catenatus pop. 1</i>	Massasauga (Great Lakes / St. Lawrence population)				S3	GN3	THR	THR
<i>Midland painted Turtle</i>	Midland painted Turtle				S4	G5T5	-	-
<i>Mink Frog</i>	Mink Frog				S5	G5	-	-
<i>Northern Leopard Frog</i>	Northern Leopard Frog				S5	G5	-	-
<i>Northern Watersnake</i>	Northern Watersnake				S5	G5T5	-	-
<i>Red-bellied Snake</i>	Red-bellied Snake				S5	G5	-	-
<i>Ring-necked Snake</i>	Ring-necked Snake				S4	G5	-	-
<i>Smooth Greensnake</i>	Smooth Greensnake				S4	G5	-	-
<i>Spring Peeper</i>	Spring Peeper				S5	G5	-	-
<i>Wood Frog</i>	Wood Frog				S5	G5	-	-
<b>MAMMALS</b>								
<i>American Marten</i>	American Marten				S5	G5	-	-
<i>Beaver</i>	Beaver				S5	G5	-	-
<i>Black Bear</i>	Black Bear				S5	G5	-	-

## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Eastern Chipmunk</i>	Eastern Chipmunk				S5	G5	-	-
<i>Eastern Gray Squirrel</i>	Eastern Gray Squirrel				S5	G5	-	-
<i>Meadow Vole</i>	Meadow Vole				S5	G5	-	-
<i>Vole sp.</i>	Vole sp.				-	-	-	-
<i>Moose</i>	Moose				S5	G5	-	-
<i>North American River Otter</i>	North American River Otter				S5	G5	-	-
<i>Northern Gray Wolf</i>	Northern Gray Wolf				S4	G4TNR	-	-
<i>Porcupine</i>	Porcupine				S5	G5	-	-
<i>Red Squirrel</i>	Red Squirrel				S5	G5	-	-
<i>White-tailed Deer</i>	White-tailed Deer				S5	G5	-	-
<i>Lynx (sighting unconfirmed)</i>	Lynx (sighting unconfirmed)				S5	G5	-	-
<i>Fox</i>	Fox				S5	G5	-	-
<i>Wolf Sp.</i>	Wolf Sp.				-	-	-	-
<b>INSECT</b>								
Springtails	Springtails				-	-	-	-
Grasshopper Sp.	Grasshopper Sp.				-	-	-	-
Spring Azure	Spring Azure				SU	G4G5	-	-

## 4.2 SIGNIFICANT FEATURES AND HABITATS

### 4.2.1 Colonial Waterbirds

Record all available information. Score the highest applicable category. Include additional information as possible (e.g., nest locations, etc).

Activity	Species	Info Source	Points
Currently nesting	Great Blue Heron	J. Kamstra, 2015	= 50 <b>50</b>
Known to have nested within the past 5 years			= 25
Active feeding area (great blue heron excluded)			= 15
None known			= 0
<b>Total:</b>			<b>50</b>

Additional Notes/Comments:

Field Observation: J. Kamstra, May 13, 2015.

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Colonial Waterbird Nesting Score (maximum 50 points)	<b>50</b>
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### 4.2.2 Winter Cover for Wildlife

Score highest appropriate category. Include rationale/sources of information.

Provincially significant	=	100 pts
Significant in Ecoregion	=	50
Significant in Ecodistrict	=	25
Locally significant	=	10
<b>0</b> Little or poor winter cover	=	0
<b>0</b>		

Species/habitat/vegetation community scored (e.g., winter deer cover in hemlock swamp, S3 and S4b):

Field observation; Kristan Washburn, 2015

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Source of information:

Discussions with Aylmer District Office

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Winter Cover for Wildlife Score (maximum 100 points)	<b>0</b>
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### 4.2.3 Waterfowl Staging and/or Moulting Areas

Check highest level of significance for both staging and moulting; add scores for staging and for moulting together for final score. However, maximum score for evaluation under this section is 150 points.

	Staging		Moulting	
Nationally/internationally significant	=	150 pts	=	150 pts
Provincially significant	=	100	=	00
Significant in the Ecoregion	=	50	=	50
Significant in Ecodistrict	=	25	=	25
Known to occur	=	10 x	=	10 x
Not possible/Unknown	=	0	=	0
Subtotal:		10		10
Subtotal:		20		

Species/habitat/vegetation community scored (e.g., approx 20 mallards in W3):

11 Canada Goose, 32 Bufflehead, 14 Ring-necked Duck in fW1. 12 Canada Goose, 12 Bufflehead in mF4.

2 Canada Goose, 16 Bufflehead in suW1. 23 Bufflehead, 15 Ring-necked Duck in neM6. Observed

Over 796 individual birds of a waterfowl species were identified within the entire HIWEC study area during 2013

field surveys conducted by Stantec. Strong indication that this wetland complex is a significant staging area for the ecodistrict. Waterfowl moulting is not known.

Source of information:

Field Observation: J. Kamstra April 24 and May 13, 2015, Stantec, 2013

Waterfowl Staging/Moulting Score (maximum 150 points)	<b>20</b>
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### 4.2.4 Waterfowl Breeding

Check highest level of significance.

Nationally/internationally significant	=	150 pts
Provincially significant	=	100
Significant in the Ecoregion	=	50
Significant in Ecodistrict	=	25
x Habitat Suitable	=	10
Habitat not suitable	=	0
10		

Species/habitat/vegetation community scored (e.g., mallard in W3):

Canada Goose, American Black Duck, Mallard, Common Loon and Wood Duck were confirmed breeding within the WET-001 wetland complex. Exact location and vegetation community undetermined.

Source of information:

Field observation: LGL, 2011-2012

Waterfowl Breeding Score (maximum 100 points)	<b>10</b>
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### 4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area

Check highest level of significance.

Nationally / internationally significant	=	150 pts
Provincially significant	=	100
Significant in Ecoregion	=	50
Significant in Ecodistrict	=	25
x Known to occur	=	10
Not possible / Unknown	=	0
10		

Species/habitat/vegetation community scored:

Raptors observed during migration surveys within the study area included: Turkey Vulture, American Kestrel,

Bald Eagle, Boad-winged Hawk, Merlin, Northern Goshawk, Northern Harrier, Osprey, Red-tailed Hawk, Sharp-

shinned Hawk. There is the strong possibility that some of these species may be using the WET-001 wetland

complex as a stopover area.

Source of information:

Field Observation: Stantec, 2013

Passerine, Shorebird or Raptor Stopover Score (maximum 100 points)	<b>10</b>
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### 4.2.6 Ungulate Habitat

**EVALUATION:**

Score (1) + (2) + one of (3) to (6)

<input checked="" type="checkbox"/> 15	1. Ungulate summer cover	=	15
<input type="checkbox"/>	2. Mineral licks	=	50
<input type="checkbox"/>	3. Moose aquatic feeding area Class 1	=	0
<input type="checkbox"/>	4. Moose aquatic feeding area Class 2	=	10
<input type="checkbox"/>	5. Moose aquatic feeding area Class 3	=	20
<input type="checkbox"/>	6. Moose aquatic feeding area Class 4	=	35

(Score is cumulative for a maximum possible score of 100)

Ungulat Habitat Score (maximum 100 points)	<b>15</b>
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### 4.2.7 Fish Habitat

#### 4.2.6.1 Spawning and Nursery Habitat

Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5- 4.9	0.2
5.0- 9.9	0.4
10.0- 14.9	0.6
15.0 -19.9	0.8
20.0+ ha	1.0

**Step 1:**

- Fish habitat is not present within the wetland Go to Step 7, Score 0 points
- Fish habitat is present within the wetland Go to Step 2

**Step 2:** Choose only one option

- Significance of the spawning and nursery habitat within the wetland is known Go to Step 3
- Significance of the spawning and nursery habitat within the wetland is not known Go through Steps 4, 5 and 6

**Step 3:** Select the highest appropriate category below, attach documentation

- Significant in Ecoregion Go to Step 7, 100 points
- Significant in Ecodistrict Go to Step 7, 50
- Locally Significant Habitat (5.0+ ha) Go to Step 7, 25
- Locally Significant Habitat (<5.0 ha) Go to Step 7, 15

**Subtotal:** **0**

Source of information:

---

**Step 4:** Low Marsh = the permanent' marsh area, from the existing water line out to the outer boundary of the wetland.

- Low marsh not present Go to Step 5
- Low marsh present Continue through Step 4, scoring as noted below

### Scoring of Low Marsh:

1. Check the appropriate **Vegetation Group** (see Appendix 7) for each Low Marsh community. (Based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community.)
2. Sum the areas (ha) of the vegetation communities assigned to each **Vegetation Group**.
3. Use these areas to assign an **Area Factor** for each checked **Vegetation Group**.
4. Multiply the **Area Factor** by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for Low Marsh**.

Scoring for Presence of Key Vegetation Groups – Low Marsh						
Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
1	Tallgrass				6	0.0
2	Shortgrass-Sedge				11	0.0
3	Cattail-Bulrush-Burreed				5	0.0
4	Arrowhead-Pickerelweed				5	0.0
5	Duckweed				2	0.0
6	Smartweed-Waterwillow				6	0.0
7	Waterlily-Lotus	x	122.86	1	11	11.0
8	Waterweed-Watercress				9	0.0
9	Ribbongrass				10	0.0
10	Coontail-Naiad-Watermilfoil	x	38.75	1	13	13.0
11	Narrowleaf Pondweed				5	0.0
12	Broadleaf Pondweed				8	0.0
Sub Total Score						24.0
Total Score (maximum 75 points)						24.0

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5- 4.9	0.2
5.0- 9.9	0.4
10.0- 14.9	0.6
15.0 -19.9	0.8
20.0+ ha	1.0

**Step 5:** High Marsh = the 'seasonal' marsh area, from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as a wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.

High marsh not present

*Go to Step 6*

High marsh present

*Continue through Step 5, scoring as noted below*

**Scoring of High Marsh:**

1. Check the appropriate **Vegetation Group** (see Appendix 7) for each High Marsh community. (Based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community.)
2. Sum the areas (ha) of the vegetation communities assigned to each **Vegetation Group**.
3. Use these areas to assign an **Area Factor** (from Table 8) for each checked **Vegetation Group**.
4. Multiply the **Area Factor** by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for High Marsh**.

Scoring for Presence of Key Vegetation Groups – High Marsh							
Vegetation Group Number	Vegetation Name	Group	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
1	Tallgrass					6	0.0
2	Shortgrass-Sedge		x	59.03	1	11	11.0
3	Cattail-Bulrush-Burreed					5	0.0
4	Arrowhead-Pickerelweed					5	0.0
Sub Total Score							11.0
Total Score for High Marsh ( <i>maximum 25 points</i> )							11.0

*Continue to Step 6*

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5- 4.9	0.2
5.0- 9.9	0.4
10.0- 14.9	0.6
15.0 -19.9	0.8
20.0+ ha	1.0

**Step 6:**

**Scoring of Swamp:**

1. Determine the total area (ha) of seasonally flooded swamp communities within the wetland containing fish habitat and record below.
2. Determine the total area (ha) of permanently flooded swamp communities within the wetland containing fish habitat and record below.
3. Use these areas to assign an **Area Factor** (from Table 8).
4. Multiply the Area Factor by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for Swamp**.

Scoring Swamps for Fish Habitat (Seasonally flooded; Permanently flooded)					
Swamp Containing Fish Habitat	Present (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
Seasonally Flooded Swamp	x	3.66	0.2	10	2.0
Permanently Flooded Swamp				10	0.0
Sub Total Score					2.0
Total Score for Swamp (maximum 20 points)					2.0

*Continue to Step 7*

**Step 7: CALCULATION OF FINAL SCORE**

NOTE: Scores for Steps 4, 5 and 6 are only recorded if Steps 1 and 3 have not been scored.

A. Score from Step 1 (fish habitat present)	=	0
B. Score from Step 3 (significance known)	=	0
C. Score from Step 4 (Low Marsh)	=	24.0
D. Score from Step 5 (High Marsh)	=	11.0
E. Score from Step 6 (Swamp)	=	2.0
Subtotal:		37.0

Calculation of Final Score for Spawning and Nursery Habitat = A or B or Sum of C, D, and E

Score for Spawning and Nursery Habitat (maximum 100 points)	37.0
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### 4.2.7.2 Migration and Staging Habitat

#### Step 1:

- |  |                              |
|--|------------------------------|
| <input type="checkbox"/> Staging or Migration Habitat is not present in the wetland  | Go to Step 4, Score 0 points |
| <input type="checkbox"/> Staging or Migration Habitat is present in the wetland<br>significance of the habitat is known                | Go to Step 2                 |
| <input checked="" type="checkbox"/> Staging or Migration Habitat is present in the wetland<br>significance of the habitat is not known | Go to Step 3                 |

#### Step 2:

 Select the highest appropriate category below. Ensure that documentation is attached to the data record.

- |  |                           |
|--|---------------------------|
| <input type="checkbox"/> Significant in Ecoregion  | Score 25 points in Step 4 |
| <input type="checkbox"/> Significant in Ecodistrict                                      | Score 15 points in Step 4 |
| <input type="checkbox"/> Locally Significant   | Score 10 points in Step 4 |
| <input type="checkbox"/> Fish staging and/or migration habitat present, but not as above | Score 5 points in Step 4  |

Source of information:

Field observation; AECOM, 2015

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#### Step 3:

 Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Refer to Site Types recorded earlier (section 1.1.3). Attach documentation.

- |   |                           |
|---|---------------------------|
| <input type="checkbox"/> Wetland is riverine at rivermouth or lacustrine at rivermouth              | Score 25 points in Step 4 |
| <input type="checkbox"/> Wetland is riverine, within 0.75 km of rivermouth                          | Score 15 points in Step 4 |
| <input type="checkbox"/> Wetland is lacustrine, within 0.75 km of rivermouth                        | Score 10 points in Step 4 |
| <input checked="" type="checkbox"/> Fish staging and/or migration habitat present, but not as above | Score 5 points in Step 4  |

#### Step 4:

 Enter a score from only one of the three above Steps.

Score for Staging and Migration Habitat (maximum 25 points)	<b>5</b>
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### 4.3 Ecosystem Age

	Fractional Area		Scoring
Bog =	0.06	x 25 =	1.5
Fen, on deeper soils; floating mats or marl =	0.34	x 20 =	6.8
Fen, on limestone rock =	0.00	x 5 =	0.0
Swamp =	0.35	x 3 =	1.1
Marsh =	0.26	x 0 =	0.0
Sub Total:			9.4

Ecosystem Age Score (maximum 25 points)	<b>9</b>
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### 4.4 Great Lakes Coastal

#### Wetlands

Choose one only. Only coastal wetland units may be scored.

<input type="checkbox"/>	wetland < 10 ha	=	0 pts
<input type="checkbox"/>	wetland 10- 50 ha	=	25
<input type="checkbox"/>	wetland 51 -100 ha	=	50
<input checked="" type="checkbox"/>	wetland > 100 ha	=	75

Great Lakes Coastal Wetland Score (maximum 75 points)	<b>75</b>
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**5.0 DOCUMENTATION OF  
WETLAND FEATURES NOT  
INCLUDED IN THE EVALUATION**

**5.1 INVASIVE SPECIES**

Attach documentation of invasive species found in wetland (include location information and a coarse estimate of abundance [F = few, C = fairly common, A = abundant]):

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**5.2 VERNAL POOLS**

Documentation of information on vernal pools encountered during the wetland evaluation but not included as part of the evaluated wetland.

Vernal pools observed throughout most wetland communities. Due to scale they were not all documented.

Field observation: AECOM, 2015

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## 5.3 SPECIES OF SPECIAL INTEREST

### 5.3.1 Osprey

Check all that apply

- Present and nesting
- Known to have nested in last 5 yr
- Feeding area for osprey
- Not as above

### 5.3.2 Common Loon

Check all that apply

- Nesting in wetland
- Feeding at edge of wetland
- Observed or heard on lake or river adjoining the wetland
- Not as above

## 5.4 IMPORTANT DRINKING WATER AREA

Wetland located within:  
(check all that apply)

- Wellhead Protection Area
- Intake Protection Zone
- Significant Recharge Area
- Vulnerable Aquifer Area

Source of information:

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Additional Comments:

No additional comments.

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## 5.5 Area of Wetland

### Restoration Potential

Check all that apply. Attach additional pages if necessary.

- Area of wetland restoration potential adjacent to evaluated wetland unit(s)
- Area of wetland restoration potential within 750m of evaluated wetland unit(s), but not adjacent
- Area of wetland restoration potential encountered elsewhere
- Area currently functioning as wetland (e.g., showing signs of degradation but still mapped as wetland).
- Adjacent Wetland Unit (if applicable): \_\_\_\_\_
- GPS Coordinates of Site: \_\_\_\_\_

Description of site (e.g., current land use, wetland characteristics of site, etc) and why it is identified as an area of restoration potential:

\_\_\_\_\_

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Additional Notes/Comments (e.g., adjacent lands, etc)

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**General Information**

**Wetland Evaluator(s)**

Name: Kristan Washburn, 2013- 2015 Affiliation: AECOM

Name: Jillian deMan, 2014- 2015 Affiliation: AECOM

Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_

Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_

Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_

Date(s) wetland visited (in field): April 6-July 6

Date evaluation completed: \_\_\_\_\_ 16-Jul-14

Estimated time devoted to completing the field survey in person hours: 2460 hrs

**Weather Conditions**

i) at time of field work: varied from -10 to +30. Had a mix of sunshine, rain and snow

ii) summer conditions in general: Typical summer conditions

## WETLAND EVALUATION SCORING

### RECORD

Wetland Name: Henvey Inlet Wetland WET-001

#### 1.0 BIOLOGICAL COMPONENT

##### 1.1 PRODUCTIVITY

<b>12.3</b>	1.1.1 Growing Degree-Days/Soils
<b>8.9</b>	1.1.2 Wetland Type
<b>2.1</b>	1.1.3 Site Type

##### 1.2 BIODIVERSITY

<b>30.0</b>	1.2.1 Number of Wetland Types
<b>45.0</b>	1.2.2 Vegetation Communities
<b>7.0</b>	1.2.3 Diversity of Surrounding Habitat
<b>8.0</b>	1.2.4 Proximity to Other Wetlands
<b>30.0</b>	1.2.5 Interspersion
<b>14.0</b>	1.2.6 Open Water Type

**50** 1.3 SIZE (Biological Component)

**207** Subtotal  
**207** TOTAL (Biological Component)

## 2.0 SOCIAL COMPONENT

### 2.1 ECONOMICALLY VALUABLE PRODUCTS

<b>14</b>	2.1.1 Wood Products
<b>2</b>	2.1.2 Low Bush Cranberry
<b>0</b>	2.1.3 Wild Rice
<b>12</b>	2.1.4 Commercial Fish (Bait Fish and/or Coarse Fish)
<b>12</b>	2.1.5 Furbearers

### **28** 2.2 RECREATIONAL ACTIVITIES

### 2.3 LANDSCAPE AESTHETICS

<b>3</b>	2.3.1 Distinctness
<b>7</b>	2.3.2 Absence of Human Disturbance

### 2.4 EDUCATION AND PUBLIC AWARENESS

<b>0</b>	2.4.1 Educational Uses
<b>0</b>	2.4.2 Facilities and Programs
<b>5</b>	2.4.3 Research and Studies

### **16** 2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT

### **10** 2.6 OWNERSHIP

### **19** 2.7 SIZE (Social Component)

### **30** 2.8 ABORIGINAL AND CULTURAL VALUES

- 2.8.1 Aboriginal Values
- 2.8.2 Cultural Heritage

**158** Subtotal

**158** TOTAL (Social Component)



### 3.0 HYDROLOGICAL COMPONENT

<b>0</b>	3.1 FLOOD ATTENUATION
	3.2 WATER QUALITY IMPROVEMENT
<b>17.4</b>	3.2.1 Site Type
<b>4.0</b>	3.2.2 Soil Recharge Potential
	3.3 WATER QUALITY IMPROVEMENT
<b>24</b>	3.3.1 Watershed Improvement Factor
<b>0.0</b>	3.3.2 Adjacent and Watershed Land Use
<b>8.0</b>	3.3.3. Vegetation Form
<b>9</b>	3.4 CARBON SINK
<b>8</b>	3.5 SHORELINE EROSION CONTROL
<b>15</b>	3.6 GROUNDWATER DISCHARGE
<b>86</b>	Subtotal
<b>86</b>	TOTAL (Hydrological Component)

## 4.0 SPECIAL FEATURES COMPONENT

### 4.1 RARITY

<b>70</b>	4.1.1 Wetlands
	4.1.2 Species
<b>0</b>	4.1.2.1 Reproductive Habitat for an Endangered or Threatened Species
<b>300</b>	4.1.2.2 Traditional Migration or Feeding Habitat for an Endangered or Threatened Species
<b>105</b>	4.1.2.3 Provincially Significant Animal Species
<b>0</b>	4.1.2.4 Provincially Significant Plant Species
<b>0</b>	4.1.2.5 Regionally Significant Species
<b>0</b>	4.1.2.6 Locally Significant Species
<b>15</b>	4.1.2.7 Species of Special Status

### 4.2 SIGNIFICANT FEATURES OR HABITATS

<b>50</b>	4.2.1 Colonial Waterbirds
<b>0</b>	4.2.2 Winter Cover for Wildlife
<b>20</b>	4.2.3 Waterfowl Staging and/or Moulting Areas
<b>10</b>	4.2.4 Waterfowl Breeding
<b>10</b>	4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area
<b>15</b>	4.2.6 Ungulate Habitat
<b>37</b>	4.2.7 Fish Habitat

### 4.3 ECOSYSTEM AGE

**9**

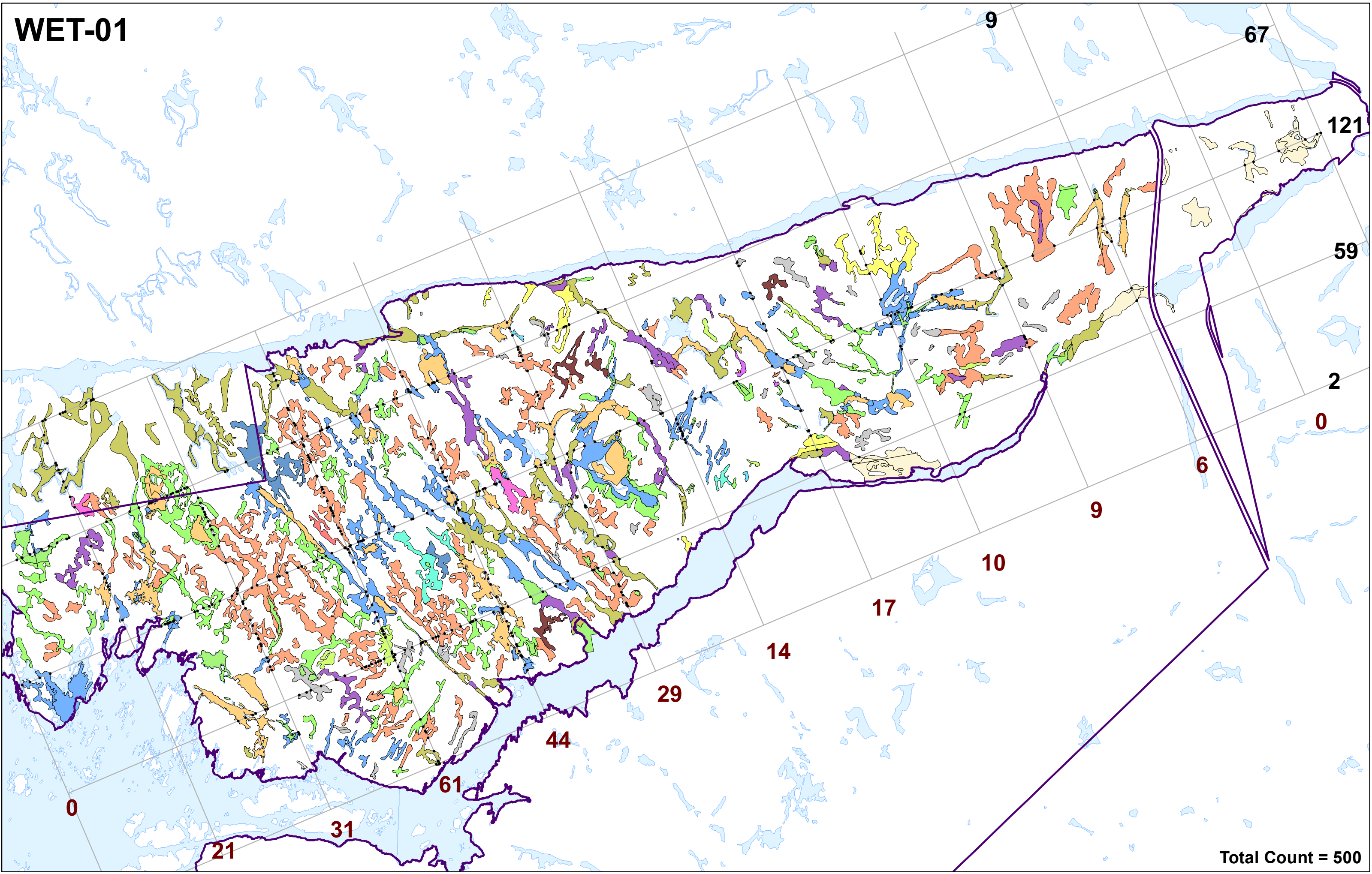
### 4.4 GREAT LAKES COASTAL WETLANDS

**75**

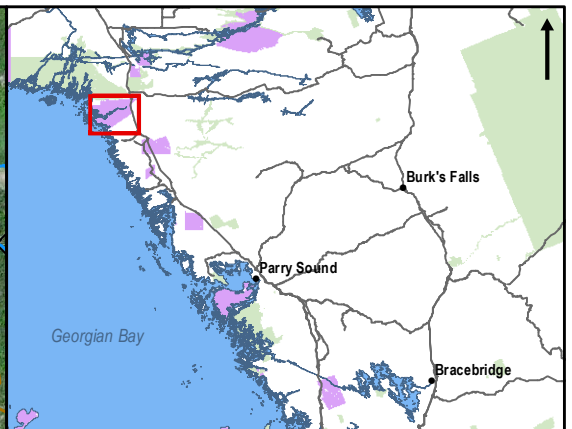
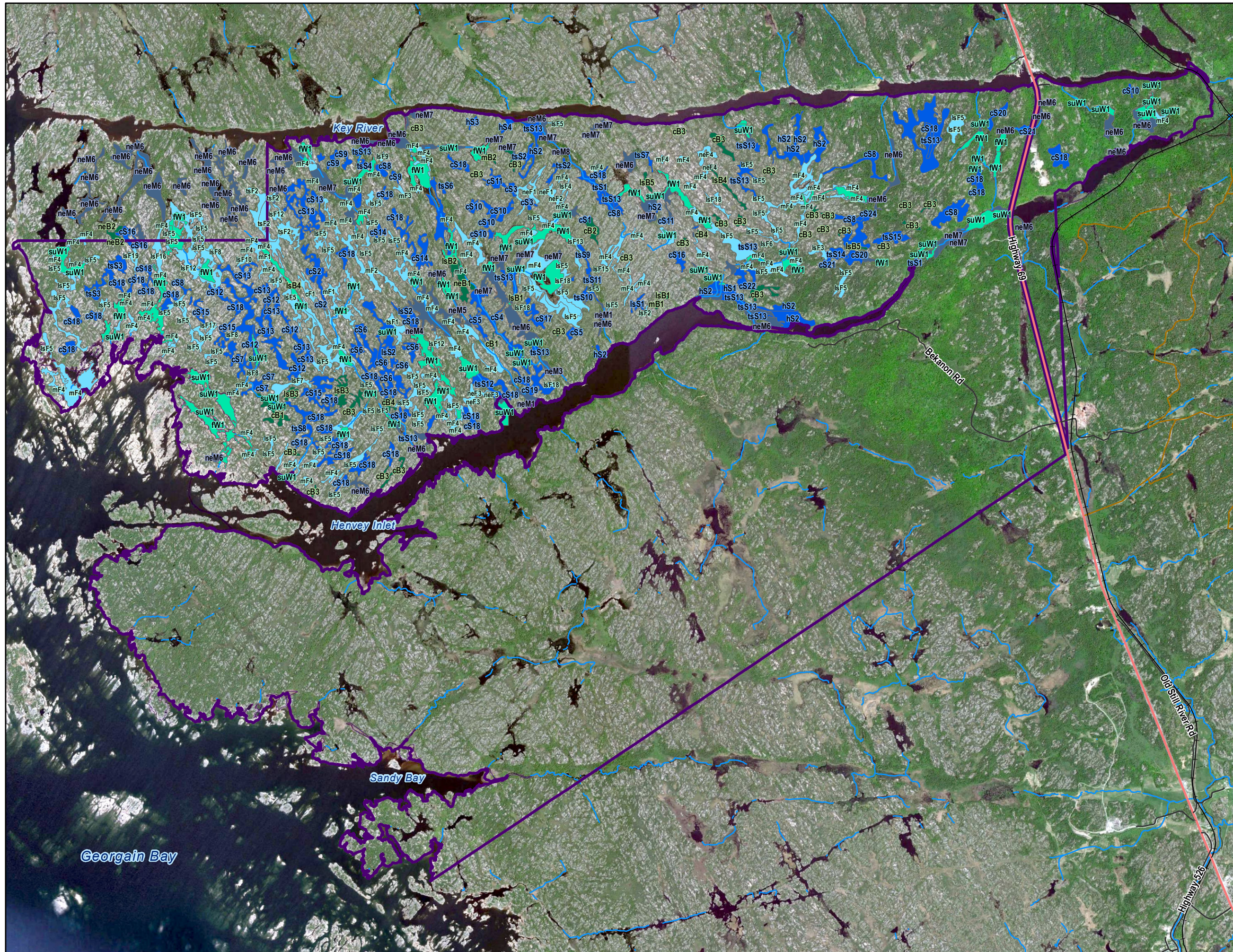
<b>646</b>	Subtotal
<b>250</b>	<b>TOTAL (Special Features Component)</b>



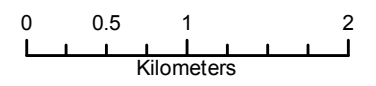
**WET-01**



**Total Count = 500**



- OWES Communities**
- Bog
  - Fen
  - Swamp
  - Open Water Marsh
  - Marsh
- Base Layers**
- Major Roads
  - Highway
  - Trails
  - Railway
  - Watercourses
  - Henvey Inlet First Nation Reserve No.2



**Henvey Inlet Wind Energy Centre**

**OWES Communities - Complex WET-01**

September 2015	1:47,000	Datum: NAD 83, Zone 17 Source: LIO
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P#: 60341251	V#:
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**Figure 2**

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Map location: A:\AECOM\Work\60341251\33300 - Henvey WindDesign\Final\_Report\Site\_Investigation\Wetlands\_OWES\_20150908.mxd Date saved: 06/01/15 10:32:42 PM

## Henvey Inlet Wetland WET-002

Wetland Evaluation Edition

1st

July 29, 2015

### Comments

The following evaluation was conducted using field studies completed by: AECOM in 2015, Stantec in 2013, and LGL in 2011 and 2012. Wetland polygons were identified through fieldwork completed in 2013 and 2015 using colour ortho-aerial photography from 2013. This wetland complex is approximately 254 ha in size and composed of a mosaic of bog, fen, marsh and swamp wetland types. All four site types were found within this wetland complex with lacustrine wetlands influenced by Henvey Inlet and Georgian Bay, riverine wetlands influenced by the Key River, isolated bogs relying on atmospheric moisture, and palustrine wetlands influenced by surface flow and watercourses. Swamps were the most abundant wetland type observed within the wetland complex (36% coverage). These wetlands consisted of dominant: Black Spruce (*Picea mariana*), Tamarack (*Larix laricina*), Speckled Alder (*Alnus incana*), American Mountain Ash (*Nemopanthus mucronatus*), Leatherleaf (*Chamaedaphne calyculata*), Labrador Tea (*Ledum groenlandicum*), Canada Mayflower (*Mainthemum canadense*), Three-leaved Solomon's Seal (*Mainthemum trifolium*) and Sphagnum Moss (*Sphagnum spp.*). Fen wetland types also abundant (28% coverage). Dominant plant species within these wetlands included: Tamarack (*Larix laricina*), Sheep Laurel (*Kalmia angustifolia*), Leatherleaf (*Chamaedaphne calyculata*) a variety of sedge species (*Carex spp.*) and Sphagnum mosses. Marsh wetland comprised 30% of the wetlands within the complex. Marshes, including open water marshes, contained a dominant mixture of: Sedge species as well as robust emergent plants (*Typha latifolia*), floating (*Nuphar variegatum*) and free floating (*Lemna minor*) species. Bogs also occurred within this wetland complex although not abundant (5% coverage). Bogs within this complex were composed of dominant: Leatherleaf, a variety of Sedge species and Sphagnum Mosses. Migration, feeding and hibernation habitat for and threatened species was identified within this complex as well as provincially significant species.

### Additional Information

Include relevant information that can not be entered in the wetland data record( Ex. Sections that have not been completed.)


<b>Official Name:</b>	Henvey Inlet Wetland WET-002		
<b>Evaluation Edition:</b>	1st	<b>Version:</b>	1.3
<b>Wetland ID.:</b>	WET-002		
<b>Wetland Significance:</b>	Year/Month Last Evaluated	Not Evaluated	
	Year/Month Last Updated		
<b>Special Planning Considerations:</b>	Federal Land		<b>Scores</b>
<b>Wetland Area:</b>	254.00	Biological:	186
<b>Dentention Area:</b>	NA/Coastal Wetlands	Social:	152
<b>Catchment Area:</b>	NA/Coastal Wetlands	Hydrological:	90
<b>Coastal Unit Area:</b>	254.00	Special Features:	250
<b>OMNR Source</b>	Parry Sound District MNR	Overall:	678
<b>Information Source</b>	Field Observation: AECOM, 2015		
<b>Submitted by:</b>	Kristan Washburn	<b>Date</b>	4-Aug-15

# WETLAND EVALUATION DATA AND SCORING RECORD

i) Wetland Name: Henvey Inlet Wetland WET-002

ii) MNR Administrative Region: Southern  
MNR District: Parry Sound  
MNR Area Office: Parry Sound

iii) Conservation Authority Jurisdiction: N/A

iv) County of Regional Municipality: Henvey Inlet 2 Indian Reserve

v) Township/Geographic Twp and/or Local Municipality: Key Harbour Area

vi) Lots & Concessions: N/A

vii) Ecodistrict/Ecoregion: 5 E-7

viii) Map and Air Photo References:

a) Latitude: 45.8422 Longitude: -80.654431

b) UTM grid reference:  
Zone: 17T Block: N/A E: 526892 N: 5076682

c) National Topographic Series:  
Map name(s): NTS Map - Key Harbour  
Map number(s): 41H/15  
Edition: 5  
Scale: 1: 50,000

d) Aerial photographs:  
Date(s) photo taken: 2013 Scale: 1:2500  
Flight & plate numbers: 2013 Colour Orthophotography

e) Ontario Base Map numbers & scale: Ontario Base Mapping 1:20000  
17 52005080, 52005070, 53005080, 53005070

Data Summary Form

Wetland Name: Henvey Inlet Wetland WET-001

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	ne	Fen	neF	5	0.063618	Palustrine	Sand	ne*,m,ls	3	5	0.00		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	c	Fen	cF	5	0.739171	Palustrine	Sand	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
4	ne	Marsh	neM	6	2.83066	Palustrine	Humic-Mesic	ne*,m,gc	3	50	1.42	HM	ne-Carex spp, m- Sphagnum spp,gc-Potentilla palustris	see attached flora and fauna lists	
4	ts	Swamp	tsS	6	1.190123	Palustrine	Humic-Mesic	ts*,m, gc	3	0	-		ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica	see attached flora and fauna lists	
4	ls	Swamp	hS	1	4.093513	Lacustrine	Humic-Mesic	ls*	1	0	-		Is-Chamaedaphne calyculata, Gaylussacia baccata, Kalmia angustifolia	see attached flora and fauna lists	
5	h	Swamp	hS	4	1.203626	Lacustrine	Humic-Mesic	h*,m,gc	3	0	-		h-Acer rubrum, Betula papyrifera,Populus tremuloides, m- Sphagnum moss, gc-Cornus canadensis, Trientalis borealis	see attached flora and fauna lists	
5	ne	Fen	neF	5	0.797196	Palustrine	Sand	ne*,m,ls	3	5	0.04		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
5	ts	Swamp	tsS	11	1.160615	Palustrine	Sand	ts*,ne,re	3	0	-		ts-Alnus incana, Nemopanthus mucronatus , Spiraea alba, ne- Carex stricta, Carex aquatilis, Cyperus microcarpus, re- Typha latifolia	see attached flora and fauna lists	
5	ts	Swamp	tsS	11	1.177362	Lacustrine	Humic-Mesic	ts*,ne,re	3	0	-		ts-Alnus incana, Nemopanthus mucronatus , Spiraea alba, ne- Carex stricta, Carex aquatilis, Cyperus microcarpus, re- Typha latifolia	see attached flora and fauna lists	
5	ls	Swamp	lsS	1	3.92246	Lacustrine	Humic-Mesic	ls*	1	0	-		Is-Chamaedaphne calyculata, Gaylussacia baccata, Kalmia angustifolia	see attached flora and fauna lists	
1	c	Swamp	cS	2	1.833977	Palustrine	Sand	c*,h,m,gc,ls	3	0	-		c-Pinus strobus, Pinus banksiana, h- Betula papyrifera, m-Sphagnum moss, gc-Maianthemum canadensis, Cornus canadensis, Is-Ilex mucronata, Viburnum coccineoides, Gaylussacia baccata	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	7.859558	Palustrine	Fibric	ts*,ne,m	3	0	-		ts-Alnus incana, Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum, Sp	see attached flora and fauna lists	
1	c	Fen	cF	5	1.290687	Palustrine	Sand	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
1	ne	Marsh	neM	6	1.641929	Palustrine	Sand	ne*,m,gc	3	50	0.82	HM	ne-Carex spp, m- Sphagnum spp,gc-Potentilla palustris	see attached flora and fauna lists	
1	h	Swamp	hS	4	4.754072	Palustrine	Sand	h*,m,gc	3	0	-		h-Acer rubrum, Betula papyrifera,Populus tremuloides, m- Sphagnum moss, gc-Cornus canadensis, Trientalis borealis	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	2.920858	Palustrine	Fibric	ts*,ne,m	3	0	-		ts-Alnus incana, Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum, Sp	see attached flora and fauna lists	
1	c	Fen	cF	5	0.391479	Palustrine	Fibric	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
1	ne	Fen	neF	5	1.217796	Palustrine	Sand	ne*,m,ls	3	5	0.06		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	c	Fen	cF	5	2.396011	Palustrine	Fibric	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
1	c	Fen	cF	5	5.272327	Palustrine	Fibric	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
1	c	Fen	cF	5	1.389912	Palustrine	Fibric	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.650663	Palustrine	Fibric	ls*,m,ne	3	0	-		Is-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp	see attached flora and fauna lists	
1	c	Swamp	cS	2	0.136456	Palustrine	Fibric	c*,h,m,gc,ls	3	0	-		c-Pinus strobus, Pinus banksiana, h- Betula papyrifera, m-Sphagnum moss, gc-Maianthemum canadensis, Cornus canadensis, Is-Ilex mucronata, Viburnum coccineoides, Gaylussacia baccata	see attached flora and fauna lists	
1	ne	Fen	neF	5	1.5504	Palustrine	Sand	ne*,m,ls	3	5	0.08		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	2.421439	Palustrine	Sand	ne*,m,gc	4	50	1.21	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
9	ls	Fen	lsF	5	0.65308	Palustrine	Fibric	ls*,m,ne	3	0	-		Is-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp	see attached flora and fauna lists	
11	ne	Marsh	neM	6	0.484134	Palustrine	Fibric	ne*,m,gc	4	50	0.24	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
7	ne	Fen	neF	5	2.648375	Palustrine	Fibric	ne*,m,ls	3	5	0.13		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
7	ts	Swamp	tsS	6	1.48288	Palustrine	Clay-Loam	ts*,m, gc	3	0	-		ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica	see attached flora and fauna lists	



Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
7	c	Fen	cF	5	0.50741	Palustrine	Fibric	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc-Thelypteris palustris</i>	see attached flora and fauna lists	
7	ne	Marsh	neM	6	0.034762	Palustrine	Fibric	ne*,m,gc	4	50	0.02	HM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
7	m	Bog	mB	1	0.253588	Isolated	Sand	m*,ne	2	0	-		<i>m-Sphagnum spp, ne-Carex spp, Eriophorum vaginatum</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.777117	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.706164	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc-Thelypteris palustris</i>	see attached flora and fauna lists	
3	ne	Fen	neF	5	1.277382	Palustrine	Clay-Loam	ne*,m,ls	3	5	0.06		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
6	ts	Swamp	tsS	4	1.69085	Lacustrine	Fibric	ts*,ne,m	3	0	-		<i>ts-Alnus incana, ne-Carex lasiocarpa, Carex lacustrina, m-Sphagnum spp</i>	see attached flora and fauna lists	
5	f	Marsh	fW	1	0.365999	Palustrine	Humic-Mesic	f*,ff	2	90	0.33	LM	<i>f-Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
5	f	Marsh	fW	1	1.009819	Palustrine	Humic-Mesic	f*,ff	2	90	0.91	LM	<i>f-Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.600642	Palustrine	Humic-Mesic	ne*,m,gc	4	50	0.30	HM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.839156	Palustrine	Humic-Mesic	ne*,m,gc	4	50	0.42	HM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	3.727377	Palustrine	Sand	f*,ff	2	90	3.35	LM	<i>f-Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	3.662307	Palustrine	Sand	ne*,m,gc	3	50	1.83	HM	<i>ne-Carex spp, m-Sphagnum spp, gc-Potentilla palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.322051	Palustrine	Fibric	ts*,ne,m	3	0	-		<i>ts-Alnus incana, ne-Carex lasiocarpa, Carex lacustrina, m-Sphagnum spp</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.969778	Palustrine	Fibric	f*,ff	2	90	1.77	LM	<i>f-Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.8523	Palustrine	Sand	f*,ff	2	90	0.77	LM	<i>f-Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.748369	Palustrine	Sand	ne*,m,ls	3	5	0.04		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	su	Marsh	suW	1	0.724759	Palustrine	Sand	su	1	90	0.65	LM	<i>su</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.278639	Palustrine	Fibric	f*,ff	2	90	0.25	LM	<i>f-Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	4.566456	Palustrine	Fibric	f*,ff	2	90	4.11	LM	<i>f-Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
5	f	Marsh	fW	1	0.302733	Palustrine	Sand	f*,ff	2	90	0.27	LM	<i>f-Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
5	f	Marsh	fW	1	3.086446	Palustrine	Granite	f*,ff	2	90	2.78	LM	<i>f-Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.09898	Palustrine	Sand	ne*,m,gc	3	50	0.05	HM	<i>ne-Carex spp, m-Sphagnum spp, gc-Potentilla palustris</i>	see attached flora and fauna lists	
10	ls	Fen	lsF	5	1.099968	Palustrine	Fibric	ls*,m,ne	1	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.480284	Palustrine	Fibric	ne*,m,ls	3	5	0.02		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.309616	Palustrine	Fibric	ne*,m,ls	3	5	0.02		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.630341	Palustrine	Fibric	ne*,m,ls	3	5	0.03		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	2.901037	Palustrine	Sand	ne*,m,ls	3	5	0.15		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.367895	Palustrine	Sand	ne*,m,ls	3	5	0.02		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
6	ne	Fen	neF	5	0.507139	Palustrine	Fibric	ne*,m,ls	3	5	0.03		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
6	ne	Fen	neF	5	0.326039	Palustrine	Fibric	ne*,m,ls	3	5	0.02		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
6	ne	Fen	neF	5	0.105889	Palustrine	Fibric	ne*,m,ls	3	5	0.01		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
6	f	Marsh	fW	1	2.059224	Palustrine	Granite	f*,ff	2	90	1.85	LM	f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor	see attached flora and fauna lists	
7	f	Marsh	fW	1	0.199296	Palustrine	Fibric	f*,ff	2	90	0.18	LM	f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.572887	Palustrine	Fibric	ne*,m,ls	3	5	0.03		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
7	f	Marsh	fW	1	2.446771	Palustrine	Fibric	f*,ff	2	90	2.20	LM	f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.978886	Palustrine	Sand	ne*,m,ls	3	5	0.05		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
7	f	Marsh	fW	1	3.561501	Palustrine	Fibric	f*,ff	2	90	3.21	LM	f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.066055	Palustrine	Fibric	ne*,m,ls	3	5	0.00		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.360323	Palustrine	Fibric	ne*,m,ls	3	5	0.02		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	ne	Marsh	neM	6	2.167165	Palustrine	Clay-Loam	ne*,m,gc	4	50	1.08	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	2.386161	Lacustrine	Fibric	ts*,ne,m	3	0	-		ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum, Sp	see attached flora and fauna lists	
1	m	Bog	mB	6	0.12032	Isolated	Sand	m*	1	0	-		m-Sphagnum spp., gc-Vaccinium oxycoccus	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.033824	Palustrine	Fibric	ts*,ne,m	3	0	-		ts-Alnus incana,ne- Carex lasiocarpa ,Carex lacustrina , m-Sphagnum spp	see attached flora and fauna lists	
11	ne	Marsh	neM	6	0.720396	Palustrine	Fibric	ne*,m,gc	4	50	0.36	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
10	c	Swamp	cS	2	4.858101	Palustrine	Sand	c*,h,m,gc,ls	5	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc- Maianthemum canadensis ,Cornus canadensis, Is-Ilex mucronata, Viburnum coccineoides, Gaylussacia baccata	see attached flora and fauna lists	
10	ts	Swamp	tsS	4	1.075364	Palustrine	Sand	ts*,ne,m	3	0	-		ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum, Sp	see attached flora and fauna lists	
10	ls	Swamp	lsS	1	0.000046	Palustrine	Sand	ls*	1	0	-		ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia	see attached flora and fauna lists	
10	m	Bog	mB	6	0.326489	Isolated	Fibric	m*	1	0	-		m-Sphagnum spp., gc-Vaccinium oxycoccus	see attached flora and fauna lists	
8	m	Bog	mB	6	0.244208	Isolated	Sand	m*	1	0	-		m-Sphagnum spp., gc-Vaccinium oxycoccus	see attached flora and fauna lists	
8	m	Bog	mB	6	0.647914	Isolated	Sand	m*	1	0	-		m-Sphagnum spp., gc-Vaccinium oxycoccus	see attached flora and fauna lists	
6	c	Swamp	cS	2	1.951599	Palustrine	Fibric	c*,h,m,gc,ls	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc- Maianthemum canadensis ,Cornus canadensis, Is-Ilex mucronata, Viburnum coccineoides, Gaylussacia baccata	see attached flora and fauna lists	
6	f	Marsh	fW	1	1.577297	Palustrine	Fibric	f*,ff	2	90	1.42	LM	f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.940835	Palustrine	Sand	f*,ff	2	90	0.85	LM	f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.541725	Palustrine	Clay-Loam	ls*,m,ne	3	0	-		ls-Chamaedaphne calyculata ,Kalmia angustifolia ,Kalmia polifolia, m- Sphagnum spp, ne- Carex spp, Eriophorum spp	see attached flora and fauna lists	
1	c	Fen	cF	5	0.462955	Palustrine	Sand	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
1	c	Swamp	cS	2	0.875205	Palustrine	Sand	c*,h,m,gc,ls	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc- Maianthemum canadensis ,Cornus canadensis, Is-Ilex mucronata, Viburnum coccineoides, Gaylussacia baccata	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.894537	Palustrine	Fibric	ne*,m,ls	3	5	0.04		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.480652	Palustrine	Fibric	ne*,m,ls	3	5	0.02		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.324621	Palustrine	Fibric	ts*,ne,m	3	0	-		ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum, Sp	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.152811	Palustrine	Fibric	ne*,m,ls	3	5	0.01		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	ts	Swamp	tsS	4	1.42418	Palustrine	Fibric	ts*,ne,m	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>ne-Carex lacustrine</i> , <i>Carex tenuiflora</i> , <i>Calla palustris</i> , <i>m-Sphagnum</i> , <i>Sp</i>	see attached flora and fauna lists	
1	c	Swamp	cS	2	0.661806	Palustrine	Fibric	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus</i> , <i>Pinus banksiana</i> , <i>h-Betula papyifera</i> , <i>m-Sphagnum moss</i> , <i>gc-Maianthemum canadensis</i> , <i>Cornus canadensis</i> , <i>Is-Ilex mucronata</i> , <i>Viburnum coccineoides</i> , <i>Gaylussacia baccata</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.663094	Palustrine	Sand	ne*,m,ls	3	5	0.03		<i>ne-Carex spp</i> , <i>m-Sphagnum spp</i> , <i>Is-Vaccinium oxycoccus</i> , <i>Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.364836	Palustrine	Fibric	ne*,m,ls	3	5	0.02		<i>ne-Carex spp</i> , <i>m-Sphagnum spp</i> , <i>Is-Vaccinium oxycoccus</i> , <i>Potentilla palustris</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.508057	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc-Thelypteris palustris</i>	see attached flora and fauna lists	
1	c	Swamp	cS	2	1.654816	Palustrine	Sand	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus</i> , <i>Pinus banksiana</i> , <i>h-Betula papyifera</i> , <i>m-Sphagnum moss</i> , <i>gc-Maianthemum canadensis</i> , <i>Cornus canadensis</i> , <i>Is-Ilex mucronata</i> , <i>Viburnum coccineoides</i> , <i>Gaylussacia baccata</i>	see attached flora and fauna lists	
10	c	Swamp	cS	2	1.373517	Palustrine	Fibric	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus</i> , <i>Pinus banksiana</i> , <i>h-Betula papyifera</i> , <i>m-Sphagnum moss</i> , <i>gc-Maianthemum canadensis</i> , <i>Cornus canadensis</i> , <i>Is-Ilex mucronata</i> , <i>Viburnum coccineoides</i> , <i>Gaylussacia baccata</i>	see attached flora and fauna lists	
6	ts	Swamp	tsS	4	1.267249	Lacustrine	Fibric	ts*,ne,m	3	0	-		<i>ts-Alnus incana</i> , <i>ne-Carex lasiocarpa</i> , <i>Carex lacustrina</i> , <i>m-Sphagnum spp</i>	see attached flora and fauna lists	
6	ne	Marsh	neM	6	0.9271	Palustrine	Fibric	ne*,m,gc	4	50	0.46	HM	<i>ne-Carex spp</i> , <i>m-Sphagnum</i> , <i>gc-Viola palustris</i>	see attached flora and fauna lists	
6	ts	Swamp	tsS	4	0.958226	Palustrine	Fibric	ts*,ne,m	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>ne-Carex lacustrine</i> , <i>Carex tenuiflora</i> , <i>Calla palustris</i> , <i>m-Sphagnum</i> , <i>Sp</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	4	0.577436	Palustrine	Sand	ts*,ne,m	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>ne-Carex lacustrine</i> , <i>Carex tenuiflora</i> , <i>Calla palustris</i> , <i>m-Sphagnum</i> , <i>Sp</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	4	1.808672	Lacustrine	Humic-Mesic	ts*,ne,m	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>ne-Carex lacustrine</i> , <i>Carex tenuiflora</i> , <i>Calla palustris</i> , <i>m-Sphagnum</i> , <i>Sp</i>	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.365041	Palustrine	Humic-Mesic	ne*,m,gc	4	50	0.18	HM	<i>ne-Carex spp</i> , <i>m-Sphagnum</i> , <i>gc-Viola palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	3.515033	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>m-Sphagnum spp</i> , <i>gc-Maianthemum trifolia</i> , <i>Woodwardia virginica</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	1.112884	Palustrine	Sand	ne*,m,ls	3	5	0.06		<i>ne-Carex spp</i> , <i>m-Sphagnum spp</i> , <i>Is-Vaccinium oxycoccus</i> , <i>Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	3.982306	Palustrine	Sand	ne*,m,ls	3	5	0.20		<i>ne-Carex spp</i> , <i>m-Sphagnum spp</i> , <i>Is-Vaccinium oxycoccus</i> , <i>Potentilla palustris</i>	see attached flora and fauna lists	
1	m	Bog	mB	6	0.483299	Isolated	Sand	m*	1	0	-		<i>m-Sphagnum spp</i> , <i>gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.92166	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc-Thelypteris palustris</i>	see attached flora and fauna lists	
5	ls	Swamp	lsS	1	0.438146	Palustrine	Humic-Mesic	ls*	1	0	-		<i>Is-Chamaedaphne calyculata</i> , <i>Gaylussacia baccata</i> , <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.527179	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc-Thelypteris palustris</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	1.325884	Palustrine	Fibric	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc-Thelypteris palustris</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	1.646553	Palustrine	Sand	ne*,m,gc	3	50	0.82	HM	<i>ne-Carex spp</i> , <i>m-Sphagnum spp</i> , <i>gc-Potentilla palustris</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	1.797201	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc-Thelypteris palustris</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	1.069293	Palustrine	Fibric	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc-Thelypteris palustris</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	3.44865	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc-Thelypteris palustris</i>	see attached flora and fauna lists	
7	c	Fen	cF	5	0.024219	Palustrine	Fibric	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc-Thelypteris palustris</i>	see attached flora and fauna lists	
8	m	Bog	mB	6	1.817571	Isolated	Sand	m*	1	0	-		<i>m-Sphagnum spp</i> , <i>gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
7	ne	Marsh	neM	6	1.187323	Palustrine	Fibric	ne*,m,gc	4	50	0.59	HM	<i>ne-Carex spp</i> , <i>m-Sphagnum</i> , <i>gc-Viola palustris</i>	see attached flora and fauna lists	
7	m	Bog	mB	1	1.541114	Isolated	Sand	m*,ne	2	0	-		<i>m-Sphagnum spp</i> , <i>ne-Carex spp</i> , <i>Eriophorum vaginatum</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.975045	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>m-Sphagnum spp</i> , <i>gc-Maianthemum trifolia</i> , <i>Woodwardia virginica</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	2.052467	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>m-Sphagnum spp</i> , <i>gc-Maianthemum trifolia</i> , <i>Woodwardia virginica</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
5	f	Marsh	fW	1	0.578539	Palustrine	Humic-Mesic	f*,ff	2	90	0.52	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
5	f	Marsh	fW	1	0.025384	Palustrine	Humic-Mesic	f*,ff	2	90	0.02	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.537369	Palustrine	Humic-Mesic	ne*,m,gc	4	50	0.27	HM	<i>ne-Carex spp , m-Sphagnum , gc-Viola palustris</i>	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.166491	Palustrine	Sand	ne*,m,gc	4	50	0.08	HM	<i>ne-Carex spp , m-Sphagnum , gc-Viola palustris</i>	see attached flora and fauna lists	
5	c	Fen	cF	5	0.784805	Palustrine	Humic-Mesic	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma Carex stricta, gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.110242	Palustrine	Sand	f*,ff	2	90	0.10	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.043675	Palustrine	Fibric	f*,ff	2	90	0.94	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.559749	Palustrine	Fibric	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma Carex stricta, gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.228902	Palustrine	Fibric	ne*,m,ls	3	5	0.01		<i>ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
5	ne	Fen	neF	5	0.751001	Palustrine	Sand	ne*,m,ls	3	5	0.04		<i>ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
5	ne	Marsh	neM	1	0.171369	Palustrine	Sand	ne*,gc	2	50	0.09	HM	<i>ne-Carex crinita , Onoclea sensibilis ,gs- Calamagrostis canadensis</i>	see attached flora and fauna lists	
5	ne	Fen	neF	5	0.456182	Palustrine	Sand	ne*,m,ls	3	5	0.02		<i>ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.085529	Palustrine	Sand	f*,ff	2	90	0.08	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.114223	Palustrine	Sand	ne*,m,ls	3	5	0.01		<i>ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
7	ne	Marsh	neM	1	0.167089	Palustrine	Fibric	ne*,gc	2	50	0.08	HM	<i>ne-Carex crinita , Onoclea sensibilis ,gs- Calamagrostis canadensis</i>	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.458605	Palustrine	Fibric	ne*,m,ls	3	5	0.02		<i>ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
5	su	Marsh	suW	1	0.681875	Palustrine	Sand	su	1	100	0.68	LM	<i>su</i>	see attached flora and fauna lists	
5	ne	Fen	neF	5	0.336832	Palustrine	Sand	ne*,m,ls	3	5	0.02		<i>ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	su	Marsh	suW	1	0.842321	Palustrine	Clay-Loam	su	1	100	0.84	LM	<i>su</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.057865	Palustrine	Fibric	ts*,ne,m	3	0	-		<i>ts-Alnus incana , Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum Sp</i>	see attached flora and fauna lists	
1	m	Bog	mB	6	0.498631	Isolated	Fibric	m*	1	0	-		<i>m-Sphagnum spp., gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
1	m	Bog	mB	6	0.590884	Isolated	Sand	m*	1	0	-		<i>m-Sphagnum spp., gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.787486	Palustrine	Fibric	ts*,ne,m	3	0	-		<i>ts-Alnus incana, ne- Carex lasiocarpa , Carex lacustrina , m-Sphagnum spp</i>	see attached flora and fauna lists	
8	ne	Fen	neF	5	0.094881	Palustrine	Sand	ne*,m,ls	3	5	0.00		<i>ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
5	c	Swamp	cS	2	0.18909	Palustrine	Sand	c*,h,m,gc,ls	5	0	-		<i>c-Pinus strobus , Pinus banksiana, h- Betula papyrifera, m-Sphagnum moss, gc- Maianthemum canadensis , Cornus canadensis, ls-Ilex mucronata, Viburnum opacifolium, Gaultheria procumbens</i>	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.19567	Palustrine	Sand	ne*,m,gc	4	50	0.10	HM	<i>ne-Carex spp , m-Sphagnum , gc-Viola palustris</i>	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.14172	Palustrine	Sand	ne*,m,gc	4	50	0.07	HM	<i>ne-Carex spp , m-Sphagnum , gc-Viola palustris</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	1	0.048425	Palustrine	Fibric	ne*,gc	2	50	0.02	HM	<i>ne-Carex crinita , Onoclea sensibilis ,gs- Calamagrostis canadensis</i>	see attached flora and fauna lists	
1	h	Swamp	hS	1	0.332252	Palustrine	Fibric	h*	1	0	-		<i>h-Acer rubrum</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.195376	Palustrine	Sand	ts*,ne,m	3	0	-		<i>ts-Alnus incana, ne- Carex lasiocarpa , Carex lacustrina , m-Sphagnum spp</i>	see attached flora and fauna lists	
1	gc	Swamp	gcS	1	1.083792	Palustrine	Sand	gc*	5	0	-		<i>gc-Gaultheria procumbens</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	ts	Swamp	tsS	6	1.23887	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	m	Bog	mB	6	0.37176	Isolated	Sand	m*	1	0	-		<i>m-Sphagnum spp., gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
7	c	Swamp	cS	2	1.133986	Palustrine	Sand	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus, Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis, Cornus canadensis, Is-Ilex mucronata, Viburnum</i>	see attached flora and fauna lists	
7	ne	Marsh	neM	1	0.080094	Palustrine	Sand	ne*,gc	2	50	0.04	HM	<i>ne-Carex crinita, Onoclea sensibilis, gs- Calamagrostis canadensis</i>	see attached flora and fauna lists	
7	m	Bog	mB	1	0.141104	Isolated	Fibric	m*,ne	2	0	-		<i>m-Sphagnum spp, ne- Carex spp, Eriophorum vaginatum</i>	see attached flora and fauna lists	
10	ls	Swamp	lsS	1	2.162134	Palustrine	Sand	ls*	1	0	-		<i>ls-Chamaedaphne calyculata, Gaylussacia baccata, Kalmia angustifolia</i>	see attached flora and fauna lists	
7	ts	Swamp	tsS	4	0.943415	Palustrine	Sand	ts*,ne,m	3	0	-		<i>ts-Alnus incana, ne- Carex lasiocarpa, Carex lacustrina, m-Sphagnum spp</i>	see attached flora and fauna lists	
7	ne	Marsh	neM	6	0.38931	Palustrine	Fibric	ne*,m,gc	4	50	0.19	HM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
8	m	Bog	mB	6	0.162283	Isolated	Fibric	m*	1	0	-		<i>m-Sphagnum spp., gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
8	m	Bog	mB	6	0.126955	Isolated	Sand	m*	1	0	-		<i>m-Sphagnum spp., gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
8	m	Bog	mB	6	0.216604	Isolated	Sand	m*	1	0	-		<i>m-Sphagnum spp., gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
8	m	Bog	mB	6	0.264088	Isolated	Sand	m*	1	0	-		<i>m-Sphagnum spp., gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
8	m	Bog	mB	6	0.440968	Isolated	Sand	m*	1	0	-		<i>m-Sphagnum spp., gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
6	ne	Fen	neF	5	0.774868	Palustrine	Sand	ne*,m,ls	3	5	0.04		<i>ne-Carex spp, m- Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	m	Bog	mB	6	0.504455	Isolated	Sand	m*	1	0	-		<i>m-Sphagnum spp., gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
1	m	Bog	mB	1	0.357453	Isolated	Sand	m*,ne	2	0	-		<i>m-Sphagnum spp, ne- Carex lacustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	1.260324	Palustrine	Fibric	ne*,m,ls	3	5	0.06		<i>ne-Carex spp, m- Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	2.023214	Palustrine	Sand	ls*	1	0	-		<i>ls-Chamaedaphne calyculata, Gaylussacia baccata, Kalmia angustifolia</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.006228	Palustrine	Sand	ne*,m,ls	3	5	0.00		<i>ne-Carex spp, m- Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.108932	Palustrine	Sand	ne*,m,ls	3	5	0.01		<i>ne-Carex spp, m- Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.004868	Palustrine	Sand	ne*,m,ls	3	5	0.00		<i>ne-Carex spp, m- Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.054306	Palustrine	Fibric	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	1.312868	Palustrine	Fibric	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris</i>	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.229366	Palustrine	Fibric	ne*,m,ls	3	5	0.01		<i>ne-Carex spp, m- Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.098742	Palustrine	Fibric	ne*,m,ls	3	5	0.00		<i>ne-Carex spp, m- Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.00203	Palustrine	Fibric	ne*,m,ls	3	5	0.00		<i>ne-Carex spp, m- Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.868195	Palustrine	Fibric	f*,ff	2	90	1.68	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
5	f	Marsh	fW	1	5.547617	Palustrine	Granite	f*,ff	2	90	4.99	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
7	f	Marsh	fW	1	3.750054	Palustrine	Fibric	f*,ff	2	90	3.38	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.220974	Palustrine	Sand	ne*,m,ls	3	5	0.01		<i>ne-Carex spp, m- Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.006414	Palustrine	Sand	ne*,m,ls	3	5	0.00		<i>ne-Carex spp, m- Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
7	f	Marsh	fW	1	6.125705	Palustrine	Fibric	f*,ff	2	90	5.51	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
7	f	Marsh	fW	1	0.025671	Palustrine	Fibric	f*,ff	2	90	0.02	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	gc	Swamp	gcS	2	4.298298	Palustrine	Sand	gc*,ts	2	0	-		<i>gc-Ilex verticillata, ts-Alnus incana</i>	see attached flora and fauna lists	
1	m	Fen	mF	4	1.586798	Palustrine	Sand	m*,gc	2	5	0.08		<i>m-Sphagnum spp, gc- Woodwardia virginica, Osmunda regalis</i>	see attached flora and fauna lists	
1	m	Fen	mF	4	0.000069	Palustrine	Sand	m*,gc	2	5	0.00		<i>m-Sphagnum spp, gc- Woodwardia virginica, Maianthemum trifolia</i>	see attached flora and fauna lists	
1	m	Fen	mF	4	0.557835	Palustrine	Sand	m*,gc	2	5	0.03		<i>m-Sphagnum spp, gc- Woodwardia virginica, Osmunda regalis</i>	see attached flora and fauna lists	
5	c	Swamp	cS	1	1.086952	Palustrine	Sand	c*	1	0	-		<i>c-Picea mariana, larix laricina</i>	see attached flora and fauna lists	
1	re	Marsh	reM	3	0.930892	Palustrine	Clay-Loam	re*,ne	2	90	0.84	LM	<i>re-Typha latifolia, ne-Carex spp</i>	see attached flora and fauna lists	
7	f	Marsh	fW	1	1.096846	Palustrine	Sand	f*,ff	2	90	0.99	LM	<i>f-Brasenia schreberi</i>	see attached flora and fauna lists	
1	m	Swamp	mS	5	0.21638	Palustrine	Clay-Loam	m*,gc,ne	3	0	-		<i>m-Sphagnum spp, gc- Osmunda regalis, ne-Carex spp.</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.192901	Palustrine	Clay-Loam	ts*,ne,m	3	0	-		<i>ts-Alnus incana, ne- Carex lasiocarpa, Carex lacustrina, m-Sphagnum spp</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.121822	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	c	Bog	cB	5	1.44483	Isolated	Humic-Mesic	c*,m,gc	3	0	-		<i>c-Larix laricina, m-Sphagnum spp, gs- Mainthemum trifolium</i>	see attached flora and fauna lists	
5	c	Swamp	cS	2	0.457053	Palustrine	Sand	c*,h,m,gc,ls	5	0	-		<i>c-Pinus strobus, Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc- Maianthemum canadensis, Cornus canadensis, Is-Ilex mucronata, Viburnum coccineoides, europaensis, hacoense</i>	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.003042	Palustrine	Sand	ne*,m,gc	3	50	0.00	HM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	m	Bog	mB	6	0.671642	Isolated	Sand	m*	1	0	-		<i>m-Sphagnum spp., gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
1	m	Bog	mB	6	1.055974	Isolated	Sand	m*	1	0	-		<i>m-Sphagnum spp., gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
7	ne	Marsh	neM	1	0.130456	Palustrine	Sand	ne*,gc	2	50	0.07	HM	<i>ne-Carex stricta, Carex lacustra</i>	see attached flora and fauna lists	
7	ts	Marsh	tsW	8	0.129663	Palustrine	Sand	ts*,ne	2	50	0.06	HM	<i>ts-Spiraea tomentosa, ne-grass spp, carex brunnescens</i>	see attached flora and fauna lists	
8	h	Swamp	hS	1	0.358658	Palustrine	Sand	h*	1	0	-		<i>h-Betula papyrifera, Acer rubrum</i>	see attached flora and fauna lists	
7	ne	Marsh	neM	1	0.423977	Palustrine	Fibric	ne*,gc	2	50	0.21	HM	<i>ne-Carex stricta, Carex lacustra</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	2	0.339615	Palustrine	Fibric	ts*	1	0	-		<i>ts-Alnus incana, Ilex verticillata, Nemopanthus mucronatus</i>	see attached flora and fauna lists	
1	c	Bog	cB	5	1.006523	Isolated	Sand	c*,m,gc	3	0	-		<i>c-Larix laricina, m-Sphagnum spp, gs- Mainthemum trifolium</i>	see attached flora and fauna lists	
7	ne	Swamp	neS	1	2.334062	Palustrine	Sand	ne*,gc	2	0	-		<i>ne-Carex utriculata, gc-Osmunda regalis</i>	see attached flora and fauna lists	
4	ne	Marsh	neM	6	0.000564	Palustrine	Humic-Mesic	ne*,m,gc	3	50	0.00	HM	<i>ne-Carex spp, m- Sphagnum spp,gc-Potentilla palustris</i>	see attached flora and fauna lists	
4	ts	Swamp	tsS	6	0.000203	Palustrine	Humic-Mesic	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
4	ts	Swamp	tsS	6	0.000255	Palustrine	Humic-Mesic	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ls	Fen	lsF	5	0.000283	Palustrine	Humic-Mesic	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000262	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000159	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.00006	Palustrine	Humic-Mesic	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	ts	Swamp	tsS	6	0.001427	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.000775	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.003432	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.003432	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.000034	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.000039	Palustrine	Sand	ne*,m,gc	3	50	0.00	HM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.000785	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.000886	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.000886	Palustrine	Fibric	ne*,m,gc	3	50	0.00	HM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.001966	Palustrine	Fibric	ne*,m,gc	3	50	0.00	HM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.000501	Palustrine	Fibric	f*,ff	2	90	0.00	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.000501	Palustrine	Fibric	f*,ff	2	90	0.00	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.000947	Palustrine	Sand	f*,ff	2	90	0.00	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.000947	Palustrine	Sand	f*,ff	2	90	0.00	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.000141	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.000141	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.000329	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.000317	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.011406	Palustrine	Fibric	f*,ff	2	90	0.01	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.002757	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.000082	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.000391	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.000606	Palustrine	Fibric	f*,ff	2	90	0.00	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.001124	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
5	ls	Fen	lsF	5	0.00011	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
5	ls	Fen	lsF	5	0.00121	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.000018	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
5	ls	Fen	lsF	5	0.000007	Palustrine	Humic-Mesic	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
5	ls	Fen	lsF	5	0.000054	Palustrine	Humic-Mesic	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne-Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
7	f	Marsh	fW	1	0.000924	Palustrine	Fibric	f*,ff	2	90	0.00	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
7	f	Marsh	fW	1	0.000924	Palustrine	Fibric	f*,ff	2	90	0.00	LM	<i>f- Polygonum amphibium, Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	

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7	f	Marsh	fW	1	0.000022	Palustrine	Fibric	f*,ff	2	90	0.00	LM	<i>f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.158241	Palustrine	Sand	f*,ff	2	90	0.14	LM	<i>f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.91349	Palustrine	Clay-Loam	f*,ff	2	90	1.72	LM	<i>f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
5	f	Marsh	fW	1	0.069698	Palustrine	Sand	f*,ff	2	90	0.06	LM	<i>f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
5	f	Marsh	fW	1	0.000071	Palustrine	Humic-Mesic	f*,ff	2	90	0.00	LM	<i>f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
5	f	Marsh	fW	1	0.000006	Palustrine	Humic-Mesic	f*,ff	2	90	0.00	LM	<i>f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000103	Palustrine	Humic-Mesic	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000203	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000037	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000004	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ls	Fen	lsF	5	0.00003	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
5	m	Bog	mB	1	0.000029	Isolated	Sand	m*,ne	2	0	-		<i>m-Sphagnum spp, ne- Carex spp,Eriophorum vaginatum</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000049	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000051	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000001	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000001	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000081	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.000049	Palustrine	Fibric	ne*,m,gc	3	50	0.00	HM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
5	su	Marsh	suW	1	0.000003	Palustrine	Granite	su	1	90	0.00	LM	<i>su</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000059	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000021	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000231	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000002	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
5	ls	Fen	lsF	5	0.000018	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.000107	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, Kalmia polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.000062	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.000003	Palustrine	Sand	ne*,m,gc	3	50	0.00	HM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	2	0.000099	Palustrine	Sand	ts*	1	0	-		<i>ts-Alnus incana, Ilex verticillata, Nemopanthus mucronatus</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	1	0.97313	Palustrine	Fibric	ls*	1	0	-		<i>ls-Chamaedaphne calyculata, Rhododendron groenlandica</i>	see attached flora and fauna lists	
1	m	Swamp	mS	4	0.474339	Palustrine	Sand	m*,gc	2	0	-		<i>m-Sphagnum spp, gc- Maianthemum trifolia</i>	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000017	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	



Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	c	Swamp	cS	2	3.050908	Palustrine	Sand	c*,h,m,gc,ls	5	0	-		c-Pinus strobus , pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, ls-Ilex mucronata, Viburnum cassinoides, Ceryle alcyon, h-herodias	see attached flora and fauna lists	
5	c	Swamp	cS	1	0.555323	Palustrine	Fibric	c*	1	0	-		c-Picea mariana ,larix laricina	see attached flora and fauna lists	
5	c	Swamp	cS	2	0.639251	Palustrine	Sand	c*,h,m,gc,ls	5	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, ls-Ilex mucronata, Viburnum cassinoides, Ceryle alcyon, h-herodias	see attached flora and fauna lists	
1	ne	Swamp	neS	1	0.514027	Palustrine	Fibric	ne*,gc	2	0	-		ne-Carex spp, gc- Onoclea sensibilis	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.311829	Palustrine	Clay-Loam	ne*,m,gc	3	50	0.16	HM	ne-Carex spp, m- sphagnum spp,gc-potentilla palustris	see attached flora and fauna lists	
7	su	Marsh	suW	1	1.49334	Palustrine	Fibric	su	1	100	1.49	LM	su	see attached flora and fauna lists	
1	h	Swamp	hS	1	0.000273	Palustrine	Sand	h*	1	0	-		h-Acer rubrum	see attached flora and fauna lists	
1	h	Swamp	hS	1	0.31196	Palustrine	Sand	h*	1	0	-		h-Acer rubrum	see attached flora and fauna lists	
1	h	Swamp	hS	1	0.000949	Palustrine	Fibric	h*	1	0	-		h-Acer rubrum	see attached flora and fauna lists	
1	ts	Swamp	tsS	5	2.52802	Palustrine	Fibric	ts*,ls	2	0	-		ts-Nemopanthus mucronatus, Alnus incana , ls-Viburnum cassinoides	see attached flora and fauna lists	
5	ne	Fen	neF	2	2.418979	Palustrine	Humic-Mesic	ne*,ls	2	5	0.12		ne-Carex lacustra, ls- Potentilla palustris	see attached flora and fauna lists	
1	ls	Fen	lsF	2	7.528205	Palustrine	Sand	ls*,ts	2	0	-		ls-Chamaedaphne calyculata ,ts- Nemopanthus mucronatus	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.49561	Palustrine	Sand	ts*,m, gc	3	0	-		ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.716898	Palustrine	Sand	ne*,m,gc	3	50	0.36	HM	ne-Carex spp, m- Sphagnum spp,gc-Potentilla palustris	see attached flora and fauna lists	
1	c	Swamp	cS	1	0.520856	Palustrine	Sand	c*	1	0	-		c-Tsuga canadensis	see attached flora and fauna lists	

ix) Wetland Size

(circle appropriate category, a or b)

a) Single contiguous wetland area:

Total wetland size = 254 hectares

b) Wetland complex comprised of 11 individual wetlands:

Wetland Unit No.	<u>1</u>	<u>142.85</u>
Wetland Unit No.	<u>2</u>	<u>2.42</u>
Wetland Unit No.	<u>3</u>	<u>1.28</u>
Wetland Unit No.	<u>4</u>	<u>8.12</u>
Wetland Unit No.	<u>5</u>	<u>35.00</u>
Wetland Unit No.	<u>6</u>	<u>12.15</u>
Wetland Unit No.	<u>7</u>	<u>35.25</u>
Wetland Unit No.	<u>8</u>	<u>4.37</u>
Wetland Unit No.	<u>9</u>	<u>0.65</u>
Wetland Unit No.	<u>10</u>	<u>10.90</u>
Wetland Unit No.	<u>11</u>	<u>1.20</u>
Wetland Unit Totals:		<u><u>254.19</u></u>

(Attach additional sheets if necessary)

Total Wetland Size = 254.19 hectares (add together size of each unit)

Documentation requirements for evaluated wetland complexes (attach additional sheet if necessary):

- : a statement of rationale for identifying a wetland complex;
- : a statement of rationale for identifying any wetland complex less than 2 ha in total size;
- : a statement of rationale for any vegetation community less than 0.5 ha in size;
- : adherence to the wetland complexing rules (750 m; "watershed rule"; lacustrine wetlands); and
- : written documentation of the reasons for including wetland units smaller than 2 ha.

The wetland units complexed within the WET-002 wetland complex were all within 750m straight line distance of another wetland unit. All complexed wetlands fall within the same sub watershed. Given the abundance of species at risk and rare species within the study area, and the high potential for these species to occur within any wetland within this area 3, wetland units (3,9,11) less than 2ha were included within this wetland complex. Also given the complexity and size of this wetland complex accurate determination of hydrological connectivity or discontinuity could not be determined for all wetlands. To ensure accurate coverage of the wetlands within the study area and the potential habitat for SAR and rare species, these wetland units were complexed. As wetland boundaries and vegetation communities were compiled and delineated from several years of data a number of vegetation communities less than 0.5ha were included within the wetland complex. This is primarily due to vegetation data for multiple portions of a wetland polygon being assessed over a number of years.

Wetland Size (ha):

254.19

Vegetation Form	Fractional Area (FA)
h	0.03
c	0.19
dh	0.00
dc	0.00
ts	0.17
ls	0.10
ds	0.00
gc	0.02
m	0.05
ne	0.22
be	0.00
re	0.00
ff	0.00
f	0.19
su	0.01
u (unvegetated)	0.00

Total = 100%

1.00

## 1.0 BIOLOGICAL COMPONENT

### 1.1 PRODUCTIVITY

#### 1.1.1 Growing Degree-Days/Soils (max: 30 pts)

Refer to page 43 of manual for further explanation.

1. Determine the correct GDD value for your wetland (use Figure 5).
2. Circle the appropriate GDD value from the evaluation table below.
3. Determine the Fractional Area (FA) of the wetland for each soil type.
4. Multiply the fractional area of each soil type by the applicable score-factor in the evaluation table.
5. Sum the scores for each soil type to obtain the final score (maximum score is 30 points).

*Note: In wetland complexes the evaluator should aim at determining the fractional area occupied by the categories for the complex as a whole.*

Growing Degree-Days	Clay-Loam	Silt-Marl	Limestone	Sand	Humic-Mesic	Fibric	Granite
	<2800	12	11	9	7	7	6
1600-2000	15	13	11	9	8	7	5
2000-2400	18	15	13	11	9	8	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

Soil Type	FA of wetland soil type	in	Enter appropriate score-factor from above table		
clay/loam:	0.05	X	26	=	1.3
silt/marl:	0.00	X	21	=	0.0
limestone:	0.00	X	18	=	0.0
sand:	0.45	X	15	=	6.8
humic/mesic:	0.10	X	13	=	1.3
fibric:	0.36	X	10	=	3.6
granite:	0.04	X	8	=	0.3
Total					13.3

GDD/Soils score (maximum 30 points)	13
--	----

### 1.1.2 Wetland Type

(Fractional Area = area of wetland type/total wetland area)

	Fractional Area				Score
Bog	0.05	X	3	=	0.2
Fen	0.28	X	6	=	1.7
Swamp	0.36	X	8	=	2.9
Marsh	0.30	X	15	=	4.5
Total				=	9.2

Wetland type score (maximum 15 points)	<b>9</b>
---	----------

### 1.1.3 Site Type

(Fractional Area = area of site type/total wetland area)

	Fractional Area				Score
Isolated	0.05	x	1	=	0.05
Palustrine (permanent or intermittent flow)	0.88	x	2	=	1.76
Riverine	0.00	x	4	=	0.00
Riverine (at rivermouth)	0.00	x	5	=	0.00
Lacustrine (at rivermouth)	0.00	x	5	=	0.00
Lacustrine (on enclosed bay, with barrier beach)	0.00	x	3	=	0.00
Lacustrine (exposed to lake)	0.07	x	2	=	0.14
Total				=	1.95

Site Type Score (maximum 5 points)	<b>2</b>
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## 1.2 BIODIVERSITY

### 1.2.1 Number of Wetland Types

(Check only one)

	one	=	9	points
	two	=	13	
	three	=	20	
<b>30</b>	four	=	30	

Number of Wetland Types Score (maximum 30 points)	<b>30</b>
--	-----------

### 1.2.2. Vegetation Communities

Use the data sheet provided in Appendix 4 to record and score vegetation communities (the completed form must be attached to this data record)

Scoring (circle only one option for each of the columns below):

Total # of communities with 1-3 forms	
1 =	1.5 pts
2 =	2.5
3 =	3.5
4 =	4.5
5 =	5
6 =	5.5
7 =	6
8 =	6.5
9 =	7
10 =	7.5
11 =	8
+ 0.5 for each additional community	
=	<b>16.5</b>

Total # of communities with 4 -5 forms	
1 =	2 pts
2 =	3.5
3 =	5
4 =	6.5
5 =	7.5
6 =	8.5
7 =	9.5
8 =	10.5
9 =	11.5
10 =	12.5
11 =	13
+ 0.5 for each additional community	
=	<b>6.5</b>

Total # of communities with 6 or more forms	
1 =	3 pts
2 =	5
3 =	7
4 =	9
5 =	10.5
6 =	12
7 =	13.5
8 =	15
9 =	16.5
10 =	18
11 =	19
+ 0.5 for each additional community	
=	<b>0.0</b>

SubTotal: **23**

Vegetation Communities Score (maximum 45 points)	<b>23</b>
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### 1.2.3 Diversity of Surrounding Habitat

Check all appropriate items. Only habitat within 1.5 km of the wetland boundary and at least 0.5 ha in size are to be scored.

	recent burn (<5yrs)	* "Mixed forest" is defined as either 25% coniferous trees distributed singly or in clumps in deciduous forest, or 25% deciduous trees distributed singly or in clumps in coniferous forest. Note that Forest Resource Inventory (FRI) maps can be misleading since 25% conifer within a unit could be entirely concentrated around a lake.
	abandoned agricultural land	
	utility corridor	
1	deciduous forest	
	recent cutover or clearcut (<5yrs)	
1	coniferous forest	
1	*mixed forest	
	crops	
1	abandoned pits and quarries	
	pasture	
1	ravine	
	fencerows	
1	open lake or deep river	
1	creek floodplain	
1	rock outcrop	
8	Subtotal	
Score 1 point for each feature checked, up to a maximum of 7 points.		Diversity of Surrounding Habitat Score (maximum 7 points) <b>7</b>

### 1.2.4 Proximity to Other Wetlands

Check highest appropriate category. (Note: if the wetland is lacustrine, score option #1 at 8 points).

		points
8	Hydrologically connected by surface water to other wetlands (different dominant wetland type) or to open lake or deep river within 1.5 km	8
	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or to open lake or deep river from 1.5 to 4 km away	5
	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
	Within 0.75 km of other wetlands (different dominant wetland type) or open water body, but not hydrologically connected by surface water	5
	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
	No wetland within 1 km	0

Name and distance (from wetland) of wetlands/waterbodies scored above:

Key River and Henvey Inlet are both directly adjacent to the wetland complex.

Proximity to other Wetlands Score (maximum 8 points) <b>8</b>
---

### 1.2.5 Interspersion

Number of Intersections = 206

	Number of Intersections (Check only one)	=	Points
	26 or less	=	3
	27 to 40	=	6
	41 to 60	=	9
	61 to 80	=	12
	81 to 100	=	15
	101 to 125	=	18
	126 to 150	=	21
	151 to 175	=	24
	176 to 200	=	27
<b>30</b>	>200	=	30

Interspersion Score (maximum 30 points)	<b>30</b>
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### 1.2.6 Open Water Types

*Note: this attribute is only to be scored for permanently flooded open water within the wetland (adjacent lakes do not count). Check one option only.*

	Open Water Type	Characteristic	Points
	type 1	Open water occupies < 5 % of wetland area	8
	type 2	Open water occupies 5-25% of wetland (occurring in central area)	8
<b>14</b>	type 3	Open water occupies 5-25% (occurring in various-sized ponds, dense patches of vegetation or vegetation in diffuse stands)	14
	type 4	Open water occupies 26-75% of wetland (occurring in a central area)	20
	type 5	Open water occupies 26-75% of wetlands (small ponds and embayments are common)	30
	type 6	Open water occupies 76%-95% of wetland (occurring in large central area; vegetation is peripheral)	8
	type 7	Open water occupies 76-95% of wetland (vegetation in patches or diffuse open stands)	14
	type 8	Open water occupies more than 95% of wetland area	3
	no open water		0

Open Water Type Score (maximum 30 points)	<b>14</b>
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### 1.3 SIZE

#### (BIOLOGICAL COMPONENT)

Total Size of Wetland = 254.2 ha

Sum of scores from Biodiversity Subcomponent

1.2.1

+1.2.2

+1.2.3

+1.2.4

+1.2.5

+1.2.6

112

		Total Score for Biodiversity Subcomponent									
		<37	37-48	49-60	61-72	73-84	85-96	97- 108	109-120	121- 132	>132
Wetland size (ha)	<20 ha	1	5	7	8	9	17	25	34	43	50
	20-40	5	7	8	9	10	19	28	37	46	50
	41-60	6	8	9	10	11	21	31	40	49	50
	61-80	7	9	10	11	13	23	34	43	50	50
	81-100	8	10	11	13	15	25	37	46	50	50
	101-120	9	11	13	15	18	28	40	49	50	50
	121-140	10	13	15	17	21	31	43	50	50	50
	141-160	11	15	17	19	23	34	46	50	50	50
	161-180	13	17	19	21	25	37	49	50	50	50
	181-200	15	19	21	23	28	40	50	50	50	50
	201-400	17	21	23	25	31	43	50	50	50	50
	401-600	19	23	25	28	34	46	50	50	50	50
	601-800	21	25	28	31	37	49	50	50	50	50
	801-1000	23	28	31	34	40	50	50	50	50	50
	1001-1200	25	31	34	37	43	50	50	50	50	50
	1201-1400	28	34	37	40	46	50	50	50	50	50
	1401-1600	31	37	40	43	49	50	50	50	50	50
	1601-1800	34	40	43	46	50	50	50	50	50	50
	1801-2000	37	43	47	49	50	50	50	50	50	50
>2000	40	46	50	50	50	50	50	50	50	50	

Size Score (Biological Component) (maximum 50 points)	<u>50</u>
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## 2.0 SOCIAL COMPONENT

### 2.1 ECONOMICALLY VALUABLE PRODUCTS

#### 2.1.1 Wood Products

Check the option that best reflects the total area (ha) of forested wetland (i.e., areas where the dominant vegetation form is h or c). Note that this is the area of all the forested vegetation communities, not total wetland size. Do not include areas where harvest is not permitted. Check only one option.

Area of wetland used for scoring 2.1.1:

h: 7.62 c: 48.26

	<5 ha =	0
	5 -25 ha =	3
	26 -50 ha =	6
9	51- 100 ha =	9
	101-200 ha =	12
	>200 ha =	18

Source of information:

Field Observation: AECOM, 2014,2015

Wood Products Score **9**  
(maximum 14 points)

#### 2.1.2 Lowbush Cranberry

Check only one.

2	Present (minimum size 0.5 ha) =	2 pts
	Absent =	0
	Harvest not permitted =	0

Source of information:

Field Observation: AECOM, 2014,2015

Wild Rice Score **2**  
(maximum 6 points)

#### 2.1.3 Wild Rice

Check only one.

	Present (minimum size 0.5 ha) =	6 pts
0	Absent =	0
	Harvest not permitted =	0

Source of information:

Field Observation: AECOM, 2014,2015

Wild Rice Score **0**  
(maximum 10 points)

### 2.1.4 Commercial Bait Fish

Check only one.

<b>12</b>	Present	=	12 pts
	Absent	=	0
	Fishing not permitted	=	0

Source of information:

Field Observation; A. Ingriselli, 2015

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Commercial Fish Score (maximum 12 points)	<b>12</b>
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### 2.1.5 Furbearers

Only species recognized as furbearers under the Fish & Wildlife Conservation Act may be scored here. Score 3 points for each furbearer species listed, up to a maximum of 12 points.

Name of furbearer			Source of information
1	<b>3</b>	Beaver ( <i>Castor canadensis</i> )	Field Observation: AECOM 215, Stantec, 2013
2	<b>3</b>	Long-tailed Weasel ( <i>Mustela fenata</i> )	Field Observation: Stantec, 2013
3	<b>3</b>	Muskrat ( <i>Ondatra zibethicus</i> )	Field Observation: Stantec, 2013
4	<b>3</b>	North American River Otter ( <i>Lontra canadensis</i> )	Field Observation: AECOM 2015, Stantec, 2013
5	<b>3</b>	Northern Raccoon ( <i>Procyon lotor</i> )	Field Observation: Stantec, 2013
6	<b>3</b>	Red fox ( <i>Vulpes vulpes</i> )	Field Observation: AECOM 2015, Stantec, 2013
7	<b>3</b>	Red Squirrel ( <i>Tamiasciurus hudsonicus</i> )	Field Observation: AECOM 215, Stantec, 2013
<b>21</b>	<b>Subtotal</b>		

Furbearer Score (maximum 12 points)	<b>12</b>
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## 2.2 RECREATIONAL ACTIVITIES

Circle one score for each of the activities listed. Score is cumulative – add score for hunting, nature enjoyment and fishing together for final score.

		Type of Wetland-Associated Use					
		Hunting		Nature Enjoyment/ Ecosystem Study		Fishing	
Intensity of Use	High	40 points		40 points		40 points	
	Moderate	20	20	20		20	
	Low	8		8		8	8
	Not possible/ No evidence	0		0		0	
	Totals		20		0		8
						28	

Sources of information (include evidence/criteria forming basis for score and any relevant reference used to obtain that information):

- e.g., Hunting scored at 20 points: 5 hunting blinds observed; hunters using area frequently monitored for compliance (source: D. Black, MNR Conservation Officer)

Hunting: Personal Communication: Henvey Inlet First Nation, 2015  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Nature: Not known  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Fishing: Not Known  
Field Observation: Kristan Washburn, 2013,2015  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Recreational Activities Score (maximum 80 points)	<b>28</b>
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## 2.3 LANDSCAPE AESTHETICS

### 2.3.1 Distinctness

Check only one.

3	Clearly distinct	=	3	pts
	Indistinct	=	0	

Landscape Distinctness Score (maximum 3 points)	3
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### 2.3.2 Absence of Human Disturbance

Check only one.

7	Human disturbances absent or nearly so	=	7	pts
	One or several localized disturbances	=	4	
	Moderate disturbance; localized water pollution	=	2	
	Wetland intact but impairment of ecosystem quality intense in some areas	=	1	
	Extreme ecological degradation, or water pollution severe and widespread	=	0	

Details regarding type, extent and location of disturbance scored:

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Source of information:

Kristan Washburn, 2015

Absence of Human Disturbance Score (maximum 7 points)	7
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## 2.4 EDUCATION AND PUBLIC AWARENESS

### 2.4.1 Educational Uses

Check highest appropriate category.

	Frequent	=	20	pts
	Infrequent	=	12	
0	No visits	=	0	

Details regarding the type and frequency of education uses scored above:

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Source of information:

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Educational Uses Score (maximum 20 points)	0
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### 2.4.2 Facilities and Programs

Check all appropriate options, score highest category checked.

	Staffed interpretation centre	=	8	pts
	No interpretation centre or staff but a system of self-guiding trails or brochures available	=	4	
	Facilities such as maintained paths (e.g., woodchips) boardwalks, boat launches or observation towers but no brochures or other interpretation	=	2	
0	No facilities or programs	=	0	

Additional Notes/Comments:

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Source of information:

Field Observation: Kristan Washburn, 2015

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Facilities and Programs Score (maximum 8 points)	0
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### 2.4.3 Research and Studies

Check all that apply; score highest category checked.

	Long term research has been done	=	12	pts
	Research papers published in refereed scientific journal or as a thesis	=	10	
<b>5</b>	One or more (non-research) reports have been written on some aspect of the wetland's flora, fauna, hydrology etc.	=	5	
	No research or reports	=	0	
<b>5</b>	Subtotal:			

List of reports, publications, research studies etc. scored above:

Georgian Bay Biosphere Reserve (2013). Ecosystem Health Report for Eastern Georgian Bay. Background

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Research and Studies Score **5**  
(maximum 12 points)

### 2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT

Name of Settlement: Henvey Inlet First Nation

Distance of wetland from settlement: 2.8km from eastern edge of wetland complex.

Population of settlement: 170 (Source: First Nations Market Housing Fund)

Circle only the highest score applicable

Distance of wetland to settlement	population >10,000		population 2,500-10,000		population or cottage community <2,500	
	40 points		26 points		16 points	
Within or adjoining settlement	40 points		26 points		16 points	<b>16</b>
0.5 to 10 km from settlement	26		16		10	
10 to 60 km from settlement	12		8		4	
60-100 km from nearest settlement	5		2		0	
100 km from nearest settlement	0		0		0	
		<b>0</b>		<b>0</b>		<b>16</b>

Proximity to Human Settlement Score **16**  
(maximum 40 points)

Additional Reports  
No additional reports.



## 2.6 OWNERSHIP

FA of wetland held by or held under a legal contract by a conservation body (as defined by the Conservation Land Act) for wetland protection	<b>0.92</b>	x	10	=	<b>9.20</b>
FA of wetland occurring in provincially or nationally protected areas (e.g., parks and conservation reserves)		x	10	=	<b>0.00</b>
FA of wetland area in Crown/public ownership, not as above	<b>0.08</b>	x	8	=	<b>0.64</b>
FA of wetland area in private ownership, not as above		x	4	=	<b>0.00</b>

Source of information:

Henvey Inlet First Nation Land Owner. NW corner of wetland is Provincial Crown Land.

Ownership Score (maximum 10 points)	<b>10</b>
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## 2.7 SIZE (SOCIAL COMPONENT)

Total Size of Wetland = **254.0** ha

Sum of scores from Subcomponents 2.1, 2.2, and 2.5 =

**79**

Circle the appropriate score from the table below.

Total for Size Dependent Social Features										
	<31	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
<2 ha	1	2	4	8	10	12	14	14	14	15
2 - 4ha	1	2	4	8	12	13	14	14	15	16
5 - 8ha	2	2	5	9	13	14	15	15	16	16
9 - 12ha	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	<b>18</b>	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	20	20

Total Size Score (Social Component)	<b>18</b>
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## 2.8 ABORIGINAL VALUES AND CULTURAL HERITAGE

*Either or both Aboriginal or Cultural Values may be scored. However, the maximum score permitted for 2.8 is 30 points.*

*Full documentation of sources must be attached to the data record.*

### 2.8.1 Aboriginal Values

<b>30.0</b>	Significant	=	30 pts
	Not Significant	=	0
	Unknown	=	0
<b>30</b>	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

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### 2.8.2 Cultural Heritage

	Significant	=	30 pts
	Not Significant	=	0
<b>0.0</b>	Unknown	=	0
<b>0</b>	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

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Aboriginal Values/Cultural Heritage Score <i>(maximum 30 points)</i>	<b>30.0</b>
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### 3.0 HYDROLOGICAL COMPONENT

#### 3.1 FLOOD ATTENUATION

Check one of the following four options.

- If wetland is a single contiguous coastal wetland, → score 0 points for this section.
- If the wetland is a single contiguous lacustrine wetland where the ratio of wetland area to lake area is less than 0.1, → score 0 points for this section
- If all wetland units of the wetland complex are coastal wetland units, or if all wetland units are all lacustrine and the ratio of the wetland area (total area of all wetland units) to the lake areas is less than 0.1, →score 0 points for this section
- If wetland or wetland complex is entirely isolated in site type, →score 100 points automatically.
- Wetland not as above – proceed through 'steps' A through L below.

- (A) Total wetland area =  ha
- (B) Size of wetland's catchment =  ha
- (C) Size of other detention areas in catchment =  ha
- (D) Size of 'isolated' portions of wetland =  ha (FA = )
- (E) Size of coastal units of wetland complex =  ha (FA = )
- (F) Size of small lacustrine units of a wetland complex =  ha =  (FA=)  
(when wetland area: lake area <0.1)

Wetland Surface Form (select the form which best describes the non-coastal units of the wetland):

- flooded with little or no aquatic vegetation
- flooded but with submergent, emergent, or floating vegetation = 0.2
- flat (lawn) vegetation (typical of fens)=0.5
- hummock-depression microtopography=0.7
- patterned (e.g. string bod, ribber fens)=0.5

- (G) Wetland Surface Form Factor =  (maximum 1.0)

Points for Isolated Wetland Unit(s) (if not applicable, enter '0')

- (H) (FA of D)x 100 pts =  pts

Points for Coastal Wetland Unit(s) (if not applicable, enter '0')

- (I) (FA of E) x 100 pts =  pts

Points for Small Lacustrine Wetland Unit(s) (If not applicable enter '0'):

- (J) (FA of F) x100 pts =  pts

- (K) Size of wetland minus isolated, coastal and small lacustrine portions= (A-D-E-F)=  ha

- (L) number of points availblt to score 'rest' of wetland = {100-H-I-J}=  pts

- (M) Total are of upstream detnetion areas\*= {A+C}=  ha

- (N) Upstream Detention Factor= {(K/M)x2}=  (maximum 1.0)

- (O) Attenuation Factor = {(K/B)x 10}=  (maximum 1.0)

- (P) Surface Form Factor =  (maximum 1.0)

Flood Attenuation Score (maximum 100 points)	<b>0</b>
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## 3.2 GROUNDWATER RECHARGE

### 3.2.1 Site Type

Wetland > 50% lacustrine (by area) or located on the St. Mary's River	=					<b>0</b>
Wetland not as above. Calculate final score as follows:						
FA of isolated or palustrine wetland	=	<b>0.93</b>	x	20	=	<b>18.63</b>
FA of riverine wetland	=	<b>0.00</b>	x	5	=	<b>0.00</b>
FA of lacustrine wetland (when wetland is <50% lacustrine)	=	<b>0.07</b>	x	0	=	<b>0.00</b>
				Sub Total:		<b>18.63</b>

Groundwater Recharge/Wetland Site Type Score  
(Maximum 20 points) **19**

### 3.2.2 Soil Recharge Potential

Select only one choice that **best** describes the soils in **the area surrounding the wetland** being evaluated (the soils with the wetland are not scored here).

Dominant Wetland Type	Group A, B, C (sands, gravels, loams)	Group D (clays, substrates in high water tables, shallow substrates over impervious materials such as bedrock)
	Lacustrine or on St. Mary's River	0
Isolated	10	5
Palustrine	7	4
Riverine (not on a major river)	5	2

Groundwater Recharge/Wetland Soil Recharge Potential Score  
(maximum 10 points) **4**

### 3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

#### 3.2.1 Watershed Improvement Factor

Calculation of Watershed Improvement Score is based upon the fractional area (FA) of each site type within the wetland.

FA= area of site type/total area of the wetland

					Improvement Factor (IF)
FA of isolated wetland	=	0.05	x 0.5	=	0.03
FA of riverine wetland	=	0.00	x 1	=	0.00
FA of palustrine wetland with no inflow	=	0.29	x 0.7	=	0.21
FA of palustrine wetland with inflows	=	0.59	x 1	=	0.59
FA of lacustrine on lake shoreline	=	0.00	x 0.2	=	0.00
FA of lacustrine at lake inflow or outflow	=	0.00	x 1	=	0.00
Sub Total :					0.82
IF x 30 :					24.53

Watershed Improvement Score (maximum=30)	25
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#### 3.3.2 Adjacent and Watershed Land Use

##### Step 1: Determination of maximum initial score

x	Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)
	All other wetlands (Go through Steps 2, 3, 4, and 5B)

##### Step 2: Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in and extensive manner.

Choose one

>50% of catchment basin	=	20.0
20-50% of catchment basin	=	14
<20% of catchment basin	=	4

Score for BLU

##### Step 3. Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

Choose the highest only Score

Major Corridor	15
Secondary corridor	11
Tertiary corridor	6
Temporary or abandoned	3
None	0

Score for LUU

##### Step 4. Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits use for local road construction), etc. Score as present' only if a point source land use is location less than 1km upstream from the wetland.

Present	15
Not present	0

Score for PS

**Step 5. Calculation of total score for Ajaacent and Watershed Land Use**

		Score
<input checked="" type="checkbox"/>	a) Wetland on the Great Lakes or St. Mary's River	0
<input type="checkbox"/>	b) All other wetlands, calculate as follows: BLU+LUU+PS	0
		Final Score <b>0</b>

**3.3.3 Vegetation Form**

*Choose the category that best describes the vegetation of the wetland*

		Score
<input checked="" type="checkbox"/>	Trees, shrubs or herbs (h,c, ts, ls, gc)	8.0
<input type="checkbox"/>	Emergents, submergenets (ne, re, be, f, ff, su)	10
<input type="checkbox"/>	Little or no vegetation (u)	0
		Dominant Vegetation form Score (maximum 10 points) <b>8</b>

**3.4 CARBON SINK**

*Check only one of the following:*

<input type="checkbox"/>	Bog or fen with more than 50% coverage by organic soil	= 15 pts
<input type="checkbox"/>	Wetland with between 10-50% coverage by organic soil (ie. Mainly mineral or undersignated soils, any wetland type)	= 6
<input checked="" type="checkbox"/>	Marshes and swamps with more than 50% coverage by organic soil	= 9
<input type="checkbox"/>	Wetland with less than 10% soils organic	= 0
		Carbon Sink Score (maximum 9 points) <b>9</b>

### 3.5 SHORELINE EROSION CONTROL

From the wetland vegetation map determine the **Dominant** vegetation type within the erosion zone for **lacustrine and riverine site type areas only**. Score according to the factors listed below.

#### Step 1:

	Wetland entirely isolated or palustrine	=	0 pts
x	Any part of the Wetland riverine or lacustrine	=	Go to step 2

**Step 2:** Choose the one characteristic that best describes the shoreline vegetation see page 112 for description of “shoreline”.)

15	Trees and shrubs	=	15 pts
	Emergent vegetation	=	8
	Submergent vegetation	=	6
	Other shoreline vegetation	=	3
	No vegetation	=	0

Shoreline Erosion Control Score (maximum 15 points)	<b>15</b>
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### 3.6 GROUNDWATER DISCHARGE

Circle the characteristics that best describe the wetland being evaluated and then sum the scores. If the sum exceeds 30 points, assign the maximum score of 30). Note: for wetland type, wetland type scored does not have to be the dominant type in the wetland.

		Potential for Discharge					
		None to Little		Some		High	
Wetland Characteristics	Wetland type Presence/Absence	Bog = 0		Swamp/Marsh = 2	2	Fen = 5	
	Basin Topography	Flat/rolling = 0	0	Hilly = 2		Steep = 5	
	Wetland area: Upslope catchment area	Large (>50%) = 0	0	Moderate (5-50%) = 2		Small (<5%) = 5	
	Lagg Development	None found = 0		Minor = 2	2	Extensive = 5	
	Seeps	None = 0	0	≤ 3 seeps = 2		> 3 seeps = 5	
	Iron precipitates	None = 0	0	≤ 3 sites = 2		> 3 sites = 5	
	Surface marl deposits	None = 0	0	≤3 sites = 2		> 3 sites = 5	
	Wetland pH	Low<4.2=0		Moderate 4.2-5.7 = 5	5	High > 5.7 =10	
	Catchment soil coverage	Patchy=0	0	Thin (<20cm) = 2		Thick = 5	
	Catchment soil permeability	Low= 0		Moderate = 2	2	High = 5	
	Totals		0		11		0

Additional Comments/Notes:

Field Observation: A. Ingriselli, 2015

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Groundwater Discharge Score (maximum 30 points)	<b>11</b>
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## 4.0 SPECIAL FEATURES

### COMPONENT

## 4.1 RARITY

### 4.1.1 Wetland Types

Wetland type (Check one or more)

<input checked="" type="checkbox"/>	Bog
<input checked="" type="checkbox"/>	Fen
<input checked="" type="checkbox"/>	Swamp
<input checked="" type="checkbox"/>	Marsh

Ecoregion/Ecodistrict		Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	Big Trout Lake	20	20	0	10
3E	Lake Abitibi	20	20	10	0
3W	Lake Nipigon	20	20	10	0
3S	Lake St. Joseph	20	20	10	0
4E	Lake temagami	20	20	10	0
4W	Pigeon River	20	10	20	0
4S	Wabigoon Lake	20	10	20	0
5E-1	Thessalon	10	0	30	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E13	Western Sault Ste. Marie-Lake Superior Coast	20	0	10	30
5-S	Lake of the Wood	10	10	20	10

Score (maximum 70 points)

**70**

## 4.1.2 Species

### 4.1.2.1 Reproductive Habitat for an Endangered or Threatened Species

Under the "Activity" column, when scoring animal species, record what the animal was doing when observed (e.g., nesting, courtship, singing, etc).

	Common Name	Scientific Name	Activity	Date Observed	Info Source
		#N/A			
		#N/A			
		#N/A			
		#N/A			
		#N/A			
		#N/A			
		#N/A			
<b>0</b>	Total				

For each species score 250 points. (Score is cumulative, no maximum score)

Additional Notes/Comments:

None observed. Field observation; AECOM, 2015

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Reproductive Habitat for Endangered or Threatened Species (no maximum)	<b>0</b>
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#### 4.1.2.2 Traditional Migration or Feeding Habitat for an Endangered or Threatened Species

Under the "Activity" column, when scoring animal species, record what the animal was doing when observed (e.g., nesting, courtship, singing, feeding, resting etc). Dates that species has been recorded using the wetland must be included in the table below.

	Common Name	Scientific Name	Activity	Date Observed	Info Source
150	Blanding's Turtle	<i>Emydoidea blandingii</i>	Basking	Numerous 2011-2015	AECOM, 2015
75	Massasauga	<i>Sistrurus catenatus</i>	Basking	Numerous 2011-2015	AECOM, 2015
		#N/A			
		#N/A			
		#N/A			
		#N/A			
		#N/A			
225	Total				

For one species score 150 points; for each additional species score 75 points. (Score is cumulative)

Additional Notes/Comments:

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Traditional Habitat for Endangered or Threatened Species (no maximum)	<b>225</b>
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#### 4.1.2.3 Provincially Significant Animal Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
Canada Warbler	Cardellina Canadensis	Singing	Multiple	AECOM, 2015
Snapping Turtle	Chelydra serpentina	Basking	Multiple	AECOM, 2015
Eastern Wood-Pewee	Contopus virens	Singing	Multiple	AECOM, 2015
	#N/A			
	#N/A			
	#N/A			
	#N/A			

Additional Notes/Comments:

Field Observation: AECOM, 2015

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One species = 50 pts	9 species = 140	17 species = 160
2 species = 80	10 species = 143	18 species = 162
3 species = 95	11 species = 146	19 species = 164
4 species = 105	12 species = 149	20 species = 166
5 species = 115	13 species = 152	21 species = 168
6 species = 125	14 species = 154	22 species = 170
7 species = 130	15 species = 156	23 species = 172
8 species = 135	16 species = 158	24 species = 174
		25 species = 176

*Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)*

Provincially Significant Plant Species (no maximum)	<b>95</b>
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#### 4.1.2.4 Provincially Significant Plant Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			

Additional Notes/Comments:

None observed

1 species = 50 pts	9 species = 140	17 species = 160
2 species = 80	10 species = 143	18 species = 162
3 species = 95	11 species = 146	19 species = 164
4 species = 105	12 species = 149	20 species = 166
5 species = 115	13 species = 152	21 species = 168
6 species = 125	14 species = 154	22 species = 170
7 species = 130	15 species = 156	23 species = 172
8 species = 135	16 species = 158	24 species = 174
		25 species = 176

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species (no maximum)	<b>0</b>
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#### 4.1.2.5 Regionally Significant Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			

One species = 20 pts	4 species = 45	7 species = 58 pts
2 species = 30	5 species = 50	8 species = 61
3 species = 40	6 species = 55	9 species = 64
		10 species = 67

For each significant species over 10 in wetland, add 1 point.

Regionally Significant Species Score (no maximum score)	<b>0</b>
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#### 4.1.2.6 Locally Significant Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			

One species = 10 pts	4 species = 31 pts	7 species = 43 pts
2 species = 17	5 species = 38	8 species = 45
3 species = 24	6 species = 41	9 species = 47
		10 species = 49

For each significant species over 10 in wetland, add 1 point.

Locally Significant Species Score (no maximum score)	<b>0</b>
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#### 4.1.2.7 Species of Special Status

##### Black Duck

Suitable breeding habitat present and within assessment range (Figure 25)

Assessment Category	Check One	Points
20-40 Indicated Pairs/100km sq		= 20
10-20 Indicated Pairs/100 km sq	x	= 15
5-10 Indicated Pairs/100 km sq		= 10
1-5 Indicated Pairs/100km sq		= 5
Habitat not suitable		= 0
Out of assessment range		= 0

Black Duck Score (no maximum score)	<b>15</b>
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SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<b>PTERIDOPHYTES</b>		<b>FERNS &amp; ALLIES</b>						
<i>Woodwardia virginica</i>	Virginia Chain Fern	10	-5	0	S4	G5	-	-
<i>Pteridium aquilinum var. latiusculum</i>	Eastern Bracken-fern	2	3	0	S5	G5T	-	-
<i>Dryopteris marginalis</i>	Marginal Wood Fern	5	3	0	S5	G5	-	-
<i>Dryopteris cristata</i>	Crested Wood Fern	7	-5	0	S5	G5	-	-
<i>Onoclea sensibilis</i>	Sensitive Fern	4	-3	0	S5	G5	-	-
<i>Athyrium filix-femina</i>	Lady Fern						-	-
<i>Gymnocarpium dryopteris</i>	Oak Fern	7	0	0	S5	G5	-	-
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	5	-2	0	S5	G5	-	-
<i>Matteuccia struthiopteris</i>	Ostrich Fern	5	-3	0	S5	G5	-	-
<i>Dryopteris sp.</i>	Wood Fern						-	-
<i>Equisetum sylvaticum</i>	Wood Horsetail	7	-3	0	S5	G5	-	-
<i>Equisetum arvense</i>	Field Horsetail	0	0	0	S5	G5	-	-
<i>Equisetum fluviatile</i>	Water Horsetail	7	-5	0	S5	G5	-	-
<i>Equisetum hyemale var. affine</i>	Scouring-rush	2	-2	0	S5	G5T5	-	-
<i>Lycopodium dendroideum</i>	Prickly Tree Club-moss	7	0	0	S5	G5	-	-
<i>Lycopodiella inundata</i>	Nothern Bog Club-moss	9	-5	0	S5	G5	-	-
<i>Huperzia lucidula</i>	Shining Fir-moss	7	-1	0	S5	G5	-	-
<i>Osmunda regalis var. spectabilis</i>	Royal Fern	7	-5	0	S5	G5T	-	-
<i>Osmunda cinnamomea</i>	Cinnamon Fern	7	-3	0	S5	G5	-	-
<i>Osmunda claytoniana</i>	Interrupted Fern	7	-1	0	S5	G5	-	-
<i>Polypodium virginianum</i>	Rock Polypody Fern	6	5	0	S5	G5	-	-
<i>Thelypteris palustris var. pubescens</i>	Marsh Fern	5	-4	0	S5	G5T?	-	-
<i>Phegopteris connectilis</i>	Northern Beech Fern	8	5	0	S5	G5	-	-
<b>GYMNOSPERMS</b>		<b>CONIFERS</b>						
<i>Juniperus communis</i>	Common Juniper	4	3	0	S5	G5	-	-
<i>Thuja occidentalis</i>	Eastern White Cedar	4	-3	0	S5	G5	-	-
<i>Larix laricina</i>	Tamarack	7	-3	0	S5	G5	-	-
<i>Picea mariana</i>	Black Spruce	8	-3	0	S5	G5	-	-
<i>Pinus banksiana</i>	Jack Pine	9	3	0	S5	G5	-	-
<i>Pinus strobus</i>	Eastern White Pine	4	3	0	S5	G5	-	-
<i>Picea glauca</i>	White Spruce	6	3	0	S5	G5	-	-
<i>Abies balsamea</i>	Balsam Fir	5	-3	0	S5	G5	-	-
<b>DICOTYLEDONS</b>		<b>DICOTS</b>						
<i>Acer rubrum</i>	Red Maple	4	0	0	S5	G5	-	-
<i>Acer spicatum</i>	Mountain Maple	6	3	0	S5	G5	-	-
<i>Rhus typhina</i>	Staghorn Sumac				S5	G5	-	-
<i>Toxicodendron radicans ssp. negundo</i>	Poison-ivy	5	-1	0	S5	G5T	-	-
<i>Sium suave</i>	Hemlock Water-parsnip	4	-5	0	S5	G5	-	-
<i>Apocynum androsaemifolium ssp. androsaemifolium</i>	Spreading Dogbane	3	5	0	S5	G5T?	-	-
<i>Nemopanthus mucronatus</i>	Mountain-holly	8	-5	0	S5	G5	-	-
<i>Ilex verticillata</i>	Winterberry	5	-4	0	S5	G5	-	-
<i>Ilex mucronata</i>	Catberry				S5	G5	-	-
<i>Ilex sp.</i>							-	-
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	4	3	0	S5	G5	-	-
<i>Eurybia macrophylla</i>	Large-leaved Aster	5	5	0	S5	G5	-	-
<i>Lactuca biennis</i>	Biennial Lettuce	6	0	0	S5	G5	-	-
<i>Solidago rugosa ssp. rugosa</i>	Rough Goldenrod	4	-1	0	S5	G5T?	-	-
<i>Symphotrichum umbellatus var. umbellatus</i>	Flat-top White Aster	6	-3	0	S5	G5T?	-	-
<i>Eupatorium maculatum</i>	Spotted Joe-pye-weed	3	-5	0	S5	G5T5	-	-
<i>Euthamia graminifolia</i>	Flat-topped Bushy Goldenrod	2	-2	0	S5	G5	-	-
<i>Solidago canadensis</i>	Canada Goldenrod	1	3	0	S5	G5	-	-
<i>Symphotrichum puniceum var. puniceum</i>	Purple-stemmed Aster	0	0	0	S5	G5T?	-	-
<i>Hieracium aurantiacum</i>	Devil's Paintbrush	0	5	-2	SE5	G?	-	-
<i>Arctium minus</i>	Common Burdock						-	-
<i>Solidago sp.</i>	Goldenrod						-	-
<i>Aster sp.</i>	Aster						-	-
<i>Eupatorium perfoliatum</i>	Perfoliate Thoroughwort/Boneset	2	-4	0	S5	G5	-	-
<i>Leucanthemum vulgare</i>	Ox-eye Daisy	0	5	-1	SE5	G?	-	-

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Symphotrichum</i> sp.							-	-
<i>Eutrochium maculatum</i>	Spotted Joe Pye Weed						-	-
<i>Symphotrichum borealis</i>	Rush Aster	10	-5	0	S5	G5	-	-
<i>Bidens cernua</i>	Stick-tight	2	-5	0	S5	G5	-	-
<i>Anaphalis margaritacea</i>	Pearly Everlasting	3	5	0	S5	G5	-	-
<i>Impatiens capensis</i>	Spotted Touch-me-not	4	-3	0	S5	G5	-	-
<i>Alnus incana</i> spp. <i>rugosa</i>	Speckled Alder	6	-5	0	S5	G5T5	-	-
<i>Betula papyrifera</i>	White Birch	0	2	0	S5	G5	-	-
<i>Corylus cornuta</i>	Beaked Hazel	5	5	0	S5	G5T	-	-
<i>Cardamine diphylla</i>	Two-leaved Toothwort	7	5	0	S5	G5	-	-
<i>Armoracia lacustris</i>	Lake-cress						-	-
<i>Brasenia schreberi</i>	Water-shield	7	-5	0	S5	G5	-	-
<i>Diervilla lonicera</i>	Bush Honeysuckle	5	5	0	S5	G5	-	-
<i>Viburnum nudum</i> var. <i>cassinoides</i>	Northern Wild Raisin						-	-
<i>Sambucus nigra</i> ssp. <i>canadensis</i>	Common Elderberry						-	-
<i>Sambucus canadensis</i>	American Elderberry						-	-
<i>Symphoricarpos albus</i>	Snowberry	7	4	0	S5	G5	-	-
<i>Viburnum lentago</i>	Nannyberry	4	-1	0	S5	G5	-	-
<i>Sambucus</i> sp.	Elderberry						-	-
<i>Cornus canadensis</i>	Bunchberry	7	0	0	S5	G5	-	-
<i>Cornus stolonifera</i>	Red-osier Dogwood				S5	G5	-	-
<i>Cornus racemosa</i>	Red Panicked Dogwood/Gray dogwood	2	-2	0	S5	G5?	-	-
<i>Cornus sericea</i>	Red-osier Dogwood	2	-3	0	S5	G5	-	-
<i>Drosera rotundifolia</i>	Round-leaved Sundew	7	-5	0	S5	G5	-	-
<i>Arctostaphylos uva-ursi</i>	Common Bearberry	8	5	0	S5	G5	-	-
<i>Chamaedaphne calyculata</i>	Leatherleaf	9	-5	0	S5	G5	-	-
<i>Gaultheria procumbens</i>	Wintergreen	6	3	0	S5	G5	-	-
<i>Kalmia angustifolia</i>	Sheep Laurel	9	0	0	S5	G5	-	-
<i>Kalmia polifolia</i>	Bog Laurel	10	-5	0	S5	G5	-	-
<i>Ledum groenlandicum</i>	Labrador-tea	9	-5	0	S5	G5	-	-
<i>Vaccinium angustifolium</i>	Low Sweet Blueberry	6	3	0	S5	G5	-	-
<i>Vaccinium oxycoccos</i>	Small Cranberry	10	-5	0	S5	G5	-	-
<i>Vaccinium myrtilloides</i>	Velvet-leaf Blueberry	7	-2	0	S5	G5	-	-
<i>Andromeda polifolia</i> ssp. <i>glaucophylla</i>	Bog Rosemary	10	-5	0	S5	G5T5	-	-
<i>Gaylussacia baccata</i>	Black Huckleberry	8	3	0	S4	G5	-	-
<i>Andromeda polifolia</i> ssp. <i>polifolia</i>	Wild Rosemary	0	0	0	S4	G5T5	-	-
<i>Vaccinium macrocarpon</i>	Large Cranberry	10	-5	0	S4S5	G4	-	-
<i>Quercus rubra</i>	Red Oak	6	3	0	S5	G5	-	-
<i>Corydalis</i> sp.	Corydalis						-	-
<i>Geranium bicknellii</i>	Bicknell's Crane's-bill	5	5	0	S4	G5	-	-
<i>Ribes glandulosum</i>	Skunk Currant	6	-3	0	S5	G5	-	-
<i>Ribes triste</i>	Wild Red Currant	6	-5	0	S5	G5	-	-
<i>Ribes americanum</i>	Wild Black Currant	4	-3	0	S5	G5	-	-
<i>Ribes lacustre</i>	Swamp Black Currant	7	-3	0	S5	G5	-	-
<i>Ribes</i> sp.							-	-
<i>Ribes cynosbati</i>	Prickly Gooseberry	4	5	0	S5	G5	-	-
<i>Ribes hirtellum</i>	Smooth Gooseberry	6	-3	0	S5	G5	-	-
<i>Triadenum fraseri</i>	Fraser's St. John's-wort	7	-5	0	S5	G4G5	-	-
<i>Hypericum perforatum</i>	Common St. John's-wort	0	5	-3	SE5	G?	-	-
<i>Myriophyllum sibiricum</i>	Pale Water-milfoil	0	-5	0	S5	G5	-	-
<i>Myriophyllum</i> sp.							-	-
<i>Proserpinaca palustris</i>	Field Mermaid-weed	7	-5	0	S4	G5	-	-
<i>Myriophyllum verticillatum</i>	Whorled Water-milfoil	7	-5	0	S5	G5	-	-
<i>Mentha arvensis</i>	American Wild Mint	3	-3	0	S5		-	-
<i>Lycopus uniflorus</i>	Northern Water-horehound	5	-5	0	S5	G5	-	-
<i>Utricularia intermedia</i>	Flat-leaved Bladderwort	8	-5	0	S5	G5	-	-
<i>Utricularia vulgaris</i>	Greater Bladderwort	4	-5	0	S5	G5	-	-
<i>Menyanthes trifoliata</i>	Three-leaved Buckbean	9	-5	0	S5	G5	-	-
<i>Myrica gale</i>	Sweet Gale	6	-5	0	S5	G5	-	-
<i>Comptonia peregrina</i>	Sweetfern	7	5	0	S5	G5	-	-



SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Nymphaea odorata</i>	Fragrant Water-lily	0	0	0	S5	G5	-	-
<i>Nuphar variegata</i>	Bulhead Pond-lily	4	-5	0	S5	G5	-	-
<i>Nymphaea</i> sp.	Water-lily						-	-
<i>Nuphar</i> sp.	Pond-lily						-	-
<i>Nuphar lutea</i> ssp. <i>pumila</i>	Yellow Pond-lily						-	-
<i>Fraxinus nigra</i>	Black Ash	7	-4	0	S5	G5	-	-
<i>Circaea lutetiana</i> ssp. <i>canadensis</i>	Enchanter's Nightshade	3	3	0	S5	G5T5	-	-
<i>Epilobium ciliatum</i>	Hairy Willow-herb				S5	G5	-	-
<i>Epilobium angustifolium</i>	Fireweed						-	-
<i>Polygonum cilinode</i>	Fringed Black Bindweed	2	5	0	S5	G5	-	-
<i>Polygonum</i> sp.							-	-
<i>Polygonum amphibium</i>	Water Smartweed	5	-5	0	S5	G5	-	-
<i>Trientalis borealis</i> ssp. <i>borealis</i>	Star-flower	6	-1	0	S5	G5T?	-	-
<i>Lysimachia thyrsiflora</i>	Tufted Loosestrife	7	-5	0	S5	G5	-	-
<i>Lysimachia terrestris</i>	Swamp Loosestrife	6	-5	0	S5	G5	-	-
<i>Lysimachia ciliata</i>	Fringed Loosestrife	4	-3	0	S5	G5	-	-
<i>Lysimachia</i> sp.	Loosestrife						-	-
<i>Pyrola asarifolia</i>	Pink Pyrola	7	-3	0	S5	G5	-	-
<i>Chimaphila umbellata</i>	Common Pipsissewa				S5	G5	-	-
<i>Aquilegia canadensis</i>	Wild Columbine	5	1	0	S5	G5	-	-
<i>Coptis trifolia</i>		7	-3	0	S5	G5T5	-	-
<i>Caltha palustris</i>	Marsh-marigold	5	-5	0	S5	G5	-	-
<i>Actaea rubra</i>	Red Baneberry	5	5	0	S5	G5	-	-
<i>Clematis virginiana</i>	Virgin's-bower	3	0	0	S5	G5	-	-
<i>Ranunculus abortivus</i>	Kidney-leaf Buttercup	2	-2	0	S5	G5	-	-
<i>Ranunculus recurvatus</i> var. <i>recurvatus</i>	Hooked Buttercup	4	-3	0	S5	G5	-	-
<i>Thalictrum pubescens</i>	Tall Meadow-rue	5	-2	0	S5	G5	-	-
<i>Ranunculus pensylvanicus</i>	Bristly Buttercup	3	-5	0	S5	G5	-	-
<i>Anemone canadensis</i>	Canada Anemone	3	-3	0	S5	G5	-	-
<i>Ranunculus acris</i>	Tall Buttercup	0	0	-2	SE5	G5	-	-
<i>Thalictrum dasycarpum</i>	Purple Meadow-rue	8	-2	0	S4?	G5	-	-
<i>Amelanchier arborea</i>	Downy Juneberry	0	3	0	S5	G5	-	-
<i>Aronia melanocarpa</i>	Black chokeberry	7	-3	0	S5	G5	-	-
<i>Fragaria vesca</i> ssp. <i>americana</i>	Woodland Strawberry	4	4	0	S5	G5T?	-	-
<i>Prunus pumila</i>	Sand Cherry						-	-
<i>Rubus idaeus</i>	Red Raspberry	0	0	0	SE1	G5T5	-	-
<i>Rubus pubescens</i>	Dwarf Raspberry	4	-4	0	S5	G5	-	-
<i>Prunus virginiana</i>	Choke Cherry						-	-
<i>Rubus flagellaris</i>	Prickly Raspberry	4	4	0	S4	G5	-	-
<i>Spiraea latifolia</i>	Broad-leaved Meadow-sweet				S5	G5	-	-
<i>Amelanchier laevis</i>	Smooth Juneberry	5	5	0	S5	G4G5Q	-	-
<i>Spiraea alba</i>	Narrow-leaved Meadow-sweet	3	-4	0	S5	G5	-	-
<i>Geum aleppicum</i>	Yellow Avens	2	-1	0	S5	G5	-	-
<i>Rubus allegheniensis</i>	Alleghany Blackberry	2	2	0	S5	G5	-	-
<i>Rubus hispidus</i>	Trailing Blackberry	6	-3	0	S4S5	G5	-	-
<i>Spiraea tomentosa</i>	Tomentose Meadow-sweet	5	-3	0	S4S5	G5	-	-
<i>Comarum palustre</i>	Marsh Cinquefoil						-	-
<i>Spiraea</i> sp.	Meadow-sweet						-	-
<i>Fragaria virginiana</i>	Virginia Strawberry						-	-
<i>Prunus serotina</i>	Black Cherry	3	3	0	S5	G5	-	-
<i>Rosa palustris</i>	Marsh Rose	7	-5	0	S5	G5	-	-
<i>Sorbus americana</i>	American Mountain-ash	8	-1	0	S5	G5	-	-
<i>Potentilla norvegica</i>	Norwegian cinquefoil				S5	G5	-	-
<i>Potentilla arguta</i>	Tall Cinquefoil	7	5	0	S4	G5	-	-
<i>Galium aparine</i>	Cleavers	4	3	0	S5	G5	-	-
<i>Galium triflorum</i>	Sweet-scented Bedstraw	4	2	0	S5	G5	-	-
<i>Galium palustre</i>	Marsh Bedstraw	5	-5	0	S5	G5	-	-
<i>Populus tremuloides</i>	Trembling Aspen	2	0	0	S5	G5	-	-
<i>Salix</i> sp.	Willow						-	-
<i>Salix petiolaris</i>	Slender Willow	3	-4	0	S5	G4	-	-

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<i>Populus grandidentata</i>	Large-tooth Aspen	5	3	0	S5	G5	-	-
<i>Salix bebbiana</i>	Long-beaked Willow	4	-4	0	S5	G5	-	-
<i>Salix discolor</i>	Pussy Willow	3	-3	0	S5	G5	-	-
<i>Salix pyrifolia</i>	Balsam Willow	10	-4	0	S5	G5	-	-
<i>Comandra umbellata</i>	Bastard Toad-flax	6	3	0	S5	G5	-	-
<i>Sarracenia purpurea</i>	Pitcher-plant	10	-5	0	S5	G5	-	-
<i>Ulmus americana</i>	White Elm	3	-2	0	S5	G5?	-	-
<i>Urtica dioica ssp. dioica</i>	European Stinging Nettle	0	-1	-1	SE2	G5T?	-	-
<i>Laportea canadensis</i>	Wood Nettle	6	-3	0	S5	G5	-	-
<i>Viola macloskeyi</i>	Smooth White Violet				S5	G5	-	-
<i>Viola cucullata</i>	Marsh Blue Violet	5	-5	0	S5	G4G5	-	-
<i>Viola canadensis</i>	Canada Violet	6	5	0	S5	G5	-	-
<i>Viola palustris</i>	Marsh Violet	0	0	0	SU	G5	-	-
<b>MONOCOTYLEDONS</b>								
<i>Arisaema triphyllum</i>	Small Jack-in-the-pulpit	5	-2	0	S5	G5T5	-	-
<i>Calla palustris</i>	Wild Calla	8	-5	0	S5	G5	-	-
<i>Eriophorum sp.</i>	Cotton-grass						-	-
<i>Scirpus cyperinus</i>	Wool-grass	4	-5	0	S5	G5	-	-
<i>Carex sp.</i>							-	-
<i>Carex aquatilis</i>	Aquatic Sedge	7	-5	0	S5	G5	-	-
<i>Carex deweyana</i>	Dewey's Sedge	6	4	0	S5	G5	-	-
<i>Carex stricta</i>	Tussock Sedge	4	-5	0	S5	G5	-	-
<i>Carex blanda</i>	Woodland Sedge	3	0	0	S5	G5?	-	-
<i>Carex crinita</i>	Fringed Sedge	6	-4	0	S5	G5	-	-
<i>Carex gracillima</i>	Graceful Sedge	4	3	0	S5	G5	-	-
<i>Carex intumescens</i>	Bladder Sedge	6	-4	0	S5	G5	-	-
<i>Carex lacustris</i>	Lake-bank Sedge	5	-5	0	S5	G5	-	-
<i>Carex arctata</i>	Drooping Wood Sedge	5	5	0	S5	G5?	-	-
<i>Eriophorum virginicum</i>	Virginia Cotton-grass	10	-5	0	S5	G5	-	-
<i>Scirpus sp.</i>	Bulrush						-	-
<i>Carex utriculata</i>	Beaked Sedge	7	-5	0	S5	G5	-	-
<i>Eriophorum vaginatum ssp. spissum</i>	Sheathed Cotton-grass	10	-5	0	S5	G5T5	-	-
<i>Dulichium arundinaceum</i>	Reed-like Three-way Sedge	7	-5	0	S5	G5	-	-
<i>Scirpus atrovirens</i>	Dark-green Bulrush	3	-5	0	S5	G5?	-	-
<i>Eriophorum viridi-carinatum</i>	Thin-leaved Cotton-grass	9	-5	0	S5	G4	-	-
<i>Carex magellanica ssp. irrigua</i>	Stunted Sedge	10	-5	0	S5	G5T?	-	-
<i>Carex oligosperma</i>	Few-seeded Sedge	10	-5	0	S4	G4	-	-
<i>Carex tenuiflora</i>	Sparse-flowered Sedge	10	-5	0	S5	G5	-	-
<i>Carex canescens ssp. canescens</i>	Silvery Sedge	7	-5	0	S5	G5T?	-	-
<i>Carex disperma</i>	Soft-leaved Sedge	8	-5	0	S5	G5	-	-
<i>Scirpus microcarpus</i>	Small-fruited Bulrush	4	-5	0	S5	G5	-	-
<i>Carex interior</i>	Inland Sedge	6	-5	0	S5	G5	-	-
<i>Carex lasiocarpa</i>	Slender Sedge	8	-5	0	S5	G5	-	-
<i>Carex brunnescens ssp. brunnescens</i>	Brownish Sedge	7	-3	0	S5	G5T?	-	-
<i>Carex echinata ssp. echinata</i>	Prickly Sedge	7	-5	0	S5	G5T5	-	-
<i>Carex scoparia</i>	Pointed Broom Sedge	5	-3	0	S5	G5	-	-
<i>Carex pellita</i>	Woolly Sedge	4	-5	0	S5	G5	-	-
<i>Carex stipata</i>	Awl-fruited Sedge	3	-5	0	S5	G5	-	-
<i>Carex lupulina</i>	Hop Sedge	6	-5	0	S5	G5	-	-
<i>Carex siccata</i>	Silvery-flowered Hay Sedge	0	0	0	S5	G5	-	-
<i>Iris versicolor</i>	Multi-coloured Blue-flag	5	-5	0	S5	G5	-	-
<i>Iris sp.</i>	Iris						-	-
<i>Sisyrinchium montanum</i>	Montane Blue-eyed-grass	0	-1	0	S5	G5	-	-
<i>Juncus effusus</i>	Common rush	0	0	0			-	-
<i>Juncus bufonius</i>	Toad Rush	1	-4	0	S5	G5	-	-
<i>Juncus validus</i>	Roundhead Rush						-	-
<i>Juncus sp.</i>	Rush						-	-
<i>Lemna minor</i>	Lesser Duckweed	2	-5	0	S5	G5	-	-
<i>Maianthemum canadense</i>	Wild Lily-of-the-valley	5	0	0	S5	G5	-	-
<i>Maianthemum trifolium</i>	Three-leaved Solomon's Seal	10	-5	0	S5	G5	-	-

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<i>Polygonatum pubescens</i>	Hairy Solomon's Seal	5	5	0	S5	G5	-	-
<i>Clintonia borealis</i>	Bluebead-lily	7	-1	0	S5	G5	-	-
<i>Trillium erectum</i>	Purple Trillium	6	1	0	S5	G5	-	-
<i>Trillium grandiflorum</i>	White Trillium	5	5	0	S5	G5	-	-
<i>Cypripedium acaule</i>	Moccasin Flower	7	-3	0	S5	G5	-	-
<i>Poa sp.</i>							-	-
<i>Calamagrostis canadensis</i>	Blue-joint Grass	4	-5	0	S5	G5	-	-
<i>Deschampsia flexuosa</i>	Common Hairgrass	8	5	0	S5	G5	-	-
<i>Brachyelytrum erectum</i>	Bearded Short-husk	7	5	0	S4S5	G5	-	-
<i>Glyceria striata</i>	Fowl Meadow Grass	3	-5	0	S5	G5	-	-
<i>Cinna latifolia</i>	Broad-leaved Reed Grass	7	-4	0	S5	G5	-	-
<i>Phragmites australis</i>	Common Reed	0	-4	0	S5	G5	-	-
<i>Poa palustris</i>	Fowl Meadow Grass	5	-4	0	S5	G5	-	-
<i>Phalaris arundinacea</i>	Reed Canary Grass	0	-4	0	S5	G5	-	-
<i>Poa annua</i>	Annual Blue Grass	0	1	-2	SE5	G?	-	-
<i>Bromus inermis</i>	Awnless Brome				SNA	G5TNR	-	-
<i>Agrostis stolonifera</i>	Redtop	0	-3	0	S5	G5	-	-
<i>Pontederia cordata</i>	Heart-leaved Pickerel-weed	7	-5	0	S5	G5	-	-
<i>Sparganium emersum ssp. acaule</i>	Stemless Bur-reed	0	0	0	SU		-	-
<i>Sparganium angustifolium</i>	Narrow-leaved Bur-reed	9	-5	0	S4?	G5	-	-
<i>Sparganium fluctuans</i>	Floating Bur-reed	9	-5	0	S4?	G5	-	-
<i>Sparganium eurycarpum</i>	Broad-fruited Bur-reed	3	-5	0	S5	G5	-	-
<i>Typha latifolia</i>	Broad-leaved Cattail	3	-5	0	S5	G5	-	-
<i>Typha angustifolia</i>	Narrow-leaved Cattail	3	-5	0	S5	G5	-	-
<i>Typha sp.</i>	Cattail						-	-
<b>ASCOMYCETES</b>	<b>LICHENS</b>							
<i>Cladonia rangiferina</i>	Grey Reindeer Lichen				S5	G5	-	-
<b>BRYOPSIDA</b>	<b>MOSESSES</b>							
<i>Aulacomnium palustre</i>	Glow Moss				S5	G5	-	-
<i>Dicranum polysetum</i>	Wavy Moss				S5	G5	-	-
<i>Dicranum montanum</i>	Montane Dicranum Moss				S5	G5	-	-
<i>Dicranum ontariense</i>	Ontario Dicranum Moss				S5	G4G5	-	-
<i>Polytrichum sp.</i>	Haircap Moss						-	-
<i>Polytrichum commune</i>	Common Haircap Moss				S5	G5	-	-
<i>Polytrichum strictum</i>	Bog Haircap Moss				S5	G4	-	-
<b>SPHAGNOPSIDA</b>	<b>MOSESSES</b>							
<i>Sphagnum sp.</i>	Peat Moss						-	-
<i>Sphagnum girgensohnii</i>	Common Green Peat Moss				S5	G5	-	-
<i>Sphagnum capillifolium</i>	Northern Peat Moss				S5	G5	-	-
<i>Sphagnum angustifolium</i>	Cuspidate Peat Moss				S5	G5	-	-
<i>Sphagnum squarrosum</i>	Squarrose Peat Moss				S5	G5	-	-
<i>Sphagnum fuscum</i>	Common Brown Sphagnum				S5	G5	-	-
<b>AVIFAUNA</b>								
<i>Corvus brachyrhynchos</i>	American Crow				S5B	G5	-	-
<i>Picoides dorsalis</i>	American Three-toed Woodpecker				S4	G5	-	-
<i>Scolopax minor</i>	American Woodcock				S4B	G5	-	-
<i>Haliaeetus leucocephalus</i>	Bald Eagle				S2N, S4B	G5	SC	-
<i>Strix varia</i>	Barred Owl				S5	G5	-	-
<i>Setophaga castanea</i>	Bay-breasted Warbler				S5B	G5	-	-
<i>Mniotilta varia</i>	Black-and-white Warbler				S5B	G5	-	-
<i>Picoides arcticus</i>	Black-backed Woodpecker				S4	G5	-	-
<i>Poecile atricapillus</i>	Black-capped Chickadee				S5	G5	-	-
<i>Setophaga virens</i>	Black-throated Green Warbler				S5B	G5	-	-
<i>Cyanocitta cristata</i>	Blue Jay				S5	G5	-	-
<i>Buteo platypterus</i>	Broad-winged Hawk				S5B	G5	-	-
<i>Bucephala albeola</i>	Bufflehead				S4	G5	-	-
<i>Branta canadensis</i>	Canada Goose				S5	G5	-	-
<i>Cardellina pusilla</i>	Canada Warbler				S4B	G5	THR	THR
<i>Setophaga pensylvanica</i>	Chestnut-sided Warbler				S5B	G5	-	-
<i>Gavia immer</i>	Common Loon				S5B,S5N	G5	-	-

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Chordeiles minor</i>	Common Nighthawk				S4B	G4	SC	THR
<i>Geothlypis trichas</i>	Common Yellowthroat				S5B	G5	-	-
<i>Junco hyemalis</i>	Dark-eyed Junco				S5	G5	-	-
<i>Picoidese pubescens</i>	Downy Woodpecker				S5	G5	-	-
<i>Sayornis phoebe</i>	Eastern Pheobe				S5B	G5	-	-
<i>Caprimulgus vociferus</i>	Eastern Whip-poor-will				S4B	G5	THR	THR
<i>Contopus virens</i>	Eastern Wood-Pewee				S4B	G5	-	-
<i>Regulus satrapa</i>	Golden-crowned Kinglet				S5B	G5	-	-
<i>Perisoreus canadensis</i>	Gray Jay				S5	G5	-	-
<i>Ardea herodias</i>	Great blue Heron				S4	G5	-	-
<i>Tringa melanoleuca</i>	Greater Yellowlegs				S4B, S4N	G5	-	-
<i>Picoides villosus</i>	Hairy Woodpecker				S5	G5	-	-
unknown	Hawk Sp.				-	-	-	-
<i>Catharus guttatus</i>	Hermit Thrush				S5B	G5	-	-
<i>Charadrius vociferus</i>	Killdeer				S5B, S5N	G5	-	-
<i>Setophaga kirtlandii</i>	Kirtland's Warbler				S1B	G1	END	END
<i>Anas platyrhynchos</i>	Mallard				S5	G5	-	-
<i>Oreothlypis ruficapilla</i>	Nashville Warbler				S5B	G5	-	-
<i>Colaptes auratus</i>	Northern Flicker				S4B	G5	-	-
<i>Accipiter gentilis</i>	Northern Goshawk				S4	G5	-	-
<i>Parkesia noveboracensis</i>	Northern Waterthrush				S5B	G5	-	-
<i>Contopus cooperi</i>	Olive-sided Flycatcher				S4B	G4	SC	THR
<i>Pandion haliaetus</i>	Osprey				S5B	G5	-	-
<i>Seiurus aurocapilla</i>	Ovenbird				S4B	G5	-	-
<i>Hyalomus pileatus</i>	Pileated Woodpecker				S5	G5	-	-
<i>Pinicola enucleator</i>	Pine Grosbeak				S4B	G5	-	-
<i>Corvus corax</i>	Common Raven				S5	G5	-	-
<i>Sitta canadensis</i>	Red-breasted Nuthatch				S5	G5	-	-
<i>Vireo olivaceus</i>	Red-eyed Vireo				S5B	G5	-	-
<i>Buteo jamaicensis</i>	Red-tailed Hawk				S5	G5	-	-
<i>Aythya collaris</i>	Ring-neck Duck				S5	G5	-	-
<i>Bonasa umbellus</i>	Ruffed Grouse				S4	G5	-	-
<i>Euphagus carolinus</i>	Rusty Blackbird				S4B	G4	-	SC
<i>Grus canadensis</i>	Sandhill Crane				S5B	G5	-	-
<i>Falciennis canadensis</i>	Spruce Grouse				S5	G5	-	-
<i>Picoides dorsalis</i>	Three-toed Woodpecker				S4	G5	-	-
<i>Cathartes aura</i>	Turkey Vulture				S5B	G5	-	-
<i>Zonotrichia albicollis</i>	White-throated Sparrow				S5B	G5	-	-
<i>Troglodytes troglodytes</i>	Winter Wren				S5B	G5	-	-
<i>Aix sponsa</i>	Wood Duck				S5	G5	-	-
<i>Hylocichla mustelina</i>	Wood Thrush				S4B	G5	-	THR
<i>Setophaga petechia</i>	Yellow Warbler				S5B	G5	-	-
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker				S5B	G5	-	-
<i>Setophaga coronata</i>	Yellow-rumped Warbler				S5B	G5	-	-
<b>HERPETOFAUNA</b>								
<i>Lithobates catesbeianus</i>	American Bullfrog				S4	G5	-	-
<i>Anaxyrus americanus</i>	American Toad				S5	G5	-	-
<i>Emydoidea blandingii</i>	Blanding's Turtle				S3	G4	THR	THR
<i>Plestiodon fasciatus pop. 2</i>	Common Five-lined Skink (Southern Shield population)				S3	G5T3	SC	SC
<i>Thamnophis sirtalis sirtalis</i>	Eastern Gartersnake				S5	G5T5	-	-
<i>Hemidactylium scutatum</i>	Four-toed Salamander				S4	G5	-	-
<i>Lithobates clamitans</i>	Green Frog				S5	G5	-	-
<i>Hyla versicolor</i>	Gray Treefrog				S5	G5	-	-
<i>Sistrurus catenatus pop. 1</i>	Massasauga (Great Lakes / St. Lawrence population)				S3	GN3	THR	THR
<i>Midland painted Turtle</i>	Midland painted Turtle				S4	G5T5	-	-
<i>Mink Frog</i>	Mink Frog				S5	G5	-	-
<i>Northern Leopard Frog</i>	Northern Leopard Frog				S5	G5	-	-
<i>Northern Watersnake</i>	Northern Watersnake				S5	G5T5	-	-

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Red-bellied Snake</i>	Red-bellied Snake				S5	G5	-	-
<i>Ring-necked Snake</i>	Ring-necked Snake				S4	G5	-	-
<i>Smooth Greensnake</i>	Smooth Greensnake				S4	G5	-	-
<i>Spring Peeper</i>	Spring Peeper				S5	G5	-	-
<i>Wood Frog</i>	Wood Frog				S5	G5	-	-
<b>MAMMALS</b>								
<i>American Marten</i>	American Marten				S5	G5	-	-
<i>Beaver</i>	Beaver				S5	G5	-	-
<i>Black Bear</i>	Black Bear				S5	G5	-	-
<i>Eastern Chipmunk</i>	Eastern Chipmunk				S5	G5	-	-
<i>Eastern Gray Squirrel</i>	Eastern Gray Squirrel				S5	G5	-	-
<i>Meadow Vole</i>	Meadow Vole				S5	G5	-	-
<i>Vole sp.</i>	Vole sp.				-	-	-	-
<i>Moose</i>	Moose				S5	G5	-	-
<i>North American River Otter</i>	North American River Otter				S5	G5	-	-
<i>Northern Gray Wolf</i>	Northern Gray Wolf				S4	G4TNR	-	-
<i>Porcupine</i>	Porcupine				S5	G5	-	-
<i>Red Squirrel</i>	Red Squirrel				S5	G5	-	-
<i>White-tailed Deer</i>	White-tailed Deer				S5	G5	-	-
<i>Lynx (sighting unconfirmed)</i>	Lynx (sighting unconfirmed)				S5	G5	-	-
<i>Fox</i>	Fox				S5	G5	-	-
<i>Wolf Sp.</i>	Wolf Sp.				-	-	-	-
<b>INSECT</b>								
<i>Springtails</i>	Springtails				-	-	-	-
<i>Grasshopper Sp.</i>	Grasshopper Sp.				-	-	-	-
<i>Spring Azure</i>	Spring Azure				SU	G4G5	-	-

## 4.2 SIGNIFICANT FEATURES AND HABITATS

### 4.2.1 Colonial Waterbirds

Record all available information. Score the highest applicable category. Include additional information as possible (e.g., nest locations, etc).

Activity	Species	Info Source	Points
Currently nesting	Great Blue Heron	J. Kamstra, 2015	= 50
Known to have nested within the past 5 years			= 25
Active feeding area (great blue heron excluded)			= 15
None known			= 0
<b>Total:</b>			<b>0</b>

Additional Notes/Comments:

None Observed: 2011-2015

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Colonial Waterbird Nesting Score (maximum 50 points)	<b>0</b>
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### 4.2.2 Winter Cover for Wildlife

Score highest appropriate category. Include rationale/sources of information.

Provincially significant	=	100 pts
Significant in Ecoregion	=	50
Significant in Ecodistrict	=	25
Locally significant	=	10
<b>0</b> Little or poor winter cover	=	<b>0</b>
<b>0</b>		

Species/habitat/vegetation community scored (e.g., winter deer cover in hemlock swamp, S3 and S4b):

Field observation; Kristan Washburn, 2015

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Source of information:

Discussions with Aylmer District Office

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Winter Cover for Wildlife Score (maximum 100 points)	<b>0</b>
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### 4.2.3 Waterfowl Staging and/or Moulting Areas

Check highest level of significance for both staging and moulting; add scores for staging and for moulting together for final score. However, maximum score for evaluation under this section is 150 points.

	Staging		Moulting	
Nationally/internationally significant	=	150 pts	=	150 pts
Provincially significant	=	100	=	100
Significant in the Ecoregion	=	50	=	50
Significant in Ecodistrict	=	25	=	25
Known to occur	=	10 x	=	10 x
Not possible/Unknown	=	0	=	0
Subtotal:		10		10
Subtotal:		20		

Species/habitat/vegetation community scored (e.g., approx 20 mallards in W3):

4 Canada Goose and 10 Bufflehead in neF5. 6 Canada Goose and 2 Bufflehead in fW1. 20 Bufflehead in suW1.

Over 796 individual birds of a waterfowl species were identified within the entire HIWEC study area during 2013 field surveys conducted by Stantec. Strong indication that this wetland complex is a significant staging area for the ecodistrict. Waterfowl moulting is not known.

Source of information:

Field Observation: J. Kamstra April 24 and May 13, 2015, Stantec, 2013

Waterfowl Staging/Moulting Score (maximum 150 points)	<b>20</b>
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### 4.2.4 Waterfowl Breeding

Check highest level of significance.

	Nationally/internationally significant	=	150 pts
	Provincially significant	=	100
	Significant in the Ecoregion	=	50
	Significant in Ecodistrict	=	25
<b>x</b>	Habitat Suitable	=	10
	Habitat not suitable	=	0
<b>10</b>			

Species/habitat/vegetation community scored (e.g., mallard in W3):

Canada Goose, American Black Duck, Mallard, Common Loon and Wood Duck were confirmed breeding within the WET-002 wetland complex. Exact location and vegetation community undetermined.

Source of information:

Field observation: LGL, 2011-2012

Waterfowl Breeding Score (maximum 100 points)	<b>10</b>
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### 4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area

Check highest level of significance.

	Nationally / internationally significant	=	150 pts
	Provincially significant	=	100
	Significant in Ecoregion	=	50
	Significant in Ecodistrict	=	25
<b>x</b>	Known to occur	=	10
	Not possible / Unknown	=	0
<b>10</b>	Species/habitat/vegetation community scored:		

Raptors observed during migration surveys within the study area included: Turkey Vulture, American Kestrel,

Bald Eagle, Boad-winged Hawk, Merlin, Northern Goshawk, Northern Harrier, Osprey, Red-tailed Hawk, Sharp-shinned Hawk. There is the strong possibility that some of these species may be using the WET-002 wetland complex as a stopover area.

Source of information:

Field Observation: Stantec, 2013

Passerine, Shorebird or Raptor Stopover Score (maximum 100 points)	<b>10</b>
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### 4.2.6 Ungulate Habitat

EVALUATION:

Score (1) + (2) + one of (3) to (6)

<input checked="" type="checkbox"/> 15	1. Ungulate summer cover	=	15
<input type="checkbox"/>	2. Mineral licks	=	50
<input type="checkbox"/>	3. Moose aquatic feeding area Class 1	=	0
<input type="checkbox"/>	4. Moose aquatic feeding area Class 2	=	10
<input type="checkbox"/>	5. Moose aquatic feeding area Class 3	=	20
<input type="checkbox"/>	6. Moose aquatic feeding area Class 4	=	35

(Score is cumulative for a maximum possible score of 100)

Ungulat Habitat Score	<b>15</b>
(maximum 100 points)	

### 4.2.7 Fish Habitat

#### 4.2.6.1 Spawning and Nursery Habitat

Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5- 4.9	0.2
5.0- 9.9	0.4
10.0- 14.9	0.6
15.0 -19.9	0.8
20.0+ ha	1.0

#### Step 1:

- Fish habitat is not present within the wetland Go to Step 7, Score 0 points
- Fish habitat is present within the wetland Go to Step 2

#### Step 2: Choose only one option

- Significance of the spawning and nursery habitat within the wetland is known Go to Step 3
- Significance of the spawning and nursery habitat within the wetland is not known Go through Steps 4, 5 and 6

#### Step 3: Select the highest appropriate category below, attach documentation:

- Significant in Ecoregion Go to Step 7, 100 points
- Significant in Ecodistrict Go to Step 7, 50
- Locally Significant Habitat (5.0+ ha) Go to Step 7, 25
- Locally Significant Habitat (<5.0 ha) Go to Step 7, 15

**Subtotal:** **0**

Source of information:

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#### Step 4: Low Marsh = the 'permanent' marsh area, from the existing water line out to the outer boundary of the wetland.

- Low marsh not present Go to Step 5
- Low marsh present Continue through Step 4, scoring as noted below



### Scoring of Low Marsh:

1. Check the appropriate **Vegetation Group** (see Appendix 7) for each Low Marsh community. (Based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community.)
2. Sum the areas (ha) of the vegetation communities assigned to each **Vegetation Group**.
3. Use these areas to assign an **Area Factor** for each checked **Vegetation Group**.
4. Multiply the **Area Factor** by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for Low Marsh**.

Scoring for Presence of Key Vegetation Groups – Low Marsh						
Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
1	Tallgrass				6	0.0
2	Shortgrass-Sedge				11	0.0
3	Cattail-Bulrush-Burreed	x	0.84	0.2	5	1.0
4	Arrowhead-Pickerelweed				5	0.0
5	Duckweed				2	0.0
6	Smartweed-Waterwillow				6	0.0
7	Waterlily-Lotus	x	44.42	1	11	11.0
8	Waterweed-Watercress				9	0.0
9	Ribbongrass				10	0.0
10	Coontail-Naiad-Watermilfoil	x	3.67	0.2	13	2.6
11	Narrowleaf Pondweed				5	0.0
12	Broadleaf Pondweed				8	0.0
Sub Total Score						14.6
Total Score (maximum 75 points)						14.6

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5- 4.9	0.2
5.0- 9.9	0.4
10.0- 14.9	0.6
15.0 -19.9	0.8
20.0+ ha	1.0

**Step 5:** High Marsh = the 'seasonal' marsh area, from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as a wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.

High marsh not present

*Go to Step 6*

High marsh present

*Continue through Step 5, scoring as noted below*

**Scoring of High Marsh:**

1. Check the appropriate **Vegetation Group** (see Appendix 7) for each High Marsh community. (Based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community.)
2. Sum the areas (ha) of the vegetation communities assigned to each **Vegetation Group**.
3. Use these areas to assign an **Area Factor** (from Table 8) for each checked **Vegetation Group**.
4. Multiply the **Area Factor** by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for High Marsh**.

Scoring for Presence of Key Vegetation Groups – High Marsh							
Vegetation Group Number	Vegetation Name	Group	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
1	Tallgrass					6	0.0
2	Shortgrass-Sedge		x	11.59	1	11	11.0
3	Cattail-Bulrush-Burreed					5	0.0
4	Arrowhead-Pickerelweed					5	0.0
Sub Total Score							11.0
Total Score for High Marsh ( <i>maximum 25 points</i> )							11.0

*Continue to Step 6*

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5- 4.9	0.2
5.0- 9.9	0.4
10.0- 14.9	0.6
15.0 -19.9	0.8
20.0+ ha	1.0

**Step 6:**

**Scoring of Swamp:**

1. Determine the total area (ha) of seasonally flooded swamp communities within the wetland containing fish habitat and record below.
2. Determine the total area (ha) of permanently flooded swamp communities within the wetland containing fish habitat and record below.
3. Use these areas to assign an **Area Factor** (from Table 8).
4. Multiply the Area Factor by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for Swamp**.

Scoring Swamps for Fish Habitat (Seasonally flooded; Permanently flooded)					
Swamp Containing Fish Habitat	Present (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
Seasonally Flooded Swamp	x	0.03	<b>0.2</b>	10	<b>2.0</b>
Permanently Flooded Swamp				10	<b>0.0</b>
Sub Total Score					<b>2.0</b>
Total Score for Swamp ( <i>maximum 20 points</i> )					<b>2.0</b>

*Continue to Step 7*

**Step 7: CALCULATION OF FINAL SCORE**

NOTE: Scores for Steps 4, 5 and 6 are only recorded if Steps 1 and 3 have not been scored.

A. Score from Step 1 (fish habitat present)	=	<b>0</b>
B. Score from Step 3 (significance known)	=	<b>0</b>
C. Score from Step 4 (Low Marsh)	=	<b>14.6</b>
D. Score from Step 5 (High Marsh)	=	<b>11.0</b>
E. Score from Step 6 (Swamp)	=	<b>2.0</b>
Subtotal:		<b>27.6</b>

Calculation of Final Score for Spawning and Nursery Habitat = A or B or Sum of C, D, and E

Score for Spawning and Nursery Habitat (maximum 100 points)	<b>28</b>
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### 4.2.7.2 Migration and Staging Habitat

#### Step 1:

- |  |                              |
|--|------------------------------|
| <input type="checkbox"/> Staging or Migration Habitat is not present in the wetland  | Go to Step 4, Score 0 points |
| <input type="checkbox"/> Staging or Migration Habitat is present in the wetland<br>significance of the habitat is known                | Go to Step 2                 |
| <input checked="" type="checkbox"/> Staging or Migration Habitat is present in the wetland<br>significance of the habitat is not known | Go to Step 3                 |

#### Step 2:

 Select the highest appropriate category below. Ensure that documentation is attached to the data record.

- |  |                           |
|--|---------------------------|
| <input type="checkbox"/> Significant in Ecoregion  | Score 25 points in Step 4 |
| <input type="checkbox"/> Significant in Ecodistrict                                      | Score 15 points in Step 4 |
| <input type="checkbox"/> Locally Significant   | Score 10 points in Step 4 |
| <input type="checkbox"/> Fish staging and/or migration habitat present, but not as above | Score 5 points in Step 4  |

Source of information:

Field observation; AECOM, 2015

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#### Step 3:

 Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Refer to Site Types recorded earlier (section 1.1.3). Attach documentation.

- |   |                           |
|---|---------------------------|
| <input type="checkbox"/> Wetland is riverine at rivermouth or lacustrine at rivermouth              | Score 25 points in Step 4 |
| <input type="checkbox"/> Wetland is riverine, within 0.75 km of rivermouth                          | Score 15 points in Step 4 |
| <input type="checkbox"/> Wetland is lacustrine, within 0.75 km of rivermouth                        | Score 10 points in Step 4 |
| <input checked="" type="checkbox"/> Fish staging and/or migration habitat present, but not as above | Score 5 points in Step 4  |

#### Step 4:

 Enter a score from only one of the three above Steps.

Score for Staging and Migration Habitat (maximum 25 points)	<b>5</b>
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### 4.3 Ecosystem Age

	Fractional Area		Scoring
Bog =	0.05	x 25 =	1.3
Fen, on deeper soils; floating mats or marl =	0.28	x 20 =	5.6
Fen, on limestone rock =	0.00	x 5 =	0.0
Swamp =	0.36	x 3 =	1.1
Marsh =	0.30	x 0 =	0.0
Sub Total:			7.9

Ecosystem Age Score (maximum 25 points)	<b>8</b>
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### 4.4 Great Lakes Coastal

#### Wetlands

Choose one only. Only coastal wetland units may be scored.

<input type="checkbox"/>	wetland < 10 ha	=	0 pts
<input type="checkbox"/>	wetland 10- 50 ha	=	25
<input type="checkbox"/>	wetland 51 -100 ha	=	50
<input checked="" type="checkbox"/>	wetland > 100 ha	=	75

Great Lakes Coastal Wetland Score (maximum 75 points)	<b>75</b>
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**5.0 DOCUMENTATION OF  
WETLAND FEATURES NOT  
INCLUDED IN THE EVALUATION**

**5.1 INVASIVE SPECIES**

Attach documentation of invasive species found in wetland (include location information and a coarse estimate of abundance [F = few, C = fairly common, A = abundant]):

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**5.2 VERNAL POOLS**

Documentation of information on vernal pools encountered during the wetland evaluation but not included as part of the evaluated wetland.

Vernal pools observed throughout most wetland communities. Due to scale they were not all documented.

Field observation: AECOM, 2015

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## 5.3 SPECIES OF SPECIAL INTEREST

### 5.3.1 Osprey

Check all that apply:

- Present and nesting
- Known to have nested in last 5 yr
- Feeding area for osprey
- Not as above

### 5.3.2 Common Loon

Check all that apply:

- Nesting in wetland
- Feeding at edge of wetland
- Observed or heard on lake or river adjoining the wetland
- Not as above

## 5.4 IMPORTANT DRINKING WATER AREA

Wetland located within:  
(check all that apply)

- Wellhead Protection Area
- Intake Protection Zone
- Significant Recharge Area
- Vulnerable Aquifer Area

Source of information:

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Additional Comments:

No additional comments.

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**5.5 Area of Wetland**

**Restoration Potential**

Check all that apply. Attach additional pages if necessary.

- Area of wetland restoration potential adjacent to evaluated wetland unit(s)
- Area of wetland restoration potential within 750m of evaluated wetland unit(s), but not adjacent
- Area of wetland restoration potential encountered elsewhere
- Area currently functioning as wetland (e.g., showing signs of degradation but still mapped as wetland).
- Adjacent Wetland Unit (if applicable): \_\_\_\_\_
- GPS Coordinates of Site: \_\_\_\_\_

Description of site (e.g., current land use, wetland characteristics of site, etc) and why it is identified as an area of restoration potential:

\_\_\_\_\_  
All wetlands for the most part undisturbed.  
\_\_\_\_\_  
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Additional Notes/Comments (e.g., adjacent lands, etc)

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**General Information**

**Wetland Evaluator(s)**

Name: Kristan Washburn, 2015 Affiliation: AECOM

Name: Jillian deMan, 2015 Affiliation: AECOM

Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_

Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_

Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_

Date(s) wetland visited (in field): April 6-July 6

Date evaluation completed: \_\_\_\_\_ 16-Jul-14

Estimated time devoted to completing the field survey in person hours: 2460 hrs

**Weather Conditions**

i) at time of field work: varied from -10 to +30. Had a mix of sunshine, rain and snow

ii) summer conditions in general: Typical summer conditions

## WETLAND EVALUATION SCORING

### RECORD

Wetland Name: Henvey Inlet Wetland WET-002

#### 1.0 BIOLOGICAL COMPONENT

##### 1.1 PRODUCTIVITY

<b>13.3</b>	1.1.1 Growing Degree-Days/Soils
<b>9.2</b>	1.1.2 Wetland Type
<b>2.0</b>	1.1.3 Site Type

##### 1.2 BIODIVERSITY

<b>30.0</b>	1.2.1 Number of Wetland Types
<b>23.0</b>	1.2.2 Vegetation Communities
<b>7.0</b>	1.2.3 Diversity of Surrounding Habitat
<b>8.0</b>	1.2.4 Proximity to Other Wetlands
<b>30.0</b>	1.2.5 Interspersion
<b>14.0</b>	1.2.6 Open Water Type

**50** 1.3 SIZE (Biological Component)

**186** Subtotal  
**186** TOTAL (Biological Component)

## 2.0 SOCIAL COMPONENT

### 2.1 ECONOMICALLY VALUABLE PRODUCTS

<b>9</b>	2.1.1 Wood Products
<b>2</b>	2.1.2 Low Bush Cranberry
<b>0</b>	2.1.3 Wild Rice
<b>12</b>	2.1.4 Commercial Fish (Bait Fish and/or Coarse Fish)
<b>12</b>	2.1.5 Furbearers

### **28** 2.2 RECREATIONAL ACTIVITIES

### 2.3 LANDSCAPE AESTHETICS

<b>3</b>	2.3.1 Distinctness
<b>7</b>	2.3.2 Absence of Human Disturbance

### 2.4 EDUCATION AND PUBLIC AWARENESS

<b>0</b>	2.4.1 Educational Uses
<b>0</b>	2.4.2 Facilities and Programs
<b>5</b>	2.4.3 Research and Studies

### **16** 2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT

### **10** 2.6 OWNERSHIP

### **18** 2.7 SIZE (Social Component)

### **30** 2.8 ABORIGINAL AND CULTURAL VALUES

- 2.8.1 Aboriginal Values
- 2.8.2 Cultural Heritage

**152** Subtotal

**152** TOTAL (Social Component)

### 3.0 HYDROLOGICAL COMPONENT

<b>0</b>	3.1 FLOOD ATTENUATION
	3.2 WATER QUALITY IMPROVEMENT
<b>18.6</b>	3.2.1 Site Type
<b>4.0</b>	3.2.2 Soil Recharge Potential
	3.3 WATER QUALITY IMPROVEMENT
<b>25</b>	3.3.1 Watershed Improvement Factor
<b>0.0</b>	3.3.2 Adjacent and Watershed Land Use
<b>8.0</b>	3.3.3. Vegetation Form
<b>9</b>	3.4 CARBON SINK
<b>15</b>	3.5 SHORELINE EROSION CONTROL
<b>11</b>	3.6 GROUNDWATER DISCHARGE
<b>90</b>	Subtotal
<b>90</b>	TOTAL (Hydrological Component)

## 4.0 SPECIAL FEATURES COMPONENT

### 4.1 RARITY

<b>70</b>	4.1.1 Wetlands
	4.1.2 Species
<b>0</b>	4.1.2.1 Reproductive Habitat for an Endangered or Threatened Species
<b>225</b>	4.1.2.2 Traditional Migration or Feeding Habitat for an Endangered or Threatened Species
<b>95</b>	4.1.2.3 Provincially Significant Animal Species
<b>0</b>	4.1.2.4 Provincially Significant Plant Species
<b>0</b>	4.1.2.5 Regionally Significant Species
<b>0</b>	4.1.2.6 Locally Significant Species
<b>15</b>	4.1.2.7 Species of Special Status

### 4.2 SIGNIFICANT FEATURES OR HABITATS

<b>0</b>	4.2.1 Colonial Waterbirds
<b>0</b>	4.2.2 Winter Cover for Wildlife
<b>20</b>	4.2.3 Waterfowl Staging and/or Moulting Areas
<b>10</b>	4.2.4 Waterfowl Breeding
<b>10</b>	4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area
<b>15</b>	4.2.6 Ungulate Habitat
<b>28</b>	4.2.7 Fish Habitat

### 4.3 ECOSYSTEM AGE

**8**

### 4.4 GREAT LAKES COASTAL WETLANDS

**75**

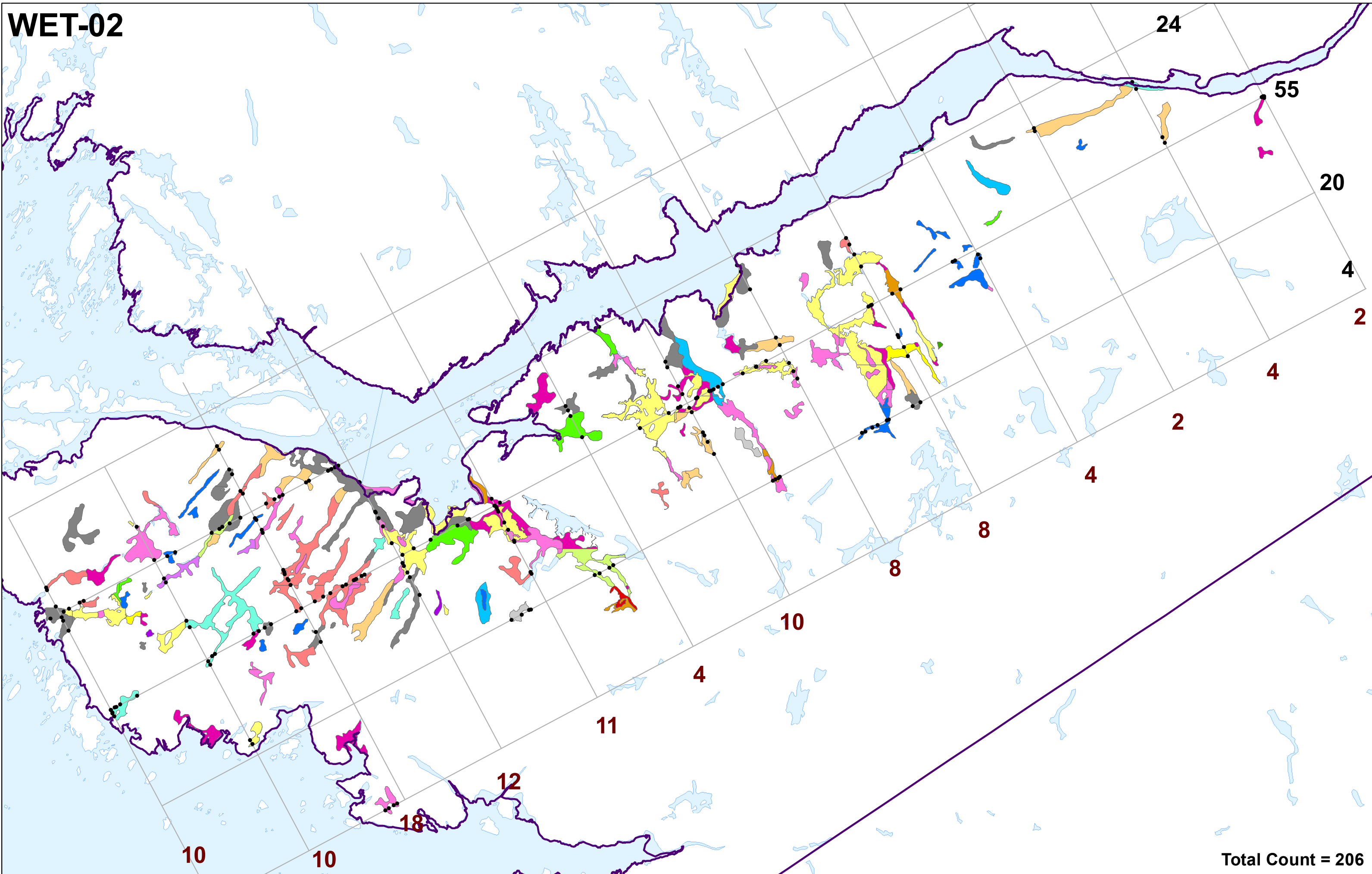
<b>501</b>	Subtotal
<b>250</b>	<b>TOTAL (Special Features Component)</b>

**SUMMARY OF EVALUATION RESULT**

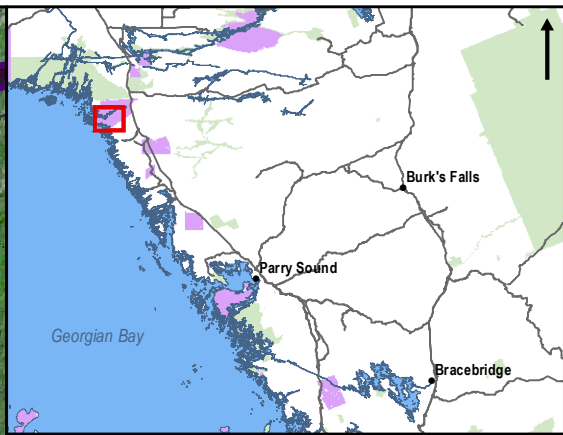
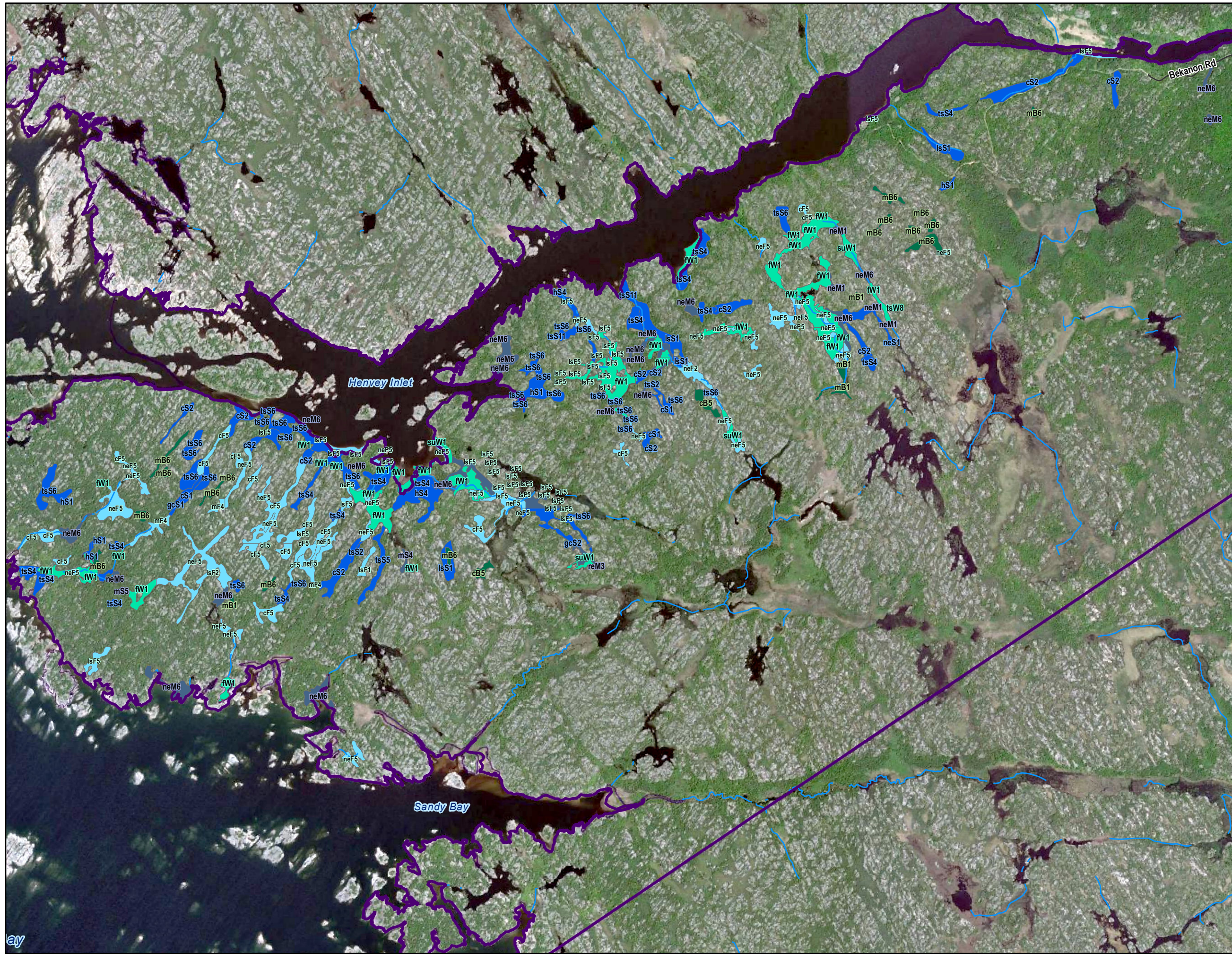
<u><b>186</b></u>	1.0	TOTAL FOR BIOLOGICAL COMPONENT
<u><b>152</b></u>	2.0	TOTAL FOR SOCIAL COMPONENT
<u><b>90</b></u>	3.0	TOTAL FOR HYDROLOGICAL COMPONENT
<u><b>250</b></u>	4.0	TOTAL FOR SPECIAL FEATURES COMPONENT
<u><b>678</b></u>		TOTAL WETLAND SCORE

FOR MNR USE ONLY	
MNR Reviewer (Name & Position)	
Reviewer Comments	
MNR Approver (Name & Position)	
Approval Date	

**WET-02**



**Total Count = 206**

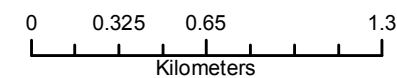


**OWES Communities**

- Bog
- Fen
- Swamp
- Open Water Marsh
- Marsh

**Base Layers**

- Major Roads
- Highway
- Trails
- Railway
- Watercourses
- Henvey Inlet First Nation Reserve No. 2



**Henvey Inlet Wind Energy Centre**

OWES Communities - Complex WET-02

September 2015	1:28,000	Datum: NAD 83, Zone 17 Source: LIO
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P#: 60341251	V#:
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**Figure 2**



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Map location: AECOM\Projects\60341251\Henvey\WindDesign\Final\_Report\SiteInvestigation\Wetlands\_OWES\_20150906.mxd  
Date saved: 09/01/15 10:52:42 PM



## Henvey Inlet Wetland WET-003

Wetland Evaluation Edition

1st

July 29, 2015

### Comments

The following evaluation was conducted using field studies completed by: AECOM in 2015, Stantec in 2013, and LGL in 2011 and 2012. Wetland polygons were identified through fieldwork completed in 2013 and 2015 using colour ortho-aerial photography from 2013. This wetland complex is approximately 957 ha in size and composed of a mosaic of bog, fen, marsh and swamp wetland types. Three site types found within this wetland complex with lacustrine wetlands influenced by Georgian Bay, isolated bogs relying on atmospheric moisture, and palustrine wetlands influenced by surface flow and watercourses. Swamps and fens were the most abundant wetland type observed within the wetland complex (35% coverage). These wetlands consisted of dominant: Black Spruce (*Picea Tamarack (Larix laricina)*), Speckled Alder (*Alnus incana*), American Mountain Holly (*Nemopanthus mucronatus*), Leatherleaf (*Chamaedaphne calyculata*), Labrador Tea (*Ledum groenlandicum*), Canada Mayflower (*Mainthemum canadense*), Three-leaved Solomon's Seal (*Mainthemum trifolium*) Spahgnum Moss (*Sphagnum spp.*). Dominant plant species within Fens included: Tamarack (*Larix laricina*) Sheep Laurel (*Kalmia angustifolia*), Leatherleaf a variety of sedge species (*Carex spp.*) and Spahgnum mosses. Marsh wetland comprised 26% of the wetlands within the complex. Marshes, including open water marshes, contained a dominant mixture of: Sedge species as well as robust emergent plants (*Typha latifolia*), floating (*Nuphar variegatum*) and free floating (*Lemna minor*) species. Bogs also occurred within this wetland complex although not abundant (6% coverage). Bogs within this complex were composed of dominant: Leatherleaf (*Chamaedaphne calyculata*) a variety of Sedge species and Spahgnum Mosses. Migration, feeding and hibernation habitat for endangered and threatened species was identified within this complex as well as provincially significant species.

### Additional Information

Include relevant information that can not be entered in the wetland data record( Ex. Sections that have not been completed.)

<b>Official Name:</b>	Henvey Inlet Wetland WET-003		
<b>Evaluation Edition:</b>	1st	<b>Version:</b>	1.3
<b>Wetland ID.:</b>	WET-003		
<b>Wetland Significance:</b>	Year/Month Last Evaluated	Not Evaluated	
	Year/Month Last Updated		
<b>Special Planning Considerations:</b>	Federal Land		<b>Scores</b>
<b>Wetland Area:</b>	957.00		Biological: 204
<b>Dentention Area:</b>	NA/Coastal Wetlands		Social: 155
<b>Catchment Area:</b>	NA/Coastal Wetlands		Hydrological: 93
<b>Coastal Unit Area:</b>	957.00		Special Features: 250
<b>OMNR Source</b>	Parry Sound District MNR		Overall: 703
<b>Information Source</b>	Field Observation: AECOM, 2015		
<b>Submitted by:</b>	Kristan Washburn		<b>Date</b> 10-Sep-15

**WETLAND EVALUATION DATA  
AND SCORING RECORD**

i) Wetland Name: Henvey Inlet Wetland WET-003

ii) MNR Administrative Region: Southern  
MNR District: Parry Sound  
MNR Area Office: Parry Sound

iii) Conservation Authority Jurisdiction: N/A

iv) County of Regional Municipality: Henvey Inlet 2 Indian Reserve

v) Township/Geographic Twp and/or Local Municipality: Key Harbour Area

vi) Lots & Concessions: N/A

vii) Ecodistrict/Ecoregion: 5 E-7

viii) Map and Air Photo References:

a) Latitude: 45.831765 Longitude: -80.619106

b) UTM grid reference:  
Zone: 17T Block: N/A E: 529632 N: 5075448

c) National Topographic Series:  
Map name(s): NTS Map - Key Harbour  
Map number(s): 41H/15  
Edition: 5  
Scale: 1: 50,000

d) Aerial photographs:  
Date(s) photo taken: 2013 Scale: 1:2500  
Flight & plate numbers: 2013 Colour Orthophotography

e) Ontario Base Map numbers & scale: Ontario Base Mapping 1:20000  
17 52005080, 52005070, 53005080, 53005070

Summary Form

Wetland Name:

Henvey Inlet Wetland WET-003

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
3	Is	Fen	IsF	5	1.10992	Palustrine	Clay-Loam	Is*,m,ne	3	0	-		<i>Is-Chamaedaphne calculata</i> , <i>Kalmia angustifolia</i> , <i>Kalmia Polifolia</i> , <i>m-Sphagnum spp</i> , <i>ne- Carex spp</i> , <i>Eriophorum spp</i>	see attached flora and fauna lists	
3	Is	Fen	IsF	5	1.17353	Palustrine	Clay-Loam	Is*,m,ne	3	0	-		<i>Is-Chamaedaphne calculata</i> , <i>Kalmia angustifolia</i> , <i>Kalmia Polifolia</i> , <i>m-Sphagnum spp</i> , <i>ne- Carex spp</i> , <i>Eriophorum spp</i>	see attached flora and fauna lists	
3	Is	Fen	IsF	5	1.32727	Palustrine	Sand	Is*,m,ne	3	0	-		<i>Is-Chamaedaphne calculata</i> , <i>Kalmia angustifolia</i> , <i>Kalmia Polifolia</i> , <i>m-Sphagnum spp</i> , <i>ne- Carex spp</i> , <i>Eriophorum spp</i>	see attached flora and fauna lists	
2	Is	Fen	IsF	5	2.84364	Palustrine	Sand	Is*,m,ne	3	0	-		<i>Is-Chamaedaphne calculata</i> , <i>Kalmia angustifolia</i> , <i>Kalmia Polifolia</i> , <i>m-Sphagnum spp</i> , <i>ne- Carex spp</i> , <i>Eriophorum spp</i>	see attached flora and fauna lists	
2	ts	Swamp	tsS	6	1.72728	Palustrine	Sand	ts*,m, gc	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>m-Sphagnum spp</i> , <i>gc- Maianthemum trifolia</i> , <i>Woodwardia virginica</i>	see attached flora and fauna lists	
2	Is	Fen	IsF	5	0.9125	Palustrine	Sand	Is*,m,ne	3	0	-		<i>Is-Chamaedaphne calculata</i> , <i>Kalmia angustifolia</i> , <i>Kalmia Polifolia</i> , <i>m-Sphagnum spp</i> , <i>ne- Carex spp</i> , <i>Eriophorum spp</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	5.02922	Palustrine	Clay-Loam	ne*,m,gc	4	50	2.51	LM	<i>ne-Carex spp</i> , <i>m-Sphagnum</i> , <i>gc-Viola palustris</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	2.18642	Palustrine	Fibric	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.32474	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.74816	Palustrine	Sand	ts*,m, gc	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>m-Sphagnum spp</i> , <i>gc- Maianthemum trifolia</i> , <i>Woodwardia virginica</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	1.06617	Palustrine	Sand	ne*,m,gc	3	50	0.53	LM	<i>ne-Carex spp</i> , <i>m-Sphagnum</i> , <i>gc-Viola palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	2.12643	Lacustrine	Sand	ts*,ne,m	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>ne -Carex lacustrine</i> , <i>Carex tenuiflora</i> , <i>Calla palustris</i> , <i>m- Sphagnum. Sp.</i>	see attached flora and fauna lists	
1	c	Swamp	cS	2	0.1729	Palustrine	Sand	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus</i> , <i>Pinus banksiana</i> , <i>h- Betula papyifera</i> , <i>m-Sphagnum moss</i> , <i>gc- Maianthemum canadensis</i> , <i>Cornus canadensis</i> , <i>Is-Ilex mucronata</i> , <i>Viburnum cassinoides</i> , <i>gaylussacia baccata</i>	see attached flora and fauna lists	
1	Is	Fen	IsF	5	0.05139	Palustrine	Clay-Loam	Is*,m,ne	3	0	-		<i>Is-Chamaedaphne calculata</i> , <i>Kalmia angustifolia</i> , <i>Kalmia Polifolia</i> , <i>m-Sphagnum spp</i> , <i>ne- Carex spp</i> , <i>Eriophorum spp</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	h	Swamp	hS	4	2.55316	Palustrine	Fibric	h*,m,gc	3	0	-		<i>h-Acer rubrum, Betula papyrifera, Populus tremuloides, m- Sphagnum moss, gc-Cornus canadensis, Trientalis borealis</i>	see attached flora and fauna lists	
1	c	Swamp	cS	2	1.76676	Lacustrine at River Mouth	Sand	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus, Pinus banksiana, h- Betula papyrifera, m-Sphagnum moss, gc-Maianthemum canadensis, Cornus canadensis, Is-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata</i>	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	12.2984	Palustrine	Sand	ls*	1	0	-		<i>Is-Chamaedaphne calyculata, Gaylussacia baccata, Kalmia angustifolia</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	4.1462	Palustrine	Humic-Mesic	ne*,m,ls	3	5	0.21		<i>ne-Carex spp, m- Sphagnum spp, Is-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.53025	Palustrine	Fibric	ne*,m,ls	3	5	0.03		<i>ne-Carex spp, m- Sphagnum spp, Is-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.55368	Palustrine	Sand	ts*,ne,m	3	0	-		<i>ts-Alnus incana, ne- Carex lasiocarpa, Carex lacustrina, m-Sphagnum spp</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	1.16205	Palustrine	Sand	ne*,m,gc	4	50	0.58	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	2.87048	Palustrine	Sand	ne*,m,gc	4	50	1.44	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	c	Swamp	cS	2	10.3578	Palustrine	Sand	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus, Pinus banksiana, h- Betula papyrifera, m-Sphagnum moss, gc-Maianthemum canadensis, Cornus canadensis, Is-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata</i>	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	13.4749	Palustrine	Sand	ls*	1	0	-		<i>Is-Chamaedaphne calyculata, Gaylussacia baccata, Kalmia angustifolia</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	4.90996	Palustrine	Fibric	ne*,m,ls	3	5	0.25		<i>ne-Carex spp, m- Sphagnum spp, Is-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	c	Swamp	cS	2	1.60781	Palustrine	Clay-Loam	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus, Pinus banksiana, h- Betula papyrifera, m-Sphagnum moss, gc-Maianthemum canadensis, Cornus canadensis, Is-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	1.00889	Palustrine	Fibric	ne*,m,ls	3	5	0.05		<i>ne-Carex spp, m- Sphagnum spp, Is-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.08976	Palustrine	Sand	ts*,ne,m	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.62302	Palustrine	Fibric	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	ts	Swamp	tsS	6	1.24851	Lacustrine at River Mouth	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.88336	Palustrine	Fibric	ne*,m,gc	3	50	0.44	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.01903	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.4565	Palustrine	Sand	ne*,m,gc	4	50	0.23	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	2.38164	Palustrine	Humic-Mesic	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.09233	Palustrine	Fibric	f*,ff	2	90	0.98	HM	<i>f-Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	5.54551	Palustrine	Sand	f*,ff	2	90	4.99	HM	<i>f-Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.6187	Palustrine	Humic-Mesic	f*,ff	2	90	0.56	HM	<i>f-Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.55184	Palustrine	Clay-Loam	f*,ff	2	90	0.50	HM	<i>f-Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	3.05	Palustrine	Fibric	f*,ff	2	90	2.75	HM	<i>f-Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.48061	Palustrine	Sand	ne*,m,ls	3	5	0.02		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.03325	Palustrine	Clay-Loam	ne*,m,ls	3	5	0.00		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.04471	Palustrine	Clay-Loam	ne*,m,ls	3	5	0.00		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.52864	Palustrine	Clay-Loam	ne*,m,ls	3	5	0.03		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.37881	Palustrine	Clay-Loam	ne*,m,ls	3	5	0.02		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.08009	Palustrine	Clay-Loam	ne*,m,ls	3	5	0.00		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.02498	Palustrine	Clay-Loam	ne*,m,ls	3	5	0.00		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.48847	Palustrine	Clay-Loam	f*,ff	2	90	1.34	HM	<i>f-Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.30195	Palustrine	Fibric	ne*,m,ls	3	5	0.02		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.51758	Palustrine	Fibric	ne*,m,ls	3	5	0.03		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	ne	Fen	neF	5	0.34739	Palustrine	Fibric	ne*,m,ls	3	5	0.02		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.41489	Palustrine	Fibric	ne*,m,ls	3	5	0.02		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.21006	Palustrine	Clay-Loam	ls*,m,ne	3	0	-		Is-Chamaedaphne calculata ,Kalmia angustifolia ,Kalmia Polifolia, m-Sphagnum spp , ne- Carex spp, Eriophorum spp	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.91596	Palustrine	Clay-Loam	ls*,m,ne	3	0	-		Is-Chamaedaphne calculata ,Kalmia angustifolia ,Kalmia Polifolia, m-Sphagnum spp , ne- Carex spp, Eriophorum spp	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.83819	Palustrine	Fibric	ne*,m,gc	4	50	0.42	LM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	re	Marsh	neM	7	0.00898	Palustrine	Sand	re*	1	90	0.01	HM	re-Typha spp	see attached flora and fauna lists	
1	c	Swamp	cS	2	2.49765	Palustrine	Fibric	c*,h,m,gc,ls	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, Is-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata	see attached flora and fauna lists	
1	m	Bog	mB	6	0.04934	Isolated	Fibric	m*	1	0	-		m-Sphagnum, gc-Vaccinium oxycoccus	see attached flora and fauna lists	
1	h	Swamp	hS	4	0.72518	Palustrine	Fibric	h*,m,gc	3	0	-		h-Acer rubrum, Betula papyrifera,Populus tremuloides, m- Sphagnum moss, gc-Cornus canadensis, Trientalis borealis	see attached flora and fauna lists	
1	ne	Marsh	neM	6	1.03552	Palustrine	Sand	ne*,m,gc	4	50	0.52	LM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.26495	Palustrine	Sand	f*,ff	2	90	0.24	HM	f- Lemna minor, Polygonum amphibium,Nuphar variegatum	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.42746	Palustrine	Sand	f*,ff	2	90	0.38	HM	f- Lemna minor, Polygonum amphibium,Nuphar variegatum	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.38806	Palustrine	Sand	ts*,ne,m	3	0	-		ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.29376	Palustrine	Fibric	ts*,ne,m	3	0	-		ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.13183	Palustrine	Sand	ne*,m,gc	4	50	0.07	LM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	c	Swamp	cS	2	0.39325	Palustrine	Clay-Loam	c*,h,m,gc,ls	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, Is-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.51242	Palustrine	Sand	ne*,m,gc	3	50	0.26	LM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	h	Swamp	hS	4	5.12536	Lacustrine	Sand	h*,m,gc	3	0	-		<i>h-Acer rubrum, Betula papyrifera, Populus tremuloides, m- Sphagnum moss, gc-Cornus canadensis, Trientalis borealis</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.3998	Palustrine	Sand	ne*,m,ls	3	5	0.02		<i>ne-Carex spp, m- Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.67445	Palustrine	Clay-Loam	ts*,ne,m	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.</i>	see attached flora and fauna lists	
1	c	Swamp	cS	2	1.31609	Palustrine	Clay-Loam	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus, Pinus banksiana, h- Betula papyrifera, m-Sphagnum moss, gc-Maianthemum canadensis, Cornus canadensis, ls-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata</i>	see attached flora and fauna lists	
1	c	Swamp	cS	2	2.2557	Palustrine	Sand	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus, Pinus banksiana, h- Betula papyrifera, m-Sphagnum moss, gc-Maianthemum canadensis, Cornus canadensis, ls-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	1.70858	Palustrine	Fibric	ne*,m,gc	4	50	0.85	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	c	Swamp	cS	2	0.81408	Palustrine	Fibric	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus, Pinus banksiana, h- Betula papyrifera, m-Sphagnum moss, gc-Maianthemum canadensis, Cornus canadensis, ls-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata</i>	see attached flora and fauna lists	
2	ts	Swamp	tsS	6	2.68256	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.14257	Palustrine	Sand	ts*,ne,m	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.69846	Palustrine	Silt	ne*,m,gc	4	50	0.35	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.74969	Palustrine	Clay-Loam	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	c	Swamp	cS	2	0.84164	Palustrine	Clay-Loam	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus, Pinus banksiana, h- Betula papyrifera, m-Sphagnum moss, gc-Maianthemum canadensis, Cornus canadensis, ls-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	c	Fen	cF	5	2.17364	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	1	2.16627	Palustrine	Fibric	ls*	1	0	-		<i>ls-Chamaedaphne calyculata, Kalmia, polifolia, Vaccinium angustifolium</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.31394	Palustrine	Fibric	ne*,m,gc	4	50	0.16	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	4.69557	Palustrine	Clay-Loam	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	3.36624	Palustrine	Clay-Loam	ts*,m, gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	1.80613	Palustrine	Fibric	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	4.68003	Palustrine	Fibric	ne*,m,ls	3	5	0.23		<i>ne-Carex spp, m- Sphagnum spp, ls- Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.41497	Palustrine	Sand	ts*,m, gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	m	Bog	mB	6	1.58187	Isolated	Sand	m*	1	0	-		<i>m-Sphagnum, gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.87087	Palustrine	Humic-Mesic	ne*,m,gc	4	50	0.44	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	7.62541	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	9.55493	Palustrine	Humic-Mesic	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	3.18101	Palustrine	Sand	ts*,m, gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	4.83671	Palustrine	Humic-Mesic	ne*,m,ls	3	5	0.24		<i>ne-Carex spp, m- Sphagnum spp, ls- Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.13954	Palustrine	Fibric	ne*,m,ls	3	5	0.01		<i>ne-Carex spp, m- Sphagnum spp, ls- Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.48289	Palustrine	Sand	ne*,m,gc	4	50	0.24	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.11521	Palustrine	Sand	ts*,ne,m	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.</i>	see attached flora and fauna lists	



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1	ls	Swamp	lsS	1	1.8608	Palustrine	Fibric	ls*	1	0	-		<i>Is-Chamaedaphne calyculata</i> , <i>Gaylussacia baccata</i> , <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	1.69803	Palustrine	Sand	ls*	1	0	-		<i>Is-Chamaedaphne calyculata</i> , <i>Gaylussacia baccata</i> , <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	1.49247	Palustrine	Silt	ls*	1	0	-		<i>Is-Chamaedaphne calyculata</i> , <i>Gaylussacia baccata</i> , <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	2.14995	Palustrine	Sand	ls*	1	0	-		<i>Is-Chamaedaphne calyculata</i> , <i>Gaylussacia baccata</i> , <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.77274	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.64881	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	1	3.58504	Palustrine	Sand	ne*,gc	2	50	1.79	LM	<i>ne-Carex crinita</i> , <i>Onoclea sensibilis</i> , <i>gs-Calamagrostis canadensis</i>	see attached flora and fauna lists	
1	su	Marsh	suW	1	4.73055	Palustrine	Humic-Mesic	su	1	90	4.26	HM	<i>su</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	7.62527	Palustrine	Sand	ne*,m,gc	4	50	3.81	LM	<i>ne-Carex spp</i> , <i>m-Sphagnum</i> , <i>gc-Viola palustris</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	5.94337	Palustrine	Fibric	ne*,m,gc	4	50	2.97	LM	<i>ne-Carex spp</i> , <i>m-Sphagnum</i> , <i>gc-Viola palustris</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	2.71779	Palustrine	Sand	ls*,m,ne	3	0	-		<i>Is-Chamaedaphne calyculata</i> , <i>Kalmia angustifolia</i> , <i>Kalmia Polifolia</i> , <i>m-Sphagnum spp</i> , <i>ne- Carex spp</i> , <i>Eriophorum spp</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.90714	Palustrine	Humic-Mesic	ts*,ne,m	3	0	-		<i>ts-Alnus incana</i> , <i>ne- Carex lasiocarpa</i> , <i>Carex lacustrina</i> , <i>m-Sphagnum spp</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	1.78305	Palustrine	Fibric	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.57238	Palustrine	Silt	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum spp</i> , <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	3.38486	Palustrine	Clay-Loam	ts*,ne,m	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>ne -Carex lacustrine</i> , <i>Carex tenuiflora</i> , <i>Calla palustris</i> , <i>m- Sphagnum. Sp.</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.89607	Palustrine	Sand	ts*,ne,m	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>ne -Carex lacustrine</i> , <i>Carex tenuiflora</i> , <i>Calla palustris</i> , <i>m- Sphagnum. Sp.</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	ts	Swamp	tsS	4	1.11053	Palustrine	Fibric	ts*,ne,m	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>ne-Carex lacustrine</i> , <i>Carex tenuiflora</i> , <i>Calla palustris</i> , <i>m-Sphagnum</i> . <i>Sp.</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.56823	Palustrine	Fibric	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum</i> spp, <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc-Thelypteris palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	1.27008	Palustrine	Sand	ne*,m,ls	3	5	0.06		<i>ne-Carex</i> spp, <i>m-Sphagnum</i> spp, <i>Is-Vaccinium oxycoccus</i> , <i>Potentilla palustris</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	5.69786	Palustrine	Sand	f*,ff	2	90	5.13	HM	<i>f-Lemna minor</i> , <i>Polygonum amphibium</i> , <i>Nuphar variegatum</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.15784	Palustrine	Fibric	f*,ff	2	90	1.04	HM	<i>f-Lemna minor</i> , <i>Polygonum amphibium</i> , <i>Nuphar variegatum</i>	see attached flora and fauna lists	
1	su	Marsh	suW	1	0.3029	Palustrine	Sand	su	1	100	0.30	HM	<i>su</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	3.79745	Palustrine	Sand	f*,ff	2	90	3.42	HM	<i>f-Lemna minor</i> , <i>Polygonum amphibium</i> , <i>Nuphar variegatum</i>	see attached flora and fauna lists	
1	su	Marsh	suW	1	2.25697	Palustrine	Humic-Mesic	su	1	100	2.26	HM	<i>su</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	1	1.72444	Palustrine	Fibric	ne*,gc	2	50	0.86	LM	<i>ne-Carex crinita</i> , <i>Onoclea sensibilis</i> , <i>gs-Calamagrostis canadensis</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	3.28782	Palustrine	Silt	f*,ff	2	90	2.96	HM	<i>f-Lemna minor</i> , <i>Polygonum amphibium</i> , <i>Nuphar variegatum</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.07572	Palustrine	Silt	ne*,m,ls	3	5	0.00		<i>ne-Carex</i> spp, <i>m-Sphagnum</i> spp, <i>Is-Vaccinium oxycoccus</i> , <i>Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.30044	Palustrine	Silt	ne*,m,ls	3	5	0.02		<i>ne-Carex</i> spp, <i>m-Sphagnum</i> spp, <i>Is-Vaccinium oxycoccus</i> , <i>Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.09196	Palustrine	Silt	ne*,m,ls	3	5	0.00		<i>ne-Carex</i> spp, <i>m-Sphagnum</i> spp, <i>Is-Vaccinium oxycoccus</i> , <i>Potentilla palustris</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	2.59057	Palustrine	Fibric	f*,ff	2	90	2.33	HM	<i>f-Lemna minor</i> , <i>Polygonum amphibium</i> , <i>Nuphar variegatum</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.927	Palustrine	Sand	ne*,m,ls	3	5	0.05		<i>ne-Carex</i> spp, <i>m-Sphagnum</i> spp, <i>Is-Vaccinium oxycoccus</i> , <i>Potentilla palustris</i>	see attached flora and fauna lists	
1	su	Marsh	suW	1	0.14507	Palustrine	Sand	su	1	100	0.15	HM	<i>su</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.69702	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina</i> , <i>Pinus banksiana</i> , <i>m-Sphagnum</i> spp, <i>ne-Carex oligosperma</i> , <i>Carex stricta</i> , <i>gc-Thelypteris palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.6276	Palustrine	Silt	ne*,m,ls	3	5	0.03		<i>ne-Carex</i> spp, <i>m-Sphagnum</i> spp, <i>Is-Vaccinium oxycoccus</i> , <i>Potentilla palustris</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.37516	Palustrine	Sand	f*,ff	2	90	1.24	HM	<i>f-Lemna minor</i> , <i>Polygonum amphibium</i> , <i>Nuphar variegatum</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.40636	Palustrine	Sand	ne*,m,gc	4	50	0.20	LM	<i>ne-Carex</i> spp, <i>m-Sphagnum</i> , <i>gc-Viola palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	2.15326	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>m-Sphagnum</i> spp, <i>gc-Maianthemum trifolia</i> , <i>Woodwardia virginica</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	ne	Fen	neF	5	0.12653	Palustrine	Sand	ne*,m,ls	3	5	0.01		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.49101	Palustrine	Humic-Mesic	ts*,ne,m	3	0	-		ts-Alnus incana,ne- Carex lasiocarpa ,Carex lacustrina , m-Sphagnum spp	see attached flora and fauna lists	
1	h	Swamp	hS	1	0.4576	Palustrine	Sand	h*	1	0	-		h-Betula papyrifera, Acer rubrum, Fraxinus nigra	see attached flora and fauna lists	
1	m	Bog	mB	1	0.27478	Isolated	Sand	m*,ne	2	0	-		m-Sphagnum spp, ne- Carex spp,Eriophorum vaginatum	see attached flora and fauna lists	
1	ne	Fen	neF	5	1.25203	Palustrine	Sand	ne*,m,ls	3	5	0.06		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.92548	Palustrine	Fibric	ne*,m,gc	3	50	0.46	LM	ne-Carex spp, m- Sphagnum spp,gc-Potentilla palustris	see attached flora and fauna lists	
1	c	Swamp	cS	2	1.84929	Palustrine	Sand	c*,h,m,gc,ls	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyrifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, Is-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata	see attached flora and fauna lists	
1	m	Bog	mB	6	0.14742	Isolated	Silt	m*	1	0	-		m-Sphagnum, gc-Vaccinium oxycoccus	see attached flora and fauna lists	
1	c	Fen	cF	5	0.49843	Palustrine	Clay-Loam	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma,Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
1	m	Bog	mB	6	0.01618	Isolated	Clay-Loam	m*	1	0	-		m-Sphagnum, gc-Vaccinium oxycoccus	see attached flora and fauna lists	
1	m	Bog	mB	6	0.21157	Isolated	Clay-Loam	m*	1	0	-		m-Sphagnum, gc-Vaccinium oxycoccus	see attached flora and fauna lists	
1	c	Swamp	cS	2	0.47459	Palustrine	Fibric	c*,h,m,gc,ls	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyrifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, Is-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata	see attached flora and fauna lists	
1	m	Bog	mB	6	0.1303	Isolated	Sand	m*	1	0	-		m-Sphagnum, gc-Vaccinium oxycoccus	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.04725	Palustrine	Sand	f*,ff	2	90	0.04	HM	f- Lemna minor, Polygonum amphibium,Nuphar variegatum	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.06948	Palustrine	Sand	ls*,m,ne	3	0	-		Is-Chamaedaphne calculata ,Kalmia angustifolia ,Kalmia Polifolia, m-Sphagnum spp , ne- Carex spp, Eriophorum spp	see attached flora and fauna lists	
1	h	Swamp	hS	4	1.89792	Palustrine	Fibric	h*,m,gc	3	0	-		h-Acer rubrum, Betula papyrifera,Populus tremuloides, m- Sphagnum moss, gc-Cornus canadensis, Trientalis borealis	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.34703	Palustrine	Fibric	ts*,ne,m	3	0	-		ts-Alnus incana,ne- Carex lasiocarpa ,Carex lacustrina , m-Sphagnum spp	see attached flora and fauna lists	
1	re	Marsh	neM	7	0.3714	Palustrine	Humic-Mesic	re*	1	90	0.33	HM	re-Typha spp	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	ts	Swamp	tsS	4	0.29689	Palustrine	Sand	ts*,ne,m	3	0	-		<i>ts-Alnus incana,ne-Carex lasiocarpa ,Carex lacustrina , m-Sphagnum spp</i>	see attached flora and fauna lists	
1	m	Bog	mB	6	0.23264	Isolated	Fibric	m*	1	0	-		<i>m-Sphagnum, gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
1	h	Swamp	hS	4	0.3661	Palustrine	Clay-Loam	h*,m,gc	3	0	-		<i>h-Acer rubrum, Betula papyrifera,Populus tremuloides, m- Sphagnum moss, gc-Cornus canadensis, Trientalis borealis</i>	see attached flora and fauna lists	
1	h	Swamp	hS	1	0.7806	Palustrine	Clay-Loam	h*	3	0	-		<i>h-Betula papyrifera, Acer rubrum, Fraxinus nigra</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	2.86489	Palustrine	Sand	ne*,m,ls	3	5	0.14		<i>ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	h	Swamp	hS	4	1.651	Palustrine	Fibric	h*,m,gc	3	0	-		<i>h-Acer rubrum, Betula papyrifera,Populus tremuloides, m- Sphagnum moss, gc-Cornus canadensis, Trientalis borealis</i>	see attached flora and fauna lists	
1	c	Swamp	cS	2	0.93373	Palustrine	Sand	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, ls-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.91189	Palustrine	Sand	ts*,ne,m	3	0	-		<i>ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.49463	Palustrine	Fibric	ts*,ne,m	3	0	-		<i>ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.80414	Palustrine	Sand	ts*,ne,m	3	0	-		<i>ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.</i>	see attached flora and fauna lists	
1	m	Bog	mB	6	0.56547	Isolated	Fibric	m*	1	0	-		<i>m-Sphagnum, gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.45316	Palustrine	Sand	f*,ff	2	90	0.41	HM	<i>f- Lemna minor, Polygonum amphibium,Nuphar variegatum</i>	see attached flora and fauna lists	
1	c	Swamp	cS	2	1.66802	Palustrine	Sand	c*,h,m,gc,ls	3	0	-		<i>c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, ls-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata</i>	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	3.18882	Palustrine	Sand	ls*	1	0	-		<i>ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia</i>	see attached flora and fauna lists	
1	m	Bog	mB	6	0.2734	Isolated	Fibric	m*	1	0	-		<i>m-Sphagnum, gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	ne	Marsh	neM	6	3.1174	Palustrine	Fibric	ne*,m,gc	4	50	1.56	LM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	3.63531	Palustrine	Sand	ls*	1	0	-		ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia	see attached flora and fauna lists	
1	c	Fen	cF	5	1.18135	Palustrine	Fibric	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma,Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
1	ne	Marsh	neM	6	1.08468	Palustrine	Sand	ne*,m,gc	4	50	0.54	LM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	c	Fen	cF	5	0.4088	Palustrine	Sand	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma,Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.67831	Palustrine	Sand	ne*,m,ls	3	5	0.03		ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	m	Bog	mB	6	0.29705	Isolated	Sand	m*	1	0	-		m-Sphagnum, gc-Vaccinium oxycoccus	see attached flora and fauna lists	
1	c	Swamp	cS	2	1.62187	Palustrine	Sand	c*,h,m,gc,ls	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, ls-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata	see attached flora and fauna lists	
1	m	Bog	mB	6	1.0069	Isolated	Sand	m*	1	0	-		m-Sphagnum, gc-Vaccinium oxycoccus	see attached flora and fauna lists	
1	m	Bog	mB	6	0.61202	Isolated	Sand	m*	1	0	-		m-Sphagnum, gc-Vaccinium oxycoccus	see attached flora and fauna lists	
1	c	Swamp	cS	2	0.62828	Palustrine	Fibric	c*,h,m,gc,ls	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, ls-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.39829	Palustrine	Clay-Loam	f*,ff	2	90	0.36	HM	f- Lemna minor, Polygonum amphibium,Nuphar variegatum	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.72296	Palustrine	Clay-Loam	ne*,m,gc	4	50	0.36	LM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.51619	Palustrine	Sand	ne*,m,gc	4	50	0.26	LM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.40583	Palustrine	Sand	ts*,ne,m	3	0	-		ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.64253	Palustrine	Sand	ts*,ne,m	3	0	-		ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.97217	Palustrine	Sand	ne*,m,gc	2	50	0.49	LM	ne-Carex spp, m- Sphagnum spp,gc-Potentilla palustris	see attached flora and fauna lists	

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1	ne	Marsh	neM	6	2.9232	Palustrine	Sand	ne*,m,gc	2	50	1.46	LM	ne-Carex spp, m- Sphagnum spp,gc-Potentilla palustris	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.21096	Palustrine	Sand	ne*,m,ls	3	5	0.01		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	1.19911	Palustrine	Silt	ls*	1	0	-		Is-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.83533	Palustrine	Sand	f*,ff	2	90	0.75	HM	f- Lemna minor, Polygonum amphibium,Nuphar variegatum	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.1513	Palustrine	Sand	ts*,ne,m	3	0	-		ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.	see attached flora and fauna lists	
1	m	Bog	mB	6	1.0651	Isolated	Clay-Loam	m*	1	0	-		m-Sphagnum, gc-Vaccinium oxycoccus	see attached flora and fauna lists	
1	c	Swamp	cS	2	2.67125	Palustrine	Clay-Loam	c*,h,m,gc,ls	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, Is-Ilex mucronata, Viburnum cassinoides, qavlussacia baccata	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.71486	Palustrine	Clay-Loam	ts*,ne,m	3	0	-		ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.29269	Palustrine	Fibric	ts*,ne,m	3	0	-		ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.	see attached flora and fauna lists	
1	c	Swamp	cS	2	0.72747	Palustrine	Sand	c*,h,m,gc,ls	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, Is-Ilex mucronata, Viburnum cassinoides, qavlussacia baccata	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.2462	Palustrine	Fibric	ne*,m,gc	4	50	0.12	LM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.41171	Palustrine	Sand	ne*,m,ls	3	5	0.02		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	ne	Fen	neF	5	1.77049	Palustrine	Silt	ne*,m,ls	3	5	0.09		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	ne	Marsh	neM	6	1.18374	Palustrine	Sand	ne*,m,gc	3	50	0.59	LM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.54141	Palustrine	Sand	f*,ff	2	90	1.39	HM	f- Lemna minor, Polygonum amphibium,Nuphar variegatum	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.64645	Palustrine	Sand	ne*,m,ls	3	5	0.03		ne-Carex spp, m- Sphagnum spp , Is-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	

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1	c	Swamp	cS	2	0.01038	Palustrine	Clay-Loam	c*,h,m,gc,l s	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, Is-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata	see attached flora and fauna lists	
1	c	Swamp	cS	2	0.28061	Palustrine	Sand	c*,h,m,gc,l s	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, Is-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata	see attached flora and fauna lists	
1	c	Fen	cF	5	0.62058	Palustrine	Fibric	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma,Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
1	c	Fen	cF	5	1.72526	Palustrine	Sand	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma,Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
1	c	Swamp	cS	2	1.29778	Palustrine	Sand	c*,h,m,gc,l s	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, Is-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.93247	Palustrine	Sand	ts*,ne,m	3	0	-		ts-Alnus incana ,Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.	see attached flora and fauna lists	
1	c	Fen	cF	5	1.5067	Palustrine	Clay-Loam	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma,Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.54248	Palustrine	Clay-Loam	ls*,m,ne	3	0	-		ls-Chamaedaphne calculata ,Kalmia angustifolia ,Kalmia Polifolia, m-Sphagnum spp , ne- Carex spp, Eriophorum spp	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.06427	Palustrine	Silt	ne*,m,gc	4	50	0.03	LM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	c	Swamp	cS	2	1.52337	Palustrine	Clay-Loam	c*,h,m,gc,l s	3	0	-		c-Pinus strobus , Pinus banksiana, h- Betula papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, Is-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata	see attached flora and fauna lists	
1	h	Swamp	hS	1	0.18015	Palustrine	Clay-Loam	h*	1	0	-		h-Quercus rubra	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	4.69541	Palustrine	Sand	ts*,m, gc	3	0	-		ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica	see attached flora and fauna lists	
1	c	Fen	cF	5	0.19217	Palustrine	Fibric	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma,Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	c	Fen	cF	5	2E-06	Palustrine	Fibric	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	
1	ls	Fen	lsF	1	2.67422	Palustrine	Clay-Loam	ls*	1	0	-		ls-Chamaedaphne calyculata, Kalmia, polifolia, Vaccinium angustifolium	see attached flora and fauna lists	
1	f	Marsh	fW	1	11.2368	Palustrine	Sand	f*,ff	2	90	10.11	HM	f-Brasenia schreberi, Nymphaea alba, Nuphar lutea	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	0.23528	Palustrine	Humic-Mesic	ls*	1	0	-		ls-Chamaedaphne calyculata, Gaylussacia baccata, Kalmia angustifolia	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	0.35253	Palustrine	Humic-Mesic	ls*	1	0	-		ls-Chamaedaphne calyculata, Gaylussacia baccata, Kalmia angustifolia	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.19993	Palustrine	Sand	ts*,ne,m	3	0	-		ts-Alnus incana, ne- Carex lasiocarpa, Carex lacustrina, m-Sphagnum spp	see attached flora and fauna lists	
1	f	Marsh	fW	1	3.65342	Palustrine	Sand	f*,ff	2	90	3.29	HM	f- Lemna minor, Polygonum amphibium, Nuphar variegatum	see attached flora and fauna lists	
1	f	Marsh	fW	1	22.6043	Palustrine	Humic-Mesic	f*,ff	2	90	20.34	HM	f-Brasenia schreberi, Nymphaea alba, Nuphar lutea	see attached flora and fauna lists	
1	f	Marsh	fW	1	5.02215	Palustrine	Fibric	f*,ff	2	90	4.52	HM	f- Lemna minor, Polygonum amphibium, Nuphar variegatum	see attached flora and fauna lists	
1	f	Marsh	fW	1	3.67378	Palustrine	Clay-Loam	f*,ff	2	90	3.31	HM	f- Lemna minor, Polygonum amphibium, Nuphar variegatum	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.04173	Palustrine	Fibric	f*,ff	2	90	0.04	HM	f- Lemna minor, Polygonum amphibium, Nuphar variegatum	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.00447	Palustrine	Fibric	f*,ff	2	90	0.00	HM	f- Lemna minor, Polygonum amphibium, Nuphar variegatum	see attached flora and fauna lists	
1	h	Swamp	hS	4	3.31957	Palustrine	Sand	h*,m,gc	3	0	-		h-Acer rubrum, Betula papyrifera, Populus tremuloides, m- Sphagnum moss, gc-Cornus canadensis, Trientalis borealis	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	4.14087	Palustrine	Sand	ts*,ne,m	3	0	-		ts-Alnus incana, Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	1.52039	Palustrine	Sand	ls*	1	0	-		ls-Chamaedaphne calyculata, Gaylussacia baccata, Kalmia angustifolia	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	7.86129	Palustrine	Sand	ts*,ne,m	3	0	-		ts-Alnus incana, Nemopanthus mucronatus, ne -Carex lacustrine, Carex tenuiflora, Calla palustris, m- Sphagnum. Sp.	see attached flora and fauna lists	
1	c	Fen	cF	5	0.70634	Palustrine	Clay-Loam	c*,m,ne,gc	4	0	-		c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris	see attached flora and fauna lists	



Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	c	Fen	cF	5	0.00818	Palustrine	Clay-Loam	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	1	2.64717	Palustrine	Sand	ne*, gc	2	50	1.32	LM	<i>ne-Carex aquatilis, gc- Onoclea sensibilis</i>	see attached flora and fauna lists	
1	m	Fen	mF	4	2.20142	Palustrine	Sand	m*,gc	2	5	0.11		<i>m-Sphagnum spp, gc- Woodwardia virginica, Maianthemum trifolia</i>	see attached flora and fauna lists	
1	m	Fen	mF	4	1.06143	Palustrine	Sand	m*,gc	2	5	0.05		<i>m-Sphagnum spp, gc- Woodwardia virginica, Maianthemum trifolia</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	0.0016	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.00555	Palustrine	Humic-Mesic	ne*,m,ls	3	5	0.00		<i>ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	3	0.37444	Palustrine	Sand	ls*,m	2	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, m-sphagnum spp</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.00107	Palustrine	Sand	ne*,m,gc	3	50	0.00	LM	<i>ne-Carex spp , m-Sphagnum , gc-Viola palustris</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.67932	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata ,Kalmia angustifolia ,Kalmia Polifolia, m-Sphagnum spp , ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	9.15484	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata ,Kalmia angustifolia ,Kalmia Polifolia, m-Sphagnum spp , ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	h	Swamp	hS	1	11.7799	Palustrine	Silt	h*	1	0	-		<i>h-Acer rubrum, Betula papyrifera , Populus tremuloides</i>	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	0.91292	Palustrine	Sand	ls*	1	0	-		<i>ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia</i>	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	0.36834	Palustrine	Sand	ls*	1	0	-		<i>ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	1	0.00374	Palustrine	Sand	ne*, gc	3	50	0.00	LM	<i>ne-Carex aquatilis, gc- Onoclea sensibilis</i>	see attached flora and fauna lists	
1	m	Bog	mB	6	0.22629	Isolated	Sand	m*	2	0	-		<i>m-Sphagnum, gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	2	0.37978	Palustrine	Humic-Mesic	ts*	1	0	-		<i>ts-Alnus incana, Ilex verticillata ,Nemopanthus mucronatus</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	2	0.20335	Palustrine	Sand	ts*	1	0	-		<i>ts-Alnus incana, Ilex verticillata ,Nemopanthus mucronatus</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	2	0.79477	Palustrine	Fibric	ts*	1	0	-		<i>ts-Alnus incana, Ilex verticillata ,Nemopanthus mucronatus</i>	see attached flora and fauna lists	

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1	ne	Marsh	neM	6	3.25224	Palustrine	Fibric	ne*,m,gc	3	50	1.63	LM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	m	Bog	mB	6	0.83378	Isolated	Sand	m*	1	0	-		m-Sphagnum, gc-Vaccinium oxycoccus	see attached flora and fauna lists	
1	m	Bog	mB	6	0.25888	Isolated	Clay-Loam	m*	1	0	-		m-Sphagnum, gc-Vaccinium oxycoccus	see attached flora and fauna lists	
3	m	Bog	mB	1	0.37128	Isolated	Humic-Mesic	m*,ne	2	0	-		m-Sphagnum spp, ne- Carex spp,Eriophorum vaginatum	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.56974	Palustrine	Humic-Mesic	ts*,m, gc	3	0	-		ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc- Maianthemum trifolia> Woodwardia virginica	see attached flora and fauna lists	
1	c	Bog	cB	6	0.0875	Isolated	Sand	c*,ls	2	0	-		c-Pinus strobus, Pinus banksiana, ls-Chamaedaphne calyculata,Gaylussacia baccata	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.01381	Palustrine	Sand	ls*,m,ne	3	0	-		ls-Chamaedaphne calculata ,Kalmia angustifolia ,Kalmia polifolia, m-Sphagnum spp , ne- Carex spp, Eriophorum spp	see attached flora and fauna lists	
1	h	Swamp	hS	1	0.10324	Palustrine	Fibric	h*	1	0	-		h-Acer rubrum, Betula papyrifera , Populus tremuloides	see attached flora and fauna lists	
1	ls	Bog	lsB	1	0.37216	Isolated	Sand	ls*	1	0	-		ls-Chamaedaphne calyculata	see attached flora and fauna lists	
1	h	Swamp	hS	2	9.1327	Palustrine	Clay-Loam	h*,c	2	0	-		h-Fraxinus nigra, Betula Papyrifera, c- Picea mariana	see attached flora and fauna lists	
1	m	Swamp	mS	2	9.4707	Palustrine	Silt	m*, ne, ls, be	4	0	-		m-Sphagnum spp, ne- Carex sp, ls- Potentilla palustris, be- Calla palustris	see attached flora and fauna lists	
1	ts	Swamp	tsS	2	0.52697	Palustrine	Sand	ts*	1	0	-		ts-Alnus incana	see attached flora and fauna lists	
1	ts	Swamp	tsS	2	1.76262	Palustrine	Sand	ts*	2	0	-		ts-Alnus incana, spiraea alba	see attached flora and fauna lists	
1	ts	Swamp	tsS	8	0.72771	Palustrine	Clay-Loam	ts*,ne	2	0	-		ts-Alnus incana, ne-Carex spp	see attached flora and fauna lists	
1	ts	Swamp	tsS	2	3.57523	Palustrine	Fibric	ts*	1	0	-		ts-alnus incana	see attached flora and fauna lists	
1	m	Swamp	mS	4	1.65194	Palustrine	Sand	m*,gc	2	0	-		m-Sphagnum spp , gc-Maianthemum trifoliata	see attached flora and fauna lists	
1	h	Swamp	hS	1	2.35667	Palustrine	Fibric	h*	1	0	-		h-Fraxinus Nigra, Acer rubrum,Populus tremuloides	see attached flora and fauna lists	
1	ne	Swamp	neS	2	0.76564	Palustrine	Sand	ne* ls	2	0	-		ne-Carex sp, ls-Scirpus cyperinus, Calamagrostis canadensis, Rubus pubescens	see attached flora and fauna lists	
1	ls	Fen	lsF	2	1.61727	Palustrine	Silt	ls*,ts	2	0	-		ls-Chamaedaphne calyculata, ts- Alnus incana, Spiraea alba	see attached flora and fauna lists	
1	ts	Marsh	tsM	10	1.64101	Palustrine	Fibric	ts*,gc	2	50	0.82	LM	ts-Corylus cornuta , gc-Pteridium aquilinum, Chamaedaphne calyculata , Thalictrum pubescens	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	h	Swamp	hS	2	3.86353	Palustrine	Silt	h*,c	2	0	-		<i>h-Populus tremuloides, betula papyrifera, c-Picea mariana</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	2.53306	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, m-Sphagnum spp, gc-Vaccinium angustifolium</i>	see attached flora and fauna lists	
1	c	Fen	cF	5	1.28672	Palustrine	Sand	c*,m,ne,gc	4	0	-		<i>c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma, Carex stricta, gc- Thelypteris palustris</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	2	6.0552	Palustrine	Sand	ls*,ts	2	0	-		<i>ls-Chamaedaphne calyculata , ts-Ilex mucronatum , Alnus incana</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	2	5.52469	Palustrine	Sand	ts*	2	0	-		<i>ts-Alnus incana, Ilex verticillata , Nemopanthus mucronatus</i>	see attached flora and fauna lists	
1	h	Swamp	hS	3	2.87997	Palustrine	Clay-Loam	h*,gc	2	0	-		<i>h -Acer rubrum, Betula papyrifera, gc- Cornus canadensis, Trientalis borealis, Mainthemum canadense</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	1.18884	Palustrine	Sand	ne*,m,ls	3	5	0.06		<i>ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	8	0.9396	Palustrine	Fibric	ts*,ne	2	0	-		<i>ts-Alnus incana ,Nemopanthus mucronatus ,Spiraea alba, Viburnum cassinoides , ne-Carex crinita, Carex lacustris</i>	see attached flora and fauna lists	
1	ne	Swamp	neS	3	2.03549	Palustrine	Fibric	ne*,m	2	0	-		<i>ne-Carex spp, m- Sphagnum spp</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	4.82448	Palustrine	Silt	f*,ff	2	90	4.34	HM	<i>f-Brasenia schreberi ,Nymphaea alba , Nuphar lutea</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	1	0.37381	Palustrine	Sand	ne*, gc	3	50	0.19	LM	<i>ne-Carex aquatilis, gc- Onoclea sensibilis</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	1.6E-05	Palustrine	Sand	ts*,m, gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	1.6E-05	Palustrine	Sand	ts*,m, gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.00116	Palustrine	Sand	ts*,m, gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	9.4E-05	Palustrine	Sand	ne*,m,gc	3	50	0.00	LM	<i>ne-Carex spp , m-Sphagnum , gc-Viola palustris</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.00269	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata ,Kalmia angustifolia ,Kalmia Polifolia, m-Sphagnum spp , ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.00019	Palustrine	Sand	ne*,m,gc	3	50	0.00	LM	<i>ne-Carex spp , m-Sphagnum , gc-Viola palustris</i>	see attached flora and fauna lists	

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1	ts	Swamp	tsS	6	0.00048	Palustrine	Humic-Mesic	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.00013	Palustrine	Sand	f*,ff	2	90	0.00	HM	<i>f- Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	4.4E-05	Palustrine	Sand	ne*,m,gc	3	50	0.00	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.00302	Palustrine	Clay-Loam	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.00097	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.00016	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	2E-06	Palustrine	Fibric	ne*,m,gc	3	50	0.00	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	2E-06	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	7.9E-05	Palustrine	Fibric	f*,ff	2	90	0.00	HM	<i>f- Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.00314	Palustrine	Sand	f*,ff	2	90	0.00	HM	<i>f- Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.00314	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.00157	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.00157	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.1235	Palustrine	Sand	ne*,m,gc	3	50	0.06	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.00265	Palustrine	Sand	ne*,m,gc	3	50	0.00	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	3E-06	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	ts	Swamp	tsS	6	3E-06	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	3.6E-05	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.00097	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.0002	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	m	Bog	mB	6	0.0002	Isolated	Sand	m*	1	0	-		<i>m-Sphagnum, gc-Vaccinium oxycoccus</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	1E-06	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.00065	Palustrine	Clay-Loam	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	1.7281	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ne	Fen	neF	3	1.33197	Palustrine	Sand	ne*,m	2	5	0.07		<i>ne-Carex spp, m- Sphagnum spp</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	1	6.51217	Palustrine	Sand	ne*,ls,gc,	3	50	3.26	LM	<i>ne- Carex spp, gc-Lysimachia thyrsiflora, ls-Potentilla palustris</i>	see attached flora and fauna lists	
1	f	Marsh	fW	2	5.02424	Palustrine	Sand	f*	1	90	4.52	HM	<i>f-Brasenia schreberi, Nymphaea alba, Nuphar lutea</i>	see attached flora and fauna lists	
1	f	Marsh	fW	2	7.95494	Palustrine	Clay-Loam	f*	1	90	7.16	HM	<i>f-Nuphar variegatum, Nymphaea odorata, Brasenia schreberi</i>	see attached flora and fauna lists	
1	f	Marsh	fW	2	15.9291	Palustrine	Fibric	f*	1	90	14.34	HM	<i>f-Nupha variegatum, Nupha pumila</i>	see attached flora and fauna lists	
1	h	Swamp	hS	4	10.5681	Palustrine	Fibric	h*,m,gc	3	0	-		<i>h-Acer rubrum, Betula papyrifera, Populus tremuloides, m- Sphagnum moss, gc-Cornus canadensis, Trientalis borealis</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.0034	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.00427	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	ts	Swamp	tsS	6	2E-06	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	2E-06	Palustrine	Fibric	ne*,m,gc	3	50	0.00	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	9E-06	Palustrine	Fibric	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	9E-06	Palustrine	Fibric	ne*,m,gc	3	50	0.00	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.0002	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.0002	Palustrine	Sand	f*,ff	2	90	0.00	HM	<i>f- Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	1E-06	Palustrine	Sand	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	1E-06	Palustrine	Sand	f*,ff	2	90	0.00	HM	<i>f- Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.00006	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1E-06	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.00003	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	3E-06	Palustrine	Fibric	ne*,m,gc	3	50	0.00	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.00211	Palustrine	Sand	ne*,m,gc	3	50	0.00	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.0003	Palustrine	Clay-Loam	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.00013	Palustrine	Clay-Loam	ts*,m,gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus, m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.0001	Palustrine	Fibric	ne*,m,ls	3	5	0.00		<i>ne-Carex spp, m-Sphagnum spp, ls-Vaccinium oxycoccus, Potentilla palustris</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	ne	Marsh	neM	1	1.34834	Palustrine	Silt	ne*, gc	3	50	0.67	LM	ne-Carex aquatilis, gc- Onoclea sensibilis	see attached flora and fauna lists	
1	c	Swamp	cS	4	1.46129	Palustrine	Clay-Loam	c*,ts	2	0	-		c-Larix laricina, ts-Alnus incana	see attached flora and fauna lists	
1	ne	Swamp	neS	5	2.7866	Palustrine	Sand	ne*,m,ls	3	0	-		ne-Carex spp, m- Sphagnum spp, ls-Rubus idaeus	see attached flora and fauna lists	
1	gc	Swamp	gcS	1	5.81725	Palustrine	Silt	gc*	1	0	-		gc-Cornus canadensis , mainthemum canadensis, Trientalis borealis, Ilex verticallata	see attached flora and fauna lists	
1	h	Swamp	hS	1	4.95673	Palustrine	Humic-Mesic	h*	1	0	-		h-Acer rubrum, Betula papyrifera, Fraxinus nigra	see attached flora and fauna lists	
1	ne	Marsh	neM	2	6.49119	Palustrine	Sand	ne*,ls	2	50	3.25	LM	ne-Carex stricta, Carex aquatilis , ls- Potentilla palustris	see attached flora and fauna lists	
1	m	Swamp	mS	3	1.09792	Palustrine	Humic-Mesic	m*,ne,ls	3	0	-		m-Sphagnum , ne-Carex lacustris, Carex canescens, ls-Calamagrostis canadensis	see attached flora and fauna lists	
1	ne	Fen	neF	5	1.34433	Palustrine	Fibric	ne*,ls,m	3	5	0.07		ne-Carex spp, ls-Chamaedaphne calyculata, m-Sphagnum spp	see attached flora and fauna lists	
1	ne	Fen	neF	4	1.20309	Palustrine	Sand	ne*	1	5	0.06		ne-Carex aquatilis ,Carex echinita , Grass sp.	see attached flora and fauna lists	
1	c	Fen	cF	1	0.6956	Palustrine	Silt	c*	1	0	-		c-Pinus banksiana, Larix laricina	see attached flora and fauna lists	
1	ts	Swamp	tsS	8	3.84558	Palustrine	Fibric	ts*,ne	2	0	-		ts-Alnus incana ,Nemopanthus mucronatus ,Spiraea alba, Viburnum cassinoides , ne-Carex crinita, Carex lacustris	see attached flora and fauna lists	
1	c	Fen	cF	1	0.51461	Palustrine	Sand	c*	1	0	-		c-Larix laricina, Pinus banksiana	see attached flora and fauna lists	
1	m	Bog	mB	1	1.47285	Isolated	Fibric	m*,ne	2	0	-		m-Sphagnum spp, ne- Carex lacustris	see attached flora and fauna lists	
1	re	Swamp	reS	1	8.75394	Palustrine	Sand	re*	1	0	-		re-Typha latifolia	see attached flora and fauna lists	
1	m	Bog	mB	5	1.00327	Isolated	Sand	m*,gc,ne	3	0	-		m-Sphagnum spp, gc-Maianthemum trifoliata, ne- Carex spp	see attached flora and fauna lists	
1	h	Swamp	hS	1	1.91182	Palustrine	Clay-Loam	h*	1	0	-		h-Acer rubrum, Betula papyrifera , Populus tremuloides	see attached flora and fauna lists	
1	ts	Swamp	tsS	1	26.7274	Palustrine	Sand	ts*,h	2	0	-		ts-Alnus americana, h-Fraxinus nigra	see attached flora and fauna lists	
1	ne	Marsh	neM	1	0.01567	Palustrine	Fibric	ne*,gc	2	50	0.01	LM	ne-Carex crinita ,Onoclea sensibilis ,gs-Calamagrostis canadensis	see attached flora and fauna lists	
1	ls	Fen	lsF	1	9.66874	Palustrine	Fibric	ls*	1	0	-		ls-Chamaedaphne calyculata, Kalmia, polifolia, Vaccinium angustifolium	see attached flora and fauna lists	
1	ne	Fen	neF	4	33.2886	Palustrine	Clay-Loam	ne*	2	5	1.66		ne-Carex lasiocarpa ,Carex lacustris	see attached flora and fauna lists	
1	h	Swamp	hS	2	0.00398	Palustrine	Clay-Loam	h*,c	2	0	-		h-Acer rubrum, Betula papyrifera , c- Pinus strobus , Picea glauca	see attached flora and fauna lists	
1	h	Swamp	hS	2	1.61335	Palustrine	Fibric	h*,c	1	0	-		h-Acer rubrum, betula papyrifera, c-Larix laricina	see attached flora and fauna lists	
1	c	Swamp	cS	1	2.43332	Palustrine	Clay-Loam	c*	1	0	-		c-Pinus strobus, Picea glauca	see attached flora and fauna lists	

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1	ts	Swamp	tsS	3	2.34083	Palustrine	Sand	ts*,gc,h	3	0	-		ts- <i>Alnus incana</i> , gc- <i>Nemophila maculata</i> , h- <i>Acer rubrum</i>	see attached flora and fauna lists	
1	ls	Bog	lsB	1	0.39523	Isolated	Sand	ls*	1	0	-		ls- <i>Chamaedaphne calyculata</i>	see attached flora and fauna lists	
1	ne	Fen	neF	1	18.986	Palustrine	Humic-Mesic	ne*,gc	2	5	0.95		ne- <i>Carex utriculata</i> , gc- <i>Sarracenia purpurea</i> , <i>Iris versicolor</i>	see attached flora and fauna lists	
1	gc	Swamp	gcS	2	0.57836	Palustrine	Sand	gc*,ts	2	0	-		gc- <i>Ilex verticillata</i> ,ts- <i>Alnus incana</i>	see attached flora and fauna lists	
1	h	Swamp	hS	2	1.78723	Palustrine	Fibric	h*,c	2	0	-		h- <i>Fraxinus nigra</i> , <i>Acer rubrum</i> , c- <i>Picea mariana</i>	see attached flora and fauna lists	
1	c	Bog	cB	5	0.31522	Isolated	Fibric	c*,m,gc	3	0	-		c- <i>Larix laricina</i> , m- <i>Sphagnum spp</i> , gs- <i>Maimthium trifolium</i>	see attached flora and fauna lists	
1	c	Swamp	cS	3	7.92719	Palustrine	Sand	c*,h	2	0	-		c- <i>Abies balsamea</i> , <i>Pinus strobus</i> , h- <i>Acer rubrum</i>	see attached flora and fauna lists	
1	h	Swamp	hS	5	0.56835	Palustrine	Sand	h*,gc,ls	3	0	-		h- <i>Acer rubrum</i> , <i>Betula papyrifera</i> , <i>Populus tremuloides</i> , gc- <i>Pteridium aquilinum</i> , ls- <i>Kalmia angustifolia</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	11	2.77718	Palustrine	Sand	ts*,ne,re	3	0	-		ts- <i>Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>Spiraea alba</i> , ne- <i>Carex stricta</i> , <i>Carex aquatilis</i> . <i>Cyperus microcarpus</i> ,re- <i>Typha latifolia</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	11	1.0372	Palustrine	Sand	ts*,ne,re	3	0	-		ts- <i>Alnus incana</i> , <i>Nemopanthus mucronatus</i> , <i>Spiraea alba</i> , ne- <i>Carex stricta</i> , <i>Carex aquatilis</i> . <i>Cyperus microcarpus</i> ,re- <i>Typha latifolia</i>	see attached flora and fauna lists	
1	c	Swamp	cS	3	6.59569	Palustrine	Sand	c*,h	2	0	-		c- <i>Larix laricina</i> , h- <i>Acer rubrum</i> , <i>Populus tremuloides</i>	see attached flora and fauna lists	
1	h	Swamp	hS	1	1.58467	Palustrine	Humic-Mesic	h*	1	0	-		h- <i>Acer rubrum</i> , <i>Betula papyrifera</i> , <i>Populus tremuloides</i>	see attached flora and fauna lists	
1	gc	Swamp	gcS	1	3.68552	Palustrine	Sand	gc*	1	0	-		gc- <i>Trientalis borealis</i> , <i>Dryopteris carthusiana</i> , <i>Onoclea sensibilis</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	1	0.28685	Palustrine	Sand	ne*,gc	2	50	0.14	LM	ne- <i>Carex spp</i> , <i>Calla palustris</i> , gc- <i>Iris versicolor</i>	see attached flora and fauna lists	
1	h	Swamp	hS	1	2.3802	Palustrine	Humic-Mesic	h*	1	0	-		h- <i>Betula alleghaniensis</i> , <i>Fraxinus nigra</i> , <i>Acer rubrum</i> , <i>Acer saccharum</i>	see attached flora and fauna lists	
1	ne	Fen	neF	3	0.2505	Palustrine	Sand	ne*,m	2	5	0.01		ne- <i>Carex lasiocarpa</i> , m- <i>Sphagnum spp</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.46485	Palustrine	Sand	ts*,ne,m	3	0	-		ts- <i>Alnus incana</i> ,ne- <i>Carex lasiocarpa</i> , <i>Carex lacustrina</i> , m- <i>Sphagnum spp</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.91504	Palustrine	Sand	ts*,ne,m	3	0	-		ts- <i>Alnus incana</i> ,ne- <i>Carex lasiocarpa</i> , <i>Carex lacustrina</i> , m- <i>Sphagnum spp</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	9	0.57295	Palustrine	Sand	ts*,ls,ne	3	0	-		ts- <i>Alnus incana</i> , ls- <i>Rubus alleghensis</i> , ne- <i>Carex spp</i> , <i>Phalaris arundinacia</i>	see attached flora and fauna lists	
1	h	Swamp	hS	2	1.19657	Palustrine	Sand	h*,c	2	0	-		h- <i>Betula papyrifera</i> , <i>Populus tremuloides</i> , <i>Acer rubrum</i> , c- <i>Picea mariana</i>	see attached flora and fauna lists	



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1	m	Marsh	mM	1	0.6334	Palustrine	Clay-Loam	m*,ne	2	50	0.32	LM	<i>m-Sphagnum spp, ne- Carex lacustris ,Carex achinada</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.04899	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata ,Kalmia angustifolia ,Kalmia Polifolia, m-Sphagnum spp , ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.83853	Palustrine	Fibric	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata ,Kalmia angustifolia ,Kalmia Polifolia, m-Sphagnum spp , ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Swamp	lsS	4	0.33595	Palustrine	Silt	ls*,m,gc	3	0	-		<i>ls-Vaccinium angustifolium , m-Sphagnum spp, gc-Cornus canadensis ,Gaultheria procumbens, Rubus flagellaris</i>	see attached flora and fauna lists	
1	ne	Bog	neB	4	0.09671	Isolated	Sand	ne*	2	0	-		<i>ne-Carex oligosperma</i>	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.51037	Palustrine	Fibric	ts*,m, gc	3	0	-		<i>ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica</i>	see attached flora and fauna lists	
1	m	Bog	mB	1	0.28471	Isolated	Sand	m*,ne	2	0	-		<i>m-Sphagnum spp, ne-Carex lacustris, Carex sp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.40558	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calyculata, Kalmia angustifolia, m- Sphagnum spp, ne-Carex oligosperma</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.0017	Palustrine	Humic-Mesic	ne*,m,gc	3	50	0.00	LM	<i>ne-Carex spp , m-Sphagnum , gc-Viola palustris</i>	see attached flora and fauna lists	
1	m	Swamp	mS	1	0.06096	Palustrine	Silt	m*,ne	2	0	-		<i>m-Sphagnum moss, ne- Carex species</i>	see attached flora and fauna lists	
1	ne	Marsh	mM	7	0.37648	Palustrine	Silt	ne*ts,m,gc	4	50	0.19	LM	<i>ne-Carex spp ,ts- Myrica gale, m-Sphagnum spp, gc-Potentilla palustris</i>	see attached flora and fauna lists	
1	ne	Marsh	mM	7	1.21422	Palustrine	Sand	ne*ts,m,gc	4	50	0.61	LM	<i>ne-Carex spp ,ts- Myrica gale, m-Sphagnum spp, gc-potentilla palustris</i>	see attached flora and fauna lists	
1	m	Fen	mF	6	0.28267	Palustrine	Sand	m*	1	5	0.01		<i>m-Sphagnum spp</i>	see attached flora and fauna lists	
1	ne	Fen	neF	4	12.3906	Palustrine	Sand	ne*	1	5	0.62		<i>ne-Carex lasiocarpa ,Carex lacustris</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	1	3.50664	Palustrine	Clay-Loam	ls*	1	0	-		<i>ls-Chamaedaphne calyculata, Kalmia, polifolia, Vaccinium angustifolium</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	31.0458	Palustrine	Clay-Loam	ne*,m,gc	3	50	15.52	LM	<i>ne-Carex spp , m-Sphagnum , gc-Viola palustris</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	15.079	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata ,Kalmia angustifolia ,Kalmia Polifolia, m-Sphagnum spp , ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	66.2713	Palustrine	Sand	ne*,m,gc	3	50	33.14	LM	<i>ne-Carex spp , m-Sphagnum , gc-Viola palustris</i>	see attached flora and fauna lists	

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1	f	Marsh	fW	1	4.21353	Palustrine	Clay-Loam	f*,ff	2	90	3.79	HM	<i>f- Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	2.77672	Palustrine	Fibric	f*,ff	2	90	2.50	HM	<i>f- Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.95956	Palustrine	Clay-Loam	f*,ff	2	90	1.76	HM	<i>f- Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	3.69807	Palustrine	Clay-Loam	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	3.26716	Palustrine	Fibric	f*,ff	2	90	2.94	HM	<i>f- Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	18.969	Palustrine	Clay-Loam	ne*,m,gc	3	50	9.48	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ne	Marsh	neM	6	33.5839	Palustrine	Sand	ne*,m,gc	3	50	16.79	LM	<i>ne-Carex spp, m-Sphagnum, gc-Viola palustris</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	2.58352	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	3.24673	Palustrine	Clay-Loam	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.83027	Palustrine	Clay-Loam	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.25296	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	5.80223	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.88413	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.99927	Palustrine	Sand	ls*,m,ne	3	0	-		<i>ls-Chamaedaphne calculata, Kalmia angustifolia, Kalmia Polifolia, m-Sphagnum spp, ne- Carex spp, Eriophorum spp</i>	see attached flora and fauna lists	
1	f	Marsh	fW	1	8.67384	Palustrine	Sand	f*,ff	2	90	7.81	HM	<i>f- Lemna minor, Polygonum amphibium, Nuphar variegatum</i>	see attached flora and fauna lists	

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
1	Is	Fen	IsF	5	7.05165	Palustrine	Clay-Loam	Is*,m,ne	3	0	-		<i>Is-Chamaedaphne calculata</i> , <i>Kalmia angustifolia</i> , <i>Kalmia Polifolia</i> , <i>m-Sphagnum spp</i> , <i>ne- Carex spp</i> , <i>Eriophorum spp</i>	see attached flora and fauna lists	

ix) Wetland Size

(circle appropriate category, a or b)

a) Single contiguous wetland area:

Total wetland size = 957 hectares

b) Wetland complex comprised of 5 individual wetlands:

Wetland Unit No.	<u>1</u>	<u>942.70</u>
Wetland Unit No.	<u>2</u>	<u>8.17</u>
Wetland Unit No.	<u>3</u>	<u>6.11</u>
Wetland Unit Totals:		<u>956.98</u>

(Attach additional sheets if necessary)

Total Wetland Size = 956.98 hectares (add together size of each unit)

Documentation requirements for evaluated wetland complexes (attach additional sheet if necessary):

- : a statement of rationale for identifying a wetland complex;
- : a statement of rationale for identifying any wetland complex less than 2 ha in total size;
- : a statement of rationale for any vegetation community less than 0.5 ha in size;
- : adherence to the wetland complexing rules (750 m; "watershed rule"; lacustrine wetlands); and
- : written documentation of the reasons for including wetland units smaller than 2 ha.

The wetland units complexed within the WET-003 wetland complex were all within 750m straight line distance of another wetland unit. All complexed wetlands fall within the same sub watershed. Given the complexity and size of this wetland complex accurate determination of hydrological connectivity or discontinuity could no be determined for all wetlands. As wetland boundaries and vegetation communities were compiled and delineated from several years of data a number of vegetation communities less than 0.5 ha were included within the wetland complex. This is primarily due to vegetation data for multiple portions of wetland plygon being assessed over a number of years.

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Wetland Size (ha):

956.98

Vegetation Form	Fractional Area (FA)
h	0.08
c	0.09
dh	0.00
dc	0.00
ts	0.13
ls	0.16
ds	0.00
gc	0.01
m	0.03
ne	0.35
be	0.00
re	0.01
ff	0.00
f	0.14
su	0.01
u (unvegetated)	0.00

Total = 100%

1.00

## 1.0 BIOLOGICAL COMPONENT

### 1.1 PRODUCTIVITY

#### 1.1.1 Growing Degree-Days/Soils (max: 30 pts)

Refer to page 43 of manual for further explanation.

1. Determine the correct GDD value for your wetland (use Figure 5).
2. Circle the appropriate GDD value from the evaluation table below.
3. Determine the Fractional Area (FA) of the wetland for each soil type.
4. Multiply the fractional area of each soil type by the applicable score-factor in the evaluation table.
5. Sum the scores for each soil type to obtain the final score (maximum score is 30 points).

*Note: In wetland complexes the evaluator should aim at determining the fractional area occupied by the categories for the complex as a whole.*

Growing Degree-Days	Clay-Loam	Silt-Marl	Limestone	Sand	Humic-Mesic	Fibric	Granite
	<2800	12	11	9	7	7	6
1600-2000	15	13	11	9	8	7	5
2000-2400	18	15	13	11	9	8	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

Soil Type	FA of wetland soil type	in	Enter appropriate score-factor from above table		
clay/loam:	0.19	X	26	=	5.1
silt/marl:	0.05	X	21	=	1.1
limestone:	0.00	X	18	=	0.0
sand:	0.50	X	15	=	7.5
humic/mesic:	0.09	X	13	=	1.2
fibric:	0.16	X	10	=	1.6
granite:	0.00	X	8	=	0.0
Total					16.5

GDD/Soils score (maximum 30 points)	<b>16</b>
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### 1.1.2 Wetland Type

(Fractional Area = area of wetland type/total wetland area)

	Fractional Area				Score
Bog	0.01	X	3	=	0.0
Fen	0.26	X	6	=	1.6
Swamp	0.34	X	8	=	2.7
Marsh	0.38	X	15	=	5.7
Total				=	10.0

Wetland type score (maximum 15 points)	<b>10</b>
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### 1.1.3 Site Type

(Fractional Area = area of site type/total wetland area)

	Fractional Area				Score
Isolated	0.01	x	1	=	0.01
Palustrine (permanent or intermittent flow)	0.98	x	2	=	1.95
Riverine	0.00	x	4	=	0.00
Riverine (at rivermouth)	0.00	x	5	=	0.00
Lacustrine (at rivermouth)	0.00	x	5	=	0.00
Lacustrine (on enclosed bay, with barrier beach)	0.00	x	3	=	0.00
Lacustrine (exposed to lake)	0.01	x	2	=	0.02
Total				=	1.98

Site Type Score (maximum 5 points)	<b>2</b>
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## 1.2 BIODIVERSITY

### 1.2.1 Number of Wetland Types

(Check only one)

	one	=	9	points
	two	=	13	
	three	=	20	
<b>30</b>	four	=	30	

Number of Wetland Types Score (maximum 30 points)	<b>30</b>
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### 1.2.2. Vegetation Communities

Use the data sheet provided in Appendix 4 to record and score vegetation communities (the completed form must be attached to this data record)

Scoring (circle only one option for each of the columns below):

Total # of communities with 1-3 forms	
1 =	1.5 pts
2 =	2.5
3 =	3.5
4 =	4.5
5 =	5
6 =	5.5
7 =	6
8 =	6.5
9 =	7
10 =	7.5
11 =	8
+ 0.5 for each additional community	
=	<b>30.5</b>

Total # of communities with 4 -5 forms	
1 =	2 pts
2 =	3.5
3 =	5
4 =	6.5
5 =	7.5
6 =	8.5
7 =	9.5
8 =	10.5
9 =	11.5
10 =	12.5
11 =	13
+ 0.5 for each additional community	
=	<b>6.5</b>

Total # of communities with 6 or more forms	
1 =	3 pts
2 =	5
3 =	7
4 =	9
5 =	10.5
6 =	12
7 =	13.5
8 =	15
9 =	16.5
10 =	18
11 =	19
+ 0.5 for each additional community	
=	<b>0.0</b>

SubTotal: **37**

Vegetation Communities Score (maximum 45 points)	<b>37</b>
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### 1.2.3 Diversity of Surrounding Habitat

Check all appropriate items. Only habitat within 1.5 km of the wetland boundary and at least 0.5 ha in size are to be scored.

	recent burn (<5yrs)	* "Mixed forest" is defined as either 25% coniferous trees distributed singly or in clumps in deciduous forest, or 25% deciduous trees distributed singly or in clumps in coniferous forest. Note that Forest Resource Inventory (FRI) maps can be misleading since 25% conifer within a unit could be entirely concentrated around a lake.
	abandoned agricultural land	
	utility corridor	
1	deciduous forest	
	recent cutover or clearcut (<5yrs)	
1	coniferous forest	
1	*mixed forest	
	crops	
1	abandoned pits and quarries	
	pasture	
1	ravine	
	fencerows	
1	open lake or deep river	
1	creek floodplain	
1	rock outcrop	
8	Subtotal	
<p>Score 1 point for each feature checked, up to a maximum of 7 points.</p>		<p>Diversity of Surrounding Habitat Score (maximum 7 points) <b>7</b></p>

### 1.2.4 Proximity to Other Wetlands

Check highest appropriate category. (Note: if the wetland is lacustrine, score option #1 at 8 points).

		points
8	Hydrologically connected by surface water to other wetlands (different dominant wetland type) or to open lake or deep river within 1.5 km	8
	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or to open lake or deep river from 1.5 to 4 km away	5
	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
	Within 0.75 km of other wetlands (different dominant wetland type) or open water body, but not hydrologically connected by surface water	5
	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
	No wetland within 1 km	0

Name and distance (from wetland) of wetlands/waterbodies scored above:

Key River and Henvey Inlet are both directly adjacent to the wetland complex.

Proximity to other Wetlands Score (maximum 8 points) <b>8</b>
---

### 1.2.5 Interspersion

Number of Intersections = 457

	Number of Intersections (Check only one)	Points
	26 or less	= 3
	27 to 40	= 6
	41 to 60	= 9
	61 to 80	= 12
	81 to 100	= 15
	101 to 125	= 18
	126 to 150	= 21
	151 to 175	= 24
	176 to 200	= 27
<b>30</b>	>200	= 30

Interspersion Score (maximum 30 points)	<b>30</b>
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### 1.2.6 Open Water Types

*Note: this attribute is only to be scored for permanently flooded open water within the wetland (adjacent lakes do not count). Check one option only.*

	Open Water Type	Characteristic	Points
	type 1	Open water occupies < 5 % of wetland area	8
	type 2	Open water occupies 5-25% of wetland (occurring in central area)	8
<b>14</b>	type 3	Open water occupies 5-25% (occurring in various-sized ponds, dense patches of vegetation or vegetation in diffuse stands)	14
	type 4	Open water occupies 26-75% of wetland (occurring in a central area)	20
	type 5	Open water occupies 26-75% of wetlands (small ponds and embayments are common)	30
	type 6	Open water occupies 76%-95% of wetland (occurring in large central area; vegetation is peripheral)	8
	type 7	Open water occupies 76-95% of wetland (vegetation in patches or diffuse open stands)	14
	type 8	Open water occupies more than 95% of wetland area	3
	no open water		0

Open Water Type Score (maximum 30 points)	<b>14</b>
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### 1.3 SIZE

#### (BIOLOGICAL COMPONENT)

Total Size of Wetland = **957.0** ha

Sum of scores from Biodiversity Subcomponent

1.2.1

+1.2.2

+1.2.3

+1.2.4

+1.2.5

+1.2.6

**126**

		Total Score for Biodiversity Subcomponent									
		<37	37-48	49-60	61-72	73-84	85-96	97- 108	109-120	121- 132	>132
Wetland size (ha)	<20 ha	1	5	7	8	9	17	25	34	43	50
	20-40	5	7	8	9	10	19	28	37	46	50
	41-60	6	8	9	10	11	21	31	40	49	50
	61-80	7	9	10	11	13	23	34	43	50	50
	81-100	8	10	11	13	15	25	37	46	50	50
	101-120	9	11	13	15	18	28	40	49	50	50
	121-140	10	13	15	17	21	31	43	50	50	50
	141-160	11	15	17	19	23	34	46	50	50	50
	161-180	13	17	19	21	25	37	49	50	50	50
	181-200	15	19	21	23	28	40	50	50	50	50
	201-400	17	21	23	25	31	43	50	50	50	50
	401-600	19	23	25	28	34	46	50	50	50	50
	601-800	21	25	28	31	37	49	50	50	50	50
	801-1000	23	28	31	34	40	50	50	50	50	50
	1001-1200	25	31	34	37	43	50	50	50	50	50
	1201-1400	28	34	37	40	46	50	50	50	50	50
	1401-1600	31	37	40	43	49	50	50	50	50	50
	1601-1800	34	40	43	46	50	50	50	50	50	50
	1801-2000	37	43	47	49	50	50	50	50	50	50
>2000	40	46	50	50	50	50	50	50	50	50	

Size Score (Biological Component) (maximum 50 points)	<b>50</b>
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## 2.0 SOCIAL COMPONENT

### 2.1 ECONOMICALLY VALUABLE PRODUCTS

#### 2.1.1 Wood Products

Check the option that best reflects the total area (ha) of forested wetland (i.e., areas where the dominant vegetation form is h or c). Note that this is the area of all the forested vegetation communities, not total wetland size. Do not include areas where harvest is not permitted. Check only one option.

Area of wetland used for scoring 2.1.1:

h: 76.56 c: 86.13

	<5 ha =	0
	5 -25 ha =	3
	26 -50 ha =	6
	51- 100 ha =	9
<b>x</b>	101-200 ha =	12
	>200 ha =	18

Source of information:

Field Observation: AECOM, 2014,2015

Wood Products Score **12**  
(maximum 14 points)

#### 2.1.2 Lowbush Cranberry

Check only one.

<b>2</b>	Present (minimum size 0.5 ha) =	2 pts
	Absent =	0
	Harvest not permitted =	0

Source of information:

Field Observation: AECOM, 2014,2015

Wild Rice Score **2**  
(maximum 6 points)

#### 2.1.3 Wild Rice

Check only one.

	Present (minimum size 0.5 ha) =	6 pts
<b>0</b>	Absent =	0
	Harvest not permitted =	0

Source of information:

Field Observation: AECOM, 2014,2015

Wild Rice Score **0**  
(maximum 10 points)

### 2.1.4 Commercial Bait Fish

Check only one.

<b>12</b>	Present	=	12 pts
	Absent	=	0
	Fishing not permitted	=	0

Source of information:

Field Observation; A. Ingriselli, 2015

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Commercial Fish Score (maximum 12 points)	<b>12</b>
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### 2.1.5 Furbearers

Only species recognized as furbearers under the Fish & Wildlife Conservation Act may be scored here. Score 3 points for each furbearer species listed, up to a maximum of 12 points.

Name of furbearer			Source of information
1	<b>3</b>	Beaver ( <i>Castor canadensis</i> )	Field Observation: AECOM 215, Stantec, 2013
2	<b>3</b>	Long-tailed Weasel ( <i>Mustela fenata</i> )	Field Observation: Stantec, 2013
3	<b>3</b>	Muskrat ( <i>Ondatra zibethicus</i> )	Field Observation: Stantec, 2013
4	<b>3</b>	North American River Otter ( <i>Lontra canadensis</i> )	Field Observation: AECOM 2015, Stantec, 2013
5	<b>3</b>	Northern Raccoon ( <i>Procyon lotor</i> )	Field Observation: Stantec, 2013
6	<b>3</b>	Red fox ( <i>Vulpes vulpes</i> )	Field Observation: AECOM 2015, Stantec, 2013
7	<b>3</b>	Red Squirrel ( <i>Tamiasciurus hudsonicus</i> )	Field Observation: AECOM 215, Stantec, 2013
<b>21</b>		<b>Subtotal</b>	

Furbearer Score (maximum 12 points)	<b>12</b>
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## 2.2 RECREATIONAL ACTIVITIES

Circle one score for each of the activities listed. Score is cumulative – add score for hunting, nature enjoyment and fishing together for final score.

		Type of Wetland-Associated Use				
		Hunting		Nature Enjoyment/ Ecosystem Study		Fishing
Intensity of Use	High	40 points		40 points		40 points
	Moderate	20	20	20		20
	Low	8		8		8
	Not possible/ No evidence	0		0		0
	Totals		20		0	
						<b>28</b>

Sources of information (include evidence/criteria forming basis for score and any relevant reference used to obtain that information):

- e.g., Hunting scored at 20 points: 5 hunting blinds observed; hunters using area frequently monitored for compliance (source: D. Black, MNR Conservation Officer)

Hunting: Personal Communication: Henvey Inlet First Nation, 2015  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Nature: Not known  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Fishing: Not Known  
Field Observation: Kristan Washburn, 2013,2015  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Recreational Activities Score (maximum 80 points)	<b>28</b>
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## 2.3 LANDSCAPE AESTHETICS

### 2.3.1 Distinctness

Check only one.

<b>3</b>	Clearly distinct	=	3	pts
	Indistinct	=	0	

Landscape Distinctness Score (maximum 3 points)	<b>3</b>
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### 2.3.2 Absence of Human Disturbance

Check only one.

<b>7</b>	Human disturbances absent or nearly so	=	7	pts
	One or several localized disturbances	=	4	
	Moderate disturbance; localized water pollution	=	2	
	Wetland intact but impairment of ecosystem quality intense in some areas	=	1	
	Extreme ecological degradation, or water pollution severe and widespread	=	0	

Details regarding type, extent and location of disturbance scored:

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Source of information:

Kristan Washburn, 2015

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Absence of Human Disturbance Score (maximum 7 points)	<b>7</b>
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## 2.4 EDUCATION AND PUBLIC AWARENESS

### 2.4.1 Educational Uses

Check highest appropriate category.

	Frequent	=	20	pts
	Infrequent	=	12	
0	No visits	=	0	

Details regarding the type and frequency of education uses scored above:

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Source of information:

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Educational Uses Score (maximum 20 points)	0
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### 2.4.2 Facilities and Programs

Check all appropriate options, score highest category checked.

	Staffed interpretation centre	=	8	pts
	No interpretation centre or staff but a system of self-guiding trails or brochures available	=	4	
	Facilities such as maintained paths (e.g., woodchips) boardwalks, boat launches or observation towers but no brochures or other interpretation	=	2	
0	No facilities or programs	=	0	

Additional Notes/Comments:

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Source of information:

Field Observation: Kristan Washburn, 2015

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Facilities and Programs Score (maximum 8 points)	0
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### 2.4.3 Research and Studies

Check all that apply; score highest category checked.

	Long term research has been done	=	12	pts
	Research papers published in refereed scientific journal or as a thesis	=	10	
<b>5</b>	One or more (non-research) reports have been written on some aspect of the wetland's flora, fauna, hydrology etc.	=	5	
	No research or reports	=	0	
<b>5</b>	Subtotal:			

List of reports, publications, research studies etc. scored above:

Georgian Bay Biosphere Reserve (2013). Ecosystem Health Report for Eastern Georgian Bay. Background

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Research and Studies Score **5**  
(maximum 12 points)

### 2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT

Name of Settlement: Henvey Inlet First Nation

Distance of wetland from settlement: 2.8km from eastern edge of wetland complex.

Population of settlement: 170 (Source: First Nations Market Housing Fund)

Circle only the highest score applicable

Distance of wetland to settlement	population >10,000		population 2,500-10,000		population or cottage community <2,500	
	40 points		26 points		16 points	
Within or adjoiningg settlement	40 points		26 points		16 points	<b>16</b>
0.5 to 10 km from settlement	26		16		10	
10 to 60 km from settlement	12		8		4	
60-100 km from nearest settlement	5		2		0	
100 km from nearest settlement	0		0		0	
		<b>0</b>		<b>0</b>		<b>16</b>

Proximity to Human Settlement Score **16**  
(maximum 40 points)

Additional Reports  
No additional reports.

## 2.6 OWNERSHIP

FA of wetland held by or held under a legal contract by a conservation body (as defined by the Conservation Land Act) for wetland protection	<b>0.92</b>	x	10	=	<b>9.20</b>
FA of wetland occurring in provincially or nationally protected areas (e.g., parks and conservation reserves)		x	10	=	<b>0.00</b>
FA of wetland area in Crown/public ownership, not as above	<b>0.08</b>	x	8	=	<b>0.64</b>
FA of wetland area in private ownership, not as above		x	4	=	<b>0.00</b>

Source of information:

Henvey Inlet First Nation Land Owner. NW corner of wetland is Provincial Crown Land.

Ownership Score (maximum 10 points)	<b>10</b>
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## 2.7 SIZE (SOCIAL COMPONENT)

Total Size of Wetland = **254.0** ha

Sum of scores from Subcomponents 2.1, 2.2, and 2.5 = **82**

Circle the appropriate score from the table below.

Total for Size Dependent Social Features										
	<31	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
<2 ha	1	2	4	8	10	12	14	14	14	15
2 - 4ha	1	2	4	8	12	13	14	14	15	16
5 - 8ha	2	2	5	9	13	14	15	15	16	16
9 - 12ha	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	<b>18</b>	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	20	20

Total Size Score (Social Component)	<b>18</b>
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## 2.8 ABORIGINAL VALUES AND CULTURAL HERITAGE

Either or both Aboriginal or Cultural Values may be scored. However, the maximum score permitted for 2.8 is 30 points.

Full documentation of sources must be attached to the data record.

### 2.8.1 Aboriginal Values

<b>30.0</b>	Significant	=	30 pts
	Not Significant	=	0
	Unknown	=	0
<b>30</b>	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

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### 2.8.2 Cultural Heritage

	Significant	=	30 pts
	Not Significant	=	0
<b>0.0</b>	Unknown	=	0
<b>0</b>	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

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Aboriginal Values/Cultural Heritage Score (maximum 30 points)	<b>30.0</b>
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### 3.0 HYDROLOGICAL COMPONENT

#### 3.1 FLOOD ATTENUATION

Check one of the following four options.

- If wetland is a single contiguous coastal wetland, → score 0 points for this section.
- If the wetland is a single contiguous lacustrine wetland where the ratio of wetland area to lake area is less than 0.1, → score 0 points for this section
- If all wetland units of the wetland complex are coastal wetland units, or if all wetland units are all lacustrine and the ratio of the wetland area (total area of all wetland units) to the lake areas is less than 0.1, →score 0 points for this section
- If wetland or wetland complex is entirely isolated in site type, →score 100 points automatically.
- Wetland not as above – proceed through 'steps' A through L below.

- (A) Total wetland area =  ha
- (B) Size of wetland's catchment =  ha
- (C) Size of other detention areas in catchment =  ha
- (D) Size of 'isolated' portions of wetland =  ha (FA = )
- (E) Size of coastal units of wetland complex =  ha (FA = )
- (F) Size of small lacustrine units of a wetland complex =  ha = (FA= )  
(when wetland area: lake area <0.1)

Wetland Surface Form (select the form which best describes the non-coastal units of the wetland):

- flooded with little or no aquatic vegetation
- flooded but with submergent, emergent, or floating vegetation = 0.2
- flat (lawn) vegetation (typical of fens)=0.5
- hummock-depression microtopography=0.7
- patterned (e.g. string bod, ribber fens)=0.5

- (G) Wetland Surface Form Factor =  (maximum 1.0)

Points for Isolated Wetland Unit(s) (if not applicable, enter '0')

- (H) (FA of D)x 100 pts =  pts

Points for Coastal Wetland Unit(s) (if not applicable, enter '0')

- (I) (FA of E) x 100 pts =  pts

Points for Small Lacustrine Wetland Unit(s) (If not applicable enter '0'):

- (J) (FA of F) x100 pts =  pts

- (K) Size of wetland minus isolated, coastal and small lacustrine portions= (A-D-E-F)=  ha

- (L) number of points availblt to score 'rest' of wetland = {100-H-I-J}=  pts

- (M) Total are of upstream detnetion areas\*= {A+C}=  ha

- (N) Upstream Detention Factor= {(K/M)x2}=  (maximum 1.0)

- (O) Attenuation Factor = {(K/B)x 10}=  (maximum 1.0)

- (P) Surface Form Factor =  (maximum 1.0)

Flood Attenuation Score (maximum 100 points)	0
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## 3.2 GROUNDWATER RECHARGE

### 3.2.1 Site Type

Wetland > 50% lacustrine (by area) or located on the St. Mary's River	=			=	<b>0</b>
Wetland not as above. Calculate final score as follows:					
FA of isolated or palustrine wetland	=	<b>0.99</b>	x	20	= <b>19.79</b>
FA of riverine wetland	=	<b>0.00</b>	x	5	= <b>0.00</b>
FA of lacustrine wetland (when wetland is <50% lacustrine)	=	<b>0.01</b>	x	0	= <b>0.00</b>
				Sub Total:	<b>19.79</b>

Groundwater Recharge/Wetland Site Type Score (Maximum 20 points)	<b>20</b>
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### 3.2.2 Soil Recharge Potential

Select only one choice that **best** describes the soils in **the area surrounding the wetland** being evaluated (the soils with the wetland are not scored here).

Dominant Wetland Type	Group A, B, C (sands, gravels, loams)	Group D (clays, substrates in high water tables, shallow substrates over impervious materials such as bedrock)
	Lacustrine or on St. Mary's River	0
Isolated	10	5
Palustrine	7	<b>4</b>
Riverine (not on a major river)	5	2

Groundwater Recharge/Wetland Soil Recharge Potential Score (maximum 10 points)	<b>4</b>
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### 3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

#### 3.2.1 Watershed Improvement Factor

Calculation of Watershed Improvement Score is based upon the fractional area (FA) of each site type within the wetland.

FA= area of site type/total area of the wetland

					Improvement Factor (IF)
FA of isolated wetland	=	0.01	x 0.5	=	0.01
FA of riverine wetland	=	0.00	x 1	=	0.00
FA of palustrine wetland with no inflow	=	0.33	x 0.7	=	0.23
FA of palustrine wetland with inflows	=	0.65	x 1	=	0.65
FA of lacustrine on lake shoreline	=	0.00	x 0.2	=	0.00
FA of lacustrine at lake inflow or outflow	=	0.00	x 1	=	0.00
Sub Total :					0.89
IF x 30 :					26.56

Watershed Improvement Score (maximum=30)	27
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#### 3.3.2 Adjacent and Watershed Land Use

##### Step 1: Determination of maximum initial score

x	Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)
	All other wetlands (Go through Steps 2, 3, 4, and 5B)

##### Step 2: Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in an extensive manner.

Choose one

>50% of catchment basin	=	20.0
20-50% of catchment basin	=	14
<20% of catchment basin	=	4

Score for BLU

##### Step 3: Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

Choose the highest only

	Score
Major Corridor	15
Secondary corridor	11
Tertiary corridor	6
Temporary or abandoned	3
None	0

Score for LUU

##### Step 4: Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits used for local road construction), etc. Score as 'present' only if a point source land use is located less than 1km upstream from the wetland.

Present	15
Not present	0

Score for PS

**Step 5. Calculation of total score for Ajacent and Watershed Land Use**

		Score
<input checked="" type="checkbox"/>	a) Wetland on the Great Lakes or St. Mary's River	0
<input type="checkbox"/>	b) All other wetlands, calculate as follows: BLU+LUU+PS	0
		Final Score <input type="text" value="0"/>

**3.3.3 Vegetation Form**

*Choose the category that best describes the vegetation of the wetland*

		Score
<input checked="" type="checkbox"/>	Trees, shrubs or herbs (h,c, ts, ls, gc)	8.0
<input type="checkbox"/>	Emergents, submergenets (ne, re, be, f, ff, su)	10
<input type="checkbox"/>	Little or no vegetation (u)	0
		Dominant Vegetation form Score (maximum 10 points) <input type="text" value="8"/>

**3.4 CARBON SINK**

*Check only one of the following:*

<input type="checkbox"/>	Bog or fen with more than 50% coverage by organic soil	= 15 pts
<input type="checkbox"/>	Wetland with between 10-50% coverage by organic soil (ie. Mainly mineral or undersignated soils, any wetland type)	= 6
<input checked="" type="checkbox"/>	Marshes and swamps with more than 50% coverage by organic soil	= 9
<input type="checkbox"/>	Wetland with less than 10% soils organic	= 0
		Carbon Sink Score (maximum 9 points) <input type="text" value="9"/>



### 3.5 SHORELINE EROSION CONTROL

From the wetland vegetation map determine the **Dominant** vegetation type within the erosion zone for **lacustrine and riverine site type areas only**. Score according to the factors listed below.

**Step 1:**

	Wetland entirely isolated or palustrine	=	0 pts
x	Any part of the Wetland riverine or lacustrine	=	Go to step 2

**Step 2:** Choose the one characteristic that best describes the shoreline vegetation (see page 112 for description of “shoreline”.)

15	Trees and shrubs	=	15 pts
	Emergent vegetation	=	8
	Submergent vegetation	=	6
	Other shoreline vegetation	=	3
	No vegetation	=	0

Shoreline Erosion Control Score (maximum 15 points)	<b>15</b>
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### 3.6 GROUNDWATER DISCHARGE

Circle the characteristics that best describe the wetland being evaluated and then sum the scores. If the sum exceeds 30 points, assign the maximum score of 30). Note: for wetland type, wetland type scored does not have to be the dominant type in the wetland.

		Potential for Discharge					
		None to Little		Some		High	
Wetland Characteristics	Wetland type Presence/Absence	Bog = 0		Swamp/Marsh = 2	2	Fen = 5	
	Basin Topography	Flat/rolling = 0	0	Hilly = 2		Steep = 5	
	Wetland area: Upslope catchment area	Large (>50%) = 0	0	Moderate (5-50%) = 2		Small (<5%) = 5	
	Lagg Development	None found = 0		Minor = 2	2	Extensive = 5	
	Seeps	None = 0	0	≤ 3 seeps = 2		> 3 seeps = 5	
	Iron precipitates	None = 0	0	≤ 3 sites = 2		> 3 sites = 5	
	Surface marl deposits	None = 0	0	≤3 sites = 2		> 3 sites = 5	
	Wetland pH	Low<4.2=0		Moderate 4.2-5.7 = 5	5	High > 5.7 =10	
	Catchment soil coverage	Patchy=0	0	Thin (<20cm) = 2		Thick = 5	
	Catchment soil permeability	Low= 0		Moderate = 2	2	High = 5	
	Totals		0		11		0

Additional Comments/Notes:

Field Observation: A. Ingriselli, 2015

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Groundwater Discharge Score (maximum 30 points)	<b>11</b>
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## 4.0 SPECIAL FEATURES

### COMPONENT

## 4.1 RARITY

### 4.1.1 Wetland Types

Wetland type (*Check one or more*)

<input checked="" type="checkbox"/>	Bog
<input checked="" type="checkbox"/>	Fen
<input checked="" type="checkbox"/>	Swamp
<input checked="" type="checkbox"/>	Marsh

Ecoregion/Ecodistrict		Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	Big Trout Lake	20	20	0	10
3E	Lake Abitibi	20	20	10	0
3W	Lake Nipigon	20	20	10	0
3S	Lake St. Joseph	20	20	10	0
4E	Lake temagami	20	20	10	0
4W	Pigeon River	20	10	20	0
4S	Wabigoon Lake	20	10	20	0
5E-1	Thessalon	10	0	30	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E13	Western Sault Ste. Marie-Lake Superior Coast	20	0	10	30
5-S	Lake of the Wood	10	10	20	10

Score (maximum 70 points)

**70**

## 4.1.2 Species

### 4.1.2.1 Reproductive Habitat for an Endangered or Threatened Species

Under the "Activity" column, when scoring animal species, record what the animal was doing when observed (e.g., nesting, courtship, singing, etc).

	Common Name	Scientific Name	Activity	Date Observed	Info Source
250	Blanding's Turtle	Emydoidea blandingii	Nesting	2015	Field Observation
		#N/A			
		#N/A			
		#N/A			
		#N/A			
		#N/A			
250	Total				

For each species score 250 points. (Score is cumulative, no maximum score)

Additional Notes/Comments:

Field observation; AECOM, 2015

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Reproductive Habitat for Endangered or Threatened Species (no maximum)	<b>250</b>
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#### 4.1.2.2 Traditional Migration or Feeding Habitat for an Endangered or Threatened Species

Under the "Activity" column, when scoring animal species, record what the animal was doing when observed (e.g., nesting, courtship, singing, feeding, resting etc). Dates that species has been recorded using the wetland must be included in the table below.

	Common Name	Scientific Name	Activity	Date Observed	Info Source
150	Blanding's Turtle	<i>Emydoidea blandingii</i>	Basking	Numerous 2011-2015	AECOM, 2015
75	Massasauga	<i>Sistrurus catenatus</i>	Basking	Numerous 2011-2015	AECOM, 2015
		#N/A			
		#N/A			
		#N/A			
		#N/A			
		#N/A			
225	Total				

For one species score 150 points; for each additional species score 75 points. (Score is cumulative)

Additional Notes/Comments:

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Traditional Habitat for Endangered or Threatened Species (no maximum)	<b>225</b>
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### 4.1.2.3 Provincially Significant Animal Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
Canada Warbler	Cardellina Canadensis	Singing	Multiple	AECOM, 2015
Snapping Turtle	Chelydra serpentina	Basking	Multiple	AECOM, 2015
Eastern Wood-Pewee	Contopus virens	Singing	Multiple	AECOM, 2015
	#N/A			
	#N/A			
	#N/A			
	#N/A			

Additional Notes/Comments:

Field Observation: AECOM, 2015

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One species = 50 pts	9 species = 140	17 species = 160
2 species = 80	10 species = 143	18 species = 162
3 species = 95	11 species = 146	19 species = 164
4 species = 105	12 species = 149	20 species = 166
5 species = 115	13 species = 152	21 species = 168
6 species = 125	14 species = 154	22 species = 170
7 species = 130	15 species = 156	23 species = 172
8 species = 135	16 species = 158	24 species = 174
		25 species = 176

*Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)*

Provincially Significant Plant Species (no maximum)	<b>95</b>
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#### 4.1.2.4 Provincially Significant Plant Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			

Additional Notes/Comments:

None observed

1 species = 50 pts	9 species = 140	17 species = 160
2 species = 80	10 species = 143	18 species = 162
3 species = 95	11 species = 146	19 species = 164
4 species = 105	12 species = 149	20 species = 166
5 species = 115	13 species = 152	21 species = 168
6 species = 125	14 species = 154	22 species = 170
7 species = 130	15 species = 156	23 species = 172
8 species = 135	16 species = 158	24 species = 174
		25 species = 176

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species (no maximum)	<b>0</b>
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#### 4.1.2.5 Regionally Significant Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			

One species = 20 pts	4 species = 45	7 species = 58 pts
2 species = 30	5 species = 50	8 species = 61
3 species = 40	6 species = 55	9 species = 64
		10 species = 67

For each significant species over 10 in wetland, add 1 point.

Regionally Significant Species Score (no maximum score)	<b>0</b>
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#### 4.1.2.6 Locally Significant Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			

One species = 10 pts	4 species = 31 pts	7 species = 43 pts
2 species = 17	5 species = 38	8 species = 45
3 species = 24	6 species = 41	9 species = 47
		10 species = 49

For each significant species over 10 in wetland, add 1 point.

Locally Significant Species Score (no maximum score)	<b>0</b>
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#### 4.1.2.7 Species of Special Status

##### Black Duck

Suitable breeding habitat present and within assessment range (Figure 25)

Assessment Category	Check One	Points
20-40 Indicated Pairs/100km sq		= 20
10-20 Indicated Pairs/100 km sq	x	= 15
5-10 Indicated Pairs/100 km sq		= 10
1-5 Indicated Pairs/100km sq		= 5
Habitat not suitable		= 0
Out of assessment range		= 0

Black Duck Score (no maximum score)	<b>15</b>
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SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<b>PTERIDOPHYTES</b>		<b>FERNS &amp; ALLIES</b>						
<i>Woodwardia virginica</i>	Virginia Chain Fern	10	-5	0	S4	G5	-	-
<i>Pteridium aquilinum var. latiusculum</i>	Eastern Bracken-fern	2	3	0	S5	G5T	-	-
<i>Dryopteris marginalis</i>	Marginal Wood Fern	5	3	0	S5	G5	-	-
<i>Dryopteris cristata</i>	Crested Wood Fern	7	-5	0	S5	G5	-	-
<i>Onoclea sensibilis</i>	Sensitive Fern	4	-3	0	S5	G5	-	-
<i>Athyrium filix-femina</i>	Lady Fern						-	-
<i>Gymnocarpium dryopteris</i>	Oak Fern	7	0	0	S5	G5	-	-
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	5	-2	0	S5	G5	-	-
<i>Matteuccia struthiopteris</i>	Ostrich Fern	5	-3	0	S5	G5	-	-
<i>Dryopteris sp.</i>	Wood Fern						-	-
<i>Equisetum sylvaticum</i>	Wood Horsetail	7	-3	0	S5	G5	-	-
<i>Equisetum arvense</i>	Field Horsetail	0	0	0	S5	G5	-	-
<i>Equisetum fluviatile</i>	Water Horsetail	7	-5	0	S5	G5	-	-
<i>Equisetum hyemale var. affine</i>	Scouring-rush	2	-2	0	S5	G5T5	-	-
<i>Lycopodium dendroideum</i>	Prickly Tree Club-moss	7	0	0	S5	G5	-	-
<i>Lycopodiella inundata</i>	Nothern Bog Club-moss	9	-5	0	S5	G5	-	-
<i>Huperzia lucidula</i>	Shining Fir-moss	7	-1	0	S5	G5	-	-
<i>Osmunda regalis var. spectabilis</i>	Royal Fern	7	-5	0	S5	G5T	-	-
<i>Osmunda cinnamomea</i>	Cinnamon Fern	7	-3	0	S5	G5	-	-
<i>Osmunda claytoniana</i>	Interrupted Fern	7	-1	0	S5	G5	-	-
<i>Polypodium virginianum</i>	Rock Polypody Fern	6	5	0	S5	G5	-	-
<i>Thelypteris palustris var. pubescens</i>	Marsh Fern	5	-4	0	S5	G5T?	-	-
<i>Phegopteris connectilis</i>	Northern Beech Fern	8	5	0	S5	G5	-	-
<b>GYMNOSPERMS</b>		<b>CONIFERS</b>						
<i>Juniperus communis</i>	Common Juniper	4	3	0	S5	G5	-	-
<i>Thuja occidentalis</i>	Eastern White Cedar	4	-3	0	S5	G5	-	-
<i>Larix laricina</i>	Tamarack	7	-3	0	S5	G5	-	-
<i>Picea mariana</i>	Black Spruce	8	-3	0	S5	G5	-	-
<i>Pinus banksiana</i>	Jack Pine	9	3	0	S5	G5	-	-
<i>Pinus strobus</i>	Eastern White Pine	4	3	0	S5	G5	-	-
<i>Picea glauca</i>	White Spruce	6	3	0	S5	G5	-	-
<i>Abies balsamea</i>	Balsam Fir	5	-3	0	S5	G5	-	-
<b>DICOTYLEDONS</b>		<b>DICOTS</b>						
<i>Acer rubrum</i>	Red Maple	4	0	0	S5	G5	-	-
<i>Acer spicatum</i>	Mountain Maple	6	3	0	S5	G5	-	-
<i>Rhus typhina</i>	Staghorn Sumac				S5	G5	-	-
<i>Toxicodendron radicans ssp. negundo</i>	Poison-ivy	5	-1	0	S5	G5T	-	-
<i>Sium suave</i>	Hemlock Water-parsnip	4	-5	0	S5	G5	-	-
<i>Apocynum androsaemifolium ssp. androsaemifolium</i>	Spreading Dogbane	3	5	0	S5	G5T?	-	-
<i>Nemopanthus mucronatus</i>	Mountain-holly	8	-5	0	S5	G5	-	-
<i>Ilex verticillata</i>	Winterberry	5	-4	0	S5	G5	-	-
<i>Ilex mucronata</i>	Catberry				S5	G5	-	-
<i>Ilex sp.</i>							-	-
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	4	3	0	S5	G5	-	-
<i>Eurybia macrophylla</i>	Large-leaved Aster	5	5	0	S5	G5	-	-
<i>Lactuca biennis</i>	Biennial Lettuce	6	0	0	S5	G5	-	-
<i>Solidago rugosa ssp. rugosa</i>	Rough Goldenrod	4	-1	0	S5	G5T?	-	-
<i>Symphotrichum umbellatus var. umbellatus</i>	Flat-top White Aster	6	-3	0	S5	G5T?	-	-
<i>Eupatorium maculatum</i>	Spotted Joe-pye-weed	3	-5	0	S5	G5T5	-	-
<i>Euthamia graminifolia</i>	Flat-topped Bushy Goldenrod	2	-2	0	S5	G5	-	-
<i>Solidago canadensis</i>	Canada Goldenrod	1	3	0	S5	G5	-	-
<i>Symphotrichum puniceum var. puniceum</i>	Purple-stemmed Aster	0	0	0	S5	G5T?	-	-
<i>Hieracium aurantiacum</i>	Devil's Paintbrush	0	5	-2	SE5	G?	-	-
<i>Arctium minus</i>	Common Burdock						-	-
<i>Solidago sp.</i>	Goldenrod						-	-
<i>Aster sp.</i>	Aster						-	-
<i>Eupatorium perfoliatum</i>	Perfoliate Thoroughwort/Boneset	2	-4	0	S5	G5	-	-
<i>Leucanthemum vulgare</i>	Ox-eye Daisy	0	5	-1	SE5	G?	-	-
<i>Symphotrichum sp.</i>							-	-
<i>Eutrochium maculatum</i>	Spotted Joe Pye Weed						-	-
<i>Symphotrichum borealis</i>	Rush Aster	10	-5	0	S5	G5	-	-
<i>Bidens cernua</i>	Stick-tight	2	-5	0	S5	G5	-	-

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Anaphalis margaritacea</i>	Pearly Everlasting	3	5	0	S5	G5	-	-
<i>Impatiens capensis</i>	Spotted Touch-me-not	4	-3	0	S5	G5	-	-
<i>Alnus incana</i> spp. <i>rugosa</i>	Speckled Alder	6	-5	0	S5	G5T5	-	-
<i>Betula papyrifera</i>	White Birch	0	2	0	S5	G5	-	-
<i>Corylus cornuta</i>	Beaked Hazel	5	5	0	S5	G5T	-	-
<i>Cardamine diphylla</i>	Two-leaved Toothwort	7	5	0	S5	G5	-	-
<i>Armoracia lacustris</i>	Lake-cress						-	-
<i>Brasenia schreberi</i>	Water-shield	7	-5	0	S5	G5	-	-
<i>Diervilla lonicera</i>	Bush Honeysuckle	5	5	0	S5	G5	-	-
<i>Viburnum nudum</i> var. <i>cassinoides</i>	Northern Wild Raisin						-	-
<i>Sambucus nigra</i> ssp. <i>canadensis</i>	Common Elderberry						-	-
<i>Sambucus canadensis</i>	American Elderberry						-	-
<i>Symphoricarpos albus</i>	Snowberry	7	4	0	S5	G5	-	-
<i>Viburnum lentago</i>	Nannyberry	4	-1	0	S5	G5	-	-
<i>Sambucus</i> sp.	Elderberry						-	-
<i>Cornus canadensis</i>	Bunchberry	7	0	0	S5	G5	-	-
<i>Cornus stolonifera</i>	Red-osier Dogwood				S5	G5	-	-
<i>Cornus racemosa</i>	Red Panicked Dogwood/Gray dogwood	2	-2	0	S5	G5?	-	-
<i>Cornus sericea</i>	Red-osier Dogwood	2	-3	0	S5	G5	-	-
<i>Drosera rotundifolia</i>	Round-leaved Sundew	7	-5	0	S5	G5	-	-
<i>Arctostaphylos uva-ursi</i>	Common Bearberry	8	5	0	S5	G5	-	-
<i>Chamaedaphne calyculata</i>	Leatherleaf	9	-5	0	S5	G5	-	-
<i>Gaultheria procumbens</i>	Wintergreen	6	3	0	S5	G5	-	-
<i>Kalmia angustifolia</i>	Sheep Laurel	9	0	0	S5	G5	-	-
<i>Kalmia polifolia</i>	Bog Laurel	10	-5	0	S5	G5	-	-
<i>Ledum groenlandicum</i>	Labrador-tea	9	-5	0	S5	G5	-	-
<i>Vaccinium angustifolium</i>	Low Sweet Blueberry	6	3	0	S5	G5	-	-
<i>Vaccinium oxycoccos</i>	Small Cranberry	10	-5	0	S5	G5	-	-
<i>Vaccinium myrtilloides</i>	Velvet-leaf Blueberry	7	-2	0	S5	G5	-	-
<i>Andromeda polifolia</i> ssp. <i>glaucophylla</i>	Bog Rosemary	10	-5	0	S5	G5T5	-	-
<i>Gaylussacia baccata</i>	Black Huckleberry	8	3	0	S4	G5	-	-
<i>Andromeda polifolia</i> ssp. <i>polifolia</i>	Wild Rosemary	0	0	0	S4	G5T5	-	-
<i>Vaccinium macrocarpon</i>	Large Cranberry	10	-5	0	S4S5	G4	-	-
<i>Quercus rubra</i>	Red Oak	6	3	0	S5	G5	-	-
<i>Corydalis</i> sp.	Corydalis						-	-
<i>Geranium bicknellii</i>	Bicknell's Crane's-bill	5	5	0	S4	G5	-	-
<i>Ribes glandulosum</i>	Skunk Currant	6	-3	0	S5	G5	-	-
<i>Ribes triste</i>	Wild Red Currant	6	-5	0	S5	G5	-	-
<i>Ribes americanum</i>	Wild Black Currant	4	-3	0	S5	G5	-	-
<i>Ribes lacustre</i>	Swamp Black Currant	7	-3	0	S5	G5	-	-
<i>Ribes</i> sp.							-	-
<i>Ribes cynosbati</i>	Prickly Gooseberry	4	5	0	S5	G5	-	-
<i>Ribes hirtellum</i>	Smooth Gooseberry	6	-3	0	S5	G5	-	-
<i>Triadenum fraseri</i>	Fraser's St. John's-wort	7	-5	0	S5	G4G5	-	-
<i>Hypericum perforatum</i>	Common St. John's-wort	0	5	-3	SE5	G?	-	-
<i>Myriophyllum sibiricum</i>	Pale Water-milfoil	0	-5	0	S5	G5	-	-
<i>Myriophyllum</i> sp.							-	-
<i>Proserpinaca palustris</i>	Field Mermaid-weed	7	-5	0	S4	G5	-	-
<i>Myriophyllum verticillatum</i>	Whorled Water-milfoil	7	-5	0	S5	G5	-	-
<i>Mentha arvensis</i>	American Wild Mint	3	-3	0	S5		-	-
<i>Lycopus uniflorus</i>	Northern Water-horehound	5	-5	0	S5	G5	-	-
<i>Utricularia intermedia</i>	Flat-leaved Bladderwort	8	-5	0	S5	G5	-	-
<i>Utricularia vulgaris</i>	Greater Bladderwort	4	-5	0	S5	G5	-	-
<i>Menyanthes trifoliata</i>	Three-leaved Buckbean	9	-5	0	S5	G5	-	-
<i>Myrica gale</i>	Sweet Gale	6	-5	0	S5	G5	-	-
<i>Comptonia peregrina</i>	Sweetfern	7	5	0	S5	G5	-	-
<i>Nymphaea odorata</i>	Fragrant Water-lily	0	0	0	S5	G5	-	-
<i>Nuphar variegata</i>	Bulhead Pond-lily	4	-5	0	S5	G5	-	-
<i>Nymphaea</i> sp.	Water-lily						-	-
<i>Nuphar</i> sp.	Pond-lily						-	-
<i>Nuphar lutea</i> ssp. <i>pumila</i>	Yellow Pond-lily						-	-
<i>Fraxinus nigra</i>	Black Ash	7	-4	0	S5	G5	-	-
<i>Circaea lutetiana</i> ssp. <i>canadensis</i>	Enchanter's Nightshade	3	3	0	S5	G5T5	-	-

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Epilobium ciliatum</i>	Hairy Willow-herb				S5	G5	-	-
<i>Epilobium angustifolium</i>	Fireweed						-	-
<i>Polygonum cilinode</i>	Fringed Black Bindweed	2	5	0	S5	G5	-	-
<i>Polygonum sp.</i>							-	-
<i>Polygonum amphibium</i>	Water Smartweed	5	-5	0	S5	G5	-	-
<i>Trientalis borealis ssp. borealis</i>	Star-flower	6	-1	0	S5	G5T?	-	-
<i>Lysimachia thyrsoiflora</i>	Tufted Loosestrife	7	-5	0	S5	G5	-	-
<i>Lysimachia terrestris</i>	Swamp Loosestrife	6	-5	0	S5	G5	-	-
<i>Lysimachia ciliata</i>	Fringed Loosestrife	4	-3	0	S5	G5	-	-
<i>Lysimachia sp.</i>	Loosestrife						-	-
<i>Pyrola asarifolia</i>	Pink Pyrola	7	-3	0	S5	G5	-	-
<i>Chimaphila umbellata</i>	Common Pipsissewa				S5	G5	-	-
<i>Aquilegia canadensis</i>	Wild Columbine	5	1	0	S5	G5	-	-
<i>Coptis trifolia</i>		7	-3	0	S5	G5T5	-	-
<i>Caltha palustris</i>	Marsh-marigold	5	-5	0	S5	G5	-	-
<i>Actaea rubra</i>	Red Baneberry	5	5	0	S5	G5	-	-
<i>Clematis virginiana</i>	Virgin's-bower	3	0	0	S5	G5	-	-
<i>Ranunculus abortivus</i>	Kidney-leaf Buttercup	2	-2	0	S5	G5	-	-
<i>Ranunculus recurvatus var. recurvatus</i>	Hooked Buttercup	4	-3	0	S5	G5	-	-
<i>Thalictrum pubescens</i>	Tall Meadow-rue	5	-2	0	S5	G5	-	-
<i>Ranunculus pensylvanicus</i>	Bristly Buttercup	3	-5	0	S5	G5	-	-
<i>Anemone canadensis</i>	Canada Anemone	3	-3	0	S5	G5	-	-
<i>Ranunculus acris</i>	Tall Buttercup	0	0	-2	SE5	G5	-	-
<i>Thalictrum dasycarpum</i>	Purple Meadow-rue	8	-2	0	S4?	G5	-	-
<i>Amelanchier arborea</i>	Downy Juneberry	0	3	0	S5	G5	-	-
<i>Aronia melanocarpa</i>	Black chokeberry	7	-3	0	S5	G5	-	-
<i>Fragaria vesca ssp. americana</i>	Woodland Strawberry	4	4	0	S5	G5T?	-	-
<i>Prunus pumila</i>	Sand Cherry						-	-
<i>Rubus idaeus</i>	Red Raspberry	0	0	0	SE1	G5T5	-	-
<i>Rubus pubescens</i>	Dwarf Raspberry	4	-4	0	S5	G5	-	-
<i>Prunus virginiana</i>	Choke Cherry						-	-
<i>Rubus flagellaris</i>	Prickly Raspberry	4	4	0	S4	G5	-	-
<i>Spiraea latifolia</i>	Broad-leaved Meadow-sweet				S5	G5	-	-
<i>Amelanchier laevis</i>	Smooth Juneberry	5	5	0	S5	G4G5Q	-	-
<i>Spiraea alba</i>	Narrow-leaved Meadow-sweet	3	-4	0	S5	G5	-	-
<i>Geum aleppicum</i>	Yellow Avens	2	-1	0	S5	G5	-	-
<i>Rubus allegheniensis</i>	Alleghany Blackberry	2	2	0	S5	G5	-	-
<i>Rubus hispidus</i>	Trailing Blackberry	6	-3	0	S4S5	G5	-	-
<i>Spiraea tomentosa</i>	Tomentose Meadow-sweet	5	-3	0	S4S5	G5	-	-
<i>Comarum palustre</i>	Marsh Cinquefoil						-	-
<i>Spiraea sp.</i>	Meadow-sweet						-	-
<i>Fragaria virginiana</i>	Virginia Strawberry						-	-
<i>Prunus serotina</i>	Black Cherry	3	3	0	S5	G5	-	-
<i>Rosa palustris</i>	Marsh Rose	7	-5	0	S5	G5	-	-
<i>Sorbus americana</i>	American Mountain-ash	8	-1	0	S5	G5	-	-
<i>Potentilla norvegica</i>	Norwegian cinquefoil				S5	G5	-	-
<i>Potentilla arguta</i>	Tall Cinquefoil	7	5	0	S4	G5	-	-
<i>Galium aparine</i>	Cleavers	4	3	0	S5	G5	-	-
<i>Galium triflorum</i>	Sweet-scented Bedstraw	4	2	0	S5	G5	-	-
<i>Galium palustre</i>	Marsh Bedstraw	5	-5	0	S5	G5	-	-
<i>Populus tremuloides</i>	Trembling Aspen	2	0	0	S5	G5	-	-
<i>Salix sp.</i>	Willow						-	-
<i>Salix petiolaris</i>	Slender Willow	3	-4	0	S5	G4	-	-
<i>Populus grandidentata</i>	Large-tooth Aspen	5	3	0	S5	G5	-	-
<i>Salix bebbiana</i>	Long-beaked Willow	4	-4	0	S5	G5	-	-
<i>Salix discolor</i>	Pussy Willow	3	-3	0	S5	G5	-	-
<i>Salix pyrifolia</i>	Balsam Willow	10	-4	0	S5	G5	-	-
<i>Comandra umbellata</i>	Bastard Toad-flax	6	3	0	S5	G5	-	-
<i>Sarracenia purpurea</i>	Pitcher-plant	10	-5	0	S5	G5	-	-
<i>Ulmus americana</i>	White Elm	3	-2	0	S5	G5?	-	-
<i>Urtica dioica ssp. dioica</i>	European Stinging Nettle	0	-1	-1	SE2	G5T?	-	-
<i>Laportea canadensis</i>	Wood Nettle	6	-3	0	S5	G5	-	-
<i>Viola macloskeyi</i>	Smooth White Violet				S5	G5	-	-

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<i>Viola cucullata</i>	Marsh Blue Violet	5	-5	0	S5	G4G5	-	-
<i>Viola canadensis</i>	Canada Violet	6	5	0	S5	G5	-	-
<i>Viola palustris</i>	Marsh Violet	0	0	0	SU	G5	-	-
<b>MONOCOTYLEDONS</b>	<b>MONOCOTS</b>							
<i>Arisaema triphyllum</i>	Small Jack-in-the-pulpit	5	-2	0	S5	G5T5	-	-
<i>Calla palustris</i>	Wild Calla	8	-5	0	S5	G5	-	-
<i>Eriophorum</i> sp.	Cotton-grass						-	-
<i>Scirpus cyperinus</i>	Wool-grass	4	-5	0	S5	G5	-	-
<i>Carex</i> sp.							-	-
<i>Carex aquatilis</i>	Aquatic Sedge	7	-5	0	S5	G5	-	-
<i>Carex deweyana</i>	Dewey's Sedge	6	4	0	S5	G5	-	-
<i>Carex stricta</i>	Tussock Sedge	4	-5	0	S5	G5	-	-
<i>Carex blanda</i>	Woodland Sedge	3	0	0	S5	G5?	-	-
<i>Carex crinita</i>	Fringed Sedge	6	-4	0	S5	G5	-	-
<i>Carex gracillima</i>	Graceful Sedge	4	3	0	S5	G5	-	-
<i>Carex intumescens</i>	Bladder Sedge	6	-4	0	S5	G5	-	-
<i>Carex lacustris</i>	Lake-bank Sedge	5	-5	0	S5	G5	-	-
<i>Carex arctata</i>	Drooping Wood Sedge	5	5	0	S5	G5?	-	-
<i>Eriophorum virginicum</i>	Virginia Cotton-grass	10	-5	0	S5	G5	-	-
<i>Scirpus</i> sp.	Bulrush						-	-
<i>Carex utriculata</i>	Beaked Sedge	7	-5	0	S5	G5	-	-
<i>Eriophorum vaginatum</i> ssp. <i>spissum</i>	Sheathed Cotton-grass	10	-5	0	S5	G5T5	-	-
<i>Dulichium arundinaceum</i>	Reed-like Three-way Sedge	7	-5	0	S5	G5	-	-
<i>Scirpus atrovirens</i>	Dark-green Bulrush	3	-5	0	S5	G5?	-	-
<i>Eriophorum viridi-carinatum</i>	Thin-leaved Cotton-grass	9	-5	0	S5	G4	-	-
<i>Carex magellanica</i> ssp. <i>irrigua</i>	Stunted Sedge	10	-5	0	S5	G5T?	-	-
<i>Carex oligosperma</i>	Few-seeded Sedge	10	-5	0	S4	G4	-	-
<i>Carex tenuiflora</i>	Sparse-flowered Sedge	10	-5	0	S5	G5	-	-
<i>Carex canescens</i> ssp. <i>canescens</i>	Silvery Sedge	7	-5	0	S5	G5T?	-	-
<i>Carex disperma</i>	Soft-leaved Sedge	8	-5	0	S5	G5	-	-
<i>Scirpus microcarpus</i>	Small-fruited Bulrush	4	-5	0	S5	G5	-	-
<i>Carex interior</i>	Inland Sedge	6	-5	0	S5	G5	-	-
<i>Carex lasiocarpa</i>	Slender Sedge	8	-5	0	S5	G5	-	-
<i>Carex brunnescens</i> ssp. <i>brunnescens</i>	Brownish Sedge	7	-3	0	S5	G5T?	-	-
<i>Carex echinata</i> ssp. <i>echinata</i>	Prickly Sedge	7	-5	0	S5	G5T5	-	-
<i>Carex scoparia</i>	Pointed Broom Sedge	5	-3	0	S5	G5	-	-
<i>Carex pellita</i>	Woolly Sedge	4	-5	0	S5	G5	-	-
<i>Carex stipata</i>	Awl-fruited Sedge	3	-5	0	S5	G5	-	-
<i>Carex lupulina</i>	Hop Sedge	6	-5	0	S5	G5	-	-
<i>Carex siccata</i>	Silvery-flowered Hay Sedge	0	0	0	S5	G5	-	-
<i>Iris versicolor</i>	Multi-coloured Blue-flag	5	-5	0	S5	G5	-	-
<i>Iris</i> sp.	Iris						-	-
<i>Sisyrinchium montanum</i>	Montane Blue-eyed-grass	0	-1	0	S5	G5	-	-
<i>Juncus effusus</i>	Common rush	0	0	0			-	-
<i>Juncus bufonius</i>	Toad Rush	1	-4	0	S5	G5	-	-
<i>Juncus validus</i>	Roundhead Rush						-	-
<i>Juncus</i> sp.	Rush						-	-
<i>Lemna minor</i>	Lesser Duckweed	2	-5	0	S5	G5	-	-
<i>Maianthemum canadense</i>	Wild Lily-of-the-valley	5	0	0	S5	G5	-	-
<i>Maianthemum trifolium</i>	Three-leaved Solomon's Seal	10	-5	0	S5	G5	-	-
<i>Polygonatum pubescens</i>	Hairy Solomon's Seal	5	5	0	S5	G5	-	-
<i>Clintonia borealis</i>	Bluebead-lily	7	-1	0	S5	G5	-	-
<i>Trillium erectum</i>	Purple Trillium	6	1	0	S5	G5	-	-
<i>Trillium grandiflorum</i>	White Trillium	5	5	0	S5	G5	-	-
<i>Cypripedium acaule</i>	Moccasin Flower	7	-3	0	S5	G5	-	-
<i>Poa</i> sp.							-	-
<i>Calamagrostis canadensis</i>	Blue-joint Grass	4	-5	0	S5	G5	-	-
<i>Deschampsia flexuosa</i>	Common Hairgrass	8	5	0	S5	G5	-	-
<i>Brachyelytrum erectum</i>	Bearded Short-husk	7	5	0	S4S5	G5	-	-
<i>Glyceria striata</i>	Fowl Meadow Grass	3	-5	0	S5	G5	-	-
<i>Cinna latifolia</i>	Broad-leaved Reed Grass	7	-4	0	S5	G5	-	-
<i>Phragmites australis</i>	Common Reed	0	-4	0	S5	G5	-	-
<i>Poa palustris</i>	Fowl Meadow Grass	5	-4	0	S5	G5	-	-

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<i>Phalaris arundinacea</i>	Reed Canary Grass	0	-4	0	S5	G5	-	-
<i>Poa annua</i>	Annual Blue Grass	0	1	-2	SE5	G?	-	-
<i>Bromus inermis</i>	Awnless Brome				SNA	G5TNR	-	-
<i>Agrostis stolonifera</i>	Redtop	0	-3	0	S5	G5	-	-
<i>Pontederia cordata</i>	Heart-leaved Pickerel-weed	7	-5	0	S5	G5	-	-
<i>Sparganium emersum ssp. acaule</i>	Stemless Bur-reed	0	0	0	SU		-	-
<i>Sparganium angustifolium</i>	Narrow-leaved Bur-reed	9	-5	0	S4?	G5	-	-
<i>Sparganium fluctuans</i>	Floating Bur-reed	9	-5	0	S4?	G5	-	-
<i>Sparganium eurycarpum</i>	Broad-fruited Bur-reed	3	-5	0	S5	G5	-	-
<i>Typha latifolia</i>	Broad-leaved Cattail	3	-5	0	S5	G5	-	-
<i>Typha angustifolia</i>	Narrow-leaved Cattail	3	-5	0	S5	G5	-	-
<i>Typha sp.</i>	Cattail						-	-
<b>ASCOMYCETES</b>	<b>LICHENS</b>							
<i>Cladonia rangiferina</i>	Grey Reindeer Lichen				S5	G5	-	-
<b>BRYOPSIDA</b>	<b>MOSESSES</b>							
<i>Aulacomnium palustre</i>	Glow Moss				S5	G5	-	-
<i>Dicranum polysetum</i>	Wavy Moss				S5	G5	-	-
<i>Dicranum montanum</i>	Montane Dicranum Moss				S5	G5	-	-
<i>Dicranum ontariense</i>	Ontario Dicranum Moss				S5	G4G5	-	-
<i>Polytrichum sp.</i>	Haircap Moss						-	-
<i>Polytrichum commune</i>	Common Haircap Moss				S5	G5	-	-
<i>Polytrichum strictum</i>	Bog Haircap Moss				S5	G4	-	-
<b>SPHAGNOPSIDA</b>	<b>MOSESSES</b>							
<i>Sphagnum sp.</i>	Peat Moss						-	-
<i>Sphagnum girgensohnii</i>	Common Green Peat Moss				S5	G5	-	-
<i>Sphagnum capillifolium</i>	Northern Peat Moss				S5	G5	-	-
<i>Sphagnum angustifolium</i>	Cuspidate Peat Moss				S5	G5	-	-
<i>Sphagnum squarrosum</i>	Squarrose Peat Moss				S5	G5	-	-
<i>Sphagnum fuscum</i>	Common Brown Sphagnum				S5	G5	-	-
<b>AVIFAUNA</b>								
<i>Corvus brachyrhynchos</i>	American Crow				S5B	G5	-	-
<i>Picoides dorsalis</i>	American Three-toed Woodpecker				S4	G5	-	-
<i>Scolopax minor</i>	American Woodcock				S4B	G5	-	-
<i>Haliaeetus leucocephalus</i>	Bald Eagle				S2N, S4B	G5	SC	-
<i>Strix varia</i>	Barred Owl				S5	G5	-	-
<i>Setophaga castanea</i>	Bay-breasted Warbler				S5B	G5	-	-
<i>Mniotilta varia</i>	Black-and-white Warbler				S5B	G5	-	-
<i>Picoides arcticus</i>	Black-backed Woodpecker				S4	G5	-	-
<i>Poecile atricapillus</i>	Black-capped Chickadee				S5	G5	-	-
<i>Setophaga virens</i>	Black-throated Green Warbler				S5B	G5	-	-
<i>Cyanocitta cristata</i>	Blue Jay				S5	G5	-	-
<i>Buteo platypterus</i>	Broad-winged Hawk				S5B	G5	-	-
<i>Bucephala albeola</i>	Bufflehead				S4	G5	-	-
<i>Branta canadensis</i>	Canada Goose				S5	G5	-	-
<i>Cardellina pusilla</i>	Canada Warbler				S4B	G5	THR	THR
<i>Setophaga pensylvanica</i>	Chestnut-sided Warbler				S5B	G5	-	-
<i>Gavia immer</i>	Common Loon				S5B, S5N	G5	-	-
<i>Chordeiles minor</i>	Common Nighthawk				S4B	G4	SC	THR
<i>Geothlypis trichas</i>	Common Yellowthroat				S5B	G5	-	-
<i>Junco hyemalis</i>	Dark-eyed Junco				S5	G5	-	-
<i>Picoides pubescens</i>	Downy Woodpecker				S5	G5	-	-
<i>Sayornis phoebe</i>	Eastern Pheobe				S5B	G5	-	-
<i>Caprimulgus vociferus</i>	Eastern Whip-poor-will				S4B	G5	THR	THR
<i>Contopus virens</i>	Eastern Wood-Pewee				S4B	G5	-	-
<i>Regulus satrapa</i>	Golden-crowned Kinglet				S5B	G5	-	-
<i>Perisoreus canadensis</i>	Gray Jay				S5	G5	-	-
<i>Ardea herodias</i>	Great blue Heron				S4	G5	-	-
<i>Tringa melanoleuca</i>	Greater Yellowlegs				S4B, S4N	G5	-	-
<i>Picoides villosus</i>	Hairy Woodpecker				S5	G5	-	-
unknown	Hawk Sp.				-	-	-	-
<i>Catharus guttatus</i>	Hermit Thrush				S5B	G5	-	-
<i>Charadrius vociferus</i>	Killdeer				S5B, S5N	G5	-	-
<i>Setophaga kirtlandii</i>	Kirtland's Warbler				S1B	G1	END	END

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Anas platyrhynchos</i>	Mallard				S5	G5	-	-
<i>Oreothlypis ruficapilla</i>	Nashville Warbler				S5B	G5	-	-
<i>Colaptes auratus</i>	Northern Flicker				S4B	G5	-	-
<i>Accipiter gentilis</i>	Northern Goshawk				S4	G5	-	-
<i>Parkesia noveboracensis</i>	Northern Waterthrush				S5B	G5	-	-
<i>Contopus cooperi</i>	Olive-sided Flycatcher				S4B	G4	SC	THR
<i>Pandion haliaetus</i>	Osprey				S5B	G5	-	-
<i>Seiurus aurocapilla</i>	Ovenbird				S4B	G5	-	-
<i>Hyalotomus pileatus</i>	Pileated Woodpecker				S5	G5	-	-
<i>Pinicola enucleator</i>	Pine Grosbeak				S4B	G5	-	-
<i>Corvus corax</i>	Common Raven				S5	G5	-	-
<i>Sitta canadensis</i>	Red-breasted Nuthatch				S5	G5	-	-
<i>Vireo olivaceus</i>	Red-eyed Vireo				S5B	G5	-	-
<i>Buteo jamaicensis</i>	Red-tailed Hawk				S5	G5	-	-
<i>Aythya collaris</i>	Ring-neck Duck				S5	G5	-	-
<i>Bonasa umbellus</i>	Ruffed Grouse				S4	G5	-	-
<i>Euphagus carolinus</i>	Rusty Blackbird				S4B	G4	-	SC
<i>Grus canadensis</i>	Sandhill Crane				S5B	G5	-	-
<i>Falcipecten canadensis</i>	Spruce Grouse				S5	G5	-	-
<i>Picoides dorsalis</i>	Three-toed Woodpecker				S4	G5	-	-
<i>Cathartes aura</i>	Turkey Vulture				S5B	G5	-	-
<i>Zonotrichia albicollis</i>	White-throated Sparrow				S5B	G5	-	-
<i>Troglodytes troglodytes</i>	Winter Wren				S5B	G5	-	-
<i>Aix sponsa</i>	Wood Duck				S5	G5	-	-
<i>Hylocichla mustelina</i>	Wood Thrush				S4B	G5	-	THR
<i>Setophaga petechia</i>	Yellow Warbler				S5B	G5	-	-
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker				S5B	G5	-	-
<i>Setophaga coronata</i>	Yellow-rumped Warbler				S5B	G5	-	-
<b>HERPETOFAUNA</b>								
<i>Lithobates catesbeianus</i>	American Bullfrog				S4	G5	-	-
<i>Anaxyrus americanus</i>	American Toad				S5	G5	-	-
<i>Emydoidea blandingii</i>	Blanding's Turtle				S3	G4	THR	THR
<i>Plestiodon fasciatus</i> pop. 2	Common Five-lined Skink (Southern Shield population)				S3	G5T3	SC	SC
<i>Thamnophis sirtalis sirtalis</i>	Eastern Gartersnake				S5	G5T5	-	-
<i>Hemidactylium scutatum</i>	Four-toed Salamander				S4	G5	-	-
<i>Lithobates clamitans</i>	Green Frog				S5	G5	-	-
<i>Hyla versicolor</i>	Gray Treefrog				S5	G5	-	-
<i>Sistrurus catenatus</i> pop. 1	Massasauga (Great Lakes / St. Lawrence population)				S3	GN3	THR	THR
Midland painted Turtle	Midland painted Turtle				S4	G5T5	-	-
Mink Frog	Mink Frog				S5	G5	-	-
Northern Leopard Frog	Northern Leopard Frog				S5	G5	-	-
Northern Watersnake	Northern Watersnake				S5	G5T5	-	-
Red-bellied Snake	Red-bellied Snake				S5	G5	-	-
Ring-necked Snake	Ring-necked Snake				S4	G5	-	-
Smooth Greensnake	Smooth Greensnake				S4	G5	-	-
Spring Peeper	Spring Peeper				S5	G5	-	-
Wood Frog	Wood Frog				S5	G5	-	-
<b>MAMMALS</b>								
American Marten	American Marten				S5	G5	-	-
Beaver	Beaver				S5	G5	-	-
Black Bear	Black Bear				S5	G5	-	-
Eastern Chipmunk	Eastern Chipmunk				S5	G5	-	-
Eastern Gray Squirrel	Eastern Gray Squirrel				S5	G5	-	-
Meadow Vole	Meadow Vole				S5	G5	-	-
Vole sp.	Vole sp.				-	-	-	-
Moose	Moose				S5	G5	-	-
North American River Otter	North American River Otter				S5	G5	-	-
Northern Gray Wolf	Northern Gray Wolf				S4	G4TNR	-	-
Porcupine	Porcupine				S5	G5	-	-
Red Squirrel	Red Squirrel				S5	G5	-	-
White-tailed Deer	White-tailed Deer				S5	G5	-	-

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Lynx (sighting unconfirmed)</i>	Lynx (sighting unconfirmed)				S5	G5	-	-
<i>Fox</i>	Fox				S5	G5	-	-
<i>Wolf Sp.</i>	Wolf Sp.				-	-	-	-
<b>INSECT</b>								
Springtails	Springtails				-	-	-	-
Grasshopper Sp.	Grasshopper Sp.				-	-	-	-
Spring Azure	Spring Azure				SU	G4G5	-	-

## 4.2 SIGNIFICANT FEATURES AND HABITATS

### 4.2.1 Colonial Waterbirds

Record all available information. Score the highest applicable category. Include additional information as possible (e.g., nest locations, etc).

Activity	Species	Info Source	Points
Currently nesting	Great Blue Heron	J. Kamstra, 2015	= 50
Known to have nested within the past 5 years			= 25 <b>25</b>
Active feeding area (great blue heron excluded)			= 15
None known			= 0
<b>Total:</b>			<b>25</b>

Additional Notes/Comments:

Field Observation: J. Kamstra, 2015

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Colonial Waterbird Nesting Score (maximum 50 points)	<b>25</b>
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### 4.2.2 Winter Cover for Wildlife

Score highest appropriate category. Include rationale/sources of information.

Provincially significant	=	100 pts
Significant in Ecoregion	=	50
Significant in Ecodistrict	=	25
Locally significant	=	10
<b>0</b> Little or poor winter cover	=	0
<b>0</b>		

Species/habitat/vegetation community scored (e.g., winter deer cover in hemlock swamp, S3 and S4b):

Field observation; Kristan Washburn, 2015

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Source of information:

Discussions with Aylmer District Office

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Winter Cover for Wildlife Score (maximum 100 points)	<b>0</b>
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### 4.2.3 Waterfowl Staging and/or Moulting Areas

Check highest level of significance for both staging and moulting; add scores for staging and for moulting together for final score. However, maximum score for evaluation under this section is 150 points.

	Staging		Moulting	
Nationally/internationally significant	=	150 pts	=	150 pts
Provincially significant	=	100	=	100
Significant in the Ecoregion	=	50	=	50
Significant in Ecodistrict	=	25	=	25
Known to occur	=	10 x	=	10 x
Not possible/Unknown	=	0	=	0
Subtotal:		10		10
Subtotal:		20		

Species/habitat/vegetation community scored (e.g., approx 20 mallards in W3):

102 Common Mergansers, 6 Canada Goose and 2 Buffleheads in neM6., 4 Canada Goose, 6 Buffleheads in fW1.

Over 796 individual birds of a waterfowl species were identified within the entire HIWEC study area during 2013

field surveys conducted by Stantec. Strong indication that this wetland complex is a significant staging area for the ecodistrict. Waterfowl moulting is not known.

Source of information:

Field Observation: J. Kamstra April 24 and May 13, 2015, Stantec, 2013

Waterfowl Staging/Moulting Score (maximum 150 points)	<b>20</b>
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### 4.2.4 Waterfowl Breeding

Check highest level of significance.

Nationally/internationally significant	=	150 pts
Provincially significant	=	100
Significant in the Ecoregion	=	50
Significant in Ecodistrict	=	25
x Habitat Suitable	=	10
Habitat not suitable	=	0
10		

Species/habitat/vegetation community scored (e.g., mallard in W3):

Canada Goose, American Black Duck, Mallard, Common Loo, Common Merganser and Wood Duck were confirmed breeding within the WET-003 wetland complex. Exact location and vegetation community undetermined.

Source of information:

Field observation: LGL, 2011-2012

Waterfowl Breeding Score (maximum 100 points)	<b>10</b>
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### 4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area

Check highest level of significance.

Nationally / internationally significant	=	150 pts
Provincially significant	=	100
Significant in Ecoregion	=	50
Significant in Ecodistrict	=	25
x Known to occur	=	10
Not possible / Unknown	=	0
10		

Species/habitat/vegetation community scored:

Raptors observed during migration surveys within the study area included: Turkey Vulture, American Kestrel,

Bald Eagle, Boad-winged Hawk, Merlin, Northern Goshawk, Northern Harrier, Osprey, Red-tailed Hawk, Sharp-

shinned Hawk. There is the strong possibility that some of these species may be using the WET-002 wetland

complex as a stopover area.

Source of information:

Field Observation: Stantec, 2013

Passerine, Shorebird or Raptor Stopover Score (maximum 100 points)	<b>10</b>
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#### 4.2.6 Ungulate Habitat

**EVALUATION:**

Score (1) + (2) + one of (3) to (6)

<input checked="" type="checkbox"/> 15	1. Ungulate summer cover	=	15
<input type="checkbox"/>	2. Mineral licks	=	50
<input type="checkbox"/>	3. Moose aquatic feeding area Class 1	=	0
<input type="checkbox"/>	4. Moose aquatic feeding area Class 2	=	10
<input type="checkbox"/>	5. Moose aquatic feeding area Class 3	=	20
<input type="checkbox"/>	6. Moose aquatic feeding area Class 4	=	35

(Score is cumulative for a maximum possible score of 100)

Ungulat Habitat Score (maximum 100 points)	<b>15</b>
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#### 4.2.7 Fish Habitat

##### 4.2.6.1 Spawning and Nursery Habitat

Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5- 4.9	0.2
5.0- 9.9	0.4
10.0- 14.9	0.6
15.0 -19.9	0.8
20.0+ ha	1.0

**Step 1:**

- Fish habitat is not present within the wetland Go to Step 7, Score 0 points
- Fish habitat is present within the wetland Go to Step 2

**Step 2:** Choose only one option

- Significance of the spawning and nursery habitat within the wetland is known Go to Step 3
- Significance of the spawning and nursery habitat within the wetland is not known Go through Steps 4, 5 and 6

**Step 3:** Select the highest appropriate category below, attach documentation:

- Significant in Ecoregion Go to Step 7, 100 points
- Significant in Ecodistrict Go to Step 7, 50
- Locally Significant Habitat (5.0+ ha) Go to Step 7, 25
- Locally Significant Habitat (<5.0 ha) Go to Step 7, 15

**Subtotal:** **0**

Source of information:

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**Step 4:** Low Marsh = the 'permanent' marsh area, from the existing water line out to the outer boundary of the wetland.

- Low marsh not present Go to Step 5
- Low marsh present Continue through Step 4, scoring as noted below

### Scoring of Low Marsh:

1. Check the appropriate **Vegetation Group** (see Appendix 7) for each Low Marsh community. (Based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community.)
2. Sum the areas (ha) of the vegetation communities assigned to each **Vegetation Group**.
3. Use these areas to assign an **Area Factor** for each checked **Vegetation Group**.
4. Multiply the **Area Factor** by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for Low Marsh**.

Scoring for Presence of Key Vegetation Groups – Low Marsh						
Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
1	Tallgrass				6	0.0
2	Shortgrass-Sedge				11	0.0
3	Cattail-Bulrush-Burreed	x	0.84	0.2	5	1.0
4	Arrowhead-Pickerelweed				5	0.0
5	Duckweed				2	0.0
6	Smartweed-Waterwillow				6	0.0
7	Waterlily-Lotus	x	44.42	1	11	11.0
8	Waterweed-Watercress				9	0.0
9	Ribbongrass				10	0.0
10	Coontail-Naiad-Watermilfoil	x	3.67	0.2	13	2.6
11	Narrowleaf Pondweed				5	0.0
12	Broadleaf Pondweed				8	0.0
Sub Total Score						14.6
Total Score (maximum 75 points)						14.6

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5- 4.9	0.2
5.0- 9.9	0.4
10.0- 14.9	0.6
15.0 -19.9	0.8
20.0+ ha	1.0

**Step 5:** High Marsh = the 'seasonal' marsh area, from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as a wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.

High marsh not present

*Go to Step 6*

High marsh present

*Continue through Step 5, scoring as noted below*

**Scoring of High Marsh:**

1. Check the appropriate **Vegetation Group** (see Appendix 7) for each High Marsh community. (Based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community.)
2. Sum the areas (ha) of the vegetation communities assigned to each **Vegetation Group**.
3. Use these areas to assign an **Area Factor** (from Table 8) for each checked **Vegetation Group**.
4. Multiply the **Area Factor** by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for High Marsh**.

Scoring for Presence of Key Vegetation Groups – High Marsh							
Vegetation Group Number	Vegetation Name	Group	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
1	Tallgrass					6	0.0
2	Shortgrass-Sedge		x	11.59	1	11	11.0
3	Cattail-Bulrush-Burreed					5	0.0
4	Arrowhead-Pickerelweed					5	0.0
Sub Total Score							11.0
Total Score for High Marsh ( <i>maximum 25 points</i> )							11.0

*Continue to Step 6*

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5- 4.9	0.2
5.0- 9.9	0.4
10.0- 14.9	0.6
15.0 -19.9	0.8
20.0+ ha	1.0

**Step 6:**

**Scoring of Swamp:**

1. Determine the total area (ha) of seasonally flooded swamp communities within the wetland containing fish habitat and record below.
2. Determine the total area (ha) of permanently flooded swamp communities within the wetland containing fish habitat and record below.
3. Use these areas to assign an **Area Factor** (from Table 8).
4. Multiply the Area Factor by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for Swamp**.

Scoring Swamps for Fish Habitat (Seasonally flooded; Permanently flooded)					
Swamp Containing Fish Habitat	Present (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
Seasonally Flooded Swamp	x	0.03	<b>0.2</b>	10	<b>2.0</b>
Permanently Flooded Swamp				10	<b>0.0</b>
Sub Total Score					<b>2.0</b>
Total Score for Swamp ( <i>maximum 20 points</i> )					<b>2.0</b>

*Continue to Step 7*

**Step 7: CALCULATION OF FINAL SCORE**

NOTE: Scores for Steps 4, 5 and 6 are only recorded if Steps 1 and 3 have not been scored.

A. Score from Step 1 (fish habitat present)	=	<b>0</b>
B. Score from Step 3 (significance known)	=	<b>0</b>
C. Score from Step 4 (Low Marsh)	=	<b>14.6</b>
D. Score from Step 5 (High Marsh)	=	<b>11.0</b>
E. Score from Step 6 (Swamp)	=	<b>2.0</b>
Subtotal:		<b>27.6</b>

Calculation of Final Score for Spawning and Nursery Habitat = A or B or Sum of C, D, and E

Score for Spawning and Nursery Habitat (maximum 100 points)	<b>28</b>
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### 4.2.7.2 Migration and Staging Habitat

#### Step 1:

- |  |                              |
|--|------------------------------|
| <input type="checkbox"/> Staging or Migration Habitat is not present in the wetland  | Go to Step 4, Score 0 points |
| <input type="checkbox"/> Staging or Migration Habitat is present in the wetland<br>significance of the habitat is known                | Go to Step 2                 |
| <input checked="" type="checkbox"/> Staging or Migration Habitat is present in the wetland<br>significance of the habitat is not known | Go to Step 3                 |

#### Step 2: Select the highest appropriate category below. Ensure that documentation is attached to the data record.

- |  |                           |
|--|---------------------------|
| <input type="checkbox"/> Significant in Ecoregion  | Score 25 points in Step 4 |
| <input type="checkbox"/> Significant in Ecodistrict                                      | Score 15 points in Step 4 |
| <input type="checkbox"/> Locally Significant   | Score 10 points in Step 4 |
| <input type="checkbox"/> Fish staging and/or migration habitat present, but not as above | Score 5 points in Step 4  |

Source of information:

Field observation; AECOM, 2015

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#### Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Refer to Site Types recorded earlier (section 1.1.3). Attach documentation.

- |   |                           |
|---|---------------------------|
| <input type="checkbox"/> Wetland is riverine at rivermouth or lacustrine at rivermouth              | Score 25 points in Step 4 |
| <input type="checkbox"/> Wetland is riverine, within 0.75 km of rivermouth                          | Score 15 points in Step 4 |
| <input type="checkbox"/> Wetland is lacustrine, within 0.75 km of rivermouth                        | Score 10 points in Step 4 |
| <input checked="" type="checkbox"/> Fish staging and/or migration habitat present, but not as above | Score 5 points in Step 4  |

#### Step 4: Enter a score from only one of the three above Steps.

Score for Staging and Migration Habitat (maximum 25 points)	<b>5</b>
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### 4.3 Ecosystem Age

	Fractional Area		Scoring
Bog =	0.01	x 25 =	0.3
Fen, on deeper soils; floating mats or marl =	0.26	x 20 =	5.2
Fen, on limestone rock =	0.00	x 5 =	0.0
Swamp =	0.34	x 3 =	1.0
Marsh =	0.38	x 0 =	0.0
Sub Total:			6.5

Ecosystem Age Score (maximum 25 points)	<b>6</b>
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### 4.4 Great Lakes Coastal

#### Wetlands

Choose one only. Only coastal wetland units may be scored.

<input type="checkbox"/>	wetland < 10 ha	=	0 pts
<input type="checkbox"/>	wetland 10- 50 ha	=	25
<input type="checkbox"/>	wetland 51 -100 ha	=	50
<input checked="" type="checkbox"/>	wetland > 100 ha	=	75

Great Lakes Coastal Wetland Score (maximum 75 points)	<b>75</b>
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**5.0 DOCUMENTATION OF  
WETLAND FEATURES NOT  
INCLUDED IN THE EVALUATION**

**5.1 INVASIVE SPECIES**

Attach documentation of invasive species found in wetland (include location information and a coarse estimate of abundance [F = few, C = fairly common, A = abundant]):

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**5.2 VERNAL POOLS**

Documentation of information on vernal pools encountered during the wetland evaluation but not included as part of the evaluated wetland.

Vernal pools observed throughout most wetland communities. Due to scale they were not all documented.

Field observation: AECOM, 2015

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## 5.3 SPECIES OF SPECIAL INTEREST

### 5.3.1 Osprey

Check all that apply:

- Present and nesting
- Known to have nested in last 5 yr
- Feeding area for osprey
- Not as above

### 5.3.2 Common Loon

Check all that apply:

- Nesting in wetland
- Feeding at edge of wetland
- Observed or heard on lake or river adjoining the wetland
- Not as above

## 5.4 IMPORTANT DRINKING WATER AREA

Wetland located within:  
(check all that apply)

- Wellhead Protection Area
- Intake Protection Zone
- Significant Recharge Area
- Vulnerable Aquifer Area

Source of information:

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Additional Comments:

No additional comments.

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## 5.5 Area of Wetland

### Restoration Potential

Check all that apply. Attach additional pages if necessary.

- Area of wetland restoration potential adjacent to evaluated wetland unit(s)
- Area of wetland restoration potential within 750m of evaluated wetland unit(s), but not adjacent
- Area of wetland restoration potential encountered elsewhere
- Area currently functioning as wetland (e.g., showing signs of degradation but still mapped as wetland).
- Adjacent Wetland Unit (if applicable): \_\_\_\_\_
- GPS Coordinates of Site: \_\_\_\_\_

Description of site (e.g., current land use, wetland characteristics of site, etc) and why it is identified as an area of restoration potential:

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All wetlands for the most part undisturbed.

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Additional Notes/Comments (e.g., adjacent lands, etc)

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**General Information**

**Wetland Evaluator(s)**

Name: Kristan Washburn, 2015 Affiliation: AECOM

Name: Jillian deMan, 2015 Affiliation: AECOM

Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_

Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_

Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_

Date(s) wetland visited (in field): April 6-July 6

Date evaluation completed: \_\_\_\_\_ 16-Jul-14

Estimated time devoted to completing the field survey in person hours: 2460 hrs

**Weather Conditions**

i) at time of field work: varied from -10 to +30. Had a mix of sunshine, rain and snow

ii) summer conditions in general: Typical summer conditions

## WETLAND EVALUATION SCORING

### RECORD

Wetland Name: Henvey Inlet Wetland WET-002

#### 1.0 BIOLOGICAL COMPONENT

##### 1.1 PRODUCTIVITY

<u>16.5</u>	1.1.1 Growing Degree-Days/Soils
<u>10.0</u>	1.1.2 Wetland Type
<u>2.0</u>	1.1.3 Site Type

##### 1.2 BIODIVERSITY

<u>30.0</u>	1.2.1 Number of Wetland Types
<u>37.0</u>	1.2.2 Vegetation Communities
<u>7.0</u>	1.2.3 Diversity of Surrounding Habitat
<u>8.0</u>	1.2.4 Proximity to Other Wetlands
<u>30.0</u>	1.2.5 Interspersion
<u>14.0</u>	1.2.6 Open Water Type

50 1.3 SIZE (Biological Component)

204 Subtotal  
204 TOTAL (Biological Component)

## 2.0 SOCIAL COMPONENT

### 2.1 ECONOMICALLY VALUABLE PRODUCTS

<b>12</b>	2.1.1 Wood Products
<b>2</b>	2.1.2 Low Bush Cranberry
<b>0</b>	2.1.3 Wild Rice
<b>12</b>	2.1.4 Commercial Fish (Bait Fish and/or Coarse Fish)
<b>12</b>	2.1.5 Furbearers

### **28** 2.2 RECREATIONAL ACTIVITIES

### 2.3 LANDSCAPE AESTHETICS

<b>3</b>	2.3.1 Distinctness
<b>7</b>	2.3.2 Absence of Human Disturbance

### 2.4 EDUCATION AND PUBLIC AWARENESS

<b>0</b>	2.4.1 Educational Uses
<b>0</b>	2.4.2 Facilities and Programs
<b>5</b>	2.4.3 Research and Studies

### **16** 2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT

### **10** 2.6 OWNERSHIP

### **18** 2.7 SIZE (Social Component)

### **30** 2.8 ABORIGINAL AND CULTURAL VALUES

- 2.8.1 Aboriginal Values
- 2.8.2 Cultural Heritage

**155** Subtotal

**155** TOTAL (Social Component)

### 3.0 HYDROLOGICAL COMPONENT

<b>0</b>	3.1 FLOOD ATTENUATION
	3.2 WATER QUALITY IMPROVEMENT
<b>19.8</b>	3.2.1 Site Type
<b>4.0</b>	3.2.2 Soil Recharge Potential
	3.3 WATER QUALITY IMPROVEMENT
<b>27</b>	3.3.1 Watershed Improvement Factor
<b>0.0</b>	3.3.2 Adjacent and Watershed Land Use
<b>8.0</b>	3.3.3. Vegetation Form
<b>9</b>	3.4 CARBON SINK
<b>15</b>	3.5 SHORELINE EROSION CONTROL
<b>11</b>	3.6 GROUNDWATER DISCHARGE
<b>93</b>	Subtotal
<b>93</b>	TOTAL (Hydrological Component)

## 4.0 SPECIAL FEATURES COMPONENT

### 4.1 RARITY

<b>70</b>	4.1.1 Wetlands	
	4.1.2 Species	
<b>250</b>	4.1.2.1	Reproductive Habitat for an Endangered or Threatened Species
<b>225</b>	4.1.2.2	Traditional Migration or Feeding Habitat for an Endangered or Threatened Species
<b>95</b>	4.1.2.3	Provincially Significant Animal Species
<b>0</b>	4.1.2.4	Provincially Significant Plant Species
<b>0</b>	4.1.2.5	Regionally Significant Species
<b>0</b>	4.1.2.6	Locally Significant Species
<b>15</b>	4.1.2.7	Species of Special Status

### 4.2 SIGNIFICANT FEATURES OR HABITATS

<b>25</b>	4.2.1	Colonial Waterbirds
<b>0</b>	4.2.2	Winter Cover for Wildlife
<b>20</b>	4.2.3	Waterfowl Staging and/or Moulting Areas
<b>10</b>	4.2.4	Waterfowl Breeding
<b>10</b>	4.2.5	Migratory Passerine, Shorebird or Raptor Stopover Area
<b>15</b>	4.2.6	Ungulate Habitat
<b>28</b>	4.2.7	Fish Habitat

### 4.3 ECOSYSTEM AGE

**6**

### 4.4 GREAT LAKES COASTAL WETLANDS

**75**

<b>774</b>	Subtotal
<b>250</b>	<b>TOTAL (Special Features Component)</b>

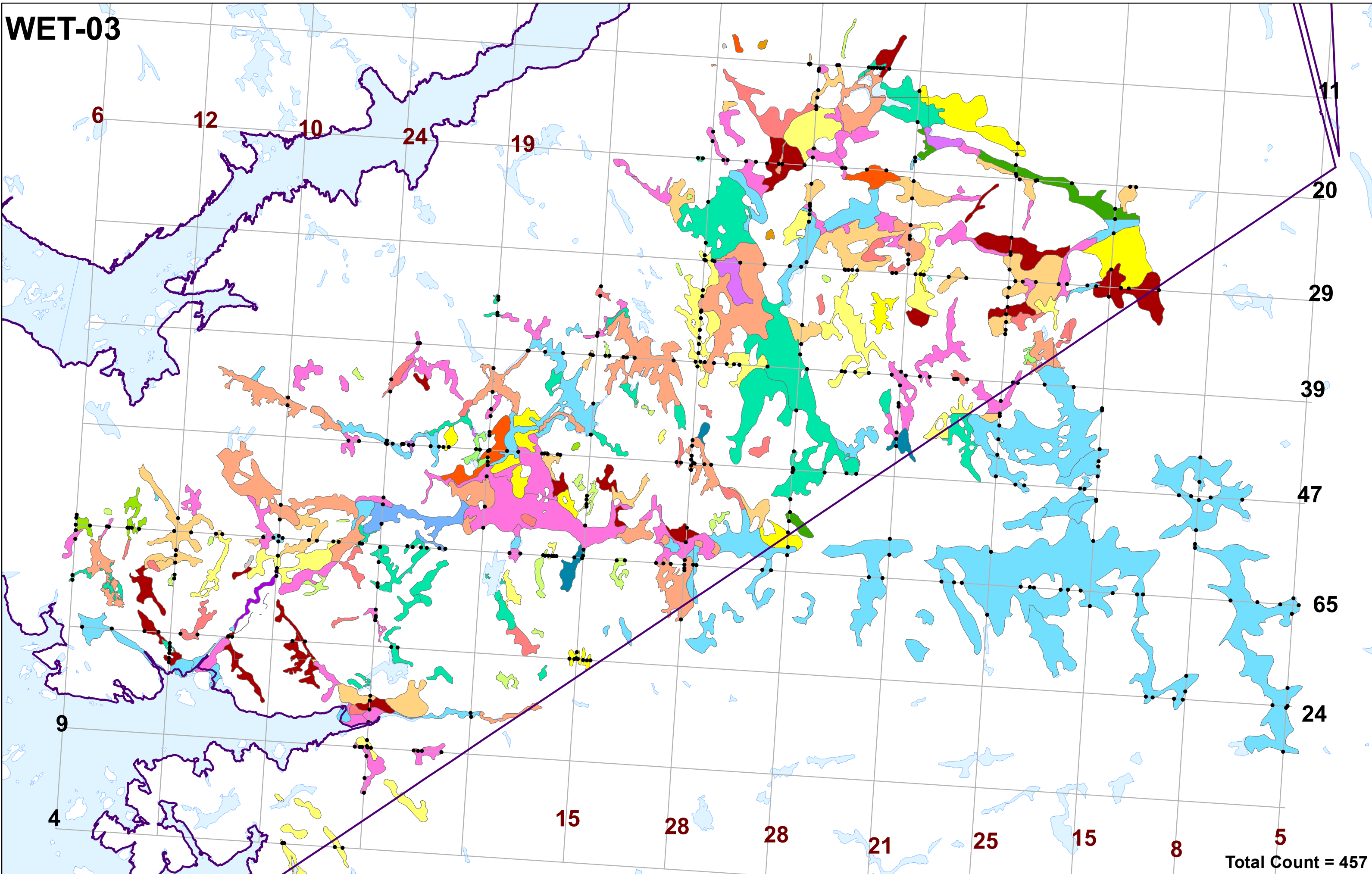
**SUMMARY OF EVALUATION RESULT**

<b>204</b>	1.0 TOTAL FOR BIOLOGICAL COMPONENT
<b>155</b>	2.0 TOTAL FOR SOCIAL COMPONENT
<b>93</b>	3.0 TOTAL FOR HYDROLOGICAL COMPONENT
<b>250</b>	4.0 TOTAL FOR SPECIAL FEATURES COMPONENT
<b>703</b>	TOTAL WETLAND SCORE

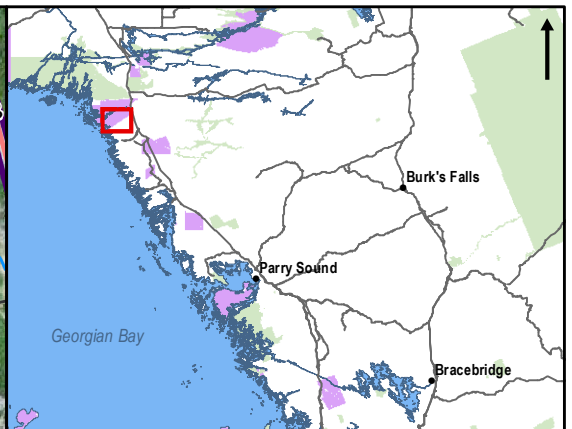
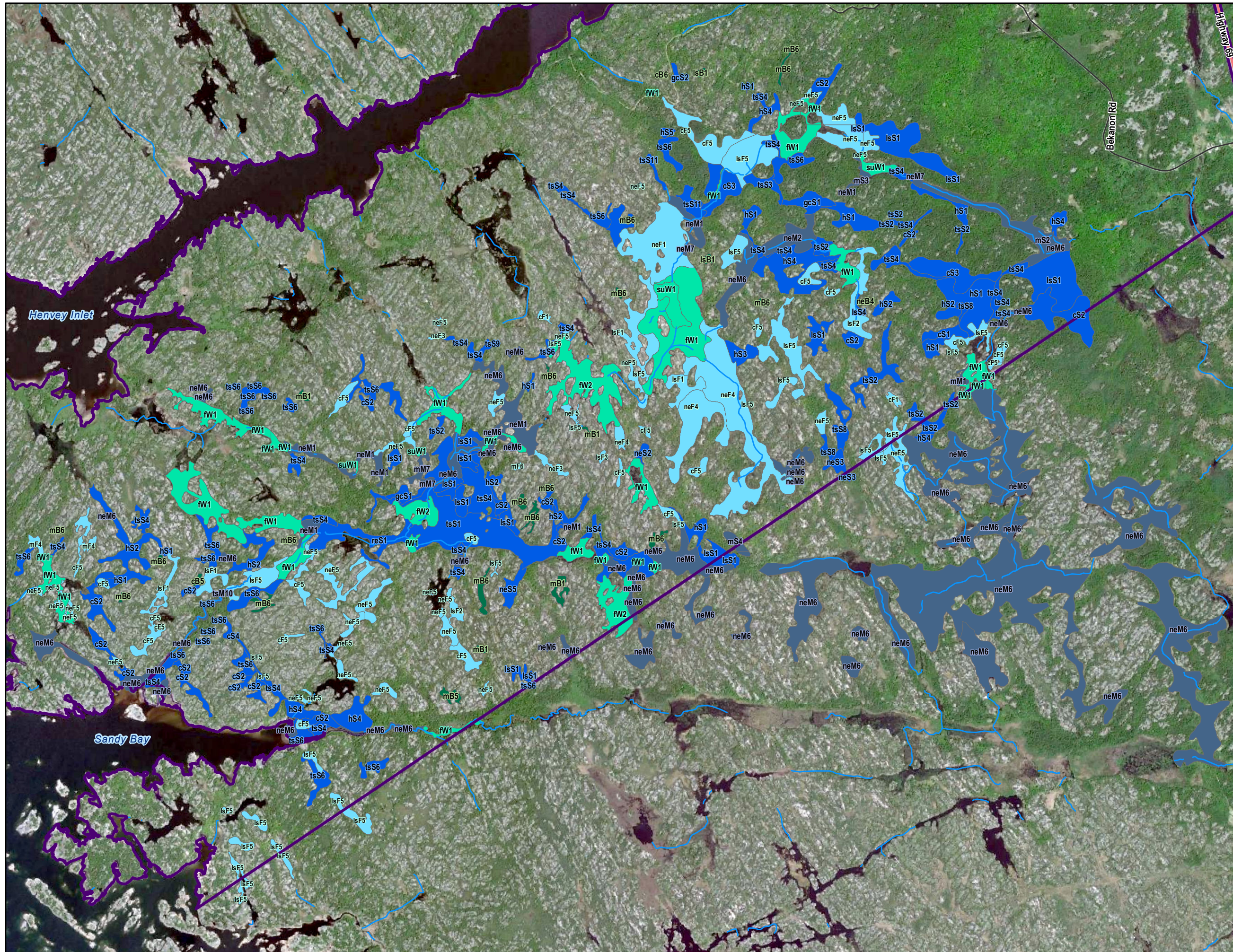
<b>FOR MNR USE ONLY</b>	
MNR Reviewer (Name & Position)	
Reviewer Comments	
MNR Approver (Name & Position)	
Approval Date	



**WET-03**



**Total Count = 457**

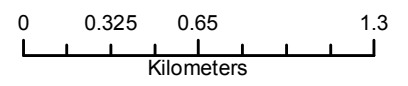


**OWES Communities**

- Bog
- Fen
- Swamp
- Open Water Marsh
- Marsh

**Base Layers**

- Major Roads
- Highway
- Trails
- Railway
- Watercourses
- Henvey Inlet First Nation Reserve No.2



**Henvey Inlet Wind Energy Centre**

**OWES Communities - Complex WET-03**

September 2015	1:28,000	Datum: NAD 83, Zone 17 Source: LIO
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P#: 60341251	V#:
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**Figure 2**

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Map location: AECOM\Projects\60341251\OWES\Site Investigation\Wetlands\_OWES\_20150908.mxd Date saved: 06/01/15 10:32:21 PM

## Henvey Inlet Wetland WET-004

Wetland Evaluation Edition

1st

July 29, 2015

### Comments

The following evaluation was conducted using field studies completed by: AECOM in 2015, Stantec in 2013, and LGL in 2011 and 2012. Wetland polygons were identified through fieldwork completed in 2013 and 2015 using colour orthoairial photography from 2013. This wetland complex is approximately 75 ha in size and composed of a mosaic of fen, marsh and swamp wetland types. Two site types palustrine and riverine were identified within the complex. Marsh was the most abundant wetland type within this complex (62% coverage). Marshes, including open water marshes, contained a dominant mixture of Sedge species (*Carex spp.*) as well as robust emergent plants (*Typha latifolia*), floating (*Nuphar variegatum*) and free floating (*Lemna minor*) species. Swamps were also abundant within this complex (34% coverage). These wetlands consisted of dominant: Black Spruce (*Picea mariana*), (*Larix laricina*), Speckled Alder (*Alnus incana*), American Mountain Holly (*Nemopanthus mucronatus*), Leather leaf (*Chamaedaphne calyculata*), Labrador Tea (*Ledum groenlandicum*), Canada Mayflower (*Mainthemum canadense*), Three-leaved Solomon's Seal (*Mainthemum trifolium*) and Sphagnum. Fen wetlands were also represented within this complex although were not abundant (3% coverage). Dominant plant species within Tamarack, Sheep Laurel (*Kalmia angustifolia*), Leatherleaf a variety of Sedge species Sphagnum mosses. Migration feeding and hibernation habitat for endangered and threatened species identified within this complex as well as provincially significant species.

### Additional Information

*Include relevant information that can not be entered in the wetland data record( Ex. Sections that have not been completed.)*

<b>Official Name:</b>	Henvey Inlet Wetland WET-004		
<b>Evaluation Edition:</b>	1st	<b>Version:</b>	1.3
<b>Wetland ID.:</b>	WET-004		
<b>Wetland Significance:</b>	Year/Month Last Evaluated	Not Evaluated	
	Year/Month Last Updated		
<b>Special Planning Considerations:</b>	Federal Land		<b>Scores</b>
<b>Wetland Area:</b>	75.00		Biological: 170
<b>Dentention Area:</b>	NA/Coastal Wetlands		Social: 135
<b>Catchment Area:</b>	NA/Coastal Wetlands		Hydrological: 91
<b>Coastal Unit Area:</b>	75.00		Special Features: 250
<b>OMNR Source</b>	Parry Sound District MNR		Overall: 646
<b>Information Source</b>	Field Observation: AECOM, 2015		
<b>Submitted by:</b>	Kristan Washburn		<b>Date</b> 10-Sep-15

# WETLAND EVALUATION DATA AND SCORING RECORD

i) Wetland Name: Henvey Inlet Wetland WET-004

ii) MNR Administrative Region: Southern  
MNR District: Parry Sound  
MNR Area Office: Parry Sound

iii) Conservation Authority Jurisdiction: N/A

iv) County of Regional Municipality: Henvey Inlet 2 Indian Reserve

v) Township/Geographic Twp and/or Local Municipality: Key Harbour Area

vi) Lots & Concessions: N/A

vii) Ecodistrict/Ecoregion: 5 E-7

viii) Map and Air Photo References:

a) Latitude: 45.851171 Longitude: -80.567026

b) UTM grid reference:  
Zone: 17T Block: N/A E: 533635 N: 5077565

c) National Topographic Series:  
Map name(s): NTS Map - Key Harbour  
Map number(s): 41H/15  
Edition: 5  
Scale: 1: 50,000

d) Aerial photographs:  
Date(s) photo taken: 2013 Scale: 1:2500  
Flight & plate numbers: 2013 Colour Orthophotography

e) Ontario Base Map numbers & scale: Ontario Base Mapping 1:20000  
17 52005080, 52005070, 53005080, 53005070

## Data Summary Form

Wetland Name: Henvey Inlet Wetland WET-003

Wetland Unit	Dominant Form	Wetland Type	Community Code	Community Sub_code	Area (ha)	Site Type	Soil	Forms	# of Forms	% Open Water	Open Water (ha)	Fish Habitat (LM/HM)	Dominant Species	Additional Species	Comments
2	ne	Marsh	neM	6	1.323674	Palustrine	Sand	ne*,m,gc	3	50	0.66	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	6.490658	Palustrine	Sand	ne*,m,gc	4	50	3.25	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	2.937032	Palustrine	Fibric	ne*,m,gc	3	50	1.47	HM	ne-Carex spp , m- Sphagnum spp,gc-Potentilla palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.826358	Palustrine	Clay-Loam	ne*,m,gc	4	50	0.41	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	2.4234	Palustrine	Clay-Loam	ne*,m,gc	4	50	1.21	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.16125	Palustrine	Fibric	ne*,m,gc	3	50	0.08	HM	ne-Carex spp , m- Sphagnum spp,gc-Potentilla palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.073412	Palustrine	Fibric	ne*,m,gc	3	50	0.04	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.022549	Palustrine	Fibric	ne*,m,gc	3	50	0.01	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.321493	Palustrine	Clay-Loam	ne*,m,gc	3	50	0.16	HM	ne-Carex spp , m- Sphagnum spp,gc-Potentilla palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.000241	Palustrine	Sand	ne*,m,gc	3	50	0.00	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	ne	Marsh	neM	6	1.460633	Palustrine	Sand	ne*,m,gc	4	50	0.73	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.053016	Palustrine	Fibric	ne*,m,gc	3	50	0.03	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.241802	Palustrine	Clay-Loam	ne*,m,gc	4	50	0.12	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.686796	Palustrine	Fibric	ne*,m,gc	3	50	0.34	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.000111	Palustrine	Sand	ne*,m,gc	3	50	0.00	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.144845	Palustrine	Sand	ne*,m,gc	3	50	0.07	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.103457	Palustrine	Sand	ne*,m,gc	3	50	0.05	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	1.27475	Palustrine	Sand	ne*,m,gc	3	50	0.64	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	1.27475	Palustrine	Sand	ne*,m,gc	3	50	0.64	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.129523	Palustrine	Sand	ne*,m,gc	3	50	0.06	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	1.848143	Palustrine	Sand	ne*,m,gc	3	50	0.92	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.032204	Palustrine	Sand	ne*,m,gc	3	50	0.02	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.000215	Palustrine	Sand	ne*,m,gc	3	50	0.00	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
2	ne	Marsh	neM	6	0.009472	Palustrine	Sand	ne*,m,gc	3	50	0.00	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
3	ne	Marsh	neM	1	0.80898	Palustrine	Clay-Loam	ne*,gc	2	50	0.40	HM	ne-Carex crinita , Onoclea sensibilis ,gs-Calamagrostis canadensis	see attached flora and fauna lists	

ix) Wetland Size

(circle appropriate category, a or b)

a) Single contiguous wetland area:

Total wetland size = 75 hectares

b) Wetland complex comprised of 3 individual wetlands:

Wetland Unit No.	<u>1</u>	<u>11.42</u>
Wetland Unit No.	<u>2</u>	<u>61.63</u>
Wetland Unit No.	<u>3</u>	<u>1.48</u>
Wetland Unit Totals:		<u>74.53</u>

(Attach additional sheets if necessary)

Total Wetland Size = 74.53 hectares (add together size of each unit)

Documentation requirements for evaluated wetland complexes (attach additional sheet if necessary):

- : a statement of rationale for identifying a wetland complex;
- : a statement of rationale for identifying any wetland complex less than 2 ha in total size;
- : a statement of rationale for any vegetation community less than 0.5 ha in size;
- : adherence to the wetland complexing rules (750 m; "watershed rule"; lacustrine wetlands); and
- : written documentation of the reasons for including wetland units smaller than 2 ha.

The wetland units complexed within the WET-004 wetland complex were all within 750m straight line distance of another wetland unit. All complexed wetlands fall within the same sub watershed. Given the abundance of species at risk and rare species within the study area, and the high potential for these species to occur within any wetland within this area, one wetland unit (3) less than 2ha was included within this wetland complex. Also given the complexity and size of this wetland complex accurate determination of hydrological connectivity or discontinuity could not be determined for all wetlands. To ensure accurate coverage of the wetlands within the study area and the potential habitat for SAR and rare species, these wetland units were complexed. As wetland boundaries and vegetation communities were compiled and delineated from several years of data a number of vegetation communities less than 0.5ha were included within the wetland complex. This is primarily due to vegetation data for multiple portions of a wetland polygon being assessed of a number of years.

Wetland Size (ha):

74.53

Vegetation Form	Fractional Area (FA)
h	0.17
c	0.00
dh	0.00
dc	0.00
ts	0.17
ls	0.01
ds	0.00
gc	0.00
m	0.00
ne	0.34
be	0.00
re	0.08
ff	0.00
f	0.23
su	0.00
u (unvegetated)	0.00

Total = 100%

1.00

## 1.0 BIOLOGICAL COMPONENT

### 1.1 PRODUCTIVITY

#### 1.1.1 Growing Degree-Days/Soils (max: 30 pts)

Refer to page 43 of manual for further explanation.

1. Determine the correct GDD value for your wetland (use Figure 5).
2. Circle the appropriate GDD value from the evaluation table below.
3. Determine the Fractional Area (FA) of the wetland for each soil type.
4. Multiply the fractional area of each soil type by the applicable score-factor in the evaluation table.
5. Sum the scores for each soil type to obtain the final score (maximum score is 30 points).

*Note: In wetland complexes the evaluator should aim at determining the fractional area occupied by the categories for the complex as a whole.*

Growing Degree-Days	Clay-Loam	Silt-Marl	Limestone	Sand	Humic-Mesic	Fibric	Granite
	<2800	12	11	9	7	7	6
1600-2000	15	13	11	9	8	7	5
2000-2400	18	15	13	11	9	8	7
2400-2800	22	18	15	13	11	9	7
2800-3000	26	21	18	15	13	10	8
>3000	30	25	20	18	15	12	9

Soil Type	FA of wetland soil type	in	Enter appropriate score-factor from above table	=	
clay/loam:	0.22	X	26	=	5.6
silt/marl:	0.00	X	21	=	0.0
limestone:	0.00	X	18	=	0.0
sand:	0.70	X	15	=	10.5
humic/mesic:	0.01	X	13	=	0.1
fibric:	0.07	X	10	=	0.7
granite:	0.00	X	8	=	0.0
Total					16.9

GDD/Soils score (maximum 30 points)	17
--	----



### 1.1.2 Wetland Type

(Fractional Area = area of wetland type/total wetland area)

	Fractional Area				Score
Bog	0.00	X	3	=	0.0
Fen	0.03	X	6	=	0.2
Swamp	0.34	X	8	=	2.7
Marsh	0.62	X	15	=	9.3
Total				=	12.2

Wetland type score (maximum 15 points)	<b>12</b>
---	-----------

### 1.1.3 Site Type

(Fractional Area = area of site type/total wetland area)

	Fractional Area				Score
Isolated	0.00	x	1	=	0.00
Palustrine (permanent or intermittent flow)	0.96	x	2	=	1.92
Riverine	0.04	x	4	=	0.14
Riverine (at rivermouth)	0.00	x	5	=	0.00
Lacustrine (at rivermouth)	0.00	x	5	=	0.00
Lacustrine (on enclosed bay, with barrier beach)	0.00	x	3	=	0.00
Lacustrine (exposed to lake)	0.00	x	2	=	0.00
Total				=	2.06

Site Type Score (maximum 5 points)	<b>2</b>
---------------------------------------	----------

## 1.2 BIODIVERSITY

### 1.2.1 Number of Wetland Types

(Check only one)

	one	=	9	points
	two	=	13	
	three	=	20	
<b>30</b>	four	=	30	

Number of Wetland Types Score (maximum 30 points)	<b>30</b>
--	-----------

### 1.2.2. Vegetation Communities

Use the data sheet provided in Appendix 4 to record and score vegetation communities (the completed form must be attached to this data record)

Scoring (circle only one option for each of the columns below):

Total # of communities with 1-3 forms	
1 =	1.5 pts
2 =	2.5
3 =	3.5
4 =	4.5
5 =	5
6 =	5.5
7 =	6
8 =	6.5
9 =	7
10 =	7.5
11 =	8
+ 0.5 for each additional community	
=	<b>11.0</b>

Total # of communities with 4 -5 forms	
1 =	2 pts
2 =	3.5
3 =	5
4 =	6.5
5 =	7.5
6 =	8.5
7 =	9.5
8 =	10.5
9 =	11.5
10 =	12.5
11 =	13
+ 0.5 for each additional community	
=	<b>2.0</b>

Total # of communities with 6 or more forms	
1 =	3 pts
2 =	5
3 =	7
4 =	9
5 =	10.5
6 =	12
7 =	13.5
8 =	15
9 =	16.5
10 =	18
11 =	19
+ 0.5 for each additional community	
=	<b>0.0</b>

SubTotal: **13**

Vegetation Communities Score (maximum 45 points)	<b>13</b>
---	-----------

### 1.2.3 Diversity of Surrounding Habitat

Check all appropriate items. Only habitat within 1.5 km of the wetland boundary and at least 0.5 ha in size are to be scored.

	recent burn (<5yrs)	* "Mixed forest" is defined as either 25% coniferous trees distributed singly or in clumps in deciduous forest, or 25% deciduous trees distributed singly or in clumps in coniferous forest. Note that Forest Resource Inventory (FRI) maps can be misleading since 25% conifer within a unit could be entirely concentrated around a lake.
	abandoned agricultural land	
	utility corridor	
1	deciduous forest	
	recent cutover or clearcut (<5yrs)	
1	coniferous forest	
1	*mixed forest	
	crops	
1	abandoned pits and quarries	
	pasture	
1	ravine	
	fencerows	
1	open lake or deep river	
1	creek floodplain	
1	rock outcrop	
8	Subtotal	

Score 1 point for each feature checked, up to a maximum of 7 points.

Diversity of Surrounding Habitat Score (maximum 7 points)	<b>7</b>
---	----------

### 1.2.4 Proximity to Other Wetlands

Check highest appropriate category. (Note: if the wetland is lacustrine, score option #1 at 8 points).

		points
8	Hydrologically connected by surface water to other wetlands (different dominant wetland type) or to open lake or deep river within 1.5 km	8
	Hydrologically connected by surface water to other wetlands (same dominant wetland type) within 0.5 km	8
	Hydrologically connected by surface water to other wetlands (different dominant wetland type), or to open lake or deep river from 1.5 to 4 km away	5
	Hydrologically connected by surface water to other wetlands (same dominant wetland type) from 0.5 to 1.5 km away	5
	Within 0.75 km of other wetlands (different dominant wetland type) or open water body, but not hydrologically connected by surface water	5
	Within 1 km of other wetlands, but not hydrologically connected by surface water	2
	No wetland within 1 km	0

Name and distance (from wetland) of wetlands/waterbodies scored above:

\ Henvey Inlet is directly adjacent to the wetland complex.

Proximity to other Wetlands Score (maximum 8 points)	<b>8</b>
--	----------

### 1.2.5 Interspersion

Number of Intersections = 457

	Number of Intersections (Check only one)	Points
	26 or less	= 3
	27 to 40	= 6
	41 to 60	= 9
	61 to 80	= 12
	81 to 100	= 15
	101 to 125	= 18
	126 to 150	= 21
	151 to 175	= 24
	176 to 200	= 27
<b>30</b>	>200	= 30

Interspersion Score (maximum 30 points)	<b>30</b>
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### 1.2.6 Open Water Types

*Note: this attribute is only to be scored for permanently flooded open water within the wetland (adjacent lakes do not count). Check one option only.*

	Open Water Type	Characteristic	Points
	type 1	Open water occupies < 5 % of wetland area	8
	type 2	Open water occupies 5-25% of wetland (occurring in central area)	8
<b>14</b>	type 3	Open water occupies 5-25% (occurring in various-sized ponds, dense patches of vegetation or vegetation in diffuse stands)	14
	type 4	Open water occupies 26-75% of wetland (occurring in a central area)	20
	type 5	Open water occupies 26-75% of wetlands (small ponds and embayments are common)	30
	type 6	Open water occupies 76%-95% of wetland (occurring in large central area; vegetation is peripheral)	8
	type 7	Open water occupies 76-95% of wetland (vegetation in patches or diffuse open stands)	14
	type 8	Open water occupies more than 95% of wetland area	3
	no open water		0

Open Water Type Score (maximum 30 points)	<b>14</b>
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### 1.3 SIZE

#### (BIOLOGICAL COMPONENT)

Total Size of Wetland = 75.0 ha

Sum of scores from Biodiversity Subcomponent

1.2.1

+1.2.2

+1.2.3

+1.2.4

+1.2.5

+1.2.6

102

		Total Score for Biodiversity Subcomponent									
		<37	37-48	49-60	61-72	73-84	85-96	97- 108	109-120	121- 132	>132
Wetland size (ha)	<20 ha	1	5	7	8	9	17	25	34	43	50
	20-40	5	7	8	9	10	19	28	37	46	50
	41-60	6	8	9	10	11	21	31	40	49	50
	61-80	7	9	10	11	13	23	34	43	50	50
	81-100	8	10	11	13	15	25	37	46	50	50
	101-120	9	11	13	15	18	28	40	49	50	50
	121-140	10	13	15	17	21	31	43	50	50	50
	141-160	11	15	17	19	23	34	46	50	50	50
	161-180	13	17	19	21	25	37	49	50	50	50
	181-200	15	19	21	23	28	40	50	50	50	50
	201-400	17	21	23	25	31	43	50	50	50	50
	401-600	19	23	25	28	34	46	50	50	50	50
	601-800	21	25	28	31	37	49	50	50	50	50
	801-1000	23	28	31	34	40	50	50	50	50	50
	1001-1200	25	31	34	37	43	50	50	50	50	50
	1201-1400	28	34	37	40	46	50	50	50	50	50
	1401-1600	31	37	40	43	49	50	50	50	50	50
	1601-1800	34	40	43	46	50	50	50	50	50	50
	1801-2000	37	43	47	49	50	50	50	50	50	50
	>2000	40	46	50	50	50	50	50	50	50	50

Size Score (Biological Component) (maximum 50 points)	<u>37</u>
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## 2.0 SOCIAL COMPONENT

### 2.1 ECONOMICALLY VALUABLE PRODUCTS

#### 2.1.1 Wood Products

Check the option that best reflects the total area (ha) of forested wetland (i.e., areas where the dominant vegetation form is h or c). Note that this is the area of all the forested vegetation communities, not total wetland size. Do not include areas where harvest is not permitted. Check only one option.

Area of wetland used for scoring 2.1.1:

h: 12.55 c: 0.00

	<5 ha =	0
<b>x</b>	5 -25 ha =	3
	26 -50 ha =	6
	51- 100 ha =	9
	101-200 ha =	12
	>200 ha =	18

Source of information:

Field Observation: AECOM, 2014,2015

Wood Products Score **3**  
(maximum 14 points)

#### 2.1.2 Lowbush Cranberry

Check only one.

<b>2</b>	Present (minimum size 0.5 ha) =	2 pts
	Absent =	0
	Harvest not permitted =	0

Source of information:

Field Observation: AECOM, 2014,2015

Wild Rice Score **2**  
(maximum 6 points)

#### 2.1.3 Wild Rice

Check only one.

	Present (minimum size 0.5 ha) =	6 pts
<b>0</b>	Absent =	0
	Harvest not permitted =	0

Source of information:

Field Observation: AECOM, 2014,2015

Wild Rice Score **0**  
(maximum 10 points)

### 2.1.4 Commercial Bait Fish

Check only one.

<b>12</b>	Present	=	12 pts
	Absent	=	0
	Fishing not permitted	=	0

Source of information:

Field Observation; A. Ingriselli, 2015

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Commercial Fish Score (maximum 12 points)	<b>12</b>
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### 2.1.5 Furbearers

Only species recognized as furbearers under the Fish & Wildlife Conservation Act may be scored here. Score 3 points for each furbearer species listed, up to a maximum of 12 points.

Name of furbearer			Source of information
1	<b>3</b>	Beaver ( <i>Castor canadensis</i> )	Field Observation: AECOM 215, Stantec, 2013
2	<b>3</b>	Long-tailed Weasel ( <i>Mustela fenata</i> )	Field Observation: Stantec, 2013
3	<b>3</b>	Muskrat ( <i>Ondatra zibethicus</i> )	Field Observation: Stantec, 2013
4	<b>3</b>	North American River Otter ( <i>Lontra canadensis</i> )	Field Observation: AECOM 2015, Stantec, 2013
5	<b>3</b>	Northern Raccoon ( <i>Procyon lotor</i> )	Field Observation: Stantec, 2013
6	<b>3</b>	Red fox ( <i>Vulpes vulpes</i> )	Field Observation: AECOM 2015, Stantec, 2013
7	<b>3</b>	Red Squirrel ( <i>Tamiasciurus hudsonicus</i> )	Field Observation: AECOM 215, Stantec, 2013
<b>21</b>	<b>Subtotal</b>		

Furbearer Score (maximum 12 points)	<b>12</b>
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## 2.2 RECREATIONAL ACTIVITIES

Circle one score for each of the activities listed. Score is cumulative – add score for hunting, nature enjoyment and fishing together for final score.

		Type of Wetland-Associated Use				
		Hunting		Nature Enjoyment/ Ecosystem Study		Fishing
Intensity of Use	High	40 points		40 points		40 points
	Moderate	20	20	20		20
	Low	8		8		8
	Not possible/ No evidence	0		0		0
	Totals		20		0	
						0

Sources of information (include evidence/criteria forming basis for score and any relevant reference used to obtain that information):

- e.g., Hunting scored at 20 points: 5 hunting blinds observed; hunters using area frequently monitored for compliance (source: D. Black, MNR Conservation Officer)

Hunting: Personal Communication: Henvey Inlet First Nation, 2015  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Nature: Not known  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Fishing: Not Known  
 \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

Recreational Activities Score (maximum 80 points)	<b>20</b>
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## 2.3 LANDSCAPE AESTHETICS

### 2.3.1 Distinctness

Check only one.

<b>3</b>	Clearly distinct	=	3	pts
	Indistinct	=	0	

Landscape Distinctness Score (maximum 3 points)	<b>3</b>
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### 2.3.2 Absence of Human Disturbance

Check only one.

<b>7</b>	Human disturbances absent or nearly so	=	7	pts
	One or several localized disturbances	=	4	
	Moderate disturbance; localized water pollution	=	2	
	Wetland intact but impairment of ecosystem quality intense in some areas	=	1	
	Extreme ecological degradation, or water pollution severe and widespread	=	0	

Details regarding type, extent and location of disturbance scored:

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Source of information:

Kristan Washburn, 2015

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Absence of Human Disturbance Score (maximum 7 points)	<b>7</b>
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## 2.4 EDUCATION AND PUBLIC AWARENESS

### 2.4.1 Educational Uses

Check highest appropriate category.

	Frequent	=	20	pts
	Infrequent	=	12	
0	No visits	=	0	

Details regarding the type and frequency of education uses scored above:

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Source of information:

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Educational Uses Score (maximum 20 points)	0
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### 2.4.2 Facilities and Programs

Check all appropriate options, score highest category checked.

	Staffed interpretation centre	=	8	pts
	No interpretation centre or staff but a system of self-guiding trails or brochures available	=	4	
	Facilities such as maintained paths (e.g., woodchips) boardwalks, boat launches or observation towers but no brochures or other interpretation	=	2	
0	No facilities or programs	=	0	

Additional Notes/Comments:

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Source of information:

Field Observation: Kristan Washburn, 2015

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Facilities and Programs Score (maximum 8 points)	0
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### 2.4.3 Research and Studies

Check all that apply; score highest category checked.

	Long term research has been done	=	12	pts
	Research papers published in refereed scientific journal or as a thesis	=	10	
<b>5</b>	One or more (non-research) reports have been written on some aspect of the wetland's flora, fauna, hydrology etc.	=	5	
	No research or reports	=	0	
<b>5</b>	Subtotal:			

List of reports, publications, research studies etc. scored above:

Georgian Bay Biosphere Reserve (2013). Ecosystem Health Report for Eastern Georgian Bay. Background

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Research and Studies Score **5**  
(maximum 12 points)

### 2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT

Name of Settlement: Henvey Inlet First Nation

Distance of wetland from settlement: Henvey Inlet First Nation houses fall within the wetland boundary.

Population of settlement: 170 (Source: First Nations Market Housing Fund)

Circle only the highest score applicable

Distance of wetland to settlement	population >10,000		population 2,500-10,000		population or <2,500 cottage community	
	40 points		26 points		16 points	
Within or adjoining settlement	40 points		26 points		16 points	<b>16</b>
0.5 to 10 km from settlement	26		16		10	
10 to 60 km from settlement	12		8		4	
60-100 km from nearest settlement	5		2		0	
100 km from nearest settlement	0		0		0	
		<b>0</b>		<b>0</b>		<b>16</b>

Proximity to Human Settlement Score **16**  
(maximum 40 points)

Additional Reports  
No additional reports.

## 2.6 OWNERSHIP

FA of wetland held by or held under a legal contract by a conservation body (as defined by the Conservation Land Act) for wetland protection	1.00	x	10	=	10.00
FA of wetland occurring in provincially or nationally protected areas (e.g., parks and conservation reserves)		x	10	=	0.00
FA of wetland area in Crown/public ownership, not as above		x	8	=	0.00
FA of wetland area in private ownership, not as above		x	4	=	0.00

Source of information:

Henvey Inlet First Nation Land Owner. NW corner of wetland is Provincial Crown Land.

Ownership Score (maximum 10 points)	<b>10</b>
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## 2.7 SIZE (SOCIAL COMPONENT)

Total Size of Wetland = **75.0** ha

Sum of scores from Subcomponents 2.1, 2.2, and 2.5 = **65**

Circle the appropriate score from the table below.

Total for Size Dependent Social Features										
	<31	31-45	46-60	61-75	76-90	91-105	106-120	121-135	136-150	>150
<2 ha	1	2	4	8	10	12	14	14	14	15
2 - 4ha	1	2	4	8	12	13	14	14	15	16
5 - 8ha	2	2	5	9	13	14	15	15	16	16
9 - 12ha	3	3	6	10	14	15	15	16	17	17
13-17	3	4	7	10	14	15	16	16	17	17
18-28	4	5	8	11	15	16	16	17	17	18
29-37	5	7	10	13	16	17	18	18	19	19
38-49	5	7	10	13	16	17	18	18	19	20
50-62	5	8	11	14	17	17	18	19	20	20
63-81	5	8	11	15	17	18	19	20	20	20
82-105	6	9	11	15	18	18	19	20	20	20
106-137	6	9	12	16	18	19	20	20	20	20
138-178	6	9	13	16	18	19	20	20	20	20
179-233	6	9	13	16	18	20	20	20	20	20
234-302	7	9	13	16	18	20	20	20	20	20
303-393	7	9	14	17	18	20	20	20	20	20
394-511	7	10	14	17	18	20	20	20	20	20
512-665	7	10	14	17	18	20	20	20	20	20
666-863	7	10	14	17	19	20	20	20	20	20
864-1123	8	12	15	17	19	20	20	20	20	20
1124-1460	8	12	15	17	19	20	20	20	20	20
1461-1898	8	13	15	18	19	20	20	20	20	20
1899-2467	8	14	16	18	20	20	20	20	20	20
>2467	8	14	16	18	20	20	20	20	20	20

Total Size Score (Social Component)	<b>15</b>
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## 2.8 ABORIGINAL VALUES AND CULTURAL HERITAGE

Either or both Aboriginal or Cultural Values may be scored. However, the maximum score permitted for 2.8 is 30 points.

Full documentation of sources must be attached to the data record.

### 2.8.1 Aboriginal Values

<b>30.0</b>	Significant	=	30 pts
	Not Significant	=	0
	Unknown	=	0
<b>30</b>	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

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### 2.8.2 Cultural Heritage

	Significant	=	30 pts
	Not Significant	=	0
<b>0.0</b>	Unknown	=	0
<b>0</b>	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

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Aboriginal Values/Cultural Heritage Score (maximum 30 points)	<b>30.0</b>
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### 3.0 HYDROLOGICAL COMPONENT

#### 3.1 FLOOD ATTENUATION

Check one of the following four options.

- If wetland is a single contiguous coastal wetland, → score 0 points for this section.
- If the wetland is a single contiguous lacustrine wetland where the ratio of wetland area to lake area is less than 0.1, → score 0 points for this section
- If all wetland units of the wetland complex are coastal wetland units, or if all wetland units are all lacustrine and the ratio of the wetland area (total area of all wetland units) to the lake areas is less than 0.1, →score 0 points for this section
- If wetland or wetland complex is entirely isolated in site type, →score 100 points automatically.
- Wetland not as above – proceed through 'steps' A through L below.

- (A) Total wetland area =  ha
- (B) Size of wetland's catchment =  ha
- (C) Size of other detention areas in catchment =  ha
- (D) Size of 'isolated' portions of wetland =  ha (FA = )
- (E) Size of coastal units of wetland complex =  ha (FA = )
- (F) Size of small lacustrine units of a wetland complex =  ha =  (FA=)  
(when wetland area: lake area <0.1)

Wetland Surface Form (select the form which best describes the non-coastal units of the wetland):

- flooded with little or no aquatic vegetation
- flooded but with submergent, emergent, or floating vegetation = 0.2
- flat (lawn) vegetation (typical of fens)=0.5
- hummock-depression microtopography=0.7
- patterned (e.g. string bod, ribber fens)=0.5

- (G) Wetland Surface Form Factor =  (maximum 1.0)

Points for Isolated Wetland Unit(s) (if not applicable, enter '0')

- (H) (FA of D)x 100 pts =  pts

Points for Coastal Wetland Unit(s) (if not applicable, enter '0')

- (I) (FA of E) x 100 pts =  pts

Points for Small Lacustrine Wetland Unit(s) (If not applicable enter '0'):

- (J) (FA of F) x100 pts =  pts

- (K) Size of wetland minus isolated, coastal and small lacustrine portions= (A-D-E-F)=  ha

- (L) number of points availblt to score 'rest' of wetland = {100-H-I-J}=  pts

- (M) Total are of upstream detnetion areas\*= {A+C}=  ha

- (N) Upstream Detention Factor= {(K/M)x2}=  (maximum 1.0)

- (O) Attenuation Factor = {(K/B)x 10}=  (maximum 1.0)

- (P) Surface Form Factor =  (maximum 1.0)

Flood Attenuation Score (maximum 100 points)	0
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## 3.2 GROUNDWATER RECHARGE

### 3.2.1 Site Type

Wetland > 50% lacustrine (by area) or located on the St. Mary's River	=					<b>0</b>
Wetland not as above. Calculate final score as follows:						
FA of isolated or palustrine wetland	=	<b>0.96</b>	x	20	=	<b>19.17</b>
FA of riverine wetland	=	<b>0.04</b>	x	5	=	<b>0.18</b>
FA of lacustrine wetland (when wetland is <50% lacustrine)	=	<b>0.00</b>	x	0	=	<b>0.00</b>
				Sub Total:		<b>19.34</b>

Groundwater Recharge/Wetland Site Type Score  
(Maximum 20 points) **19**

### 3.2.2 Soil Recharge Potential

Select only one choice that **best** describes the soils in **the area surrounding the wetland** being evaluated (the soils with the wetland are not scored here).

Dominant Wetland Type	Group A, B, C (sands, gravels, loams)	Group D (clays, substrates in high water tables, shallow substrates over impervious materials such as bedrock)
	Lacustrine or on St. Mary's River	0
Isolated	10	5
Palustrine	7	4
Riverine (not on a major river)	5	2

Groundwater Recharge/Wetland Soil Recharge Potential Score  
(maximum 10 points) **4**



### 3.3 DOWNSTREAM WATER QUALITY IMPROVEMENT

#### 3.2.1 Watershed Improvement Factor

Calculation of Watershed Improvement Score is based upon the fractional area (FA) of each site type within the wetland.

FA= area of site type/total area of the wetland

					Improvement Factor (IF)
FA of isolated wetland	=	0.00	x 0.5	=	0.00
FA of riverine wetland	=	0.04	x 1	=	0.04
FA of palustrine wetland with no inflow	=	0.32	x 0.7	=	0.22
FA of palustrine wetland with inflows	=	0.64	x 1	=	0.64
FA of lacustrine on lake shoreline	=	0.00	x 0.2	=	0.00
FA of lacustrine at lake inflow or outflow	=	0.01	x 1	=	0.01
Sub Total :					0.91
IF x 30 :					27.23

Watershed Improvement Score (maximum=30)	27
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#### 3.3.2 Adjacent and Watershed Land Use

##### Step 1: Determination of maximum initial score

x	Wetland on the Great Lakes or St. Mary's River (Go to Step 5a)
	All other wetlands (Go through Steps 2, 3, 4, and 5B)

##### Step 2: Determination of Broad Upslope Land Use (BLU)

Assess broad upslope land uses as logging within the previous 5 years, agriculture, or other activities which alter the natural vegetation cover in and extensive manner.

Choose one

>50% of catchment basin	=	20.0
20-50% of catchment basin	=	14
<20% of catchment basin	=	4

Score for BLU

##### Step 3. Determination of Linear Upslope Land Uses (LUU)

Assess linear upslope uses (LUU) e.g., roads, railways, hydro corridors, pipelines, etc., crossing the upslope catchment within 200 m of the wetland boundary.

Choose the highest only

	Score
Major Corridor	15
Secondary corridor	11
Tertiary corridor	6
Temporary or abandoned	3
None	0

Score for LUU

##### Step 4. Determination of Point-source Land Uses (PS)

Assess point source (PS) land uses producing industrial effluents such as heavy industry, pulp and paper plants, major aggregate operations (but not small pits use for local road construction), etc. Score as present' only if a point source land use is location less than 1km upstream from the wetland.

Present	15
Not present	0

Score for PS

**Step 5. Calculation of total score for Ajacent and Watershed Land Use**

		Score	
<b>x</b>	a) Wetland on the Great Lakes or St. Mary's River	0	
	b) All other wetlands, calculate as follows: BLU+LUU+PS	0	
			Final Score <b>0</b>

**3.3.3 Vegetation Form**

*Choose the category that best describes the vegetation of the wetland*

		Score	
	Trees, shrubs or herbs (h,c, ts, ls, gc)	8.0	
<b>x</b>	Emergents, submergenets (ne, re, be, f, ff, su)	10	
	Little or no vegetation (u)	0	
			Dominant Vegetation form Score <b>10</b> (maximum 10 points)

**3.4 CARBON SINK**

*Check only one of the following:*

	Bog or fen with more than 50% coverage by organic soil	= 15 pts	
	Wetland with between 10-50% coverage by organic soil (ie. Mainly mineral or undersignated soils, any wetland type)	= 6	
	Marshes and swamps with more than 50% coverage by organic soil	= 9	
<b>x</b>	Wetland with less than 10% soils organic	= 0	
			Carbon Sink Score <b>0</b> (maximum 9 points)

### 3.5 SHORELINE EROSION CONTROL

From the wetland vegetation map determine the **Dominant** vegetation type within the erosion zone for **lacustrine and riverine site type areas only**. Score according to the factors listed below.

**Step 1:**

	Wetland entirely isolated or palustrine	=	0 pts
x	Any part of the Wetland riverine or lacustrine	=	Go to step 2

**Step 2:** Choose the one characteristic that best describes the shoreline vegetation see page 112 for description of “shoreline”.)

x	Trees and shrubs	=	15 pts
	Emergent vegetation	=	8
	Submergent vegetation	=	6
	Other shoreline vegetation	=	3
	No vegetation	=	0

Shoreline Erosion Control Score (maximum 15 points)	<b>15</b>
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### 3.6 GROUNDWATER DISCHARGE

Circle the characteristics that best describe the wetland being evaluated and then sum the scores. If the sum exceeds 30 points, assign the maximum score of 30). Note: for wetland type, wetland type scored does not have to be the dominant type in the wetland.

		Potential for Discharge					
		None to Little		Some		High	
Wetland Characteristics	Wetland type Presence/Absence	Bog = 0		Swamp/Marsh = 2	2	Fen = 5	
	Basin Topography	Flat/rolling = 0	0	Hilly = 2		Steep = 5	
	Wetland area: Upslope catchment area	Large (>50%) = 0	0	Moderate (5-50%) = 2		Small (<5%) = 5	
	Lagg Development	None found = 0		Minor = 2	2	Extensive = 5	
	Seeps	None = 0		≤ 3 seeps = 2	2	> 3 seeps = 5	
	Iron precipitates	None = 0		≤ 3 sites = 2	2	> 3 sites = 5	
	Surface marl deposits	None = 0	0	≤ 3 sites = 2		> 3 sites = 5	
	Wetland pH	Low < 4.2 = 0		Moderate 4.2-5.7 = 5	5	High > 5.7 = 10	
	Catchment soil coverage	Patchy = 0	0	Thin (<20cm) = 2		Thick = 5	
	Catchment soil permeability	Low = 0		Moderate = 2	2	High = 5	
	Totals		0		15		0

Additional Comments/Notes:

Field Observation: A. Ingriselli, 2015

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Groundwater Discharge Score (maximum 30 points)	<b>15</b>
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## 4.0 SPECIAL FEATURES

### COMPONENT

## 4.1 RARITY

### 4.1.1 Wetland Types

Wetland type (Check one or more)

<input checked="" type="checkbox"/>	Bog
<input checked="" type="checkbox"/>	Fen
<input checked="" type="checkbox"/>	Swamp
<input checked="" type="checkbox"/>	Marsh

Ecoregion/Ecodistrict		Marsh	Swamp	Fen	Bog
2E	James Bay	20	20	0	20
2W	Big Trout Lake	20	20	0	10
3E	Lake Abitibi	20	20	10	0
3W	Lake Nipigon	20	20	10	0
3S	Lake St. Joseph	20	20	10	0
4E	Lake temagami	20	20	10	0
4W	Pigeon River	20	10	20	0
4S	Wabigoon Lake	20	10	20	0
5E-1	Thessalon	10	0	30	20
5E-3	La Cloche	20	0	30	20
5E-4	Sudbury	10	0	30	10
5E-5	North Bay	10	0	20	0
5E-6	Tomiko	10	0	20	0
5E-7	Parry Sound	20	0	30	20
5E-8	Huntsville	20	0	30	20
5E-9	Algonquin Park	10	0	30	0
5E-10	Brent	20	0	30	0
5E-11	Bancroft	0	10	30	10
5E13	Western Sault Ste. Marie- Lake Superior Coast	20	0	10	30
5-S	Lake of the Wood	10	10	20	10

Score (maximum 70 points)

**70**

## 4.1.2 Species

### 4.1.2.1 Reproductive Habitat for an Endangered or Threatened Species

Under the "Activity" column, when scoring animal species, record what the animal was doing when observed (e.g., nesting, courtship, singing, etc).

	Common Name	Scientific Name	Activity	Date Observed	Info Source
250	Blanding's Turtle	Emydoidea blandingii	Nesting	2015	Field Observation
		#N/A			
		#N/A			
		#N/A			
		#N/A			
		#N/A			
250	Total				

For each species score 250 points. (Score is cumulative, no maximum score)

Additional Notes/Comments:

Field observation; AECOM, 2015

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Reproductive Habitat for Endangered or Threatened Species (no maximum)	<b>250</b>
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#### 4.1.2.2 Traditional Migration or Feeding Habitat for an Endangered or Threatened Species

Under the "Activity" column, when scoring animal species, record what the animal was doing when observed (e.g., nesting, courtship, singing, feeding, resting etc). Dates that species has been recorded using the wetland must be included in the table below.

	Common Name	Scientific Name	Activity	Date Observed	Info Source
150	Blanding's Turtle	<i>Emydoidea blandingii</i>	Basking	Numerous 2011-2015	AECOM, 2015
		#N/A			
		#N/A			
		#N/A			
		#N/A			
		#N/A			
150	Total				

For one species score 150 points; for each additional species score 75 points. (Score is cumulative)

Additional Notes/Comments:

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Traditional Habitat for Endangered or Threatened Species (no maximum)	<b>150</b>
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### 4.1.2.3 Provincially Significant Animal Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
Snapping Turtle	Chelydra serpentina	Basking	Multiple	Aecom, Stantec, LGL, 2011-2015
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			

Additional Notes/Comments:

Field Observation: AECOM, 2015

One species = 50 pts	9 species = 140	17 species = 160
2 species = 80	10 species = 143	18 species = 162
3 species = 95	11 species = 146	19 species = 164
4 species = 105	12 species = 149	20 species = 166
5 species = 115	13 species = 152	21 species = 168
6 species = 125	14 species = 154	22 species = 170
7 species = 130	15 species = 156	23 species = 172
8 species = 135	16 species = 158	24 species = 174
		25 species = 176

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species (no maximum)	<b>50</b>
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#### 4.1.2.4 Provincially Significant Plant Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			

Additional Notes/Comments:

None observed

1 species = 50 pts	9 species = 140	17 species = 160
2 species = 80	10 species = 143	18 species = 162
3 species = 95	11 species = 146	19 species = 164
4 species = 105	12 species = 149	20 species = 166
5 species = 115	13 species = 152	21 species = 168
6 species = 125	14 species = 154	22 species = 170
7 species = 130	15 species = 156	23 species = 172
8 species = 135	16 species = 158	24 species = 174
		25 species = 176

Add one point for every species past 25 (for example, 26 species = 177 points, 27 species = 178 points etc.)

Provincially Significant Plant Species (no maximum)	<b>0</b>
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#### 4.1.2.5 Regionally Significant Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			

One species = 20 pts	4 species = 45	7 species = 58 pts
2 species = 30	5 species = 50	8 species = 61
3 species = 40	6 species = 55	9 species = 64
		10 species = 67

For each significant species over 10 in wetland, add 1 point.

Regionally Significant Species Score (no maximum score)	<b>0</b>
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#### 4.1.2.6 Locally Significant Species

Common Name	Scientific Name	Activity	Date Observed	Info Source
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			
	#N/A			

One species = 10 pts	4 species = 31 pts	7 species = 43 pts
2 species = 17	5 species = 38	8 species = 45
3 species = 24	6 species = 41	9 species = 47
		10 species = 49

For each significant species over 10 in wetland, add 1 point.

Locally Significant Species Score (no maximum score)	<b>0</b>
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#### 4.1.2.7 Species of Special Status

##### Black Duck

Suitable breeding habitat present and within assessment range (Figure 25)

Assessment Category	Check One	Points
20-40 Indicated Pairs/100km sq		= 20
10-20 Indicated Pairs/100 km sq	x	= 15
5-10 Indicated Pairs/100 km sq		= 10
1-5 Indicated Pairs/100km sq		= 5
Habitat not suitable		= 0
Out of assessment range		= 0

Black Duck Score (no maximum score)	<b>15</b>
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## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<b>PTERIDOPHYTES</b>		<b>FERNS &amp; ALLIES</b>						
<i>Woodwardia virginica</i>	Virginia Chain Fern	10	-5	0	S4	G5	-	-
<i>Pteridium aquilinum</i> var. <i>latiusculum</i>	Eastern Bracken-fern	2	3	0	S5	G5T	-	-
<i>Dryopteris marginalis</i>	Marginal Wood Fern	5	3	0	S5	G5	-	-
<i>Dryopteris cristata</i>	Crested Wood Fern	7	-5	0	S5	G5	-	-
<i>Onoclea sensibilis</i>	Sensitive Fern	4	-3	0	S5	G5	-	-
<i>Athyrium filix-femina</i>	Lady Fern						-	-
<i>Gymnocarpium dryopteris</i>	Oak Fern	7	0	0	S5	G5	-	-
<i>Dryopteris carthusiana</i>	Spinulose Wood Fern	5	-2	0	S5	G5	-	-
<i>Matteuccia struthiopteris</i>	Ostrich Fern	5	-3	0	S5	G5	-	-
<i>Dryopteris</i> sp.	Wood Fern						-	-
<i>Equisetum sylvaticum</i>	Wood Horsetail	7	-3	0	S5	G5	-	-
<i>Equisetum arvense</i>	Field Horsetail	0	0	0	S5	G5	-	-
<i>Equisetum fluviatile</i>	Water Horsetail	7	-5	0	S5	G5	-	-
<i>Equisetum hyemale</i> var. <i>affine</i>	Scouring-rush	2	-2	0	S5	G5T5	-	-
<i>Lycopodium dendroideum</i>	Prickly Tree Club-moss	7	0	0	S5	G5	-	-
<i>Lycopodiella inundata</i>	Nothern Bog Club-moss	9	-5	0	S5	G5	-	-
<i>Huperzia lucidula</i>	Shining Fir-moss	7	-1	0	S5	G5	-	-
<i>Osmunda regalis</i> var. <i>spectabilis</i>	Royal Fern	7	-5	0	S5	G5T	-	-
<i>Osmunda cinnamomea</i>	Cinnamon Fern	7	-3	0	S5	G5	-	-
<i>Osmunda claytoniana</i>	Interrupted Fern	7	-1	0	S5	G5	-	-
<i>Polypodium virginianum</i>	Rock Polypody Fern	6	5	0	S5	G5	-	-
<i>Thelypteris palustris</i> var. <i>pubescens</i>	Marsh Fern	5	-4	0	S5	G5T?	-	-
<i>Phegopteris connectilis</i>	Northern Beech Fern	8	5	0	S5	G5	-	-
<b>GYMNOSPERMS</b>		<b>CONIFERS</b>						
<i>Juniperus communis</i>	Common Juniper	4	3	0	S5	G5	-	-
<i>Thuja occidentalis</i>	Eastern White Cedar	4	-3	0	S5	G5	-	-
<i>Larix laricina</i>	Tamarack	7	-3	0	S5	G5	-	-
<i>Picea mariana</i>	Black Spruce	8	-3	0	S5	G5	-	-
<i>Pinus banksiana</i>	Jack Pine	9	3	0	S5	G5	-	-
<i>Pinus strobus</i>	Eastern White Pine	4	3	0	S5	G5	-	-
<i>Picea glauca</i>	White Spruce	6	3	0	S5	G5	-	-
<i>Abies balsamea</i>	Balsam Fir	5	-3	0	S5	G5	-	-
<b>DICOTYLEDONS</b>		<b>DICOTS</b>						
<i>Acer rubrum</i>	Red Maple	4	0	0	S5	G5	-	-
<i>Acer spicatum</i>	Mountain Maple	6	3	0	S5	G5	-	-
<i>Rhus typhina</i>	Staghorn Sumac				S5	G5	-	-
<i>Toxicodendron radicans</i> ssp. <i>negundo</i>	Poison-ivy	5	-1	0	S5	G5T	-	-
<i>Sium suave</i>	Hemlock Water-parsnip	4	-5	0	S5	G5	-	-
<i>Apocynum androsaemifolium</i> ssp. <i>androsaemifolium</i>	Spreading Dogbane	3	5	0	S5	G5T?	-	-
<i>Nemopanthus mucronatus</i>	Mountain-holly	8	-5	0	S5	G5	-	-
<i>Ilex verticillata</i>	Winterberry	5	-4	0	S5	G5	-	-
<i>Ilex mucronata</i>	Catberry				S5	G5	-	-
<i>Ilex</i> sp.							-	-
<i>Aralia nudicaulis</i>	Wild Sarsaparilla	4	3	0	S5	G5	-	-
<i>Eurybia macrophylla</i>	Large-leaved Aster	5	5	0	S5	G5	-	-
<i>Lactuca biennis</i>	Biennial Lettuce	6	0	0	S5	G5	-	-
<i>Solidago rugosa</i> ssp. <i>rugosa</i>	Rough Goldenrod	4	-1	0	S5	G5T?	-	-
<i>Symphytotrichum umbellatus</i> var. <i>umbellatus</i>	Flat-top White Aster	6	-3	0	S5	G5T?	-	-
<i>Eupatorium maculatum</i>	Spotted Joe-pye-weed	3	-5	0	S5	G5T5	-	-
<i>Euthamia graminifolia</i>	Flat-topped Bushy Goldenrod	2	-2	0	S5	G5	-	-
<i>Solidago canadensis</i>	Canada Goldenrod	1	3	0	S5	G5	-	-
<i>Symphytotrichum puniceum</i> var. <i>puniceum</i>	Purple-stemmed Aster	0	0	0	S5	G5T?	-	-
<i>Hieracium aurantiacum</i>	Devil's Paintbrush	0	5	-2	SE5	G?	-	-
<i>Arctium minus</i>	Common Burdock						-	-
<i>Solidago</i> sp.	Goldenrod						-	-
<i>Aster</i> sp.	Aster						-	-

## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Eupatorium perfoliatum</i>	Perfoliate Thoroughwort/Boneset	2	-4	0	S5	G5	-	-
<i>Leucanthemum vulgare</i>	Ox-eye Daisy	0	5	-1	SE5	G?	-	-
<i>Symphotrichum</i> sp.							-	-
<i>Eutrochium maculatum</i>	Spotted Joe Pye Weed						-	-
<i>Symphotrichum borealis</i>	Rush Aster	10	-5	0	S5	G5	-	-
<i>Bidens cernua</i>	Stick-tight	2	-5	0	S5	G5	-	-
<i>Anaphalis margaritacea</i>	Pearly Everlasting	3	5	0	S5	G5	-	-
<i>Impatiens capensis</i>	Spotted Touch-me-not	4	-3	0	S5	G5	-	-
<i>Alnus incana</i> spp. <i>rugosa</i>	Speckled Alder	6	-5	0	S5	G5T5	-	-
<i>Betula papyrifera</i>	White Birch	0	2	0	S5	G5	-	-
<i>Corylus cornuta</i>	Beaked Hazel	5	5	0	S5	G5T	-	-
<i>Cardamine diphylla</i>	Two-leaved Toothwort	7	5	0	S5	G5	-	-
<i>Armoracia lacustris</i>	Lake-cress						-	-
<i>Brasenia schreberi</i>	Water-shield	7	-5	0	S5	G5	-	-
<i>Diervilla lonicera</i>	Bush Honeysuckle	5	5	0	S5	G5	-	-
<i>Viburnum nudum</i> var. <i>cassinoides</i>	Northern Wild Raisin						-	-
<i>Sambucus nigra</i> ssp. <i>canadensis</i>	Common Elderberry						-	-
<i>Sambucus canadensis</i>	American Elderberry						-	-
<i>Symphoricarpos albus</i>	Snowberry	7	4	0	S5	G5	-	-
<i>Viburnum lentago</i>	Nannyberry	4	-1	0	S5	G5	-	-
<i>Sambucus</i> sp.	Elderberry						-	-
<i>Cornus canadensis</i>	Bunchberry	7	0	0	S5	G5	-	-
<i>Cornus stolonifera</i>	Red-osier Dogwood				S5	G5	-	-
<i>Cornus racemosa</i>	Red Panicked Dogwood/Gray dogwood	2	-2	0	S5	G5?	-	-
<i>Cornus sericea</i>	Red-osier Dogwood	2	-3	0	S5	G5	-	-
<i>Drosera rotundifolia</i>	Round-leaved Sundew	7	-5	0	S5	G5	-	-
<i>Arctostaphylos uva-ursi</i>	Common Bearberry	8	5	0	S5	G5	-	-
<i>Chamaedaphne calyculata</i>	Leatherleaf	9	-5	0	S5	G5	-	-
<i>Gaultheria procumbens</i>	Wintergreen	6	3	0	S5	G5	-	-
<i>Kalmia angustifolia</i>	Sheep Laurel	9	0	0	S5	G5	-	-
<i>Kalmia polifolia</i>	Bog Laurel	10	-5	0	S5	G5	-	-
<i>Ledum groenlandicum</i>	Labrador-tea	9	-5	0	S5	G5	-	-
<i>Vaccinium angustifolium</i>	Low Sweet Blueberry	6	3	0	S5	G5	-	-
<i>Vaccinium oxycoccos</i>	Small Cranberry	10	-5	0	S5	G5	-	-
<i>Vaccinium myrtilloides</i>	Velvet-leaf Blueberry	7	-2	0	S5	G5	-	-
<i>Andromeda polifolia</i> ssp. <i>glaucophylla</i>	Bog Rosemary	10	-5	0	S5	G5T5	-	-
<i>Gaylussacia baccata</i>	Black Huckleberry	8	3	0	S4	G5	-	-
<i>Andromeda polifolia</i> ssp. <i>polifolia</i>	Wild Rosemary	0	0	0	S4	G5T5	-	-
<i>Vaccinium macrocarpon</i>	Large Cranberry	10	-5	0	S4S5	G4	-	-
<i>Quercus rubra</i>	Red Oak	6	3	0	S5	G5	-	-
<i>Corydalis</i> sp.	Corydalis						-	-
<i>Geranium bicknellii</i>	Bicknell's Crane's-bill	5	5	0	S4	G5	-	-
<i>Ribes glandulosum</i>	Skunk Currant	6	-3	0	S5	G5	-	-
<i>Ribes triste</i>	Wild Red Currant	6	-5	0	S5	G5	-	-
<i>Ribes americanum</i>	Wild Black Currant	4	-3	0	S5	G5	-	-
<i>Ribes lacustre</i>	Swamp Black Currant	7	-3	0	S5	G5	-	-
<i>Ribes</i> sp.							-	-
<i>Ribes cynosbati</i>	Prickly Gooseberry	4	5	0	S5	G5	-	-
<i>Ribes hirtellum</i>	Smooth Gooseberry	6	-3	0	S5	G5	-	-
<i>Triadenum fraseri</i>	Fraser's St. John's-wort	7	-5	0	S5	G4G5	-	-
<i>Hypericum perforatum</i>	Common St. John's-wort	0	5	-3	SE5	G?	-	-
<i>Myriophyllum sibiricum</i>	Pale Water-milfoil	0	-5	0	S5	G5	-	-
<i>Myriophyllum</i> sp.							-	-
<i>Proserpinaca palustris</i>	Field Mermaid-weed	7	-5	0	S4	G5	-	-
<i>Myriophyllum verticillatum</i>	Whorled Water-milfoil	7	-5	0	S5	G5	-	-
<i>Mentha arvensis</i>	American Wild Mint	3	-3	0	S5		-	-
<i>Lycopus uniflorus</i>	Northern Water-horehound	5	-5	0	S5	G5	-	-

## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Utricularia intermedia</i>	Flat-leaved Bladderwort	8	-5	0	S5	G5	-	-
<i>Utricularia vulgaris</i>	Greater Bladderwort	4	-5	0	S5	G5	-	-
<i>Menyanthes trifoliata</i>	Three-leaved Buckbean	9	-5	0	S5	G5	-	-
<i>Myrica gale</i>	Sweet Gale	6	-5	0	S5	G5	-	-
<i>Comptonia peregrina</i>	Sweetfern	7	5	0	S5	G5	-	-
<i>Nymphaea odorata</i>	Fragrant Water-lily	0	0	0	S5	G5	-	-
<i>Nuphar variegata</i>	Bulhead Pond-lily	4	-5	0	S5	G5	-	-
<i>Nymphaea sp.</i>	Water-lily						-	-
<i>Nuphar sp.</i>	Pond-lily						-	-
<i>Nuphar lutea ssp. pumila</i>	Yellow Pond-lily						-	-
<i>Fraxinus nigra</i>	Black Ash	7	-4	0	S5	G5	-	-
<i>Circaea lutetiana ssp. canadensis</i>	Enchanter's Nightshade	3	3	0	S5	G5T5	-	-
<i>Epilobium ciliatum</i>	Hairy Willow-herb				S5	G5	-	-
<i>Epilobium angustifolium</i>	Fireweed						-	-
<i>Polygonum ciliinode</i>	Fringed Black Bindweed	2	5	0	S5	G5	-	-
<i>Polygonum sp.</i>							-	-
<i>Polygonum amphibium</i>	Water Smartweed	5	-5	0	S5	G5	-	-
<i>Trientalis borealis ssp. borealis</i>	Star-flower	6	-1	0	S5	G5T?	-	-
<i>Lysimachia thyrsiflora</i>	Tufted Loosestrife	7	-5	0	S5	G5	-	-
<i>Lysimachia terrestris</i>	Swamp Loosestrife	6	-5	0	S5	G5	-	-
<i>Lysimachia ciliata</i>	Fringed Loosestrife	4	-3	0	S5	G5	-	-
<i>Lysimachia sp.</i>	Loosestrife						-	-
<i>Pyrola asarifolia</i>	Pink Pyrola	7	-3	0	S5	G5	-	-
<i>Chimaphila umbellata</i>	Common Pipsissewa				S5	G5	-	-
<i>Aquilegia canadensis</i>	Wild Columbine	5	1	0	S5	G5	-	-
<i>Coptis trifolia</i>		7	-3	0	S5	G5T5	-	-
<i>Caltha palustris</i>	Marsh-marigold	5	-5	0	S5	G5	-	-
<i>Actaea rubra</i>	Red Baneberry	5	5	0	S5	G5	-	-
<i>Clematis virginiana</i>	Virgin's-bower	3	0	0	S5	G5	-	-
<i>Ranunculus abortivus</i>	Kidney-leaf Buttercup	2	-2	0	S5	G5	-	-
<i>Ranunculus recurvatus var. recurvatus</i>	Hooked Buttercup	4	-3	0	S5	G5	-	-
<i>Thalictrum pubescens</i>	Tall Meadow-rue	5	-2	0	S5	G5	-	-
<i>Ranunculus pensylvanicus</i>	Bristly Buttercup	3	-5	0	S5	G5	-	-
<i>Anemone canadensis</i>	Canada Anemone	3	-3	0	S5	G5	-	-
<i>Ranunculus acris</i>	Tall Buttercup	0	0	-2	SE5	G5	-	-
<i>Thalictrum dasycarpum</i>	Purple Meadow-rue	8	-2	0	S4?	G5	-	-
<i>Amelanchier arborea</i>	Downy Juneberry	0	3	0	S5	G5	-	-
<i>Aronia melanocarpa</i>	Black chokeberry	7	-3	0	S5	G5	-	-
<i>Fragaria vesca ssp. americana</i>	Woodland Strawberry	4	4	0	S5	G5T?	-	-
<i>Prunus pumila</i>	Sand Cherry						-	-
<i>Rubus idaeus</i>	Red Raspberry	0	0	0	SE1	G5T5	-	-
<i>Rubus pubescens</i>	Dwarf Raspberry	4	-4	0	S5	G5	-	-
<i>Prunus virginiana</i>	Choke Cherry						-	-
<i>Rubus flagellaris</i>	Prickly Raspberry	4	4	0	S4	G5	-	-
<i>Spiraea latifolia</i>	Broad-leaved Meadow-sweet				S5	G5	-	-
<i>Amelanchier laevis</i>	Smooth Juneberry	5	5	0	S5	G4G5Q	-	-
<i>Spiraea alba</i>	Narrow-leaved Meadow-sweet	3	-4	0	S5	G5	-	-
<i>Geum aleppicum</i>	Yellow Avens	2	-1	0	S5	G5	-	-
<i>Rubus allegheniensis</i>	Alleghany Blackberry	2	2	0	S5	G5	-	-
<i>Rubus hispidus</i>	Trailing Blackberry	6	-3	0	S4S5	G5	-	-
<i>Spiraea tomentosa</i>	Tomentose Meadow-sweet	5	-3	0	S4S5	G5	-	-
<i>Comarum palustre</i>	Marsh Cinquefoil						-	-
<i>Spiraea sp.</i>	Meadow-sweet						-	-
<i>Fragaria virginiana</i>	Virginia Strawberry						-	-
<i>Prunus serotina</i>	Black Cherry	3	3	0	S5	G5	-	-
<i>Rosa palustris</i>	Marsh Rose	7	-5	0	S5	G5	-	-
<i>Sorbus americana</i>	American Mountain-ash	8	-1	0	S5	G5	-	-

## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Potentilla norvegica</i>	Norwegian cinquefoil				S5	G5	-	-
<i>Potentilla arguta</i>	Tall Cinquefoil	7	5	0	S4	G5	-	-
<i>Galium aparine</i>	Cleavers	4	3	0	S5	G5	-	-
<i>Galium triflorum</i>	Sweet-scented Bedstraw	4	2	0	S5	G5	-	-
<i>Galium palustre</i>	Marsh Bedstraw	5	-5	0	S5	G5	-	-
<i>Populus tremuloides</i>	Trembling Aspen	2	0	0	S5	G5	-	-
<i>Salix sp.</i>	Willow						-	-
<i>Salix petiolaris</i>	Slender Willow	3	-4	0	S5	G4	-	-
<i>Populus grandidentata</i>	Large-tooth Aspen	5	3	0	S5	G5	-	-
<i>Salix bebbiana</i>	Long-beaked Willow	4	-4	0	S5	G5	-	-
<i>Salix discolor</i>	Pussy Willow	3	-3	0	S5	G5	-	-
<i>Salix pyrifolia</i>	Balsam Willow	10	-4	0	S5	G5	-	-
<i>Comandra umbellata</i>	Bastard Toad-flax	6	3	0	S5	G5	-	-
<i>Sarracenia purpurea</i>	Pitcher-plant	10	-5	0	S5	G5	-	-
<i>Ulmus americana</i>	White Elm	3	-2	0	S5	G5?	-	-
<i>Urtica dioica ssp. dioica</i>	European Stinging Nettle	0	-1	-1	SE2	G5T?	-	-
<i>Laportea canadensis</i>	Wood Nettle	6	-3	0	S5	G5	-	-
<i>Viola macloskeyi</i>	Smooth White Violet				S5	G5	-	-
<i>Viola cucullata</i>	Marsh Blue Violet	5	-5	0	S5	G4G5	-	-
<i>Viola canadensis</i>	Canada Violet	6	5	0	S5	G5	-	-
<i>Viola palustris</i>	Marsh Violet	0	0	0	SU	G5	-	-
<b>MONOCOTYLEDONS</b>	<b>MONOCOTS</b>							
<i>Arisaema triphyllum</i>	Small Jack-in-the-pulpit	5	-2	0	S5	G5T5	-	-
<i>Calla palustris</i>	Wild Calla	8	-5	0	S5	G5	-	-
<i>Eriophorum sp.</i>	Cotton-grass						-	-
<i>Scirpus cyperinus</i>	Wool-grass	4	-5	0	S5	G5	-	-
<i>Carex sp.</i>							-	-
<i>Carex aquatilis</i>	Aquatic Sedge	7	-5	0	S5	G5	-	-
<i>Carex deweyana</i>	Dewey's Sedge	6	4	0	S5	G5	-	-
<i>Carex stricta</i>	Tussock Sedge	4	-5	0	S5	G5	-	-
<i>Carex blanda</i>	Woodland Sedge	3	0	0	S5	G5?	-	-
<i>Carex crinita</i>	Fringed Sedge	6	-4	0	S5	G5	-	-
<i>Carex gracillima</i>	Graceful Sedge	4	3	0	S5	G5	-	-
<i>Carex intumescens</i>	Bladder Sedge	6	-4	0	S5	G5	-	-
<i>Carex lacustris</i>	Lake-bank Sedge	5	-5	0	S5	G5	-	-
<i>Carex arctata</i>	Drooping Wood Sedge	5	5	0	S5	G5?	-	-
<i>Eriophorum virginicum</i>	Virginia Cotton-grass	10	-5	0	S5	G5	-	-
<i>Scirpus sp.</i>	Bulrush						-	-
<i>Carex utriculata</i>	Beaked Sedge	7	-5	0	S5	G5	-	-
<i>Eriophorum vaginatum ssp. spissum</i>	Sheathed Cotton-grass	10	-5	0	S5	G5T5	-	-
<i>Dulichium arundinaceum</i>	Reed-like Three-way Sedge	7	-5	0	S5	G5	-	-
<i>Scirpus atrovirens</i>	Dark-green Bulrush	3	-5	0	S5	G5?	-	-
<i>Eriophorum viridi-carinatum</i>	Thin-leaved Cotton-grass	9	-5	0	S5	G4	-	-
<i>Carex magellanica ssp. irrigua</i>	Stunted Sedge	10	-5	0	S5	G5T?	-	-
<i>Carex oligosperma</i>	Few-seeded Sedge	10	-5	0	S4	G4	-	-
<i>Carex tenuiflora</i>	Sparse-flowered Sedge	10	-5	0	S5	G5	-	-
<i>Carex canescens ssp. canescens</i>	Silvery Sedge	7	-5	0	S5	G5T?	-	-
<i>Carex disperma</i>	Soft-leaved Sedge	8	-5	0	S5	G5	-	-
<i>Scirpus microcarpus</i>	Small-fruited Bulrush	4	-5	0	S5	G5	-	-
<i>Carex interior</i>	Inland Sedge	6	-5	0	S5	G5	-	-
<i>Carex lasiocarpa</i>	Slender Sedge	8	-5	0	S5	G5	-	-
<i>Carex brunnescens ssp. brunnescens</i>	Brownish Sedge	7	-3	0	S5	G5T?	-	-
<i>Carex echinata ssp. echinata</i>	Prickly Sedge	7	-5	0	S5	G5T5	-	-
<i>Carex scoparia</i>	Pointed Broom Sedge	5	-3	0	S5	G5	-	-
<i>Carex pellita</i>	Woolly Sedge	4	-5	0	S5	G5	-	-
<i>Carex stipata</i>	Awl-fruited Sedge	3	-5	0	S5	G5	-	-
<i>Carex lupulina</i>	Hop Sedge	6	-5	0	S5	G5	-	-

## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Carex siccata</i>	Silvery-flowered Hay Sedge	0	0	0	S5	G5	-	-
<i>Iris versicolor</i>	Multi-coloured Blue-flag	5	-5	0	S5	G5	-	-
<i>Iris sp.</i>	Iris						-	-
<i>Sisyrinchium montanum</i>	Montane Blue-eyed-grass	0	-1	0	S5	G5	-	-
<i>Juncus effusus</i>	Common rush	0	0	0			-	-
<i>Juncus bufonius</i>	Toad Rush	1	-4	0	S5	G5	-	-
<i>Juncus validus</i>	Roundhead Rush						-	-
<i>Juncus sp.</i>	Rush						-	-
<i>Lemna minor</i>	Lesser Duckweed	2	-5	0	S5	G5	-	-
<i>Maianthemum canadense</i>	Wild Lily-of-the-valley	5	0	0	S5	G5	-	-
<i>Maianthemum trifolium</i>	Three-leaved Solomon's Seal	10	-5	0	S5	G5	-	-
<i>Polygonatum pubescens</i>	Hairy Solomon's Seal	5	5	0	S5	G5	-	-
<i>Clintonia borealis</i>	Bluebead-lily	7	-1	0	S5	G5	-	-
<i>Trillium erectum</i>	Purple Trillium	6	1	0	S5	G5	-	-
<i>Trillium grandiflorum</i>	White Trillium	5	5	0	S5	G5	-	-
<i>Cypripedium acaule</i>	Moccasin Flower	7	-3	0	S5	G5	-	-
<i>Poa sp.</i>							-	-
<i>Calamagrostis canadensis</i>	Blue-joint Grass	4	-5	0	S5	G5	-	-
<i>Deschampsia flexuosa</i>	Common Hairgrass	8	5	0	S5	G5	-	-
<i>Brachyelytrum erectum</i>	Bearded Short-husk	7	5	0	S4S5	G5	-	-
<i>Glyceria striata</i>	Fowl Meadow Grass	3	-5	0	S5	G5	-	-
<i>Cinna latifolia</i>	Broad-leaved Reed Grass	7	-4	0	S5	G5	-	-
<i>Phragmites australis</i>	Common Reed	0	-4	0	S5	G5	-	-
<i>Poa palustris</i>	Fowl Meadow Grass	5	-4	0	S5	G5	-	-
<i>Phalaris arundinacea</i>	Reed Canary Grass	0	-4	0	S5	G5	-	-
<i>Poa annua</i>	Annual Blue Grass	0	1	-2	SE5	G?	-	-
<i>Bromus inermis</i>	Awnless Brome				SNA	G5TNR	-	-
<i>Agrostis stolonifera</i>	Redtop	0	-3	0	S5	G5	-	-
<i>Pontederia cordata</i>	Heart-leaved Pickerel-weed	7	-5	0	S5	G5	-	-
<i>Sparqanium emersum ssp. acaule</i>	Stemless Bur-reed	0	0	0	SU		-	-
<i>Sparqanium angustifolium</i>	Narrow-leaved Bur-reed	9	-5	0	S4?	G5	-	-
<i>Sparqanium fluctuans</i>	Floating Bur-reed	9	-5	0	S4?	G5	-	-
<i>Sparqanium eurycarpum</i>	Broad-fruited Bur-reed	3	-5	0	S5	G5	-	-
<i>Typha latifolia</i>	Broad-leaved Cattail	3	-5	0	S5	G5	-	-
<i>Typha angustifolia</i>	Narrow-leaved Cattail	3	-5	0	S5	G5	-	-
<i>Typha sp.</i>	Cattail						-	-
<b>ASCOMYCETES</b>	<b>LICHENS</b>							
<i>Cladonia rangiferina</i>	Grey Reindeer Lichen				S5	G5	-	-
<b>BRYOPSIDA</b>	<b>MOSSES</b>							
<i>Aulacomnium palustre</i>	Glow Moss				S5	G5	-	-
<i>Dicranum polysetum</i>	Wavy Moss				S5	G5	-	-
<i>Dicranum montanum</i>	Montane Dicranum Moss				S5	G5	-	-
<i>Dicranum ontariense</i>	Ontario Dicranum Moss				S5	G4G5	-	-
<i>Polytrichum sp.</i>	Haircap Moss						-	-
<i>Polytrichum commune</i>	Common Haircap Moss				S5	G5	-	-
<i>Polytrichum strictum</i>	Bog Haircap Moss				S5	G4	-	-
<b>SPHAGNOPSIDA</b>	<b>MOSSES</b>							
<i>Sphagnum sp.</i>	Peat Moss						-	-
<i>Sphagnum girgensohnii</i>	Common Green Peat Moss				S5	G5	-	-
<i>Sphagnum capillifolium</i>	Northern Peat Moss				S5	G5	-	-
<i>Sphagnum angustifolium</i>	Cuspidate Peat Moss				S5	G5	-	-
<i>Sphagnum squarrosum</i>	Squarrose Peat Moss				S5	G5	-	-
<i>Sphagnum fuscum</i>	Common Brown Sphagnum				S5	G5	-	-
<b>AVIFAUNA</b>								
<i>Corvus brachyrhynchos</i>	American Crow				S5B	G5	-	-
<i>Picoides dorsalis</i>	American Three-toed Woodpecker				S4	G5	-	-
<i>Scolopax minor</i>	American Woodcock				S4B	G5	-	-

## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEDDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Haliaeetus leucocephalus</i>	Bald Eagle				S2N, S4B	G5	SC	-
<i>Strix varia</i>	Barred Owl				S5	G5	-	-
<i>Setophaga castanea</i>	Bay-breasted Warbler				S5B	G5	-	-
<i>Mniotilta varia</i>	Black-and-white Warbler				S5B	G5	-	-
<i>Picoides arcticus</i>	Black-backed Woodpecker				S4	G5	-	-
<i>Poecile atricapillus</i>	Black-capped Chickadee				S5	G5	-	-
<i>Setophaga virens</i>	Black-throated Green Warbler				S5B	G5	-	-
<i>Cyanocitta cristata</i>	Blue Jay				S5	G5	-	-
<i>Buteo platypterus</i>	Broad-winged Hawk				S5B	G5	-	-
<i>Bucephala albeola</i>	Bufflehead				S4	G5	-	-
<i>Branta canadensis</i>	Canada Goose				S5	G5	-	-
<i>Cardellina pusilla</i>	Canada Warbler				S4B	G5	THR	THR
<i>Setophaga pensylvanica</i>	Chestnut-sided Warbler				S5B	G5	-	-
<i>Gavia immer</i>	Common Loon				S5B, S5N	G5	-	-
<i>Chordeiles minor</i>	Common Nighthawk				S4B	G4	SC	THR
<i>Geothlypis trichas</i>	Common Yellowthroat				S5B	G5	-	-
<i>Junco hyemalis</i>	Dark-eyed Junco				S5	G5	-	-
<i>Picoidese pubescens</i>	Downy Woodpecker				S5	G5	-	-
<i>Sayornis phoebe</i>	Eastern Pheobe				S5B	G5	-	-
<i>Caprimulgus vociferus</i>	Eastern Whip-poor-will				S4B	G5	THR	THR
<i>Contopus virens</i>	Eastern Wood-Pewee				S4B	G5	-	-
<i>Regulus satrapa</i>	Golden-crowned Kinglet				S5B	G5	-	-
<i>Perisoreus canadensis</i>	Gray Jay				S5	G5	-	-
<i>Ardea herodias</i>	Great blue Heron				S4	G5	-	-
<i>Tringa melanoleuca</i>	Greater Yellowlegs				S4B, S4N	G5	-	-
<i>Picoides villosus</i>	Hairy Woodpecker				S5	G5	-	-
<i>unknown</i>	Hawk Sp.				-	-	-	-
<i>Catharus guttatus</i>	Hermit Thrush				S5B	G5	-	-
<i>Charadrius vociferus</i>	Killdeer				S5B, S5N	G5	-	-
<i>Setophaga kirtlandii</i>	Kirtland's Warbler				S1B	G1	END	END
<i>Anas platyrhynchos</i>	Mallard				S5	G5	-	-
<i>Oreothlypis ruficapilla</i>	Nashville Warbler				S5B	G5	-	-
<i>Colaptes auratus</i>	Northern Flicker				S4B	G5	-	-
<i>Accipiter gentilis</i>	Northern Goshawk				S4	G5	-	-
<i>Parkesia noveboracensis</i>	Northern Waterthrush				S5B	G5	-	-
<i>Contopus cooperi</i>	Olive-sided Flycatcher				S4B	G4	SC	THR
<i>Pandion haliaetus</i>	Osprey				S5B	G5	-	-
<i>Seiurus aurocapilla</i>	Ovenbird				S4B	G5	-	-
<i>Hylatomus pileatus</i>	Pileated Woodpecker				S5	G5	-	-
<i>Pinicola enucleator</i>	Pine Grosbeak				S4B	G5	-	-
<i>Corvus corax</i>	Common Raven				S5	G5	-	-
<i>Sitta canadensis</i>	Red-breasted Nuthatch				S5	G5	-	-
<i>Vireo olivaceus</i>	Red-eyed Vireo				S5B	G5	-	-
<i>Buteo jamaicensis</i>	Red-tailed Hawk				S5	G5	-	-
<i>Aythya collaris</i>	Ring-neck Duck				S5	G5	-	-
<i>Bonasa umbellus</i>	Ruffed Grouse				S4	G5	-	-
<i>Euphagus carolinus</i>	Rusty Blackbird				S4B	G4	-	SC
<i>Grus canadensis</i>	Sandhill Crane				S5B	G5	-	-
<i>Falci pennis canadensis</i>	Spruce Grouse				S5	G5	-	-
<i>Picoides dorsalis</i>	Three-toed Woodpecker				S4	G5	-	-
<i>Cathartes aura</i>	Turkey Vulture				S5B	G5	-	-
<i>Zonotrichia albicollis</i>	White-throated Sparrow				S5B	G5	-	-
<i>Troglodytes troglodytes</i>	Winter Wren				S5B	G5	-	-
<i>Aix sponsa</i>	Wood Duck				S5	G5	-	-
<i>Hylocichla mustelina</i>	Wood Thrush				S4B	G5	-	THR
<i>Setophaga petechia</i>	Yellow Warbler				S5B	G5	-	-
<i>Sphyrapicus varius</i>	Yellow-bellied Sapsucker				S5B	G5	-	-



## ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Schedule 1
<i>Setophaga coronata</i>	Yellow-rumped Warbler				S5B	G5	-	-
<b>HERPETOFAUNA</b>								
<i>Lithobates catesbeianus</i>	American Bullfrog				S4	G5	-	-
<i>Anaxyrus americanus</i>	American Toad				S5	G5	-	-
<i>Emydoidea blandingii</i>	Blanding's Turtle				S3	G4	THR	THR
<i>Plestiodon fasciatus pop. 2</i>	Common Five-lined Skink (Southern Shield population)				S3	G5T3	SC	SC
<i>Thamnophis sirtalis sirtalis</i>	Eastern Gartersnake				S5	G5T5	-	-
<i>Hemidactylium scutatum</i>	Four-toed Salamander				S4	G5	-	-
<i>Lithobates clamitans</i>	Green Frog				S5	G5	-	-
<i>Hyla versicolor</i>	Gray Treefrog				S5	G5	-	-
<i>Sistrurus catenatus pop. 1</i>	Massasauga (Great Lakes / St. Lawrence population)				S3	GN3	THR	THR
<i>Midland painted Turtle</i>	Midland painted Turtle				S4	G5T5	-	-
<i>Mink Frog</i>	Mink Frog				S5	G5	-	-
<i>Northern Leopard Frog</i>	Northern Leopard Frog				S5	G5	-	-
<i>Northern Watersnake</i>	Northern Watersnake				S5	G5T5	-	-
<i>Red-bellied Snake</i>	Red-bellied Snake				S5	G5	-	-
<i>Ring-necked Snake</i>	Ring-necked Snake				S4	G5	-	-
<i>Smooth Greensnake</i>	Smooth Greensnake				S4	G5	-	-
<i>Spring Peeper</i>	Spring Peeper				S5	G5	-	-
<i>Wood Frog</i>	Wood Frog				S5	G5	-	-
<b>MAMMALS</b>								
<i>American Marten</i>	American Marten				S5	G5	-	-
<i>Beaver</i>	Beaver				S5	G5	-	-
<i>Black Bear</i>	Black Bear				S5	G5	-	-
<i>Eastern Chipmunk</i>	Eastern Chipmunk				S5	G5	-	-
<i>Eastern Gray Squirrel</i>	Eastern Gray Squirrel				S5	G5	-	-
<i>Meadow Vole</i>	Meadow Vole				S5	G5	-	-
<i>Vole sp.</i>	Vole sp.				-	-	-	-
<i>Moose</i>	Moose				S5	G5	-	-
<i>North American River Otter</i>	North American River Otter				S5	G5	-	-
<i>Northern Gray Wolf</i>	Northern Gray Wolf				S4	G4TNR	-	-
<i>Porcupine</i>	Porcupine				S5	G5	-	-
<i>Red Squirrel</i>	Red Squirrel				S5	G5	-	-
<i>White-tailed Deer</i>	White-tailed Deer				S5	G5	-	-
<i>Lynx (sighting unconfirmed)</i>	Lynx (sighting unconfirmed)				S5	G5	-	-
<i>Fox</i>	Fox				S5	G5	-	-
<i>Wolf Sp.</i>	Wolf Sp.				-	-	-	-
<b>INSECT</b>								
<i>Springtails</i>	Springtails				-	-	-	-
<i>Grasshopper Sp.</i>	Grasshopper Sp.				-	-	-	-
<i>Spring Azure</i>	Spring Azure				SU	G4G5	-	-

## 4.2 SIGNIFICANT FEATURES AND HABITATS

### 4.2.1 Colonial Waterbirds

Record all available information. Score the highest applicable category. Include additional information as possible (e.g., nest locations, etc).

Activity	Species	Info Source	Points
Currently nesting			= 50
Known to have nested within the past 5 years			= 25
Active feeding area (great blue heron excluded)			= 15
None known			= 0
<b>Total:</b>			<b>0</b>

Additional Notes/Comments:

Not known

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Colonial Waterbird Nesting Score (maximum 50 points)	<b>0</b>
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### 4.2.2 Winter Cover for Wildlife

Score highest appropriate category. Include rationale/sources of information.

	Provincially significant	=	100 pts
	Significant in Ecoregion	=	50
	Significant in Ecodistrict	=	25
	Locally significant	=	10
<b>0</b>	Little or poor winter cover	=	0
<b>0</b>			

Species/habitat/vegetation community scored (e.g., winter deer cover in hemlock swamp, S3 and S4b):

Field observation; Kristan Washburn, 2015

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Source of information:

Discussions with Aylmer District Office

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Winter Cover for Wildlife Score (maximum 100 points)	<b>0</b>
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### 4.2.3 Waterfowl Staging and/or Moulting Areas

Check highest level of significance for both staging and moulting; add scores for staging and for moulting together for final score. However, maximum score for evaluation under this section is 150 points.

	Staging	Moulting
Nationally/internationally significant	= 150 pts	= 150 pts
Provincially significant	= 100	= 100
Significant in the Ecoregion	= 50	= 50
Significant in Ecodistrict	= 25	= 25
Known to occur	= 10	= 10
Not possible/Unknown	= 0 x	= 0 x
Subtotal:		0
Subtotal:	0	

Species/habitat/vegetation community scored (e.g., approx 20 mallards in W3):

Waterfowl staging and Moulting are not known to occur.

Source of information:

Field Observation: J. Kamstra April 24 and May 13, 2015, Stantec, 2013

Waterfowl Staging/Moulting Score (maximum 150 points)	0
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### 4.2.4 Waterfowl Breeding

Check highest level of significance.

Nationally/internationally significant	=	150 pts
Provincially significant	=	100
Significant in the Ecoregion	=	50
Significant in Ecodistrict	=	25
x Habitat Suitable	=	10
Habitat not suitable	=	0
10		

Species/habitat/vegetation community scored (e.g., mallard in W3):

Canada Goose, American Black Duck, Mallard, Common Loon and Wood Duck were confirmed breeding within the WET-004 wetland complex. Exact location and vegetation community undetermined.

Source of information:

Field observation: LGL, 2011-2012

Waterfowl Breeding Score (maximum 100 points)	10
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### 4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area

Check highest level of significance.

Nationally / internationally significant	=	150 pts
Provincially significant	=	100
Significant in Ecoregion	=	50
Significant in Ecodistrict	=	25
x Known to occur	=	10
Not possible / Unknown	=	0
10		

Species/habitat/vegetation community scored:

Raptors observed during migration surveys within the study area included: Turkey Vulture, American Kestrel, Bald Eagle, Boad-winged Hawk, Merlin, Northern Goshawk, Northern Harrier, Osprey, Red-tailed Hawk, Sharp-shinned Hawk. There is the strong possibility that some of these species may be using the WET-004 wetland complex as a stopover area.

Source of information:

Field Observation: Stantec, 2013

Passerine, Shorebird or Raptor Stopover Score (maximum 100 points)	10
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### 4.2.6 Ungulate Habitat

EVALUATION:

Score (1) + (2) + one of (3) to (6)

<input checked="" type="checkbox"/> 15	1. Ungulate summer cover	=	15
<input type="checkbox"/>	2. Mineral licks	=	50
<input type="checkbox"/>	3. Moose aquatic feeding area Class 1	=	0
<input type="checkbox"/>	4. Moose aquatic feeding area Class 2	=	10
<input type="checkbox"/>	5. Moose aquatic feeding area Class 3	=	20
<input type="checkbox"/>	6. Moose aquatic feeding area Class 4	=	35

(Score is cumulative for a maximum possible score of 100)

Ungulat Habitat Score	<b>15</b>
(maximum 100 points)	

### 4.2.7 Fish Habitat

#### 4.2.6.1 Spawning and Nursery Habitat

Area Factors for Low Marsh, High Marsh and Swamp Communities.

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5- 4.9	0.2
5.0- 9.9	0.4
10.0- 14.9	0.6
15.0 -19.9	0.8
20.0+ ha	1.0

**Step 1:**

- Fish habitat is not present within the wetland Go to Step 7, Score 0 points
- Fish habitat is present within the wetland Go to Step 2

**Step 2:** Choose only one option

- Significance of the spawning and nursery habitat within the wetland is known Go to Step 3
- Significance of the spawning and nursery habitat within the wetland is not known Go through Steps 4, 5 and 6

**Step 3:** Select the highest appropriate category below, attach documentation:

- Significant in Ecoregion Go to Step 7, 100 points
- Significant in Ecodistrict Go to Step 7, 50
- Locally Significant Habitat (5.0+ ha) Go to Step 7, 25
- Locally Significant Habitat (<5.0 ha) Go to Step 7, 15

**Subtotal:** **0**

Source of information:

---

**Step 4:** Low Marsh = the 'permanent' marsh area, from the existing water line out to the outer boundary of the wetland.

- Low marsh not present Go to Step 5
- Low marsh present Continue through Step 4, scoring as noted below

### Scoring of Low Marsh:

1. Check the appropriate **Vegetation Group** (see Appendix 7) for each Low Marsh community. (Based on the one most clearly dominant plant species of the dominant form in each Low Marsh vegetation community.)
2. Sum the areas (ha) of the vegetation communities assigned to each **Vegetation Group**.
3. Use these areas to assign an **Area Factor** for each checked **Vegetation Group**.
4. Multiply the **Area Factor** by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for Low Marsh**.

Scoring for Presence of Key Vegetation Groups – Low Marsh						
Vegetation Group Number	Vegetation Group Name	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
1	Tallgrass				6	0.0
2	Shortgrass-Sedge				11	0.0
3	Cattail-Bulrush-Burreed	x	5.31	0.4	5	2.0
4	Arrowhead-Pickerelweed				5	0.0
5	Duckweed				2	0.0
6	Smartweed-Waterwillow				6	0.0
7	Waterlily-Lotus	x	15.22	0.2	11	2.2
8	Waterweed-Watercress				9	0.0
9	Ribbongrass				10	0.0
10	Coontail-Naiad-Watermilfoil	x	0.15	0.1	13	1.3
11	Narrowleaf Pondweed				5	0.0
12	Broadleaf Pondweed				8	0.0
Sub Total Score						5.5
Total Score (maximum 75 points)						5.5

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5- 4.9	0.2
5.0- 9.9	0.4
10.0- 14.9	0.6
15.0 -19.9	0.8
20.0+ ha	1.0

**Step 5:** High Marsh = the 'seasonal' marsh area, from the water line to the inland boundary of marsh wetland type. This is essentially what is commonly referred to as a wet meadow, in that there is insufficient standing water to provide fisheries habitat except during flood or high water conditions.

High marsh not present

*Go to Step 6*

High marsh present

*Continue through Step 5, scoring as noted below*

**Scoring of High Marsh:**

1. Check the appropriate **Vegetation Group** (see Appendix 7) for each High Marsh community. (Based on the one most clearly dominant plant species of the dominant form in each High Marsh vegetation community.)
2. Sum the areas (ha) of the vegetation communities assigned to each **Vegetation Group**.
3. Use these areas to assign an **Area Factor** (from Table 8) for each checked **Vegetation Group**.
4. Multiply the **Area Factor** by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for High Marsh**.

Scoring for Presence of Key Vegetation Groups – High Marsh							
Vegetation Group Number	Vegetation Name	Group	Present as a Dominant Form (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
1	Tallgrass					6	0.0
2	Shortgrass-Sedge		x	11.32	0.6	11	6.6
3	Cattail-Bulrush-Burreed					5	0.0
4	Arrowhead-Pickerelweed					5	0.0
Sub Total Score							6.6
Total Score for High Marsh ( <i>maximum 25 points</i> )							6.6

*Continue to Step 6*

No. of ha of Fish Habitat	Area Factor
< 0.5 ha	0.1
0.5- 4.9	0.2
5.0- 9.9	0.4
10.0- 14.9	0.6
15.0 -19.9	0.8
20.0+ ha	1.0

**Step 6:**

**Scoring of Swamp:**

1. Determine the total area (ha) of seasonally flooded swamp communities within the wetland containing fish habitat and record below.
2. Determine the total area (ha) of permanently flooded swamp communities within the wetland containing fish habitat and record below.
3. Use these areas to assign an **Area Factor** (from Table 8).
4. Multiply the Area Factor by the **Multiplication Factor** for each row to calculate Score.
5. Sum all numbers in Score column to get **Total Score for Swamp**.

Scoring Swamps for Fish Habitat (Seasonally flooded; Permanently flooded)					
Swamp Containing Fish Habitat	Present (check)	Total Area (ha)	Area Factor (from Table 8)	Multiplication Factor	Score
Seasonally Flooded Swamp				10	0.0
Permanently Flooded Swamp				10	0.0
Sub Total Score					0.0
Total Score for Swamp (maximum 20 points)					0.0

*Continue to Step 7*

**Step 7: CALCULATION OF FINAL SCORE**

NOTE: Scores for Steps 4, 5 and 6 are only recorded if Steps 1 and 3 have not been scored.

A. Score from Step 1 (fish habitat present)	=	0
B. Score from Step 3 (significance known)	=	0
C. Score from Step 4 (Low Marsh)	=	5.5
D. Score from Step 5 (High Marsh)	=	6.6
E. Score from Step 6 (Swamp)	=	0.0
Subtotal:		12.1

Calculation of Final Score for Spawning and Nursery Habitat = A or B or Sum of C, D, and E

Score for Spawning and Nursery Habitat (maximum 100 points)	12
---	----

### 4.2.7.2 Migration and Staging Habitat

#### Step 1:

- |  |                              |
|--|------------------------------|
| <input type="checkbox"/> Staging or Migration Habitat is not present in the wetland  | Go to Step 4, Score 0 points |
| <input type="checkbox"/> Staging or Migration Habitat is present in the wetland<br>significance of the habitat is known                | Go to Step 2                 |
| <input checked="" type="checkbox"/> Staging or Migration Habitat is present in the wetland<br>significance of the habitat is not known | Go to Step 3                 |

#### Step 2: Select the highest appropriate category below. Ensure that documentation is attached to the data record.

- |  |                           |
|--|---------------------------|
| <input type="checkbox"/> Significant in Ecoregion  | Score 25 points in Step 4 |
| <input type="checkbox"/> Significant in Ecodistrict                                      | Score 15 points in Step 4 |
| <input type="checkbox"/> Locally Significant   | Score 10 points in Step 4 |
| <input type="checkbox"/> Fish staging and/or migration habitat present, but not as above | Score 5 points in Step 4  |

Source of information:

Field observation; AECOM, 2015

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#### Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to be the dominant site type). Refer to Site Types recorded earlier (section 1.1.3). Attach documentation.

- |   |                           |
|---|---------------------------|
| <input type="checkbox"/> Wetland is riverine at rivermouth or lacustrine at rivermouth              | Score 25 points in Step 4 |
| <input type="checkbox"/> Wetland is riverine, within 0.75 km of rivermouth                          | Score 15 points in Step 4 |
| <input type="checkbox"/> Wetland is lacustrine, within 0.75 km of rivermouth                        | Score 10 points in Step 4 |
| <input checked="" type="checkbox"/> Fish staging and/or migration habitat present, but not as above | Score 5 points in Step 4  |

#### Step 4: Enter a score from only one of the three above Steps.

Score for Staging and Migration Habitat (maximum 25 points)	<b>5</b>
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### 4.3 Ecosystem Age

	Fractional Area		Scoring
Bog =	0.00	x 25 =	0.0
Fen, on deeper soils; floating mats or marl =	0.03	x 20 =	0.7
Fen, on limestone rock =	0.00	x 5 =	0.0
Swamp =	0.34	x 3 =	1.0
Marsh =	0.62	x 0 =	0.0
Sub Total:			1.7

Ecosystem Age Score 2  
(maximum 25 points)

### 4.4 Great Lakes Coastal

#### Wetlands

Choose one only. Only coastal wetland units may be scored.

<input type="checkbox"/>	wetland < 10 ha =	0 pts
<input type="checkbox"/>	wetland 10- 50 ha =	25
<input checked="" type="checkbox"/>	wetland 51 -100 ha =	50
<input type="checkbox"/>	wetland > 100 ha =	75

Great Lakes Coastal Wetland Score 50  
(maximum 75 points)

**5.0 DOCUMENTATION OF  
WETLAND FEATURES NOT  
INCLUDED IN THE EVALUATION**

**5.1 INVASIVE SPECIES**

Attach documentation of invasive species found in wetland (include location information and a coarse estimate of abundance [F = few, C = fairly common, A = abundant]):

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**5.2 VERNAL POOLS**

Documentation of information on vernal pools encountered during the wetland evaluation but not included as part of the evaluated wetland.

Vernal pools observed throughout most wetland communities. Due to scale they were not all documented.

Field observation: AECOM, 2015

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## 5.3 SPECIES OF SPECIAL INTEREST

### 5.3.1 Osprey

Check all that apply:

- Present and nesting
- Known to have nested in last 5 yr
- Feeding area for osprey
- Not as above

### 5.3.2 Common Loon

Check all that apply:

- Nesting in wetland
- Feeding at edge of wetland
- Observed or heard on lake or river adjoining the wetland
- Not as above

## 5.4 IMPORTANT DRINKING WATER AREA

Wetland located within:  
(check all that apply)

- Wellhead Protection Area
- Intake Protection Zone
- Significant Recharge Area
- Vulnerable Aquifer Area

Source of information:

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Additional Comments:

No additional comments.

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# 5.5 Area of Wetland Restoration Potential

Check all that apply. Attach additional pages if necessary.

- Area of wetland restoration potential adjacent to evaluated wetland unit(s)
- Area of wetland restoration potential within 750m of evaluated wetland unit(s), but not adjacent
- Area of wetland restoration potential encountered elsewhere
- Area currently functioning as wetland (e.g., showing signs of degradation but still mapped as wetland).
- Adjacent Wetland Unit (if applicable): \_\_\_\_\_
- GPS Coordinates of Site: \_\_\_\_\_

Description of site (e.g., current land use, wetland characteristics of site, etc) and why it is identified as an area of restoration potential:

All wetlands for the most part undisturbed.

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Additional Notes/Comments (e.g., adjacent lands, etc)

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**General Information**

**Wetland Evaluator(s)**

Name: Kristan Washburn, 2015 Affiliation: AECOM  
Name: Jillian deMan, 2015 Affiliation: AECOM  
Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_  
Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_  
Name: \_\_\_\_\_ Affiliation: \_\_\_\_\_

Date(s) wetland visited (in field): April 6-July 6

Date evaluation completed: 16-Jul-14

Estimated time devoted to completing the field survey in person hours: 2460 hrs

**Weather Conditions**

- i) at time of field work: varied from -10 to +30. Had a mix of sunshine, rain and snow
- ii) summer conditions in general: Typical summer conditions

## WETLAND EVALUATION SCORING

### RECORD

Wetland Name: Henvey Inlet Wetland WET-002

#### 1.0 BIOLOGICAL COMPONENT

##### 1.1 PRODUCTIVITY

<u>16.9</u>	1.1.1 Growing Degree-Days/Soils
<u>12.2</u>	1.1.2 Wetland Type
<u>2.1</u>	1.1.3 Site Type

##### 1.2 BIODIVERSITY

<u>30.0</u>	1.2.1 Number of Wetland Types
<u>13.0</u>	1.2.2 Vegetation Communities
<u>7.0</u>	1.2.3 Diversity of Surrounding Habitat
<u>8.0</u>	1.2.4 Proximity to Other Wetlands
<u>30.0</u>	1.2.5 Interspersion
<u>14.0</u>	1.2.6 Open Water Type

37 1.3 SIZE (Biological Component)

170 Subtotal  
170 TOTAL (Biological Component)

## 2.0 SOCIAL COMPONENT

### 2.1 ECONOMICALLY VALUABLE PRODUCTS

<b>3</b>	2.1.1 Wood Products
<b>2</b>	2.1.2 Low Bush Cranberry
<b>0</b>	2.1.3 Wild Rice
<b>12</b>	2.1.4 Commercial Fish (Bait Fish and/or Coarse Fish)
<b>12</b>	2.1.5 Furbearers

### **20** 2.2 RECREATIONAL ACTIVITIES

### 2.3 LANDSCAPE AESTHETICS

<b>3</b>	2.3.1 Distinctness
<b>7</b>	2.3.2 Absence of Human Disturbance

### 2.4 EDUCATION AND PUBLIC AWARENESS

<b>0</b>	2.4.1 Educational Uses
<b>0</b>	2.4.2 Facilities and Programs
<b>5</b>	2.4.3 Research and Studies

### **16** 2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT

### **10** 2.6 OWNERSHIP

### **15** 2.7 SIZE (Social Component)

### **30** 2.8 ABORIGINAL AND CULTURAL VALUES

- 2.8.1 Aboriginal Values
- 2.8.2 Cultural Heritage

**135** Subtotal

**135** TOTAL (Social Component)

### 3.0 HYDROLOGICAL COMPONENT

**0**

3.1 FLOOD ATTENUATION

3.2 WATER QUALITY IMPROVEMENT

**19.3**

3.2.1 Site Type

**4.0**

3.2.2 Soil Recharge Potential

3.3 WATER QUALITY IMPROVEMENT

**27**

3.3.1 Watershed Improvement Factor

**0.0**

3.3.2 Adjacent and Watershed Land Use

**10.0**

3.3.3. Vegetation Form

**0**

3.4 CARBON SINK

**15**

3.5 SHORELINE EROSION CONTROL

**15**

3.6 GROUNDWATER DISCHARGE

**91**

Subtotal

**91**

TOTAL (Hydrological Component)



## 4.0 SPECIAL FEATURES COMPONENT

### 4.1 RARITY

<b>70</b>	4.1.1 Wetlands
	4.1.2 Species
<b>250</b>	4.1.2.1 Reproductive Habitat for an Endangered or Threatened Species
<b>150</b>	4.1.2.2 Traditional Migration or Feeding Habitat for an Endangered or Threatened Species
<b>50</b>	4.1.2.3 Provincially Significant Animal Species
<b>0</b>	4.1.2.4 Provincially Significant Plant Species
<b>0</b>	4.1.2.5 Regionally Significant Species
<b>0</b>	4.1.2.6 Locally Significant Species
<b>15</b>	4.1.2.7 Species of Special Status

### 4.2 SIGNIFICANT FEATURES OR HABITATS

<b>0</b>	4.2.1 Colonial Waterbirds
<b>0</b>	4.2.2 Winter Cover for Wildlife
<b>0</b>	4.2.3 Waterfowl Staging and/or Moulting Areas
<b>10</b>	4.2.4 Waterfowl Breeding
<b>10</b>	4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area
<b>15</b>	4.2.6 Ungulate Habitat
<b>12</b>	4.2.7 Fish Habitat

### 4.3 ECOSYSTEM AGE

**2**

### 4.4 GREAT LAKES COASTAL WETLANDS

**50**

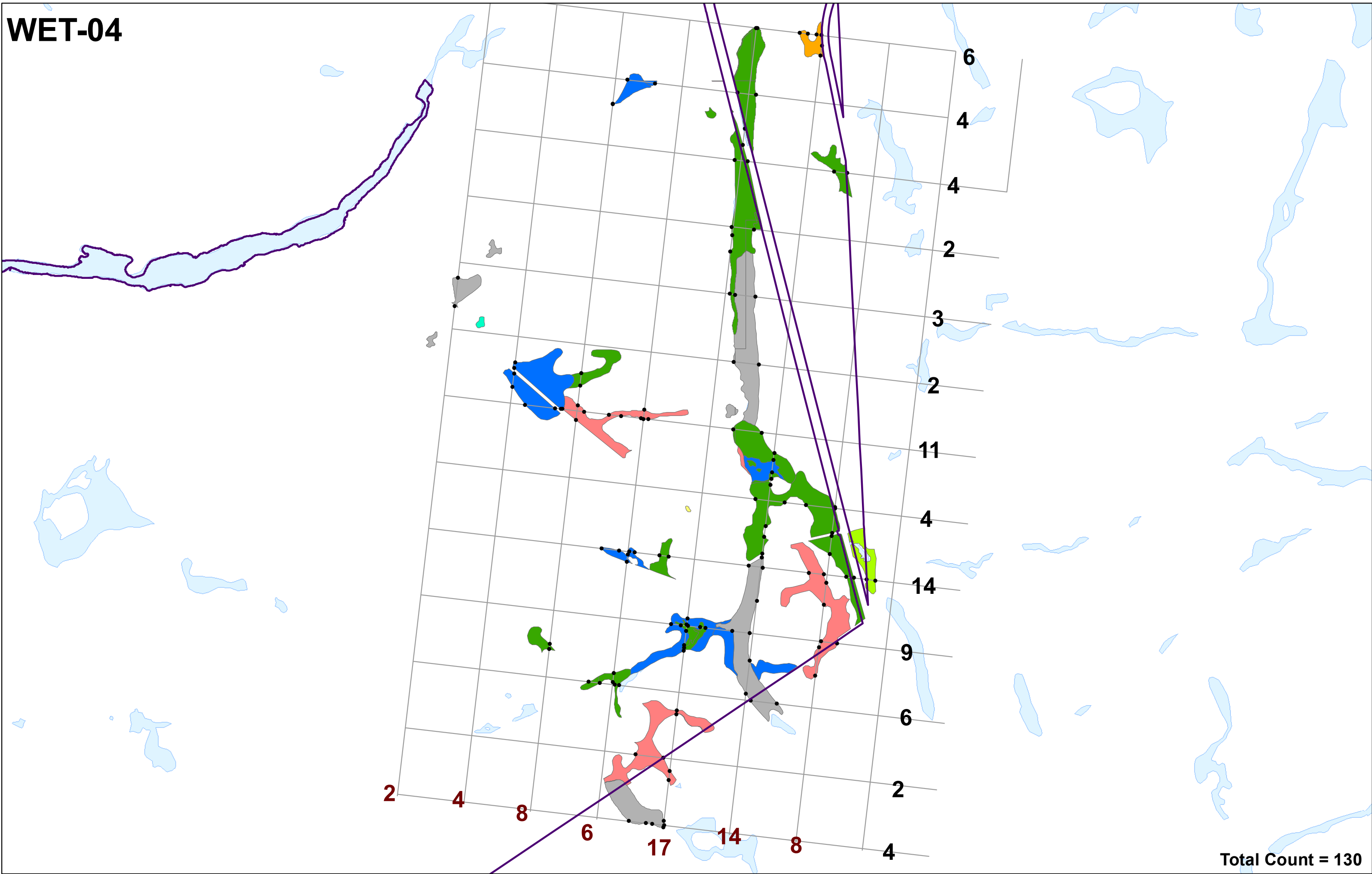
<b>564</b>	Subtotal
<b>250</b>	<b>TOTAL (Special Features Component)</b>

SUMMARY OF EVALUATION RESULT

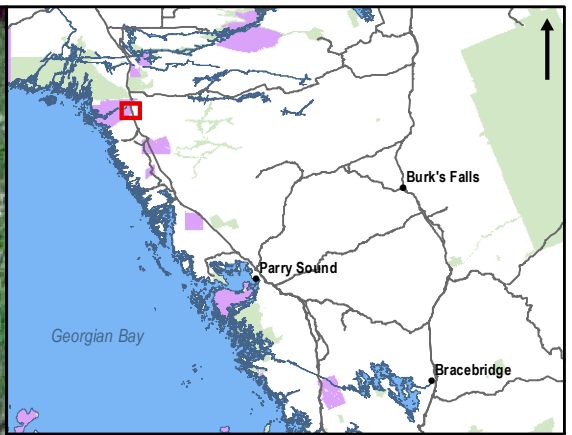
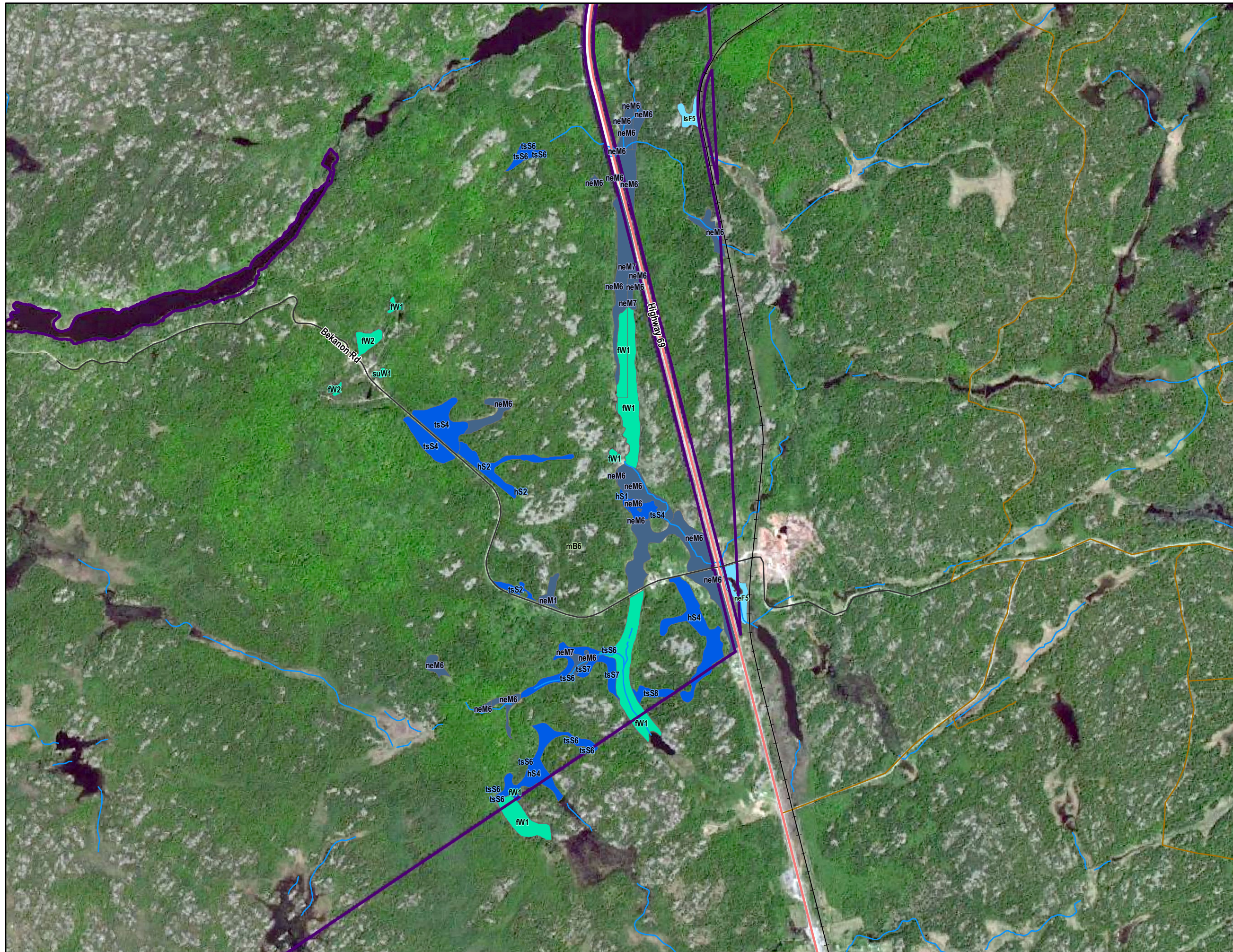
<b>170</b>	1.0 TOTAL FOR BIOLOGICAL COMPONENT
<b>135</b>	2.0 TOTAL FOR SOCIAL COMPONENT
<b>91</b>	3.0 TOTAL FOR HYDROLOGICAL COMPONENT
<b>250</b>	4.0 TOTAL FOR SPECIAL FEATURES COMPONENT
<b>646</b>	TOTAL WETLAND SCORE

FOR MNR USE ONLY	
MNR Reviewer (Name & Position)	
Reviewer Comments	
MNR Approver (Name & Position)	
Approval Date	

**WET-04**



**Total Count = 130**

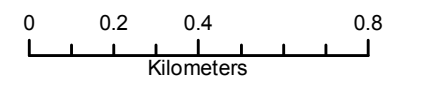


**OWES Communities**

- Bog
- Fen
- Swamp
- Open Water Marsh
- Marsh

**Base Layers**

- Major Roads
- Highway
- Trails
- Railway
- Watercourses
- Henvey Inlet First Nation Reserve No.2



**Henvey Inlet Wind Energy Centre**

**OWES Communities - Complex WET-04**

September 2015	1:17,857	Datum: NAD 83, Zone 17 Source: LIO
P#: 60341251	V#:	

**Figure 2**

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# Appendix C

## Evaluation of Importance (EOI) Field Notes

# Appendix C1

## 2015 Spring Waterfowl Migration Surveys

# Table C-1: 2015 Spring Waterfowl Migration Survey Results - HIWEC Study Area

<b>Survey Number</b>	1	1	1	1	1	1	1	1	1	1	1
<b>Survey Date</b>	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015
<b>Start Time</b>	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM
<b>End Time</b>	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM
<b>Way Point</b>	34	35	36	37	38	39	40	41	42	43	44
<b>Latitude</b>	45.848847	45.828535	45.825487	45.827596	45.822630	45.813181	45.811898	45.814628	45.811824	45.819144	45.822749
<b>Longitude</b>	-80.569005	-80.586280	-80.591192	-80.595214	-80.602145	-80.619025	-80.658659	-80.674013	-80.674521	-80.680610	-80.652135
<b>Easting</b>	-	-	-	-	-	-	-	-	-	-	-
<b>Northing</b>	-	-	-	-	-	-	-	-	-	-	-
<b>Temp. (°C)</b>	2	2	2	2	2	2	2	2	2	2	2
<b>Wind (Beaufort Scale)<sup>1</sup></b>											
<b>Relative Cloud Cover (%)</b>	50	50	50	50	50	50	50	50	50	50	50
<b>Precip.</b>	None	None	None	None	None	None	None	None	None	None	None
<b>Precip. (24h)</b>	None	None	None	None	None	None	None	None	None	None	None

Target Waterfowl for Waterfowl Stopover and Staging Areas (Aquatic) Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
ABDU	American Black Duck	<i>Anas rubripes</i>	-	-	-	S4
BUFF	Bufflehead	<i>Bucephala albeola</i>	-	-	-	S4
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5
COGO	Common Goldeneye	<i>Bucephala clangula</i>	-	-	-	S5
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5
HOME	Hooder Merganser	<i>Lophodytes cucullatus</i>	-	-	-	S5
RNDU	Ring-Necked Duck	<i>Aythya collaris</i>	-	-	-	S5
<b>Total Target Waterfowl Observed per Way Point:</b>						
			<b>0</b>	<b>3</b>	<b>6</b>	<b>0</b>
Non-Target Waterfowl Observed						
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5
TRUS	Trumpeter Swan	<i>Cygnus buccinator</i>	-	-	-	S4
WODU	Wood Duck	<i>Aix sponsa</i>	-	-	-	S5
Incidental Wildlife/ Non-waterfowl Species Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	-	-	S2
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5
GBHE	Great Blue Heron	<i>Ardea herodias</i>	-	-	-	S4
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5
RTHA	Red-Tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5
Stick Nests Observed						
-	Number of Stick Nest	-	-	-	-	-
						1 unoccupied stick nest
						1 occupied stick nest by 1 Great Blue Heron

Notes: 1. Wind (Beaufort Scale):

0 (Less than 1 Km/h), 1 (1 - 5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.

No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N/A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System (S-Rank)**

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S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

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**References:**

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# Table C-1: 2015 Spring Waterfowl Migration Survey Results - HIWEC Study Area

Survey Number	1	1	1	1	1	1	1	1	1	1
Survey Date	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015
Start Time	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM
End Time	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM
Way Point	45	46	47	48	49	50	51	52	53	54
Latitude	45.826056	45.819036	45.844411	45.844728	45.849969	45.838380	45.836158	45.837006	45.827877	45.831436
Longitude	-80.645137	-80.627417	-80.602841	-80.603648	-80.598540	-80.619290	-80.625127	-80.630832	-80.624292	-80.633167
Easting	-	-	-	-	-	-	-	-	-	-
Northing	-	-	-	-	-	-	-	-	-	-
Temp. (°C)	2	2	2	2	2	2	2	2	2	2
Wind (Beaufort Scale) <sup>1</sup>										
Relative Cloud Cover (%)	50	50	50	50	50	50	50	50	50	50
Precip.	None	None	None	None	None	None	None	None	None	None
Precip. (24h)	None	None	None	None	None	None	None	None	None	None

Target Waterfowl for Waterfowl Stopover and Staging Areas (Aquatic) Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
ABDU	American Black Duck	<i>Anas rubripes</i>	-	-	-	S4
BUFF	Bufflehead	<i>Bucephala albeola</i>	-	-	-	S4
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5
COGO	Common Goldeneye	<i>Bucephala clangula</i>	-	-	-	S5
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5
HOME	Hooder Merganser	<i>Lophodytes cucullatus</i>	-	-	-	S5
RNDU	Ring-Necked Duck	<i>Aythya collaris</i>	-	-	-	S5
<b>Total Target Waterfowl Observed per Way Point:</b>						
<b>Non-Target Waterfowl Observed</b>						
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5
TRUS	Trumpeter Swan	<i>Cygnus buccinator</i>	-	-	-	S4
WODU	Wood Duck	<i>Aix sponsa</i>	-	-	-	S5
<b>Incidental Wildlife/ Non-waterfowl Species Observed</b>						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	-	-	S2
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5
GBHE	Great Blue Heron	<i>Ardea herodias</i>	-	-	-	S4
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5
RTHA	Red-Tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5
<b>Stick Nests Observed</b>						
-	Number of Stick Nest	-	-	-	-	-
2 unoccupied stick nests						
1 occupied stick nest by 1 Great Blue Heron						

Notes: 1. Wind (Beaufort Scale):  
 0 (Less than 1 Km/h), 1 (1 - 5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

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Survey Date	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015
Start Time	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM
End Time	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM
Way Point	55	56	57	58	59	60	61	62	63	64	65	66
Latitude	45.835700	45.832876	45.833047	45.834352	45.836296	45.835295	45.840013	45.841330	45.841169	45.840951	45.837103	45.835767
Longitude	-80.644195	-80.662390	-80.679520	-80.675663	-80.675723	-80.681337	-80.694348	-80.706301	-80.712159	-80.715255	-80.723816	-80.719163
Easting	-	-	-	-	-	-	-	-	-	-	-	-
Northing	-	-	-	-	-	-	-	-	-	-	-	-
Temp. (°C)	2	2	2	2	2	2	2	2	2	2	2	2
Wind (Beaufort Scale) <sup>1</sup>												
Relative Cloud Cover (%)	50	50	50	50	50	50	50	50	50	50	50	50
Precip.	None	None	None	None	None	None	None	None	None	None	None	None
Precip. (24h)	None	None	None	None	None	None	None	None	None	None	None	None

Target Waterfowl for Waterfowl Stopover and Staging Areas (Aquatic) Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
ABDU	American Black Duck	<i>Anas rubripes</i>	-	-	-	S4
BUFF	Bufflehead	<i>Bucephala albeola</i>	-	-	-	S4
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5
COGO	Common Goldeneye	<i>Bucephala clangula</i>	-	-	-	S5
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5
HOME	Hooder Merganser	<i>Lophodytes cucullatus</i>	-	-	-	S5
RNDU	Ring-Necked Duck	<i>Aythya collaris</i>	-	-	-	S5
<b>Total Target Waterfowl Observed per Way Point:</b>						
			<b>0</b>	<b>0</b>	<b>8</b>	<b>10</b>
<b>Non-Target Waterfowl Observed</b>						
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5
TRUS	Trumpeter Swan	<i>Cygnus buccinator</i>	-	-	-	S4
WODU	Wood Duck	<i>Aix sponsa</i>	-	-	-	S5
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SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5
<b>Stick Nests Observed</b>						
-	Number of Stick Nest	-	-	-	-	-

**Notes: 1. Wind (Beaufort Scale):**  
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Start Time	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM
End Time	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM
Way Point	67	68	69	70	71	72	73	74	75	76	77	78
Latitude	45.837426	45.844203	45.843827	45.844180	45.848350	45.852084	45.854553	45.854787	45.860774	45.863816	45.863066	45.862313
Longitude	-80.716215	-80.704119	-80.699366	-80.672062	-80.664888	-80.654079	-80.650552	-80.645026	-80.630733	-80.620556	-80.615188	-80.607434
Easting	-	-	-	-	-	-	-	-	-	-	-	-
Northing	-	-	-	-	-	-	-	-	-	-	-	-
Temp. (°C)	2	2	2	2	2	2	2	2	2	2	2	2
Wind (Beaufort Scale) <sup>1</sup>												
Relative Cloud Cover (%)	50	50	50	50	50	50	50	50	50	50	50	50
Precip.	None	None	None	None	None	None	None	None	None	None	None	None
Precip. (24h)	None	None	None	None	None	None	None	None	None	None	None	None

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CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5								2			
COGO	Common Goldeneye	<i>Bucephala clangula</i>	-	-	-	S5											
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RNDU	Ring-Necked Duck	<i>Aythya collaris</i>	-	-	-	S5	6	60	6			10					
<b>Total Target Waterfowl Observed per Way Point:</b>							<b>12</b>	<b>10</b>	<b>61</b>	<b>10</b>	<b>6</b>	<b>16</b>	<b>10</b>	<b>10</b>	<b>2</b>	<b>0</b>	<b>0</b>
Non-Target Waterfowl Observed																	
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5		2				2					
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**References:**  
Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especes/faq/faq-eng.htm>  
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# Table C-1: 2015 Spring Waterfowl Migration Survey Results - HIWEC Study Area

Survey Number	1	1	1	1	1	1	1	1	1	1	1	1
Survey Date	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015
Start Time	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM
End Time	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM
Way Point	79	80	81	82	83	84	85	86	87	88	89	90
Latitude	45.862086	45.863214	45.868933	45.871007	45.872871	45.875124	45.881882	45.886645	45.879973	45.870391	45.875904	45.880083
Longitude	-80.600922	-80.593907	-80.585251	-80.582799	-80.577973	-80.572249	-80.570556	-80.573667	-80.601643	-80.613896	-80.619255	-80.635886
Easting	-	-	-	-	-	-	-	-	-	-	-	-
Northing	-	-	-	-	-	-	-	-	-	-	-	-
Temp. (°C)	2	2	2	2	2	2	2	2	2	2	2	2
Wind (Beaufort Scale) <sup>1</sup>												
Relative Cloud Cover (%)	50	50	50	50	50	50	50	50	50	50	50	50
Precip.	None	None	None	None	None	None	None	None	None	None	None	None
Precip. (24h)	None	None	None	None	None	None	None	None	None	None	None	None

Target Waterfowl for Waterfowl Stopover and Staging Areas (Aquatic) Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
ABDU	American Black Duck	<i>Anas rubripes</i>	-	-	-	S4
BUFF	Bufflehead	<i>Bucephala albeola</i>	-	-	-	S4
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5
COGO	Common Goldeneye	<i>Bucephala clangula</i>	-	-	-	S5
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5
HOME	Hooder Merganser	<i>Lophodytes cucullatus</i>	-	-	-	S5
RNDU	Ring-Necked Duck	<i>Aythya collaris</i>	-	-	-	S5
<b>Total Target Waterfowl Observed per Way Point:</b>						
			0	2	4	2
Non-Target Waterfowl Observed						
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5
TRUS	Trumpeter Swan	<i>Cygnus buccinator</i>	-	-	-	S4
WODU	Wood Duck	<i>Aix sponsa</i>	-	-	-	S5
Incidental Wildlife/ Non-waterfowl Species Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	-	-	S2
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5
GBHE	Great Blue Heron	<i>Ardea herodias</i>	-	-	-	S4
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5
RTHA	Red-Tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5
Stick Nests Observed						
-	Number of Stick Nest	-	-	-	-	-

Notes: 1. Wind (Beaufort Scale):  
 0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
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**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System (S-Rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
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 S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
 S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
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Survey Number	1	1	1	1	1	1	1	1	1	1
Survey Date	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015
Start Time	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM
End Time	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM
Way Point	91	92	93	94	95	96	97	98	99	100
Latitude	45.875177	45.873637	45.882938	45.859919	45.858512	45.862882	45.859550	45.852985	45.849558	45.850583
Longitude	-80.656124	-80.662616	-80.667002	-80.670260	-80.660425	-80.661433	-80.681250	-80.691868	-80.700352	-80.702500
Easting	-	-	-	-	-	-	-	-	-	-
Northing	-	-	-	-	-	-	-	-	-	-
Temp. (°C)	2	2	2	2	2	2	2	2	2	2
Wind (Beaufort Scale) <sup>1</sup>										
Relative Cloud Cover (%)	50	50	50	50	50	50	50	50	50	50
Precip.	None	None	None	None	None	None	None	None	None	None
Precip. (24h)	None	None	None	None	None	None	None	None	None	None

Target Waterfowl for Waterfowl Stopover and Staging Areas (Aquatic) Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
ABDU	American Black Duck	<i>Anas rubripes</i>	-	-	-	S4
BUFF	Bufflehead	<i>Bucephala albeola</i>	-	-	-	S4
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5
COGO	Common Goldeneye	<i>Bucephala clangula</i>	-	-	-	S5
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5
HOME	Hooder Merganser	<i>Lophodytes cucullatus</i>	-	-	-	S5
RNDU	Ring-Necked Duck	<i>Aythya collaris</i>	-	-	-	S5
<b>Total Target Waterfowl Observed per Way Point:</b>						
			2	1	2	2
					0	2
					2	2
					4	2
					2	8
Non-Target Waterfowl Observed						
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5
TRUS	Trumpeter Swan	<i>Cygnus buccinator</i>	-	-	-	S4
WODU	Wood Duck	<i>Aix sponsa</i>	-	-	-	S5
Incidental Wildlife/ Non-waterfowl Species Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
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COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5
GBHE	Great Blue Heron	<i>Ardea herodias</i>	-	-	-	S4
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5
RTHA	Red-Tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5
Stick Nests Observed						
-	Number of Stick Nest	-	-	-	-	-
						3 unoccupied stick nests, 1 Great Blue Heron nearby

Notes: 1. Wind (Beaufort Scale):  
 0 (Less than 1 Km/h), 1 (1 - 5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

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Survey Number	1	1	1	1	1	1	1	1	1	1	1	1
Survey Date	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015	4/24/2015
Start Time	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM	9:50 AM
End Time	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM	2:00 PM
Way Point	101	102	103	104	105	106	107	108	109	110	111	112
Latitude	45.856393	45.858560	45.860749	45.865592	45.868084	45.860184	45.882522	45.884799	45.886916	45.886157	45.884700	45.884853
Longitude	-80.707383	-80.710247	-80.715223	-80.712697	-80.712583	-80.732633	-80.728389	-80.738176	-80.736628	-80.728135	-80.701389	-80.676224
Easting	-	-	-	-	-	-	-	-	-	-	-	-
Northing	-	-	-	-	-	-	-	-	-	-	-	-
Temp. (°C)	2	2	2	2	2	2	2	2	2	2	2	2
Wind (Beaufort Scale) <sup>1</sup>												
Relative Cloud Cover (%)	50	50	50	50	50	50	50	50	50	50	50	50
Precip.	None	None	None	None	None	None	None	None	None	None	None	None
Precip. (24h)	None	None	None	None	None	None	None	None	None	None	None	None

Target Waterfowl for Waterfowl Stopover and Staging Areas (Aquatic) Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
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CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5
COGO	Common Goldeneye	<i>Bucephala clangula</i>	-	-	-	S5
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5
HOME	Hooder Merganser	<i>Lophodytes cucullatus</i>	-	-	-	S5
RNDU	Ring-Necked Duck	<i>Aythya collaris</i>	-	-	-	S5
<b>Total Target Waterfowl Observed per Way Point:</b>						
			2	12	2	2
						2
						2
						20
						5
						10
						26
						15
						8
						15
Non-Target Waterfowl Observed						
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5
TRUS	Trumpeter Swan	<i>Cygnus buccinator</i>	-	-	-	S4
WODU	Wood Duck	<i>Aix sponsa</i>	-	-	-	S5
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Stick Nests Observed						
-	Number of Stick Nest	-	-	-	-	-

Notes: 1. Wind (Beaufort Scale):  
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 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.

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Survey Number	1	1	1	2	2	2	2	2	2	2	2
Survey Date	4/24/2015	4/24/2015	4/24/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015
Start Time	9:50 AM	9:50 AM	9:50 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM
End Time	2:00 PM	2:00 PM	2:00 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM
Way Point	113	114	115	136	137	138	139	140	141	142	143
Latitude	45.888417	45.888770	45.887304	-	-	-	-	-	-	-	-
Longitude	-80.668408	-80.603117	-80.545458	-	-	-	-	-	-	-	-
Easting	-	-	-	530208	526598	524742	524372	522545	521642	522261	524600
Northing	-	-	-	5074752	5073227	5073241	5073721	5074076	5075358	5076051	5073934
Temp. (°C)	2	2	2	7	7	7	7	7	7	7	7
Wind (Beaufort Scale) <sup>1</sup>				2	2	2	2	2	2	2	2
Relative Cloud Cover (%)	50	50	50	0	0	0	0	0	0	0	0
Precip.	None	None	None	None	None	None	None	None	None	None	None
Precip. (24h)	None	None	None	None	None	None	None	None	None	None	None

Target Waterfowl for Waterfowl Stopover and Staging Areas (Aquatic) Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
ABDU	American Black Duck	<i>Anas rubripes</i>	-	-	-	S4
BUFF	Bufflehead	<i>Bucephala albeola</i>	-	-	-	S4
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5
COGO	Common Goldeneye	<i>Bucephala clangula</i>	-	-	-	S5
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5
HOME	Hooder Merganser	<i>Lophodytes cucullatus</i>	-	-	-	S5
RNDU	Ring-Necked Duck	<i>Aythya collaris</i>	-	-	-	S5
<b>Total Target Waterfowl Observed per Way Point:</b>						
			6	4	0	0
Non-Target Waterfowl Observed						
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5
TRUS	Trumpeter Swan	<i>Cygnus buccinator</i>	-	-	-	S4
WODU	Wood Duck	<i>Aix sponsa</i>	-	-	-	S5
Incidental Wildlife/ Non-waterfowl Species Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	-	-	S2
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5
GBHE	Great Blue Heron	<i>Ardea herodias</i>	-	-	-	S4
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5
RTHA	Red-Tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5
Stick Nests Observed						
-	Number of Stick Nest	-	-	-	-	-
						3 stick nests with adult Great Blue Herons

Notes: 1. Wind (Beaufort Scale):  
 0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 ( 103 - 117 Km/h), 12 (118 - 133 Km/h)

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 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.

**References:**

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**Table C-1: 2015 Spring Waterfowl Migration Survey Results - HIWEC Study Area**

Survey Number	2	2	2	2	2	2	2	2
Survey Date	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015
Start Time	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM
End Time	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM
Way Point	144	145	146	147	148	149	150	151
Latitude	-	-	-	-	-	-	-	-
Longitude	-	-	-	-	-	-	-	-
Easting	529013	530921	530752	528039	525582	525318	528366	529627
Northing	5075552	5077412	5076976	5077567	5076077	5075666	5078479	5078983
Temp. (°C)	7	7	7	7	7	7	7	8
Wind (Beaufort Scale) <sup>1</sup>	2	2	2	2	2	2	2	2
Relative Cloud Cover (%)	0	0	0	0	0	0	0	0
Precip.	None	None	None	None	None	None	None	None
Precip. (24h)	None	None	None	None	None	None	None	None

**Target Waterfowl for Waterfowl Stopover and Staging Areas (Aquatic) Observed**

Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
ABDU	American Black Duck	<i>Anas rubripes</i>	-	-	-	S4
BUFF	Bufflehead	<i>Bucephala albeola</i>	-	-	-	S4
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5
COGO	Common Goldeneye	<i>Bucephala clangula</i>	-	-	-	S5
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5
HOME	Hooder Merganser	<i>Lophodytes cucullatus</i>	-	-	-	S5
RNDU	Ring-Necked Duck	<i>Aythya collaris</i>	-	-	-	S5

Total Target Waterfowl Observed per Way Point:	0	0	0	0	0	6	1	0
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**Non-Target Waterfowl Observed**

MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5
TRUS	Trumpeter Swan	<i>Cygnus buccinator</i>	-	-	-	S4
WODU	Wood Duck	<i>Aix sponsa</i>	-	-	-	S5

**Incidental Wildlife/ Non-waterfowl Species Observed**

Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	-	-	S2
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5
GBHE	Great Blue Heron	<i>Ardea herodias</i>	-	-	-	S4
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5
RTHA	Red-Tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5

**Stick Nests Observed**

-	Number of Stick Nest	-	-	-	-	-	1 occupied stick nest by 1 Great Blue Heron	2 unoccupied stick nests, no birds present	1 unoccupied stick nest, no birds present	1 occupied stick nest by 1 Great Blue Heron
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**Notes: 1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 ( 103 - 117 Km/h), 12 (118 - 133 Km/h)

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 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
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**Table C-1: 2015 Spring Waterfowl Migration Survey Results - HIWEC Study Area**

Survey Number	2	2	2	2	2	2	2	2	2	2	2
Survey Date	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015	5/15/2015
Start Time	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM
End Time	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM
Way Point	152	153	154	155	156	157	158	159	160	161	162
Latitude	-	-	-	-	-	-	-	-	-	-	-
Longitude	-	-	-	-	-	-	-	-	-	-	-
Easting	533187	533387	533069	529418	526861	526600	526428	521639	523383	521252	520935
Northing	5080421	5081228	5081591	5080474	5080306	5078648	5078452	5079323	5076758	5078187	5078033
Temp. (°C)	8	8	8	8	8	8	8	8	8	9	9
Wind (Beaufort Scale) <sup>1</sup>	2	2	2	2	2	2	2	2	2	2	2
Relative Cloud Cover (%)	0	0	0	0	0	0	0	0	0	0	0
Precip.	None	None	None	None	None	None	None	None	None	None	None
Precip. (24h)	None	None	None	None	None	None	None	None	None	None	None

Target Waterfowl for Waterfowl Stopover and Staging Areas (Aquatic) Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
ABDU	American Black Duck	<i>Anas rubripes</i>	-	-	-	S4
BUFF	Bufflehead	<i>Bucephala albeola</i>	-	-	-	S4
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5
COGO	Common Goldeneye	<i>Bucephala clangula</i>	-	-	-	S5
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5
HOME	Hooder Merganser	<i>Lophodytes cucullatus</i>	-	-	-	S5
RNDU	Ring-Necked Duck	<i>Aythya collaris</i>	-	-	-	S5
<b>Total Target Waterfowl Observed per Way Point:</b>						
			2	0	2	0
Non-Target Waterfowl Observed						
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5
TRUS	Trumpeter Swan	<i>Cygnus buccinator</i>	-	-	-	S4
WODU	Wood Duck	<i>Aix sponsa</i>	-	-	-	S5
Incidental Wildlife/ Non-waterfowl Species Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
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COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5
GBHE	Great Blue Heron	<i>Ardea herodias</i>	-	-	-	S4
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5
RTHA	Red-Tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5
Stick Nests Observed						
-	Number of Stick Nest	-	-	-	-	-
						2 stick nests with adult Great Blue Herons

Notes: 1. Wind (Beaufort Scale):  
 0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 ( 103 - 117 Km/h), 12 (118 - 133 Km/h)

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Start Time	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM	9:54 AM
End Time	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM	12:50 PM
Way Point	163	164	165	166	167	168	169	170	171	172	173
Latitude	-	-	-	-	-	-	-	-	-	-	-
Longitude	-	-	-	-	-	-	-	-	-	-	-
Easting	521072	520320	520256	520381	522013	523334	523805	524193	525227	526787	528152
Northing	5080064	5080482	5081042	5081419	5081289	5081231	5081215	5081306	5081323	5081618	5081573
Temp. (°C)	9	9	9	9	9	9	9	9	10	10	10
Wind (Beaufort Scale) <sup>1</sup>	2	2	2	2	2	2	2	2	2	2	2
Relative Cloud Cover (%)	0	0	0	0	0	0	0	0	0	0	0
Precip.	None	None	None	None	None	None	None	None	None	None	None
Precip. (24h)	None	None	None	None	None	None	None	None	None	None	None

Target Waterfowl for Waterfowl Stopover and Staging Areas (Aquatic) Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
ABDU	American Black Duck	<i>Anas rubripes</i>	-	-	-	S4
BUFF	Bufflehead	<i>Bucephala albeola</i>	-	-	-	S4
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5
COGO	Common Goldeneye	<i>Bucephala clangula</i>	-	-	-	S5
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5
HOME	Hooder Merganser	<i>Lophodytes cucullatus</i>	-	-	-	S5
RNDU	Ring-Necked Duck	<i>Aythya collaris</i>	-	-	-	S5
<b>Total Target Waterfowl Observed per Way Point:</b>						
			1	6	1	1
						2
						2
						0
						0
						0
						8
						0
Non-Target Waterfowl Observed						
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5
TRUS	Trumpeter Swan	<i>Cygnus buccinator</i>	-	-	-	S4
WODU	Wood Duck	<i>Aix sponsa</i>	-	-	-	S5
Incidental Wildlife/ Non-waterfowl Species Observed						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	-	-	S2
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5
GBHE	Great Blue Heron	<i>Ardea herodias</i>	-	-	-	S4
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5
RTHA	Red-Tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5
Stick Nests Observed						
-	Number of Stick Nest	-	-	-	-	-

Notes: 1. Wind (Beaufort Scale):  
 0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 ( 103 - 117 Km/h), 12 (118 - 133 Km/h)

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**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System (S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
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 SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
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# Table C-1: 2015 Spring Waterfowl Migration Survey Results - HIWEC Study Area

Survey Number
Survey Date
Start Time
End Time
Way Point
Latitude
Longitude
Easting
Northing
Temp. (°C)
Wind (Beaufort Scale) <sup>1</sup>
Relative Cloud Cover (%)
Precip.
Precip. (24h)

Target Waterfowl for Waterfowl Stopover and Staging Areas (Aquatic) Observed								Grand Total
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>		N / A
ABDU	American Black Duck	<i>Anas rubripes</i>	-	-	-	S4		2
BUFF	Bufflehead	<i>Bucephala albeola</i>	-	-	-	S4		265
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5		155
COGO	Common Goldeneye	<i>Bucephala clangula</i>	-	-	-	S5		2
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5		128
HOME	Hooder Merganser	<i>Lophodytes cucullatus</i>	-	-	-	S5		3
RNDU	Ring-Necked Duck	<i>Aythya collaris</i>	-	-	-	S5		172
<b>Total Target Waterfowl Observed per Way Point:</b>								N / A
Non-Target Waterfowl Observed								
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5		36
TRUS	Trumpeter Swan	<i>Cygnus buccinator</i>	-	-	-	S4		2
WODU	Wood Duck	<i>Aix sponsa</i>	-	-	-	S5		14
Incidental Wildlife/ Non-waterfowl Species Observed								
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>		N / A
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	-	-	S2		1
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5		1
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5		203
GBHE	Great Blue Heron	<i>Ardea herodias</i>	-	-	-	S4		18
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5		0
RTHA	Red-Tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4		1
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5		4
Stick Nests Observed								
-	Number of Stick Nest	-	-	-	-	-		17

Notes: 1. Wind (Beaufort Scale):

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

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# Helicopter Waterfowl Survey - Hemen

April 24/2015

James Kuntze, Jessica Walker, Scott

start flight 9:50 from Pang Sound Airport Return at 14:00 pm

Start along T-line B. following Hydro corridor N from Pang Sound to Head of Nive Mile Lake, then W through Upper + Lower Marsh Lakes to Hwy 69, Now E side of Hwy 69 to Beckman Road. Flew over all small lakes of Horns Inlet ENR, first on S side of Inlet, then N side. Stopped Helicopter on smooth rock shoreline

- Pt 2 - 2 BUFF  
3 2 BUFF  
4 4 BUFF  
5 2 HOME 3 BUFF, 1 CAGO  
6 5 BLDG  
7 7 GBH nests - birds on some nests  
8 8 GBH nests 2 BUFF  
9 BAEA 1 ad 3 WOODY  
on nest 2 other Stick nest  
10 2 large stick nests  
11 2 BUFF  
12 stick nest 1 BLDG 2 MALL  
13 5 BUFF  
14 2 CAGO  
16 3 WOOD, 2 BUFF  
17 4 BUFF  
18 8 DCCO, 2 CAGO, 2 MALL  
20  
21+22 - 2 DCCO, 6 RNDU, 2 BUFF  
23 2 BUFF  
24 5 BUFF

45-

- 26 2 MALL, 2 CAGO
- 27 2 BUFF
- 28 2 MALL
- 29 1 WOOD
- 30 2 MALL 1 WOOD
- 31 2 BUFF
- 32 2 BUFF
- 33 GBHE on nest, 2 MALL
- 34 2 MALL
- 35 2 CAGO 1 HOME
- 36 2 CAGO 4 BUFF 2 WOOD
- 37 stick nest with green spurs
- 38 2 BUFF 2 COME 1 RTHA
- 39 2 WOOD
- 40 100 COME
- 41 6 CAGO
- 42 6 RNDU
- 43 1 GBHE on nest
- 44 2 CAGO
- 45 2 CAGO
- 46 4 BUFF 2 WOOD
- 47 2 BUFF
- 48 2 stick nest No bush
- 50 1 SACR
- 51 2 MALL
- 52 2 MALL 1 BLDU
- 53 1 GBHE on stick nest; 4 adults nearby; 2 HOME
- 54 2 WOOD 2 MALL
- 55 3 SACR
- 56 2 WOOD
- 57 2 TRUS 6 CAGO 2 BUFF

- 87 - 4 WOOD
- 88 - 2 MALL
- 89 - 2 MALL 2 CAGO
- 90 4 CAGO
- 91 2 BUFF
- 92 2 MALL 1 CAGO
- 93 2 BUFF 2 MALL
- 94 2 BUFF
- 95 3 lamp sticks nest, 1 horn ready
- 96 2 CAGO 2 MALL
- 97 2 BUFF
- 98 4 BUFF
- 99 2 RNDU
- 100 2 BUFF 2 MALL, 2 CAGO
- 101 2 BUFF 2 DCCO
- 102 10 BUFF 2 CAGO
- 103 2 BUFF
- 104 2 CONE
- 105 2 BUF

Henry Inlet + all interior lakes ice free, Georgian Bay mostly ice covered still  
 weather 2°C. 50% cloud cover,

Most interior wetlands did not have any water level,

- 106 10 CAGO + 10 BUFF
- ~~107~~ 10
- 108 1 DCCO 5 RNDU
- 108 10 BUFF
- 109 10 RNDU 10 BUFF 6 CAGO
- 110 15 RNDU
- 111 8 BUFF
- 112 15 BUF

- 58 10 BUFF
- 59 20 BUFF
- 60 4 CAGO
- 61 2 RNDU
- 62 15 RNDU 4 BUFF
- 63 10 RNDU 10 BUR
- 64 15 RNDU 6 CAGO, 2 BUR
- 65 10 BUFF
- 66 15 BUFF
- 67 2 COME 6 RNDU, 4 BUFF
- 68 ~~10 BUFF~~
- 69 60 RNDU 2 DCCO SMALL, 1 CAG
- 70 6 RNDU, 4 BUFF
- 71 2 BUFF 2 CAGO
- 72 10 BUFF, 4 CAGO, 2 COGO
- 73 10 RNDU
- 74 10 BUFF, 2 SMALL
- 75 35 DCCO 10 BUFF
- 76 2 CAGO 2 DCCO
- 77 25 DCCO
- 78 8 DCCO
- 79 10 DCCO
- 80 2 BUFF 1 COLO, 5 DCCO
- 81 4 BUFF
- 82 2 CAGO, 2 SMALL,
- 83 2 BUFF 2 DCCO
- 84 2 BUFF
- 85 10 BUFF
- 86 V Laps 12 RNDU 4 BUFF

10m survey  
Paula Korpimäki  
Jenni Kumpulainen

00341251  
Henley wind <sup>Empty</sup>  
①

May 13 / 2015 Waterland Survey

ROUTE B  
P216 → 2 mallards ♂ ♀ MALL

P2117 → 8 nests <sup>red</sup> } heronry, some adults noted  
P2118 → ~ 4 nests } GBHE

P2119 → heronry ~ 15, <sup>25</sup> adults noted.

P2120 → ~~heronry~~ osprey nests → one on, one flying

P2121 → ~~heronry~~ 2 stick nests no birds

P2122 → Snapping turtle → huge, in water.

P2123 → 2 CAGO + 1 GBHE

124 → GBHE nest x3 + 1 MALL<sup>♂</sup> + 1 WOOD<sup>♂</sup>

125 → 2 x BUFF

126 → ♀ <sup>COME</sup> MERS + 1 ~~CAGO~~ DCO

127 → CAGO x1

128 → CAGO x5

129 → heronry 3 occupied nests + 2 nests

130 → CAGO x1

131 → CAGO x1

132 → BUFF x1 + CAGO x2

(2)

SACR

133 Sandhill Crane x 2

134 GBHE → 1 adult on nest

135 ~~GBA~~ CAGO x 1

---

WEC

136 2 x MOOSE

137 CAGO x 4

COME x 10

BUFF x 3

138 Rest of 100 waterfowl → DCCO  
HERG x 1

139 DCCO x 1

140 DCCO x 6

141 BUFF x 3

142 GBHE x 1 flying + 3 COME

143 GBHE nests x 3 → active

144 GBHE nest x 1 → active

145 GBHE → 2 nests, nothing on them

146 GBHE → 1 nest nothing on it



147 GBHE nest w/ 1 neon on it.

148 Immature Bald Eagle in flight

149 CAGO x 3 + <sup>3</sup>BLUFF

150 CAGO x 1

151 MALL x 3 ♂

152 <sup>RWDU</sup> Diving ducks x 2

153 MALL x 3

154 CAGO x 2

155 MALL ♂ flying

156 MALL x 2  
GBHE x 1

157 MALL x 1

158 GBHE nests x 2, but h/w adults

159 CAGO x 1

160 COME flying x 1

161 Olympia  
mableology

162 come x 1

163 <sup>ABDU</sup>  
AMBL x 1

164 CAGO x ~~2~~ 6

165 Come x 1 ~~ECAGO x 1~~

166 CAGO x 1

167 DCCO x 2 + 2 come

168 RNDU x 2

169 DCCO x 2 + ~~2 CAGO~~ MALL

170 MALL x 2

171 GBHE x 2 in flight.

172 CAGO x ~~1~~ 3

173 spotted sandpiper

Weather - 6° to 10° C clear sky, light wind Beaufort 2 from West.  
followed essentially same route as April 24

Pilot Scott Jacklin of Central Helicopters recorded GPS points

# Appendix C2

## 2015 Spring Shorebird Migration Surveys

# Table C-2: 2015 Shorebird Migration Survey Incidental Wildlife Observations

Shorebirds Observed (Y/N)							Survey number	1	2
							Survey Date	15-May-15	3-Jun-15
							Start Time	7:58 AM	10:00 AM
							End Time	11:26 AM	5:00 PM
							Temp. (°C)	13	15
							Wind (Beaufort Scale) <sup>1</sup>	0	2
							Relative Cloud Cover (%)	90	25
							Precip.	None	None
								N	N
Incidental Wildlife/ Non-waterfowl Species									
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>			Grand Total
AMBI	American Bittern	<i>Botaurus lentiginosus</i>	-	-	-	S4		1	1
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5		16	16
CATE	Caspian Tern	<i>Sterna caspia</i>	-	-	-	S3		3	3
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5		1	1
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5		2	2
COTE	Common Tern	<i>Sterna hirundo</i>	-	-	-	S4		68	68
DCCO	Double-Crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5		48	48
GBHE	Great Blue Heron	<i>Ardea herodias</i>	-	-	-	S4		2	2
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5		34	34
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5		3	3
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5		1	1
RBME	Red-Breasted Merganser	<i>Mergus serrator</i>	-	-	-	S4		2	2
RBGU	Ring-Billed Gull	<i>Larus delawarensis</i>	-	-	-	S5		272	272
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5		1	1

**Notes:**

**1. Wind (Beaufort Scale):**  
0 (Less than 1 Km/h), 1 (1 - 5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

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## Migratory Bird

Record: 42

Point Count ID	1
Point Count Location	Latitude:;Longitude:;Altitude:;Speed:;Accuracy:;Provider:;Time:
Additional Notes	Shorebird survey by boat of key river, henvey inlet, sandy bay and Georgian bay. Water level was very high, most beaches were under water. No shorebirds observed.

### Survey Information

Project Number	60341251
Map Number	Key River, Georgian Bay, Henvey inlet
Feature ID	Shorebird surveys; no specific feature ID
Field Crew	Sarah Richer Olga Hropach
Start Timestamp	2015-05-15 07:58:35
End Timestamp	2015-05-15 11:26:30

### Weather

Air Temperature (deg C)	13
Wind Speed (Beaufort Scale)	0 Calm
Precipitation	none
Cloud Cover (%)	90

### Observation

Observation Time	11:27:00
Bird Species	None
Number of Observations	0
Behaviour	Flying high overhead (>100 m)
Observation Notes	No birds observed.

## Migratory Bird

### Record: 51

Point Count ID	Boat
Point Count Location	Latitude:,Longitude:,Altitude:,Speed:,Accuracy:,Provider:,Time:
Additional Notes	No shorebird species were observed at any surveyed locations.

### Survey Information

Project Number	60341251
Map Number	Multiple locations - sandy bay, Hervey Inlet, key
Feature ID	Shorelines
Field Crew	Kamstra
Start Timestamp	2015-06-03 10:00:24
End Timestamp	2015-06-03 17:00:51

### Weather

Air Temperature (deg C)	15
Wind Speed (Beaufort Scale)	2 Slight breeze felt on face
Precipitation	none
Cloud Cover (%)	25

### Observation

Observation Time	14:21:00
Bird Species	Na
Number of Observations	0
Behaviour	Flying high overhead (>100 m)
Height (m)	0
Direction of Flight	N

# Appendix C3

## Cliff and Talus Slope Surveys

# Wildlife Habitat

Record: 1433

## Survey Information

Project Number	60341251
Map Number	CL-001
Feature ID	CL-001
Field Crew	Amy ingriselli Kristan washburn
Start Timestamp	2015-10-06 11:22:40
End Timestamp	2015-10-06 11:56:37

## Weather

Air Temperature (deg C)	15
Wind Speed (Beaufort Scale)	3 Leaves move on twigs
Precipitation	none
Cloud Cover (%)	15

## Habitat Observations

Feature	Cliffs and Talus Slopes
Feature Location	
Feature Description	Cliff and talus survey. Talus. Broken bedrock on gradual slope on rock barren. No cliff. Rock type and polyphy present. Photos 526-534 Amy's camera
Feature Photo	





# Wildlife Habitat

Record: 1430

## Survey Information

Project Number	60341251
Map Number	CL-003
Feature ID	CL-003
Field Crew	Kristan Washburn and Amy Ingriselli
Start Timestamp	2015-10-06 09:17:03
End Timestamp	2015-10-06 09:37:32

## Weather

Air Temperature (deg C)	6
Wind Speed (Beaufort Scale)	1 Light air movement
Precipitation	none
Cloud Cover (%)	0

## Habitat Observations

Feature	Cliffs and Talus Slopes
Feature Location	
Feature Description	Cliff and talus surveys. Cliff ~3 m tall facing east. Rock face ~15 m long at base. Cracks and ledges scarce. Small amount of rock troye, no other associate species present. Photos 519-525 Amy's camera.
Feature Photo	



# Floral Inventory

Record: 863

<b>Project Number</b>	60341251
<b>Field Crew</b>	Kristan Washburn and Amy Ingriselli
<b>Survey Date</b>	2015-10-06 09:19:48

## ELC Features

<b>Feature ID</b>	CL-003
<b>Feature Notes</b>	Only rock tripe species none of the indicators

## Plant Observations

<b>Species</b>	<i>Cladonia coniocraea</i>
<b>Abundance Code</b>	U
<b>Layer</b>	Ground

## Plant Observations

<b>Species</b>	<i>Cladonia fimbriata</i>
<b>Abundance Code</b>	U
<b>Layer</b>	Ground

## Plant Observations

<b>Species</b>	<i>Umbilicaria americana</i>
<b>Abundance Code</b>	U
<b>Layer</b>	Ground

## Plant Observations

<b>Species</b>	<i>Umbilicaria mammulata</i>
<b>Abundance Code</b>	U
<b>Layer</b>	Ground

Plant Observations	
Species	<i>Umbilicaria deusta</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Lecanora polytropa</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Candelariella vitellina</i>
Abundance Code	U
Layer	Ground

ELC Features	
Feature ID	CL-001
Feature Notes	Only rock tripe and polypody

Plant Observations	
Species	<i>Dryopteris marginalis</i>
Abundance Code	R
Layer	Ground

Plant Observations	
Species	<i>Polypodium virginianum</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Cladina mitis</i>
Abundance Code	F
Layer	Ground

Plant Observations	
Species	<i>Cladina stellaris</i>
Abundance Code	F
Layer	Ground

Plant Observations	
Species	<i>Aralia nudicaulis</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Stereocaulon saxatile</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Xanthoparmelia somloensis</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Umbilicaria deusta</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Umbilicaria muehlenbergii</i>
Abundance Code	F
Layer	Ground

Plant Observations	
Species	<i>Lepraria neglecta</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Cladina rangiferina</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Cladonia uncialis</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Rhizocarpon geographium</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Polytrichum juniperinum</i>
Abundance Code	F
Layer	Ground

Plant Observations	
Species	<i>Polytrichum commune</i>
Abundance Code	F
Layer	Ground

Plant Observations	
Species	<i>Cladonia coniocraea</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Cladonia cenotea</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Vaccinium angustifolium</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Candelariella vitellina</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Leucobryum glaucum</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Ramalina intermedia</i>
Abundance Code	U
Layer	Ground

ELC Features	
Feature ID	CL-007
Feature Notes	SIGNIFICANT

Plant Observations	
Species	<i>Polypodium virginianum</i>
Abundance Code	F
Layer	Ground

Plant Observations	
Species	<i>Umbilicaria mammulata</i>
Abundance Code	F
Layer	Ground

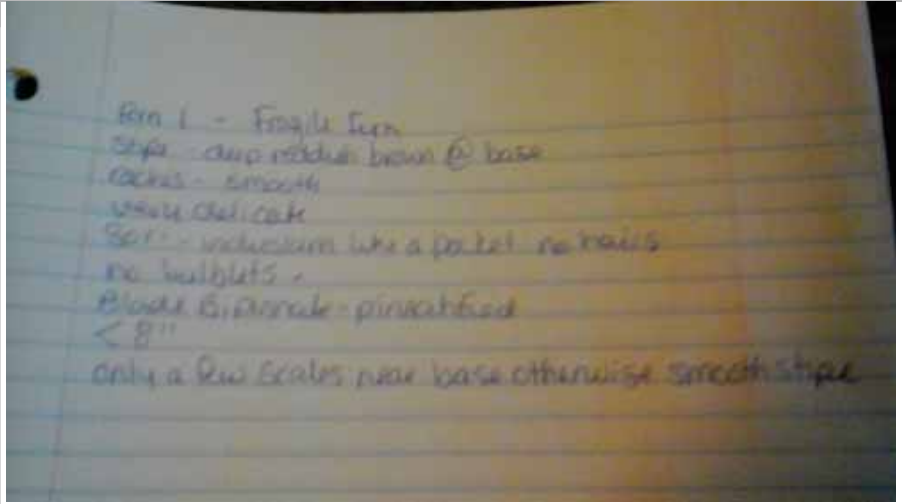
Plant Observations	
Species	<i>Cladonia turgida</i>
Abundance Code	U
Layer	Ground

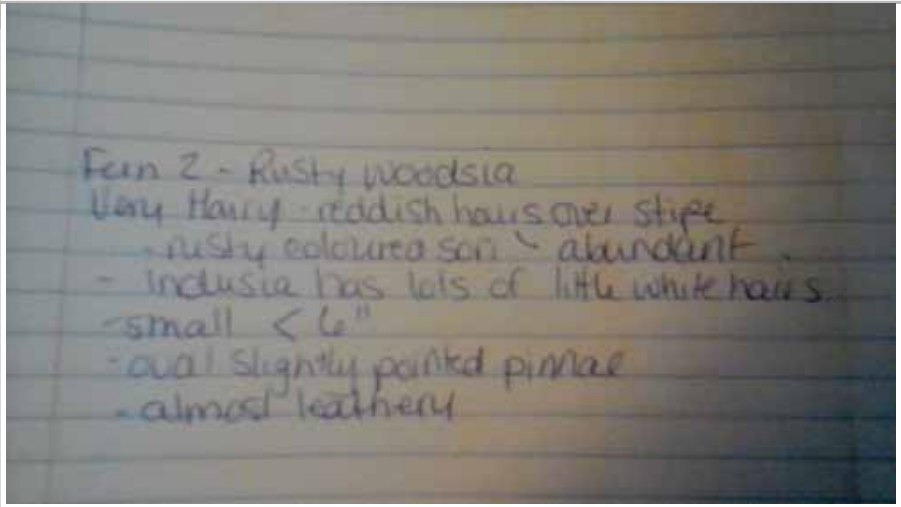
Plant Observations	
Species	<i>Cladonia fimbriata</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Ramalina intermedia</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Dryopteris marginalis</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Cystopteris fragilis</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Cystopteris fragilis</i>
Abundance Code	U
Layer	Ground
Plant Photo	

Plant Observations	
Species	<i>Woodsia ilvensis</i>
Abundance Code	U
Layer	Ground
Plant Photo	

Plant Observations	
Species	<i>Mnium marginatum</i>
Abundance Code	F
Layer	Ground

Plant Observations	
Species	<i>Hedwigia ciliata</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Lepraria neglecta</i>
Abundance Code	U
Layer	Ground



Plant Observations

<b>Species</b>	<i>Juniperus communis</i>
<b>Abundance Code</b>	<i>F</i>
<b>Layer</b>	<i>Shrub</i>

# Wildlife Habitat

Record: 1439

## Survey Information

Project Number	60341251
Map Number	CL-004
Feature ID	CL-004
Field Crew	Kristan Washburn and Amy Ingriselli
Start Timestamp	2015-10-07 10:26:16
End Timestamp	2015-10-07 10:50:48

## Weather

Air Temperature (deg C)	8
Wind Speed (Beaufort Scale)	3 Leaves move on twigs
Precipitation	none
Cloud Cover (%)	10

## Habitat Observations

Feature	Cliffs and Talus Slopes
Feature Location	
Feature Description	Cliff and talus surveys. Cliff; 2 rock faces, mean 3 m tall, cracks and crevices abundant, facing west, ~ 30 m total length at base. Rock trypse and polypody present. Photos 543-551 Amy's camera
Feature Photo	



# Floral Inventory

Record: 866

<b>Project Number</b>	60341251
<b>Field Crew</b>	Kristan Washburn and Amy Ingriselli
<b>Survey Date</b>	2015-10-07 10:25:21

## ELC Features

<b>Feature ID</b>	CL-004
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## Plant Observations

<b>Species</b>	<i>Polypodium virginianum</i>
<b>Abundance Code</b>	F
<b>Layer</b>	Ground

## Plant Observations

<b>Species</b>	<i>Dryopteris marginalis</i>
<b>Abundance Code</b>	F
<b>Layer</b>	Ground

## Plant Observations

<b>Species</b>	<i>Umbilicaria mammulata</i>
<b>Abundance Code</b>	F
<b>Layer</b>	Ground

## Plant Observations

<b>Species</b>	<i>Anomodon minor</i>
<b>Abundance Code</b>	U
<b>Layer</b>	Ground

Plant Observations	
Species	<i>Hedwigia ciliata</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Ramalina intermedia</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Lepraria neglecta</i>
Abundance Code	U
Layer	Ground

ELC Features	
Feature ID	CL-005

Plant Observations	
Species	<i>Thuidium delicatulum</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Umbilicaria mammulata</i>
Abundance Code	F
Layer	Ground

Plant Observations	
Species	<i>Ramalina intermedia</i>
Abundance Code	F
Layer	Ground

Plant Observations	
Species	<i>Polypodium virginianum</i>
Abundance Code	F
Layer	Ground

Plant Observations	
Species	<i>Lepraria neglecta</i>
Abundance Code	F
Layer	Ground

Plant Observations	
Species	<i>Xanthoparmelia somloensis</i>
Abundance Code	F
Layer	Ground

Plant Observations	
Species	<i>Dryopteris marginalis</i>
Abundance Code	F
Layer	Ground

Plant Observations	
Species	<i>Polytrichum juniperinum</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Dryopteris carthusiana</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Abietinella abietina</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Dicranum fulvum</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Polytrichum commune</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Dicranum montanum</i>
Abundance Code	U
Layer	Ground

Plant Observations	
Species	<i>Anomodon rostratus</i>
Abundance Code	U
Layer	Ground

# Wildlife Habitat

Record: 1442

## Survey Information

Project Number	60341251
Map Number	CL-005
Feature ID	CL-005
Field Crew	Kristan Washburn and Amy Ingriselli
Start Timestamp	2015-10-07 12:02:20
End Timestamp	2015-10-07 12:45:51

## Weather

Air Temperature (deg C)	15
Wind Speed (Beaufort Scale)	2 Slight breeze felt on face
Precipitation	none
Cloud Cover (%)	50

## Habitat Observations

Feature	Cliffs and Talus Slopes
Feature Location	
Feature Description	Cliff and talus surveys. Cliff; ~10 m tall facing west, >100 m in length at base. Rock type and polypody present. Photos 552-568
Feature Photo	



## Wildlife Habitat

Record: 1436

<b>Comments Regarding Proposed Infrastructure Relocation</b>	<i>Recommend shifting road alignment slightly south so blasting on or near this feature does not need to occur</i>
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### Survey Information

<b>Project Number</b>	60341251
<b>Map Number</b>	CL-007
<b>Feature ID</b>	CL-007
<b>Field Crew</b>	<i>Amy ingriselli and Kristan Washburn</i>
<b>Start Timestamp</b>	2015-10-06 12:51:21
<b>End Timestamp</b>	2015-10-06 13:20:41

### Weather

<b>Air Temperature (deg C)</b>	15
<b>Wind Speed (Beaufort Scale)</b>	<i>4 Small branches move</i>
<b>Precipitation</b>	<i>none</i>
<b>Cloud Cover (%)</b>	90

### Habitat Observations

<b>Feature</b>	<i>Cliffs and Talus Slopes</i>
<b>Feature Location</b>	
<b>Feature Description</b>	<i>Cliff and talus survey. Cliff; ~3 m tall and ~30 m long at base. Facing south. Cracks and crevices on rock face, lichen and mosses abundant. Rock trypse, polypody, fragile fern and rusty woodsia present. Makes it Significant. Photos 535-542 Amy's camera</i>
<b>Feature Photo</b>	



# Appendix C4

## Old Growth Surveys


# Old Growth Forest Survey

Map Number	FO-002-1	Field Crew	KASEY & KRISTAN	2
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Feature ID	FO-002			
Project Number	60341251	Air Temp. (degC)	7.00	Weather Notes
Tablet	AECOM10	Wind Speed (beaufort)	0 Calm	
Start Date	10/14/2015 8:49:16 AM	Precipitation	none	
End Date	10/14/2015 9:22:15 AM	Cloud Cover	0.00	

Plot ID	FO-002-T1-S1	Location	Latitude:45.882897,Longitude:-80.580179,Altitude:200.1,Speed:0.4064111,Accuracy:3.9,Provider:gps,Time:10/14/2015 09:02:10 EDT	2
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Tree Tally	1511
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Notes		Location	Latitude:45.882898,Longitude:-80.580197,Altitude:196.5,Speed:0.15947777,Accuracy:3.3,Provider:gps,Time:10/14/2015 08:56:44 EDT	
Dead	1.00			

Species	Tally	ID
Tsuga canadense	1.00	3176
Acer rubrum	1.00	3179
Betula papyrifera	2.00	3182
Pinus strobus	1.00	3185

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-002-T1-S2-1	Tsuga canadensis	Latitude:45.882886,Longitude:-80.580201,Altitude:200.4,Speed:0.16462222,Accuracy:4.2,Provider:gps,Time:10/14/2015 09:00:01 EDT	55.00	27.00	2

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	No
Cut stumps / logs - recent	No
Roads / trails	No
Exotic / invasive plants	No
Signs of fire	No
Other	No

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID	FO-002-T1-S1
Species	Tsuga canadensis
DBH (cm)	55.00
Height (m)	27.00
Core Sample ID	FO-002-T1-S1-1
Location	Latitude:45.882808,Longitude:-80.580227,Altitude:209.3,Speed:0.12346666,Accuracy:3.3,Provider:gps,Time:10/14/2015 09:16:23 EDT



2

## Stand Species

2156

	Height	Cover	Species Dominance
Canopy	2 >6-25m	4 > 60%	Acer rubrum > Picea glauca > Tsuga canadensis
Sub Canopy	3 >2-6m	4 > 60%	Abies balsamea > Betula papyrifera > Acer rubrum
Shrub	5 >0.5-1m	3 25 - 60%	Corylus cornuta > Viburnum cassinoides > Abies balsamea
Groundcover	7 <0.2m	3 25 - 60%	Pteridium aquilinum > Aralia nudicaulis > Cornus canadensis > Aster macrophylla
Floating & Submerged		0 None	

## Stand Composition

2156

	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	R
Standing Snags	O	O	R	R
Deadfall / Logs	A	A	O	N
Species Dominance <10	Acer rubrum > Picea glauca			
Species Dominance 10-24	Acer rubrum			
Species Dominance 25-50	Tsuga canadensis > Pinus strobus			
Species Dominance >50	Tsuga canadensis			

Map Number	FO-002-1	Field Crew	KRISTAN WASHBURN AND KASEY MCKENZIE
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5

Feature ID	FO-002		
Project Number	60341251	Air Temp. (degC)	8.00
Tablet	AECOM10	Wind Speed (beaufort)	2 Slight breeze felt on face
Start Date	10/14/2015 9:30:31 AM	Precipitation	none
End Date	10/14/2015 9:54:42 AM	Cloud Cover	25.00

Plot ID	FO-002-T1-S2	Location	Latitude:45.883317,Longitude:-80.579991,Altitude:203.5,Speed:0.05658889,Accuracy:2.1,Provider:gps,Time:
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5


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally


1514

Notes		Location	
Dead	0.00	Latitude:45.88332,Longitude:-80.579992,Altitude:203.3,Speed:0.051444445,Accuracy:2.1,Provider:gps,Time:10/14/2015 09:38:02 EDT	

Species	Tally	ID
Populus tremuloides	6.00	3188
Acer rubrum	4.00	3191

tree id	Species	tree location	DBH	Height	ID
FO-002-T1-S2-1	Populus tremuloides	Latitude:45.883316,Longitude:-80.579988,Altitude:202.9,Speed:0.06173333,Accuracy:2.1,Provider:gps,Time:10/14/2015 09:40:43 EDT	43.00	26.00	5

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	<input type="text" value="No"/>
Cut stumps / logs - recent	<input type="text" value="No"/>
Roads / trails	<input type="text" value="No"/>
Exotic / invasive plants	<input type="text" value="No"/>
Signs of fire	<input type="text" value="No"/>
Other	<input type="text" value="No"/>

Tree Core Sampling		
Tree ID	<input type="text" value="FO-002-T1-S2"/>	
Species	<input type="text" value="Populus tremuloides"/>	
DBH (cm)	<input type="text" value="43.00"/>	
Height (m)	<input type="text" value="26.00"/>	
Core Sample ID	<input type="text" value="FO-002-T1 -S2-1"/>	
Location	Latitude:45.883305,Longitude:-80.580024,Altitude:199.0,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:10/14/2015 09:51:31 EDT	

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Species

2159

	Height	Cover	Species Dominance
Canopy	1 >25m	3 25 - 60%	Populus tremuloides > Acer rubrum
Sub Canopy	2 >6-25m	3 25 - 60%	Acer rubrum > Populus tremuloides
Shrub	3 >2-6m	2 10 - 25%	Corylus cornuta > Viburnum cassinoides
Groundcover	4 >1-2m	3 25 - 60%	Aster macrophylla > Pteridium aquilinum
Floating & Submerged		0 None	

Stand Composition

2159

	<10	10-24	25-50	>50
Size Class Analysis	O	O	A	N
Standing Snags	R	R	N	N
Deadfall / Logs	A	O	O	N
Species Dominance <10	Populus tremuloides > Acer rubrum			
Species Dominance 10-24	Acer rrubrum > Populus tremuloides			
Species Dominance 25-50	Populus tremuloides > Acer rubrum			
Species Dominance >50				

Map Number FO-002-1

Field Crew KASEY MCKENZIE & KRISTAN WASHBURN

8

Feature ID FO-002

Project Number 60341251

Air Temp. (degC)

8.00

Weather Notes

Tablet AECOM10

Wind Speed (beaufort)

0 Calm

Start Date 10/14/2015 10:06:42 AM

Precipitation

none

End Date 10/14/2015 10:29:51 AM

Cloud Cover

20.00

Plot ID FO-002-T1-S3

Location

Latitude:45.883726,Longitude:-80.579597,Altitude:204.4,Speed:0.0926,Accuracy:2.1,Provider:gps,Time:10/14/2015 10:09:16 EDT

8

Tree Tally

1517

Notes Tree core taken a 90cm, couldn't get a full sample at DBH

Location

Latitude:45.883726,Longitude:-80.579597,Altitude:204.4,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:10/14/2015 10:09:22 EDT



Dead

Species	Tally	ID
Populus grandidentata	2.00	3194
Acer rubrum	1.00	3197
Populus tremuloides	1.00	3200

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-002-T1-S3-1	Populus grandidentata	Latitude:45.883738,Longitude:-80.579525,Altitude:205.8,Speed:0.17491111,Accuracy:1.8,Provider:gps,Time:10/14/2015 10:15:13 EDT	46.00	22.00	8
FO-002-T1-S3-2	Populus grandidentata	Latitude:45.883738,Longitude:-80.57953,Altitude:205.9,Speed:0.33438888,Accuracy:1.8,Provider:gps,Time:10/14/2015 10:15:08 EDT	42.00	22.00	11

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Tree Core Sampling

Tree ID	FO-002-T1-S3		8
Species	Populus grandidentata		
DBH (cm)	46.00		
Height (m)	22.00		
Core Sample ID	FO-002-T1-S3		
Location	Latitude:45.883733,Longitude:-80.579494,Altitude:206.0,Speed:0.0,Accuracy:2.1,Provider:gps,Time:10/14/2015 10:15:46 EDT		

## Stand Species

2162

	Height	Cover	Species Dominance
Canopy	2 >6-25m		Populus grandidentata > Acer rubrum > populus trembuloides > Betula alleghaniensis
Sub Canopy	3 >2-6m	3 25 - 60%	Acer rubrum > Abies balsamea
Shrub	4 >1-2m	3 25 - 60%	Corylus cornuta
Groundcover	5 >0.5-1m	3 25 - 60%	Pteridium aquilinum
Floating & Submerged		0 None	

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2162

	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	N
Standing Snags	O	O	R	N
Deadfall / Logs	A	O	R	N
Species Dominance <10	Acer rubrum			
Species Dominance 10-24	Acer rubrum			
Species Dominance 25-50	Populus grandidentata > Populus tremuloides			
Species Dominance >50				

Map Number  Field Crew

11


Feature ID	<input type="text" value="FO-002"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="7.00"/>
Tablet	<input type="text" value="AECOM10"/>	Wind Speed (beaufort)	<input type="text" value="0 Calm"/>
Start Date	<input type="text" value="10/14/2015 10:44:55 AM"/>	Precipitation	<input type="text" value="none"/>
End Date	<input type="text" value="10/14/2015 11:26:32 AM"/>	Cloud Cover	<input type="text" value="20.00"/>
Weather Notes			

Plot ID  Location

11

Tree Tally

1520


Notes	<input type="text"/>	Location	<input type="text" value="Latitude:45.884046,Longitude:-80.579184,Altitude:191.7,Speed:0.26236665,Accuracy:2.1,Provider:gps,Time:10/14/2015 10:47:34 EDT"/>	
Dead	<input type="text"/>			

Species	Tally	ID
Populus grandidentata	3.00	3203
Acer rubrum	3.00	3206

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Disturbance Indicators				
	Present	Details		
Cut stumps / logs - old	No			
Cut stumps / logs - recent	No			
Roads / trails	No			
Exotic / invasive plants	No			
Signs of fire	No			
Other	No			
Tree Core Sampling				
Tree ID	FO-002-T1-S4			
Species	Populus grandidentata			
DBH (cm)	39.50			
Height (m)	20.00			
Core Sample ID	FO-002-T1-S4-1			
Location	Latitude:45.884099,Longitude:-80.579203,Altitude:201.9,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:10/14/2015 11:07:01 EDT			
Stand Species				
	Height	Cover	Species Dominance	
Canopy	1 >25m	4 > 60%	Populus grandidentata > Populus tremuloides > pinus strobus	
Sub Canopy	2 >6-25m	4 > 60%	Acer rubrum	
Shrub	4 >1-2m	4 > 60%	Corylus cornuta > Viburnum cassinoides > Diervilla Lonicera	
Groundcover	7 <0.2m	4 > 60%	Pteridium aquilinum > Lycopodium dendroideum > Gaultheria procumbens > Maianthemum canadense	
Floating & Submerged		0 None		
Stand Composition				
	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	N
Standing Snags	O	R	R	N
Deadfall / Logs	A	O	R	N
Species Dominance <10	Acer rubrum			
Species Dominance 10-24	Acer rubrum > Populus tremuloides			
Species Dominance 25-50	Populus grandidentata > Populus tremuloides			
Species Dominance >50				
Map Number	FO-002-1		Field Crew	KRISTAN WASHBURN ANS KASEY MCKENZIE

11

2165

2165

14

Filter Start Date 10/1/2015

Filter End Date 10/30/2015




# Old Growth Forest Survey

Feature ID	FO-002	Air Temp. (degC)	8.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	3 Leaves move on twigs	
Tablet	AECOM10	Precipitation	none	
Start Date	10/14/2015 11:27:40 AM	Cloud Cover	25.00	
End Date	10/14/2015 11:55:42 AM			

Plot ID	FO-002-T1-S5	Location	Latitude:45.884441,Longitude:-80.5787,Altitude:193.2,Speed:0.18005556,Accuracy:1.8,Provider:gps,Time:10/14/2015 11:29:13 EDT	14
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Tree Tally	1523
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Notes	Predominantly mature Populus grandidentata however there was one really old outline pine so we took cores of each. No other pine in plot of really elsewhere in forest nearby. The core for the pine is like only a little over 1/3 of the way through	Location	Latitude:45.884441,Longitude:-80.5787,Altitude:193.2,Speed:0.1286112,Accuracy:1.8,Provider:gps,Time:10/14/2015 11:29:26 EDT	
Dead	0.00			

Species	Tally	ID
Populus grandidentata	9.00	3209
Pinus strobus	1.00	3212

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-002-T1-S5-1	Populus grandidentata	Latitude:45.884433,Longitude:-80.578691,Altitude:195.3,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:10/14/2015 11:31:32 EDT	47.00	18.00	14
FO-002-T1-S5-2	Populus grandidentata	Latitude:45.88442,Longitude:-80.57871,Altitude:195.0,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:10/14/2015 11:32:05 EDT	41.20	19.00	17
FO-002-T1-S5-3	Populus grandidentata	Latitude:45.8844,Longitude:-80.578718,Altitude:192.3,Speed:0.03601111,Accuracy:1.8,Provider:gps,Time:10/14/2015 11:33:24 EDT	41.50	20.00	20
FO-002-T1-S5-4	Pinus strobus	Latitude:45.884353,Longitude:-80.578708,Altitude:191.7,Speed:0.18005556,Accuracy:1.8,Provider:gps,Time:10/14/2015 11:34:34 EDT	84.00	27.00	23

Filter Start Date 10/1/2015


Filter End Date 10/30/2015


# Old Growth Forest Survey

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Tree Core Sampling

Tree ID	FO-002-T-S1-1		14
Species	Populus grandidentata		
DBH (cm)	47.00		
Height (m)	18.00		
Core Sample ID	FO-002-T-S1-1		
Location	Latitude:45.884449,Longitude:-80.578618,Altitude:199.7,Speed:0.05658889,Accuracy:1.8,Provider:gps,Time:10/14/2015 11:42:13 EDT		

Tree ID	FO-002-T1-S5		17
Species	Pinus strobus		
DBH (cm)	84.00		
Height (m)	27.00		
Core Sample ID	FO-002-T1-S5		
Location	Latitude:45.884359,Longitude:-80.578698,Altitude:200.6,Speed:0.08231111,Accuracy:2.1,Provider:gps,Time:10/14/2015 11:49:57 EDT		

## Stand Species

2168

	Height	Cover	Species Dominance
Canopy	1 >25m	3 25 - 60%	Populus grandidentata
Sub Canopy	2 >6-25m	3 25 - 60%	Acer rubrum > Populus grandidentata
Shrub	3 >2-6m	4 > 60%	Corylus cornuta > Viburnum cassinoides > Acer rubrum
Groundcover	5 >0.5-1m	2 10 - 25%	Aster macrophylla > Lycopodium dendroideum > Pteridium aquilinum
Floating & Submerged		0 None	

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2168

	<10	10-24	25-50	>50
Size Class Analysis	A	A	A	R
Standing Snags	O	R	N	N
Deadfall / Logs	O	O	N	N
Species Dominance <10	Acer rubrum > Populus grandidentata			
Species Dominance 10-24	Populus grandidentata > Acer rubrum			
Species Dominance 25-50	Populus grandidentata			
Species Dominance >50	Pinus strobus			

Map Number  Field Crew

17

Feature ID	<input type="text" value="FO-002"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="10.00"/>
Tablet	<input type="text" value="AECOM10"/>	Wind Speed (beaufort)	<input type="text" value="2 Slight breeze felt on face"/>
Start Date	<input type="text" value="10/14/2015 12:30:08 PM"/>	Precipitation	<input type="text" value="none"/>
End Date	<input type="text" value="10/14/2015 12:51:20 PM"/>	Cloud Cover	<input type="text" value="20.00"/>
Weather Notes			

Plot ID  Location

17

Tree Tally

1526

Notes	<input type="text"/>	Location	<input type="text" value="Latitude:45.885115,Longitude:-80.577983,Altitude:201.7,Speed:0.14918889,Accuracy:1.8,Provider:gps,Time:10/14/2015 12:32:20 EDT"/>
Dead	<input type="text"/>		



Species	Tally	ID
Acer rubrum	4.00	3215
Pinus strobus	1.00	3218

DBH

tree id	Species	tree location	DBH	Height	ID
FO-002-T1-S7-1	Pinus strobus	Latitude:45.885125,Longitude:-80.578,Altitude:201.9,Speed:0.051444443,Accuracy:1.8,Provider:gps,Time:10/14/2015 12:33:26 EDT	65.50	30.00	26

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	No
Cut stumps / logs - recent	No
Roads / trails	No
Exotic / invasive plants	No
Signs of fire	No
Other	No

Tree Core Sampling	
Tree ID	FO-002-T1-S7
Species	Pinus strobus
DBH (cm)	65.50
Height (m)	30.00
Core Sample ID	FO-002-T1-S7-1
Location	Latitude:45.88514,Longitude:-80.578023,Altitude:200.2,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:10/14/2015 12:34:36 EDT

Stand Species	
Canopy	2 >6-25m   4 > 60%   Populus grandidentata > Acer rubrum > Betula papyrifera
Sub Canopy	2 >6-25m   4 > 60%   Acer rubrum > Populus grandidentata
Shrub	4 >1-2m   4 > 60%   Corylus cornuta > Viburnum cassinoides
Groundcover	7 <0.2m   4 > 60%   Pteridium aquilinum > Maianthemum canadense > Lycopodium dendroideum
Floating & Submerged	0 None

Stand Composition	
	<10    10-24    25-50    >50
Size Class Analysis	A    A    O    R
Standing Snags	
Deadfall / Logs	O    O    R    N
Species Dominance <10	Acer rubrum
Species Dominance 10-24	Acer rubrum > Populus grandidentata
Species Dominance 25-50	Populus grandidentata
Species Dominance >50	Pinus strobus

Map Number	FO-002-1	Field Crew	KRISTAN WASHBURN AND KASEY MCKENZIE
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# Old Growth Forest Survey

Feature ID	FO-002	Air Temp. (degC)	10.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	2 Slight breeze felt on face	
Tablet	AECOM10	Precipitation	none	
Start Date	10/14/2015 1:00:46 PM	Cloud Cover	15.00	
End Date	10/14/2015 1:07:49 PM			

Plot ID	FO-002-T1-S6	Location	Latitude:45.884744,Longitude:-80.578336,Altitude:202.7,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:02:43 EDT	20
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Tree Tally	1529
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Notes	Largest tree 34 cm dbh. So. No cores taken.	Location	Latitude:45.884744,Longitude:-80.578336,Altitude:202.7,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:03:01 EDT	
Dead	1.00			

Species	Tally	ID
Populus tremuloides	7.00	3221
Betula papyrifera	1.00	3224
Acer rubrum	1.00	3227

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

Stand Species	2174
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	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	POPULUS TREMULOIDES > ACER RUBRUM
Sub Canopy	2 >6-25m	3 25 - 60%	Acer rubrum
Shrub	3 >2-6m	3 25 - 60%	Corylus cornuta > Viburnum cassinoides
Groundcover	4 >1-2m	3 25 - 60%	Trientalis borealis > Aster macrophylla > Rubus pubescens
Floating & Submerged		0 None	

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2174

	<10	10-24	25-50	>50
Size Class Analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Standing Snags	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Deadfall / Logs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Species Dominance <10	Acer rubrum			
Species Dominance 10-24	Populus tremuloides > Acer rubrum			
Species Dominance 25-50	Populus tremuloides			
Species Dominance >50				

Map Number  Field Crew

23

Feature ID

Project Number  Air Temp. (degC)  Weather Notes

Tablet  Wind Speed (beaufort)

Start Date  Precipitation

End Date  Cloud Cover

Plot ID  Location

23


Tree Tally

1532

Notes

Location

Dead



Species	Tally	ID
Acer rubrum	4.00	3230
Populus tremuloides	1.00	3233
Pinus strobus	2.00	3236
Picea glauca	1.00	3239

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-002-T1-S8-1	Pinus strobus	Latitude:45.885479,Longitude:-80.577463,Altitude:194.0,Speed:0.3241,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:17:08 EDT	52.00	27.00	29
FO-002-T1-S8-2	Pinus strobus	Latitude:45.885369,Longitude:-80.577276,Altitude:197.1,Speed:0.4269889,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:19:20 EDT	81.00	26.00	32

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

## Tree Core Sampling

Tree ID	<input type="text" value="FO-002-T1-S8"/>		23
Species	<input type="text" value="Pinus strobus"/>		
DBH (cm)	<input type="text" value="81.00"/>		
Height (m)	<input type="text" value="26.00"/>		
Core Sample ID	<input type="text" value="FO-002-T1-S8-1"/>		
Location	<input type="text" value="Latitude:45.885389,Longitude:-80.577309,Altitude:198.6,Speed:0.051444445,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:27:06 EDT"/>		

## Stand Species

2177

	Height	Cover	Species Dominance
Canopy	<input type="text" value="1 &gt;25m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Populus tremuloides &gt; pinus strobus"/>
Sub Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Acer rubrum &gt; Picea glauca"/>
Shrub	<input type="text" value="4 &gt;1-2m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Corylus cornuta &gt; Viburnum cassinoides"/>
Groundcover	<input type="text" value="7 &lt;0.2m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Grass sp &gt; aster macrophylla &gt; Cornus canadensis"/>
Floating & Submerged		<input type="text" value="0 None"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2177

	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	R
Standing Snags	A	O	R	N
Deadfall / Logs	A	R	R	N
Species Dominance <10	Acer rubrum			
Species Dominance 10-24	Acer rubrum > Picea glauca			
Species Dominance 25-50	Populus tremuloides > pinus strobus			
Species Dominance >50	Pinus strobus			

Map Number  Field Crew

26


Feature ID	<input type="text" value="FO-002"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="10.00"/>
Tablet	<input type="text" value="AECOM10"/>	Wind Speed (beaufort)	<input type="text" value="2 Slight breeze felt on face"/>
Start Date	<input type="text" value="10/14/2015 1:58:07 PM"/>	Precipitation	<input type="text" value="none"/>
End Date	<input type="text" value="10/14/2015 2:19:38 PM"/>	Cloud Cover	<input type="text" value="25.00"/>
Weather Notes			

Plot ID  Location

26

Tree Tally

1535

Notes	<input type="text"/>	Location	<input type="text" value="Latitude:45.887861,Longitude:-80.572407,Altitude:198.6,Speed:0.0926,Accuracy:3.0,Provider:gps,Time:10/14/2015 02:00:24 EDT"/>	
Dead	<input type="text" value="3.00"/>			

Species	Tally	ID
Pinus strobus	1.00	3242
Tsuga canadensis	1.00	3245
Abies balsamea	9.00	3248
Acer rubrum	1.00	3251
Populus tremuloides	1.00	3254

Filter Start Date 10/1/2015

Filter End Date 10/30/2015



# Old Growth Forest Survey

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-002-T2-S1-1	Tsuga canadensis	Latitude:45.887868,Longitude:-80.572402,Altitude:199.0,Speed:0.025722222,Accuracy:3.9,Provider:gps,Time:10/14/2015 02:04:38 EDT	54.00	30.00	35
FO-002-T2-S1-2	Pinus resinosa	Latitude:45.887829,Longitude:-80.572393,Altitude:199.1,Speed:0.061733333,Accuracy:3.0,Provider:gps,Time:10/14/2015 02:06:17 EDT	57.50	31.00	38

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Stand Species

2180

	Height	Cover	Species Dominance
Canopy	1 >25m	3 25 - 60%	Tsuga canadensis > Pinus resinosa > Populus tremuloides
Sub Canopy	2 >6-25m	4 > 60%	Abies balsamea > Acer rubrum > Tsuga canadensis
Shrub	3 >2-6m	2 10 - 25%	Corylus cornuta > Acer spicatum
Groundcover	4 >1-2m	3 25 - 60%	Dicranum ontariense > Cornus canadensis > Trientalis borealis > Dryopteris carthusiana
Floating & Submerged		0 None	

## Stand Composition

2180

	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	O
Standing Snags	A	A	O	R
Deadfall / Logs	A	A	O	N
Species Dominance <10	Abies balsamea			
Species Dominance 10-24	Abies balsamea > Acer rubrum			
Species Dominance 25-50	Tsuga canadensis > Pinus resinosa			
Species Dominance >50	Tsuga canadensis > Pinus resinosa			

Map Number  Field Crew

29

Filter Start Date 10/1/2015


Filter End Date 10/30/2015

# Old Growth Forest Survey

Feature ID	<input type="text" value="FO-002"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="11.00"/>
Tablet	<input type="text" value="AECOM10"/>	Wind Speed (beaufort)	<input type="text" value="3 Leaves move on twigs"/>
Start Date	<input type="text" value="10/14/2015 2:23:54 PM"/>	Precipitation	<input type="text" value="none"/>
End Date	<input type="text" value="10/14/2015 2:37:43 PM"/>	Cloud Cover	<input type="text" value="20.00"/>

Plot ID	<input type="text" value="FO-002-T2-S2"/>	Location	<input type="text" value="Latitude:45.88783,Longitude:-80.571779,Altitude:191.0,Speed:0.11317778,Accuracy:2.4,Provider:gps,Time:10/14/2015 02:27:42 EDT"/>	29
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Tree Tally	1538
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Notes	<input type="text"/>	Location	<input type="text" value="Latitude:45.887843,Longitude:-80.571815,Altitude:191.2,Speed:0.087455556,Accuracy:2.4,Provider:gps,Time:10/14/2015 02:26:12 EDT"/>	
Dead	<input type="text" value="1.00"/>			

Species	Tally	ID
Abies balsamea	9.00	3257
Acer rubrum	2.00	3260
Populus tremuloides	2.00	3263
Betula papyrifera	1.00	3266
Pinus strobus	1.00	3269

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-002-T2-S2-1	Pinus strobus	Latitude:45.887827,Longitude:-80.571792,Altitude:191.7,Speed:0.14918889,Accuracy:2.4,Provider:gps,Time:10/14/2015 02:29:16 EDT	62.50	30.00	41

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID

Species

DBH (cm)

Height (m)

Core Sample ID

Location



26

## Stand Species

2183

	Height	Cover	Species Dominance
Canopy	1 >25m	3 25 - 60%	Pinus strobus > Abies balsamea
Sub Canopy	2 >6-25m	4 > 60%	Abies balsamea > acer rubrum > Betula papyrifera
Shrub	6 >0.2-0.5m	3 25 - 60%	Corylus cornuta
Groundcover	7 <0.2m	2 10 - 25%	Aster macrophylla > moss > Gaultheria procumbens
Floating & Submerged		0 None	

## Stand Composition

2183

	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	R
Standing Snags	O	O	R	N
Deadfall / Logs	A	O	R	N
Species Dominance <10	Abies balsamea			
Species Dominance 10-24	Abies balsamea > Acer rubrum			
Species Dominance 25-50	Abies balsamea > pinus strobus			
Species Dominance >50	Pinus strobus			

Map Number  Field Crew

32

Feature ID

Project Number  Air Temp. (degC)  Weather Notes

Tablet  Wind Speed (beaufort)

Start Date  Precipitation

End Date  Cloud Cover

Plot ID  Location

32


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1541

Notes		Location	
		Latitude:45.887641,Longitude:-80.570817,Altitude:192.4,Speed:0.05658889,Accuracy:2.0,Provider:gps,Time:10/14/2015 02:44:44 EDT	
Dead	1.00		

Species	Tally	ID
Populus tremuloides	2.00	3272
Picea mariana	1.00	3275
Abies balsamea	8.00	3278

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Stand Species

2186

	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Picea mariana > Populus tremuloides
Sub Canopy	2 >6-25m	3 25 - 60%	Abies balsamea
Shrub	4 >1-2m	3 25 - 60%	Corylus cornuta > Lonicera canadense
Groundcover	6 >0.2-0.5m	2 10 - 25%	Lycopodium dendroideum > Clintonia borealis
Floating & Submerged		0 None	

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2186

	<10	10-24	25-50	>50
Size Class Analysis	A	O	R	N
Standing Snags	O	O	N	N
Deadfall / Logs	O	O	N	N
Species Dominance <10	Picea mariana > Abies balsamea			
Species Dominance 10-24	PICEA MARIANA > Populus tremuloides			
Species Dominance 25-50	PICEA Mariana			
Species Dominance >50				

Map Number  Field Crew

35


Feature ID	<input type="text" value="FO-002"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="11.00"/>
Tablet	<input type="text" value="AECOM10"/>	Wind Speed (beaufort)	<input type="text" value="3 Leaves move on twigs"/>
Start Date	<input type="text" value="10/14/2015 2:52:15 PM"/>	Precipitation	<input type="text" value="none"/>
End Date	<input type="text" value="10/14/2015 3:08:22 PM"/>	Cloud Cover	<input type="text" value="20.00"/>
Weather Notes			

Plot ID  Location

35

Tree Tally

1544

Notes	<input type="text"/>	Location	<input type="text" value="Latitude:45.88748,Longitude:-80.570152,Altitude:190.5,Speed:0.087455556,Accuracy:2.1,Provider:gps,Time:10/14/2015 02:55:01 EDT"/>	
Dead	<input type="text" value="1.00"/>			

Species	Tally	ID
Acer rubrum	1.00	3281
Picea glauca	1.00	3284
Populus tremuloides	5.00	3287
Picea mariana	1.00	3290

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-002-T3-S2-1	Populus tremuloides	Latitude:45.887443,Longitude:-80.570247,Altitude:190.3,Speed:0.16976666,Accuracy:2.4,Provider:gps,Time:10/14/2015 02:58:17 EDT	42.00	26.00	44
FO-002-T3-S2-2	Populus tremuloides	Latitude:45.887449,Longitude:-80.570244,Altitude:189.9,Speed:0.34982222,Accuracy:2.1,Provider:gps,Time:10/14/2015 02:58:40 EDT	50.00	28.00	47

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="Yes"/>	<input type="text" value="Atv trail"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

## Tree Core Sampling

Tree ID	<input type="text" value="FO-002-T3-S2"/>		29
Species	<input type="text" value="Populus tremuloides"/>		
DBH (cm)	<input type="text" value="51.00"/>		
Height (m)	<input type="text" value="28.00"/>		
Core Sample ID	<input type="text" value="FO-002-T3-S2-1"/>		
Location	<input type="text" value="Latitude:45.887446,Longitude:-80.57025,Altitude:190.5,Speed:0.19034444,Accuracy:1.75,Provider:gps,Time:10/14/2015 02:59:57 EDT"/>		

## Stand Species

	Height	Cover	Species Dominance
Canopy	<input type="text" value="1 &gt;25m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Populus tremuloides"/>
Sub Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Populus tremuloides &gt; Picea glauca &gt; Abies balsamea &gt; Acer rubrum"/>
Shrub	<input type="text" value="4 &gt;1-2m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Corylus cornuta &gt; abies balsamea &gt; Acer rubrum"/>
Groundcover	<input type="text" value="7 &lt;0.2m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Cornus canadensis &gt; moss sp"/>
Floating & Submerged		<input type="text" value="0 None"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2189

	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	R
Standing Snags	A	O	R	N
Deadfall / Logs	A	O	R	N
Species Dominance <10	Populus tremuloides			
Species Dominance 10-24	Populus tremuloides > Picea glauca > Acer rubrum			
Species Dominance 25-50	Populus tremuloides			
Species Dominance >50	Populus tremuloides			

Map Number  Field Crew  38

Feature ID

Project Number  Air Temp. (degC)  Weather Notes

Tablet  Wind Speed (beaufort)

Start Date  Precipitation

End Date  Cloud Cover


Plot ID  Location  38

Tree Tally 1547

Notes

Location

Dead



Species	Tally	ID
Black cherry	1.00	3293
Populus tremuloides	5.00	3296
Abies balsamea	5.00	3299
Acer rubrum	2.00	3302
BETULA PAPYRIFERA	1.00	3305

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Disturbance Indicators		Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text"/>	<input type="text"/>	<input type="text"/>
Roads / trails	<input type="text" value="Yes"/>	<input type="text" value="ATV trail"/>	
Exotic / invasive plants	<input type="text" value="Yes"/>	<input type="text" value="A lot of Solidago spp .... cannot determine native"/>	
Signs of fire	<input type="text" value="No"/>	<input type="text"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>	<input type="text"/>

## Stand Species 2192

	Height	Cover	Species Dominance
Canopy	<input type="text" value="1 &gt;25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Populus tremuloides"/>
Sub Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Abies balsamea &gt; Acer rubrum"/>
Shrub	<input type="text" value="3 &gt;2-6m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Corylus cornuta &gt; Lonicera canadense"/>
Groundcover	<input type="text" value="5 &gt;0.5-1m"/>	<input type="text" value="2 10 - 25%"/>	<input type="text" value="Trientalis borealis &gt; Cornus canadensis&gt; Solidago spp."/>
Floating & Submerged		<input type="text" value="0 None"/>	<input type="text"/>

## Stand Composition 2192

	<10	10-24	25-50	>50
Size Class Analysis	<input type="text" value="A"/>	<input type="text" value="O"/>	<input type="text" value="O"/>	<input type="text" value="N"/>
Standing Snags	<input type="text" value="O"/>	<input type="text" value="O"/>	<input type="text" value="N"/>	<input type="text" value="N"/>
Deadfall / Logs	<input type="text" value="A"/>	<input type="text" value="A"/>	<input type="text" value="R"/>	<input type="text" value="N"/>
Species Dominance <10	<input type="text" value="Abies balsamea &gt; Acer rubrum"/>			
Species Dominance 10-24	<input type="text" value="Populus tremuloides &gt; Abies balsamea"/>			
Species Dominance 25-50	<input type="text" value="Populus tremuloides"/>			
Species Dominance >50	<input type="text"/>			

Map Number	<input type="text" value="FO-002-2"/>	Field Crew	<input type="text" value="KRISTAN WASHBURN AND KASEY MCKENZIE"/>	41
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Feature ID	<input type="text" value="FO-002"/>			
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="10.00"/>	Weather Notes <input type="text"/>
Tablet	<input type="text" value="AECOM10"/>	Wind Speed (beaufort)	<input type="text" value="3 Leaves move on twigs"/>	
Start Date	<input type="text" value="10/14/2015 3:27:04 PM"/>	Precipitation	<input type="text" value="none"/>	
End Date	<input type="text" value="10/14/2015 3:40:14 PM"/>	Cloud Cover	<input type="text" value="25.00"/>	

Plot ID	<input type="text" value="FO-002-T3-S4"/>	Location	<input type="text" value="Latitude:45.887139,Longitude:-80.56886,Altitude:194.1,Speed:0.015433333,Accuracy:3.3,Provider:gps,Time:10/14/2015 03:31:35 EDT"/>	41
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Filter Start Date 10/1/2015


Filter End Date 10/30/2015



# Old Growth Forest Survey

Tree Tally

1550

Notes		Location	
Dead		Latitude:45.887149,Longitude:-80.568888,Altitude:194.0,Speed:0.010288889,Accuracy:3.3,Provider:gps,Time:10/14/2015 03:28:54 EDT	


Species	Tally	ID
Populus tremuloides	3.00	3308
PINUS STROBUS	2.00	3311
ABIES BALSAMEA	5.00	3314
Picea glauca	1.00	3317

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-002-T3-S4-1	PINUS STROBUS	Latitude:45.887122,Longitude:-80.568725,Altitude:194.6,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:10/14/2015 03:36:59 EDT	52.00	30.00	50

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="Yes"/>	<input type="text" value="A lot of blow down"/>

## Tree Core Sampling

Tree ID	<input type="text" value="FO-002-T3-S4"/>		32
Species	<input type="text" value="PINUS STROBUS"/>		
DBH (cm)	<input type="text" value="52.00"/>		
Height (m)	<input type="text" value="30.00"/>		
Core Sample ID	<input type="text" value="FO-002-T3-S4-01"/>		
Location	Latitude:45.887126,Longitude:-80.568827,Altitude:194.2,Speed:0.15433334,Accuracy:2.4,Provider:gps,Time:10/14/2015 03:35:37 EDT		

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Species

2195

	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Populus tremuloides > Pinus strobus
Sub Canopy	2 >6-25m	3 25 - 60%	Abies balsamea > Acer saccharum
Shrub	4 >1-2m		Corylus cornuta > Quercus rubra
Groundcover	6 >0.2-0.5m	2 10 - 25%	Pteridium aquilinum > Salidago spp> Aster macrophylla
Floating & Submerged		0 None	

Stand Composition

2195

	<10	10-24	25-50	>50
Size Class Analysis	A	O	R	R
Standing Snags	A	A	O	N
Deadfall / Logs	A	A	O	N
Species Dominance <10	Abies balsamea > Acer saccharum			
Species Dominance 10-24	Populus tremuloides > Abies balsamea			
Species Dominance 25-50	Populus tremuloides			
Species Dominance >50	PINUS STROBUS			


Map Number  Field Crew  44

Feature ID	<input type="text" value="FO-002"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="10.00"/> Weather Notes
Tablet	<input type="text" value="AECOM10"/>	Wind Speed (beaufort)	<input type="text" value="2 Slight breeze felt on face"/>
Start Date	<input type="text" value="10/14/2015 3:43:02 PM"/>	Precipitation	<input type="text" value="none"/>
End Date	<input type="text" value="10/14/2015 3:49:03 PM"/>	Cloud Cover	<input type="text" value="10.00"/>

Plot ID  Location  44

Tree Tally

1553

Notes	<input type="text"/>	Location	<input type="text" value="Latitude:45.887017,Longitude:-80.568174,Altitude:196.2,Speed:0.025722222,Accuracy:2.7,Provider:gps,Time:10/14/2015 03:45:13 EDT"/>	
Dead	<input type="text" value="6.00"/>			

Species	Tally	ID
Betula alleghaniensis	2.00	3320
Abies balsamea	3.00	3323
Thuja occidentalis	1.00	3326

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Stand Species

2198

	Height	Cover	Species Dominance
Canopy	2 >6-25m	2 10 - 25%	Betula alleghaniensis
Sub Canopy	2 >6-25m	3 25 - 60%	Abies balsamea
Shrub	4 >1-2m	2 10 - 25%	Viburnum cassinoides > Corylus cornuta
Groundcover	4 >1-2m	4 > 60%	Grass spp. > Equisetum arvense > Dryopteris carthusiana
Floating & Submerged		0 None	

## Stand Composition

2198

	<10	10-24	25-50	>50
Size Class Analysis	A	O	O	N
Standing Snags	A	O	N	N
Deadfall / Logs	A	O	N	N
Species Dominance <10	Abies balsamea > Betula alleghaniensis			
Species Dominance 10-24	Betula alleghaniensis			
Species Dominance 25-50	Betula alleghaniensis			
Species Dominance >50				

Map Number  Field Crew  47

Feature ID	<input type="text" value="FO-138"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="5.00"/> Weather Notes
Tablet	<input type="text" value="AECOM6"/>	Wind Speed (beaufort)	<input type="text" value="0 Calm"/>
Start Date	<input type="text" value="10/14/2015 10:20:47 AM"/>	Precipitation	<input type="text" value="none"/>
End Date	<input type="text" value="10/14/2015 12:35:00 PM"/>	Cloud Cover	<input type="text" value="0.00"/>

Plot ID  Location  47


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1556

Notes		Location	
Dead		Latitude:45.829229,Longitude:-80.710583,Altitude:183.3,Speed:0.35496667,Accuracy:2.1,Provider:gps,Time:10/14/2015 10:23:40 EDT	

Species	Tally	ID
Pinus strobus	4.00	3329
Dead	1.00	3332
Picea mariana	1.00	3335

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-138-T3-S4-2	Pinus strobus	Latitude:45.829248,Longitude:-80.710521,Altitude:179.6,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:10/14/2015 10:31:43 EDT	42.00	12.00	53

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	<input type="text" value="No"/>
Cut stumps / logs - recent	<input type="text" value="No"/>
Roads / trails	<input type="text" value="No"/>
Exotic / invasive plants	<input type="text" value="No"/>
Signs of fire	<input type="text" value="No"/>
Other	<input type="text" value="No"/>

Tree Core Sampling	
Tree ID	<input type="text" value="FO-138-T3-S4-1"/>
Species	<input type="text" value="Pinus strobus"/>
DBH (cm)	<input type="text" value="42.00"/>
Height (m)	<input type="text" value="12.00"/>
Core Sample ID	<input type="text" value="FO-138-T3-S4-1"/>
Location	Latitude:45.829236,Longitude:-80.710492,Altitude:179.5,Speed:0.07202222,Accuracy:2.4,Provider:gps,Time:10/14/2015 10:33:34 EDT

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Species

2201

	Height	Cover	Species Dominance
Canopy	2 >6-25m	2 10 - 25%	Pinus strobus > > Picea mariana
Sub Canopy	3 >2-6m	2 10 - 25%	Pinus strobus > Picea mariana > Quercus rubra
Shrub	6 >0.2-0.5m	2 10 - 25%	Juniperus communis > Arionia melanacarpia > Kalmia angustifolia
Groundcover	7 <0.2m	2 10 - 25%	Moss/lichen/grass
Floating & Submerged		0 None	

Stand Composition

2201


	<10	10-24	25-50	>50
Size Class Analysis	A	A	R	N
Standing Snags	R	R	N	N
Deadfall / Logs	O	R	N	N
Species Dominance <10				
Species Dominance 10-24				
Species Dominance 25-50				
Species Dominance >50				

Plot ID	FO-138-T3-S3	Location	Latitude:45.829531,Longitude:-80.710993,Altitude:178.9,Speed:0.051444445,Accuracy:1.75,Provider:gps,Time:10/14/2015 10:56:20 EDT
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50

Tree Tally

1559

Notes		Location	Latitude:45.829529,Longitude:-80.710997,Altitude:179.0,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:10/14/2015 10:57:46 EDT	
Dead	1.00			

Species	Tally	ID
Pinus strobus	5.00	3338
Betula papyrifera	1.00	3341

DBH

tree id	Species	tree location	DBH	Height	ID
FO-138-T3-S3-2	Pinus strobus	Latitude:45.829524,Longitude:-80.710866,Altitude:183.6,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:10/14/2015 11:10:44 EDT	40.00	13.00	56

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	No
Cut stumps / logs - recent	No
Roads / trails	No
Exotic / invasive plants	No
Signs of fire	No
Other	No

Tree Core Sampling	
Tree ID	FO-138-T3-S3-1
Species	Pinus strobus
DBH (cm)	40.00
Height (m)	13.00
Core Sample ID	FO-138-T3-S3
Location	Latitude:45.829524,Longitude:-80.710902,Altitude:182.8,Speed:0.010288889,Accuracy:1.75,Provider:gps,Time:

			38
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Stand Species	
Canopy	2 >6-25m   3 25 - 60%   Pinus strobus >> Betula papyrifera =Acer Rubrum> Quercus rubra
Sub Canopy	3 >2-6m   2 10 - 25%   Pinus strobus >Acer rubrum
Shrub	5 >0.5-1m   3 25 - 60%   Juniperus communis >Vaccinium angustifolium > Acer rubrum
Groundcover	7 <0.2m   2 10 - 25%   Mosses
Floating & Submerged	0 None

Stand Composition	
	<10    10-24    25-50    >50
Size Class Analysis	A    A    R    N
Standing Snags	O    R    R    N
Deadfall / Logs	A    O    R    N
Species Dominance <10	
Species Dominance 10-24	
Species Dominance 25-50	
Species Dominance >50	


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Plot ID	FO-138-T3-S2	Location	Latitude:45.829891,Longitude:-80.711304,Altitude:177.1,Speed:0.0051444443,Accuracy:1.8,Provider:gps,Time:10/14/2015 11:22:04 EDT	53
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Tree Tally	1562
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Notes		Location	Latitude:45.829894,Longitude:-80.71131,Altitude:176.7,Speed:0.0,Accuracy:1.8,Provider:gps,Time:10/14/2015 11:22:08 EDT	
Dead	0.00			

Species	Tally	ID
Pinus strobus	4.00	3344
Acer rubrum	2.00	3347

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-138-T3-S2-1	Pinus strobus	Latitude:45.829829,Longitude:-80.711291,Altitude:176.3,Speed:0.05658889,Accuracy:1.5,Provider:gps,Time:10/14/2015 11:24:29 EDT	42.00	16.00	59


Disturbance Indicators		Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>		
Cut stumps / logs - recent	<input type="text" value="No"/>		
Roads / trails	<input type="text" value="No"/>		
Exotic / invasive plants	<input type="text" value="No"/>		
Signs of fire	<input type="text" value="No"/>		
Other	<input type="text" value="No"/>		

Tree Core Sampling		
Tree ID	FO-138-T3-S2-2	
Species	Pinus strobus	
DBH (cm)	53.50	
Height (m)	18.00	
Core Sample ID	FO-138-T3-S2-2	
Location	Latitude:45.829807,Longitude:-80.711309,Altitude:176.0,Speed:0.010288889,Accuracy:1.75,Provider:gps,Time:10/14/2015 11:27:02 EDT	

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Species		2207			
	Height      Cover      Species Dominance				
Canopy	2 >6-25m    4 > 60%    Pinus strobus >> Acer rubrum = Quercus rubra				
Sub Canopy	3 >2-6m    3 25 - 60%    Pinus strobus > Acer rubrum				
Shrub	6 >0.2-0.5m    2 10 - 25%    Kalmia angustifolia > Acer rubrum				
Groundcover	6 >0.2-0.5m    2 10 - 25%    Vaccinium angustifolium				
Floating & Submerged	0 None				
Stand Composition		2207			
	<10    10-24    25-50    >50				
Size Class Analysis	A    A    O    R				
Standing Snags	N    N    N    N				
Deadfall / Logs	A    R    N    N				
Species Dominance <10					
Species Dominance 10-24					
Species Dominance 25-50					
Species Dominance >50					
Plot ID	FO-138-T3-S1	56			
Location	Latitude:45.830243,Longitude:-80.711473,Altitude:181.4,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:10/14/2015 12:09:27 EDT				
Tree Tally		1565			
Notes		Location			
Dead		Latitude:45.830245,Longitude:-80.711468,Altitude:181.3,Speed:0.0051444443,Accuracy:1.8,Provider:gps,Time:10/14/2015 12:10:09 EDT			
					
<b>Species</b>	<b>Tally</b>	<b>ID</b>			
Pinus strobus	6.50	3350			
Acer rubrum	1.00	3353			
Betula papyrifera	0.50	3356			
Picea glauca	0.50	3359			
<b>DBH</b>					
<b>tree id</b>	<b>Species</b>	<b>tree location</b>	<b>DBH</b>	<b>Height</b>	<b>ID</b>
FO-138-T3-S1-2	Pinus strobus	Latitude:45.830164,Longitude:-80.711385,Altitude:181.8,Speed:0.10803334,Accuracy:2.1,Provider:gps,Time:10/14/2015 12:25:14 EDT	46.00	13.00	62

Filter Start Date 10/1/2015

Filter End Date 10/30/2015




# Old Growth Forest Survey

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Tree Core Sampling

Tree ID	FO-138-T3-S1-1		44
Species	Pinus strobus		
DBH (cm)	59.00		
Height (m)	15.00		
Core Sample ID	FO-138-T3-S1-1		
Location	Latitude:45.830118,Longitude:-80.711336,Altitude:180.4,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:10/14/2015 12:20:10 EDT		

## Stand Species

2210

	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Pinus strobus > Acer rubrum > Betula papyrifera > Quercus rubra
Sub Canopy	3 >2-6m	1 0% - 10%	Pinus strobus > Picea glauca
Shrub	4 >1-2m	2 10 - 25%	Pteridium aquilinum > Acer rubrum > Aralia nudicaulis
Groundcover	6 >0.2-0.5m	2 10 - 25%	Cornus canadensis > Eurybia macrocarpa > Trientalis borealis
Floating & Submerged			

## Stand Composition

2210

	<10	10-24	25-50	>50
Size Class Analysis	A	O	R	R
Standing Snags	R	R	N	N
Deadfall / Logs	O	O	R	R
Species Dominance <10				
Species Dominance 10-24				
Species Dominance 25-50				
Species Dominance >50				


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Map Number	FO-138-1	Field Crew	JULIE ADAM		50
Feature ID	FO-138				
Project Number	60341251	Air Temp. (degC)	7.00	Weather Notes	
Tablet	AECOM6	Wind Speed (beaufort)	3 Leaves move on twigs		
Start Date	10/14/2015 12:46:02 PM	Precipitation	none		
End Date	10/14/2015 5:07:02 PM	Cloud Cover	0.00		
Plot ID	FO-138-T2-S3	Location	Latitude:45.830559,Longitude:-80.711616,Altitude:180.6,Speed:0.14404444,Accuracy:1.8,Provider:gps,Time:10/14/2015 12:47:45 EDT		

Tree Tally 1568

Notes		Location		
			Latitude:45.830559,Longitude:-80.711616,Altitude:180.6,Speed:0.11317778,Accuracy:1.8,Provider:gps,Time:10/14/2015 12:47:46 EDT	
Dead	0.50			

Species	Tally	ID
Pinus strobus	5.50	3362
ACER. RUBRUM	1.00	3365
Betula papyrifera	1.00	3368

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-138-T2-S3-1	Picea glauca	Latitude:45.830538,Longitude:-80.711671,Altitude:180.2,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:03:02 EDT	40.00	16.00	65
FO-138-T2-S3-3	Pinus strobus	Latitude:45.830493,Longitude:-80.711761,Altitude:180.4,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:05:12 EDT	45.00	16.00	68

Disturbance Indicators


	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID	FO-138-T2-S3-4		47
Species	Pinus strobus		
DBH (cm)	75.00		
Height (m)	18.00		
Core Sample ID	FO-138-T2-S3-4		
Location	Latitude:45.830591,Longitude:-80.711703,Altitude:184.0,Speed:0.12346666,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:10:32 EDT		

Tree ID	FO-138-T2-S3-2		50
Species	Pinus strobus		
DBH (cm)	47.50		
Height (m)	19.00		
Core Sample ID	FO-138-T2-S3-2		
Location	Latitude:45.830585,Longitude:-80.711756,Altitude:182.8,Speed:0.10803334,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:49:51 EDT		

## Stand Species

2213

	Height	Cover	Species Dominance
Canopy	2 >6-25m	4 > 60%	Pinus strobus > Picea glauca > Acer rubrum > Betula papyrifera
Sub Canopy	3 >2-6m	3 25 - 60%	Picea glauca > pinus strobus > Acer rubrum
Shrub	4 >1-2m	3 25 - 60%	Pteridium aquilinum > Acer rubrum > Vaccinium angustifolium > Vaccinium myrtilloides
Groundcover	6 >0.2-0.5m	3 25 - 60%	Mosses>> Polypodium virginianum
Floating & Submerged			

## Stand Composition

2213

	<10	10-24	25-50	>50
Size Class Analysis	O	A	A	O
Standing Snags	R	R	N	N
Deadfall / Logs	A	O	R	N
Species Dominance <10				
Species Dominance 10-24				
Species Dominance 25-50				
Species Dominance >50				


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Plot ID	FO-138-T2-S2	Location	Latitude:45.830851,Longitude:-80.711768,Altitude:174.5,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:10/14/2015 02:02:27 EDT	62
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Tree Tally 1571


Notes		Location	Latitude:45.830854,Longitude:-80.711766,Altitude:174.4,Speed:0.05658889,Accuracy:2.1,Provider:gps,Time:10/14/2015 02:02:58 EDT	
Dead	3.00			

Species	Tally	ID
Pinus strobus	4.00	3371

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	Yes	Many fallen trees, possibly from wind

## Tree Core Sampling

Tree ID	FO-138-T2-S2-1		53
Species	Pinus strobus		
DBH (cm)	33.00		
Height (m)	12.00		
Core Sample ID	FO-138-T2-S2-1		
Location	Latitude:45.83095,Longitude:-80.711927,Altitude:182.2,Speed:0.12861112,Accuracy:2.1,Provider:gps,Time:10/14/2015 02:22:47 EDT		

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Species

2216

	Height	Cover	Species Dominance
Canopy	2 >6-25m	4 > 60%	Pinus strobus >> Acer rubrum > Quercus rubra
Sub Canopy	3 >2-6m		Acer rubrum > pinus strobus
Shrub	5 >0.5-1m	2 10 - 25%	Aronia melanocarpa = Vaccinium myrtilloides > Pteridium aquilinum >Picea mariana > Viburnum cassinoides
Groundcover	7 <0.2m	3 25 - 60%	Cornus canadensis > Cyripedium acaule > Vaccinium angustifolium
Floating & Submerged			

Stand Composition

2216


	<10	10-24	25-50	>50
Size Class Analysis	A	O	O	N
Standing Snags	R	O	R	N
Deadfall / Logs	A	A	O	N
Species Dominance <10				
Species Dominance 10-24				
Species Dominance 25-50				
Species Dominance >50				

Plot ID	FO-138-T2-S1	Location	Latitude:45.831201,Longitude:-80.711659,Altitude:183.3,Speed:0.020577777,Accuracy:2.4,Provider:gps,Time:10/14/2015 02:33:38 EDT
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65

Tree Tally

1574

Notes	Had to move plotnto remain innwoodland	Location	Latitude:45.831196,Longitude:-80.711654,Altitude:183.2,Speed:0.06687775,Accuracy:2.1,Provider:gps,Time:10/14/2015 02:35:41 EDT	
Dead				

Species	Tally	ID
Snag	2.50	3374
Picea mariana	2.50	3377
Betula papyrifera	0.50	3380
Acer rubrum	0.50	3383
Pinus strobus	3.00	3386
Quercus rubra	0.50	3389

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-138-T2-S1-2	Pinus strobus	Latitude:45.831143,Longitude:-80.711614,Altitude:183.0,Speed:0.21606667,Accuracy:2.1,Provider:gps,Time:10/14/2015 02:39:47 EDT	44.00	13.00	71

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

## Tree Core Sampling

Tree ID	<input type="text" value="FO-138-T2-S1-1"/>		56
Species	<input type="text" value="Pinus strobus"/>		
DBH (cm)	<input type="text" value="44.00"/>		
Height (m)	<input type="text" value="16.00"/>		
Core Sample ID	<input type="text" value="FO-138-T2-S1-1"/>		
Location	<input type="text" value="Latitude:45.831133,Longitude:-80.711562,Altitude:185.2,Speed:0.10803334,Accuracy:2.1,Provider:gps,Time:10/14/2015 02:43:03 EDT"/>		

## Stand Species

2219

	Height	Cover	Species Dominance
Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Pinus strobus = Picea mariana &gt; Betula papyrifera &gt;&gt; Quercus rubra"/>
Sub Canopy	<input type="text" value="3 &gt;2-6m"/>	<input type="text" value="2 10 - 25%"/>	<input type="text" value="Picea mariana &gt; pinus strobus"/>
Shrub	<input type="text" value="4 &gt;1-2m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Viburnum cassinoides &gt; Acer rubrum &gt; Quercus rubra &gt; Nemopanthus mucronatus"/>
Groundcover	<input type="text" value="6 &gt;0.2-0.5m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Cornus canadensis &gt;&gt; Acer rubrum &gt; club moss"/>
Floating & Submerged	<input type="text"/>	<input type="text"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2219

<10    10-24    25-50    >50

Size Class Analysis               

Standing Snags               

Deadfall / Logs               

Species Dominance <10   

Species Dominance 10-24   

Species Dominance 25-50   

Species Dominance >50   

Plot ID   

Location    Latitude:45.831677,Longitude:-80.712093,Altitude:185.5,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:10/14/2015 03:03:38 EDT

68

Tree Tally

1577

Notes   

Location    Latitude:45.831677,Longitude:-80.712093,Altitude:185.5,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:10/14/2015 03:03:43 EDT



Dead   

Species	Tally	ID
Pinus strobus	7.00	3392
Acer rubrum	0.50	3395
Pinus banksiana	0.50	3398

Disturbance Indicators

Present    Details

Cut stumps / logs - old       

Cut stumps / logs - recent       

Roads / trails       

Exotic / invasive plants       

Signs of fire       

Other       

Filter Start Date    10/1/2015

Filter End Date    10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID

Species

DBH (cm)

Height (m)

Core Sample ID

Location



59

## Stand Species

2222

	Height	Cover	Species Dominance
Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Pinus strobus &gt; &gt; Picea mariana &gt;&gt; pinus banksiana"/>
Sub Canopy	<input type="text" value="3 &gt;2-6m"/>	<input type="text" value="1 0% - 10%"/>	<input type="text" value="Pinus strobus"/>
Shrub	<input type="text" value="4 &gt;1-2m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Juniperus communis &gt; Aronia melanocarpa &gt; Viburnum cassinoides &gt; Pteridium aquilinum"/>
Groundcover	<input type="text" value="6 &gt;0.2-0.5m"/>	<input type="text" value="1 0% - 10%"/>	<input type="text" value="Cornus canadensis &gt; mosses &gt; club moss"/>
Floating & Submerged			

## Stand Composition

2222

	<10	10-24	25-50	>50
Size Class Analysis	<input type="text" value="O"/>	<input type="text" value="O"/>	<input type="text" value="O"/>	<input type="text" value="N"/>
Standing Snags	<input type="text" value="N"/>	<input type="text" value="R"/>	<input type="text" value="N"/>	<input type="text" value="N"/>
Deadfall / Logs	<input type="text" value="A"/>	<input type="text" value="R"/>	<input type="text" value="N"/>	<input type="text" value="N"/>
Species Dominance <10	<input type="text"/>			
Species Dominance 10-24	<input type="text"/>			
Species Dominance 25-50	<input type="text"/>			
Species Dominance >50	<input type="text"/>			

Plot ID

Location

71

Filter Start Date 10/1/2015


Filter End Date 10/30/2015



# Old Growth Forest Survey

Tree Tally

1580


Notes		Location	
		Latitude:45.832003,Longitude:-80.712073,Altitude:185.2,Speed:0.07202222,Accuracy:2.7,Provider:gps,Time:10/14/2015 03:26:42 EDT	
Dead	0.50		

Species	Tally	ID
Pinus strobus	4.50	3401
Acer rubrum	0.50	3404
Betula papyrifera	0.50	3407
Picea. Mariana	3.00	3410

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Tree Core Sampling

Tree ID	FO-138-T1-S1-1		62
Species	Pinus strobus		
DBH (cm)	48.00		
Height (m)	10.00		
Core Sample ID	FO-138-T1-S1-1		
Location	Latitude:45.832022,Longitude:-80.712014,Altitude:186.8,Speed:0.02572222,Accuracy:2.7,Provider:gps,Time:10/14/2015 03:31:30 EDT		

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Species

2225

	Height	Cover	Species Dominance
Canopy	2 >6-25m	4 > 60%	Pinus strobus > Picea mariana > Acer rubrum > Betula papyrifera
Sub Canopy	3 >2-6m		Pinus strobus > Picea mariana > Acer rubrum >
Shrub	5 >0.5-1m	3 25 - 60%	Aronia melanocarpa > Vaccinium angustifolium > Juniperus communis
Groundcover	6 >0.2-0.5m	2 10 - 25%	Mosses > Gaultheria procumbens > Quercus rubra
Floating & Submerged			

Stand Composition

2225

	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	N
Standing Snags	O	O	N	N
Deadfall / Logs	A	O	N	N
Species Dominance <10				
Species Dominance 10-24				
Species Dominance 25-50				
Species Dominance >50				

Map Number FO-061-4

Field Crew T. SHORNEY , E. MCNAUGHTON

53

Feature ID FO-061

Project Number 60341251

Air Temp. (degC)

8.00

Weather Notes

Tablet AECOM12

Wind Speed (beaufort)

1 Light air movement

Start Date 10/15/2015 2:20:30 PM

Precipitation

light rain

End Date 10/15/2015 5:20:11 PM

Cloud Cover

100.00

Plot ID FO-061-T3-S13

Location

Latitude:45.846097,Longitude:-80.590685,Altitude:189.8,Speed:0.6019,Accuracy:2.1,Provider:gps,Time:10/15/2015 02:23:48 EDT

74

Tree Tally

1583

Notes

Location

Latitude:45.846223,Longitude:-80.590931,Altitude:190.6,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:10/15/2015 02:25:37 EDT



Dead

1.00

Species	Tally	ID
Acer rubrum	4.00	3413
Picea glauca	2.00	3416
Abies balsamia	3.00	3419

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T3-S13-1	Picea glauca	Latitude:45.846316,Longitude:-80.590998,Altitude:192.3,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:10/15/2015 02:28:28 EDT	42.00	22.00	74

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

## Tree Core Sampling

Tree ID	<input type="text" value="FO-061-T3-S13-1"/>		65
Species	<input type="text" value="Picea glauca"/>		
DBH (cm)	<input type="text" value="42.00"/>		
Height (m)	<input type="text" value="22.00"/>		
Core Sample ID	<input type="text" value="FO-061-T3-S13-1"/>		
Location	<input type="text" value="Latitude:45.846339,Longitude:-80.591004,Altitude:194.3,Speed:0.07202222,Accuracy:1.75,Provider:gps,Time:10/15/2015 02:32:52 EDT"/>		

## Stand Species

2228

	Height	Cover	Species Dominance
Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Pinus strobus &gt; picea glauca"/>
Sub Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Abies balsamia &gt; picea glauca &gt; Acer rubrum"/>
Shrub	<input type="text" value="4 &gt;1-2m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Wild raisin &gt; betula papyrifera"/>
Groundcover	<input type="text" value="6 &gt;0.2-0.5m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Bracken fern &gt; cornus canadensis"/>
Floating & Submerged	<input type="text"/>	<input type="text"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2228

<10    10-24    25-50    >50

Size Class Analysis               

Standing Snags               

Deadfall / Logs               

Species Dominance <10   

Species Dominance 10-24   

Species Dominance 25-50   

Species Dominance >50   

Plot ID   

Location   

77

Tree Tally

1586

Notes   

Location   



Dead   

Species	Tally	ID
Picea glauca	4.00	3422
Abies balsamia	2.00	3425
Pinus strobus	2.00	3428

Disturbance Indicators

Present    Details

Cut stumps / logs - old       

Cut stumps / logs - recent       

Roads / trails       

Exotic / invasive plants       

Signs of fire       

Other       

Filter Start Date    10/1/2015

Filter End Date    10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID	FO-061-T3-S12-1
Species	Picea glauca
DBH (cm)	29.00
Height (m)	20.00
Core Sample ID	FO-061-T3-S12-1
Location	Latitude:45.846632,Longitude:-80.591359,Altitude:202.5,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:10/15/2015 02:56:58 EDT



68

## Stand Species

2231

	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Picea glauca > pinus strobus
Sub Canopy	2 >6-25m	4 > 60%	Picea glauca>pinus strobus=abies balsamia >betula papyrifera
Shrub	4 >1-2m	3 25 - 60%	Acer rubrum > wild raisin
Groundcover			Cornus canadensis> goldthread >bracken fern
Floating & Submerged			

## Stand Composition

2231

	<10	10-24	25-50	>50
Size Class Analysis	O	A		N
Standing Snags	R	O	R	N
Deadfall / Logs	O	O	O	N
Species Dominance <10	Abies balsamia > Acer rubrum			
Species Dominance 10-24	Abies balsamia>Acer rubrum>pinus strobus			
Species Dominance 25-50	picea glauca>abies balsamia > pinus strobus			
Species Dominance >50				

Plot ID	FO-061-T3-S11	Location	Latitude:45.846981,Longitude:-80.591891,Altitude:198.5,Speed:0.12346666,Accuracy:1.75,Provider:gps,Time:10/15/2015 03:09:49 EDT
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Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1589

Notes		Location	
Dead		Latitude:45.846981,Longitude:-80.591891,Altitude:198.5,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:10/15/2015 03:09:59 EDT	

Species	Tally	ID
Thuja occidentalis	1.00	3431
Picea glauca	4.00	3434
Betula papyrifera	3.00	3437
Abies balsamia	2.00	3440
Pinus strobus	2.00	3443


DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T3-S11-1	Thuja occidentalis	Latitude:45.847041,Longitude:-80.591974,Altitude:203.9,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:10/15/2015 03:14:36 EDT	43.00	15.00	77
FO-061-T3-S11-2	Populus tremuloides	Latitude:45.847048,Longitude:-80.592044,Altitude:205.4,Speed:0.03601111,Accuracy:1.75,Provider:gps,Time:10/15/2015 03:15:55 EDT	45.00	25.00	80
FO-061-T3-S11-3	Pinus strobus	Latitude:45.84703,Longitude:-80.592114,Altitude:206.6,Speed:0.051444445,Accuracy:1.75,Provider:gps,Time:10/15/2015 03:16:45 EDT	47.00	23.00	83
FO-061-T3-S11-4	Pinus strobus	Latitude:45.847022,Longitude:-80.592101,Altitude:206.1,Speed:0.07716667,Accuracy:1.75,Provider:gps,Time:10/15/2015 03:17:42 EDT	57.00	25.00	86

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Core Sampling		
Tree ID	FO-061-T3-S11-4	
Species	Pinus strobus	
DBH (cm)	57.00	
Height (m)	25.00	
Core Sample ID	FO-061-T3-S11-4	
Location	Latitude:45.847021,Longitude:-80.592099,Altitude:205.6,Speed:0.10288889,Accuracy:1.75,Provider:gps,Time:10/15/2015 03:18:32 EDT	

Stand Species				2234
	Height	Cover	Species Dominance	
Canopy	1 >25m	3 25 - 60%	Picea glauca > pinus strobus	
Sub Canopy	2 >6-25m	4 > 60%	Abies balsamia>picea glauca> betula papyrifera	
Shrub	4 >1-2m	3 25 - 60%	Wild raisin > betula papyrifera	
Groundcover	6 >0.2-0.5m	3 25 - 60%	Bracken fern>cornus canadensis > goldthread	
Floating & Submerged				

Stand Composition					2234
	<10	10-24	25-50	>50	
Size Class Analysis		A		R	
Standing Snags	R	O	O	N	
Deadfall / Logs	O	O	O	R	
Species Dominance <10	Abies balsamia > Acer rubrum >				
Species Dominance 10-24	Abies balsamia>picea glauca>Acer rubrum>Betula				
Species Dominance 25-50	Picea glauca>pinus strobus>populous tremuloides				
Species Dominance >50	Pinus strobus				

Map Number	FO-061-5	Field Crew	T. SHORNEY , E . MCNAUGHTON	56
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Feature ID	FO-061			
Project Number	60341251	Air Temp. (degC)	6.00	Weather Notes
Tablet	AECOM12	Wind Speed (beaufort)	2 Slight breeze felt on face	
Start Date	10/14/2015 11:40:10 AM	Precipitation	none	
End Date	10/15/2015 12:23:55 PM	Cloud Cover	0.00	

Plot ID	FO-061-T4-S13	Location	Latitude:45.84275,Longitude:-80.588964,Altitude:195.2,Speed:0.0926,Accuracy:2.1,Provider:gps,Time:10/14/2015 11:43:26 EDT	83
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Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally


1592

Notes		Location	
Dead		Latitude:45.842789,Longitude:-80.589021,Altitude:197.7,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:10/14/2015 11:45:11 EDT	

Species	Tally	ID
Pinus strobus	10.00	3446
Abies balsamia	2.00	3449
Pinus resinosa	1.00	3452

DBH					
tree id	Species	tree location	DBH	Height	ID
Tr-FO-061-T4-S13-1	Pinus strobus	Latitude:45.842767,Longitude:-80.589041,Altitude:199.2,Speed:0.0463,Accuracy:1.8,Provider:gps,Time:10/14/2015 11:49:58 EDT	44.00	20.00	89

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	<input type="text" value="No"/>
Cut stumps / logs - recent	<input type="text" value="No"/>
Roads / trails	<input type="text" value="No"/>
Exotic / invasive plants	<input type="text" value="No"/>
Signs of fire	<input type="text" value="No"/>
Other	<input type="text" value="No"/>

Tree Core Sampling		
Tree ID	<input type="text" value="FO-061-T4-S13"/>	
Species	<input type="text" value="Pinus strobus"/>	
DBH (cm)	<input type="text" value="44.00"/>	
Height (m)	<input type="text" value="20.00"/>	
Core Sample ID	<input type="text" value="FO-061-T4-S13"/>	
Location	Latitude:45.842774,Longitude:-80.589063,Altitude:199.4,Speed:0.051444445,Accuracy:2.1,Provider:gps,Time:10/14/2015 12:07:50 EDT	

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Filter Start Date 10/1/2015

Filter End Date 10/30/2015



# Old Growth Forest Survey

Stand Species

2237

	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Pinus strobus >> pinus resinosa
Sub Canopy	2 >6-25m	3 25 - 60%	Pinus strobus > abies balsamia > Acer rubrum
Shrub	4 >1-2m	2 10 - 25%	Abies balsamia > Acer rubrum
Groundcover	6 >0.2-0.5m	3 25 - 60%	Wintergreen > cornus canadensis
Floating & Submerged			

Stand Composition


2237

	<10	10-24	25-50	>50
Size Class Analysis	O	O	A	
Standing Snags	R	R	N	N
Deadfall / Logs	O	R	R	N
Species Dominance <10	Abies balsamia			
Species Dominance 10-24	Abies balsamia			
Species Dominance 25-50	Pinus strobus > pinus resinosa			
Species Dominance >50				

Plot ID	FO-061-T4-S12	Location	Latitude:45.842789,Longitude:-80.588977,Altitude:201.5,Speed:0.16976666,Accuracy:2.7,Provider:gps,Time:10/14/2015 12:16:56 EDT	86
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Tree Tally

1595

Notes		Location	Latitude:45.843178,Longitude:-80.589063,Altitude:200.2,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:10/14/2015 12:20:30 EDT	
Dead	1.00			

Species	Tally	ID
Pinus strobus	4.00	3455
Populus tremuloides	3.00	3458
Abies balsamia	1.00	3461

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T4-S12-1	Pinus strobus	Latitude:45.843193,Longitude:-80.589072,Altitude:199.9,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:10/14/2015 12:24:22 EDT	39.00	15.00	92

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	No
Cut stumps / logs - recent	No
Roads / trails	No
Exotic / invasive plants	No
Signs of fire	No
Other	No

Tree Core Sampling	
Tree ID	FO-061-T4-S12-1
Species	Pinus strobus
DBH (cm)	39.00
Height (m)	22.00
Core Sample ID	FO-061-T4-S12
Location	Latitude:45.843233,Longitude:-80.589033,Altitude:199.8,Speed:0.0463,Accuracy:1.5,Provider:gps,Time:10/14/2015 12:26:42 EDT

			77
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Stand Species			
	2240		
	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Pinus strobus > populus tremuloides
Sub Canopy	2 >6-25m	3 25 - 60%	Pinus strobus > abies balsamia
Shrub			Abies balsamia
Groundcover	7 <0.2m		Cornus canadensis > wintergreen
Floating & Submerged			

Stand Composition				
	2240			
	<10	10-24	25-50	>50
Size Class Analysis	O	A	O	N
Standing Snags	R	R	R	N
Deadfall / Logs	R	O	O	N
Species Dominance <10	Abies balsamia			
Species Dominance 10-24	Pinus strobus > populus tremuloides			
Species Dominance 25-50	Pinus strobus			
Species Dominance >50				


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Plot ID	FO-061-T4-S11	Location	Latitude:45.84324,Longitude:-80.589098,Altitude:207.1,Speed:0.041155554,Accuracy:1.5,Provider:gps,Time:10/14/2015 12:49:28 EDT	89
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Tree Tally 1598

Notes		Location	Latitude:45.843573,Longitude:-80.5892,Altitude:203.3,Speed:0.02572222,Accuracy:1.75,Provider:gps,Time:10/14/2015 12:51:59 EDT	
Dead				

Species	Tally	ID
Pinus strobus	3.00	3464
Abies balsamia	2.00	3467
Picea glauca	2.00	3470
Acer rubrum	3.00	3473
Betula papyrifera	1.00	3476

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T4-S11-1	Pinus strobus	Latitude:45.843567,Longitude:-80.589172,Altitude:204.0,Speed:0.07202222,Accuracy:2.1,Provider:gps,Time:10/14/2015 12:55:44 EDT	54.00	20.00	95
FO-061-T4-S11-2	Pinus strobus	Latitude:45.843573,Longitude:-80.589107,Altitude:203.8,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:14:22 EDT	45.00	21.00	98

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="Yes"/>	Remnants of burnt stumps
Other	<input type="text" value="No"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID

Species

DBH (cm)

Height (m)

Core Sample ID

Location



80

## Stand Species

2243

	Height	Cover	Species Dominance
Canopy	1 >25m	3 25 - 60%	Pinus strobus
Sub Canopy	2 >6-25m	4 > 60%	Pinus strobus > picea glauca > Acer rubrum
Shrub	4 >1-2m	3 25 - 60%	Abies balsamia > wild raisin
Groundcover			Cornus canadensis > wintergreen > goldthread
Floating & Submerged			

## Stand Composition

2243

	<10	10-24	25-50	>50
Size Class Analysis	<input type="text" value="O"/>	<input type="text" value="A"/>	<input type="text" value="O"/>	<input type="text" value="N"/>
Standing Snags	<input type="text" value="O"/>	<input type="text" value="O"/>	<input type="text" value="R"/>	<input type="text" value="N"/>
Deadfall / Logs	<input type="text" value="O"/>	<input type="text" value="O"/>	<input type="text" value="O"/>	<input type="text" value="N"/>
Species Dominance <10	<input type="text" value="Abies balsamia"/>			
Species Dominance 10-24	<input type="text" value="Pinus strobus &gt; picea glauca &gt; Acer rubrum"/>			
Species Dominance 25-50	<input type="text" value="Pinus strobus &gt; picea glauca"/>			
Species Dominance >50	<input type="text"/>			

Plot ID  Location

92


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1601

Notes		Location	
Dead		Latitude:45.844014,Longitude:-80.589376,Altitude:200.6,Speed:0.04115554,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:19:47 EDT	

Species	Tally	ID
Pinus strobus	8.00	3479
Abies balsamia	2.00	3482
Acer rubrum	2.00	3485

DBH					
tree id	Species	tree location	DBH	Height	ID
TR-FO-061-T4-S10-1	Pinstro>picglau>abies balsamia > Acer rubrum	Latitude:45.844111,Longitude:-80.589367,Altitude:200.8,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:23:09 EDT	45.00	25.00	101
TR-FO-061-T4-S10-2	Pinus strobus	Latitude:45.844154,Longitude:-80.589331,Altitude:200.8,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:24:51 EDT	41.00	22.00	104
TR-FO-061-T4-S10-3	Pinus strobus	Latitude:45.844194,Longitude:-80.589344,Altitude:200.7,Speed:0.35496667,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:25:29 EDT	41.00	22.00	107
TR-FO-061-T4-S10-4	Pinus strobus	Latitude:45.844241,Longitude:-80.589404,Altitude:201.9,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:27:42 EDT	46.00	21.00	110
TR-FO-061-T4-S10-5	Pinus strobus	Latitude:45.844227,Longitude:-80.589422,Altitude:202.6,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:28:44 EDT	40.00	21.00	113
TR-FO-061-T4-S10-6	Pinus strobus	Latitude:45.844168,Longitude:-80.5894,Altitude:203.8,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:29:30 EDT	46.00	21.00	116

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	No
Cut stumps / logs - recent	No
Roads / trails	No
Exotic / invasive plants	No
Signs of fire	Yes Old rotten stumps
Other	No

Tree Core Sampling	
Tree ID	FO-061-T4-S10-1
Species	Pinus strobus
DBH (cm)	54.00
Height (m)	25.00
Core Sample ID	FO-061-T4-S10
Location	Latitude:45.844168,Longitude:-80.589325,Altitude:204.8,Speed:0.16462222,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:36:11 EDT

			83
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Stand Species			
	2246		
	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Pinus strobus > picea glauca
Sub Canopy	2 >6-25m	4 > 60%	Pinus strobus > picea glauca > Acer rubrum
Shrub	3 >2-6m	3 25 - 60%	Abies balsamia > Acer rubrum
Groundcover	6 >0.2-0.5m	2 10 - 25%	Cornus canadensis > Acer rubrum
Floating & Submerged			

Stand Composition				
	2246			
	<10	10-24	25-50	>50
Size Class Analysis	O	A	O	
Standing Snags	O	O	R	N
Deadfall / Logs	O	R	R	N
Species Dominance <10	Abies balsamia > Acer rubrum			
Species Dominance 10-24	Pinus strobus > abies balsamia > picea glau			
Species Dominance 25-50	Pinus strobus> abies balsamia			
Species Dominance >50				


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Plot ID	FO-061-T4-S9	Location	Latitude:45.844522,Longitude:-80.589557,Altitude:204.2,Speed:0.020577777,Accuracy:2.7,Provider:gps,Time:10/14/2015 01:52:16 EDT	95
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Tree Tally	1604
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Notes		Location	Latitude:45.844525,Longitude:-80.589556,Altitude:204.1,Speed:0.03601111,Accuracy:3.0,Provider:gps,Time:10/14/2015 01:52:18 EDT	
Dead				

Species	Tally	ID
Pinus strobus	4.00	3488
Abies balsamia	2.00	3491
Acer rubrum	3.00	3494

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T4-S09	Pinus strobus	Latitude:45.844587,Longitude:-80.589568,Altitude:208.6,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:10/15/2015 11:38:03 EDT	47.00	22.00	119
FO-061-T4-S09-2	Pinus strobus	Latitude:45.844576,Longitude:-80.589555,Altitude:208.4,Speed:0.35496667,Accuracy:1.75,Provider:gps,Time:10/15/2015 11:39:04 EDT	40.00	20.00	122

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	<input type="checkbox"/> No	
Cut stumps / logs - recent	<input type="checkbox"/> No	
Roads / trails	<input type="checkbox"/> No	
Exotic / invasive plants	<input type="checkbox"/> No	
Signs of fire	<input checked="" type="checkbox"/> Yes	Remnants of burnt stumps
Other	<input type="checkbox"/> No	

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID: FO-061-T4-S9-1

Species: Pinus strobus

DBH (cm): 47.00

Height (m): 22.00

Core Sample ID: FO-061-T4-S9

Location: Latitude:45.84461,Longitude:-80.589546,Altitude:208.2,Speed:0.0051444443,Accuracy:1.75,Provider:gps,Time:10/15/2015 11:34:45 EDT



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## Stand Species

2249

	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Pinus strobus
Sub Canopy	2 >6-25m	4 > 60%	Abies balsamia > pinus strobus > Acer rubrum
Shrub	4 >1-2m	2 10 - 25%	Alnus incana > Acer rubrum
Groundcover	7 <0.2m		Sphagnum moss> winrergreen
Floating & Submerged			

## Stand Composition

2249

	<10	10-24	25-50	>50
Size Class Analysis	A	O	O	N
Standing Snags	R	O	R	N
Deadfall / Logs	O	R	R	N
Species Dominance <10	Abies balsamia			
Species Dominance 10-24	Abies balsamia > picea glauca			
Species Dominance 25-50	Pinus strobus			
Species Dominance >50				

Plot ID: FO-061-T4-S8

Location: Latitude:45.844942,Longitude:-80.589572,Altitude:206.4,Speed:0.0257222222,Accuracy:2.0,Provider:gps,Time:10/14/2015 02:17:19 EDT


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# Old Growth Forest Survey

Tree Tally


1607

Notes		Location	
Dead		Latitude:45.844942,Longitude:-80.589572,Altitude:206.4,Speed:0.0823111,Accuracy:2.0,Provider:gps,Time:10/14/2015 02:17:34 EDT	

Species	Tally	ID
Picea glauca	2.00	3497
Pinus strobus	4.00	3500
Picea mariana	1.00	3503
Abies balsamia	3.00	3506
Acer rubrum	1.00	3509

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T4-S08-1	Pinus strobus	Latitude:45.845036,Longitude:-80.589532,Altitude:209.1,Speed:0.0823111,Accuracy:2.0,Provider:gps,Time:10/15/2015 11:44:43 EDT	50.00	25.00	125

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="Yes"/>	Remnants of burnt stumps
Other	<input type="text" value="No"/>	<input type="text"/>

Tree Core Sampling		
Tree ID	<input type="text" value="FO-061-T4-S8-1"/>	
Species	<input type="text" value="Pinus strobus"/>	
DBH (cm)	<input type="text" value="50.00"/>	
Height (m)	<input type="text" value="25.00"/>	
Core Sample ID	<input type="text" value="FO-061-T4-S8"/>	
Location	Latitude:45.844986,Longitude:-80.589706,Altitude:205.7,Speed:0.010288889,Accuracy:2.4,Provider:gps,Time:	

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Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Species

2252

	Height	Cover	Species Dominance
Canopy	1 >25m	3 25 - 60%	Pinus strobus > picea glauca
Sub Canopy	2 >6-25m	4 > 60%	Picea glauca > pinus strobus > Acer rubrum
Shrub	5 >0.5-1m	3 25 - 60%	Abies balsamia > Acer rubrum
Groundcover	6 >0.2-0.5m	3 25 - 60%	Wintergreen > cornus canadensis
Floating & Submerged			

Stand Composition

2252

	<10	10-24	25-50	>50
Size Class Analysis	A	O	O	R
Standing Snags	R	R	N	N
Deadfall / Logs	O	O	R	N
Species Dominance <10	Abies balsamia > Acer rubrum			
Species Dominance 10-24	Picea glauca > abies balsamia > Acer rubrum			
Species Dominance 25-50	Pinus strobus > picea glauca			
Species Dominance >50	Pinus strobus			

Plot ID  Location

101

Tree Tally

1610

Notes

Location

Dead



Species	Tally	ID
Abies balsamia	2.00	3512
Populus tremuloides	3.00	3515
Acer rubrum	1.00	3518
Pinus strobus	2.00	3521

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T4-S02-1	Pinus strobus	Latitude:45.845358,Longitude:-80.590061,Altitude:206.4,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:10/14/2015 02:52:41 EDT	57.00	25.00	128
TR-FO-061-T4-S02-2	Pinus strobus	Latitude:45.845423,Longitude:-80.590001,Altitude:211.1,Speed:0.0463,Accuracy:1.75,Provider:gps,Time:10/15/2015 11:49:36 EDT	44.00	20.00	131

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

## Tree Core Sampling

Tree ID	<input type="text" value="FO-061-T4-S2-1"/>		92
Species	<input type="text" value="Pinus strobus"/>		
DBH (cm)	<input type="text" value="57.00"/>		
Height (m)	<input type="text" value="25.00"/>		
Core Sample ID	<input type="text" value="FO-061-T4-S2"/>		
Location	<input type="text" value="Latitude:45.845379,Longitude:-80.589991,Altitude:205.5,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:10/14/2015 02:55:05 EDT"/>		

## Stand Species

2255

	Height	Cover	Species Dominance
Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Pinus strobus &gt; populus tremuloides"/>
Sub Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Abies balsamia &gt; Acer rubrum &gt; populus tremuloides"/>
Shrub	<input type="text" value="4 &gt;1-2m"/>	<input type="text" value="2 10 - 25%"/>	<input type="text" value="Wild raisin &gt; betula papyrifera"/>
Groundcover	<input type="text" value="6 &gt;0.2-0.5m"/>	<input type="text" value="2 10 - 25%"/>	<input type="text" value="Cornus canadensis &gt; wintergreen"/>
Floating & Submerged	<input type="text"/>	<input type="text"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2255

<10    10-24    25-50    >50

Size Class Analysis         A         R

Standing Snags             R     N

Deadfall / Logs                 N

Species Dominance <10    Abies balsamia > Acer rubrum

Species Dominance 10-24    Abies balsamia > Acer rubrum

Species Dominance 25-50    Pinus strobus = abies balsamia > Acer rubrum

Species Dominance >50    Pinus strobus

Plot ID   

Location    Latitude:45.84567,Longitude:-80.59026,Altitude:205.0,Speed:0.025722222,Accuracy:1.75,Provider:gps,Time:10/14/2015 02:58:49 EDT

104

Tree Tally

1613

Notes   

Location    Latitude:45.84567,Longitude:-80.59026,Altitude:205.0,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:10/14/2015 02:59:05 EDT



Dead   

Species	Tally	ID
Picea glauca	1.00	3524
Abies balsamia	2.00	3527
Pinus strobus	5.00	3530

DBH

tree id	Species	tree location	DBH	Height	ID
FO-061-T4-S01-1	Pinus strobus, Abies balsamia, Acer rubrum	Latitude:45.845706,Longitude:-80.590221,Altitude:209.2,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:10/14/2015 03:22:25 EDT	49.00	22.00	134
FO-061-T4-S01-2	Populus tremuloides	Latitude:45.845622,Longitude:-80.590204,Altitude:208.3,Speed:0.32924443,Accuracy:1.75,Provider:gps,Time:10/15/2015 11:55:18 EDT	48.00	25.00	137

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	No
Cut stumps / logs - recent	No
Roads / trails	No
Exotic / invasive plants	No
Signs of fire	No
Other	No

Tree Core Sampling	
Tree ID	FO-061-T4-S1-1
Species	Pinus strobus
DBH (cm)	49.00
Height (m)	22.00
Core Sample ID	FO-061-T4-S1
Location	Latitude:45.845655,Longitude:-80.59019,Altitude:212.0,Speed:0.11832222,Accuracy:2.7,Provider:gps,Time:

			95
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Stand Species	
	2258

	Height	Cover	Species Dominance
Canopy	1 >25m	3 25 - 60%	Pinus strobus > populus tremuloides
Sub Canopy	2 >6-25m	4 > 60%	Abies balsamia > Acer rubrum
Shrub	4 >1-2m	2 10 - 25%	Wild raisin > Acer rubrum
Groundcover	7 <0.2m	2 10 - 25%	Cornus canadensis > wintergreen
Floating & Submerged			

Stand Composition	
	2258

	<10	10-24	25-50	>50
Size Class Analysis		A	A	O
Standing Snags	R	O	O	N
Deadfall / Logs	R	O	O	N
Species Dominance <10	Abies balsamia			
Species Dominance 10-24	Abies balsamia > Acer rubrum			
Species Dominance 25-50	Populus tremuloides = pinus strobus			
Species Dominance >50	Pinus strobus = populus tremuloides			


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Plot ID	FO-061-T4-S3	Location	Latitude:45.845366,Longitude:-80.589174,Altitude:198.8,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:10/14/2015 03:46:19 EDT	107
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Tree Tally 1616

Notes		Location	Latitude:45.845366,Longitude:-80.589174,Altitude:198.8,Speed:0.010288889,Accuracy:1.75,Provider:gps,Time:	
Dead				

Species	Tally	ID
Pinus strobus	3.00	3533
Acer rubrum	2.00	3536
Populus tremuloides	2.00	3539
Betula papyrifera	1.00	3542

DBH					
tree id	Species	tree location	DBH	Height	ID
TR-FO-061-T4-S03-1	Pinus strobus	Latitude:45.845373,Longitude:-80.589122,Altitude:205.6,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:01:12 EDT	47.00	22.00	140
FO-061-T4-S03-2	Populus tremuloides	Latitude:45.845379,Longitude:-80.589208,Altitude:204.0,Speed:0.22635555,Accuracy:1.5,Provider:gps,Time:10/15/2015 12:02:15 EDT	58.00	25.00	143
FO-061-T4-S03-3	Pinus strobus	Latitude:45.845377,Longitude:-80.589215,Altitude:204.0,Speed:0.010288889,Accuracy:2.0,Provider:gps,Time:10/15/2015 12:03:03 EDT	41.00	23.00	146

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID

Species

DBH (cm)

Height (m)

Core Sample ID

Location



98

## Stand Species

2261

	Height	Cover	Species Dominance
Canopy	1 >25m	2 10 - 25%	Pinus strobus > populus tremuloides
Sub Canopy	2 >6-25m	4 > 60%	Abies balsamia = pic glauca > Acer rubrum=pinustro
Shrub	4 >1-2m	4 > 60%	Wild raisin> Acer rubrum > abies balsamia
Groundcover	6 >0.2-0.5m	3 25 - 60%	Cornus canadensis > goldthread
Floating & Submerged			

## Stand Composition

2261

	<10	10-24	25-50	>50
Size Class Analysis	<input type="text" value="O"/>	<input type="text" value="A"/>	<input type="text" value="A"/>	<input type="text"/>
Standing Snags	<input type="text" value="R"/>	<input type="text" value="R"/>	<input type="text" value="R"/>	<input type="text" value="N"/>
Deadfall / Logs	<input type="text" value="O"/>	<input type="text" value="O"/>	<input type="text" value="R"/>	<input type="text" value="N"/>
Species Dominance <10	<input type="text" value="Abies balsamia &gt; Acer rubrum"/>			
Species Dominance 10-24	<input type="text" value="Abies balsamia &gt; Acer rubrum &gt; Betula papyr"/>			
Species Dominance 25-50	<input type="text" value="Pinus strobus &gt; abies balsamia &gt; poptrm"/>			
Species Dominance >50	<input type="text" value="Populus tremuloides &gt; pinus strobus"/>			

Plot ID  Location

110


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1619

Notes		Location	
Dead		Latitude:45.845815,Longitude:-80.58838,Altitude:204.0,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:10/15/2015 12:48:29 EDT	

Species	Tally	ID
Pinus strobus	5.00	3545
Abies balsamia	3.00	3548
Acer rubrum	1.00	3551
Betula allegheniensis	1.00	3554

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T4-S04-2	Pinus strobus	Latitude:45.845825,Longitude:-80.588338,Altitude:206.5,Speed:0.030866666,Accuracy:1.5,Provider:gps,Time:10/15/2015 12:47:16 EDT	45.00	22.00	149
FO-061-T4-S04-3	Pinus strobus	Latitude:45.845829,Longitude:-80.588332,Altitude:206.0,Speed:0.5556,Accuracy:1.5,Provider:gps,Time:10/15/2015 12:51:16 EDT	42.00	22.00	152
FO-061-T4-S04-4	Pinus strobus	Latitude:45.845827,Longitude:-80.588262,Altitude:205.5,Speed:0.5247333,Accuracy:1.5,Provider:gps,Time:10/15/2015 12:51:53 EDT	45.00	23.00	155
FO-061-T4-S04-5	Pinus strobus	Latitude:45.845797,Longitude:-80.588256,Altitude:204.8,Speed:0.2675111,Accuracy:1.75,Provider:gps,Time:10/15/2015 12:52:26 EDT	42.00	20.00	158
FO-061-T4-S04-1	Pinus strobus	Latitude:45.845772,Longitude:-80.588281,Altitude:204.1,Speed:0.015433333,Accuracy:2.0,Provider:gps,Time:10/15/2015 12:52:57 EDT	48.00	25.00	161

Filter Start Date 10/1/2015

Filter End Date 10/30/2015




# Old Growth Forest Survey

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	<input type="text" value="No"/>
Cut stumps / logs - recent	<input type="text" value="No"/>
Roads / trails	<input type="text" value="No"/>
Exotic / invasive plants	<input type="text" value="No"/>
Signs of fire	<input type="text" value="No"/>
Other	<input type="text" value="No"/>

Tree Core Sampling	
Tree ID	<input type="text" value="FO-061-T4-S4-1"/>
Species	<input type="text" value="Pinus strobus"/>
DBH (cm)	<input type="text" value="48.00"/>
Height (m)	<input type="text" value="25.00"/>
Core Sample ID	<input type="text" value="FO-061-T4-S4-1"/>
Location	Latitude:45.845838,Longitude:-80.588373,Altitude:208.6,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:10/15/2015 12:44:33 EDT

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Stand Species			
	2264		
	Height	Cover	Species Dominance
Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="2 10 - 25%"/>	<input type="text" value="Pinus strobus"/>
Sub Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Abies balsamia&gt;pinus strobus &gt; Acer rubrum&gt;Betula papyrifera"/>
Shrub	<input type="text" value="4 &gt;1-2m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Abies balsamia &gt; Acer rubrum"/>
Groundcover	<input type="text" value="6 &gt;0.2-0.5m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Bracken fern&gt;cornus canadensis &gt; trientalis borealis"/>
Floating & Submerged	<input type="text"/>	<input type="text"/>	<input type="text"/>

Stand Composition				
	2264			
	<10	10-24	25-50	>50
Size Class Analysis	<input type="text" value="O"/>	<input type="text" value="A"/>	<input type="text" value="O"/>	<input type="text" value="R"/>
Standing Snags	<input type="text" value="O"/>	<input type="text" value="O"/>	<input type="text" value="R"/>	<input type="text" value="N"/>
Deadfall / Logs	<input type="text" value="O"/>	<input type="text" value="O"/>	<input type="text" value="R"/>	<input type="text" value="N"/>
Species Dominance <10	<input type="text" value="Abies balsamia &gt; Acer rubrum &gt; pinus strobu"/>			
Species Dominance 10-24	<input type="text" value="Abies balsamia&gt;Acer rubrum&gt;pinus strobus"/>			
Species Dominance 25-50	<input type="text" value="Pinus strobus"/>			
Species Dominance >50	<input type="text" value="Pinus strobus"/>			


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Plot ID	FO-061-T4-S5	Location	Latitude:45.8459,Longitude:-80.587852,Altitude:202.4,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:56:58 EDT	113
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Tree Tally	1622
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Notes		Location	Latitude:45.8459,Longitude:-80.587852,Altitude:202.4,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:57:19 EDT	
Dead				

Species	Tally	ID
Abies balsamia	6.00	3557
Acer rubrum	3.00	3560
Betula allegheniensis	1.00	3563
Populus tremuloides	1.00	3566

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T4-S05-1	Populus tremuloides	Latitude:45.845886,Longitude:-80.587811,Altitude:201.8,Speed:0.010288889,Accuracy:1.75,Provider:gps,Time:10/15/2015 01:00:45 EDT	44.00	25.00	164

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

Tree Core Sampling		
Tree ID	FO-061-T4-S5-1	104
Species	Populus tremuloides	
DBH (cm)	44.00	
Height (m)	25.00	
Core Sample ID	FO-061-T4-S5-1	
Location	Latitude:45.845915,Longitude:-80.587815,Altitude:200.8,Speed:0.06173333,Accuracy:1.75,Provider:gps,Time:10/15/2015 01:01:20 EDT	

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Species

2267

	Height	Cover	Species Dominance
Canopy	1 >25m	2 10 - 25%	Pinus strobus > populus tremuloides
Sub Canopy	2 >6-25m	4 > 60%	Abies balsamia>Acer rubrum>Betula papyrifera>betula allegheniensis
Shrub	4 >1-2m	3 25 - 60%	Wild raisin>betula papyrifera >abies balsamia
Groundcover	6 >0.2-0.5m	3 25 - 60%	Bracken fern>cornus canadensis>goldthread
Floating & Submerged			

Stand Composition

2267

	<10	10-24	25-50	>50
Size Class Analysis	O	A	O	
Standing Snags	O	O	R	N
Deadfall / Logs	O	O	R	N
Species Dominance <10	Abies balsamia> Acer rubrum			
Species Dominance 10-24	Abies balsamia>Acer rubrum > Betula papyrifera			
Species Dominance 25-50	Pinus strobus>Acer rubrum>Betula papyrifera>abi			
Species Dominance >50	Pinus strobus > populus tremuloides			

Plot ID	FO-061-T4-S6	Location	Latitude:45.846105,Longitude:-80.587238,Altitude:198.0,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:10/15/2015 01:15:52 EDT
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Tree Tally

1625

Notes		Location	Latitude:45.846105,Longitude:-80.587238,Altitude:198.0,Speed:0.010288889,Accuracy:2.0,Provider:gps,Time:10/15/2015 01:16:12 EDT
Dead			



Species	Tally	ID
Betula allegheniensis	3.00	3569
Acer rubrum	4.00	3572
Pinus strobus	2.00	3575

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T4-S06-1	Pinus strobus	Latitude:45.846122,Longitude:-80.587207,Altitude:198.9,Speed:0.07202222,Accuracy:1.75,Provider:gps,Time:10/15/2015 01:18:56 EDT	60.00	22.00	167
FO-061-T4-S06-2	Pinus strobus	Latitude:45.846118,Longitude:-80.587335,Altitude:195.9,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:10/15/2015 01:20:06 EDT	50.00	23.00	170

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	<input type="text" value="Yes"/>	<input type="text" value="Possible signs of logging activity, few cut stumps"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

## Tree Core Sampling

Tree ID	<input type="text" value="FO-061-T4-S6-1"/>		107
Species	<input type="text" value="Pinus strobus"/>		
DBH (cm)	<input type="text" value="60.00"/>		
Height (m)	<input type="text" value="22.00"/>		
Core Sample ID	<input type="text" value="FO-061-T4-S6-1"/>		
Location	<input type="text" value="Latitude:45.846099,Longitude:-80.587161,Altitude:197.0,Speed:0.0051444443,Accuracy:2.0,Provider:gps,Time:10/15/2015 01:25:38 EDT"/>		

## Stand Species

2270

	Height	Cover	Species Dominance
Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="2 10 - 25%"/>	<input type="text" value="Pinus strobus &gt; betula papyrifera"/>
Sub Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Abies balsamia = Acer rubrum &gt;Betula papyrifera"/>
Shrub	<input type="text" value="4 &gt;1-2m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Wild raisin&gt;Acer rubrum&gt;"/>
Groundcover	<input type="text" value="6 &gt;0.2-0.5m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Bracken fern &gt; cornus canadensis"/>
Floating & Submerged	<input type="text"/>	<input type="text"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2270

<10    10-24    25-50    >50

Size Class Analysis         A       

Standing Snags             R     N

Deadfall / Logs                 R

Species Dominance <10   


Species Dominance 10-24   

Species Dominance 25-50   

Species Dominance >50   

Plot ID        Location        119

Tree Tally    1628

Notes        Location        

Dead   

Species	Tally	ID
Pinus strobus	2.00	3578
Picea glauca	7.00	3581
Abies balsamia	3.00	3584
Acer rubrum	1.00	3587
Betula papyrifera	1.00	3590


**DBH**

tree id	Species	tree location	DBH	Height	ID
FO-061-T4-S07-1	Pinus strobus	Latitude:45.84637,Longitude:-80.586691,Altitude:196.2,Speed:0.087455556,Accuracy:2.1,Provider:gps,Time:10/15/2015 01:59:16 EDT	58.00	20.00	173
FO-061-T4-S07-2	Picea glauca	Latitude:45.846305,Longitude:-80.586713,Altitude:195.0,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:10/15/2015 02:00:31 EDT	47.00	22.00	176
FO-061-T4-S07-3	Picea glauca	Latitude:45.846313,Longitude:-80.586665,Altitude:193.2,Speed:0.44756666,Accuracy:1.75,Provider:gps,Time:10/15/2015 02:01:35 EDT	45.00	20.00	179

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Disturbance Indicators				
	Present	Details		
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>		
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>		
Roads / trails	<input type="text" value="No"/>	<input type="text"/>		
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>		
Signs of fire	<input type="text" value="No"/>	<input type="text"/>		
Other	<input type="text" value="No"/>	<input type="text"/>		
Tree Core Sampling				
Tree ID	<input type="text" value="FO-061-T4-S7-1"/>			110
Species	<input type="text" value="Pinus strobus"/>			
DBH (cm)	<input type="text" value="58.00"/>			
Height (m)	<input type="text" value="20.00"/>			
Core Sample ID	<input type="text" value="FO-061-T4-S7-1"/>			
Location	<input type="text" value="Latitude:45.846288,Longitude:-80.586735,Altitude:192.6,Speed:0.041155554,Accuracy:1.75,Provider:gps,Time:10/15/2015 02:02:52 EDT"/>			
Stand Species				
	Height	Cover	Species Dominance	
Canopy	<input type="text" value="1 &gt;25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Pinus strobus &gt; picea glauca"/>	
Sub Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Abies balsamia&gt;populous tremuloides&gt;betula papyrifera"/>	
Shrub	<input type="text" value="4 &gt;1-2m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Abies balsamia &gt; Acer rubrum"/>	
Groundcover	<input type="text" value="6 &gt;0.2-0.5m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Bracken fern&gt; large leaved aster&gt; cornus canadensis"/>	
Floating & Submerged	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Stand Composition				
	<10	10-24	25-50	>50
Size Class Analysis	<input type="text" value="O"/>	<input type="text" value="A"/>	<input type="text" value="O"/>	<input type="text" value="O"/>
Standing Snags	<input type="text" value="R"/>	<input type="text" value="R"/>	<input type="text" value="R"/>	<input type="text" value="N"/>
Deadfall / Logs	<input type="text" value="O"/>	<input type="text" value="O"/>	<input type="text" value="R"/>	<input type="text" value="N"/>
Species Dominance <10	<input type="text" value="Abies balsamia"/>			
Species Dominance 10-24	<input type="text" value="Abies balsamia&gt; populous tremuloides"/>			
Species Dominance 25-50	<input type="text" value="Abies balsamia&gt;populous tremuloides&gt;"/>			
Species Dominance >50	<input type="text" value="Pinus strobus &gt; populous tremuloides"/>			
Map Number	<input type="text" value="FO-057-1"/>	Field Crew	<input type="text" value="JULIE ADAM"/>	

2273

2273

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Filter Start Date 10/1/2015


Filter End Date 10/30/2015

# Old Growth Forest Survey

Feature ID	FO-057	Air Temp. (degC)	7.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	2 Slight breeze felt on face	
Tablet	AECOM6	Precipitation	none	
Start Date	10/15/2015 9:46:42 AM	Cloud Cover	85.00	
End Date	10/15/2015 1:34:45 PM			

Plot ID	FO-057-T1-S1	Location	Latitude:45.856854,Longitude:-80.614623,Altitude:202.5,Speed:0.03601111,Accuracy:2.4,Provider:gps,Time:10/15/2015 09:48:20 EDT	122
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Tree Tally	1631
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Notes		Location	Latitude:45.856866,Longitude:-80.614632,Altitude:202.2,Speed:0.066877775,Accuracy:2.7,Provider:gps,Time:10/15/2015 09:50:25 EDT	
Dead	1.00			

Species	Tally	ID
Acer rubrum	10.00	3593
Populus tremuloides	2.00	3596
Pinus strobus	8.00	3599
Betula papyrifera	1.00	3602

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-057-T1-S1-6	Pinus strobus	Latitude:45.856865,Longitude:-80.614553,Altitude:201.3,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:15:53 EDT	40.50	13.00	182
FO-057-T1-S1-2	Pinus strobus	Latitude:45.856836,Longitude:-80.614573,Altitude:200.7,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:10/15/2015 10:16:46 EDT	49.50	14.00	185
FO-057-T1-S1-3	Pinus strobus	Latitude:45.856827,Longitude:-80.614581,Altitude:200.3,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:10/15/2015 10:17:48 EDT	40.50	13.00	188
FO-057-T1-S1-4	Pinus strobus	Latitude:45.856872,Longitude:-80.614607,Altitude:201.5,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:10/15/2015 10:20:07 EDT	40.00	13.00	191
FO-057-T1-S1-5	Pinus strobus	Latitude:45.85688,Longitude:-80.614671,Altitude:202.0,Speed:0.0051444443,Accuracy:1.8,Provider:gps,Time:10/15/2015 10:21:57 EDT	43.00	14.00	194

Filter Start Date 10/1/2015


Filter End Date 10/30/2015

# Old Growth Forest Survey

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Tree Core Sampling

Tree ID	FO-057-T1-S1-1		113
Species	Pinus strobus		
DBH (cm)	50.00		
Height (m)	15.00		
Core Sample ID	FO-057-T1-S1-1		
Location	Latitude:45.85686,Longitude:-80.61454,Altitude:201.4,Speed:0.10803334,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:06:24 EDT		

## Stand Species

2276

	Height	Cover	Species Dominance
Canopy	2 >6-25m	4 > 60%	Pinus strobus > Populus tremuloides = Acer rubrum > Quercus rubra
Sub Canopy	3 >2-6m	2 10 - 25%	Acer rubrum > Quercus rubra > pinus strobus > BETULA PAPYRIFERA
Shrub	4 >1-2m	3 25 - 60%	Acer rubrum > quercus rubra > Viburnum cassinoides > Pteridium aquilinum
Groundcover	6 >0.2-0.5m	3 25 - 60%	Gaultheria procumbens > Acer rubrum > cornus canadense > Club moss
Floating & Submerged			

## Stand Composition

2276

	<10	10-24	25-50	>50
Size Class Analysis	A	A	A	R
Standing Snags	O	O	R	N
Deadfall / Logs	A	O	O	N
Species Dominance <10				
Species Dominance 10-24				
Species Dominance 25-50				
Species Dominance >50				

Filter Start Date 10/1/2015


Filter End Date 10/30/2015



# Old Growth Forest Survey

Plot ID	FO-057-T2-S1	Location	Latitude:45.856738,Longitude:-80.613502,Altitude:194.8,Speed:0.2675111,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:34:06 EDT	125
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Tree Tally 1634

Notes		Location	Latitude:45.856733,Longitude:-80.613493,Altitude:194.7,Speed:0.27265555,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:34:13 EDT	
Dead	4.00			

Species	Tally	ID
Quercus rubra	4.00	3605
Acer rubrum	7.00	3608
Populus grandidentata	1.00	3611
Betula papyrifera	2.00	3614
Pinus strobus	11.00	3617


DBH					
tree id	Species	tree location	DBH	Height	ID
FO-057-T2-S1-6	Pinus strobus	Latitude:45.856715,Longitude:-80.613563,Altitude:195.2,Speed:0.06173333,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:57:16 EDT	44.00	13.00	197
FO-057-T2-S1-2	Pinus strobus	Latitude:45.856696,Longitude:-80.613525,Altitude:196.6,Speed:0.16462222,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:58:18 EDT	46.50	14.00	200
FO-057-T2-S1-3	Pinus strobus	Latitude:45.856654,Longitude:-80.613569,Altitude:198.4,Speed:0.2417889,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:59:20 EDT	49.00	14.00	203
FO-057-T2-S1-4	Pinus strobus	Latitude:45.856623,Longitude:-80.613668,Altitude:198.1,Speed:0.12346666,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:01:43 EDT	50.00	15.00	206
FO-057-T2-S1-5	Pinus. Strobus	Latitude:45.856671,Longitude:-80.613716,Altitude:200.1,Speed:0.051444445,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:03:42 EDT	43.00	14.00	209

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	No <input type="text"/>
Cut stumps / logs - recent	No <input type="text"/>
Roads / trails	No <input type="text"/>
Exotic / invasive plants	No <input type="text"/>
Signs of fire	No <input type="text"/>
Other	No <input type="text"/>

Tree Core Sampling	
Tree ID	FO-057-T2-S1-1
Species	Pinus strobus
DBH (cm)	49.70
Height (m)	15.00
Core Sample ID	FO-057-T2-S1-1
Location	Latitude:45.856729,Longitude:-80.613597,Altitude:192.9,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:45:09 EDT
	
	116

Stand Species			
	2279		
	Height	Cover	Species Dominance
Canopy	2 >6-25m	4 > 60%	Pinus strobus > Acer rubrum = Quercus rubra > Betula papyrifera
Sub Canopy	3 >2-6m	3 25 - 60%	Quercus rubra = Acer rubrum > Abies balsamea
Shrub	4 >1-2m	4 > 60%	Corylus cornuta > Acer rubrum > Acer spicatum > Quercus rubra > Abies balsamea
Groundcover	6 >0.2-0.5m	2 10 - 25%	Cornus canadensis > Gaultheria procumbens > club moss >
Floating & Submerged			

Stand Composition				
	2279			
	<10	10-24	25-50	>50
Size Class Analysis	O	A	O	N
Standing Snags	O	O	R	N
Deadfall / Logs	R	O	R	N
Species Dominance <10	<input type="text"/>			
Species Dominance 10-24	<input type="text"/>			
Species Dominance 25-50	<input type="text"/>			
Species Dominance >50	<input type="text"/>			


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Plot ID	FO-057-T2-S2	Location	Latitude:45.85655,Longitude:-80.61292,Altitude:198.0,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:08:02 EDT	128
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Tree Tally 1637

Notes		Location	Latitude:45.85655,Longitude:-80.61292,Altitude:198.0,Speed:0.06173333,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:08:15 EDT	
Dead	6.00			

Species	Tally	ID
Abies balsamea	1.00	3620
Acer rubrum	2.50	3623
Pinus strobus	2.00	3626

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-057-T2-S2-2	Betula papyrifera snag	Latitude:45.856548,Longitude:-80.612697,Altitude:201.5,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:22:42 EDT	40.00	9.00	212
FO-057-T2-S2-3	Pinus strobus	Latitude:45.856493,Longitude:-80.612727,Altitude:198.8,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:24:52 EDT	45.00	12.00	215

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID

Species

DBH (cm)

Height (m)

Core Sample ID

Location



119

## Stand Species

2282

	Height	Cover	Species Dominance
Canopy	2 >6-25m	4 > 60%	Pinus strobus > Acer rubrum > Abies balsamea
Sub Canopy	3 >2-6m	2 10 - 25%	Quercus rubra > Abies balsamea
Shrub	5 >0.5-1m	2 10 - 25%	Abies balsamea > Viburnum cassinoides > Corylus cornuta
Groundcover	7 <0.2m	2 10 - 25%	Cornus canadensis > Cyripedium acaule
Floating & Submerged		0 None	

## Stand Composition

2282

	<10	10-24	25-50	>50
Size Class Analysis	O	A	O	N
Standing Snags	R	O	R	N
Deadfall / Logs	O	O	R	N
Species Dominance <10	<input type="text"/>			
Species Dominance 10-24	<input type="text"/>			
Species Dominance 25-50	<input type="text"/>			
Species Dominance >50	<input type="text"/>			

Plot ID  Location

131


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1640


Notes	Near edge of rock barren inclusion	Location	
Dead	0.00	Latitude:45.856363,Longitude:-80.612247,Altitude:209.1,Speed:0.5041556,Accuracy:2.4,Provider:gps,Time:10/15/2015 12:05:32 EDT	

Species	Tally	ID
Pinus strobus	3.00	3629
Quercus rubra	1.50	3632
Acer rubrum	3.00	3635

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Tree Core Sampling

Tree ID	FO-057-T2-S3-1		122
Species	Pinus strobus		
DBH (cm)	40.00		
Height (m)	13.00		
Core Sample ID	FO-057-T2-S3-1		
Location	Latitude:45.856219,Longitude:-80.61219,Altitude:206.8,Speed:0.02057777,Accuracy:3.0,Provider:gps,Time:10/15/2015 12:15:31 EDT		

## Stand Species

2285

	Height	Cover	Species Dominance
Canopy	2 >6-25m	4 > 60%	Pinus strobus < Abies balsamea > Acer rubrum > Quercus rubra
Sub Canopy	3 >2-6m	3 25 - 60%	Pinus strobus> Abies balsamea > Acer rubrum> Quercus rubra
Shrub	4 >1-2m	3 25 - 60%	Abies balsamea > acer rubrum>Quercus rubra > viburnum cassinoides
Groundcover	6 >0.2-0.5m	3 25 - 60%	Cornus canadensis > Gaultheria procumbens > Columba moss > Vaccinium angustifolium
Floating & Submerged			

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2285

<10    10-24    25-50    >50

Size Class Analysis               

Standing Snags               

Deadfall / Logs               

Species Dominance <10   

Species Dominance 10-24   

Species Dominance 25-50   

Species Dominance >50   

Plot ID   

Location    Latitude:45.856194,Longitude:-80.611611,Altitude:206.3,Speed:0.10803334,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:44:57 EDT

134

Tree Tally

1643

Notes   

Location    Latitude:45.856195,Longitude:-80.611611,Altitude:206.2,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:46:23 EDT



Dead   

Species	Tally	ID
Pinus strobus	4.00	3638
Populus tremuloides	1.00	3641
Quercus rubra	1.50	3644
Acer rubrum	1.00	3647

Disturbance Indicators

Present    Details

Cut stumps / logs - old       

Cut stumps / logs - recent       

Roads / trails       

Exotic / invasive plants       


Signs of fire       

Other       

Filter Start Date    10/1/2015

Filter End Date    10/30/2015

# Old Growth Forest Survey

Tree Core Sampling		
Tree ID	FO-057-T2-S4-1	
Species	Pinus strobus	
DBH (cm)	47.00	
Height (m)	16.00	
Core Sample ID	FO-057-T2-S4-1	
Location	Latitude:45.856221,Longitude:-80.611592,Altitude:203.2,Speed:0.2315,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:51:56 EDT	

125

Stand Species		
	Height	Cover
Canopy	2 >6-25m	4 > 60%
Sub Canopy	3 >2-6m	2 10 - 25%
Shrub	5 >0.5-1m	2 10 - 25%
Groundcover	7 <0.2m	3 25 - 60%
Floating & Submerged		0 None
		Species Dominance
		Pinus strobus > Quercus rubra > Acer rubrum = Populus tremuloides
		Quercus rubra > Acer rubrum
		Pteridium aquilinum > Abies balsamea > Viburnum cassinoides
		Gaultheria procumbens > Cornus canadensis

2288

Stand Composition				
	<10	10-24	25-50	>50
Size Class Analysis	O	A	R	N
Standing Snags	R	R	N	N
Deadfall / Logs	A	O	R	N
Species Dominance <10				
Species Dominance 10-24				
Species Dominance 25-50				
Species Dominance >50				

2288

Map Number	FO-061-1	Field Crew	KRISTAN WASHBURN &AMY INGRISELII & KASEY MCKENZIE	62
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Feature ID	FO-061			
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	2 Slight breeze felt on face	
Start Date	10/15/2015 10:17:53 AM	Precipitation	none	
End Date	10/15/2015 10:35:10 AM	Cloud Cover	80.00	

Plot ID	FO-061-T1-S1	Location	Latitude:45.848772,Longitude:-80.608834,Altitude:182.9,Speed:0.11317778,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:20:11 EDT	137
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Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1646

Notes		Location	
Dead		Latitude:45.848771,Longitude:-80.608835,Altitude:182.7,Speed:0.04115554,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:19:09 EDT	

Species	Tally	ID
Pinus strobus	9.00	3650

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T1-S1-1	PINUS STROBUS	Latitude:45.848772,Longitude:-80.608834,Altitude:182.9,Speed:0.07716667,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:20:13 EDT	40.50	25.00	218
FO-061-T1-S1-2	Pinus strobus	Latitude:45.84883,Longitude:-80.608892,Altitude:191.6,Speed:0.0926,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:21:09 EDT	44.00	28.00	221
FO-061-T1-S1-3	Pinus strobus	Latitude:45.84886,Longitude:-80.608853,Altitude:192.1,Speed:0.06173333,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:21:41 EDT	47.00	28.00	224
FO-061-T1-S1-4	Pinus strobus	Latitude:45.848844,Longitude:-80.608757,Altitude:191.7,Speed:0.11832222,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:22:37 EDT	48.00	27.00	227
FO-061-T1-S1-5	Pinus strobus	Latitude:45.848747,Longitude:-80.608698,Altitude:193.1,Speed:0.33953333,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:23:07 EDT	61.50	30.00	230
FO-061-T1-S1-6	Pinus strobus	Latitude:45.848748,Longitude:-80.608669,Altitude:191.7,Speed:0.2315,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:24:35 EDT	62.50	31.00	233

Filter Start Date 10/1/2015

Filter End Date 10/30/2015




# Old Growth Forest Survey

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	Yes Just one portion of a white pine cut off
Cut stumps / logs - recent	No
Roads / trails	No
Exotic / invasive plants	No
Signs of fire	No
Other	No

Tree Core Sampling	
Tree ID	FO-061-T1-S1
Species	PINUS STROBUS
DBH (cm)	62.50
Height (m)	30.00
Core Sample ID	FO-061-T1-S1-1
Location	Latitude:45.848703,Longitude:-80.608673,Altitude:191.4,Speed:0.24693333,Accuracy:2.4,Provider:gps,Time:10/15/2015 10:26:21 EDT

Stand Species	
Height	Cover Species Dominance
Canopy	2 >6-25m 3 25 - 60% Pinus strobus > Populus tremuloides
Sub Canopy	2 >6-25m 3 25 - 60% Pinus strobus > Acer rubrum > Populus tremuloides
Shrub	6 >0.2-0.5m 3 25 - 60% Juniperus communis > Vaccinium angustifolium
Groundcover	7 <0.2m 4 > 60% Cladina sp > polytrichum Juniperus > Deschampsia flexuosa
Floating & Submerged	0 None

Stand Composition	
	<10 10-24 25-50 >50
Size Class Analysis	O A O O
Standing Snags	R R R N
Deadfall / Logs	A O R N
Species Dominance <10	Pinus strobus > Acer rubrum > Populus tremuloides
Species Dominance 10-24	Pinus strobus > Acer rubrum > Populus tremuloides
Species Dominance 25-50	Pinus strobus
Species Dominance >50	Pinus strobus

Map Number	FO-061-1	Field Crew	KASEY, KRISTAN & KASEY
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Filter Start Date 10/1/2015


Filter End Date 10/30/2015

# Old Growth Forest Survey

Feature ID	<input type="text" value="FO-061"/>	Air Temp. (degC)	<input type="text" value="10.00"/>	Weather Notes <input type="text"/>
Project Number	<input type="text" value="60341251"/>	Wind Speed (beaufort)	<input type="text" value="1 Light air movement"/>	
Tablet	<input type="text" value="AECOM13"/>	Precipitation	<input type="text" value="none"/>	
Start Date	<input type="text" value="10/15/2015 10:42:38 AM"/>	Cloud Cover	<input type="text" value="100.00"/>	
End Date	<input type="text" value="10/15/2015 10:54:30 AM"/>			

Plot ID	<input type="text" value="FO-061-T1-S2"/>	Location	<input type="text" value="Latitude:45.84895,Longitude:-80.608326,Altitude:190.6,Speed:0.051444445,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:44:33 EDT"/>	140
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Tree Tally	1649
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Notes	<input type="text"/>	Location	<input type="text" value="Latitude:45.84895,Longitude:-80.608323,Altitude:190.8,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:10/15/2015 10:44:44 EDT"/>	
Dead	<input type="text" value="1.00"/>			

Species	Tally	ID
Pinus strobus	7.00	3653
Acer rubrum	1.00	3656

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

Stand Species	2294
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	Height	Cover	Species Dominance
Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Pinus strobus &gt; Populus tremuloides"/>
Sub Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Pinus strobus &gt; Acer rubrum"/>
Shrub	<input type="text" value="6 &gt;0.2-0.5m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Juniperus communis &gt; Abies balsamea &gt; Vaccinium angustifolium"/>
Groundcover	<input type="text" value="7 &lt;0.2m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Cladina sp &gt; Deschampsia flexuosa"/>
Floating & Submerged		<input type="text" value="0 None"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2294


	<10	10-24	25-50	>50
Size Class Analysis	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Standing Snags	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Deadfall / Logs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Species Dominance <10	Pinus strobus > Acer rubrum			
Species Dominance 10-24	Pinus strobus > Populus tremuloides > Acer rubrum			
Species Dominance 25-50	Pinus strobus			
Species Dominance >50	Pinus strobus			

Map Number  Field Crew  68

Feature ID	<input type="text" value="FO-061"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="9.00"/>
Tablet	<input type="text" value="AECOM13"/>	Wind Speed (beaufort)	<input type="text" value="1 Light air movement"/>
Start Date	<input type="text" value="10/15/2015 11:03:50 AM"/>	Precipitation	<input type="text" value="light rain"/>
End Date	<input type="text" value="10/15/2015 11:28:42 AM"/>	Cloud Cover	<input type="text" value="100.00"/>
Weather Notes	<input type="text"/>		

Plot ID  Location  143

Tree Tally 1652

Notes	<input type="text"/>	Location	<input type="text" value="Latitude:45.84914,Longitude:-80.607824,Altitude:196.2,Speed:0.0051444443,Accuracy:1.8,Provider:gps,Time:10/15/2015 11:07:40 EDT"/>	
Dead	<input type="text" value="2.00"/>			

Species	Tally	ID
Pinus strobus	5.00	3659

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T1-S3-1	Pinus strobus	Latitude:45.849208,Longitude:-80.607769,Altitude:199.5,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:10/15/2015 11:12:25 EDT	40.00	15.00	236
FO-061-T1-S3-2	Pinus strobus	Latitude:45.849194,Longitude:-80.607599,Altitude:203.7,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:26:04 EDT	42.50	17.00	239

Filter Start Date 10/1/2015


Filter End Date 10/30/2015

# Old Growth Forest Survey

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Tree Core Sampling

Tree ID	FO-061-T1-S3		131
Species	Pinus strobus		
DBH (cm)	45.00		
Height (m)	15.00		
Core Sample ID	FO-061-T1-S3-1		
Location	Latitude:45.849142,Longitude:-80.607738,Altitude:201.7,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:23:52 EDT		

## Stand Species

2297

	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Pinus strobus > pinus resinosa
Sub Canopy	3 >2-6m	2 10 - 25%	Pinus strobus > Acer rubrum > Betula papyrifera
Shrub	6 >0.2-0.5m	3 25 - 60%	Juniperus communis > Vaccinium angustifolium
Groundcover	7 <0.2m	4 > 60%	Cladina sp > Deschampsia flexuosa > moss sp
Floating & Submerged		0 None	

## Stand Composition

2297

	<10	10-24	25-50	>50
Size Class Analysis	O	A	A	R
Standing Snags	R	R	O	N
Deadfall / Logs	O	R	R	R
Species Dominance <10	Pinus strobus > Acer rubrum			
Species Dominance 10-24	Pinus strobus > Acer rubrum			
Species Dominance 25-50	Pinus strobus			
Species Dominance >50	Pinus strobus			

Map Number	FO-061-1	Field Crew	KRISTAN WASHBURN & AMY INGRISSELLI & KASEY MCKENZIE	71
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Filter Start Date 10/1/2015


Filter End Date 10/30/2015

# Old Growth Forest Survey

Feature ID	FO-061	Air Temp. (degC)	10.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	2 Slight breeze felt on face	
Tablet	AECOM13	Precipitation	heavy rain	
Start Date	10/15/2015 11:35:42 AM	Cloud Cover	100.00	
End Date	10/15/2015 11:49:17 AM			

Plot ID	FO-061-T1-S4	Location	Latitude:45.849334,Longitude:-80.607048,Altitude:194.8,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:36:57 EDT	146
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Tree Tally	1655
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Notes		Location	Latitude:45.849334,Longitude:-80.607043,Altitude:194.8,Speed:0.13375555,Accuracy:2.4,Provider:gps,Time:10/15/2015 11:37:32 EDT	
Dead	2.00			

Species	Tally	ID
Pinus strobus	8.00	3662
Populus tremuloides	1.00	3665
Betula papyrifera	1.00	3668
Abies balsamea	3.00	3671


DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T1-S4-1	Pinus strobus	Latitude:45.84933,Longitude:-80.606974,Altitude:195.9,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:39:47 EDT	46.50	20.00	242
FO-061-T1-S4-2	Pinus strobus	Latitude:45.849297,Longitude:-80.6069,Altitude:196.7,Speed:0.43727776,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:40:33 EDT	44.00	20.00	245
FO-061-T1-S4-3	Pinus strobus	Latitude:45.849422,Longitude:-80.606972,Altitude:200.0,Speed:0.09774444,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:42:12 EDT	50.00	25.00	248
FO-061-T1-S4-4	Pinus strobus	Latitude:45.849389,Longitude:-80.606942,Altitude:199.0,Speed:0.21606667,Accuracy:2.1,Provider:gps,Time:	41.00	23.00	251

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	<input type="text" value="No"/>
Cut stumps / logs - recent	<input type="text" value="No"/>
Roads / trails	<input type="text" value="No"/>
Exotic / invasive plants	<input type="text" value="No"/>
Signs of fire	<input type="text" value="No"/>
Other	<input type="text" value="No"/>

Tree Core Sampling	
Tree ID	<input type="text" value="FO-061-T1-S4"/>
Species	<input type="text" value="Pinus strobus"/>
DBH (cm)	<input type="text" value="41.00"/>
Height (m)	<input type="text" value="23.00"/>
Core Sample ID	<input type="text" value="FO-061-T1-S4-1"/>
Location	Latitude:45.849371,Longitude:-80.606892,Altitude:200.9,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:44:10 EDT
	

Stand Species	
	2300
	Height Cover Species Dominance
Canopy	<input type="text" value="1 &gt;25m 3 25 - 60% Pinus strobus &gt; Populus tremuloides"/>
Sub Canopy	<input type="text" value="2 &gt;6-25m 3 25 - 60% Pinus strobus! &gt; Abies balsamea &gt; Acer rubrum"/>
Shrub	<input type="text" value="4 &gt;1-2m 2 10 - 25% Viburnum cassinoides &gt; Corylus cornuta"/>
Groundcover	<input type="text" value="6 &gt;0.2-0.5m 2 10 - 25% Cornus canadensis &gt; Pteridium aquilinum"/>
Floating & Submerged	<input type="text" value="0 None"/>

Stand Composition	
	2300
	<10 10-24 25-50 >50
Size Class Analysis	<input type="text" value="O A O R"/>
Standing Snags	<input type="text" value="O O O N"/>
Deadfall / Logs	<input type="text" value="A O R N"/>
Species Dominance <10	<input type="text" value="Abies balsamea &gt; Acer rubrum"/>
Species Dominance 10-24	<input type="text" value="Pinus strobus &gt; Populus tremuloides"/>
Species Dominance 25-50	<input type="text" value="Pinus strobus &gt; Populus tremuloides"/>
Species Dominance >50	<input type="text" value="Pinus strobus"/>

Map Number	<input type="text" value="FO-061-1"/>	Field Crew	<input type="text" value="KRISTAN WASHBURN &amp; AMY INGRISSELLI &amp; KASEY MCKENZIE"/>	74
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Filter Start Date 10/1/2015


Filter End Date 10/30/2015

# Old Growth Forest Survey

Feature ID	FO-061	Air Temp. (degC)	10.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	1 Light air movement	
Tablet	AECOM13	Precipitation	heavy rain	
Start Date	10/15/2015 11:55:22 AM	Cloud Cover	100.00	
End Date	10/15/2015 12:09:22 PM			

Plot ID	FO-061-T1-S5	Location	Latitude:45.849485,Longitude:-80.606543,Altitude:196.2,Speed:0.13375555,Accuracy:2.4,Provider:gps,Time:10/15/2015 11:56:37 EDT	149
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Tree Tally	1658
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Notes		Location	Latitude:45.849484,Longitude:-80.606538,Altitude:195.9,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:10/15/2015 11:57:23 EDT	
Dead	2.00			


Species	Tally	ID
Pinus strobus	4.00	3674
Pinus resinosa	1.00	3677
Abies balsamea	5.00	3680
Acer rubrum	1.00	3683
Betula papyrifera	2.00	3686

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T1-S5-1	Pinus strobus	Latitude:45.849484,Longitude:-80.606517,Altitude:196.3,Speed:0.07716667,Accuracy:2.1,Provider:gps,Time:	41.00	23.00	254
FO-061-T1-S5-2	Pinus strobus	Latitude:45.849461,Longitude:-80.606464,Altitude:196.1,Speed:0.19034444,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:01:08 EDT	44.00	25.00	257
FO-061-T1-S5-3	Pinus resinosa	Latitude:45.849444,Longitude:-80.606368,Altitude:196.3,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:02:26 EDT	43.00	22.00	260

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Disturbance Indicators				
	Present Details			
Cut stumps / logs - old	No <input type="text"/>			
Cut stumps / logs - recent	No <input type="text"/>			
Roads / trails	No <input type="text"/>			
Exotic / invasive plants	No <input type="text"/>			
Signs of fire	No <input type="text"/>			
Other	No <input type="text"/>			
Tree Core Sampling				
Tree ID	<input type="text" value="FO-061-T1-S5"/>			
Species	<input type="text" value="Pinus strobus"/>			
DBH (cm)	<input type="text" value="44.00"/>			
Height (m)	<input type="text" value="24.00"/>			
Core Sample ID	<input type="text" value="FO-061-T1-S2-1"/>			
Location	Latitude:45.849438,Longitude:-80.606468,Altitude:195.7,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:01:48 EDT			
				
	137			
Stand Species				
	2303			
	Height	Cover	Species Dominance	
Canopy	<input type="text" value="1 &gt;25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Pinus strobus &gt; Pinus resinosa &lt; Populus tremuloides"/>	
Sub Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Abies balsamea &gt; Acer rubrum &gt; Betula papyrifera"/>	
Shrub	<input type="text" value="3 &gt;2-6m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Sorbus aucuparia &gt; Lonicera canadense"/>	
Groundcover	<input type="text" value="5 &gt;0.5-1m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Dryopteris carthusiana &gt; Aralia nudicaulis &gt; Cornus canadensis"/>	
Floating & Submerged		<input type="text" value="0 None"/>	<input type="text"/>	
Stand Composition				
	2303			
	<10	10-24	25-50	>50
Size Class Analysis	<input type="text" value="A"/>	<input type="text" value="O"/>	<input type="text" value="O"/>	<input type="text" value="N"/>
Standing Snags	<input type="text" value="A"/>	<input type="text" value="A"/>	<input type="text" value="O"/>	<input type="text" value="N"/>
Deadfall / Logs	<input type="text" value="A"/>	<input type="text" value="A"/>	<input type="text" value="O"/>	<input type="text" value="N"/>
Species Dominance <10	<input type="text" value="Acer rubrum &gt; Abies balsamea"/>			
Species Dominance 10-24	<input type="text" value="Betula papyrifera &gt; Populus tremuloides &gt; Pinus st"/>			
Species Dominance 25-50	<input type="text" value="Pinus strobus &gt; Pinus resinosa"/>			
Species Dominance >50	<input type="text"/>			
Map Number	<input type="text" value="FO-061-1"/>	Field Crew	<input type="text" value="KRISTAN WASHBURN &amp; AMY INGRISSELLI &amp; KASEY MCKENZIE"/>	
				77

Filter Start Date 10/1/2015

Filter End Date 10/30/2015




# Old Growth Forest Survey

Feature ID	<input type="text" value="FO-061"/>	Air Temp. (degC)	<input type="text" value="10.00"/>	Weather Notes <input type="text"/>
Project Number	<input type="text" value="60341251"/>	Wind Speed (beaufort)	<input type="text" value="2 Slight breeze felt on face"/>	
Tablet	<input type="text" value="AECOM13"/>	Precipitation	<input type="text" value="heavy rain"/>	
Start Date	<input type="text" value="10/15/2015 12:36:25 PM"/>	Cloud Cover	<input type="text" value="80.00"/>	
End Date	<input type="text" value="10/15/2015 12:46:48 PM"/>			

Plot ID	<input type="text" value="FO-061-T1-S1"/>	Location	<input type="text" value="Latitude:45.849697,Longitude:-80.605842,Altitude:203.4,Speed:0.051444445,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:37:50 EDT"/>	152
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Tree Tally	1661
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Notes	<input type="text"/>	Location	<input type="text" value="Latitude:45.849703,Longitude:-80.605836,Altitude:203.5,Speed:0.1389,Accuracy:1.8,Provider:gps,Time:10/15/2015 12:38:00 EDT"/>	
Dead	<input type="text" value="3.00"/>			

Species	Tally	ID
Abies balsamea	13.00	3689
Acer rubrum	2.00	3692
Betula papyrifera	1.00	3695

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T1-S1-1	Pinus strobus	Latitude:45.849717,Longitude:-80.605825,Altitude:203.2,Speed:0.066877775,Accuracy:1.8,Provider:gps,Time:10/15/2015 12:39:49 EDT	61.00	28.00	263

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	<input type="text" value="No"/>
Cut stumps / logs - recent	<input type="text" value="No"/>
Roads / trails	<input type="text" value="No"/>
Exotic / invasive plants	<input type="text" value="No"/>
Signs of fire	<input type="text" value="No"/>
Other	<input type="text" value="No"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID	FO-061-T1-S6
Species	Pinus strobus
DBH (cm)	61.00
Height (m)	28.00
Core Sample ID	FO-061-T1-S6-1
Location	Latitude:45.84974,Longitude:-80.605861,Altitude:199.8,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:10/15/2015 12:41:51 EDT



140

## Stand Species

2306

	Height	Cover	Species Dominance
Canopy	1 >25m	2 10 - 25%	Pinus strobus > Betula papyrifera > Populus grandidentata
Sub Canopy	2 >6-25m	3 25 - 60%	Acer rubrum > Abies balsamea
Shrub	3 >2-6m	3 25 - 60%	Corylus cornuta > Viburnum cassinoides
Groundcover	5 >0.5-1m	2 10 - 25%	Cornus canadensis > Trientalis borealis > Dryopteris carthusiana
Floating & Submerged		0 None	

## Stand Composition

2306

	<10	10-24	25-50	>50
Size Class Analysis	A	O	O	R
Standing Snags	O		N	N
Deadfall / Logs	O	O	N	N
Species Dominance <10	Acer rubrum > Abies balsamea			
Species Dominance 10-24	Populus grandidentata > Betula papyrifera			
Species Dominance 25-50	Betula papyrifera			
Species Dominance >50	Pinus strobus			

Map Number	FO-061-1	Field Crew	KRISTAN WASHBURN & KASEY MCKENZIE & AMY INGRISSELLI	80
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Feature ID	FO-061			
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	2 Slight breeze felt on face	
Start Date	10/15/2015 12:53:25 PM	Precipitation	heavy rain	
End Date	10/15/2015 1:05:05 PM	Cloud Cover	100.00	

Plot ID	FO-061-T1-S2	Location	Latitude:45.849811,Longitude:-80.605336,Altitude:197.0,Speed:0.09774444,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:54:41 EDT	155
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Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1664

Notes		Location	
Dead	2.00	Latitude:45.849806,Longitude:-80.605333,Altitude:197.1,Speed:0.051444445,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:56:38 EDT	

Species	Tally	ID
Acer rubrum	3.00	3698
Betula papyrifera	1.00	3701
Abies balsamea	8.00	3704
Pinus strobus	3.00	3707

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T1-S2-1	ACER RUBRUM	Latitude:45.849798,Longitude:-80.605351,Altitude:196.2,Speed:0.15947777,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:57:13 EDT	55.50	20.00	266
FO-061-T1-S2-2	Betula papyrifera	Latitude:45.849779,Longitude:-80.605346,Altitude:196.9,Speed:0.041155554,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:58:17 EDT	41.00	18.00	269
FO-061-T1-S2-3	Pinus strobus	Latitude:45.849857,Longitude:-80.605292,Altitude:195.7,Speed:0.4732889,Accuracy:2.1,Provider:gps,Time:10/15/2015 12:59:09 EDT	70.50	18.00	272

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID

Species

DBH (cm)

Height (m)

Core Sample ID

Location



143

## Stand Species

2309

	Height	Cover	Species Dominance
Canopy	1 >25m	3 25 - 60%	ACER RUBRUM > PINUS STROBUS
Sub Canopy	2 >6-25m	3 25 - 60%	Abies balsamea > Acer rubrum
Shrub	4 >1-2m	2 10 - 25%	Viburnum cassinoides > Nemopanthus mucronatus > Lonicera canadense
Groundcover	6 >0.2-0.5m	3 25 - 60%	Cornus canadensis < Clintonia borealis
Floating & Submerged		0 None	

## Stand Composition

2309

	<10	10-24	25-50	>50
Size Class Analysis	A	O	O	R
Standing Snags	A	O	R	N
Deadfall / Logs	A	O	R	N
Species Dominance <10	Abies balsamea > Acer rubrum			
Species Dominance 10-24	Acer rubrum > Abies balsamea			
Species Dominance 25-50	Acer rubrum > pinus strobus > Betula papyrifera			
Species Dominance >50	Pinus strobus > Acer rubrum			

Map Number  Field Crew

83

Feature ID

Project Number  Air Temp. (degC)  Weather Notes

Tablet  Wind Speed (beaufort)

Start Date  Precipitation

End Date  Cloud Cover

Plot ID  Location

158


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1667

Notes		Location	
		Latitude:45.850013,Longitude:-80.604355,Altitude:187.7,Speed:0.03601111,Accuracy:2.7,Provider:gps,Time:10/15/2015 01:38:19 EDT	
Dead	3.00		


Species	Tally	ID
Pinus strobus	2.00	3710
Abies balsamea	4.00	3713
Acer rubrum	3.00	3716
Betula papyrifera	1.00	3719

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T1-S8-1	Pinus strobus	Latitude:45.850043,Longitude:-80.604154,Altitude:188.6,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:10/15/2015 01:45:00 EDT	47.50	22.00	275

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	<input type="checkbox"/> Yes	
Cut stumps / logs - recent	<input type="checkbox"/> No	
Roads / trails	<input type="checkbox"/> No	
Exotic / invasive plants	<input type="checkbox"/> No	
Signs of fire	<input type="checkbox"/> No	
Other	<input type="checkbox"/> No	

## Tree Core Sampling

Tree ID	FO-061-T1-S8		146
Species	Pinus strobus		
DBH (cm)	47.50		
Height (m)	22.00		
Core Sample ID	FO-062-T1-S8-1		
Location	Latitude:45.850045,Longitude:-80.604165,Altitude:187.2,Speed:0.6379111,Accuracy:2.1,Provider:gps,Time:10/15/2015 01:45:41 EDT		

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Species

2312

	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Pinus strobus > Acer rubrum
Sub Canopy	2 >6-25m	3 25 - 60%	Abies balsamea > Betula papyrifera
Shrub	5 >0.5-1m		Lonicera canadense > Viburnum cassinoides
Groundcover	7 <0.2m	2 10 - 25%	Cornus canadensis > Aster macrophylla > goldthread
Floating & Submerged		0 None	

Stand Composition

2312

	<10	10-24	25-50	>50
Size Class Analysis	A	O	R	R
Standing Snags	A	O	O	N
Deadfall / Logs	A	O	O	N
Species Dominance <10	Abies balsamea > Betula papyrifera > Acer rubrum			
Species Dominance 10-24	Betula papyrifera > Acer rubrum > Abies balsamea			
Species Dominance 25-50	Betula papyrifera > Pinus strobus			
Species Dominance >50	PINUS STROBUS			

Map Number	FO-061-1	Field Crew	KRISTAN WASHBURN AND KASEY MCKENZIE AND AMY INGRIS	86
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Feature ID	FO-061			
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	3 Leaves move on twigs	
Start Date	10/15/2015 1:56:51 PM	Precipitation	light rain	
End Date	10/15/2015 2:10:48 PM	Cloud Cover	80.00	

Plot ID	FO-061-T1-S9	Location	Latitude:45.850086,Longitude:-80.603921,Altitude:185.1,Speed:0.041155554,Accuracy:1.75,Provider:gps,Time:10/15/2015 01:58:08 EDT	161
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Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1670

Notes		Location	
Dead	1.00	Latitude:45.85009,Longitude:-80.603916,Altitude:184.9,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:10/15/2015 01:58:48 EDT	

Species	Tally	ID
Pinus strobus	3.00	3722
Betula alleghaniensis	1.00	3725
Acer rubrum	1.00	3728
Acer saccharum	1.00	3731
Abies balsamea	5.00	3734
Pinus resinosa	1.00	3737

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T1-S9-1	PINUS RESINOSA	Latitude:45.850114,Longitude:-80.60386,Altitude:189.9,Speed:0.5093,Accuracy:2.1,Provider:gps,Time:10/15/2015 02:02:48 EDT	42.00	18.00	278
FO-061-T1-S9-2	Pinus strobus	Latitude:45.850106,Longitude:-80.603857,Altitude:191.1,Speed:0.15433334,Accuracy:2.1,Provider:gps,Time:10/15/2015 02:03:17 EDT	52.50	23.00	281

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID

Species

DBH (cm)

Height (m)

Core Sample ID

Location



149

## Stand Species

2315

	Height	Cover	Species Dominance
Canopy	1 >25m	2 10 - 25%	Pinus strobus > Acer saccharum > Betula alleghaniensis > Pinus resinosa
Sub Canopy	2 >6-25m	3 25 - 60%	Acer rubrum > Abies balsamea > pinus strobus
Shrub	3 >2-6m	3 25 - 60%	Viburnum cassinoides > Vaccinium myrtilloides
Groundcover	6 >0.2-0.5m	3 25 - 60%	Dryopteris carthusiana > Pteridium aquilinum > Trientalis borealis
Floating & Submerged		0 None	

## Stand Composition

2315

	<10	10-24	25-50	>50
Size Class Analysis	A	O	O	N
Standing Snags	O	O	O	N
Deadfall / Logs	A		O	N
Species Dominance <10	Abies balsamea > Acer rubrum > Pinus strobus			
Species Dominance 10-24	Acer rubrum > Abies balsamea			
Species Dominance 25-50	Acer saccharum > Pinus strobus > Pinus resinosa			
Species Dominance >50				

Map Number  Field Crew

89

Feature ID

Project Number  Air Temp. (degC)  Weather Notes

Tablet  Wind Speed (beaufort)

Start Date  Precipitation

End Date  Cloud Cover

Plot ID  Location

164

Filter Start Date 10/1/2015


Filter End Date 10/30/2015



# Old Growth Forest Survey

Tree Tally

1673

Notes		Location	
Dead	3.00	Latitude:45.850285,Longitude:-80.603324,Altitude:185.2,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:10/15/2015 02:17:24 EDT	

Species	Tally	ID
Populus grandidentata	1.00	3740
Acer rubrum	2.00	3743
Abies balsamea	10.00	3746

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T1-S10-1	Acer rubrum	Latitude:45.850311,Longitude:-80.60308,Altitude:184.1,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:10/15/2015 02:24:16 EDT	40.50	25.00	284
FO-061-T1-S10-2	Acer rubrum	Latitude:45.8503,Longitude:-80.603085,Altitude:182.6,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:10/15/2015 02:26:00 EDT	45.50	25.00	287
FO-061-T1-S10-3	POPULUS GRANDIDENTATA	Latitude:45.850304,Longitude:-80.603104,Altitude:183.1,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:10/15/2015 02:27:03 EDT	47.50	23.00	290


Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	<input type="checkbox"/> Yes	<input type="text"/>
Cut stumps / logs - recent	<input type="checkbox"/> No	<input type="text"/>
Roads / trails	<input type="checkbox"/> No	<input type="text"/>
Exotic / invasive plants	<input type="checkbox"/> No	<input type="text"/>
Signs of fire	<input type="checkbox"/> No	<input type="text"/>
Other	<input type="checkbox"/> No	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID	FO-061-T1-S10		152
Species	Populus grandidentata		
DBH (cm)	47.50		
Height (m)	23.00		
Core Sample ID	FO-061-T1-S10-1		
Location	Latitude:45.850307,Longitude:-80.603218,Altitude:183.5,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:10/15/2015 02:33:07 EDT		

## Stand Species

2318

	Height	Cover	Species Dominance
Canopy	1 >25m	3 25 - 60%	Populus grandidentata > Acer rubrum
Sub Canopy	3 >2-6m	3 25 - 60%	Abies balsamea > Betula papyrifera
Shrub	3 >2-6m	2 10 - 25%	Viburnum cassinoides > Lonicera canadense
Groundcover	6 >0.2-0.5m	2 10 - 25%	Cornus canadensis > Dryopteris carthusiana > Coptis trifolia
Floating & Submerged		0 None	

## Stand Composition

2318

	<10	10-24	25-50	>50
Size Class Analysis	A	O	O	N
Standing Snags	O	O	R	N
Deadfall / Logs	A	A	O	N
Species Dominance <10	ABIES BALSAMA > Pinus strobus > Acer rubrum			
Species Dominance 10-24	Populus grandidentata > Acer rubrum > Betula papyr			
Species Dominance 25-50	Populus grandidentata > Acer rubrum			
Species Dominance >50				

Map Number	FO-061-3	Field Crew	KRISTAN WASHBURN & AMY INGRISSELLI & KASEY MCKENZIE	92
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Feature ID	FO-061			
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	2 Slight breeze felt on face	
Start Date	10/15/2015 2:59:47 PM	Precipitation	none	
End Date	10/15/2015 3:14:55 PM	Cloud Cover	100.00	

Plot ID	FO-061-T2-S4	Location	Latitude:45.847596,Longitude:-80.59981,Altitude:193.4,Speed:0.06173333,Accuracy:1.75,Provider:gps,Time:10/15/2015 03:01:05 EDT	167
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Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1676


Notes		Location	
		Latitude:45.847591,Longitude:-80.59981,Altitude:194.8,Speed:0.2417889,Accuracy:1.75,Provider:gps,Time:10/15/2015 03:02:02 EDT	
Dead	1.00		

Species	Tally	ID
Pinus strobus	5.00	3749
Pinus banksiana	4.00	3752

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Tree Core Sampling

Tree ID	FO-061-T2-S4		155
Species	Pinus banksiana		
DBH (cm)	23.50		
Height (m)	12.00		
Core Sample ID	FO-061-T2-S4		
Location	Latitude:45.84759,Longitude:-80.599821,Altitude:196.6,Speed:0.38068888,Accuracy:1.75,Provider:gps,Time:10/15/2015 03:03:47 EDT		

## Stand Species

2321

	Height	Cover	Species Dominance
Canopy	2 >6-25m	2 10 - 25%	PINUS STROBUS > PINUS BANKSIANA
Sub Canopy	3 >2-6m		Pinus strobus > Acer rubrum
Shrub	5 >0.5-1m	2 10 - 25%	Vaccinium angustifolium > Juniperus communis
Groundcover	7 <0.2m	3 25 - 60%	Cladina sp. > Gaultheria procumbens
Floating & Submerged		0 None	

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2321


	<10	10-24	25-50	>50
Size Class Analysis	A	O	O	N
Standing Snags	R	R	N	N
Deadfall / Logs	R	R	N	N
Species Dominance <10	Pinus strobus > Pinus banksiana			
Species Dominance 10-24	Pinus strobus > Pinus banksiana			
Species Dominance 25-50	Pinus strobus			
Species Dominance >50				

Map Number	FO-061-3	Field Crew	KRISTAN WASHBURN & AMY INGRISELII & KASEY MCKENZIE	95
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Feature ID	FO-061			
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	4 Small branches move	
Start Date	10/15/2015 3:18:44 PM	Precipitation	light rain	
End Date	10/15/2015 3:27:00 PM	Cloud Cover	100.00	

Plot ID	FO-061-T2-S5	Location	Latitude:45.847129,Longitude:-80.59963,Altitude:198.5,Speed:0.13375555,Accuracy:2.1,Provider:gps,Time:10/15/2015 03:20:06 EDT	170
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Tree Tally 1679

Notes		Location	Latitude:45.84712,Longitude:-80.599779,Altitude:174.8,Speed:0.020577777,Accuracy:2.4,Provider:gps,Time:10/15/2015 03:26:34 EDT	
Dead	1.00			

Species	Tally	ID
Pinus strobus	2.00	3755
Pinus resinosa	1.00	3758

Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Species

2324

	Height	Cover	Species Dominance
Canopy	1 >25m	3 25 - 60%	Pinus strobus > Pinus resinosa > Betula papyrifera
Sub Canopy	3 >2-6m	2 10 - 25%	Populus tremuloides > pinus strobus
Shrub	3 >2-6m	2 10 - 25%	Vaccinium angustifolium > Comptonia peregrina
Groundcover	6 >0.2-0.5m	3 25 - 60%	Cladina spp. > Gaultheria procumbens > Cornus canadensis
Floating & Submerged		0 None	

Stand Composition

2324

	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	N
Standing Snags	O	O	R	N
Deadfall / Logs	O	O	R	N
Species Dominance <10	Pinus strobus > Abies balsamea			
Species Dominance 10-24	Pinus strobus > Populus tremuloides > Acer rubrum			
Species Dominance 25-50	Pinus strobus			
Species Dominance >50				

Map Number FO-061-2

Field Crew JILLIAN DEMAN AMY INGRISELLI

98

Feature ID FO-061

Project Number 60341251

Air Temp. (degC)

14.00

Weather Notes

Tablet AECOM11

Wind Speed (beaufort)

2 Slight breeze felt on face

Start Date 10/14/2015 11:25:28 AM

Precipitation

none

End Date 10/14/2015 2:00:12 PM

Cloud Cover

0.00

Plot ID FO-061-T2-S3

Location

173


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1682

Notes	<input type="text"/>	Location	<input type="text"/>	
Dead	1.00			

Species	Tally	ID
Betula papyrifera	1.00	3761
Pinus strobus	6.00	3764
Pinus banksiana	2.00	3767


DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T2-S3-1	Betula papyrifera	Latitude:45.848111,Longitude:-80.600179,Altitude:205.4,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:10/14/2015 12:13:31 EDT	42.00	14.00	293


Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Core Sampling			158
Tree ID	FO-061-T2-S3-1		
Species	Betula papyrifera		
DBH (cm)	42.00		
Height (m)	14.00		
Core Sample ID	Tree FO-061-T2-S3a and b		
Location	Latitude:45.848135,Longitude:-80.600246,Altitude:202.0,Speed:0.0051444443,Accuracy:1.8,Provider:gps,Time:10/14/2015 12:27:15 EDT		

Tree ID	FO-061-T2-S3-2		161
Species	Pinus alba		
DBH (cm)	31.50		
Height (m)	16.00		
Core Sample ID	FO-061-T2-S3-2a		
Location	Latitude:45.848129,Longitude:-80.600181,Altitude:202.3,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:10/14/2015 12:40:46 EDT		

Stand Species	Height	Cover	Species Dominance	2327
Canopy	2 >6-25m	4 > 60%	Pinus alba = Tsuga canadensis > Betula papyrifera	
Sub Canopy	2 >6-25m	3 25 - 60%	Tsuga canadensis	
Shrub	5 >0.5-1m	1 0% - 10%	Tsuga canadensis	
Groundcover			Mosses	
Floating & Submerged		0 None		

Stand Composition	<10	10-24	25-50	>50	2327
Size Class Analysis	O	A	O	N	
Standing Snags	R	O	N	N	
Deadfall / Logs	N	O	R	N	
Species Dominance <10	Tsuga canadensis				
Species Dominance 10-24	Tsuga canadensis				
Species Dominance 25-50	Tsuga canadensis, Pinus alba, Betula papyrifera				
Species Dominance >50					

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Plot ID	FO-061-T2-S2	Location	Latitude:45.848521,Longitude:-80.600655,Altitude:197.5,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:04:52 EDT	176
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Tree Tally	1685
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Notes		Location	Latitude:45.848521,Longitude:-80.600655,Altitude:197.7,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:05:12 EDT
Dead	1.00		

Species	Tally	ID
Betula papyrifera	1.00	3770
Acer rubrum	1.00	3773
Tsuga canadensis	3.00	3776
Picea glauca	1.00	3779
Pinus banksiana	1.00	3782
Pinus strobus	1.00	3785

DBH					
tree id	Species	tree location	DBH	Height	ID
No trees greater than 40cm	N/a		0.00	0.00	296

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

Tree Core Sampling		
Tree ID	FO-061-T2-S2 (No Core Collected)	164
Species	N/a	
DBH (cm)	0.00	
Height (m)	0.00	
Core Sample ID	FO-061-T2-S2 (No Core Collected)	
Location		

Filter Start Date 10/1/2015

Filter End Date 10/30/2015



# Old Growth Forest Survey

Stand Species

2330

	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Picea glauca = Pinus strobus = Tsuga canadensis > Betula papyrifera = Acer rubrum
Sub Canopy	3 >2-6m	3 25 - 60%	Tsuga canadensis
Shrub	6 >0.2-0.5m	2 10 - 25%	Viburnum sp = Acer rubrum
Groundcover	7 <0.2m	2 10 - 25%	Cornus canadensis
Floating & Submerged		0 None	

Stand Composition


2330

	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	N
Standing Snags	R	O	N	N
Deadfall / Logs	O	R	N	N
Species Dominance <10	Tsuga canadensis			
Species Dominance 10-24	Tsuga canadensis			
Species Dominance 25-50	Picea glauca = Pinus strobus			
Species Dominance >50				

Plot ID	FO-061-T2-S1	Location	Latitude:45.848947,Longitude:-80.600925,Altitude:199.8,Speed:0.06173333,Accuracy:2.1,Provider:gps,Time:10/14/2015 01:39:44 EDT	179
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Tree Tally

1688

Notes		Location	
Dead	0.00		

Species	Tally	ID
Pinus strobus	5.00	3788
Pinus banksiana	2.00	3791

DBH

tree id	Species	tree location	DBH	Height	ID
FO-061-T2-S1-1a	Pinus strobus		45.30	18.00	299

Filter Start Date 10/1/2015


Filter End Date 10/30/2015

# Old Growth Forest Survey

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Tree Core Sampling

Tree ID	FO-061-T1-S1-1a		167
Species	Pinus strobus		
DBH (cm)	45.30		
Height (m)	18.00		
Core Sample ID	FO-061-S1-1a		
Location			

## Stand Species

2333

	Height	Cover	Species Dominance
Canopy	2 >6-25m	2 10 - 25%	Pinus strobus
Sub Canopy	3 >2-6m	1 0% - 10%	Picea glauca
Shrub	6 >0.2-0.5m	2 10 - 25%	Viburnum sp
Groundcover		3 25 - 60%	Vaccinium sp, chain fern, gum shrub
Floating & Submerged		0 None	

## Stand Composition

2333

	<10	10-24	25-50	>50
Size Class Analysis	O	R	R	N
Standing Snags	R	N	N	N
Deadfall / Logs	N	R	N	N
Species Dominance <10	Pinus strobus			
Species Dominance 10-24	Pinus strobus			
Species Dominance 25-50	Pinus strobus			
Species Dominance >50				

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

Map Number	FO-061-1	Field Crew	JILLIAN DEMAN AMY INGRISELLI	101
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Feature ID	FO-061			
Project Number	60341251	Air Temp. (degC)	9.00	Weather Notes
Tablet	AECOM11	Wind Speed (beaufort)	3 Leaves move on twigs	
Start Date	10/14/2015 2:17:41 PM	Precipitation	none	
End Date	10/14/2015 4:19:12 PM	Cloud Cover	0.00	

Plot ID	FO-061-T1-S13	Location		182
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## Tree Tally 1691

Notes		Location		
Dead	1.00			

Species	Tally	ID
Pinus strobus	4.00	3794
Picea glauca	3.00	3797
Acer rubrum	1.00	3800

DBH					
tree id	Species	tree location	DBH	Height	ID
No tree over 40cm	N/a		0.00	0.00	302

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

# Old Growth Forest Survey

Tree Core Sampling		170
Tree ID	FO-061-T1-S13 (No core collected)	
Species	N/a	
DBH (cm)	0.00	
Height (m)	0.00	
Core Sample ID	FO-061-T1-S13 (No core collected)	
Location		

Stand Species	Height	Cover	Species Dominance	2336
Canopy	2 >6-25m	3 25 - 60%	Pinus strobus=Picea banksiana	
Sub Canopy	3 >2-6m	2 10 - 25%	Picea glauca	
Shrub	4 >1-2m	2 10 - 25%	Viburnum sp	
Groundcover	7 <0.2m	2 10 - 25%	Cornus canadensis	
Floating & Submerged		0 None		

Stand Composition	<10	10-24	25-50	>50	2336
Size Class Analysis	A	A	N	N	
Standing Snags	O	R	N	N	
Deadfall / Logs	R	R	N	N	
Species Dominance <10	Picea glauca				
Species Dominance 10-24	Picea glauca=Pinus strobus				
Species Dominance 25-50					
Species Dominance >50					

Plot ID	FO-061-T1-S12	Location	Latitude:45.85,Longitude:-80.602017,Altitude:189.3,Speed:0.11317778,Accuracy:2.1,Provider:gps,Time:10/14/2015 02:36:43 EDT	185
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# Old Growth Forest Survey

Tree Tally

1694

Notes		Location
Dead	2.00	

Species	Tally	ID
Pinus strobus	6.00	3803
Yellow birch	1.00	3806
Tsuga canadensis	13.00	3809

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T1 -S12-2	Pinus strobus	Latitude:45.849957,Longitude:-80.601898,Altitude:201.2,Speed:0.2520778,Accuracy:2.4,Provider:gps,Time:10/14/2015 03:15:32 EDT	40.50	20.00	305
FO-061-T1-S12-1	Pinus strobus		43.00	20.00	308
FO-061-T1-S12-3	Populous tremuloides	Latitude:45.849965,Longitude:-80.601909,Altitude:201.7,Speed:0.051444445,Accuracy:2.4,Provider:gps,Time:10/14/2015 03:17:23 EDT	41.30	20.00	311
FO-061-S12-4	Pinus strobus	Latitude:45.850055,Longitude:-80.601885,Altitude:199.9,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:10/14/2015 03:20:07 EDT	53.80	20.00	314
FO-061-S12-5	Acer rubrum	Latitude:45.850062,Longitude:-80.601896,Altitude:199.7,Speed:0.09774444,Accuracy:2.4,Provider:gps,Time:10/14/2015 03:22:38 EDT	46.00	18.00	317

## Disturbance Indicators


	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID	FO-061-T1-S12-1		173
Species	Pinus strobus		
DBH (cm)			
Height (m)	20.00		
Core Sample ID	FO-061-T1-S12-1a		
Location	Latitude:45.85006,Longitude:-80.601902,Altitude:199.6,Speed:0.07716667,Accuracy:3.0,Provider:gps,Time:10/14/2015 03:24:13 EDT		

## Stand Species

2339

	Height	Cover	Species Dominance
Canopy	2 >6-25m	4 > 60%	Pinus strobus>Populous tremuloides
Sub Canopy	2 >6-25m	3 25 - 60%	Acer rubrum=Tsuga canadensis
Shrub	5 >0.5-1m	1 0% - 10%	Tsuga canadensis
Groundcover	7 <0.2m	1 0% - 10%	Mosses
Floating & Submerged		0 None	

## Stand Composition

2339

	<10	10-24	25-50	>50
Size Class Analysis	O	A	O	N
Standing Snags	R	O	R	N
Deadfall / Logs	R	O	R	N
Species Dominance <10	Tsuga canadensis			
Species Dominance 10-24	Tsuga canadensis			
Species Dominance 25-50	Pinus strobus> Populous tremuloides			
Species Dominance >50				

Plot ID	FO-061-T1-S11	Location	Latitude:45.850288,Longitude:-80.602703,Altitude:199.0,Speed:0.06173333,Accuracy:2.1,Provider:gps,Time:10/14/2015 03:36:01 EDT	188
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Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1697

Notes		Location	
Dead	2.00	Latitude:45.850266,Longitude:-80.602848,Altitude:200.4,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:10/14/2015 03:48:23 EDT	

Species	Tally	ID
Populus tremuloides	1.00	3812
Pinus strobus	2.00	3815
Acer rubrum	1.00	3818
Tsuga canadensis	6.00	3821
Betula papyrifera	3.00	3824

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T1-S11-1	Pinus strobus	Latitude:45.85026,Longitude:-80.602874,Altitude:198.9,Speed:0.07716667,Accuracy:2.4,Provider:gps,Time:10/14/2015 03:58:36 EDT	57.30	25.00	320
FO-061-T1-S11	Populus tremuloides	Latitude:45.850226,Longitude:-80.602873,Altitude:200.0,Speed:0.020577777,Accuracy:2.4,Provider:gps,Time:10/14/2015 04:02:44 EDT	44.00	20.00	323
FO-061-S11-3	Acer rubrum	Latitude:45.850283,Longitude:-80.602997,Altitude:196.0,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:10/14/2015 04:06:50 EDT	56.00	20.00	326


Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID	FO-061-T1-S11-1		176
Species	Pinus strobus		
DBH (cm)	57.30		
Height (m)	20.00		
Core Sample ID	FO-061-T1-S11-1a		
Location	Latitude:45.850236,Longitude:-80.602808,Altitude:194.3,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:10/14/2015 04:12:54 EDT		

## Stand Species

2342

	Height	Cover	Species Dominance
Canopy	2 >6-25m	4 > 60%	Pinus strobus>Populous tremuloides
Sub Canopy	2 >6-25m	3 25 - 60%	Acer rubrum>Tsuga canadensis
Shrub	4 >1-2m	2 10 - 25%	Tsuga canadensis
Groundcover	7 <0.2m	2 10 - 25%	Cornus canadensis
Floating & Submerged		0 None	

## Stand Composition

2342

	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	R
Standing Snags	R	R	N	N
Deadfall / Logs	O	O	R	N
Species Dominance <10	Tsuga canadensis			
Species Dominance 10-24	Tsuga canadensis>Acer rubrum			
Species Dominance 25-50	Pinus strobus=Populous tremuloides			
Species Dominance >50	Acer rubrum=Pinus strobus			

Map Number	FO-061-3	Field Crew	JULIE ADAM	104
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Feature ID	FO-061			
Project Number	60341251	Air Temp. (degC)	5.00	Weather Notes
Tablet	AECOM6	Wind Speed (beaufort)	0 Calm	
Start Date	10/16/2015 11:20:07 AM	Precipitation	light rain	
End Date	10/16/2015 1:06:23 PM	Cloud Cover	100.00	

Plot ID	FO-061-T3-S8	Location	Latitude:45.847853,Longitude:-80.593665,Altitude:176.7,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:10/16/2015 11:21:36 EDT	191
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Filter Start Date 10/1/2015


Filter End Date 10/30/2015



# Old Growth Forest Survey

Tree Tally


1700

Notes		Location	
		Latitude:45.847854,Longitude:-80.593668,Altitude:176.9,Speed:0.10803334,Accuracy:2.1,Provider:gps,Time:10/16/2015 11:22:07 EDT	
Dead	1.50		

Species	Tally	ID
Acer rubrum	7.00	3827
Betula alleghaniensis	0.50	3830
Abies balsamea	4.50	3833
Populus tremuloides	1.00	3836
Pinus strobus	1.00	3839

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T3-S8-2	Populus tremuloides	Latitude:45.847897,Longitude:-80.593731,Altitude:177.2,Speed:0.20063333,Accuracy:1.8,Provider:gps,Time:10/16/2015 11:29:43 EDT	46.00	20.00	329

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

Tree Core Sampling		
Tree ID	<input type="text" value="FO-061-T3-S8-1"/>	
Species	<input type="text" value="Populus tremuloides"/>	
DBH (cm)	<input type="text" value="51.00"/>	
Height (m)	<input type="text" value="18.00"/>	
Core Sample ID	<input type="text" value="FO-061-T3-S8-1"/>	
Location	Latitude:45.847891,Longitude:-80.593783,Altitude:177.9,Speed:0.12861112,Accuracy:1.8,Provider:gps,Time:10/16/2015 11:31:46 EDT	

179

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Species

2345

	Height	Cover	Species Dominance
Canopy	2 >6-25m	4 > 60%	Acer rubrum > Abies balsamea > Pinus strobus = Populus tremuloides
Sub Canopy	3 >2-6m	2 10 - 25%	Abies balsamea > Acer rubrum
Shrub	4 >1-2m	3 25 - 60%	Alnus incanna > VIBURNUM CASSINOIDES > BETULA ALLEGHANIENSIS
Groundcover	6 >0.2-0.5m	3 25 - 60%	Gasses> goldthred> Cornus ccanadensis
Floating & Submerged			

Stand Composition


2345

	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	N
Standing Snags	O	R	R	N
Deadfall / Logs	A	A	O	N
Species Dominance <10				
Species Dominance 10-24				
Species Dominance 25-50				
Species Dominance >50				

Plot ID	FO-061-T3-S5	Location	Latitude:45.847083,Longitude:-80.59564,Altitude:178.9,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:10/16/2015 12:00:33 EDT	194
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Tree Tally

1703

Notes	Patch of red pine in white pine forest	Location	Latitude:45.847083,Longitude:-80.59564,Altitude:178.9,Speed:0.03601111,Accuracy:2.4,Provider:gps,Time:10/16/2015 12:00:53 EDT	
Dead	1.50			

Species	Tally	ID
Pinus strobus	7.00	3842
Pinus resinosa	7.00	3845
Picea glauca	2.00	3848
Picea glauca	2.00	4112
Acer rubrum	0.50	4115

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T3-S5-2	Pinus strobus	Latitude:45.847092,Longitude:-80.595637,Altitude:177.5,Speed:0.066877775,Accuracy:2.4,Provider:gps,Time:10/16/2015 12:06:26 EDT	44.00	20.00	371
FO-061-T3-S5-3	Pinus resinosa	Latitude:45.847038,Longitude:-80.595662,Altitude:176.9,Speed:0.03601111,Accuracy:2.7,Provider:gps,Time:10/16/2015 12:08:34 EDT	44.00	15.00	374

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	<input type="text" value="Yes"/>	<input type="text" value="Cut logs in small open patch , red pine heRE"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

## Tree Core Sampling

Tree ID	<input type="text" value="FO-061-T3-S5-1"/>		200
Species	<input type="text" value="Pinus resinosa"/>		
DBH (cm)	<input type="text" value="44.00"/>		
Height (m)	<input type="text" value="15.00"/>		
Core Sample ID	<input type="text" value="FO-061-T3-S5"/>		
Location	<input type="text" value="Latitude:45.847138,Longitude:-80.595732,Altitude:177.1,Speed:0.066877775,Accuracy:2.1,Provider:gps,Time:10/16/2015 12:15:04 EDT"/>		

## Stand Species

2444

	Height	Cover	Species Dominance
Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Pinus strobus &gt; pinus resinosa &gt; Acer rubrum"/>
Sub Canopy	<input type="text" value="3 &gt;2-6m"/>	<input type="text" value="2 10 - 25%"/>	<input type="text" value="Pinus strobus &gt; Acer rubrum"/>
Shrub	<input type="text" value="4 &gt;1-2m"/>	<input type="text" value="2 10 - 25%"/>	<input type="text" value="Abies balsamea &gt; Pteridium aquilinum"/>
Groundcover	<input type="text" value="7 &lt;0.2m"/>	<input type="text" value="1 0% - 10%"/>	<input type="text" value="Mosses"/>
Floating & Submerged	<input type="text"/>	<input type="text"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2444

<10    10-24    25-50    >50

Size Class Analysis               

Standing Snags               

Deadfall / Logs               

Species Dominance <10   

Species Dominance 10-24   

Species Dominance 25-50   

Species Dominance >50   

Plot ID   

Location    Latitude:45.846502,Longitude:-80.596809,Altitude:194.5,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:10/16/2015 12:28:08 EDT

224

Tree Tally

1781

Notes   

Location    Latitude:45.8465,Longitude:-80.596811,Altitude:194.2,Speed:0.06173333,Accuracy:2.1,Provider:gps,Time:10/16/2015 12:29:54 EDT



Dead   

Species	Tally	ID
Acer rubrum	5.00	4118
Betula papyrifera	1.50	4121
Abies balsamea	6.50	4124
Picea mariana	0.50	4127
Pinus resinosa	0.50	4130

Disturbance Indicators


Present Details

Cut stumps / logs - old	<input type="radio"/> No	<input type="text"/>
Cut stumps / logs - recent	<input type="radio"/> No	<input type="text"/>
Roads / trails	<input type="radio"/> No	<input type="text"/>
Exotic / invasive plants	<input type="radio"/> No	<input type="text"/>
Signs of fire	<input type="radio"/> No	<input type="text"/>
Other	<input type="radio"/> No	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Core Sampling		203
Tree ID	FO-061-T3-S3-1	
Species	Pinus strobus	
DBH (cm)	46.00	
Height (m)	18.00	
Core Sample ID	FO-061-T3-S3	
Location	Latitude:45.846465,Longitude:-80.596881,Altitude:195.6,Speed:0.10803334,Accuracy:2.1,Provider:gps,Time:10/16/2015 12:34:32 EDT	

Stand Species		2447	
	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Pinus Reseda= pinus strobus
Sub Canopy	3 >2-6m	3 25 - 60%	Abies balsamea > acer rubrum > Betula papyrifera
Shrub	4 >1-2m	2 10 - 25%	Viburnum cassinoides > Acer rubrum > Betula papyrifera >
Groundcover	6 >0.2-0.5m		Pteridium aquilinum > Cornus canadensis > goldthread> Gaultheria procumbens
Floating & Submerged			

Stand Composition		2447		
	<10	10-24	25-50	>50
Size Class Analysis	R	A	N	N
Standing Snags	N	R	N	N
Deadfall / Logs	O	O	N	N
Species Dominance <10	Abies balsamea			
Species Dominance 10-24	Picea mariana >Acer rubrun			
Species Dominance 25-50				
Species Dominance >50				

Map Number	FO-061-3	Field Crew	AMY INGRISELLI KASEY MCKENZIE	107
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Feature ID	FO-061			
Project Number	60341251	Air Temp. (degC)	11.00	Weather Notes
Tablet	AECOM10	Wind Speed (beaufort)	0 Calm	
Start Date	10/16/2015 11:18:00 AM	Precipitation	light rain	
End Date	10/16/2015 12:00:40 PM	Cloud Cover	100.00	

Plot ID	FO-061-T2-S6	Location	Latitude:45.846668,Longitude:-80.599323,Altitude:194.7,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:10/16/2015 11:21:23 EDT	197
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Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Tree Tally

1706

Notes

Location

Latitude:45.846676,Longitude:-80.599322,Altitude:194.7,Speed:0.07202222,Accuracy:2.1,Provider:gps,Time:10/16/2015 11:23:23 EDT



Dead

1.00

Species	Tally	ID
Pinus strobus	3.00	3851
Acer rubrum	6.00	3854
Abies balsamea	1.00	3857
Populus tremuloides	3.00	3860
Pinus resinosa	1.00	3863

## Disturbance Indicators

Present Details

Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

## Stand Species

2348

	Height	Cover	Species Dominance
Canopy	<input type="text" value="1 &gt;25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Pinus strobus"/>
Sub Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Populus tremuloides &gt; Acer rubrum &gt; Populus tremuloides"/>
Shrub	<input type="text" value="6 &gt;0.2-0.5m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Abies balsamea &gt; vaccinium angustifolium &gt; sweet fern"/>
Groundcover	<input type="text" value="7 &lt;0.2m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Grass sp"/>
Floating & Submerged		<input type="text" value="0 None"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Composition

2348

	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	N
Standing Snags	O	R	R	N
Deadfall / Logs	O	O	R	N
Species Dominance <10	Pinus strobus > Abies balsamea			
Species Dominance 10-24	Acer rubrum > Populus tremuloides > pinus strobus			
Species Dominance 25-50	Pinus strobus			
Species Dominance >50				

Plot ID	FO-061-T2-S7	Location	Latitude:45.846297,Longitude:-80.598832,Altitude:170.2,Speed:0.2212111,Accuracy:3.0,Provider:gps,Time:10/16/2015 11:44:25 EDT
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200

Tree Tally

1709

Notes		Location	Latitude:45.846304,Longitude:-80.598833,Altitude:169.9,Speed:0.041155554,Accuracy:2.4,Provider:gps,Time:10/16/2015 11:45:15 EDT
Dead	0.00		



Species	Tally	ID
Pinus strobus	1.00	3866
Acer rubrum	3.00	3869
Picea glauca	1.00	3872
Abies balsamea	1.00	3875

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T2-S7-1	Picea glauca	Latitude:45.846272,Longitude:-80.598839,Altitude:169.3,Speed:0.14404444,Accuracy:2.7,Provider:gps,Time:10/16/2015 11:48:31 EDT	41.00	17.00	332
FO-061-T2-S7-2	Pinus strobus	Latitude:45.846347,Longitude:-80.598856,Altitude:170.1,Speed:0.15947777,Accuracy:3.0,Provider:gps,Time:10/16/2015 11:49:52 EDT	42.00	22.00	335

Filter Start Date 10/1/2015


Filter End Date 10/30/2015

# Old Growth Forest Survey

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	Yes	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Tree Core Sampling

Tree ID	FO-061-T2-S7		182
Species	Pinus strobus		
DBH (cm)	42.00		
Height (m)	22.00		
Core Sample ID	FO-061-T2-S7		
Location	Latitude:45.846339,Longitude:-80.598707,Altitude:166.3,Speed:0.09774444,Accuracy:3.0,Provider:gps,Time:10/16/2015 11:51:39 EDT		

## Stand Species

2351

	Height	Cover	Species Dominance
Canopy	1 >25m	4 > 60%	Pinus strobus > Abies balsamea > Populus tremuloides
Sub Canopy	2 >6-25m	4 > 60%	Pinus strobus > Abies balsamea > Acer rubrum
Shrub	5 >0.5-1m	4 > 60%	Corylus cornuta > bracken fern > Abies balsamea
Groundcover	7 <0.2m	4 > 60%	Aster macrophylla
Floating & Submerged		0 None	

## Stand Composition

2351

	<10	10-24	25-50	>50
Size Class Analysis	A	A	O	R
Standing Snags	O	O	R	N
Deadfall / Logs	A	O	R	N
Species Dominance <10	Abies balsamea > Picea glauca			
Species Dominance 10-24	Abies balsamea > Acer rubrum > Picea glauca			
Species Dominance 25-50	Pinus strobus > Populus tremuloides > Picea glauca			
Species Dominance >50	Pinus Strobus > Picea glauca			

Map Number  Field Crew

110

Filter Start Date 10/1/2015

Filter End Date 10/30/2015




# Old Growth Forest Survey

Feature ID	FO-061		
Project Number	60341251	Air Temp. (degC)	10.00
Tablet	AECOM10	Wind Speed (beaufort)	0 Calm
Start Date	10/16/2015 12:06:28 PM	Precipitation	light rain
End Date	10/16/2015 1:24:37 PM	Cloud Cover	100.00
Plot ID	FO-061-T3-S1	Location	Latitude:45.846442,Longitude:-80.597961,Altitude:163.4,Speed:0.4064111,Accuracy:3.3,Provider:gps,Time:10/16/2015 12:08:54 EDT

203

Tree Tally 1712

Notes		Location	Latitude:45.846451,Longitude:-80.597953,Altitude:163.9,Speed:0.21092223,Accuracy:3.3,Provider:gps,Time:10/16/2015 12:09:04 EDT
Dead	1.00		

Species	Tally	ID
Populus grandidentata	2.00	3878
Acer rubrum	3.00	3881
Pinus resinosa	1.00	3884
Pinus strobus	3.00	3887

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	Yes	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

Filter Start Date 10/1/2015


Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Species				2354
	Height	Cover	Species Dominance	
Canopy	1 >25m	3 25 - 60%	Pinus strobus > Populus grandidentata	
Sub Canopy	2 >6-25m	4 > 60%	Abies balsamea > Acer rubrum	
Shrub	6 >0.2-0.5m	4 > 60%	Acer rubrum > Abies balsamea > bracken fern	
Groundcover	7 <0.2m	4 > 60%	Aster macrophylla	
Floating & Submerged		0 None		

Stand Composition					2354
	<10	10-24	25-50	>50	
Size Class Analysis	A	A	O	N	
Standing Snags	O	O	R	N	
Deadfall / Logs	A	O	R	N	
Species Dominance <10	Abies balsamea > pinus strobus				
Species Dominance 10-24	Abies balsamea > Pinus strobus				
Species Dominance 25-50	Pinus strobus > Populus grandidentata				
Species Dominance >50					

Plot ID	FO-061-T3-S2	Location	Latitude:45.846528,Longitude:-80.597392,Altitude:167.6,Speed:0.07202222,Accuracy:5.1,Provider:gps,Time:10/16/2015 12:24:58 EDT	206
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Tree Tally			1715
Notes		Location	Latitude:45.846494,Longitude:-80.597264,Altitude:171.3,Speed:0.20063333,Accuracy:3.9,Provider:gps,Time:10/16/2015 12:27:26 EDT 
Dead	1.00		

Species	Tally	ID
Acer rubrum	5.00	3890
Abies balsamea	5.00	3893
Pinus strobus	3.00	3896
Picea glauca	1.00	3899

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T3-S2-1	Pinus strobus	Latitude:45.846647,Longitude:-80.597146,Altitude:179.9,Speed:0.5761778,Accuracy:3.6,Provider:gps,Time:10/16/2015 12:30:33 EDT	58.50	25.00	338

Filter Start Date 10/1/2015

Filter End Date 10/30/2015


# Old Growth Forest Survey

Disturbance Indicators	
	Present Details
Cut stumps / logs - old	No
Cut stumps / logs - recent	No
Roads / trails	No
Exotic / invasive plants	No
Signs of fire	No
Other	No

Tree Core Sampling	
Tree ID	FO-061-T3-S2
Species	Pinus strobus
DBH (cm)	58.50
Height (m)	25.00
Core Sample ID	FO-061-T3-S2
Location	Latitude:45.846626,Longitude:-80.597174,Altitude:184.5,Speed:0.5556,Accuracy:3.6,Provider:gps,Time:10/16/2015 12:31:09 EDT

			185
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Stand Species	
Canopy	1 >25m   3 25 - 60%   Pinus strobus
Sub Canopy	2 >6-25m   4 > 60%   Abies balsamea > Acer rubrum > pinus strobus > Picea glauca
Shrub	5 >0.5-1m   4 > 60%   Bracken fern
Groundcover	7 <0.2m   4 > 60%   Cornus canadense
Floating & Submerged	0 None

Stand Composition	
	<10    10-24    25-50    >50
Size Class Analysis	A    A    O    R
Standing Snags	O    O    R    N
Deadfall / Logs	O    A    R    N
Species Dominance <10	
Species Dominance 10-24	
Species Dominance 25-50	
Species Dominance >50	Pinus strobus

Map Number	FO-061-3	Field Crew	TOM SHORNEY , EMILY MCNAUGHTON	113
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Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Feature ID	FO-061		
Project Number	60341251	Air Temp. (degC)	8.00
Tablet	AECOM12	Wind Speed (beaufort)	1 Light air movement
Start Date	10/16/2015 10:42:12 AM	Precipitation	heavy rain
End Date	10/16/2015 2:35:50 PM	Cloud Cover	100.00
Plot ID	FO-061-T3-S10	Location	Latitude:45.847307,Longitude:-80.592408,Altitude:189.9,Speed:0.07202222,Accuracy:2.7,Provider:gps,Time:10/16/2015 10:42:30 EDT

Tree Tally 1718

Notes		Location	
		Latitude:45.847307,Longitude:-80.592408,Altitude:189.9,Speed:0.07716667,Accuracy:2.4,Provider:gps,Time:10/16/2015 10:42:40 EDT	
Dead			


Species	Tally	ID
Populus tremuloides	1.00	3902
Acer rubrum	2.00	3905
Abies balsamia	4.00	3908
Betula papyrifera	2.00	3911
Pinus strobus	2.00	3914
Betula allegheniensis	2.00	3917

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T3-S10-1	Pinus strobus	Latitude:45.847301,Longitude:-80.59238,Altitude:190.3,Speed:0.43213335,Accuracy:2.1,Provider:gps,Time:10/16/2015 10:44:46 EDT	53.00	23.00	341
FO-061-T3-S10-2	Populus tremuloides	Latitude:45.847291,Longitude:-80.592366,Altitude:190.2,Speed:0.21606667,Accuracy:2.1,Provider:gps,Time:10/16/2015 10:45:31 EDT	49.00	25.00	344

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Disturbance Indicators				
	Present	Details		
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>		
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>		
Roads / trails	<input type="text" value="No"/>	<input type="text"/>		
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>		
Signs of fire	<input type="text" value="No"/>	<input type="text"/>		
Other	<input type="text" value="No"/>	<input type="text"/>		
Tree Core Sampling				
Tree ID	<input type="text" value="FO-061-T3-S10-1"/>			188
Species	<input type="text" value="Pinus strobus"/>			
DBH (cm)	<input type="text" value="53.00"/>			
Height (m)	<input type="text" value="23.00"/>			
Core Sample ID	<input type="text" value="FO-061-T3-S10-1"/>			
Location	Latitude:45.847317,Longitude:-80.59236,Altitude:192.9,Speed:0.0926,Accuracy:2.1,Provider:gps,Time:10/16/2015 10:46:08 EDT			
Stand Species				
	Height	Cover	Species Dominance	
Canopy	<input type="text" value="1 &gt;25m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Pinus strobus &gt; populus tremuloides"/>	
Sub Canopy	<input type="text" value="2 &gt;6-25m"/>	<input type="text" value="4 &gt; 60%"/>	<input type="text" value="Acer rubrum=abies balsamia &gt; betula papyrifera&gt;betula allegheniensis"/>	
Shrub	<input type="text" value="4 &gt;1-2m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Wild raisin &gt; striped maple"/>	
Groundcover	<input type="text" value="6 &gt;0.2-0.5m"/>	<input type="text" value="3 25 - 60%"/>	<input type="text" value="Club moss&gt;cornus canadensis &gt; goldthread &gt; trientalis borealis"/>	
Floating & Submerged	<input type="text"/>	<input type="text"/>	<input type="text"/>	
Stand Composition				
	<10	10-24	25-50	>50
Size Class Analysis	<input type="text" value="O"/>	<input type="text" value="A"/>	<input type="text" value="O"/>	<input type="text" value="O"/>
Standing Snags	<input type="text" value="R"/>	<input type="text" value="O"/>	<input type="text" value="R"/>	<input type="text" value="N"/>
Deadfall / Logs	<input type="text" value="O"/>	<input type="text" value="O"/>	<input type="text" value="R"/>	<input type="text" value="N"/>
Species Dominance <10	<input type="text" value="Acer rubrum=abies balsamia &gt; betula papyrifera"/>			
Species Dominance 10-24	<input type="text" value="Acer rubrum=abies balsamia &gt; betula papyrifer"/>			
Species Dominance 25-50	<input type="text" value="Acer rubrum=abies balsamia &gt; betula papyrifer"/>			
Species Dominance >50	<input type="text" value="Pinus strobus &gt; populus tremuloides"/>			


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Plot ID	FO-061-T3-S9	Location	Latitude:45.847661,Longitude:-80.59308,Altitude:195.2,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:10/16/2015 10:58:54 EDT	212
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Tree Tally	1721
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Notes		Location	Latitude:45.847661,Longitude:-80.59308,Altitude:195.2,Speed:0.07716667,Accuracy:2.1,Provider:gps,Time:10/16/2015 10:59:02 EDT	
Dead				

Species	Tally	ID
Betula allegheniensis	4.00	3920
Acer rubrum	4.00	3923
Abies balsamia	1.00	3926

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T3-S09-1	Acer rubrum	Latitude:45.847653,Longitude:-80.593092,Altitude:195.5,Speed:0.24693333,Accuracy:2.4,Provider:gps,Time:10/16/2015 11:01:22 EDT	46.00	20.00	347

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

Tree Core Sampling		
Tree ID	FO-061-T3-S9-1	191
Species	Acer rubrum	
DBH (cm)	46.00	
Height (m)	20.00	
Core Sample ID	FO-061-T3-S9-1	
Location	Latitude:45.847664,Longitude:-80.593141,Altitude:196.9,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:10/16/2015 11:02:22 EDT	

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Stand Species

2363

	Height	Cover	Species Dominance
Canopy	2 >6-25m	4 > 60%	Acer rubrum=betula allegheniensis > picea glauca > pinus strobus
Sub Canopy	2 >6-25m	3 25 - 60%	Acer rubrum > abies balsamia > betula papyrifera
Shrub	5 >0.5-1m	2 10 - 25%	Betula allegheniensis > Acer rubrum > striped maple
Groundcover	6 >0.2-0.5m	3 25 - 60%	Large leaved aster>cornus canadensis > goldthread
Floating & Submerged			

Stand Composition

2363

	<10	10-24	25-50	>50
Size Class Analysis	O	A	A	N
Standing Snags	R	O	O	N
Deadfall / Logs	O	O	R	N
Species Dominance <10	Acer rubrum > abies balsamia			
Species Dominance 10-24	Acer rubrum = abies balsamia > betula allegh			
Species Dominance 25-50	Betula allegheniensis>Acer rubrum > abies bal			
Species Dominance >50				

Plot ID	FO-061-T3-S7	Location	Latitude:45.847643,Longitude:-80.594207,Altitude:194.4,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:10/16/2015 11:24:30 EDT
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Tree Tally

1724

Notes		Location	Latitude:45.847589,Longitude:-80.594282,Altitude:193.8,Speed:0.051444445,Accuracy:2.4,Provider:gps,Time:10/16/2015 11:29:52 EDT
Dead			



Species	Tally	ID
Acer rubrum	3.00	3929
Betula papyrifera	1.00	3932
Betula allegheniensis	1.00	3935
Betula papyrifera	5.00	3938

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Stand Species

2366

	Height	Cover	Species Dominance
Canopy	2 >6-25m	2 10 - 25%	Acer rubrum>Betula papyrifera
Sub Canopy	2 >6-25m	4 > 60%	Abies balsamia>Acer rubrum > Betula papyrifera
Shrub	4 >1-2m	3 25 - 60%	Abies balsamia > wild raisin>betula allegheniensis
Groundcover			Clubmoss>cornus canadensis > goldthread
Floating & Submerged			

## Stand Composition

2366

	<10	10-24	25-50	>50
Size Class Analysis	O	A	O	N
Standing Snags	R	O	O	N
Deadfall / Logs	R	O	O	N
Species Dominance <10	Abies balsamia > betula allegh			
Species Dominance 10-24	Abies balsamia>Acer rubrum			
Species Dominance 25-50	Abies balsamia>Acer rubrum > Betula papyrifer			
Species Dominance >50				

Plot ID	FO-061-T3-S6	Location	Latitude:45.847383,Longitude:-80.595044,Altitude:189.1,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:10/16/2015 11:44:51 EDT
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Filter Start Date 10/1/2015


Filter End Date 10/30/2015



# Old Growth Forest Survey

Tree Tally

1727

Notes		Location	
Dead		Latitude:45.847383,Longitude:-80.595044,Altitude:189.1,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:10/16/2015 11:45:04 EDT	

Species	Tally	ID
Pinus strobus	4.00	3941
Quercus rubra	1.00	3944
Acer rubrum	1.00	3947
Abies balsamia	5.00	3950
Betula papyrifera	1.00	3953
Thuja occidentalis	1.00	3956

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T3-S06-1	Pinus strobus	Latitude:45.847364,Longitude:-80.595178,Altitude:188.7,Speed:0.041155554,Accuracy:2.1,Provider:gps,Time:10/16/2015 11:50:15 EDT	43.00	22.00	350
FO-061-T3-S06-2	Pinus strobus	Latitude:45.847353,Longitude:-80.595251,Altitude:187.8,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:10/16/2015 11:52:35 EDT	60.00	23.00	353
FO-061-T3-S06-03	Quercus rubra	Latitude:45.847323,Longitude:-80.595287,Altitude:187.0,Speed:0.30866668,Accuracy:2.1,Provider:gps,Time:10/16/2015 11:53:11 EDT	50.00	20.00	356
FO-061-T3-S06-04	Pinus strobus	Latitude:45.847299,Longitude:-80.59526,Altitude:187.7,Speed:0.39612222,Accuracy:1.75,Provider:gps,Time:10/16/2015 11:53:55 EDT	41.00	20.00	359
FO-061-T3-S06-05	Pinus strobus	Latitude:45.847275,Longitude:-80.595229,Altitude:187.1,Speed:0.05658889,Accuracy:1.75,Provider:gps,Time:10/16/2015 11:55:03 EDT	52.00	23.00	362

Filter Start Date 10/1/2015


Filter End Date 10/30/2015

# Old Growth Forest Survey

## Disturbance Indicators

	Present	Details
Cut stumps / logs - old	No	
Cut stumps / logs - recent	No	
Roads / trails	No	
Exotic / invasive plants	No	
Signs of fire	No	
Other	No	

## Tree Core Sampling

Tree ID	FO-061-T3-S6-2		194
Species	Pinus strobus		
DBH (cm)	60.00		
Height (m)	23.00		
Core Sample ID	FO-061-T3-S6-2		
Location	Latitude:45.847273,Longitude:-80.595261,Altitude:186.2,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:10/16/2015 11:55:44 EDT		

## Stand Species

2369

	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Pinus strobus>betula papyrifera
Sub Canopy	2 >6-25m	4 > 60%	Abies balsamia > betula papyrifera > Acer rubrum
Shrub	4 >1-2m	3 25 - 60%	Acer rubrum > abies balsamia > pinus strobus
Groundcover	6 >0.2-0.5m	4 > 60%	Bracken fern>wintergreen > clubmoss
Floating & Submerged			

## Stand Composition

2369

	<10	10-24	25-50	>50
Size Class Analysis	O	A	O	O
Standing Snags	R	O	O	N
Deadfall / Logs	O	O	R	N
Species Dominance <10	Abies balsamia > Acer rubrum > Betula papyr			
Species Dominance 10-24	Abies balsamia>Acer rubrum > Betula papyrifer			
Species Dominance 25-50	Abies balsamia > Acer rubrum > pinus strobu			
Species Dominance >50	Pinus strobus >>Quercus rubra			


Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

Plot ID	FO-061-T3-S4	Location	Latitude:45.84675,Longitude:-80.596284,Altitude:197.1,Speed:0.066877775,Accuracy:3.6,Provider:gps,Time:10/16/2015 12:14:42 EDT	221
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Tree Tally 1730

Notes		Location	Latitude:45.84675,Longitude:-80.596284,Altitude:197.1,Speed:0.051444445,Accuracy:3.6,Provider:gps,Time:10/16/2015 12:14:53 EDT	
Dead				

Species	Tally	ID
Pinus strobus	5.00	3959
Pinus resinosa	5.00	3962
Abies balsamia	3.00	3965

DBH					
tree id	Species	tree location	DBH	Height	ID
FO-061-T3-S04-01	Pinus strobus	Latitude:45.846632,Longitude:-80.5965,Altitude:184.2,Speed:0.041155554,Accuracy:3.6,Provider:gps,Time:10/16/2015 12:19:00 EDT	43.00	21.00	365
FO-061-T3-S04-02	Pinus resinosa	Latitude:45.846697,Longitude:-80.596474,Altitude:186.3,Speed:0.38583332,Accuracy:3.6,Provider:gps,Time:10/16/2015 12:20:13 EDT	49.00	23.00	368

Disturbance Indicators		
	Present	Details
Cut stumps / logs - old	<input type="text" value="No"/>	<input type="text"/>
Cut stumps / logs - recent	<input type="text" value="No"/>	<input type="text"/>
Roads / trails	<input type="text" value="No"/>	<input type="text"/>
Exotic / invasive plants	<input type="text" value="No"/>	<input type="text"/>
Signs of fire	<input type="text" value="No"/>	<input type="text"/>
Other	<input type="text" value="No"/>	<input type="text"/>

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Old Growth Forest Survey

## Tree Core Sampling

Tree ID: FO-061-T3-S04-02

Species: Pinus resinosa

DBH (cm): 49.00

Height (m): 23.00

Core Sample ID: FO-061-T3-S04-02

Location: Latitude:45.846706,Longitude:-80.596556,Altitude:187.7,Speed:0.10288889,Accuracy:3.6,Provider:gps,Time:10/16/2015 12:21:29 EDT



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## Stand Species

2372

	Height	Cover	Species Dominance
Canopy	2 >6-25m	3 25 - 60%	Pinus strobus > pinus resinosa
Sub Canopy	2 >6-25m	4 > 60%	Abies balsamia > pinus strobus > Acer rubrum
Shrub	5 >0.5-1m	3 25 - 60%	Abies balsamia > Acer rubrum
Groundcover	6 >0.2-0.5m	3 25 - 60%	Cornus canadensis > goldthread > clubmoss
Floating & Submerged			

## Stand Composition

2372

	<10	10-24	25-50	>50
Size Class Analysis	O	A	O	R
Standing Snags	O	O	R	N
Deadfall / Logs	O	O	O	N
Species Dominance <10	Abies balsamia > Acer rubrum			
Species Dominance 10-24	Abies balsamia > pinus strobus > Acer rubrum			
Species Dominance 25-50	Pinus strobus > abies balsamia > Acer rubrum			
Species Dominance >50	Pinus strobus > pinus resinosa			

Filter Start Date 10/1/2015

Filter End Date 10/30/2015

# Appendix C5

## 2015 Amphibian Surveys

# Salamander Search

Map Number	<input type="text" value="N-M31"/>	Field Crew	<input type="text" value="JAMES KAMSTRA HEATHER KIME"/>		3
Feature ID	<input type="text" value="AAS-N-M31-17"/>				
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="0.00"/>	Weather Notes	
Tablet	<input type="text" value="AECOM13"/>	Wind Speed (beaufort)	<input type="text" value="0"/>		
Start Date	<input type="text" value="4/23/2015 9:48:40 AM"/>	Precipitation	<input type="text" value="0"/>		
End Date	<input type="text" value="4/23/2015 9:56:26 AM"/>	Cloud Cover	<input type="text" value="100.00"/>		
Survey Centroid	<input type="text" value="Latitude:45.883874,Longitude:-80.677246,Altitude:179.2,Speed:0.07716667,Accuracy:1.8,Provider:gps,Time:04/23/2015 09:50:01 EDT"/>				
Vernal Pool Depth (m)	<input type="text" value="1"/>	Vernal Pool Length (m)	<input type="text" value="100"/>		
Vernal Pool Width (m)	<input type="text" value="15"/>	Water Present	<input type="text" value="True"/>		
Vegetation Comments	Survey Comments				
<input type="text" value="Permanent beaver pond with a narrow fringe of leatherleaf and sedges. 20%"/>	<input type="text" value="Next to small beaver dam."/>				
Amphibians Observed	<input type="text" value="No"/>				
Map Number	<input type="text" value="N-M28"/>	Field Crew	<input type="text" value="JAMES KAMSTRA, HEATHER KIME"/>		6
Feature ID	<input type="text" value="AAS-N-M28-12"/>				
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="0.00"/>	Weather Notes	
Tablet	<input type="text" value="AECOM13"/>	Wind Speed (beaufort)	<input type="text" value="3"/>		
Start Date	<input type="text" value="4/23/2015 11:36:07 AM"/>	Precipitation	<input type="text" value="0"/>		
End Date	<input type="text" value="4/23/2015 11:48:15 AM"/>	Cloud Cover	<input type="text" value="100.00"/>		
Survey Centroid	<input type="text" value="Latitude:45.867227,Longitude:-80.663861,Altitude:185.9,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:04/23/2015 11:38:19 EDT"/>				
Vernal Pool Depth (m)	<input type="text" value="0"/>	Vernal Pool Length (m)	<input type="text" value="20"/>		
Vernal Pool Width (m)	<input type="text" value="20"/>	Water Present	<input type="text" value="True"/>		
Vegetation Comments	Survey Comments				
<input type="text" value="Sedge marsh &amp; THICKET SWAMP below beaver dam"/>	<input type="text" value="Not vernal pool"/>				
Amphibians Observed	<input type="text" value="No"/>				
Map Number	<input type="text" value="N-M33"/>	Field Crew	<input type="text" value="JAMES KAMSTRA, HEATHER KIME"/>		9

# Salamander Search

Feature ID	AAS-N-M33-21		
Project Number	60341251	Air Temp. (degC)	2.00
Tablet	AECOM13	Wind Speed (beaufort)	3
Start Date	4/23/2015 1:47:40 PM	Precipitation	0
End Date	4/23/2015 2:01:40 PM	Cloud Cover	100.00
Weather Notes			

Survey Centroid	Latitude:45.861199,Longitude:-80.667234,Altitude:175.9,Speed:0.72022223,Accuracy:1.5,Provider:gps,Time:		
Vernal Pool Depth (m)	0	Vernal Pool Length (m)	
Vernal Pool Width (m)		Water Present	True
Vegetation Comments	Survey Comments		
Very large pond	Minnows present. Shoreline of pond. Cold weather for survey.		

Amphibians Observed	No
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Map Number	S-M48	Field Crew	TOM SHORNEY, OLGA HROPACH	12
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Feature ID	AAS-S-M48-7		
Project Number	60341251	Air Temp. (degC)	6.00
Tablet	AECOM13	Wind Speed (beaufort)	3
Start Date	4/27/2015 10:45:35 AM	Precipitation	0
End Date	4/27/2015 10:46:58 AM	Cloud Cover	35.00
Weather Notes			

Survey Centroid	Latitude:45.831828,Longitude:-80.701777,Altitude:187.2,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:04/27/2015 10:46:35 EDT		
Vernal Pool Depth (m)	0	Vernal Pool Length (m)	35
Vernal Pool Width (m)	10	Water Present	True
Vegetation Comments	Survey Comments		

Emergent: Sphagnum moss, Carex sp, Canada bluejoint 40%	
Fringing :Pinus strobus, Betula papyrifera, juniper, Aceru 40%	
Trees: Pinstro, tamarack 35%	
See amphibian survey form	

Amphibians Observed	No
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Map Number	S-M50	Field Crew	TOM SHORNEY, OLGA HROPACH	15
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# Salamander Search

Feature ID	AAS-S-M50-8		
Project Number	60341251	Air Temp. (degC)	8.00
Tablet	AECOM13	Wind Speed (beaufort)	3
Start Date	4/27/2015 12:30:58 PM	Precipitation	0
End Date	4/27/2015 12:31:27 PM	Cloud Cover	65.00
Weather Notes			

Survey Centroid	Latitude:45.826565,Longitude:-80.709137,Altitude:184.5,Speed:0.010288889,Accuracy:1.75,Provider:gps,Time:04/27/2015 12:31:55 EDT		
Vernal Pool Depth (m)	0	Vernal Pool Length (m)	150
Vernal Pool Width (m)	50	Water Present	True
Vegetation Comments	Survey Comments		
Emergent Car sp, grass sp 30% Fringing Abies bals, pin strob, Acer rub 80%	See vernal pool notes		

Amphibians Observed	No
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Map Number	S-M31	Field Crew	TOM SHORNEY, OLGA HROPACH	18
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Feature ID	AAS-S-M31-3		
Project Number	60341251	Air Temp. (degC)	8.00
Tablet	AECOM13	Wind Speed (beaufort)	3
Start Date	4/27/2015 3:09:53 PM	Precipitation	0
End Date	4/27/2015 3:10:39 PM	Cloud Cover	75.00
Weather Notes			

Survey Centroid	Latitude:45.840084,Longitude:-80.655437,Altitude:183.3,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:04/27/2015 03:10:51 EDT		
Vernal Pool Depth (m)	1	Vernal Pool Length (m)	200
Vernal Pool Width (m)	50	Water Present	True
Vegetation Comments	Survey Comments		
Emergent Grass and sedge species 5% Fringing Pinstrob, betpapy, white spruce 40%	See amphibian notes		

Amphibians Observed	No
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Map Number	N-M46	Field Crew	TOM SHORNEY, OLGA HROPACH	21
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Feature ID	AAS-N-M46-20		
Project Number	60341251	Air Temp. (degC)	12.00
Tablet	AECOM13	Wind Speed (beaufort)	3
Start Date	4/28/2015 10:24:01 AM	Precipitation	0
End Date	4/28/2015 10:24:50 AM	Cloud Cover	5.00
Weather Notes			



# Salamander Search

Survey Centroid	Latitude:45.858228,Longitude:-80.69857,Altitude:182.7,Speed:0.0463,Accuracy:1.5,Provider:gps,Time:04/28/2015 10:24:55 EDT		
Vernal Pool Depth (m)	<input type="text" value="1"/>	Vernal Pool Length (m)	<input type="text"/>
Vernal Pool Width (m)	<input type="text"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
Submergent Sphagnum moss 90% Emergent Cotton grass, leatherleaf, black spruce 80% Fringing Jackpine, white pine, tamarack 20%	<input type="text" value="See vernal pool survey"/>		
Amphibians Observed	<input type="text" value="No"/>		
Map Number	<input type="text" value="N-m35"/>	Field Crew	<input type="text" value="BILL TOM OLGA"/> 24
Feature ID	<input type="text" value="AAS-N-M35-16"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="12.00"/> Weather Notes
Tablet	<input type="text" value="AECOM13"/>	Wind Speed (beaufort)	<input type="text" value="4"/>
Start Date	<input type="text" value="4/28/2015 1:06:13 PM"/>	Precipitation	<input type="text" value="0"/>
End Date	<input type="text" value="4/28/2015 1:06:17 PM"/>	Cloud Cover	<input type="text" value="0.00"/>
Survey Centroid	<input type="text"/>		
Vernal Pool Depth (m)	<input type="text" value="0"/>	Vernal Pool Length (m)	<input type="text" value="200"/>
Vernal Pool Width (m)	<input type="text" value="25"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
Submergent: Sphagnum moss 60% cover. Emergent: Leatherleaf, Juncus sp, Carex sp, Alnus incana. 70% cover.	<input type="text" value="See vernal pool form"/>		
Amphibians Observed	<input type="text" value="No"/>		
Map Number	<input type="text" value="N-M26"/>	Field Crew	<input type="text" value="BILL OLGA TOM"/> 27
Feature ID	<input type="text" value="AAS-N-M26-13"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="12.00"/> Weather Notes
Tablet	<input type="text" value="AECOM13"/>	Wind Speed (beaufort)	<input type="text" value="2"/>
Start Date	<input type="text" value="4/28/2015 2:45:24 PM"/>	Precipitation	<input type="text" value="0"/>
End Date	<input type="text" value="4/28/2015 2:46:25 PM"/>	Cloud Cover	<input type="text" value="0.00"/>

# Salamander Search

Survey Centroid	Latitude:45.856282,Longitude:-80.648646,Altitude:182.3,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:04/28/2015 02:46:34 EDT		
Vernal Pool Depth (m)	<input type="text" value="0"/>	Vernal Pool Length (m)	<input type="text" value="0"/>
Vernal Pool Width (m)	<input type="text"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
Submergent Sphagnum moss 95% Emergent Leatherleaf 5% Trees Picea marina Alnus Incana 80% Fringing Tamarack, white pine, black spruce. 60% See vernal pool form	<input type="text"/>		
Amphibians Observed	<input type="text" value="No"/>		
Map Number	<input type="text" value="N-M16"/>	Field Crew	<input type="text" value="TOM SHORNEY OLGA HROPACH"/> 30
Feature ID	<input type="text" value="AAS-N-M16-19"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="7.00"/> Weather Notes
Tablet	<input type="text" value="AECOM13"/>	Wind Speed (beaufort)	<input type="text" value="2"/>
Start Date	<input type="text" value="4/29/2015 10:22:15 AM"/>	Precipitation	<input type="text" value="0"/>
End Date	<input type="text" value="4/29/2015 10:35:20 AM"/>	Cloud Cover	<input type="text" value="40.00"/>
Survey Centroid	<input type="text"/>		
Vernal Pool Depth (m)	<input type="text" value="0"/>	Vernal Pool Length (m)	<input type="text"/>
Vernal Pool Width (m)	<input type="text"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
Emergent Carex sp 75% Submergent Sphagnum moss 95% Fringing Pic Mari, tamarack, jackpine 10% Trees Leatherleath, speckled alder, black spruce 70%	<input type="text" value="See vernal pool form&lt;br/&gt;Very little open water present"/>		
Amphibians Observed	<input type="text" value="No"/>		
Map Number	<input type="text" value="S-M50"/>	Field Crew	<input type="text" value="ROB CONOHAN, KEVIN FLOOD, JOHANNA PERZ"/> 33
Feature ID	<input type="text" value="AAS-S-M50-8"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="15.00"/> Weather Notes
Tablet	<input type="text" value="AECOM9"/>	Wind Speed (beaufort)	<input type="text" value="3"/>
Start Date	<input type="text" value="5/13/2015 1:05:32 PM"/>	Precipitation	<input type="text" value="0"/>
End Date	<input type="text" value="5/13/2015 1:35:36 PM"/>	Cloud Cover	<input type="text" value="0.00"/>

# Salamander Search

Survey Centroid	Latitude:45.826461,Longitude:-80.708844,Altitude:184.8,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:05/13/2015 01:06:22 EDT		
Vernal Pool Depth (m)	2	Vernal Pool Length (m)	30
Vernal Pool Width (m)	60	Water Present	True
Vegetation Comments	Survey Comments		
Alder swamp riparian area bordering beaver pond complex and meadow marsh community. Water fairly deep but very dark with tannin.			
Amphibians Observed	No		
Map Number	S-M48	Field Crew	JOHANNA PERZ, ROB CONOHAN, KEVIN FLOOD <span style="float: right;">36</span>
Feature ID	AAS-S-M48-7		
Project Number	60341251	Air Temp. (degC)	12.00
Tablet	AECOM9	Wind Speed (beaufort)	3
Start Date	5/13/2015 2:49:43 PM	Precipitation	0
End Date	5/13/2015 3:10:49 PM	Cloud Cover	0.00
Weather Notes			
Survey Centroid	Latitude:45.83178,Longitude:-80.701833,Altitude:189.5,Speed:0.025722222,Accuracy:1.75,Provider:gps,Time:05/13/2015 02:50:35 EDT		
Vernal Pool Depth (m)	0	Vernal Pool Length (m)	100
Vernal Pool Width (m)	5	Water Present	True
Vegetation Comments	Survey Comments		
Alder sp>>white spruce>White pine. 25 percent cover	Water levels quite low.		
Amphibians Observed	No		

# Salamander Search

Map Number	S-M34	Field Crew	JESSICA WALKER AND ADAM MCCLELLAND		39
Feature ID	AAS-S-M34-5				
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM8	Wind Speed (beaufort)	2	Sunny	
Start Date	5/13/2015 12:59:48 PM	Precipitation	0		
End Date	5/13/2015 1:10:21 PM	Cloud Cover	0.00		

Survey Centroid	Latitude:45.829959,Longitude:-80.651516,Altitude:183.1,Speed:0.041155554,Accuracy:2.1,Provider:gps,Time:05/13/2015 01:01:18 EDT				
Vernal Pool Depth (m)	1	Vernal Pool Length (m)	300		
Vernal Pool Width (m)	15	Water Present	True		
Vegetation Comments	Survey Comments				
Submergent vegetation, logs,Sphagnum moss patches	Wetland unlikely to support many egg masses. Part of a larger wetland community. No egg masses observed				

Amphibians Observed	Yes				
Species	Wood frog				3
Life Stage	Adult				
Number of Individuals	1				
Search Type	Observation				
Size (cm)	0				
Observation Notes	Heard individual				
Observation Notes	Heard individual				

Map Number	S-M31	Field Crew	JESSICA WALKER AND ADAM MCCLELLAND		42
Feature ID	AAS-S-M31-3				
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM8	Wind Speed (beaufort)	4		
Start Date	5/13/2015 2:15:48 PM	Precipitation	0		
End Date	5/13/2015 2:32:02 PM	Cloud Cover	0.00		

# Salamander Search

Survey Centroid	Latitude:45.840069,Longitude:-80.655377,Altitude:181.1,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:05/13/2015 02:17:07 EDT		
Vernal Pool Depth (m)	<input type="text" value="1"/>	Vernal Pool Length (m)	<input type="text" value="200"/>
Vernal Pool Width (m)	<input type="text" value="50"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
Large open water wetland with highly vegetated creek inputting into open water.	Wetland system likely to have predatory fish. No evidence of egg masses.		
Amphibians Observed	<input type="text" value="No"/>		

# Salamander Search

Map Number	S-M05	Field Crew	SARAH RICHER BILL MCLEOD	45
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Feature ID	Aas-s-m05-1			
Project Number	60341251	Air Temp. (degC)	9.00	Weather Notes Cool slight breeze
Tablet	AECOM18	Wind Speed (beaufort)	2	
Start Date	5/13/2015 9:27:58 AM	Precipitation	0	
End Date	5/13/2015 9:57:59 AM	Cloud Cover	0.00	

Survey Centroid	Latitude:45.848146,Longitude:-80.580902,Altitude:209.9,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:05/13/2015 09:41:34 EDT
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Vernal Pool Depth (m)	0	Vernal Pool Length (m)	100
Vernal Pool Width (m)	10	Water Present	True

Vegetation Comments	Survey Comments
Marsh marigold. Shrubs. Dragonfly and damselfly larva	Deep enough for dragon fly larva

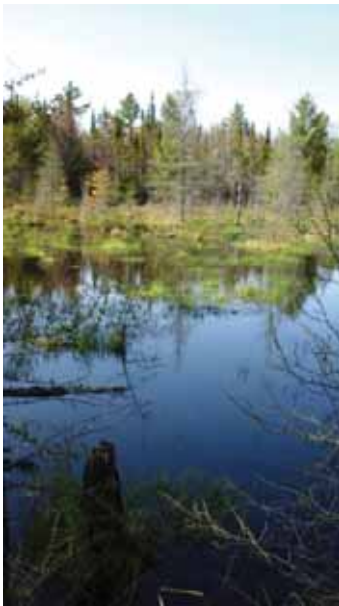
Amphibians Observed	Yes
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Species	Saw one. Escaped too quickly to identify	6
Life Stage	Adult	
Number of Individuals	One	
Search Type	Observation	
Size (cm)	4	

Observation Notes
Moved too fast to identify

Observation Notes
Moved too fast to identify

# Salamander Search

Map Number	S-M07	Field Crew	SARAH RICHER, BILL MCLEOD		96
Feature ID	AAS-S-M07-9				
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM18	Wind Speed (beaufort)	2		
Start Date	5/13/2016 4:15:56 PM	Precipitation	0		
End Date	5/13/2015 4:45:37 PM	Cloud Cover	0.00		
Survey Centroid	Latitude:45.848831,Longitude:-80.600935,Altitude:207.3,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:05/13/2015 04:32:24 EDT				
Vernal Pool Depth (m)	1	Vernal Pool Length (m)	100		
Vernal Pool Width (m)	200	Water Present	True		
Vegetation Comments	Survey Comments				
Loads of open standing water, scattered emergent aquatic sedges & other veg in tufts					
Amphibians Observed	Yes				
Species	Spring peeper				
Life Stage	Adult				
Number of Individuals	5				
Search Type	Observation				
Size (cm)	2				
Observation Notes					
Heard calling. Photo is of habitat					
Observation Notes					
Heard calling. Photo is of habitat					

# Salamander Search

Species	Green frog
Life Stage	Adult
Number of Individuals	1
Search Type	Observation
Size (cm)	4

Observation Notes

Heard calling. Photo is of habitat

Observation Notes

Heard calling. Photo is of habitat





# Salamander Search

Map Number	S-M24	Field Crew	SARAH RICHER	102
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Feature ID	AAS-S-M24-10			
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes
Tablet	AECOM18	Wind Speed (beaufort)	3	
Start Date	5/13/2015 12:07:55 PM	Precipitation	0	
End Date	5/13/2015 12:38:07 PM	Cloud Cover	0.00	

Survey Centroid	Latitude:45.833117,Longitude:-80.603716,Altitude:202.9,Speed:0.0463,Accuracy:1.8,Provider:gps,Time:
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Vernal Pool Depth (m)	0	Vernal Pool Length (m)	250
Vernal Pool Width (m)	250	Water Present	True

Vegetation Comments	Alder around edge, aquatic sedges throughout	Survey Comments	Survey centroid Centre point taken while on rock barren beside acoustic monitor
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Amphibians Observed	Yes
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Species	Green frog	15
Life Stage	Adult	
Number of Individuals	2	
Search Type	Observation	
Size (cm)	5	

Observation Notes	Centre point of observation taken while on rock barren beside acoustic monitor. Too fast to photograph
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Observation Notes	Centre point of observation taken while on rock barren beside acoustic monitor. Too fast to photograph
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# Salamander Search

Species	<input type="text" value="Spring peeper"/>
Life Stage	<input type="text" value="Adult"/>
Number of Individuals	<input type="text" value="1"/>
Search Type	<input type="text" value="Observation"/>
Size (cm)	<input type="text" value="2"/>

## Observation Notes

Centre point of observation taken while on rock barren beside acoustic monitor. Too fast to photograph

## Observation Notes

Centre point of observation taken while on rock barren beside acoustic monitor. Too fast to photograph

# Salamander Search

Map Number	S-M17	Field Crew	KRISTAN WASHBURN & KASEY MCKENZIE		54
Feature ID	AAS-S-M17-4				
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	2		
Start Date	5/13/2015 12:52:46 PM	Precipitation	0		
End Date	5/13/2015 1:23:39 PM	Cloud Cover	5.00		

Survey Centroid	Latitude:45.832339,Longitude:-80.633231,Altitude:180.0,Speed:0.0051444443,Accuracy:1.8,Provider:gps,Time:05/13/2015 01:09:17 EDT
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Vernal Pool Depth (m)	0	Vernal Pool Length (m)	50
Vernal Pool Width (m)	0	Water Present	True

Vegetation Comments	Grasses with some narrow leaved meadowsweet 30%cover	Survey Comments	
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Amphibians Observed	Yes
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Species	Leopard frog	21
Life Stage	Adult	
Number of Individuals	1	
Search Type	Observation	
Size (cm)	8	

Observation Notes	
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Observation Notes	
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Map Number	S-M14	Field Crew	KRISTAN WASHBURN & KASEY MCKENZIE		57
Feature ID	AAS-S-M14-2				
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	2		
Start Date	5/13/2015 3:02:56 PM	Precipitation	0		
End Date	5/13/2015 3:32:26 PM	Cloud Cover	0.00		

# Salamander Search

Survey Centroid	Latitude:45.84835,Longitude:-80.636021,Altitude:183.3,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:05/13/2015 03:15:29 EDT		
Vernal Pool Depth (m)	<input type="text" value="0"/>	Vernal Pool Length (m)	<input type="text" value="100"/>
Vernal Pool Width (m)	<input type="text" value="100"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
<input type="text" value="Sedge dominant 1% cover"/>	<input type="text"/>		
Amphibians Observed	<input type="text" value="No"/>		
Map Number	<input type="text" value="S-M11"/>	Field Crew	<input type="text" value="JULIE AYESHA"/> 300
Feature ID	<input type="text" value="Aas-s-m11-11"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="8.00"/> Weather Notes
Tablet	<input type="text" value="AECOM12"/>	Wind Speed (beaufort)	<input type="text" value="2"/>
Start Date	<input type="text" value="5/13/2015 9:24:26 AM"/>	Precipitation	<input type="text" value="0"/>
End Date	<input type="text" value="5/13/2015 10:19:07 AM"/>	Cloud Cover	<input type="text" value="0.00"/>
Survey Centroid	Latitude:45.855548,Longitude:-80.622034,Altitude:198.9,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:05/13/2015 10:15:55 EDT		
Vernal Pool Depth (m)	<input type="text" value="60"/>	Vernal Pool Length (m)	<input type="text" value="40"/>
Vernal Pool Width (m)	<input type="text" value="20"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
<input type="text" value="Woodland on north east and west side , steep banks ponds completely surrounded by alder emergent and submergent veg downed logs abundant"/>	<input type="text"/>		
Amphibians Observed	<input type="text" value="Yes"/>		
Species	<input type="text" value="American toad"/>		
Life Stage	<input type="text" value="Larvae"/>		
Number of Individuals	<input type="text" value="15"/>		
Search Type	<input type="text" value="Observation"/>		
Size (cm)	<input type="text" value="1"/>		
Observation Notes	<input type="text" value="Small dark almost black tadpoles"/>		
Observation Notes	<input type="text" value="Small dark almost black tadpoles"/>		

# Salamander Search

Species	Spotted salamander
Life Stage	Egg Mass
Number of Individuals	3 egg masses
Search Type	Overturned Logs
Size (cm)	6



27

Observation Notes

6 cm egg masses clear jelly with tiny black centres  
Tamarack black spruce coniferous swamp Mass  
size of fist

Observation Notes

6 cm egg masses clear jelly with tiny black centres  
Tamarack black spruce coniferous swamp Mass  
size of fist

Species	American toad
Life Stage	Adult
Number of Individuals	1
Search Type	Observation
Size (cm)	6

30

Observation Notes

Observation Notes

Species	Unknown eggs
Life Stage	Egg Mass
Number of Individuals	4 masses
Search Type	Observation
Size (cm)	10

33



Observation Notes

Long mass along branch

Observation Notes

Long mass along branch

# Salamander Search

36

Species	Unknown tadpole (leopard frog?)
Life Stage	Larvae
Number of Individuals	5
Search Type	Observation
Size (cm)	4

Observation Notes

Large tadpole dark back creamy belly

Observation Notes

Large tadpole dark back creamy belly

Map Number	N-M1	Field Crew	JULIE AYESHA CORY	63
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Feature ID	AAS-N-M1-14			
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes
Tablet	AECOM12	Wind Speed (beaufort)	1	
Start Date	5/13/2015 2:30:27 PM	Precipitation	0	
End Date	5/13/2015 2:52:44 PM	Cloud Cover	0.00	

Survey Centroid	Latitude:45.887666,Longitude:-80.571719,Altitude:186.8,Speed:0.05658889,Accuracy:2.4,Provider:gps,Time:05/13/2015 02:53:22 EDT
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Vernal Pool Depth (m)	0	Vernal Pool Length (m)	50
Vernal Pool Width (m)	10	Water Present	True

Vegetation Comments	Vernal pool in alder thicket with substrate of Sphagnum and leaf litter	Survey Comments	Numerous fallen trees and logs in water as well as dense alder thicket
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Amphibians Observed	No
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# Salamander Search

Map Number	<input type="text" value="N-M31"/>	Field Crew	<input type="text" value="ADAM AYESHA RYAN"/>		66
Feature ID	<input type="text" value="AAS-N-M31-17"/>				
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="5.00"/>	Weather Notes	
Tablet	<input type="text" value="AECOM11"/>	Wind Speed (beaufort)	<input type="text" value="1"/>		
Start Date	<input type="text" value="5/14/2015 9:23:10 AM"/>	Precipitation	<input type="text" value="0"/>		
End Date	<input type="text" value="5/14/2015 9:42:12 AM"/>	Cloud Cover	<input type="text" value="0.00"/>		

Survey Centroid	Latitude:45.883885,Longitude:-80.677217,Altitude:179.3,Speed:0.041155554,Accuracy:2.1,Provider:gps,Time:05/14/2015 09:24:30 EDT
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Vernal Pool Depth (m)	<input type="text" value="45"/>	Vernal Pool Length (m)	<input type="text" value="20"/>
Vernal Pool Width (m)	<input type="text" value="8"/>	Water Present	<input type="text" value="True"/>

Vegetation Comments	Survey Comments
Beaver pond with dams on both ends; emergent vegetation cover 70%, several fallen logs	Beaver pond, not vernal pool

Amphibians Observed	<input type="text" value="Yes"/>
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Species	<input type="text" value="American bullfrog"/>
Life Stage	<input type="text" value="Adult"/>
Number of Individuals	<input type="text" value="1"/>
Search Type	<input type="text" value="Observation"/>
Size (cm)	<input type="text" value="8"/>



Observation Notes	<input type="text"/>
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Observation Notes	<input type="text"/>
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39

Map Number	<input type="text" value="N-M9"/>	Field Crew	<input type="text" value="ADAM AYESHA RYAN"/>		69
Feature ID	<input type="text" value="AAS-N-M9-18"/>				
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="15.00"/>	Weather Notes	
Tablet	<input type="text" value="AECOM11"/>	Wind Speed (beaufort)	<input type="text" value="2"/>		
Start Date	<input type="text" value="5/14/2015 3:43:28 PM"/>	Precipitation	<input type="text" value="0"/>		
End Date	<input type="text" value="5/14/2015 3:54:37 PM"/>	Cloud Cover	<input type="text" value="15.00"/>		

# Salamander Search

Survey Centroid	Latitude:45.883882,Longitude:-80.631324,Altitude:186.7,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:05/14/2015 03:45:14 EDT		
Vernal Pool Depth (m)	0	Vernal Pool Length (m)	0
Vernal Pool Width (m)	1	Water Present	True
Vegetation Comments	Survey Comments		
Alder thicket swamp with grasses. Stream flowing through.	No stagnant water anytime of survey		
Amphibians Observed	No		
Map Number	N-M11	Field Crew	TOM SHORNEY, RICH PERREAULT 72
Feature ID	AAS -N-M11-15		
Project Number	60341251	Air Temp. (degC)	10.00 Weather Notes
Tablet	AECOM6	Wind Speed (beaufort)	1
Start Date	5/14/2015 10:39:32 AM	Precipitation	0
End Date	5/14/2015 10:58:38 AM	Cloud Cover	0.00
Survey Centroid	Latitude:;,Longitude:;,Altitude:;,Speed:;,Accuracy:;,Provider:;,Time:;		
Vernal Pool Depth (m)	50	Vernal Pool Length (m)	300
Vernal Pool Width (m)	100	Water Present	True
Vegetation Comments	Survey Comments		
Carex sp. 50% cover			
Amphibians Observed	Yes		
Species	Spring peepers 42		
Life Stage	Adult		
Number of Individuals	40 +		
Search Type	Observation		
Size (cm)	8		
Observation Notes	Several spring peepers calling and moving. Around the wetland. Some basking alongshore		
Observation Notes	Several spring peepers calling and moving. Around the wetland. Some basking alongshore		




# Salamander Search

Map Number	N-M16	Field Crew	TOM SHORNEY, RICHARD PERREAULT		75
Feature ID	AAS-N-M16-19				
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM6	Wind Speed (beaufort)	1		
Start Date	5/14/2015 1:26:56 PM	Precipitation	0		
End Date	5/14/2015 1:53:14 PM	Cloud Cover	0.00		
Survey Centroid	Latitude:45.872175,Longitude:-80.642524,Altitude:181.6,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:05/14/2015 01:47:20 EDT				
Vernal Pool Depth (m)	3	Vernal Pool Length (m)			
Vernal Pool Width (m)		Water Present	False		
Vegetation Comments	Survey Comments				
Sedge, cattail	Dry				
Amphibians Observed	No				
Map Number	N-M46	Field Crew	JULIE ELLIS KASEY MACKENZIE		78
Feature ID	AAS-N-M46-20				
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	2		
Start Date	5/14/2015 2:59:36 PM	Precipitation	0		
End Date	5/14/2015 3:16:05 PM	Cloud Cover	0.00		
Survey Centroid	Latitude:45.858205,Longitude:-80.698713,Altitude:180.0,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:05/14/2015 03:14:13 EDT				
Vernal Pool Depth (m)	45	Vernal Pool Length (m)	200		
Vernal Pool Width (m)	15	Water Present	True		
Vegetation Comments	Survey Comments				
Alder thicket and bog, dense mats of Sphagnum 40% cover.					
Amphibians Observed	No				

# Salamander Search

Map Number	N-M35	Field Crew	KRISTAN WASHBURN		81
Feature ID	AAS-N-M35-16				
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM4	Wind Speed (beaufort)	2		
Start Date	5/14/2015 12:20:05 PM	Precipitation	0		
End Date	5/14/2015 1:52:41 PM	Cloud Cover	0.00		

Survey Centroid	Latitude:45.858058,Longitude:-80.680003,Altitude:176.2,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:05/14/2015 12:38:28 EDT				
Vernal Pool Depth (m)	0	Vernal Pool Length (m)	20		
Vernal Pool Width (m)	8	Water Present	True		
Vegetation Comments	Survey Comments				
Alder and dominant sedge wth Sphagnum and emergents					

Amphibians Observed	Yes				
Species	Green frog		45		
Life Stage	Adult				
Number of Individuals	1				
Search Type	Observation				
Size (cm)	7				
Observation Notes					
Observation Notes					

Map Number	N-M33	Field Crew	KRISTAN WASHBURN		84
Feature ID	AAS-N-M33-21				
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM4	Wind Speed (beaufort)	3		
Start Date	5/14/2015 1:42:00 PM	Precipitation	0		
End Date	5/14/2015 2:07:52 PM	Cloud Cover	5.00		

# Salamander Search

Survey Centroid	Latitude:45.861224,Longitude:-80.667398,Altitude:179.3,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:05/14/2015 01:43:50 EDT		
Vernal Pool Depth (m)	<input type="text" value="3"/>	Vernal Pool Length (m)	<input type="text" value="200"/>
Vernal Pool Width (m)	<input type="text" value="500"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
Open. Water wetlands sit floating and emergentss 10% cover	<input type="text"/>		

Amphibians Observed	<input type="text" value="No"/>		
Map Number	<input type="text" value="N-M28"/>	Field Crew	<input type="text" value="WALKER AND CARMICHAEL"/>

87

Feature ID	<input type="text" value="Aas-n-M28-12"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="12.00"/>
Tablet	<input type="text" value="AECOM8"/>	Wind Speed (beaufort)	<input type="text" value="4"/>
Start Date	<input type="text" value="5/14/2015 10:52:14 AM"/>	Precipitation	<input type="text" value="0"/>
End Date	<input type="text" value="5/14/2015 11:01:53 AM"/>	Cloud Cover	<input type="text" value="5.00"/>
Weather Notes		<input type="text"/>	

Survey Centroid	Latitude:45.867324,Longitude:-80.663887,Altitude:184.6,Speed:0.05658889,Accuracy:1.5,Provider:gps,Time:05/14/2015 10:53:33 EDT		
Vernal Pool Depth (m)	<input type="text" value="2"/>	Vernal Pool Length (m)	<input type="text" value="3"/>
Vernal Pool Width (m)	<input type="text" value="4"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
Small beaver pond with little to no attachments site.	<input type="text"/>		

Amphibians Observed	<input type="text" value="No"/>		
Map Number	<input type="text" value="N-M31"/>	Field Crew	<input type="text" value="JULIE ELLIS"/>

90

Feature ID	<input type="text" value="AAS-N-M31-17"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="13.00"/>
Tablet	<input type="text" value="AECOM21"/>	Wind Speed (beaufort)	<input type="text" value="3"/>
Start Date	<input type="text" value="7/1/2015 10:02:50 AM"/>	Precipitation	<input type="text" value="0"/>
End Date	<input type="text" value="7/1/2015 10:20:34 AM"/>	Cloud Cover	<input type="text" value="100.00"/>
Weather Notes		<input type="text"/>	

# Salamander Search

Survey Centroid	Latitude:45.883866,Longitude:-80.677291,Altitude:184.8,Speed:0.05658889,Accuracy:1.5,Provider:gps,Time:07/01/2015 10:03:30 EDT		
Vernal Pool Depth (m)	<input type="text" value="2"/>	Vernal Pool Length (m)	<input type="text" value="250"/>
Vernal Pool Width (m)	<input type="text" value="20"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
<input type="text" value="Emergent leatherleaf, milfoil submergent"/>	<input type="text" value="Fish netted"/>		

Amphibians Observed	<input type="text" value="No"/>
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Map Number	<input type="text" value="N-M09"/>	Field Crew	<input type="text" value="JULIE ELLIS"/>	93
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Feature ID	<input type="text" value="AAS-N-M9-18"/>			
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="13.00"/>	Weather Notes
Tablet	<input type="text" value="AECOM21"/>	Wind Speed (beaufort)	<input type="text" value="3"/>	
Start Date	<input type="text" value="7/1/2015 12:52:33 PM"/>	Precipitation	<input type="text" value="0"/>	
End Date	<input type="text" value="7/1/2015 12:00:35 PM"/>	Cloud Cover	<input type="text" value="50.00"/>	

Survey Centroid	Latitude:45.883763710149275,Longitude:-80.63191149350823,Altitude:160.11528177466244,Speed:0.0,Accuracy:20.0,Provider:gps,Time:07/01/2015 01:05:00 EDT		
Vernal Pool Depth (m)	<input type="text" value="1"/>	Vernal Pool Length (m)	<input type="text" value="100"/>
Vernal Pool Width (m)	<input type="text" value="2"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
<input type="text" value="Alder thicket and Sedge fen"/>	<input type="text" value="Long narrow creek ruining through fen and alder thicket"/>		

Amphibians Observed	<input type="text" value="No"/>
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Map Number	<input type="text" value="N-M1"/>	Field Crew	<input type="text" value="JULIE ELLIS"/>	96
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Feature ID	<input type="text" value="AAS-N-M1-14"/>			
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="15.00"/>	Weather Notes
Tablet	<input type="text" value="AECOM21"/>	Wind Speed (beaufort)	<input type="text" value="3"/>	
Start Date	<input type="text" value="7/1/2015 2:17:23 PM"/>	Precipitation	<input type="text" value="0"/>	
End Date	<input type="text" value="7/1/2015 2:26:34 PM"/>	Cloud Cover	<input type="text" value="100.00"/>	

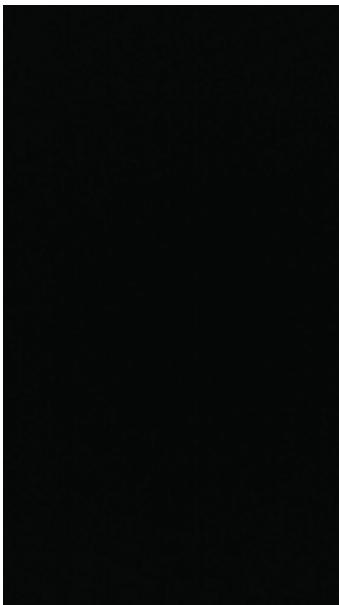
# Salamander Search

Survey Centroid	Latitude:45.88768246506659,Longitude:-80.57232657027306,Altitude:200.63094938807188,Speed:0.16343877,Accuracy:10.0,Provider:gps,Time:07/01/2015 02:27:44 EDT		
Vernal Pool Depth (m)	<input type="text" value="0"/>	Vernal Pool Length (m)	<input type="text" value="0"/>
Vernal Pool Width (m)	<input type="text" value="0"/>	Water Present	<input type="text" value="False"/>
Vegetation Comments	Survey Comments		
Alder thicket	Dry, no water		
Amphibians Observed	<input type="text" value="No"/>		
Map Number	<input type="text" value="N-M46"/>	Field Crew	<input type="text" value="KORPIJAAKKO"/> 99
Feature ID	<input type="text" value="AAS-N-M46-20"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="18.00"/> Weather Notes
Tablet	<input type="text" value="AECOM11"/>	Wind Speed (beaufort)	<input type="text" value="2"/>
Start Date	<input type="text" value="7/1/2015 9:30:58 AM"/>	Precipitation	<input type="text" value="0"/>
End Date	<input type="text" value="7/1/2015 10:00:08 AM"/>	Cloud Cover	<input type="text" value="100.00"/>
Survey Centroid	Latitude:45.858118,Longitude:-80.698606,Altitude:195.4,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:07/01/2015 09:59:26 EDT		
Vernal Pool Depth (m)	<input type="text" value="1"/>	Vernal Pool Length (m)	<input type="text" value="0"/>
Vernal Pool Width (m)	<input type="text"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
LeatherleafCarex spTamarackJack line fringe	No vernal pool locate. Dip netted into channels of water		
Amphibians Observed	<input type="text" value="No"/>		

# Salamander Search

Map Number	N-M35	Field Crew	KORPIJAAKKO	102
Feature ID	AAS-N-M35-16			
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM11	Wind Speed (beaufort)	3	
Start Date	7/1/2015 11:35:59 AM	Precipitation	0	
End Date	7/1/2015 11:54:08 AM	Cloud Cover	75.00	

Survey Centroid	Latitude:45.858226,Longitude:-80.680263,Altitude:184.9,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:07/01/2015 11:46:22 EDT		
Vernal Pool Depth (m)	1	Vernal Pool Length (m)	
Vernal Pool Width (m)		Water Present	True
Vegetation Comments	LeatherleafCarex sp		
Survey Comments	Chsnrnrlized stream between two High rock barrens. Not really any pools		

Amphibians Observed	Yes		
Species	Green frog		48
Life Stage	Adult		
Number of Individuals	1		
Search Type	Observation		
Size (cm)	6		
Observation Notes	Heard calling		
Observation Notes	Heard calling		

Map Number	N-M33	Field Crew	KORPIJAAKKO	105
Feature ID	AAS-N-M33-21			
Project Number	60341251	Air Temp. (degC)	25.00	Weather Notes
Tablet	AECOM11	Wind Speed (beaufort)	3	
Start Date	7/1/2015 1:50:55 PM	Precipitation	0	
End Date	7/1/2015 2:07:12 PM	Cloud Cover	20.00	

# Salamander Search

Survey Centroid	Latitude:45.861214,Longitude:-80.667306,Altitude:182.1,Speed:0.09774444,Accuracy:2.25,Provider:gps,Time:07/01/2015 02:03:43 EDT		
Vernal Pool Depth (m)	1	Vernal Pool Length (m)	450
Vernal Pool Width (m)	200	Water Present	True
Vegetation Comments	Survey Comments		
Nymphaea odoratus			

Amphibians Observed	No		
Map Number	N-M11	Field Crew	KRISTAN WASHBURN

108

Feature ID	AAS-N-M-11-15		
Project Number	60341251	Air Temp. (degC)	14.00
Tablet	AECOM6	Wind Speed (beaufort)	4
Start Date	7/1/2015 9:40:19 AM	Precipitation	1
End Date	7/1/2015 10:10:24 AM	Cloud Cover	100.00
Weather Notes			

Survey Centroid	Latitude:45.869166,Longitude:-80.605834,Altitude:190.7,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:07/01/2015 10:01:45 EDT		
Vernal Pool Depth (m)	0	Vernal Pool Length (m)	6
Vernal Pool Width (m)	25	Water Present	True
Vegetation Comments	Survey Comments		
Dominant Carex with Callaand marsh marigold			

Amphibians Observed	Yes
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Species	Leopard frog
Life Stage	Adult
Number of Individuals	1
Search Type	Dipnet
Size (cm)	7

51

Observation Notes	
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Observation Notes	
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# Salamander Search

Map Number	N-M16	Field Crew	KRISTAN WASHBURN	111
Feature ID	AAS-N-M16-19			
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes
Tablet	AECOM6	Wind Speed (beaufort)	3	
Start Date	7/1/2015 11:20:34 AM	Precipitation	0	
End Date	7/1/2015 11:39:42 AM	Cloud Cover	100.00	
Survey Centroid	Latitude:45.872076,Longitude:-80.642636,Altitude:185.5,Speed:0.03601111,Accuracy:1.5,Provider:gps,Time:07/01/2015 11:39:11 EDT			
Vernal Pool Depth (m)	0	Vernal Pool Length (m)	5	
Vernal Pool Width (m)	5	Water Present	True	
Vegetation Comments	Survey Comments			
Small area of openpools all about. 0.25m wide and long. Not very much open water. Dkmjnabt Sphagnum and ericaceous shrubs. WATER PRESENT BUT VERY LITTLE.				
Amphibians Observed	No			



# Salamander Search

Map Number	S-M11	Field Crew	KRISTAN WASHBURN	570
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Feature ID	AAS-S-M11-11			
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM6	Wind Speed (beaufort)	1	
Start Date	7/1/2015 1:30:35 PM	Precipitation	0	
End Date	7/1/2015 3:00:05 PM	Cloud Cover	30.00	

Survey Centroid	Latitude:45.85542,Longitude:-80.621969,Altitude:202.8,Speed:0.14918889,Accuracy:4.2,Provider:gps,Time:07/01/2015 02:57:05 EDT
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Vernal Pool Depth (m)	0	Vernal Pool Length (m)	3
Vernal Pool Width (m)	15	Water Present	True

Vegetation Comments	Some sedges and cattails but mostly just open vernal pool	Survey Comments	
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Amphibians Observed	Yes
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Species	Green frog
Life Stage	Larvae
Number of Individuals	12
Search Type	Dipnet
Size (cm)	0



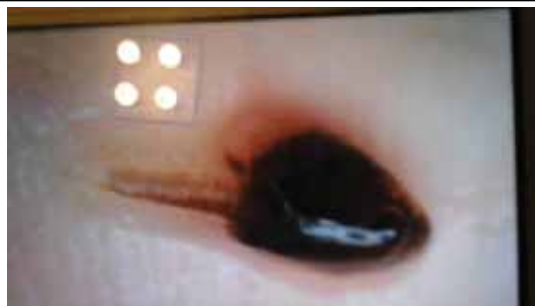
54

Observation Notes	
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Observation Notes	
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# Salamander Search

Species	<input type="text" value="Leopard frog"/>
Life Stage	<input type="text" value="Larvae"/>
Number of Individuals	<input type="text" value="1"/>
Search Type	<input type="text" value="Dipnet"/>
Size (cm)	<input type="text" value="0"/>
Observation Notes	



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Observation Notes	
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Observation Notes	
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Species	<input type="text" value="Eastern newt"/>
Life Stage	<input type="text" value="Adult"/>
Number of Individuals	<input type="text" value="1"/>
Search Type	<input type="text" value="Dipnet"/>
Size (cm)	<input type="text" value="7"/>
Observation Notes	



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Observation Notes	
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Observation Notes	
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Species	<input type="text" value="Leopard frog"/>
Life Stage	<input type="text" value="Larvae"/>
Number of Individuals	<input type="text" value="6"/>
Search Type	<input type="text" value="Dipnet"/>
Size (cm)	<input type="text" value="4"/>
Observation Notes	



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Observation Notes	
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Observation Notes	
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# Salamander Search

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Species	american toad
Life Stage	Larvae
Number of Individuals	1
Search Type	Dipnet
Size (cm)	0

Observation Notes

Observation Notes

Map Number	S-M48	Field Crew	KORPIJAAKKO	117
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Feature ID	AAS-S-M48-7			
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes
Tablet	AECOM11	Wind Speed (beaufort)	1	
Start Date	7/2/2015 9:48:04 AM	Precipitation	0	
End Date	7/2/2015 9:59:10 AM	Cloud Cover	0.00	

Survey Centroid	Latitude:45.831861,Longitude:-80.701884,Altitude:179.4,Speed:0.030866666,Accuracy:2.4,Provider:gps,Time:07/02/2015 09:55:28 EDT			
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Vernal Pool Depth (m)	1	Vernal Pool Length (m)	5
Vernal Pool Width (m)	5	Water Present	True
Vegetation Comments	Survey Comments		

Sphagnum	
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Amphibians Observed	No
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# Salamander Search

Map Number	S-M50	Field Crew	KORPIJAAKKO	120
Feature ID	AAS-S-M50-8			
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes
Tablet	AECOM11	Wind Speed (beaufort)	2	
Start Date	7/2/2015 10:36:03 AM	Precipitation	0	
End Date	7/2/2015 10:59:09 AM	Cloud Cover	0.00	

Survey Centroid	Latitude:45.826508,Longitude:-80.708899,Altitude:184.3,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:07/02/2015 11:00:21 EDT
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Vernal Pool Depth (m)	2	Vernal Pool Length (m)	100
Vernal Pool Width (m)	50	Water Present	True

Vegetation Comments	Equisetum 60%Water lilies 10%	Survey Comments	
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Amphibians Observed	Yes
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Species	Green frog
Life Stage	Larvae
Number of Individuals	50
Search Type	Dipnet
Size (cm)	2



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Observation Notes	
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Observation Notes	
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Map Number	S-M17	Field Crew	KRISTAN WASHBURN	123
Feature ID	AAS-S-M17-4			
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM4	Wind Speed (beaufort)	2	
Start Date	7/2/2015 9:41:45 AM	Precipitation	0	
End Date	7/2/2015 10:00:35 AM	Cloud Cover	0.00	

# Salamander Search

Survey Centroid	Latitude:45.832243,Longitude:-80.633086,Altitude:194.6,Speed:0.61733335,Accuracy:2.7,Provider:gps,Time:07/02/2015 09:47:46 EDT		
Vernal Pool Depth (m)	<input type="text" value="0"/>	Vernal Pool Length (m)	<input type="text" value="5"/>
Vernal Pool Width (m)	<input type="text" value="0"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
Little water left. The area that was originally pooling is now virtually dried up. Dip nets were taken from a more stagnant section of the water course with so,even floatin-leaved plants. Yellow and white pond lily. 25% cover.		<input type="text"/>	
Amphibians Observed	<input type="text" value="No"/>		
Map Number	<input type="text" value="S-M14"/>	Field Crew	<input type="text" value="KRISTAN WASHBURN"/> 126
Feature ID	<input type="text" value="AAS-S-M14-2"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="23.00"/> Weather Notes
Tablet	<input type="text" value="AECOM4"/>	Wind Speed (beaufort)	<input type="text" value="2"/>
Start Date	<input type="text" value="7/2/2015 11:21:55 AM"/>	Precipitation	<input type="text" value="0"/>
End Date	<input type="text" value="7/2/2015 11:45:09 AM"/>	Cloud Cover	<input type="text" value="0.00"/>
Survey Centroid	Latitude:45.848226,Longitude:-80.636002,Altitude:187.7,Speed:0.087455556,Accuracy:3.0,Provider:gps,Time:07/02/2015 11:31:12 EDT		
Vernal Pool Depth (m)	<input type="text" value="0"/>	Vernal Pool Length (m)	<input type="text" value="400"/>
Vernal Pool Width (m)	<input type="text" value="100"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
Dominant floatin-leaved either yellow and white pond lilly and an abundance of Carex spp. 50% cover.		<input type="text"/>	
Amphibians Observed	<input type="text" value="No"/>		
Map Number	<input type="text" value="N-M26"/>	Field Crew	<input type="text" value="JOHANNA PERZ"/> 129
Feature ID	<input type="text" value="AAS-N-M26-13"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="19.00"/> Weather Notes
Tablet	<input type="text" value="AECOM2"/>	Wind Speed (beaufort)	<input type="text" value="4"/>
Start Date	<input type="text" value="7/1/2015 12:14:23 PM"/>	Precipitation	<input type="text" value="0"/>
End Date	<input type="text" value="7/1/2015 12:15:58 PM"/>	Cloud Cover	<input type="text" value="90.00"/>

# Salamander Search

Survey Centroid	Latitude:45.856311,Longitude:-80.648586,Altitude:182.8,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:07/01/2015 12:16:16 EDT		
Vernal Pool Depth (m)	<input type="text" value="0"/>	Vernal Pool Length (m)	<input type="text" value="0"/>
Vernal Pool Width (m)	<input type="text" value="0"/>	Water Present	<input type="text"/>
Vegetation Comments	Survey Comments		
Tamarack and black spruce swamp, no standing water remains	<input type="text"/>		
Amphibians Observed	<input type="text" value="No"/>		
Map Number	<input type="text" value="S-M5"/>	Field Crew	<input type="text" value="JOHANNA PERZ"/> 132
Feature ID	<input type="text" value="AAS-S-M5-1"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="20.00"/> Weather Notes
Tablet	<input type="text" value="AECOM2"/>	Wind Speed (beaufort)	<input type="text" value="1"/>
Start Date	<input type="text" value="7/1/2015 1:49:26 PM"/>	Precipitation	<input type="text" value="0"/>
End Date	<input type="text" value="7/1/2015 2:10:17 PM"/>	Cloud Cover	<input type="text" value="40.00"/>
Survey Centroid	Latitude:45.848158,Longitude:-80.580484,Altitude:240.0,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:07/01/2015 01:51:05 EDT		
Vernal Pool Depth (m)	<input type="text" value="0"/>	Vernal Pool Length (m)	<input type="text" value="10"/>
Vernal Pool Width (m)	<input type="text" value="5"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
Black ash swamp with some balsam fir, trembling aspen; low shrub cover of wild raisin and speckled alder; high herb layer including sensitive fern	<input type="text" value="Little standing water remains, only deep enough to dip net at 2 locations, some insect larva observed"/>		
Amphibians Observed	<input type="text" value="No"/>		

# Salamander Search

Map Number	S-M34	Field Crew	JULIE ELLIS	135
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Feature ID	AAS-S-M34-5			
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes
Tablet	AECOM21	Wind Speed (beaufort)	3	
Start Date	7/2/2015 10:08:41 AM	Precipitation	0	
End Date	7/2/2015 10:37:49 AM	Cloud Cover	10.00	

Survey Centroid	Latitude:45.829949,Longitude:-80.651307,Altitude:189.1,Speed:0.0463,Accuracy:1.8,Provider:gps,Time:07/02/2015 10:41:08 EDT
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Vernal Pool Depth (m)	1	Vernal Pool Length (m)	85
Vernal Pool Width (m)	20	Water Present	True

Vegetation Comments	Survey Comments
Sphagnum and emergent very dominate some floating plant also	Small minnow also caught

Amphibians Observed	Yes
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Species	Green frog	72
Life Stage	Adult	
Number of Individuals	3	
Search Type	Observation	
Size (cm)	7	

Observation Notes
Seen while netting unable to catch

Observation Notes
Seen while netting unable to catch

# Salamander Search

Map Number	N-M31	Field Crew	JULIE ELLIS	276
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Feature ID	AAS-S-M31-3			
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes
Tablet	AECOM21	Wind Speed (beaufort)	3	
Start Date	7/2/2015 12:08:21 PM	Precipitation	0	
End Date	7/2/2015 12:54:36 PM	Cloud Cover	10.00	

Survey Centroid	Latitude:45.840143,Longitude:-80.655417,Altitude:179.2,Speed:0.07202222,Accuracy:2.1,Provider:gps,Time:07/02/2015 12:35:59 EDT
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Vernal Pool Depth (m)	0	Vernal Pool Length (m)	10
Vernal Pool Width (m)	45	Water Present	True

Vegetation Comments	Grasses and carex dominate some floating waterlily, some small hummocks, a deeper channel eating to lager SAF	Survey Comments	Green frog also heard calling
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Amphibians Observed	Yes
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Species	Bullfrog
Life Stage	Larvae
Number of Individuals	1
Search Type	D-Ring
Size (cm)	8



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Observation Notes	Large in size, colour same body and tail, strong swimmer. White belly fits in tail apparent, dextral vent apparent
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Observation Notes	Large in size, colour same body and tail, strong swimmer. White belly fits in tail apparent, dextral vent apparent
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# Salamander Search

Species	Spring peeper
Life Stage	Adult
Number of Individuals	1
Search Type	Observation
Size (cm)	2

Observation Notes

Seen on ground near pool
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Observation Notes

Seen on ground near pool
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# Salamander Search

Map Number	N-M28	Field Crew	JOHANNA PERZ	282
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Feature ID	AAS-N-M28-12			
Project Number	60341251	Air Temp. (degC)	19.00	Weather Notes
Tablet	AECOM2	Wind Speed (beaufort)	4	
Start Date	7/1/2015 9:37:40 AM	Precipitation	0	
End Date	7/1/2015 10:48:13 AM	Cloud Cover	100.00	

Survey Centroid	Latitude:45.867229,Longitude:-80.663774,Altitude:188.7,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:07/01/2015 09:39:24 EDT
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Vernal Pool Depth (m)	1	Vernal Pool Length (m)	8
Vernal Pool Width (m)	3	Water Present	True

Vegetation Comments	Survey Comments
White pine and jack pine rock barren around beaver pond	Water strider, water beetle, and dragonfly larvae observed. Samples taken mostly at shallow isolated vernal pools near large beaver dam pond. Also used dip net in two locations near shore of large beaver dam pond. Adjacent marsh standing water too shallow and murky to use dip net.

Amphibians Observed	No
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Species	Brook stickleback hatchlings
Life Stage	Larvae
Number of Individuals	24
Search Type	Dipnet
Size (cm)	1



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Observation Notes	
Observation Notes	

# Salamander Search

Species

Life Stage

Number of Individuals

Search Type

Size (cm)

Observation Notes

Observation Notes

# Salamander Search

Map Number	S-M24	Field Crew	JOHANNA PERZ		144
Feature ID	AAS-S-M24-10				
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM2	Wind Speed (beaufort)	3		
Start Date	7/2/2015 9:49:42 AM	Precipitation	0		
End Date	7/2/2015 10:25:31 AM	Cloud Cover	0.00		

Survey Centroid	Latitude:45.833025,Longitude:-80.604515,Altitude:206.0,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:07/02/2015 09:51:28 EDT				
Vernal Pool Depth (m)	0	Vernal Pool Length (m)	175		
Vernal Pool Width (m)	50	Water Present	True		
Vegetation Comments	Survey Comments				
Carex lacustris fen with some tamarack trees, bordered on the north by alder thicket swamp, some standing but very shallow water	10 wet areas in fen sampled				

Amphibians Observed	No
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Species	Spring peeper
Life Stage	Larvae
Number of Individuals	1
Search Type	Dipnet
Size (cm)	2
Observation Notes	



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Observation Notes	
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Observation Notes	
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Map Number	S-M07	Field Crew	JOHANNA PERZ		147
Feature ID	AAS-S-M7-9				
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM2	Wind Speed (beaufort)	2		
Start Date	7/2/2015 12:17:28 PM	Precipitation	0		
End Date	7/2/2015 1:19:53 PM	Cloud Cover	0.00		

# Salamander Search

Survey Centroid	Latitude:45.848094,Longitude:-80.600391,Altitude:118.6,Speed:0.06173333,Accuracy:6.6,Provider:gps,Time:07/02/2015 01:20:12 EDT		
Vernal Pool Depth (m)	<input type="text" value="1"/>	Vernal Pool Length (m)	<input type="text" value="35"/>
Vernal Pool Width (m)	<input type="text" value="20"/>	Water Present	<input type="text" value="True"/>
Vegetation Comments	Survey Comments		
<input type="text" value="Sedge marsh with open water"/>	<input type="text"/>		
Amphibians Observed	<input type="text" value="No"/>		

# Vernal Pool

Map Number	AAS-S-M48	Field Crew	TOM SHORNEY	9
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Feature ID	AAS-S-M48-7			
Project Number	60341251	Air Temp. (degC)	6.00	Weather Notes Beauty
Tablet	AECOM13	Wind Speed (beaufort)	3	
Start Date	4/27/2015 10:15:48 AM	Precipitation	0	
End Date	4/27/2015 10:44:11 AM	Cloud Cover	20.00	

Water Present	Yes	Vernal Pool or Pond	Vernal Pool
Maximum Water Depth (m)	20	Water Quality	Lots of debris, lacking deep pools
Length (m)	35	Width (m)	10
Percent Open Water (emergent)	60	Percent Floating Plant Cover	0

Potential To Hold Water Until July?	Yes
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Human Influences Affecting Area	Describe area 100m behind you
No	Treed rock barren

## Plant Layers

Plant Layer	Emergent
Species	Sphagnum moss, Carex sp, Canada bluejoint
Percent Cover	40




3

# Vernal Pool

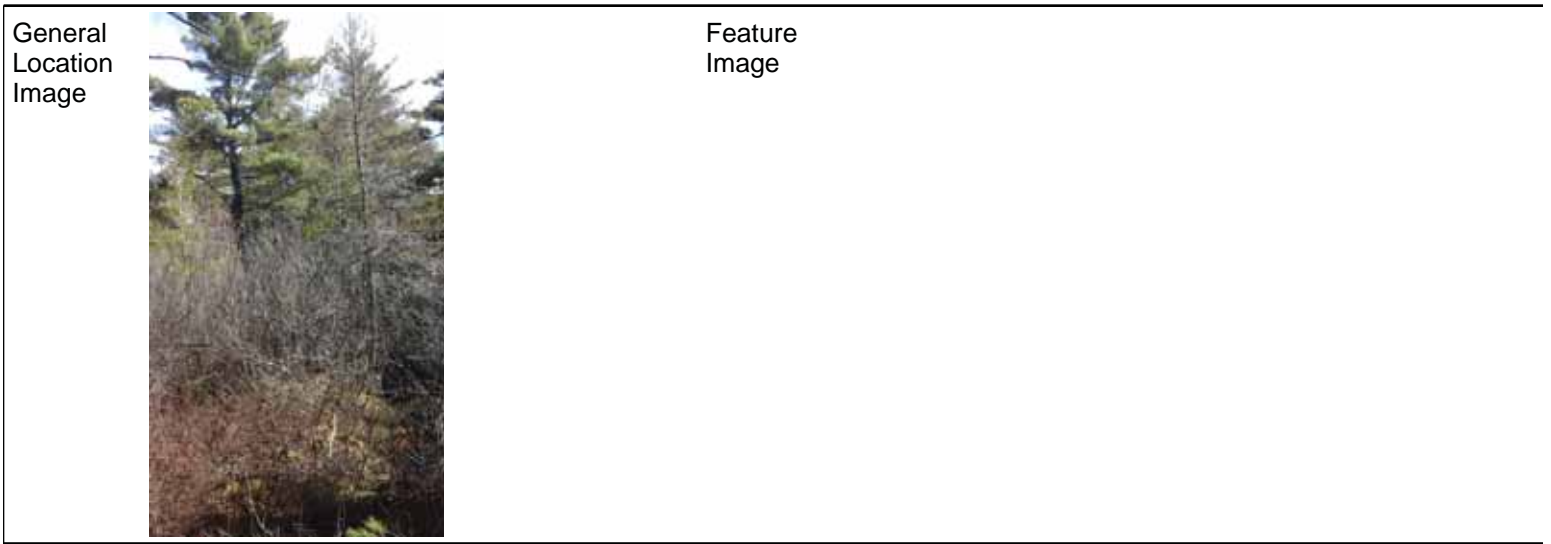
Plant Layer	Fringing
Species	Pinus strobus, Betula papyrifera, juniper, Aceru
Percent Cover	40



# Vernal Pool

Plant Layer	<input type="text" value="Trees"/>	
Species	<input type="text" value="Pinstro, tamarack"/>	
Percent Cover	<input type="text" value="35"/>	

Exposed Mud/Sand/Rock	<input type="text" value="Mud,Rock"/>
Logs	<input type="text" value="Some fallen woody debris within pool. Nothing larger than 10 cm"/>
Amphibians/egg masses observed	<input type="text" value="Na"/>
Vernal Pool Comments	<input type="text" value="Occasional deep pocket. Abundance of sediment in feature"/>



Map Number	<input type="text" value="AAS-S-M50"/>	Field Crew	<input type="text" value="TOM SHORNEY, OLGA HROPACH"/>	18
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Feature ID	<input type="text" value="AAS-S-M50-8"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="8.00"/> Weather Notes
Tablet	<input type="text" value="AECOM13"/>	Wind Speed (beaufort)	<input type="text" value="3"/>
Execution Time	9/8/2015 3:08:17 PM	Filter Start Date	4/1/2015
		Filter End Date	7/10/2015




# Vernal Pool


Start Date	4/27/2015 12:03:03 PM	Precipitation	0
End Date	4/27/2015 12:29:42 PM	Cloud Cover	65.00

Water Present	Yes	Vernal Pool or Pond	Pond
Maximum Water Depth (m)	55	Water Quality	
Length (m)	150	Width (m)	50
Percent Open Water (emergent)	70	Percent Floating Plant Cover	0
Potential To Hold Water Until July?	Yes		


Human Influences Affecting Area	Describe area 100m behind you
No	Coniferous forest

## Plant Layers


Plant Layer	Emergent		12
Species	Car sp, grass sp		
Percent Cover	30		

Plant Layer	Fringing		15
Species	Abies bals, pin strob, Acer rub		
Percent Cover	80		

# Vernal Pool

Plant Layer	<input type="text" value="Trees"/>	
Species	<input type="text" value="Alnus incana"/>	
Percent Cover	<input type="text" value="20"/>	

Exposed Mud/Sand/Rock	<input type="text" value="Mud,Rock"/>
Logs	<input type="text" value="Downed fall from beaver- all less then 10 dbh"/>
Amphibians/egg masses observed	<input type="text" value="Na"/>
Vernal Pool Comments	<input type="text" value="Feature extends way begin road alignment. Overall size is expansive comprised of a series of beaver damsSpring peepers calling to the east"/>

General Location Image	Feature Image	
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Map Number	<input type="text" value="AAS-S-M31"/>	Field Crew	<input type="text" value="TOM SHORNEY, OLGA HROPACH"/>	18
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Feature ID	<input type="text" value="AAS-S-M31-3"/>	Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="8.00"/>	Weather Notes	<input type="text"/>
Tablet	<input type="text" value="AECOM13"/>	Wind Speed (beaufort)	<input type="text" value="3"/>				


# Vernal Pool


Start Date	4/27/2015 2:53:20 PM	Precipitation	0
End Date	4/27/2015 3:08:28 PM	Cloud Cover	80.00

Water Present	Yes	Vernal Pool or Pond	Pond
Maximum Water Depth (m)	1	Water Quality	
Length (m)	200	Width (m)	50
Percent Open Water (emergent)	95	Percent Floating Plant Cover	0
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
No	Mixed forest

## Plant Layers

Plant Layer	Emergent		21
Species	Grass and sedge species		
Percent Cover	5		

Plant Layer	Fringing		24
Species	Pinstrob, betpapy, white spruce		
Percent Cover	40		

Exposed Mud/Sand/Rock	Mud,Rock
-----------------------	----------

# Vernal Pool

Logs

A few large logs throughout wetland!

Amphibians/egg masses observed

Na

Vernal Pool Comments

Feature is a large beaver pond. No pools within the coniferous swamp. Pond very deep with several damsspring peepers calling within pond.

General Location Image

Feature Image




# Vernal Pool

Map Number	AAS-N-M46	Field Crew	TOM SHORNEY, OLGA HROPACH, BILL MCLEOD		36
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Feature ID	AAS-N-M46-20				
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	2		
Start Date	4/28/2015 10:10:41 AM	Precipitation	0		
End Date	4/28/2015 10:22:51 AM	Cloud Cover	5.00		

Water Present	Yes	Vernal Pool or Pond	
Maximum Water Depth (m)	1	Water Quality	
Length (m)		Width (m)	
Percent Open Water (emergent)	15	Percent Floating Plant Cover	0
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
Na	Treed rock barren


Plant Layers		
Plant Layer	Submergent	
Species	Sphagnum moss	
Percent Cover	90	

# Vernal Pool


Plant Layer	Emergent
Species	Cotton grass, leatherleaf, black spruce
Percent Cover	80



# Vernal Pool

Plant Layer	<input type="text" value="Fringing"/>	
Species	<input type="text" value="Jackpine, white pine, tamarack"/>	
Percent Cover	<input type="text" value="20"/>	

Exposed Mud/Sand/Rock	<input type="text" value="None"/>
Logs	<input type="text" value="Few branches which have fallen into fen"/>
Amphibians/egg masses observed	<input type="text" value="No egg masses possibly as a result of the moving water"/>
Vernal Pool Comments	<input type="text" value="Feature is a fen with slow running water through channel. Very. Linear feature"/>

General Location Image	Feature Image	
------------------------	---------------	--

Map Number	<input type="text" value="N-M35"/>	Field Crew	<input type="text" value="TOM SHORNEY BILL MCLEOD OLGA HROPACH"/>	45
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Feature ID	<input type="text" value="AAS-N-M35-16"/>			
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="12.00"/>	Weather Notes
Tablet	<input type="text" value="AECOM13"/>	Wind Speed (beaufort)	<input type="text" value="3"/>	
Execution Time	9/8/2015 3:08:17 PM	Filter Start Date	4/1/2015	Filter End Date 7/10/2015

# Vernal Pool

Start Date	4/28/2015 12:50:35 PM	Precipitation	0
End Date	4/28/2015 1:03:39 PM	Cloud Cover	0.00

Water Present	Yes	Vernal Pool or Pond	
Maximum Water Depth (m)	0	Water Quality	Clear, dark water (due to tanins in the water)
Length (m)	200	Width (m)	25
Percent Open Water (emergent)	30	Percent Floating Plant Cover	0
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
None	Treed rock barren

## Plant Layers

Plant Layer	Submergent	36
Species	Sphagnum moss	
Percent Cover	60	

Plant Layer	Emergent	39
Species	Leatherleaf, Juncus sp, Carex sp, Alnus incana	
Percent Cover	70	





# Vernal Pool

42

Plant Layer	<input type="text" value="Fringing"/>
Species	<input type="text" value="Pinus STROBUS, Larix. Laricina, Picea marina"/>
Percent Cover	<input type="text" value="40"/>

Exposed Mud/Sand/Rock	<input type="text" value="Rock"/>
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Logs	<input type="text" value="None"/>
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Amphibians/egg masses observed	<input type="text" value="None observed, habitat potential for egg masses given that there are a lot of vegetation to attach egg masses in the water."/>
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Vernal Pool Comments	<input type="text" value="Slow moving channel through a fen, not a vernal pool or Pond."/>
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General Location Image

Feature Image



Map Number	<input type="text" value="N-M26"/>	Field Crew	<input type="text" value="BILL TOM OLGA"/>
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72

Feature ID	<input type="text" value="AAS -N-M26-13"/>				
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="12.00"/>	Weather Notes	<input type="text"/>
Tablet	<input type="text" value="AECOM13"/>	Wind Speed (beaufort)	<input type="text" value="2"/>	<input type="text"/>	<input type="text"/>

Execution Time 9/8/2015 3:08:17 PM Filter Start Date 4/1/2015 Filter End Date 7/10/2015

# Vernal Pool

Start Date  Precipitation   
End Date  Cloud Cover

Water Present  Vernal Pool or Pond   
Maximum Water Depth (m)  Water Quality   
Length (m)  Width (m)   
Percent Open Water (emergent)  Percent Floating Plant Cover   
Potential To Hold Water Until July?

Human Influences Affecting Area Describe area 100m behind you

## Plant Layers

Plant Layer  45  
Species   
Percent Cover

Plant Layer  48  
Species   
Percent Cover

# Vernal Pool

Plant Layer

Trees

51

Species

Picea marina Alnus  
Incana

Percent Cover

80

# Vernal Pool

Plant Layer	<input type="text" value="Fringing"/>
Species	<input type="text" value="Tamarack, white pine, black spruce."/>
Percent Cover	<input type="text" value="60"/>

Exposed Mud/Sand/Rock	<input type="text" value="Rock"/>
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Logs	<input type="text" value="None"/>
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Amphibians/egg masses observed	<input type="text" value="None"/>
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Vernal Pool Comments	<input type="text" value="Large wetlands feature interspersed with small pockets of water."/>
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General Location Image

Feature Image



Map Number	<input type="text" value="AAS-N-M16"/>	Field Crew	<input type="text" value="TOM SHORNEY, OLGA HROPACH"/>
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Feature ID	<input type="text" value="AAS-N-M16-19"/>				
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="7.00"/>	Weather Notes	<input type="text"/>
Tablet	<input type="text" value="AECOM13"/>	Wind Speed (beaufort)	<input type="text" value="1"/>	<input type="text"/>	<input type="text"/>

# Vernal Pool

Start Date	4/29/2015 10:06:43 AM	Precipitation	0
End Date	4/29/2015 10:19:57 AM	Cloud Cover	10.00

Water Present	Yes	Vernal Pool or Pond	Vernal Pool
Maximum Water Depth (m)	10	Water Quality	
Length (m)		Width (m)	
Percent Open Water (emergent)	3	Percent Floating Plant Cover	0
Potential To Hold Water Until July?	No		

Human Influences Affecting Area	Describe area 100m behind you
Na	Treed barren

## Plant Layers

Plant Layer	Emergent	57
Species	Carex sp	
Percent Cover	75	

Plant Layer	Submergent	60
Species	Sphagnum moss	
Percent Cover	95	

# Vernal Pool

Plant Layer	Fringing	63
Species	Pic Mari, tamarack, jackpine	
Percent Cover		10

# Vernal Pool

Plant Layer	Trees
Species	Leatherleath, speckled alder, black spruce
Percent Cover	70

Exposed Mud/Sand/Rock	Mud,Rock
Logs	Na
Amphibians/egg masses observed	None
Vernal Pool Comments	This feature is a bog. Very little exposed open water. Areas where water is present no deeper than 10 cm. No potentially suitable wetlands within construction footprint on this map.

General Location Image	Feature Image	
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Map Number	B-M68	Field Crew	OLGA NATALIYA	48
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Feature ID		Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM7	Wind Speed (beaufort)	1	Execution Time	9/8/2015 3:08:17 PM	Filter Start Date	4/1/2015
				Filter End Date			7/10/2015

# Vernal Pool

Start Date	5/13/2015 3:09:39 PM	Precipitation	0
End Date	5/13/2015 3:00:47 PM	Cloud Cover	35.00

Water Present	Yes	Vernal Pool or Pond	Vernal Pool
Maximum Water Depth (m)	30	Water Quality	Clean
Length (m)	10	Width (m)	2
Percent Open Water (emergent)	80	Percent Floating Plant Cover	0
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
	White pine coniferous forest

## Plant Layers

Plant Layer	Trees	69
Species	Prunus sp.	
Percent Cover	20	

Plant Layer	Fringing	72
Species	White pine	
Percent Cover	60	

Exposed Mud/Sand/Rock	Mud
-----------------------	-----



# Vernal Pool

Logs

One

Amphibians/egg masses  
observed

7 salamander egg masses

Vernal Pool Comments

General  
Location  
Image



Feature  
Image



# Vernal Pool

Map Number

TU-B-M68

Field Crew

NATALIYA SIMONOVA OLGA HROPACH

27

# Vernal Pool

Feature ID	TU-B-M68-87				
Project Number	60341251	Air Temp. (degC)	9.00	Weather Notes	
Tablet	AECOM17	Wind Speed (beaufort)	3	Forecasts	
Start Date	5/13/2015 11:53:15 AM	Precipitation	0		
End Date	5/13/2015 12:23:20 PM	Cloud Cover	0.00		

# Vernal Pool

Water Present	Yes	Vernal Pool or Pond	Vernal Pool
Maximum Water Depth (m)	40	Water Quality	Brown and transparent
Length (m)	2	Width (m)	20
Percent Open Water (emergent)	80	Percent Floating Plant Cover	25
Potential To Hold Water Until July?	Yes		
Human Influences Affecting Area	Describe area 100m behind you		
N/A	Between Marsh and coniferus forest with White Pine		

# Vernal Pool

## Plant Layers

Plant Layer

Species

Percent Cover



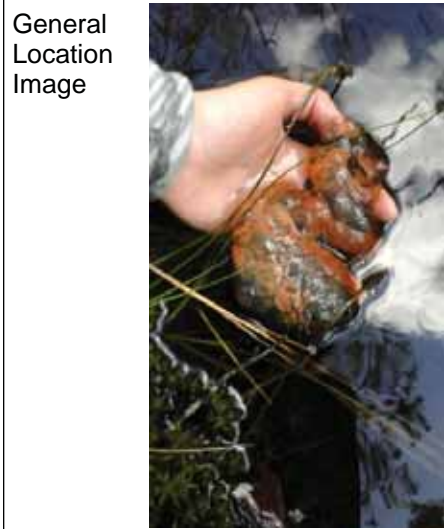
75

Exposed Mud/Sand/Rock

Logs

Amphibians/egg masses observed

Vernal Pool Comments



Map Number  Field Crew

30

Feature ID

Project Number  Air Temp. (degC)

Weather Notes

Execution Time 9/8/2015 3:08:17 PM Filter Start Date 4/1/2015 Filter End Date 7/10/2015

# Vernal Pool

Tablet	AECOM7	Wind Speed (beaufort)	1	
Start Date	5/14/2015 1:35:10 PM	Precipitation	0	
End Date	5/14/2015 1:44:35 PM	Cloud Cover	0.00	

Water Present	Yes	Vernal Pool or Pond	Pond
Maximum Water Depth (m)	0	Water Quality	Clear water
Length (m)	5	Width (m)	1
Percent Open Water (emergent)	100	Percent Floating Plant Cover	0
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
	Mixed forest surrounding pond

## Plant Layers

Plant Layer	Trees	78
Species	Unknown dead snag	
Percent Cover	20	

Exposed Mud/Sand/Rock	Mud
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Logs	A lot of snags and downfall
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Amphibians/egg masses observed	8 egg masses observed. Frog egg masses.
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Vernal Pool Comments	
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# Vernal Pool

General  
Location  
Image



Feature  
Image



# Vernal Pool

Map Number  Field Crew  132

Feature ID

Project Number  Air Temp. (degC)  Weather Notes

Tablet  Wind Speed (beaufort)

Start Date  Precipitation

End Date  Cloud Cover

Water Present  Vernal Pool or Pond

Maximum Water Depth (m)  Water Quality

Length (m)  Width (m)

Percent Open Water (emergent)  Percent Floating Plant Cover

Potential To Hold Water Until July?

Human Influences Affecting Area Describe area 100m behind you

## Plant Layers

Plant Layer  81

Species

Percent Cover





# Vernal Pool

Plant Layer

Species

Percent Cover



84

Plant Layer

Species

Percent Cover

87

# Vernal Pool

Plant Layer	<input type="text" value="Floating"/>
Species	<input type="text" value="White water lily"/>
Percent Cover	<input type="text" value="5"/>



Exposed Mud/Sand/Rock	<input type="text" value="Rock"/>
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Logs	<input type="text" value="Some 20-25 cm dbh logs"/>
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Amphibians/egg masses observed	<input type="text" value="None"/>
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Vernal Pool Comments	<input type="text" value="Nit a vernal pool, large wetlands"/>
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General Location Image



Feature Image



Map Number	<input type="text" value="N-M9"/>	Field Crew	<input type="text" value="JULIE ELLIS"/>
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Feature ID	<input type="text" value="AAS-N-M9-18"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="13.00"/>
Tablet	<input type="text" value="AECOM21"/>	Wind Speed (beaufort)	<input type="text" value="3"/>

# Vernal Pool

Start Date	7/1/2015 11:31:21 AM	Precipitation	0
End Date	7/1/2015 12:55:32 PM	Cloud Cover	50.00

Water Present	Yes	Vernal Pool or Pond	
Maximum Water Depth (m)	1	Water Quality	Dark with tannins algae abundant
Length (m)	100	Width (m)	2
Percent Open Water (emergent)	0	Percent Floating Plant Cover	0
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
None	Open sedge fen followed by mixed forest

## Plant Layers

Plant Layer	Submergent	93
Species	Stonewort	
Percent Cover	15	

Plant Layer	Submergent	96
Species	Algae	
Percent Cover	15	

Exposed Mud/Sand/Rock	None
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# Vernal Pool

Logs

None

Amphibians/egg masses  
observed

None

Vernal Pool Comments

Creek not vernal pool

General  
Location  
Image



Feature  
Image



# Vernal Pool

Map Number

N-M1

Field Crew

JULIE ELLIS

39

# Vernal Pool

Feature ID	AAS-N-M1-14			
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes
Tablet	AECOM21	Wind Speed (beaufort)	3	
Start Date	7/1/2015 2:17:45 PM	Precipitation	0	
End Date	7/1/2015 2:30:54 PM	Cloud Cover	50.00	

# Vernal Pool

Water Present	<input type="text" value="No"/>	Vernal Pool or Pond	<input type="text"/>
Maximum Water Depth (m)	<input type="text" value="0"/>	Water Quality	<input type="text" value="Na"/>
Length (m)	<input type="text" value="0"/>	Width (m)	<input type="text" value="0"/>
Percent Open Water (emergent)	<input type="text" value="0"/>	Percent Floating Plant Cover	<input type="text" value="0"/>
Potential To Hold Water Until July?	<input type="text" value="No"/>		
Human Influences Affecting Area	Describe area 100m behind you		
<input type="text"/>	<input type="text" value="Mixed forest"/>		

# Vernal Pool

## Plant Layers

Plant Layer	Trees	99
Species	Alnus incana	
Percent Cover	100	

Exposed Mud/Sand/Rock	None
Logs	None
Amphibians/egg masses observed	None
Vernal Pool Comments	Completely dry



Map Number	N-M46	Field Crew	KORPIJAAKKO	42
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Feature ID	AAS-N-M46-20	Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Execution Time	9/8/2015 3:08:17 PM	Filter Start Date	4/1/2015	Filter End Date	7/10/2015		



# Vernal Pool

Tablet	AECOM11	Wind Speed (beaufort)	2	
Start Date	7/1/2015 9:47:51 AM	Precipitation	0	
End Date	7/1/2015 9:48:07 AM	Cloud Cover	100.00	

Water Present	Yes	Vernal Pool or Pond	
Maximum Water Depth (m)	1	Water Quality	
Length (m)		Width (m)	
Percent Open Water (emergent)	2	Percent Floating Plant Cover	2
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
	RBTThis area mainly fen not anything in way of vernal pool yo be honest.

## Plant Layers

Plant Layer	Emergent	102
Species	Leatherleaf	
Percent Cover	75	

Exposed Mud/Sand/Rock	
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Logs	2. 10 cm diameter
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Amphibians/egg masses observed	None
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Vernal Pool Comments	No vernal pools. Just meandering narrow channels
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# Vernal Pool

General  
Location  
Image



Feature  
Image

# Vernal Pool

Map Number

N-M35

Field Crew

KORPIJAAKKO

45

# Vernal Pool

Feature ID	AAS-N-M35-16			
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM11	Wind Speed (beaufort)	2	
Start Date	7/1/2015 11:25:32 AM	Precipitation	0	
End Date	7/1/2015 11:49:43 AM	Cloud Cover	100.00	

# Vernal Pool

Water Present	<input type="text" value="Yes"/>	Vernal Pool or Pond	<input type="text"/>
Maximum Water Depth (m)	<input type="text" value="2"/>	Water Quality	<input type="text"/>
Length (m)	<input type="text"/>	Width (m)	<input type="text"/>
Percent Open Water (emergent)	<input type="text" value="0"/>	Percent Floating Plant Cover	<input type="text"/>
Potential To Hold Water Until July?	<input type="text" value="Yes"/>		
Human Influences Affecting Area	Describe area 100m behind you		
<input type="text"/>	<input type="text" value="Rock barrens elevated in both sides. No pool or pond. Channel is deep and 1.5 m wide. Dip netted channel"/>		

# Vernal Pool

## Plant Layers

Plant Layer

Species

Percent Cover

Exposed Mud/Sand/Rock

Logs

Amphibians/egg masses  
observed

None

Vernal Pool Comments

No pool or pond. Channelized watercourse going south through fen from small lake to north.

General  
Location  
Image



Feature  
Image



Map Number

N-M33

Field Crew

KORPIJAAKKO

48

Feature ID

AAS-N-M33-21

Project Number

60341251

Air Temp. (degC)

24.00

Weather Notes

Execution Time

9/8/2015 3:08:17 PM

Filter Start Date

4/1/2015

Filter End Date

7/10/2015

# Vernal Pool

Tablet	AECOM11	Wind Speed (beaufort)	3	
Start Date	7/1/2015 1:40:59 PM	Precipitation	0	
End Date	7/1/2015 2:06:00 PM	Cloud Cover	30.00	

Water Present	Yes	Vernal Pool or Pond	Pond
Maximum Water Depth (m)	2	Water Quality	
Length (m)	450	Width (m)	200
Percent Open Water (emergent)	90	Percent Floating Plant Cover	25
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
None	Marsh to east Rock barren all around

## Plant Layers

Plant Layer	Floating		105
Species	Fragrant water lily		
Percent Cover	20		

Exposed Mud/Sand/Rock	
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Logs	Scattered various sizes
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Amphibians/egg masses observed	None
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Vernal Pool Comments	This is more of a giant pond
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# Vernal Pool

General  
Location  
Image



Feature  
Image





# Vernal Pool

Map Number

S-M48

Field Crew

KORPIJAAKKO

51

# Vernal Pool

Feature ID	AAS-S-M48-7			
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes
Tablet	AECOM11	Wind Speed (beaufort)	1	
Start Date	7/2/2015 9:48:27 AM	Precipitation	0	
End Date	7/2/2015 9:59:33 AM	Cloud Cover	0.00	

# Vernal Pool

Water Present	Yes	Vernal Pool or Pond	Vernal Pool
Maximum Water Depth (m)	1	Water Quality	
Length (m)	5	Width (m)	5
Percent Open Water (emergent)	20	Percent Floating Plant Cover	10
Potential To Hold Water Until July?	Yes		
Human Influences Affecting Area	Describe area 100m behind you		
	RBT and SWC		

# Vernal Pool

## Plant Layers

Plant Layer

Species

Percent Cover

Exposed Mud/Sand/Rock

Logs

FewSmall less than 5 cm diameter

Amphibians/egg masses  
observed

None

Vernal Pool Comments

Very shallow now and mainly vegetated eg mosses and some vascular plants could not dip net

General  
Location  
Image



Feature  
Image



Map Number

S-M50

Field Crew

KORPIJAAKKO

54

Feature ID

AAS-S-M50-8

Project Number

60341251

Air Temp. (degC)

20.00

Weather Notes

Execution Time

9/8/2015 3:08:17 PM

Filter Start Date

4/1/2015

Filter End Date

7/10/2015


# Vernal Pool

Tablet	AECOM11	Wind Speed (beaufort)	1
Start Date	7/2/2015 10:40:31 AM	Precipitation	0
End Date	7/2/2015 10:54:36 AM	Cloud Cover	0.00

Water Present	Yes	Vernal Pool or Pond	Pond
Maximum Water Depth (m)	2	Water Quality	Great
Length (m)	100	Width (m)	50
Percent Open Water (emergent)	60	Percent Floating Plant Cover	5
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
	RBT SWC. SWT FEO

## Plant Layers

Plant Layer	Emergent		108
Species	Equisetum		
Percent Cover	60		

Exposed Mud/Sand/Rock	
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Logs	Various 40 cm diameter to 5 cm diameter
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Amphibians/egg masses observed	Green frogs heard x3
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Vernal Pool Comments	
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# Vernal Pool

General  
Location  
Image



Feature  
Image



# Vernal Pool

Map Number	S-M34	Field Crew	JULIE ELLIS	228
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Feature ID	AAS-S-M34-5			
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes
Tablet	AECOM21	Wind Speed (beaufort)	2	
Start Date	7/2/2015 10:08:43 AM	Precipitation	0	
End Date	7/2/2015 10:37:11 AM	Cloud Cover	10.00	

Water Present	Yes	Vernal Pool or Pond	
Maximum Water Depth (m)	1	Water Quality	Clear but dark with tannins
Length (m)	85	Width (m)	20
Percent Open Water (emergent)	15	Percent Floating Plant Cover	30
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
None	Marsh

## Plant Layers

Plant Layer	Emergent		111
Species	Carex utriculata >Scirpus so> Myrica gale		
Percent Cover	85		

# Vernal Pool

Plant Layer	<input type="text" value="Submergent"/>
Species	<input type="text" value="Milfoil"/>
Percent Cover	<input type="text" value="15"/>

114

Plant Layer	<input type="text" value="Floating"/>
Species	<input type="text" value="Watershield"/>
Percent Cover	<input type="text" value="30"/>


117





# Vernal Pool

120

Plant Layer	<input type="text" value="Trees"/>	
Species	<input type="text" value="Pinus strobus &gt;tamarack"/>	
Percent Cover	<input type="text" value="15"/>	

Exposed Mud/Sand/Rock	<input type="text" value="None"/>
Logs	<input type="text" value="None"/>
Amphibians/egg masses observed	<input type="text" value="3 adult Green frogs seen while betting plus 2 heard calling, no tadpoles or eggs, fish caught while netting"/>
Vernal Pool Comments	<input type="text" value="At area with deep channel leaving from fen to OAO, connected with large wetland system, fish csugh while netting"/>

General Location Image		Feature Image	
------------------------	---	---------------	--

Map Number	<input type="text" value="S-M31"/>	Field Crew	<input type="text" value="JULIE ELLIS"/>	300
------------	------------------------------------	------------	--	-----

Feature ID	<input type="text" value="AAS-S-M31-3"/>			
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="18.00"/>	Weather Notes
Tablet	<input type="text" value="AECOM21"/>	Wind Speed (beaufort)	<input type="text" value="2"/>	
Execution Time	9/8/2015 3:08:17 PM	Filter Start Date	4/1/2015	Filter End Date 7/10/2015


# Vernal Pool

Start Date	7/2/2015 12:08:48 PM	Precipitation	0
End Date	7/2/2015 12:53:09 PM	Cloud Cover	10.00

Water Present	Yes	Vernal Pool or Pond	
Maximum Water Depth (m)	1	Water Quality	Dark with tannins but otherwise clear
Length (m)	10	Width (m)	45
Percent Open Water (emergent)	45	Percent Floating Plant Cover	15
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
None	Conifer swamp, rock barren

## Plant Layers

Plant Layer	Emergent		123
Species	Carex sp> carex lacustris>Grass sp> Scirpus sp		
Percent Cover	55		

Plant Layer	Floating	126
Species	White water lily	
Percent Cover	15	

# Vernal Pool

Plant Layer	Submergent	129
Species	Milfoil	
Percent Cover	5	

Plant Layer	Fringing	132
Species	Sheep laurel> Ilex verticillata	
Percent Cover	5	

# Vernal Pool

135

Plant Layer	Trees
Species	Pinus strobus >Picea mariana
Percent Cover	20

Exposed Mud/Sand/Rock	None
-----------------------	------

Logs	Few floating near mouth to SAF,, 10-24 cm dbh
------	---

Amphibians/egg masses observed	One bullfrog larvae, green frigida heard calling
--------------------------------	--

Vernal Pool Comments	Narrow channel leads towards SAF, Hummocks with small wet patches
----------------------	---

General Location Image



Feature Image



# Appendix C6

## 2015 Acoustic Monitor Calibration

## Amphibian - Frog - Data Form

Study Area: Henvey 2 (WEC) - AAS-S-M04-1

GPS: (NAD 83) 17T 532542 5077261

Water Present (Y/N) Y

---

Date(yyyy-mm-dd): 2015-06-24 Visit #(1-3) 1

Field Staff (full name): Sarah Risher

Time Started: 22:07 Time Finished: 22:10

---

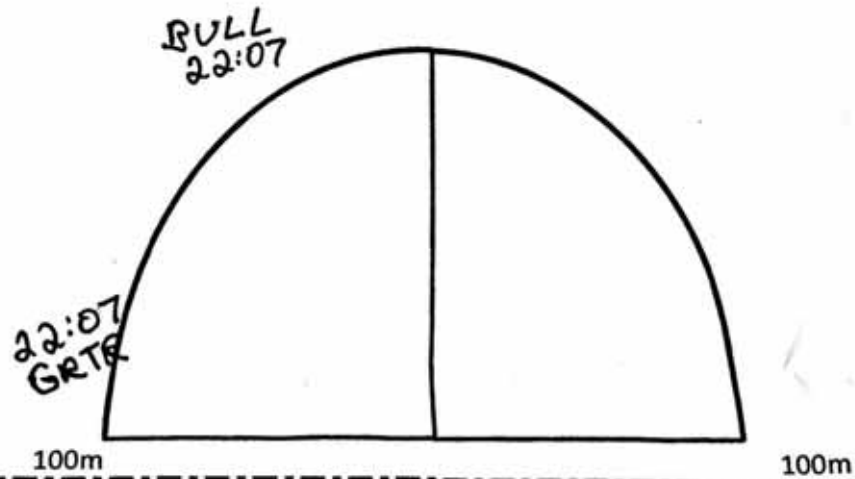
Beaufort Wind Scale (0-6): 1 Cloud Cover (%): 80%

Background Noise Scale (0-4): 2-3 (insects + train) Temperature Celcius 20

Precipitation (None, fog, drizzle, or rain) None

Species	IN	OUT
NONE		
AMTO		
BULL		1
CHFR		
MIFR		
GRTR		3
GRFR		
NLFR		
PIFR		
SPPE		
WOFR		

N ← Direction Facing



Code 1 - not simultaneous, number of individuals can be accurately counted  
 Code 2 - some call simultaneous, but number of individuals can be reliably estimated  
 Code 3 - full chorus, call continuous, numbers of individuals cannot be reliably estimated

Beaufort Wind Scale	0: 0-2 km/hr - calm	4: 20-30 km/hr - moderate breeze - small branch moves
1: 3-5 km/hr - light air movement	5: 31-38 km/hr - fresh breeze - moderate branch moves	
2: 6-11 km/hr - slight breeze - can feel on face	6: 39-49 km/hr - strong breeze - large branch moves	
3: 12-19 km/hr - gentle breeze - leaves move on twigs		

Background Noise Scale	0 - no appreciable effect	3 - serious - continuous traffic nearby (6-10 cars)
1 - slight - distant traffic (1 car)	4 - profound - continuous traffic passing	
2 - moderate - distant traffic (2-5 cars)		

AMTO - American Toad	MIFR - Mink Frog	NLFR - N. Leopard Frog
BULL - Bullfrog	GRTR - Gray Treefrog	PIFR - Pickerel Frog
CHFR - Chorus Frog	GRFR - Green Frog	SPPE - Spring Peeper
		WOFR - Wood Frog

General Comments:

Mosquitos extremely thick, loud, and distracting.  
Survey restarted due to noise from train.  
Microphones on monitor facing North and Southeast.  
Rear approached during survey.

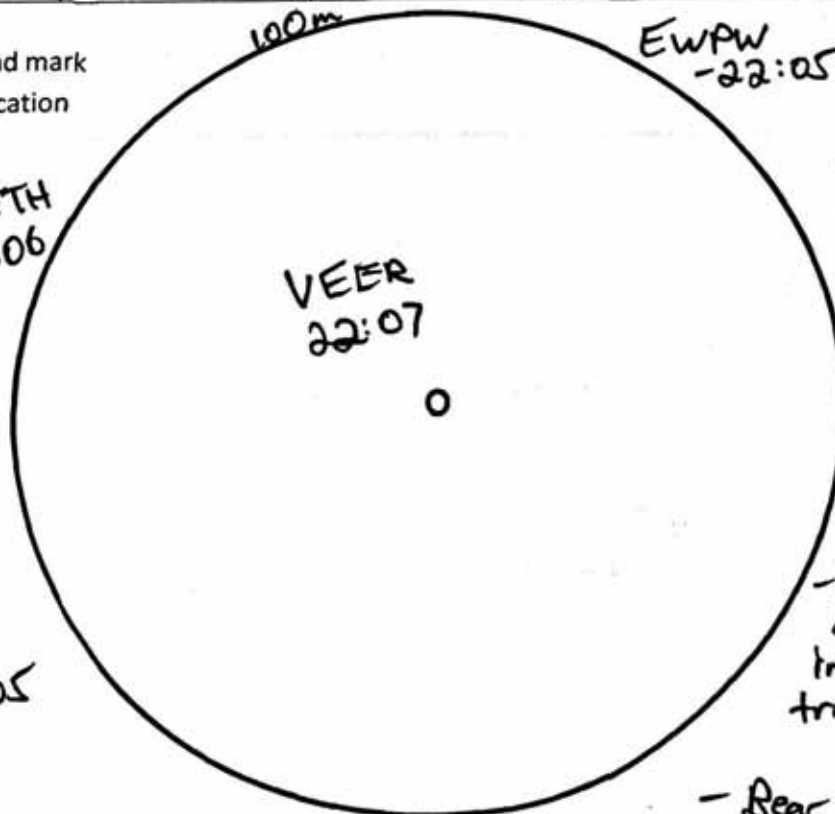
**Crepuscular Bird Survey Form**

Project Name: Henvey Surveyor(s): Sarah Richer  
 Point Count ID (i.e. BMB-01): AAS-S-M04-1 Temperature (°C): 20  
 Date (DD/MM/YYYY): 24-06-2015 Wind (Beaufort Scale): 1  
 Start Time (i.e. 13:00hrs): 22:02 Cloud Cover (%): 80  
 End Time (i.e. 13:00hrs): 22:07 UTM: 17T 532542 5077261  
 Visit No.: 1 Habitat Types: SWM - Mixed swamp (Treed)  
 Photo No(s): -

NOTE: Please use full name of species to avoid misuse of bird codes. Please provide further details on any SAR observed on site as found below:

Species	Breeding Evidence (OBBA Codes)	< 100 m (Tally Number of Individuals)	> 100 m (Tally Number of Individuals)	Flyovers (Tally Number of Individuals)
<del>EWPW</del>				Time recorded
<del>COM1</del>				
Eastern Whipoorwill	S		1	22:05
Common Nighthawk	S		1	22:05
<del>Ovenbird</del>	<del>S</del>		<del>1</del>	<del>(21:57)</del>
Hermit Thrush	S		1	22:06
Veery	S	1		22:07

Draw habitat and mark Approximate location of observations



Direction (i.e. N, S, SE)

- Microphones on monitor facing North and Southeast.
- Mosquitoes extremely thick, loud, distracting.
- Survey restarted/extended due to interfering noise from train and insects.
- Bear approached during survey.

# Appendix C7

## Mast Producing Area Surveys



# Wildlife Observations

Map Number	MPA-002	Field Crew	KRISTAN WASHBURN	1457
Feature ID	FO-129	Study Area		
Project Number	60341251	Air Temp. (degC)	6.00	Weather Notes
Tablet	AECOM3	Wind Speed (beaufort)	1 Light air movement	
Start Date	10/16/2015 9:31:38 AM	Precipitation	heavy rain	
End Date	10/16/2015 10:18:53 AM	Cloud Cover	100.00	

## Wildlife Habitat Observations

Feature

Feature Description 797

No red oak or beech trees. Forest was a mixture of red maple, pine, trembling aspen and spruce with pockets of black ash. Likely called mast producing area because of the abundance of beaked hazel (*Corylus cornuta*). Beaked hazel was dense and >50% in the shrub layer.

Feature Location

Latitude:45.825923,Longitude:-80.687094,Altitude:142.8,Speed:0.6482,Accuracy:3.6,Provider:gps,Time:10/16/2015 10:21:06 EDT



# Wildlife Observations

Map Number	MPA-003	Field Crew	JULIE, ADAM	1448
Feature ID	FO-057	Study Area		
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes
Tablet	AECOM6	Wind Speed (beaufort)	2 Slight breeze felt on face	
Start Date	10/15/2015 1:58:12 PM	Precipitation	light rain	
End Date	10/15/2015 3:32:25 PM	Cloud Cover	100.00	

# Wildlife Observations

## Wildlife Habitat Observations

Feature

Mast Producing Areas

Feature  
Description

761

FO-057 tree tally 1 See paper field notes for tree tally and notes



Feature Location

Latitude:45.856626,Longitude:-80.613697,Altitude:196.0,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:10/15/2015 02:00:06 EDT

Feature

Mast Producing Areas

Feature  
Description

764

FO-057 tree tally 2. See paper field notes for tree tally and notes



Feature Location

Latitude:45.856945,Longitude:-80.614464,Altitude:200.5,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:10/15/2015 02:37:31 EDT

Feature

Mast Producing Areas

Feature  
Description

767

FO-057 tree tally 3. See paper field notes for tree tally and notes



Feature Location

Latitude:45.856654,Longitude:-80.614722,Altitude:207.3,Speed:0.16462222,Accuracy:2.1,Provider:gps,Time:10/15/2015 02:59:06 EDT

FO-057-1 Mast Survey 10/15/2015

Tree tally #1

AM/JE

PIN STRO 10.5, 9.5

PIN RES1 1

QUE RUBR 1.5

ACE RUBR 2.5

QUE RUBR 50 cm DBH, 49.5, 37, 31, 17.5, 8, 7.6  
average DBH 20 cm

2 large canopy oaks, remainder in  
subcanopy and shrub layer

FO-057 Mast Tally #2 10/15/2015

PIN STRO 7.5

AM/JE

ACER RUB 4.0

QUE CRUB 0.5

36, 34

DBH QUE CRUB: 38, 39, 40, 31, 28, 28, 37

AVG DBH: 25 cm

Few canopy oaks, mostly in shrub layer

FO-057 Tally #3

10/15/2015

PIN STRO 8

AM/JE

For  
ITEM 1

OUTER RUB 05

ACER RUB 3.5

PIN GLA 0.5

DBH 8, 32, 26

AVG 25 cm

# Wildlife Observations

Map Number	MPA-004	Field Crew	ADAM, JULIE	1454
Feature ID	FO-67	Study Area		
Project Number	60341251	Air Temp. (degC)	5.00	Weather Notes
Tablet	AECOM6	Wind Speed (beaufort)	0 Calm	
Start Date	10/16/2015 10:14:23 AM	Precipitation	light rain	
End Date	10/16/2015 10:16:37 AM	Cloud Cover	100.00	

## Wildlife Habitat Observations

Feature

Feature Description 794

FO-67 not mast producing area, no mast producing species present



Feature Location

Latitude:45.833373,Longitude:-80.595246,Altitude:201.2,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:10/16/2015 10:16:09 EDT

# Appendix C8

## 2015 Breeding Bird Surveys

Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-N-M01-1											
Point Count Survey																		
Location ID																		
Survey No.							1					2						
Date							28-May-15					29-Jun-15						
Start Time							5:28					5:22						
End Time							5:38					5:32						
Temp. (°C)							5					14						
Precipitation							None					None						
Wind (Beaufort Scale) <sup>1</sup>							0					0						
Cloud Cover (%)							0					100						
Habitat Description							Mature deciduous forest adjacent to swamp											
Survey Time Period							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alborum</i>	-	-	-	\$5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	\$5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	\$5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	\$5												
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	\$5			1	S				1	S			
BAWV	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	\$5							1	S				
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	\$5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	\$5	1	S										
BCCH	Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	-	\$5	1	S	1	S			2	S				
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	\$4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	\$5												
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	\$5	1	S										
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	\$5												
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	\$5							1	S				
BRTN	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	\$4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	\$5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	\$5												
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	\$5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	\$5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	\$4							1	S				
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	\$5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	\$5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	\$5												
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	\$5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	\$5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	\$5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	\$4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	\$5												
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	\$5	1	S										
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	\$5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	\$5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	\$4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	\$5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	\$4												
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	\$4	1	S										
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	\$5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	\$5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	\$5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	\$5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	\$5			1	S			2	S	1	S		
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	\$5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	\$5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	\$5							1	S				
MOWA	Mourning Warbler	<i>Opopornis philadelphia</i>	-	-	-	\$4												
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	\$5												
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	\$4							1	S				
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	\$5	1	S										
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	\$4	4	S	1	S			4	S	1	S		
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	\$5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	\$5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	\$5												
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	\$4												
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	\$4							1	S				
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	\$5							1	S				
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	\$5							1	S				
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	\$5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	\$4							1	S				
RWBL	Red-winged Blackbird	<i>Aegialius phoeniceus</i>	-	-	-	\$4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	\$5												
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	\$4												
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	\$5												
SPGR	Spruce Grouse	<i>Falco pennsylvanicus</i>	-	-	-	\$5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	\$5	1	S										
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	\$4												
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	\$5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	\$4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	\$5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	\$4												
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	\$5												
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	\$5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	\$5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	\$5	1	S	1	S					1	S		
WOTH	Wood Thrush	<i>Hypocichia ustulata</i>	SC	-	THR	\$4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	\$5	1	S					1	S				
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	\$5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	\$5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	\$5								1	S			
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	\$5												

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
 THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
 SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
 THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
 SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.  
 No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.  
 NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.  
 Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.  
 THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction  
 SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
 S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.  
 S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
 S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
 S5 - Very common and demonstrably secure in Ontario.  
 SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.  
 Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
 Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>  
 Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
 Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

OBSERVED	
X	Species observed in its breeding season (no breeding evidence)
POSSIBLE	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
PROBABLE	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
CONFIRMED	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard



**Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area**

							BB-N-M01-2											
Point Count Survey							1					2						
Location ID																		
Survey No.																		
Date							28-May-15					29-Jun-15						
Start Time							6:00					5:49						
End Time							6:10					5:59						
Temp. (°C)							9					14						
Precipitation							None					none						
Wind (Beaufort Scale) <sup>1</sup>							0					0						
Cloud Cover (%)							0					100						
Habitat Description							Mature deciduous forest with a small cliff and beaver pond nearby											
Survey Time Period							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFI	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	\$5					1	S						
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	\$5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	\$5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	\$5									1	S		
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	\$5												
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	\$5	1	S										
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	\$5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	\$5									1	S		
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	\$5							2	S				
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	\$4									1	S		
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	\$5												
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	\$5	1	S					2	S				
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	\$5												
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	\$5	1	S										
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	\$4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	\$5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	\$5	1	S			1	S		1	S			
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	\$5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	\$5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	\$4									1	S		
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	\$5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	\$5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	\$5												
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	\$5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	\$5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	\$5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	\$4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	\$5							1	S				
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	\$5									1	S		
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	\$5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	\$5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	\$4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	\$5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	\$4												
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	\$4							1	S				
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	\$5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	\$5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	\$5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	\$5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	\$5	1	S			2	S	1	S	1	S		
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	\$5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	\$5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	\$5							1	S				
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	\$4												
NAWA	Nashville Warbler	<i>Vermivora ruticaolia</i>	-	-	-	\$5	1	S										
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	\$4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	\$5	1	S										
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	\$4	1	S	1	S			3	S	2	S		
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	\$5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	\$5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	\$5									1	S		
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	\$4												
RBGR	Rose-breasted Grosbeak	<i>Phoebastria immutabilis</i>	-	-	-	\$4												
RBNH	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	\$5							1	S				
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	\$5							1	S		1		
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	\$5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	\$4												
RWBL	Red-winged Blackbird	<i>Aegialius phoeniceus</i>	-	-	-	\$4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	\$5												
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	\$4												
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	\$5							1	S				
SPGR	Spruce Grouse	<i>Falco pennsylvanicus</i>	-	-	-	\$5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	\$5												
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	\$4									1	S		
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	\$5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	\$4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	\$5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	\$4												
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	\$5												
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	\$5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	\$5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	\$5			1	S			1	S				
WOTH	Wood Thrush	<i>Hylocichia ustulata</i>	SC	-	THR	\$4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	\$5									1	S		
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	\$5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	\$5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	\$5							1	S				
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	\$5	2	S					1	S		1		

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.

No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							Point Count Survey Location ID: BB-N-M02-3											
							1					2						
							28-May-15					29-Jul-15						
							6:36					6:34						
							6:46					6:44						
							9					14						
							None					none						
							0					0						
							0					100						
							Mature deciduous forest											
							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	\$5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	\$5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	\$5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	\$5												
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	\$5						1	S					
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	\$5	1	S						1	S			
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	\$5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	\$5												
BCCH	Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	-	\$5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	\$4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	\$5												
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	\$5						1	S					
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	\$5	1	S										
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	\$5												
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	\$4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	\$5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	\$5												
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	\$5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	\$5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	\$4								1	S	1	S	
CMWA	Cape May Warbler	<i>Setophaga tigrina</i>	-	-	-	\$5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	\$5						1	S					
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	\$5												
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	\$5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	\$5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	\$5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	\$4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	\$5										1	S	
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	\$5	1	S			1	S	1	S	1	S		
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	\$5								1	S			
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	\$5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	\$4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	\$5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	\$4												
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	\$4						1	S					
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	\$5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	\$5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	\$5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	\$5	1	Flover										
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	\$5	1	S						4	S	1	S	
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	\$5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	\$5												
MAWA	Magnolia Warbler	<i>Dendroica magna</i>	-	-	-	\$5												
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	\$4												
NAWA	Nashville Warbler	<i>Vermivora ruficapilla</i>	-	-	-	\$5								1	S			
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	\$4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	\$5					1	S						
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	\$4	4	S			2	S	1	S		1	S	
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	\$5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	\$5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	\$5												
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	\$4												
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	\$4												
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	\$5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	\$5	1	S						1	S			
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	\$5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	\$4					1	S						
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	\$4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	\$5												
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	\$4												
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	\$5												
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	\$5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	\$5												
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	\$4												
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	\$5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	\$4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	\$5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	\$4	1	S						2	S			
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	\$5												
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	\$5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	\$5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	\$5	1	S						1	S			
WOTH	Wood Thrush	<i>Hylocichia ustulata</i>	SC	-	THR	\$4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	\$5												
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	\$5	2	S										
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	\$5								1	NY			
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	\$5					1	S	1	S				
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	\$5			2	S			1	S				

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
 THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
 SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
 THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
 SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.  
 No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.  
 NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.  
 Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.  
 THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction  
 SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
 S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.  
 S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
 S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
 S5 - Very common and demonstrably secure in Ontario.  
 SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.  
 Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
 Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>  
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**Breeding Code Legend**

<b>OBSERVED</b>	
X	Species observed in its breeding season (no breeding evidence)
<b>POSSIBLE</b>	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
<b>PROBABLE</b>	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
<b>CONFIRMED</b>	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							Point Count Survey											
							Location ID											
							BB-N-M03-4											
							1					2						
							28-May-15					29-Jun-15						
							7:05					7:10						
							7:15					7:20						
							11					14						
							None					none						
							1					0						
							0					100						
							Mature deciduous forest											
							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alorum</i>	-	-	-	\$5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	\$5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	\$5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	\$5												
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	\$5												
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	\$5	1	S							1	S		
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	\$5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	\$5												
BCCH	Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	-	\$5	1	S										
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	\$4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	\$5												
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	\$5			1	S								
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	\$5									1	S		
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	\$5												
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	\$4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	\$5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	\$5	2	S						1	S			
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	\$5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	\$5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	\$4								1	S			
CMWA	Cape May Warbler	<i>Setophaga tigrina</i>	-	-	-	\$5												
CFDW	Cedar Waxwing	<i>Bombycilla cedrorum</i>	-	-	-	\$5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	\$5												
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	\$5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	\$5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	\$5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	\$4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	\$5							1	S				
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	\$5												
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	\$5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	\$5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	\$4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	\$5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	\$4												
GCFL	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	\$4	2	S			1	S						
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	\$5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	\$5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	\$5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	\$5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	\$5					2	S		3	S	1	S	
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	\$5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	\$5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	\$5												
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	\$4												
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	\$5	2	S						2	S			
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	\$4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	\$5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	\$4	1	S			1	S		3	S	1	S	
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	\$5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	\$5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	\$5												
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	\$4	2	S										
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	\$4												
RBNV	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	\$5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	\$5	2	S						2	S		1	S
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	\$5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	\$4					1	S						
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	\$4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	\$5												
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	\$4												
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	\$5												
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	\$5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	\$5												
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	\$4												
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	\$5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	\$4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	\$5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	\$4									1	Fluover, H		
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	\$5												
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	\$5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	\$5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	\$5												
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	\$4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	\$5					1	S						
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	\$5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	\$5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	\$5					1	S		1	NY			
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	\$5												

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

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S#? - Rank uncertain.

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**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard

Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-N-M03-5											
Point Count Survey							1		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Location ID							Mature deciduous forest with some treed rock barrens											
Survey No.							28-May-15		29-Jun-15									
Date							7:29		7:43									
Start Time							7:39		7:53									
End Time							11		14									
Temp. (°C)							None		none									
Precipitation							1		0									
Wind (Beaufort Scale) <sup>1</sup>							0		100									
Cloud Cover (%)																		
Habitat Description																		
Survey Time Period							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5			1	S								
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5												
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5			1	S						1	S	
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5										1	S	
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5					1	S						
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5	1	S										
BRGR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5												
BRTW	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5	1	S	1	S			2	S				
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5								1	S			
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4												
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5												
CDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5							1	S				
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5									1	S		
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5	1	S					1	S				
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5	2	S										
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4												
GCFL	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4	2	S					1	S				
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5							1	S				
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5							3	S				
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5					1	S						
MOWA	Mourning Warbler	<i>Opaporhys philadelphia</i>	-	-	-	S4												
NAWA	Nashville Warbler	<i>Vermivora rutica</i>	-	-	-	S5	1	S					1	S	1	S		
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4			2	S								
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	2	S	1	S			2	S	2	S		
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5											1	S
PUFI	Purple Finch	<i>Carduelis purpureus</i>	-	-	-	S4												
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4												
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5	1	S					1	S				
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4	1	S										
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5												
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4												
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5												
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	S5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5												
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4												
TFAW	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5												
TRES	Tree Swallow	<i>Ichthyophaga bicolor</i>	-	-	-	S4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4												
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5												
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5												
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	S4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5			1	S			1	S				
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5							1	S				
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5	1	S										

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
 THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
 SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
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 No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.  
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 Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.  
 THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction  
 SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
 S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.  
 S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
 S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
 S5 - Very common and demonstrably secure in Ontario.  
 SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
 Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

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**Breeding Code Legend**

OBSERVED	
X	Species observed in its breeding season (no breeding evidence)
POSSIBLE	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
PROBABLE	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
CONFIRMED	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard



# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-N-M04-6											
Point Count Survey							1					2						
Location ID																		
Survey No.							28-May-15					29-Jun-15						
Date							8:02					8:21						
Start Time							8:12					8:31						
End Time							24					15						
Temp. (°C)							None					none						
Precipitation							1					0						
Wind (Beaufort Scale) <sup>1</sup>							0					100						
Cloud Cover (%)							Mature deciduous forest											
Habitat Description							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5	1	S				1	S					
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5								1	S			
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5												
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5												
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5	1	S				1	S					
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5												
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5								1	S			
BRTW	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5								1	S			
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5	1	S				1	S	1	S			
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5								1	S			
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4												
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5					2	S						
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5												
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5												
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5												
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5	1	S										
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4												
GCFL	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4	2	S				1	S					
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5					1	S						
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5	1	S										
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5												
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NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4								1	S			
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	4	S	1	S	1	S	5	NE				
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5												
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	S4								1	S			
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4												
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5	1	S						1	S			
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5	2	S				2	S					
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4												
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VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5												
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**Notes:**

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0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

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M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
CONFIRMED	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-N-M07-7											
Point Count Survey							1					2						
Location ID																		
Survey No.							1-Jun-15					30-Jun-15						
Date							8:10					8:38						
Start Time							8:20					8:48						
End Time							9					20						
Temp. (°C)							None					none						
Precipitation							1					1						
Wind (Beaufort Scale) <sup>1</sup>							0					10						
Cloud Cover (%)							Jack Pine dominated treed rock barren											
Habitat Description							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	\$5			1	S	1	S						
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	\$5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	\$5	1	S										
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	\$5									1	S		
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	\$5					1	S			1	S		
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	\$5									1	S		
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	\$5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	\$5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	\$5							1	S				
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	\$4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	\$5					1	S						
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	\$5												
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	\$5												
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	\$5												
BRTN	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	\$4	1	S										
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	\$5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	\$5												
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	\$5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	\$5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	\$4												
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	\$5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	\$5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	\$5	1	S	1	S	2	S	2	S				
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	\$5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	\$5			1	S								
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	\$5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	\$4	1	S										
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	\$5	1	S										
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	\$5	2	S	1	S			4	S				
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	\$5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	\$5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	\$4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	\$5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	\$4	1	S										
GCFL	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	\$4												
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	\$5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	\$5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	\$5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	\$5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	\$5	2	S					2	S				
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	\$5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	\$5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	\$5												
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	\$4												
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	\$5							1	S	1	S		
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	\$4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	\$5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	\$4												
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	\$5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	\$5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	\$5												
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	\$4												
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	\$4												
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	\$5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	\$5												
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	\$5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	\$4												
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	\$4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	\$5												
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	\$4												
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	\$5												
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	\$5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	\$5												
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	\$4												
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	\$5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	\$4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	\$5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	\$4												
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	\$5												
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	\$5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	\$5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	\$5												
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	\$4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	\$5	2	S					3	S	1	FY		
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	\$5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	\$5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	\$5	1	S					1	CF				
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	\$5												

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
 THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
 SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
 THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
 SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.  
 No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.  
 NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.  
 Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.  
 THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction  
 SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
 S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.  
 S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
 S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
 S5 - Very common and demonstrably secure in Ontario.  
 SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.  
 Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
 Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>  
 Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
 Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

<b>OBSERVED</b>	
X	Species observed in its breeding season (no breeding evidence)
<b>POSSIBLE</b>	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
<b>PROBABLE</b>	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
<b>CONFIRMED</b>	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-N-M07-8											
Point Count Survey							1					2						
Location ID																		
Survey No.							1-Jun-15					30-Jun-15						
Date							7:27					7:44						
Start Time							7:37					7:54						
End Time							8					16						
Temp. (°C)							None					none						
Precipitation							1					1						
Wind (Beaufort Scale) <sup>1</sup>							0					0						
Cloud Cover (%)							Jack Pine dominated treed rock barren											
Habitat Description							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5	2	S							1	S		
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5									1	S		
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5									1	S		
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5							2	S				
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5				1	S		1	S				
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5				1	S		1	S				
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5												
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5	1	S										
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5												
BRTN	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4				1	S							
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5	1	S						1	S			
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4												
CMWA	Cape May Warbler	<i>Setophaga tigrina</i>	-	-	-	S5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5							1	S				
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5	1	S					2	S				
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5	1	S						1	S			
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5	2	S		1	S		2	S				
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4							1	S				
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4												
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5				1	S				1	S		
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5	1	S		1	S		1	S				
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5								1	S			
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4												
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	S5												
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4	2	S		1	S				2	S		
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4												
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5												
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	S4									1	S		
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4												
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5				1	S							
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4												
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5												
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4												
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5												
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	S5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5												
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4												
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	S4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4												
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5												
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5												
WOTH	Wood Thrush	<i>Hylocichia ustulata</i>	SC	-	THR	S4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5	5	S		1	S		5	S				
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5	1	S						2	S			
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5									1	S		

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.

No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-N-M08-9											
Point Count Survey							1					2						
Location ID																		
Survey No.																		
Date							1-Jun-15					30-Jun-15						
Start Time							6:56					7:19						
End Time							7:06					7:29						
Temp. (°C)							7					16						
Precipitation							None					none						
Wind (Beaufort Scale) <sup>1</sup>							1					1						
Cloud Cover (%)							0					0						
Habitat Description							Jack Pine dominated treed rock barren											
Survey Time Period							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5	2	S			1	S	2	S				
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5	1	S					2	S				
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5	1	S						1	S			
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5												
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5			1	S								
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5												
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5												
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5												
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5												
BRTN	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5												
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4												
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5												
CDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5	1	S	2	P			2	S				
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5			1	S								
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5	3	S					3	S				
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4							2	P				
GCFL	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4					1	S						
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5	2	S					2	S		2		
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5								1	S			
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4												
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	S5	1	S			1	S	3	S				
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4												
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5												
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	S4												
RBGR	Rose-breasted Grosbeak	<i>Phoebastria ludovicianus</i>	-	-	-	S4												
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5					1	S	1	S				
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4												
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5							2	S				
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4												
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5												
SPGR	Spruce Grouse	<i>Falcoennis canadensis</i>	-	-	-	S5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5												
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4	1	S							1	S		
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	S4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4												
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5												
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5												
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WOTH	Wood Thrush	<i>Hylocichia ustulata</i>	SC	-	THR	S4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5	2	S			1	S	6	S				
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5					1	S						
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5												

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
 THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
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**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
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**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.  
 THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction  
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**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
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 S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
 S5 - Very common and demonstrably secure in Ontario.  
 SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.  
 Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
 Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>  
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**Breeding Code Legend**

OBSERVED	
X	Species observed in its breeding season (no breeding evidence)
POSSIBLE	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
PROBABLE	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
CONFIRMED	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard



# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-N-M08-10											
							1					2						
							1-Jun-15					30-Jun-15						
							6:32					6:40						
							6:42					6:50						
							7					15						
							None					none						
							1					0						
							0					0						
							Jack Pine dominated treed rock barren											
							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	\$5	2	S					2	S				
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	\$5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	\$5	1	S										
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	\$5							1	S				
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	\$5							1	S				
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	\$5							1	S				
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	\$5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	\$5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	\$5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	\$4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	\$5												
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	\$5												
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	\$5												
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	\$5												
BRTN	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	\$4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	\$5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	\$5												
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	\$5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	\$5	1	S	150	Flvover								
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	\$4												
CMWA	Cape May Warbler	<i>Setophaga tigrina</i>	-	-	-	\$5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	\$5							2	P				
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	\$5	1	S					2	S				
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	\$5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	\$5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	\$5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	\$4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	\$5												
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	\$5	1	S					2	S				
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	\$5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	\$5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	\$4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	\$5							1	S				
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	\$4												
GCFL	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	\$4												
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	\$5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	\$5								1	S			
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	\$5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	\$5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	\$5						2	S	3	S			
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	\$5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	\$5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	\$5	1	S					1	S				
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	\$4												
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	\$5	2	S					1	S				
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	\$4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	\$5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	\$4												
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	\$5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	\$5						1	S					
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	\$5												
PUFI	Purple Finch	<i>Empidonax purpureus</i>	-	-	-	\$4	1	S										
RBGR	Rose-breasted Grosbeak	<i>Phoebastria ludovicianus</i>	-	-	-	\$4												
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	\$5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	\$5	1	S					1	S				
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	\$5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	\$4												
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	\$4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	\$5												
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	\$4												
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	\$5								1	S			
SPGR	Spruce Grouse	<i>Falcoennis canadensis</i>	-	-	-	\$5	1	S										
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	\$5												
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	\$4	1	S										
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	\$5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	\$4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	\$5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	\$4												
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	\$5												
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	\$5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	\$5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	\$5												
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	\$4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	\$5	4	S					1	S				
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	\$5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	\$5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	\$5												
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	\$5												

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
 THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
 SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
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 No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.  
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 Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.  
 THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction  
 SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
 S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.  
 S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
 S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
 S5 - Very common and demonstrably secure in Ontario.  
 SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.  
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**Breeding Code Legend**

OBSERVED	
X	Species observed in its breeding season (no breeding evidence)
POSSIBLE	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
PROBABLE	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
CONFIRMED	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-N-M08-11											
Point Count Survey							1					2						
Location ID																		
Survey No.																		
Date							1-Jun-15					30-Jun-15						
Start Time							6:04					6:09						
End Time							6:14					6:19						
Temp. (°C)							7					14						
Precipitation							None					none						
Wind (Beaufort Scale) <sup>1</sup>							1					0						
Cloud Cover (%)							80					5						
Habitat Description							Jack Pine dominated treed rock barren											
Survey Time Period							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5	1	S					1	S				
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5	1	S					1	S				
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5	1	S					1	S				
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5							2	S				
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5			1	S								
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5												
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5												
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5				1	S							
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5												
BRTN	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5					1	S						
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5					1	S						
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4												
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5	1	S					1	S		1		
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5								1	Fllover, S			
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5							1	S				
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5	2	S		1	S		3	S				
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
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EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4				1	S		1	S				
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GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5												
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HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5	1	S		1	S		4	S				
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5			1	S								
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5												
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NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5												
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**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>  
 Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
 Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

<b>OBSERVED</b>	
X	Species observed in its breeding season (no breeding evidence)
<b>POSSIBLE</b>	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
<b>PROBABLE</b>	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
<b>CONFIRMED</b>	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-N-M09-12											
Point Count Survey							1					2						
Location ID																		
Survey No.							2-Jun-15					30-Jun-15						
Date							5:52					5:32						
Start Time							6:02					5:42						
End Time							4					13						
Temp. (°C)							None					none						
Precipitation							0					0						
Wind (Beaufort Scale) <sup>1</sup>							0					0						
Cloud Cover (%)							0					0						
Habitat Description							Jack Pine dominated treed rock barren											
Survey Time Period							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5												
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5	1	S				1	S					
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5	1	S										
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5								1	S			
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5												
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5												
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5												
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5												
BRTN	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5	2	S			1	S		1	S			
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5	2	S										
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4												
CMWA	Cape May Warbler	<i>Setophaga tigrina</i>	-	-	-	S5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5			1	S				1	S			
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5			1	S								
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5								1	S			
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5	1	S			1	S		1	S			
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4								2	P			
GCFL	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4												
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5					3	S		2	S			
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5	1	S										
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4												
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	S5	1	S		1	S							
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	2	S		1	S		1	S				
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5												
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	S4												
RBGR	Rose-breasted Grosbeak	<i>Phoebastria ludovicianus</i>	-	-	-	S4												
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5	1	S					1	S				
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4	1	S										
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5												
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4												
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5					1	S						
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	S5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5												
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4												
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	S4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4				1	S							
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5												
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5				1	S							
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	S4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5	1	S		2	S		1	S	4	S		
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5	1	S										
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5												
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5												

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.

No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

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**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-N-M49-13											
Point Count Survey							1					2						
Location ID																		
Survey No.																		
Date							29-May-15					1-Jul-15						
Start Time							9:38					6:30						
End Time							9:48					6:40						
Temp. (°C)							28					15						
Precipitation							None					None						
Wind (Beaufort Scale) <sup>1</sup>							4					1						
Cloud Cover (%)							0					100						
Habitat Description							On a rock barren in the middle of a large wetland with lots of open water, vegetation mats, aquatic vegetation and shrubs											
Survey Time Period							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5												
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5							1	S				
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5	1	S										
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4	1	S										
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5												
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5												
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5	1	S	1	S			1	S				
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5												
BRTN	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4	1	S										
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5												
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4	1	S										
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5							1	S				
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5												
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5	2	S			1	S	1	S				
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4												
GCFL	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4	1	S										
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5							3	FL				
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5							1	S	1	S		
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5								1	S			
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5												
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4												
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	S5	2	S					2	S				
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4	1	Fllover										
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5								1	S			
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4												
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5												
PUFI	Purple Finch	<i>Carduelis purpureus</i>	-	-	-	S4												
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4												
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5			1	S								
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4												
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5												
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4												
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5												
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	S5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5	1	S					1	S				
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4												
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	S4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4												
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5												
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5							1	S				
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	S4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5	2	S					2	S	1	S		
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5												
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5												

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
 THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
 SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

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END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
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**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.  
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 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
 S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.  
 S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
 S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
 S5 - Very common and demonstrably secure in Ontario.  
 SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.  
 Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
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**References:**

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**Breeding Code Legend**

OBSERVED	
X	Species observed in its breeding season (no breeding evidence)
POSSIBLE	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
PROBABLE	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
CONFIRMED	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard



**Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area**

							BB-N-M49-14															
Point Count Survey							1					2										
Location ID																						
Survey No.							29-May-15					1-Jul-15										
Date							6:48					7:13										
Start Time							6:58					7:23										
End Time							6					15										
Temp. (°C)							None					None										
Precipitation							1					2										
Wind (Beaufort Scale) <sup>1</sup>							10					100										
Cloud Cover (%)							Treed rock barren with a bog inclusion															
Habitat Description							1 - 3 min					3 - 5 min					5 - 10 min					
Survey Time Period							Number Observed		Highest Breeding Evidence		Number Observed		Highest Breeding Evidence		Number Observed		Highest Breeding Evidence		Number Observed		Highest Breeding Evidence	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFI	Alder Flycatcher	<i>Empidonax alborum</i>	-	-	-	S5																
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5	4	S														
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5																
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5	1	S														
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5							1	S								
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5	1	S					1	S								
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5																
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5																
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5	1	S														
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4																
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5																
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5																
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5					1	S										
BRCA	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5							1	S								
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4																
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5																
BTBW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5				1	S											
BTBW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5							1	S					1	S		
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5	1	S														
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5																
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4																
CMWA	Cape May Warbler	<i>Setophaga tigrina</i>	-	-	-	S5																
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5									4	S						
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5	2	S														
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5																
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5								1		Flyover, H						
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5								1		Flyover, H						
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4								1		S						
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5																
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5	3	S						2	S							
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5																
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5																
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4																
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5																
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4																
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4													1	S		
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5													1	S		
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5																
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5																
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5																
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5	2	S						1	S							
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5			1	S												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5																
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5																
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4																
NAWA	Nashville Warbler	<i>Vermivora ruficailla</i>	-	-	-	S5	1	S						2	S							
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4																
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5																
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	2	S														
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5																
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5													1	S		
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5																
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	S4																
RBGR	Rose-breasted Grosbeak	<i>Phoebastria ludovicianus</i>	-	-	-	S4																
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5																
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5			1	S							1	S				
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5																
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4																
RWBL	Red-winged Blackbird	<i>Aegialius phoeniceus</i>	-	-	-	S4																
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5																
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4																
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5																
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	S5																
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5																
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YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5	1															
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# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

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**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>  
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POSSIBLE	
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PROBABLE	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
CONFIRMED	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

**Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area**

							BB-N-M49-15											
Point Count Survey																		
Location ID							1					2						
Survey No.							29-May-15					1-Jul-15						
Date							7:13					7:46						
Start Time							7:23					7:56						
End Time							13					15						
Temp. (°C)							None					None						
Precipitation							1					3						
Wind (Beaufort Scale) <sup>1</sup>							10					100						
Cloud Cover (%)							Treed rock barren with bog inclusion											
Habitat Description							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Survey Time Period							Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>												
ALFI	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	\$5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	\$5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	\$5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	\$5												
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	\$5												
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	\$5	1	S				1	S					
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	\$5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	\$5												
BCCH	Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	-	\$5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	\$4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	\$5												
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	\$5	1	S										
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	\$5					1	S						
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	\$5												
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	\$4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	\$5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	\$5	1	S				2	S					
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	\$5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	\$5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	\$4												
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	\$5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	\$5							3	S				
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	\$5												
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	\$5	1	Flower				1	S					
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	\$5	1	S										
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	\$5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	\$4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	\$5												
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	\$5	1	S										
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	\$5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	\$5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	\$4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	\$5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	\$4												
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	\$4												
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	\$5	1	S										
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	\$5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	\$5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	\$5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	\$5					2	S	2	S	1	S		
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	\$5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	\$5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	\$5												
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	\$4												
NAWA	Nashville Warbler	<i>Vermivora ruficailla</i>	-	-	-	\$5						1	S	1	S			
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	\$4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	\$5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	\$4	1	S			1	S	2	S				
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	\$5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	\$5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	\$5												
PIJF	Purple Finch	<i>Campestris purpureus</i>	-	-	-	\$4					1	S						
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	\$4												
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	\$5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	\$5	1	S			1	S			1	S		
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	\$5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	\$4	1	S										
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	\$4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	\$5												
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	\$4												
SOCP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	\$5												
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	\$5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	\$5												
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TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	\$5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	\$4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	\$5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	\$4												
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	\$5												
WIFI	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	\$5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	\$5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	\$5												
WOTH	Wood Thrush	<i>Hylocichia ustulata</i>	SC	-	THR	\$4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	\$5	3	S					2	S				
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	\$5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	\$5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	\$5								1	S			
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	\$5												

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

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NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID	BB-N-M50-16			
Survey No.	1		2	
Date	29-May-15		1-Jul-15	
Start Time	7:50		8:20	
End Time	8:00		8:30	
Temp. (°C)	19		15	
Precipitation	None		light rain	
Wind (Beaufort Scale) <sup>1</sup>	1		2	
Cloud Cover (%)	10		100	

Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Treed Rock barren with many large coniferous trees											
							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
							Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5												
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5												
BAWV	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5							1	S				
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5							1	S				
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5												
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5	1	S										
BRCA	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5												
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5							1	S				
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5					1	S						
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4												
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5					1	S						
CEFW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5								1	S			
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5										1	S	
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5												
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5					2	S						
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4												
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4												
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5	2	S	2	S	1	S	1	S				
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5	2	S									1	S
MOWA	Mourning Warbler	<i>Opornis philadelphia</i>	-	-	-	S4												
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	S5	1	S					1	S				
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	1	S	1	S	1	S					1	S
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5												
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RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4												
RBNV	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5	2	S					1	S				
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4	1	S										
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SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4					2	P	1	S				
SOOP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5												
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WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5							1	S				
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5	2	S										
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	S4												
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WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5												
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YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5												
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**Notes:**

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**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>

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Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Point Count Survey Location ID	BB-N-M50-17									
								1					2				
								29-May-15					1-Jul-15				
								8:11					8:58				
								8:21					9:08				
								19					15				
								None					none				
								3					3				
								0					100				
																Treed rock barren	
		1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min					
		Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence				
ALFI	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5											
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5											
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5											
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5											
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5				1	S						
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5				1	S						
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5											
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5											
BCCH	Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	-	S5	3	S		2	S						
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4											
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5											
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5											
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5						1	S				
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5											
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4											
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5											
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5	2	S			1	S					
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5											
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5											
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4											
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5											
CEFW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5						1	S				
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5	1	S	1	S							
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5											
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5											
COMF	Common Merganser	<i>Mergus meranser</i>	-	-	-	S5											
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4											
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5											
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5	2	S		2	S						
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5											
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5				1	H. flyover						
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4											
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5											
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4											
GCFL	Great Crested Flycatcher	<i>Mniotilta cinerea</i>	-	-	-	S4											
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5				1	S						
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5											
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5											
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5											
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5				2	S	1	S				
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5											
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5											
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5	1	S									
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4											
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	S5	1	S	1	S							
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4											
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5											
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	3	S	1	S	1	S					
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5											
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5											
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5											
PUFI	Purple Finch	<i>Campestris purpureus</i>	-	-	-	S4											
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4											
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5			1	S							
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5	1	S	1	S	1	S					
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5											
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4	1	S									
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4											
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5											
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4											
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5											
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	S5											
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5											
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4											
TFWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5											
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	S4											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4											
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5											
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5											
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5											
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5											
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	S4											
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5	2	S				1	S				
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5											
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5											
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5	1	S									
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5											

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.

No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

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**References:**

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**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard



# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-N-M50-18											
							1					2						
							29-May-15					1-Jul-15						
							8:46					9:28						
							8:56					9:38						
							20					16						
							None					none						
							3					3						
							0					100						
							Treed rock barren next to Tamarack fen											
							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5	1	S										
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5	1	S										
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5	1	S										
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5							1	S				
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5	2	S										
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5												
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5												
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5									1	S		
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5												
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5	3	S					2	S				
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5	45	flovers				1	S					
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4												
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5												
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5												
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5						1	S	2	S			
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4												
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4												
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5								2	S			
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5									1	S		
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4												
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	S5								1	S			
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4								1	S			
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4								2	S			
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5												
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	S4												
RBGR	Rose-breasted Grosbeak	<i>Phoebastria ludovicianus</i>	-	-	-	S4												
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5	2	S										
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4						1	S					
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5	1	S										
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4												
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5												
SPGR	Spruce Grouse	<i>Falco pennsylvanicus</i>	-	-	-	S5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5												
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4												
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	S4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4								1	fllover, H			
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5												
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5												
WOTH	Wood Thrush	<i>Hylocichia ustulata</i>	SC	-	THR	S4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5												
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5	1	S										
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5												

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
 THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
 SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
 THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
 SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.  
 No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.  
 NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.  
 Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.  
 THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction  
 SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
 S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.  
 S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
 S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
 S5 - Very common and demonstrably secure in Ontario.  
 SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.  
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**References:**

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**Breeding Code Legend**

OBSERVED	
X	Species observed in its breeding season (no breeding evidence)
POSSIBLE	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
PROBABLE	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
CONFIRMED	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							Point Count Survey											
							Location ID											
							1					2						
							2-Jun-15					2-Jul-15						
							9:30					8:58						
							9:40					9:08						
							12					15						
							None					None						
							0					1						
							0					0						
							Deciduous forest											
							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	\$5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	\$5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	\$5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	\$5												
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	\$5												
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	\$5					1	S						
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	\$5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	\$5		1	S									
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	\$5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	\$4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	\$5				1	S							
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	\$5	1	S										
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	\$5												
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	\$5												
BRTN	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	\$4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	\$5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	\$5					2	S		1	S		1	S
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	\$5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	\$5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	\$4											1	S
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	\$5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	\$5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	\$5												
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	\$5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	\$5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	\$5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	\$4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	\$5												
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	\$5							1	S				
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	\$5							1	S				
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	\$5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	\$4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	\$5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	\$4												
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	\$4							1	S				
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	\$5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	\$5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	\$5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	\$5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	\$5	1	S										
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	\$5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	\$5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	\$5												
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	\$4								1	S			
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	\$5												
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	\$4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	\$5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	\$4	2	S		1	S		3	S				
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	\$5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	\$5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	\$5												
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	\$4	1	S									1	S
RBGR	Rose-breasted Grosbeak	<i>Phoebastria ludovicianus</i>	-	-	-	\$4												
RBNV	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	\$5				1	S		2	CF				
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	\$5	1	S		1	S		1	S				
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	\$5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	\$4												
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	\$4							1	S				
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WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	\$5												
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YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	\$5	1	S					1	S				
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# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

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**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

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**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard

Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-S-M01-20																	
							1					2												
							2-Jun-15					2-Jul-15												
							8:53					8:24												
							9:03					8:34												
							11					15												
							None					None												
							1					1												
							0					0												
							Coniferous forest																	
							1 - 3 min			3 - 5 min			5 - 10 min			1 - 3 min			3 - 5 min			5 - 10 min		
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence						
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AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5																		
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5																		
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5																		
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5																		
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5																		
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5																		
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5																		
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5																		
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4																		
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5																		
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5		1	S															
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5																		
BRCA	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5																		
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4																		
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5																		
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5	2	S																
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																		
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5																		
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4																		
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5																		
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5																		
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5																		
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5																		
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5																		
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5																		
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4																		
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5																		
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5																		
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5																		
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5																		
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4																		
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5																		
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4																		
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4																		
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5																		
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5																		
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5																		
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5																		
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HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5																		
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5																		
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5																		
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4																		
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OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	3	S		1	S													
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5																		
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RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5																		
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RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4																		
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5																		
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4																		
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TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5																		
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4																		
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5																		
WIFI	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5																		
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5																		
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5																		
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	S4																		
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5																		
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5																		
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5																		
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5	1	S																
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5																		

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
 THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
 SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
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**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.  
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 SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
 S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.  
 S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
 S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
 S5 - Very common and demonstrably secure in Ontario.  
 SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
 Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>  
 Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
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**Breeding Code Legend**

OBSERVED	
X	Species observed in its breeding season (no breeding evidence)
POSSIBLE	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
PROBABLE	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
CONFIRMED	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-S-M02-21																	
Point Count Survey							1					2												
Location ID																								
Survey No.							2-Jun-15					2-Jul-15												
Date							8:31					7:45												
Start Time							8:41					7:55												
End Time							11					12												
Temp. (°C)							None					None												
Precipitation							1					0												
Wind (Beaufort Scale) <sup>1</sup>							0					0												
Cloud Cover (%)							Coniferous forest																	
Habitat Description							1 - 3 min			3 - 5 min			5 - 10 min			1 - 3 min			3 - 5 min			5 - 10 min		
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence				
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5																		
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5																		
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5																		
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5																		
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5																		
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5																		
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5																		
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5																		
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5	2	S																
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4																		
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5																		
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5	1	S							1	S								
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5																		
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5																		
BRTN	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4																		
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5																		
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5	1	S	1	S					2	S								
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																		
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COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5													1	X				
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CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4																		
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S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>

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Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard



Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey	BB-S-M03-22			
Location ID				
Survey No.	1	2		
Date	2-Jun-15	2-Jul-15		
Start Time	8:07	7:03		
End Time	8:17	7:13		
Temp. (°C)	10	10		
Precipitation	None	None		
Wind (Beaufort Scale) <sup>1</sup>	0	0		
Cloud Cover (%)	0	0		
Habitat Description	At the edge of an alder thicket swamp and a deciduous forest			
Survey Time Period	1 - 3 min	3 - 5 min	5 - 10 min	

Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min		
							Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5													
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5													
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5													
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5	1	S											
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5					1	S							
BAWV	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5											1	S	
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5													
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5													
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5	1	S									1	S	
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4													
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5	1	S											
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5					1	S							
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5										1	S		
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5													
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4					1	S							
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5													
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5			1	S	1	S	1	S					
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5			1	S									
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5													
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5													
CEFW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5													
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5													
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5													
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5													
COMF	Common Merganser	<i>Mergus merger</i>	-	-	-	S5													
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5			1	S									
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5							2	S					
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5													
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5													
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4													
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5													
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4													
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4							1	CF					
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5													
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5					1	S							
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5													
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5													
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5	2	S					1	S					
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5													
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5													
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5	1	S											
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4													
NAWA	Nashville Warbler	<i>Vermivora ruticae</i>	-	-	-	S5	1	S					1	S					
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4													
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5	1	S											
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	4	S					3	S			1	S	
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5													
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5													
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5													
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	S4	1	S											
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4													
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5													
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5	1	S					1	S			1	S	
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5													
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4													
RWBL	Red-winged Blackbird	<i>Aegialius phoeniceus</i>	-	-	-	S4													
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5													
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4													
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5													
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	S5													
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5											1	S	
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4													
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5													
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	S4													
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5													
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4													
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5													
WIFI	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5													
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5													
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5													
WOTH	Wood Thrush	<i>Hylocichia ustulata</i>	SC	-	THR	S4													
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5													
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5	1	S											
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5					1	S							
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5												1	S

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.

No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

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**References:**

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**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							Point Count Survey											
							Location ID											
							BB-S-M03-23											
							1					2						
							2-Jun-15					2-Jul-15						
							7:36					6:33						
							7:46					6:43						
							9					9						
							None					None						
							0					0						
							0					0						
							Mixed forest in a wet patch dominated by Paper Birch, Black Spruce, Red Maple and ferns											
							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax aliorum</i>	-	-	-	S5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5												
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5												
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5												
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5	1	S					1	S				
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5	1	S										
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5	1	S										
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5												
BRTN	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5	1	S	1	S	1	S	2	S				
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4									1	S		
CMWA	Cape May Warbler	<i>Setophaga tigrina</i>	-	-	-	S5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5												
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5												
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5												
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4												
GCFL	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4												
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5	1	S					1	S				
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5	3	S					1	S	1	S		
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5												
MAWA	Magnolia Warbler	<i>Dendroica magnaolia</i>	-	-	-	S5												
MOWA	Mourning Warbler	<i>Opopronis philadelphia</i>	-	-	-	S4												
NAWA	Nashville Warbler	<i>Vermivora ruticaquila</i>	-	-	-	S5	1	S	1	S								
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4							1	S				
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	4	S	1	S	1	S	2	S	1	S		
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5	1	S										
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5												
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	S4												
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4												
RBNV	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5	1	S					1	S				
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4												
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5												
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4												
SO SP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5												
SPGR	Spruce Grouse	<i>Falco pennsylvanicus</i>	-	-	-	S5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5												
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4												
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	S4									1	S		
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4			1	S								
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5												
WIFI	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5												
WOTH	Wood Thrush	<i>Hylorchia mustelina</i>	SC	-	THR	S4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5												
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5												
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5												

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.

No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

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Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

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**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							Point Count Survey											
							BB-S-M04-24											
							1					2						
							2-Jun-15					2-Jul-15						
							7:01					5:55						
							7:11					6:05						
							6					8						
							None					None						
							0					0						
							0					0						
							Mixed forest											
							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alborum</i>	-	-	-	\$5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	\$5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	\$5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	\$5												
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	\$5	1	S	1	S								
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	\$5							1	S				
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	\$5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	\$5												
BCCH	Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	-	\$5									1	S		
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	\$4									1	S		
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	\$5			1	S								
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	\$5			1	S								
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	\$5												
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	\$5												
BRTS	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	\$4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	\$5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	\$5	2	S				1	S					
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	\$5									1	S		
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	\$5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	\$4												
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	\$5				1	S							
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	\$5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	\$5												
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	\$5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	\$5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	\$5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	\$4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	\$5							1	S				
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	\$5												
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	\$5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	\$5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	\$4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	\$5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	\$4												
GCFL	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	\$4			1	S					1	S		
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	\$5			1	S								
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	\$5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	\$5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	\$5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	\$5				2	S					1	S	
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	\$5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	\$5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	\$5							1	S				
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	\$4								1	S			
NAWA	Nashville Warbler	<i>Vermivora rutica</i>	-	-	-	\$5	2	P					1	S				
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	\$4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	\$5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	\$4	3	S		1	S		2	S				
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	\$5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	\$5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	\$5							1	S				
PUFI	Purple Finch	<i>Carduelis purpureus</i>	-	-	-	\$4	1	S					1	S				
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	\$4												
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	\$5	1	S										
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	\$5	2	S					2	S		1	S	
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	\$5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	\$4			1	S								
RWBL	Red-winged Blackbird	<i>Aegialius phoeniceus</i>	-	-	-	\$4							1	S				
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	\$5												
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SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	\$5												
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WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	\$4							1	S				
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YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	\$5												
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# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 ( 103 - 117 Km/h), 12 (118 - 133 Km/h)

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**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

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**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard

Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-S-M06-25											
							1					2						
							3-Jun-15					3-Jul-15						
							6:06					5:41						
							6:16					5:51						
							9					10						
							None					None						
							0					0						
							0					0						
							Mixed forest											
							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
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BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5												
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5												
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BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5												
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5	1	S				2	S					
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5												
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5												
BRTN	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5	1	S	1	S		2	S	1	S			
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4			1	S	1	S						
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5												
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												
COMF	Common Merganser	<i>Mergus mergamser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5												
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5												
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4												
GCFL	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4								1	S			
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5			1	S	1	S	2	S				
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5												
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4												
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	S5												
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	2	S	1	S		2	S	1	S			
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5												
PUFI	Purple Finch	<i>Carduelis purpureus</i>	-	-	-	S4												
RBGR	Rose-breasted Grosbeak	<i>Phoebastria ludovicianus</i>	-	-	-	S4												
RBNL	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5	1	S				1	S					
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4												
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4												
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5	1	S										
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4	1	S						1	S			
SOSE	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5												
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	S5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5												
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4												
TETA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	S4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4												
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5												
WIFI	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5												
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	S4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5												
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5												
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5	1	S				1	S		S			
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5	2	S				1	S	1	S			
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5												

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 ( 103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.

No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk)– These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

Ministry of Natural Resources and Forestry (MNR), 2014b:Natural Heritage Methodology. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

Ministry of Natural Resources and Forestry (MNR), 2014b:Natural Heritage Methodology. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard



# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-S-M29-26											
Point Count Survey							1		3		5		1		3		5	
Location ID							1		3		5		1		3		5	
Survey No.							3-Jun-15		3-Jul-15									
Date							6:44		6:18									
Start Time							6:54		6:28									
End Time							9		10									
Temp. (°C)							None		None									
Precipitation							0		0									
Wind (Beaufort Scale) <sup>1</sup>							0		0									
Cloud Cover (%)							Edge of thicket swamp and mixed forest											
Habitat Description							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Survey Time Period																		
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alborum</i>	-	-	-	S5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5	1	S				1	S					
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5												
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5	1	S				1	S					
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5												
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5	1	S										
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5								1	S			
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5								1	S			
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5			1	S								
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5												
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5												
BRTW	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5	1	S				1	S					
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5			1	S								
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4	2	S				1	S					
CMWA	Cape May Warbler	<i>Setophaga tigrina</i>	-	-	-	S5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5												
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5									1	S		
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5												
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5												
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4												
GCFI	Great Crested Flycatcher	<i>Myiarchus cinerascens</i>	-	-	-	S4												
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5								2	S			
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5												
MAWA	Magnolia Warbler	<i>Dendroica magna</i>	-	-	-	S5	1	S				2	S					
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4												
NAWA	Nashville Warbler	<i>Vermivora ruticollis</i>	-	-	-	S5	1	S				1	S					
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	2	S				3	S		1	S		
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5									1	S		
PUFI	Purple Finch	<i>Empidonax purpureus</i>	-	-	-	S4												
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4	1	S										
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5								2	S			
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4	1	S										
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4												
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SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5												
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VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4			1	S		1	S		1	S		
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5												
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5												
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WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5												
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WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5			1	S								
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5								1	S			
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5												
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5												

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 ( 103 - 117 Km/h), 12 (118 - 133 Km/h)

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 THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
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 SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
 S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.  
 S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
 S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
 S5 - Very common and demonstrably secure in Ontario.  
 SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
 Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>  
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 Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available:<http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

<b>OBSERVED</b>	
X	Species observed in its breeding season (no breeding evidence)
<b>POSSIBLE</b>	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
<b>PROBABLE</b>	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
<b>CONFIRMED</b>	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-S-M29-27											
							1				2							
							3-Jun-15				3-Jul-05							
							7:26				6:58							
							7:36				7:08							
							10				11							
							None				none							
							0				0							
							0				0							
							Swamp											
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
							Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence
ALFI	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5	1	S				2	S					
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5						1	S					
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5	1	S										
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5			1	S								
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5									1	S		
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5												
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5												
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5												
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5												
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5			1	S								
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4	1	S				1	S					
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5												
CFDW	Cedar Waxwing	<i>Bombus citorum</i>	-	-	-	S5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5												
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5												
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5	3	S				2	S					
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4												
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4				1	S							
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5	1	S				3	S					
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5												
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4												
NAWA	Nashville Warbler	<i>Vermivora ruficailla</i>	-	-	-	S5						1	S					
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	2	S				2	S		1	S		
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5												
PUFI	Purple Finch	<i>Campestris purpureus</i>	-	-	-	S4							1	S				
RBGR	Rose-breasted Grosbeak	<i>Phoebastria ludoviciana</i>	-	-	-	S4												
RBNV	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5	1	S				1	S					
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4												
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4						1	S					
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5												
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4												
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5												
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	S5												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5						1	S					
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4												
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5												
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	S4												
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5												
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4	1	S				1	S					
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5												
WIFI	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5												
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5												
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5												
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	S4												
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5				1	S							
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5						2	S					
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5												
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5	1	S										
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5						1	S					

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.

No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>

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Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Point Count Survey Location ID: BB-S-M27-28										
							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min
Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5											
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5											
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5			1	S				1	S		
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5								1	S		
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5	1	S						1	S		
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5					1	S					
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5											
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5											
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5	1	S									
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4											
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5											
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5											
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5	1	S									
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5							1	S			
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4											
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5											
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5											
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5											
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5											
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4					1	S					
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5											
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5							1	S			
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5											
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5											
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5											
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5											
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4											
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5											
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5	1	S					2	S			
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5			1	S					1	S	
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5											
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4									1	S	
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5											
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4											
GCFI	Great Crested Flycatcher	<i>Mniotilta cristata</i>	-	-	-	S4											
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5											
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5											
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5											
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5											
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5						2	S				
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5							3	S			
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5											
MAWA	Magnolia Warbler	<i>Dendroica magnaolia</i>	-	-	-	S5											
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4											
NAWA	Nashville Warbler	<i>Vermivora ruficailla</i>	-	-	-	S5	3	S					1	S			
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4	1	S					1	S			
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5											
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	1	S	1	S			1	S			
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5											
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5											
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5											
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	S4											
RBGR	Rose-breasted Grosbeak	<i>Phoebastria ludovicianus</i>	-	-	-	S4											
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5											
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5			1	S			1	S		1	S
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5											
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4											
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4					1	S		1	S		
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5											
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4											
SOXP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5											
SPGR	Spruce Grouse	<i>Falcoennis canadensis</i>	-	-	-	S5											
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5			1	S							
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4								2	S		
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5											
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	S4											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4								2	S		
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5											
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5											
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5											
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5											
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	S4											
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5				2	S		1	S		1	S
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5											
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5											
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5											
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5											

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 ( 103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
 THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
 SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
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 SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.  
 No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.  
 NAR (Not at Risk)– These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.  
 Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.  
 THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction  
 SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
 S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.  
 S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
 S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
 S5 - Very common and demonstrably secure in Ontario.  
 SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.  
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**Breeding Code Legend**

OBSERVED	
X	Species observed in its breeding season (no breeding evidence)
POSSIBLE	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
PROBABLE	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
CONFIRMED	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-S-M27-29											
Point Count Survey							Location ID											
Location ID							1					2						
Survey No.							3-Jun-15					3-Jul-15						
Date							8:28					8:57						
Start Time							8:38					9:07						
End Time							13					18						
Temp. (°C)							None					None						
Precipitation							3					3						
Wind (Beaufort Scale) <sup>1</sup>							0					0						
Habitat Description							Treed rock barren											
Survey Time Period							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence		
ALFL	Alder Flycatcher	<i>Empidonax alorum</i>	-	-	-	S5												
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5												
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5												
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5	1	S										
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5												
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5												
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5								1	S			
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5												
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5												
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4												
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5							2	S				
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5												
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5	1	S							1	S		
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5												
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4												
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5												
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5												
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5												
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5												
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4	1	S					2	S				
CMWA	Cape May Warbler	<i>Setophaga tigrina</i>	-	-	-	S5												
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5												
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5					1	S						
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5												
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5												
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4												
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5												
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5							1	S				
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5												
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5												
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4												
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5												
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4												
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4			1	S								
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5												
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5												
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5												
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5												
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5					1	S		2	S			
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5												
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5												
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5								1	S			
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4												
NAWA	Nashville Warbler	<i>Vermivora ruticaolia</i>	-	-	-	S5												
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4												
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5												
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4												
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5												
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5												
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5												
PUFI	Purple Finch	<i>Carduelis purpureus</i>	-	-	-	S4												
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4												
RBNH	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5												
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5								1	S			
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5												
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4												
RWBL	Red-winged Blackbird	<i>Aegialius phoeniceus</i>	-	-	-	S4												
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# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

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0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 ( 103 - 117 Km/h), 12 (118 - 133 Km/h)

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**Breeding Code Legend**

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X	Species observed in its breeding season (no breeding evidence)
POSSIBLE	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
PROBABLE	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
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V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
CONFIRMED	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
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FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard



# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							BB-S-M24-30														
Point Count Survey							1					2									
Location ID							3-Jun-15					3-Jul-15									
Survey No.							9:01					9:27									
Date							9:11					9:37									
Start Time							13					20									
End Time							None					None									
Temp. (°C)							4					2									
Precipitation							0					0									
Wind (Beaufort Scale) <sup>1</sup>																					
Cloud Cover (%)																					
Habitat Description							Treed rock barren														
Survey Time Period							1 - 3 min		3 - 5 min		5 - 10 min		1 - 3 min		3 - 5 min		5 - 10 min				
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence					
ALFL	Alder Flycatcher	<i>Empidonax alborum</i>	-	-	-	S5															
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5															
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5															
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5	1	S						1	S						
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5								1	S						
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5	1	S					1	S							
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5															
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5															
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5								2	P						
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4															
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5								1	S						
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5															
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5	1	S													
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5															
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4															
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5															
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5								1	S						
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5															
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5															
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4	1	S				1	S								
CMWA	Cape May Warbler	<i>Setophaga tigrina</i>	-	-	-	S5															
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5															
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5	2	S													
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5															
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5															
COMF	Common Merganser	<i>Mergus mergamser</i>	-	-	-	S5															
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4															
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5															
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5	1	S					1	S							
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5															
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5															
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4															
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5															
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4															
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4															
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5															
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5									3	FL					
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5															
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5															
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5						1	S	4	S						
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5															
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5															
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5															
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4															
NAWA	Nashville Warbler	<i>Vermivora ruticailla</i>	-	-	-	S5															
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4															
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5															
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	2	S				1	S								
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5															
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5															
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5															
PUFI	Purple Finch	<i>Empidonax purpureus</i>	-	-	-	S4															
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4															
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5															
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5	1	S						1	S						
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5															
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4															
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4															
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5															
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4															
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5															
SPGR	Spruce Grouse	<i>Falco canadensis</i>	-	-	-	S5															
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5															
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4															
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5															
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	S4															
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5															
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4	1	S						1	S						
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5															
WIFL	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5															
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5															
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5															
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC		THR	S4															
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5								1	S						
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5															
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5															
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5								1	S						
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5															

Total individual birds observed 1493

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
 THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
 SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
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 No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.  
 NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.  
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**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.  
 THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction  
 SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.  
 NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
 S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.  
 S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
 S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
 S5 - Very common and demonstrably secure in Ontario.  
 SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
 S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
 S#? - Rank uncertain.  
 Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
 Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especies/faq/faq-eng.htm>  
 Ministry of Natural Resources and Forestry (MNR), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
 Ministry of Natural Resources and Forestry (MNR), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

<b>OBSERVED</b>	
X	Species observed in its breeding season (no breeding evidence)
<b>POSSIBLE</b>	
H	Species observed in its breeding season in suitable nesting habitat
S	Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season
<b>PROBABLE</b>	
M	At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.
P	Pair observed in suitable nesting habitat in nesting season
T	Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.
D	Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation
V	Visiting probable nest site
A	Agitated behaviour or anxiety calls of an adult
B	Brood Patch on adult female or cloacal protuberance on adult male
N	Nest-building or excavation of nest hole, except by a wren or a woodpecker
<b>CONFIRMED</b>	
NB	Nest-building or excavation of nest hole by a species other than a wren or a woodpecker
DD	Distraction display or injury feigning
NU	Used nest or egg shells found (occupied or laid within the period of the survey)
FY	Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carrying fecal sac
CF	Adult carrying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey
Location ID
Survey No.
Date
Start Time
End Time
Temp. (°C)
Precipitation
Wind (Beaufort Scale) <sup>1</sup>
Cloud Cover (%)
Habitat Description
Survey Time Period

Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Grand Total
ALFL	Alder Flycatcher	<i>Empidonax alnorum</i>	-	-	-	S5	15
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5	8
AMGO	American Goldfinch	<i>Carduelis tristis</i>	-	-	-	S5	4
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5	28
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5	22
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5	37
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5	2
BBWA	Bay-breasted Warbler	<i>Dendroica castanea</i>	-	-	-	S5	3
BCCH	Black-capped Chickadee	<i>Parus atricapillus</i>	-	-	-	S5	28
BEKI	Belted Kingfisher	<i>Ceryle alcyon</i>	-	-	-	S4	1
BHVI	Blue-headed Vireo	<i>Vireo solitarius</i>	-	-	-	S5	19
BLBW	Blackburnian Warbler	<i>Dendroica fusca</i>	-	-	-	S5	22
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5	22
BRCR	Brown Creeper	<i>Certhia americana</i>	-	-	-	S5	3
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4	4
BTBW	Black-throated Blue Warbler	<i>Dendroica caerulescens</i>	-	-	-	S5	2
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5	69
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5	3
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5	206
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	THR Schedule 1	THR	S4	23
CMWA	Cape May Warbler	<i>Setophaga tiorina</i>	-	-	-	S5	2
CFDW	Cedar Waxwing	<i>Bombus cedrorum</i>	-	-	-	S5	22
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5	29
COGR	Common Grackle	<i>Quiscalus quiscula</i>	-	-	-	S5	3
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5	5
COMF	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5	1
CONI	Common Nighthawk	<i>Chordeiles minor</i>	SC	THR Schedule 1	THR	S4	2
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5	14
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5	73
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5	5
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5	1
EAKI	Eastern Kingbird	<i>Tyrannus tyrannus</i>	-	-	-	S4	1
EAPH	Eastern Phoebe	<i>Sayornis phoebe</i>	-	-	-	S5	1
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4	8
GCFI	Great Crested Flycatcher	<i>Mniotilta varia</i>	-	-	-	S4	24
GCKI	Golden-crowned Kinglet	<i>Regulus satrapa</i>	-	-	-	S5	8
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5	9
HAWO	Hairy Woodpecker	<i>Picoides villosus</i>	-	-	-	S5	1
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5	1
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5	121
HOWR	House Wren	<i>Troglodytes aedon</i>	-	-	-	S5	2
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5	1
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5	22
MOWA	Mourning Warbler	<i>Oporornis philadelphia</i>	-	-	-	S4	2
NAWA	Nashville Warbler	<i>Vermivora ruficailla</i>	-	-	-	S5	68
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4	12
NOWA	Northern Waterthrush	<i>Seiurus noveboracensis</i>	-	-	-	S5	8
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4	146
PHVI	Philadelphia Vireo	<i>Vireo philadelphicus</i>	-	-	-	S5	1
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5	2
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5	5
PUFI	Purple Finch	<i>Carpodacus purpureus</i>	-	-	-	S4	14
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4	2
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5	23
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5	68
RTHU	Ruby-throated Hummingbird	<i>Archilochus colubris</i>	-	-	-	S5	2
RUGR	Ruffed Grouse	<i>Bonasa umbellus</i>	-	-	-	S4	11
RWBL	Red-winged Blackbird	<i>Aegialius phoeniceus</i>	-	-	-	S4	6
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5	7
SCTA	Scarlet Tanager	<i>Piranga olivacea</i>	-	-	-	S4	2
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5	4
SPGR	Spruce Grouse	<i>Falco pennsylvanicus</i>	-	-	-	S5	2
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5	9
SWTH	Swainson's Thrush	<i>Catharus ustulatus</i>	-	-	-	S4	5
TEWA	Tennessee Warbler	<i>Vermivora peregrina</i>	-	-	-	S5	1
TRES	Tree Swallow	<i>Tachycineta bicolor</i>	-	-	-	S4	3
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5	2
VEER	Veery	<i>Catharus fuscescens</i>	-	-	-	S4	25
VIRA	Virginia Rail	<i>Rallus limicola</i>	-	-	-	S5	1
WIFI	Willow Flycatcher	<i>Empidonax traillii</i>	-	-	-	S5	1
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5	1
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5	18
WOTH	Wood Thrush	<i>Hylocichla ustulata</i>	SC	-	THR	S4	2
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5	97
WWCR	White-winged Crossbill	<i>Loxia leucoptera</i>	-	-	-	S5	2
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5	16
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5	37
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5	11

# Table C8a: 2015 Breeding Bird Survey Results - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 ( 103 - 117 Km/h), 12 (118 - 133 Km/h)

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S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

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**References:**

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**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woopecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woopecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard

**Table C8b: 2015 Breeding Bird Surveys Targeting Kirtland's Warbler - HIWEC Study Area**

							Point Count Survey Location ID		BB-N-M30-56		BB-N-M29-57		BB-N-M29-58			
							Date		26-Jun-15		26-Jun-15		26-Jun-15			
							Start Time		8:32		8:08		7:37			
							End Time		8:37		8:13		7:43			
							Temp. (°C)		18		16		16			
							Precipitation		None		None		None			
							Wind (Beaufort Scale) <sup>1</sup>		1		1		0			
							Cloud Cover (%)		15		0		30			
							Habitat Description		Jack pine treed rock barren		Jack pine treed rock barren		Jack pine treed rock barren			
							Survey Time Period		0 - 5 min (< 100 m)		0 - 5 min (> 100 m)		0 - 5 min (< 100 m)		0 - 5 min (> 100 m)	
Code	Common Name (KIWA tab)	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>		Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5										
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5								1	1	
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5										
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5										
BCCH	Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	-	S5		1		1					1	
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5										
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4										
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5										
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5										
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	HRSchedule	THR	S4										
CEDW	Cedar Waxwing	<i>Bombycilla cedrorum</i>	-	-	-	S5										
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5								2		
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5										
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5										
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5										
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5		1								
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5							1			
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4										
EWPW	Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR	HRSchedule	THR	S4										
GCFL	Great Crested Flycatcher	<i>Myiarchus crinitus</i>	-	-	-	S4										
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5										
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5										
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5		2								
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5										
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5		1								
NAWA	Nashville Warbler	<i>Vermivora ruficapilla</i>	-	-	-	S5										
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4							1			
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4							2			
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5										
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5										
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4										
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5										
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5									1	
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4									2	
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5										
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5		1								
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5										
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5										
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5			1				1			
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5		1	1					1	1	
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5										
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5					1					
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5										
N/A	Picoides sp.	Woodpecker Family	-	-	-	-										

# Table C8b: 2015 Breeding Bird Surveys Targeting Kirtland's Warbler - HIWEC Study Area

**Notes: 1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7( 50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 ( 103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.

No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk)– These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

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S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

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**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

NY Nest with young seen or heard

**Table C8b: 2015 Breeding Bird Surveys Targeting Kirtland's Warbler - HIWEC Study Area**

							Point Count Survey Location ID		BB-N-M28-59		BB-N-M28-60		BB-N-M27-61				
							Date		26-Jun-15		26-Jun-15		26-Jun-15				
							Start Time		7:15		6:45		6:22				
							End Time		7:20		6:50		6:27				
							Temp. (°C)		15		14		14				
							Precipitation		None		None		None				
							Wind (Beaufort Scale) <sup>1</sup>		0		0		0				
							Cloud Cover (%)		0		0		0				
							Habitat Description		Jack pine treed rock barren		Jack pine treed rock barren		Jack pine treed rock barren				
							Survey Time Period		0 - 5 min (< 100 m)	0 - 5 min (> 100 m)	0 - 5 min (< 100 m)	0 - 5 min (> 100 m)	0 - 5 min (< 100 m)	0 - 5 min (> 100 m)			
Code	Common Name (KIWA tab)	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>		Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5											
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5			1			1					
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5		1									
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5											
BCCH	Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	-	S5		1				1					
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5											
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4											
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5											
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5											
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	HRSchedule	THR	S4											
CEDW	Cedar Waxwing	<i>Bombycilla cedrorum</i>	-	-	-	S5											
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5		1							1		
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5											
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5											
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5											
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5			2		1					1	
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5											
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4			1								
EWPW	Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR	HRSchedule	THR	S4										1	
GCFL	Great Crested Flycatcher	<i>Myiarchus crinitus</i>	-	-	-	S4											
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5											
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5											
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5						1				1	
LISP	Lincoln's Sparrow	<i>Melospiza lincolnii</i>	-	-	-	S5											
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5											
NAWA	Nashville Warbler	<i>Vermivora ruficapilla</i>	-	-	-	S5						1					
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4					1		1				
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4											
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5		1									
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5											
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4											
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5											
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5											
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4							1				
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5								1			
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5			2				1				
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5		1	2				1				
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5											
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5											
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5		1	3				1		1		2
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5											
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5					1			1			
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5											
N/A	Picoides sp.	Woodpecker Family	-	-	-	-											

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**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 ( 103 - 117 Km/h), 12 (118 - 133 Km/h)

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**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

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FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs



**Table C8b: 2015 Breeding Bird Surveys Targeting Kirtland's Warbler - HIWEC Study Area**

							Point Count Survey				BB-N-M27-Extra A				BB-N-M22-Extra B				BB-S-M13-67			
							Location ID				26-Jun-15				26-Jun-15				26-Jun-15			
							Date				26-Jun-15				26-Jun-15				26-Jun-15			
							Start Time				6:00				9:50				6:26			
							End Time				6:05				9:55				6:31			
							Temp. (°C)				14				13				18			
							Precipitation				None				None				none			
							Wind (Beaufort Scale) <sup>1</sup>				0				1				0			
							Cloud Cover (%)				0				30				0			
							Habitat Description				Jack pine treed rock barren				Jack pine treed rock barren				Jack pine treed rock barren			
							Survey Time Period				0 - 5 min (< 100 m)		0 - 5 min (> 100 m)		0 - 5 min (< 100 m)		0 - 5 min (> 100 m)		0 - 5 min (< 100 m)		0 - 5 min (> 100 m)	
Code	Common Name (KIWA tab)	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>		Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence			
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5																
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5			2			1										
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5									1	S						
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5									1	S		1	S			
BCCH	Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	-	S5																
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5								1								
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4									2	S						
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5																
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5																
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	HRSchedule	THR	S4									1	S						
CEDW	Cedar Waxwing	<i>Bombycilla cedrorum</i>	-	-	-	S5																
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5																
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5												1	S			
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5																
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5								1								
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5		1				1				1	S					
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5									2	S						
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4		1							1	S						
EWPW	Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR	HRSchedule	THR	S4																
GCFL	Great Crested Flycatcher	<i>Myiarchus crinitus</i>	-	-	-	S4																
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5																
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5																
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5		1		1				1		1	S					
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5																
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5																
NAWA	Nashville Warbler	<i>Vermivora ruficapilla</i>	-	-	-	S5									1	S						
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4								1								
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4										1	S					
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5									1	S						
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5												1	S			
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4																
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5																
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5								1		1	S					
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4									1	S						
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5																
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5		1		1												
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5																
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5									1	S						
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5																
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5				2		1			2	S						
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5									1	CF						
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5		1														
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5																
N/A	Picoides sp.	Woodpecker Family	-	-	-	-																

# Table C8b: 2015 Breeding Bird Surveys Targeting Kirtland's Warbler - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.

No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System (S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especes/faq/faq-eng.htm>

Ministry of Natural Resources and Forestry (MNRF), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

Ministry of Natural Resources and Forestry (MNRF), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

**Table C8b: 2015 Breeding Bird Surveys Targeting Kirtland's Warbler - HIWEC Study Area**

							Point Count Survey Location ID		BB-S-M15-66		BB-S-M16-64		BB-S-M16-65			
							Date		26-Jun-15		26-Jun-15		26-Jun-15			
							Start Time		7:02		7:50		7:24			
							End Time		7:07		7:55		7:29			
							Temp. (°C)		19		20		20			
							Precipitation		none		none		none			
							Wind (Beaufort Scale) <sup>1</sup>		1		1		1			
							Cloud Cover (%)		0		25		0			
							Habitat Description		Jack pine treed rock barren		Jack pine treed rock barren		Jack pine treed rock barren			
							Survey Time Period		0 - 5 min (< 100 m)		0 - 5 min (> 100 m)		0 - 5 min (< 100 m)		0 - 5 min (> 100 m)	
Code	Common Name (KIWA tab)	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>		Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5								1	S	
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5										
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5		1	S			1	S	1	A	
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5				1	S					
BCCH	Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	-	S5								1	S	
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5								1	S	
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4		2	S			1	S			
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5										
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5						1	S			
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	HRSchedule	THR	S4		1	S							
CEDW	Cedar Waxwing	<i>Bombycilla cedrorum</i>	-	-	-	S5						1	S	1	S	
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5										
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5										
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5		1	Flyover, X							
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5						1	S			
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5		2	S			4	S	1	S	
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5								1	S	
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4		2	S			2	S	1	S	
EWPW	Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR	HRSchedule	THR	S4										
GCFL	Great Crested Flycatcher	<i>Myiarchus crinitus</i>	-	-	-	S4		1	S							
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5										
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5		1	S			1	S			
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5								1	S	
LISP	Lincoln's Sparrow	<i>Melospiza lincolnii</i>	-	-	-	S5										
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5								1	CF	
NAWA	Nashville Warbler	<i>Vermivora ruficapilla</i>	-	-	-	S5								2	S	
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4										
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4		2	S			1	S			
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5										
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5				1	S					
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4								1	S	
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5		1	S							
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5		1	S			1	S			
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4		1	S	1	S					
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5				2	S					
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5										
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5								1	S	
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5		1	S			1	S	1	S	
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5										
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5						3	S	3	S	
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5						1	A			
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5								1	S	
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5						2	S			
N/A	Picoides sp.	Woodpecker Family	-	-	-	-									1	S

# Table C8b: 2015 Breeding Bird Surveys Targeting Kirtland's Warbler - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

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NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

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S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

**References:**

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Ministry of Natural Resources and Forestry (MNRF), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

**Table C8b: 2015 Breeding Bird Surveys Targeting Kirtland's Warbler - HIWEC Study Area**

							Point Count Survey		BB-S-M30-62		BB-S-M30-63					
							Location ID	BB-S-M30-62		BB-S-M30-63						
							Date	26-Jun-15		26-Jun-15						
							Start Time	9:02		8:21						
							End Time	9:07		8:26						
							Temp. (°C)	23		21						
							Precipitation	none		none						
							Wind (Beaufort Scale) <sup>1</sup>	1		1						
							Cloud Cover (%)	0		0						
							Habitat Description	Jack pine treed rock barren		Jack pine treed rock barren						
							Survey Time Period	0 - 5 min (< 100 m)	0 - 5 min (> 100 m)	0 - 5 min (< 100 m)	0 - 5 min (> 100 m)					
Code	Common Name (KIWA tab)	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>		Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Total
AMRE	American Redstart	<i>Setophaga ruticilla</i>	-	-	-	S5										1
AMRO	American Robin	<i>Turdus migratorius</i>	-	-	-	S5		1	S			1	S			9
BAWW	Black-and-white Warbler	<i>Mniotilta varia</i>	-	-	-	S5		1	S							6
BBCU	Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	-	-	-	S5						1	S			4
BCCH	Black-capped Chickadee	<i>Poecile atricapillus</i>	-	-	-	S5										6
BLJA	Blue Jay	<i>Cyanocitta cristata</i>	-	-	-	S5										2
BRTH	Brown Thrasher	<i>Toxostoma rufum</i>	-	-	-	S4										5
BTNW	Black-throated Green Warbler	<i>Dendroica virens</i>	-	-	-	S5		1	S			1	S			2
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5								1	H	2
CAWA	Canada Warbler	<i>Cardellina canadensis</i>	SC	HRSchedule	THR	S4						1	S			3
CEDW	Cedar Waxwing	<i>Bombycilla cedrorum</i>	-	-	-	S5						2	D			4
CHSP	Chipping Sparrow	<i>Spizella passerina</i>	-	-	-	S5										4
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5										1
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5						1	Flyover, X			2
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5				1	S					3
COYE	Common Yellowthroat	<i>Geothlypis trichas</i>	-	-	-	S5		3	S			4	S			22
CSWA	Chestnut-sided Warbler	<i>Dendroica pensylvanica</i>	-	-	-	S5										4
EATO	Eastern Towhee	<i>Pipilo erythrophthalmus</i>	-	-	-	S4						1	S			9
EWPW	Eastern Whip-poor-will	<i>Antrostomus vociferus</i>	THR	HRSchedule	THR	S4										1
GCFL	Great Crested Flycatcher	<i>Myiarchus crinitus</i>	-	-	-	S4										1
GRJA	Gray Jay	<i>Perisoreus canadensis</i>	-	-	-	S5		3	FY			1	S			4
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5										2
HETH	Hermit Thrush	<i>Catharus guttatus</i>	-	-	-	S5		1	S			1	S			11
LISP	Lincoln's Sparrow	<i>Melospiza lincolni</i>	-	-	-	S5						1	S			1
MAWA	Magnolia Warbler	<i>Dendroica magnolia</i>	-	-	-	S5										2
NAWA	Nashville Warbler	<i>Vermivora ruficapilla</i>	-	-	-	S5		2	S			1	S			7
NOFL	Northern Flicker	<i>Colaptes auratus</i>	-	-	-	S4										4
OVEN	Ovenbird	<i>Seiurus aurocapillus</i>	-	-	-	S4		1	S							7
PIWA	Pine Warbler	<i>Dendroica pinus</i>	-	-	-	S5										2
PIWO	Pileated Woodpecker	<i>Dryocopus pileatus</i>	-	-	-	S5										2
RBGR	Rose-breasted Grosbeak	<i>Pheucticus ludovicianus</i>	-	-	-	S4										1
RBNU	Red-breasted Nuthatch	<i>Sitta canadensis</i>	-	-	-	S5		1	S			1	S			3
REVI	Red-eyed Vireo	<i>Vireo olivaceus</i>	-	-	-	S5										5
RWBL	Red-winged Blackbird	<i>Agelaius phoeniceus</i>	-	-	-	S4										6
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5										3
SOSP	Song Sparrow	<i>Melospiza melodia</i>	-	-	-	S5						2	S			9
SWSP	Swamp Sparrow	<i>Melospiza georgiana</i>	-	-	-	S5		2	S	1	S					8
WISN	Wilson's Snipe	<i>Gallinago delicata</i>	-	-	-	S5										4
WIWR	Winter Wren	<i>Troglodytes troglodytes</i>	-	-	-	S5										2
WTSP	White-throated Sparrow	<i>Zonotrichia albicollis</i>	-	-	-	S5		3	S			4	CF			30
YBSA	Yellow-bellied Sapsucker	<i>Sphyrapicus varius</i>	-	-	-	S5										2
YRWA	Yellow-rumped Warbler	<i>Dendroica coronata</i>	-	-	-	S5						2	S			7
YWAR	Yellow Warbler	<i>Dendroica petechia</i>	-	-	-	S5										2
N/A	Picoides sp.	Woodpecker Family	-	-	-	-				1	S					2

Total individual birds observed

217

# Table C8b: 2015 Breeding Bird Surveys Targeting Kirtland's Warbler - HIWEC Study Area

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

**2. Endangered Species Act 2007 (ESA) Status**

END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.

SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**3. Species at Risk Act 2002 (SARA) Status**

END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.

SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened

No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk)– These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System (S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especes/faq/faq-eng.htm>

Ministry of Natural Resources and Forestry (MNRF), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-ai>

Ministry of Natural Resources and Forestry (MNRF), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-method>

**Breeding Code Legend**

**OBSERVED**

X Species observed in its breeding season (no breeding evidence)

**POSSIBLE**

H Species observed in its breeding season in suitable nesting habitat

S Singing male(s) present, or breeding calls heard, in suitable nesting habitat in breeding season

**PROBABLE**

M At least 7 individuals singing or producing other sounds associated with breeding (e.g., calls or drumming), heard during the same visit to a single square and in suitable nesting habitat during the species' breeding season.

P Pair observed in suitable nesting habitat in nesting season

T Permanent territory presumed through registration of territorial song, or the occurrence of an adult bird, at the same place, in breeding habitat, on at least two days a week or more apart, during its breeding season. Use discretion when using this code.

D Courtship or display, including interaction between a male and a female or two males, including courtship feeding or copulation

V Visiting probable nest site

A Agitated behaviour or anxiety calls of an adult

B Brood Patch on adult female or cloacal protuberance on adult male

N Nest-building or excavation of nest hole, except by a wren or a woodpecker

**CONFIRMED**

NB Nest-building or excavation of nest hole by a species other than a wren or a woodpecker

DD Distraction display or injury feigning

NU Used nest or egg shells found (occupied or laid within the period of the survey)

FY Recently fledged young (nidicolous species) or downy young (nidifugous species), including incapable of sustained flight

AE Adult leaving or entering nest sites in circumstances indicating occupied nest

FS Adult carrying fecal sac

CF Adult carrying food for young

NE Nest containing eggs

# Appendix C9

## 2015 Least Bittern Surveys

# Least Bittern - WEC

Map Number	S-M35	Field Crew	JOHANNA PERZ, OLGA HROPACH		3
Feature ID	LB-S-M35-5	Study Area	WEC	Survey Type	Least bittern
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	1		
Start Date	5/28/2015 7:00:41 AM	Precipitation	0		
End Date	5/28/2015 7:15:34 AM	Cloud Cover	80.00		

Habitat Type

Visit Number

Survey Location

Latitude:45.828561,Longitude:-80.667955,Altitude:181.3,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:05/28/2015 07:02:43 EDT

Survey Notes

North west



Bird Observations

Survey Type

Observation Time

Species

Breeding Evidence

< 100m

> 100m

Flyovers

3





# Least Bittern - WEC

Survey Type	LEBI
Observation Time	07:07:00
Species	RWBL
Breeding Evidence	S
< 100m	3
> 100m	
Flyovers	

6



Survey Type	LEBI
Observation Time	07:03:00
Species	SACR
Breeding Evidence	S
< 100m	1
> 100m	
Flyovers	

9

Map Number	S-M35	Field Crew	JOHANNA PERZ, OLGA HROPACH		6
Feature ID	LB-S-M35-4	Study Area	WEC	Survey Type	Least bittern
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	0		
Start Date	5/28/2015 7:30:31 AM	Precipitation	0		
End Date	5/28/2015 7:45:48 AM	Cloud Cover	80.00		

# Least Bittern - WEC

Habitat Type

Visit Number

Survey Location

Latitude:45.826646,Longitude:-80.665813,Altitude:184.0,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:05/28/2015 07:47:59 EDT

Survey Notes



Bird Observations

Survey Type  12

Observation Time

Species

Breeding Evidence

< 100m

> 100m

Flyovers

---

Survey Type  15

Observation Time

Species

Breeding Evidence

< 100m

> 100m

Flyovers

# Least Bittern - WEC

Survey Type	LEBI	18
Observation Time	07:33:00	
Species	COYE	
Breeding Evidence	S	
< 100m	3	
> 100m		
Flyovers		

---

Survey Type	LEBI	21
Observation Time	07:36:00	
Species	TRES	
Breeding Evidence	S	
< 100m	1	
> 100m		
Flyovers	0	

---

Map Number	S-M33	Field Crew	OLGA HROPACH JOHANNA PERZ		9
Feature ID	LB-S-M33-3	Study Area	WEC	Survey Type	Least bittern
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	3		
Start Date	5/28/2015 8:43:34 AM	Precipitation	0		
End Date	5/28/2015 9:00:44 AM	Cloud Cover	40.00		

# Least Bittern - WEC

Habitat Type

Visit Number

Survey Location

Latitude:45.825001,Longitude:-80.64663,Altitude:190.9,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:05/28/2015 08:47:38 EDT



Survey Notes

Speaker facing south east direction

Bird Observations

Survey Type	<input type="text" value="Least bittern survey"/>	24
Observation Time	<input type="text" value="08:48:00"/>	
Species	<input type="text" value="RWBL"/>	
Breeding Evidence	<input type="text" value="Observed"/>	
< 100m	<input type="text" value="2"/>	
> 100m	<input type="text"/>	
Flyovers	<input type="text"/>	

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Survey Type	<input type="text" value="Least bittern survey"/>	27
Observation Time	<input type="text" value="08:49:00"/>	
Species	<input type="text" value="EAKI"/>	
Breeding Evidence	<input type="text" value="Probable"/>	
< 100m	<input type="text" value="2"/>	
> 100m	<input type="text"/>	
Flyovers	<input type="text"/>	

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# Least Bittern - WEC

Survey Type	Least bittern survey	30
Observation Time	08:57:00	
Species	COYE	
Breeding Evidence	Observed	
< 100m	1	
> 100m		
Flyovers		

Map Number	S-M2	Field Crew	OLGA HROPACH	12	
Feature ID	LB-S-M2-6	Study Area	WEC	Survey Type	Least bittern
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	2		
Start Date	5/29/2015 6:18:55 AM	Precipitation	0		
End Date	5/29/2015 6:41:32 AM	Cloud Cover	60.00		

Habitat Type	Dense cartilaginous marsh
Visit Number	1

## Survey Location

Latitude:45.864688,Longitude:-80.568259,Altitude:179.7,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:05/29/2015 06:19:33 EDT



## Survey Notes

Dense cattail marsh interspersed with open water, seemingly good habitat for Levi but very loud from traffic on hwy 69. Makes it hard to listen for least bittern.

# Least Bittern - WEC

## Bird Observations

Survey Type	Least bittern surveys	33
Observation Time	06:42:00	
Species	GBHE	
Breeding Evidence	Observed	
< 100m		
> 100m		
Flyovers	1	

Survey Type	Least bittern survey point count	36
Observation Time	06:42:00	
Species	RWBL	
Breeding Evidence	Probable	
< 100m	3	
> 100m		
Flyovers		

Map Number	N-M25	Field Crew	JOHANNA PERZ		15
Feature ID	LB-N-M25-1	Study Area	WEC	Survey Type	Least bittern
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	0		
Start Date	5/29/2015 7:15:35 AM	Precipitation	0		
End Date	5/29/2015 7:30:31 AM	Cloud Cover	30.00		

# Least Bittern - WEC

Habitat Type

Visit Number

Survey Location

Latitude:45.866625,Longitude:-80.653807,Altitude:191.0,Speed:0.0051444443,Accuracy:1.75,Provider:gps,Time:05/29/2015 07:01:01 EDT



Survey Notes

Speaker facing in west direction, a bit of static from speakers

Bird Observations

Survey Type  39

Observation Time

Species

Breeding Evidence

< 100m

> 100m

Flyovers

---

Survey Type  42

Observation Time

Species

Breeding Evidence

< 100m

> 100m

Flyovers

# Least Bittern - WEC

Survey Type	LEBI	45
Observation Time	07:18:00	
Species	RWBL	
Breeding Evidence	S	
< 100m	1	
> 100m		
Flyovers		

---

Survey Type	LEBI	48
Observation Time	07:16:00	
Species	SACR	
Breeding Evidence	S	
< 100m	2	
> 100m		
Flyovers	1	

---

Map Number	S-M35	Field Crew	JOHANNA PERZ	162	
Feature ID	LB-S-M35-5	Study Area	WEC	Survey Type	Least bittern
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM2	Wind Speed (beaufort)	1		
Start Date	6/29/2015 7:05:42 AM	Precipitation	0		
End Date	6/29/2015 7:20:11 AM	Cloud Cover	75.00		



# Least Bittern - WEC

Habitat Type

Visit Number

Survey Location

Latitude:45.828564,Longitude:-80.667924,Altitude:183.0,Speed:0.066877775,Accuracy:1.75,Provider:gps,Time:06/29/2015 07:09:04 EDT



Survey Notes

Speakers oriented in North west direction

Bird Observations

Survey Type

Observation Time

Species

Breeding Evidence

< 100m

> 100m

Flyovers

84



Survey Type

Observation Time

Species

Breeding Evidence

< 100m

> 100m

Flyovers

87

# Least Bittern - WEC

Survey Type	LB	90
Observation Time	07:18:00	
Species	COYE	
Breeding Evidence	S	
< 100m	2	
> 100m		
Flyovers		

---

Survey Type	LB	93
Observation Time	07:19:00	
Species	RWBL	
Breeding Evidence	S	
< 100m	2	
> 100m		
Flyovers		

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Survey Type	LB	96
Observation Time	07:16:00	
Species	SOSP	
Breeding Evidence	CF	
< 100m	2	
> 100m		
Flyovers		

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Map Number	S-M35	Field Crew	JOHANNA PERZ	165
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# Least Bittern - WEC

Feature ID	LB-S-M35-4	Study Area	WEC	Survey Type	Least bittern
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM2	Wind Speed (beaufort)	2	Humid	
Start Date	6/29/2015 7:35:38 AM	Precipitation	0		
End Date	6/29/2015 7:50:59 AM	Cloud Cover	75.00		

Habitat Type	gramminoid fen with open water, high shrub cover
Visit Number	2

## Survey Location

Latitude:45.826664,Longitude:-80.665783,Altitude:186.9,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:06/29/2015 07:40:25 EDT



## Survey Notes

Cattails present and numerous snags; speakers oriented in west direction

## Bird Observations

Survey Type	LB	99
Observation Time	07:42:00	
Species	SWSP	
Breeding Evidence	S	
< 100m	3	
> 100m		
Flyovers		

# Least Bittern - WEC

Survey Type	<input type="text" value="LB"/>	102
Observation Time	<input type="text" value="07:43:00"/>	
Species	<input type="text" value="RWBL"/>	
Breeding Evidence	<input type="text" value="S"/>	
< 100m	<input type="text" value="1"/>	
> 100m	<input type="text"/>	
Flyovers	<input type="text"/>	

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Survey Type	<input type="text" value="LB"/>	105
Observation Time	<input type="text" value="07:45:00"/>	
Species	<input type="text" value="SOSP"/>	
Breeding Evidence	<input type="text" value="S"/>	
< 100m	<input type="text" value="1"/>	
> 100m	<input type="text"/>	
Flyovers	<input type="text"/>	

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Survey Type	<input type="text" value="LB"/>	108
Observation Time	<input type="text" value="07:50:00"/>	
Species	<input type="text" value="COYE"/>	
Breeding Evidence	<input type="text" value="S"/>	
< 100m	<input type="text" value="1"/>	
> 100m	<input type="text"/>	
Flyovers	<input type="text"/>	

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Map Number	<input type="text" value="S-M33"/>	Field Crew	<input type="text" value="JOHANNA PERZ"/>	168
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# Least Bittern - WEC

Feature ID	LB-S-M33-3	Study Area	WEC	Survey Type	Least bittern
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM2	Wind Speed (beaufort)	1		
Start Date	6/29/2015 8:35:09 AM	Precipitation	0		
End Date	6/29/2015 8:50:31 AM	Cloud Cover	80.00		

Habitat Type

Visit Number

Survey Location

Latitude:45.825006,Longitude:-80.646646,Altitude:189.0,Speed:0.025722222,Accuracy:1.75,Provider:gps,Time:06/29/2015 08:37:46 EDT



Survey Notes

GCFL heard on route to survey location

Bird Observations

Survey Type	LB	111
Observation Time	08:37:00	
Species	ALFL	
Breeding Evidence	S	
< 100m	1	
> 100m		
Flyovers		

# Least Bittern - WEC

Survey Type	<input type="text" value="LB"/>
Observation Time	<input type="text" value="08:37:00"/>
Species	<input type="text" value="RWBL"/>
Breeding Evidence	<input type="text" value="A"/>
< 100m	<input type="text" value="3"/>
> 100m	<input type="text"/>
Flyovers	<input type="text"/>

123



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Survey Type	<input type="text" value="LB"/>
Observation Time	<input type="text" value="08:40:00"/>
Species	<input type="text" value="SWSP"/>
Breeding Evidence	<input type="text" value="S"/>
< 100m	<input type="text" value="1"/>
> 100m	<input type="text"/>
Flyovers	<input type="text"/>

126

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Survey Type	<input type="text" value="LB"/>
Observation Time	<input type="text" value="08:46:00"/>
Species	<input type="text" value="COYE"/>
Breeding Evidence	<input type="text" value="S"/>
< 100m	<input type="text" value="2"/>
> 100m	<input type="text"/>
Flyovers	<input type="text"/>

129

# Least Bittern - WEC

Survey Type	LB
Observation Time	08:47:00
Species	EAKI
Breeding Evidence	T
< 100m	1
> 100m	
Flyovers	

132



Survey Type	LB
Observation Time	08:48:00
Species	COGR
Breeding Evidence	S
< 100m	4
> 100m	
Flyovers	

135

Map Number	N-M25	Field Crew	JOHANNA PERZ		171
Feature ID	LB-N-M25-1	Study Area	WEC	Survey Type	Least bittern
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM2	Wind Speed (beaufort)	2		
Start Date	6/29/2015 11:03:31 AM	Precipitation	0		
End Date	6/29/2015 11:18:30 AM	Cloud Cover	60.00		

# Least Bittern - WEC

Habitat Type

Visit Number

Survey Location

Latitude:45.866658,Longitude:-80.653761,Altitude:190.0,Speed:0.07716667,Accuracy:1.75,Provider:gps,Time:06/29/2015 11:03:49 EDT



Survey Notes

Speakers oriented in west direction

Bird Observations

Survey Type  114

Observation Time

Species

Breeding Evidence

< 100m

> 100m

Flyovers

---

Survey Type  117

Observation Time

Species

Breeding Evidence

< 100m

> 100m

Flyovers



# Least Bittern - WEC

Survey Type	LB
Observation Time	11:21:00
Species	SWSP
Breeding Evidence	S
< 100m	2
> 100m	
Flyovers	

120

# Appendix C10

## Branched Bartonina Surveys

# Wildlife Observations

Map Number	BO-059	Field Crew	TOM SHORNEY, KASEY MCKENZIE	1236
Feature ID	BO-059			
Project Number	60341251	Air Temp. (degC)	21.00	Weather Notes
Tablet	AECOM12	Wind Speed (beaufort)	3 Leaves move on twigs	
Start Date	9/14/2015 10:58:01 AM	Precipitation	none	
End Date	9/14/2015 11:25:10 AM	Cloud Cover	0.00	

Map Number	BO-044	Field Crew	KASEY MCKENZIE & TOM SHORNEY	1239
Feature ID	BO-044			
Project Number	60341251	Air Temp. (degC)	22.00	Weather Notes
Tablet	AECOM12	Wind Speed (beaufort)	2 Slight breeze felt on face	
Start Date	9/14/2015 12:31:10 PM	Precipitation	none	
End Date	9/14/2015 1:12:47 PM	Cloud Cover	10.00	

Map Number	BO-041	Field Crew	KRISTAN WASHBURN , JOHANNA PERZ , EMILY MCNAUGH	1242
Feature ID	BO-041			
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	1 Light air movement	
Start Date	9/14/2015 9:49:32 AM	Precipitation	none	
End Date	9/14/2015 10:23:45 AM	Cloud Cover	0.00	

# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonia survey

Observation Notes

1296

Peat/sphagnum present, no open water, photo 42 and 43 kristan camera



Observation Location

Latitude:45.838724,Longitude:-80.634173,Altitude:183.1,Speed:0.14918889,Accuracy:2.1,Provider:gps,Time:09/14/2015 09:52:30 EDT

Map Number

BO-050

Field Crew

E. MCNAUGHTON, K. WASHBURN, J. PERZ

1245

Feature ID

BO-050

Project Number

60341251

Air Temp. (degC)

20.00

Weather Notes

Tablet

AECOM15

Wind Speed (beaufort)

2 Slight breeze felt on face

Start Date

9/14/2015 11:02:22 AM

Precipitation

none

End Date

9/14/2015 12:05:47 PM

Cloud Cover

10.00

## Wildlife Observations

Species

Branched Bartonia Survey

Observation Notes

1299

True bog dominated by eriophorum virginicum , sphagnum - photos 44 and 45



Observation Location

Latitude:45.845711,Longitude:-80.633509,Altitude:193.4,Speed:0.23664445,Accuracy:2.4,Provider:gps,Time:09/14/2015 11:01:34 EDT

Map Number

BO-057

Field Crew

E. MCNAUGHTON , K. WASHBURN, J. PERZ

1248

# Wildlife Observations

Feature ID	<input type="text" value="BO-057"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="23.00"/>
Tablet	<input type="text" value="AECOM15"/>	Wind Speed (beaufort)	<input type="text" value="2 Slight breeze felt on face"/>
Start Date	<input type="text" value="9/14/2015 12:03:02 PM"/>	Precipitation	<input type="text" value="none"/>
End Date	<input type="text" value="9/14/2015 12:25:43 PM"/>	Cloud Cover	<input type="text" value="0.00"/>
		Weather Notes	
		<input type="text"/>	

## Wildlife Observations

Species

Observation Notes 1302

Leatherleaf dominant, tree cover 15%, sphagnum / peat substrate, no open water, photo 47 and 48 on kristan camera



## Observation Location

Latitude:45.841777,Longitude:-80.625478,Altitude:197.8,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:09/14/2015 12:04:25 EDT

Map Number	<input type="text" value="BO-049"/>	Field Crew	<input type="text" value="K WASHBURN AND J PERZ AND E MCNAUGHTON"/>	1251
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Feature ID	<input type="text" value="BO-049"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="25.00"/>
Tablet	<input type="text" value="AECOM15"/>	Wind Speed (beaufort)	<input type="text" value="2 Slight breeze felt on face"/>
Start Date	<input type="text" value="9/14/2015 1:11:05 PM"/>	Precipitation	<input type="text" value="none"/>
End Date	<input type="text" value="9/14/2015 1:11:06 PM"/>	Cloud Cover	<input type="text" value="0.00"/>
		Weather Notes	
		<input type="text"/>	

# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonia Survey

Observation Notes

1305

Not a bog missed elc ecosite determination. Definitely a maple forest FOD6 no sign of wetland plants



Observation Location

Latitude:45.846456,Longitude:-80.624083,Altitude:191.7,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:09/14/2015 01:12:27 EDT

Map Number

BO-052

Field Crew

E. MCNAUGHTON, K. WASHBURN, J. PERZ

1254

Feature ID

BO-052

Project Number

60341251

Air Temp. (degC)

23.00

Weather Notes

Tablet

AECOM15

Wind Speed (beaufort)

4 Small branches move

Start Date

9/14/2015 2:16:10 PM

Precipitation

none

End Date

9/14/2015 2:53:47 PM

Cloud Cover

0.00

## Wildlife Observations

Species

Branched Bartonia Survey

Observation Notes

1308

Lowland bog dominated by Virginia chain fern



Observation Location

Latitude:45.853428,Longitude:-80.630868,Altitude:180.3,Speed:0.29323334,Accuracy:2.1,Provider:gps,Time:09/14/2015 02:18:08 EDT

Map Number

BO-061

Field Crew

NATALIYA SIMONOVA, AMI ARSENAULT, AMY INGRISELLI

1257

# Wildlife Observations

Feature ID	BO-061			
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes
Tablet	AECOM6	Wind Speed (beaufort)	2 Slight breeze felt on face	
Start Date	9/14/2015 9:53:23 AM	Precipitation	none	
End Date	9/14/2015 11:52:11 AM	Cloud Cover	0.00	

## Wildlife Observations

Species

Observation Notes 1311

Branched Bartonian survey. Species associated with branched Bartonian are present and occasional areas of suitable habitat, however the conditions were dry, the cover throughout most of the polygon was unsuitable (dense Woodwardia). Southern half of poly



## Observation Location

Latitude:45.836734,Longitude:-80.700759,Altitude:177.9,Speed:0.07716667,Accuracy:1.75,Provider:gps,Time:09/14/2015 09:57:48 EDT

Map Number  Field Crew  1260

Feature ID	BO-046			
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes
Tablet	AECOM6	Wind Speed (beaufort)	4 Small branches move	
Start Date	9/14/2015 12:02:58 PM	Precipitation	none	
End Date	9/14/2015 12:17:50 PM	Cloud Cover	0.00	

# Wildlife Observations

Wildlife Observations

Species

Branched Bartonina Surveys

Observation Notes

1314

Not ideal habitat conditions for branched Bartonina. Forest habitat, pinus strobus dominating with pinus banksiana and Vaccinium myrtilloides. Ground cover with spagnum moss and Maianthemum trifolium. Rock barren as well. Photos 3723-3725



Observation Location

Latitude:45.833608,Longitude:-80.703659,Altitude:174.7,Speed:0.030866666,Accuracy:2.7,Provider:gps,Time:09/14/2015 12:05:04 EDT

Map Number	BO-060	Field Crew	AMY INGRISELLI NATALIYA SIMONOVA AMI ARSENAULT	1263
Feature ID	BO-060			
Project Number	60341251	Air Temp. (degC)	22.00	Weather Notes
Tablet	AECOM6	Wind Speed (beaufort)	4 Small branches move	
Start Date	9/14/2015 1:01:28 PM	Precipitation	none	
End Date	9/14/2015 1:36:57 PM	Cloud Cover	0.00	



# Wildlife Observations

Wildlife Observations

Species

Branched Bartonia Surveys

Observation Notes

1320

Small portion of polygon had associated vegetation for branched Bartonia (cottongrass, cranberry, Sphagnum moss). Did not observe BB. Very dry ground. Rest of polygon more of a forested habitat with large shaded areas. Jack and white pine, alder thicket



Observation Location

Latitude:45.831436,Longitude:-80.69961,Altitude:179.0,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:09/14/2015 01:04:11 EDT

Map Number  Field Crew  1266

Feature ID	<input type="text" value="BO-042"/>			
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="22.00"/>	Weather Notes
Tablet	<input type="text" value="AECOM6"/>	Wind Speed (beaufort)	<input type="text" value="4 Small branches move"/>	
Start Date	<input type="text" value="9/14/2015 2:29:42 PM"/>	Precipitation	<input type="text" value="none"/>	
End Date	<input type="text" value="9/14/2015 3:00:35 PM"/>	Cloud Cover	<input type="text" value="0.00"/>	

# Wildlife Observations

Wildlife Observations

Species

Branched Bartonias Surveys

Observation Notes

1323

Forested habitat to the north and east, dominated with white pine, jack pine and junipers. Open water pond to the west with fragrant white water lilies. Narrow strip of Sphagnum moss and grasses/sedges densely bordering open water pond and forest. Major



Observation Location

Latitude:45.827374,Longitude:-80.710341,Altitude:161.5,Speed:0.2212111,Accuracy:3.3,Provider:gps,Time:09/14/2015 02:31:21 EDT

Map Number	BO-038	Field Crew	AMY INGRISELLI NATALIYA SIMONOVA AMI ARSENAULT		1269
Feature ID	BO-038				
Project Number	60341251	Air Temp. (degC)	22.00	Weather Notes	
Tablet	AECOM6	Wind Speed (beaufort)	4 Small branches move		
Start Date	9/14/2015 3:14:34 PM	Precipitation	none		
End Date	9/14/2015 3:44:43 PM	Cloud Cover	0.00		

# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonia Surveys

Observation Notes

1329

High potential for branched Bartonia, lots of Sphagnum moss, leatherleaf, cranberry and cottongrass. Many open areas receiving direct sunlight. However, water table is very low and ground dry.



Observation Location

Latitude:45.830303,Longitude:-80.705547,Altitude:161.1,Speed:0.05658889,Accuracy:2.4,Provider:gps,Time:09/14/2015 03:16:13 EDT

Map Number

BO-68

Field Crew

TOM SHORNEY, KASEY MCKENZIE

1275

Feature ID

BO-68

Project Number

60341251

Air Temp. (degC)

27.00

Weather Notes

Tablet

AECOM12

Wind Speed (beaufort)

3 Leaves move on twigs

Start Date

9/15/2015 10:54:06 AM

Precipitation

none

End Date

9/15/2015 11:50:17 AM

Cloud Cover

0.00

## Wildlife Observations

Species

Branched Bartonia surveys

Observation Notes

1335

None observed. Habitat very dry, to the point that the sphagnum was brown and dry. Absolutely no water. Moisture 10-15 cm deep



Observation Location

Latitude:,Longitude:,Altitude:,Speed:,Accuracy:,Provider:,Time:

Map Number

BO-72

Field Crew

TOM SHORNEY, KASEY MCKENZIE

1278

# Wildlife Observations

Feature ID	<input type="text" value="BO-72"/>	Air Temp. (degC)	<input type="text" value="27.00"/>	Weather Notes
Project Number	<input type="text" value="60341251"/>	Wind Speed (beaufort)	<input type="text" value="3 Leaves move on twigs"/>	<input type="text"/>
Tablet	<input type="text" value="AECOM12"/>	Precipitation	<input type="text" value="none"/>	
Start Date	<input type="text" value="9/15/2015 12:04:35 PM"/>	Cloud Cover	<input type="text" value="0.00"/>	
End Date	<input type="text" value="9/15/2015 12:52:57 PM"/>			

## Wildlife Observations

Species

Observation Notes 1338

No species observed. Although this has historically been a very wet site, at this point the feature is dry. The sphagnum moss has turned brown, very little moisture. In some locations Carex was very thick.



Observation Location

Latitude:,Longitude:,Altitude:,Speed:,Accuracy:,Provider:,Time:

Map Number	<input type="text" value="BO-67"/>	Field Crew	<input type="text" value="TOM SHORNEY, KASEY MCKENZIE"/>	1281
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Feature ID	<input type="text" value="BO-67"/>	Air Temp. (degC)	<input type="text" value="27.00"/>	Weather Notes
Project Number	<input type="text" value="60341251"/>	Wind Speed (beaufort)	<input type="text" value="3 Leaves move on twigs"/>	<input type="text"/>
Tablet	<input type="text" value="AECOM12"/>	Precipitation	<input type="text" value="none"/>	
Start Date	<input type="text" value="9/15/2015 1:17:04 PM"/>	Cloud Cover	<input type="text" value="0.00"/>	
End Date	<input type="text" value="9/15/2015 1:53:04 PM"/>			

# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonia surveys

Observation Notes

1341

No species observed. Feature has dried up (similar to others). Large feature - most of the sphagnum moss brown.



Observation Location

Latitude:,Longitude:,Altitude:,Speed:,Accuracy:,Provider:,Time:

Map Number

BO-062

Field Crew

K. WASHBURN , E . MCNAUGHTON

1284

Feature ID

BO-062

Project Number

60341251

Air Temp. (degC)

20.00

Weather Notes

Tablet

AECOM15

Wind Speed (beaufort)

2 Slight breeze felt on face

Start Date

9/15/2015 10:09:54 AM

Precipitation

none

End Date

9/15/2015 10:31:14 AM

Cloud Cover

0.00

## Wildlife Observations

Species

Branched Bartonia Survey

Observation Notes

1344

Marsh community dominated by Chem a Daphne calyculata , sphagnum and viginia chain



Observation Location

Latitude:45.819821,Longitude:-80.675522,Altitude:184.4,Speed:0.051444445,Accuracy:1.8,Provider:gps,Time:09/15/2015 10:13:46 EDT

Map Number

BO-066

Field Crew

K. WASHBURN , E . MCNAUGHTON

1287

# Wildlife Observations

Feature ID	BO-066	Air Temp. (degC)	24.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	4 Small branches move	
Tablet	AECOM15	Precipitation	none	
Start Date	9/15/2015 1:08:17 PM	Cloud Cover	0.00	
End Date	9/15/2015 1:31:54 PM			

## Wildlife Observations

Species

Observation Notes 1347

Moderately suitable for branched bartonia. Very dry conditions. Chemadaohnea cover potentially too great. Photo 53 and 54.



## Observation Location

Latitude:45.826607,Longitude:-80.672301,Altitude:184.1,Speed:0.33953333,Accuracy:1.8,Provider:gps,Time:09/15/2015 01:12:38 EDT

Map Number	BO-070	Field Crew	K. WASHBURN , E . MCNAUGHTON	1290
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Feature ID	BO-070	Air Temp. (degC)	22.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	4 Small branches move	
Tablet	AECOM15	Precipitation	none	
Start Date	9/15/2015 10:50:13 AM	Cloud Cover	0.00	
End Date	9/15/2015 10:58:20 AM			

# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonia Survey

Observation Notes

1350

Photos 51 and 52



Observation Location

Latitude:45.820917,Longitude:-80.668401,Altitude:187.3,Speed:0.041155554,Accuracy:2.1,Provider:gps,Time:09/15/2015 10:59:51 EDT

Map Number

BO-045

Field Crew

K. WASHBURN , E . MCNAUGHTON

1293

Feature ID

BO-045

Project Number

60341251

Air Temp. (degC)

23.00

Weather Notes

Tablet

AECOM15

Wind Speed (beaufort)

3 Leaves move on twigs

Start Date

9/15/2015 12:18:37 PM

Precipitation

none

End Date

9/15/2015 12:25:54 PM

Cloud Cover

0.00

## Wildlife Observations

Species

Branched Bartonia Survey

Observation Notes

1353

Habitat not suitable for branched Bartonia . Area has tree cover greater than 25% and dense shrub and fern cover.



Observation Location

Latitude:45.82417,Longitude:-80.658715,Altitude:185.7,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:09/15/2015 12:20:26 EDT

Map Number

BO-065

Field Crew

NATALIA SIMONOVA AMI ARSENAULT

1299

# Wildlife Observations

Feature ID	BO-065	Air Temp. (degC)	18.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	4 Small branches move	
Tablet	AECOM6	Precipitation	none	
Start Date	9/15/2015 10:24:52 AM	Cloud Cover	0.00	
End Date	9/15/2015 10:40:34 AM			

## Wildlife Observations

Species

Observation Notes 1359

West portion of polygon is bog habitat, dominated by leatherleaf, outshading many other plants. Middle and east portion of polygon more of a forested habitat with shallow soils and trees. Ground very dry in bog areas. No BB observed.



## Observation Location

Latitude:45.856778,Longitude:-80.617324,Altitude:189.5,Speed:0.49386665,Accuracy:3.9,Provider:gps,Time:09/15/2015 10:26:05 EDT

Map Number  Field Crew  1302

Feature ID	BO-064	Air Temp. (degC)	20.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	4 Small branches move	
Tablet	AECOM6	Precipitation	none	
Start Date	9/15/2015 9:59:58 AM	Cloud Cover	0.00	
End Date	9/15/2015 10:13:12 AM			



# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonias Surveys

Observation Notes

1362

This polygon is dominant in leatherleaf, shading out much of the groundcover plants. Tree cover >40% of total polygon white and jack pine. In areas where there is some open cover and direct sunlight, the ground and mosses are very dry.



Observation Location

Latitude:45.856701,Longitude:-80.620794,Altitude:193.1,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:09/15/2015 10:01:24 EDT

Map Number

BO-069

Field Crew

NATALYIA SIMONOVA AMI ARSENAULT

1305

Feature ID

BO-069

Project Number

60341251

Air Temp. (degC)

20.00

Weather Notes

Tablet

AECOM6

Wind Speed (beaufort)

4 Small branches move

Start Date

9/15/2015 11:22:09 AM

Precipitation

none

End Date

9/15/2015 11:40:46 AM

Cloud Cover

0.00

## Wildlife Observations

Species

Branches Bartonias

Observation Notes

1365

Leatherleaf dominating with >60% cover. Very dense. Ground and mosses dry. Not suitable habitat for branched Bartonias.



Observation Location

Latitude:45.843757,Longitude:-80.615992,Altitude:198.7,Speed:0.051444445,Accuracy:2.1,Provider:gps,Time:09/15/2015 11:23:24 EDT

Map Number

BO-071

Field Crew

NATALYIA SIMONOVA AMI ARSENAULT

1308

# Wildlife Observations

Feature ID	<input type="text" value="BO-071"/>	Air Temp. (degC)	<input type="text" value="20.00"/>	Weather Notes
Project Number	<input type="text" value="60341251"/>	Wind Speed (beaufort)	<input type="text" value="4 Small branches move"/>	<input type="text"/>
Tablet	<input type="text" value="AECOM6"/>	Precipitation	<input type="text" value="none"/>	
Start Date	<input type="text" value="9/15/2015 1:55:06 PM"/>	Cloud Cover	<input type="text" value="0.00"/>	
End Date	<input type="text" value="9/15/2015 2:01:17 PM"/>			

## Wildlife Observations

Species

Observation Notes 1368

Sedge specie dominating polygon with >60% cover. Dry ground. Better bog habitat to the west of polygon, might be worth a survey if timing permits. Polygon surrounded by forest; jack pine, tamarack, birch. Not a lot of open areas with direct sunlight and



## Observation Location

Latitude:45.840675,Longitude:-80.600726,Altitude:198.8,Speed:0.16462222,Accuracy:1.5,Provider:gps,Time:09/15/2015 01:56:20 EDT

Map Number  Field Crew  1311

Feature ID	<input type="text" value="BO-069B"/>	Air Temp. (degC)	<input type="text" value="22.00"/>	Weather Notes
Project Number	<input type="text" value="60341251"/>	Wind Speed (beaufort)	<input type="text" value="4 Small branches move"/>	<input type="text"/>
Tablet	<input type="text" value="AECOM6"/>	Precipitation	<input type="text" value="none"/>	
Start Date	<input type="text" value="9/15/2015 11:40:43 AM"/>	Cloud Cover	<input type="text" value="0.00"/>	
End Date	<input type="text" value="9/15/2015 11:58:40 AM"/>			

# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonia Survey

Observation Notes

1371

This location not identified on survey maps. This is a new plot created by the survey team due to an increasing number of identified bog species, and habitat associated with BB. This location is approximately 130m SW of turbine 61 and BO-069. Lots of



Observation Location

Latitude:45.842742,Longitude:-80.617604,Altitude:192.8,Speed:0.0051444443,Accuracy:1.8,Provider:gps,Time:09/15/2015 11:42:22 EDT

Map Number

BO-063

Field Crew

AMY INGRISELLI, JOHANNA PERZ

1323

Feature ID

BO-063

Project Number

60341251

Air Temp. (degC)

20.00

Weather Notes

Tablet

AECOM7

Wind Speed (beaufort)

1 Light air movement

Start Date

9/15/2015 9:58:49 AM

Precipitation

none

End Date

9/15/2015 11:07:33 AM

Cloud Cover

0.00

## Wildlife Observations

Species

Branched Bartonia Surveys

Observation Notes

1389

Cotton grass dominant, low low-lying shrub cover, sphagnum/peat substrate, few live trees, snags present, no standing water, suitable habitat but dry and no Virginia chain fern. Additional habitat photographs contained on Johanna's phone



Observation Location

Latitude:45.83413,Longitude:-80.657454,Altitude:195.0,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:09/15/2015 10:01:56 EDT

Map Number

BO-058

Field Crew

JOHANNA PERZ AMY INGRISELLI

1326

# Wildlife Observations

Feature ID	BO-058	Air Temp. (degC)	25.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	2 Slight breeze felt on face	
Tablet	AECOM7	Precipitation	none	
Start Date	9/15/2015 11:43:38 AM	Cloud Cover	0.00	
End Date	9/15/2015 12:50:31 PM			

## Wildlife Observations

Species

Observation Notes 1392

Occasional, scattered patches of suitable, open habitat only. A significant portion of the area was thicket (mostly winterberry holly). Conditions were dry (dry sphagnum). Some associate species present but habitat in general was not ideal (too much cover)



## Observation Location

Latitude:45.837909,Longitude:-80.647985,Altitude:192.4,Speed:0.05658889,Accuracy:1.8,Provider:gps,Time:09/15/2015 11:45:51 EDT

Map Number  Field Crew  1329

Feature ID	BO-051	Air Temp. (degC)	22.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	1 Light air movement	
Tablet	AECOM7	Precipitation	none	
Start Date	9/15/2015 3:31:45 PM	Cloud Cover	0.00	
End Date	9/15/2015 3:39:45 PM			

# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonias Surveys

Observation Notes

1395

Not suitable branched bartonia habitat, conifer swamp, dominant species are black spruce, labrador tea is dominant shrub cover, sphagnum dominant and three-leaved solomon's seal present



Observation Location

Latitude:45.824976,Longitude:-80.682051,Altitude:181.1,Speed:0.5041556,Accuracy:2.1,Provider:gps,Time:09/15/2015 03:32:26 EDT

Map Number

BO-034

Field Crew

KASEY MCKENZIE & TOM SHORNEY

1335

Feature ID

BO-034

Project Number

60341251

Air Temp. (degC)

20.00

Weather Notes

Tablet

AECOM12

Wind Speed (beaufort)

1 Light air movement

Start Date

9/16/2015 9:23:22 AM

Precipitation

none

End Date

9/16/2015 9:38:45 AM

Cloud Cover

10.00

## Wildlife Observations

Species

Branched Bartonias Surveys

Observation Notes

1401

Thick treed and sedge bog, dry, not he best habitat for branched bartonia



Observation Location

Latitude:45.87614,Longitude:-80.719209,Altitude:156.3,Speed:0.066877775,Accuracy:2.4,Provider:gps,Time:09/16/2015 09:45:30 EDT

Map Number

BO-016

Field Crew

TOM SHORNEY , KASEY MCKENZIE

1338

# Wildlife Observations

Feature ID	BO-016	Air Temp. (degC)	28.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	2 Slight breeze felt on face	
Tablet	AECOM12	Precipitation	none	
Start Date	9/16/2015 11:46:47 AM	Cloud Cover	0.00	
End Date	9/16/2015 12:46:52 PM			

## Wildlife Observations

Species

Observation Notes 1404

No species observed. If more water available this site would be ideal habitat for species. Ideal fern and shrub cover. Associate species such as pitcher plant, cottongrass observed.



## Observation Location

Latitude:45.88106,Longitude:-80.631308,Altitude:195.3,Speed:0.07202222,Accuracy:1.8,Provider:gps,Time:09/16/2015 12:14:54 EDT

Map Number  Field Crew  1341

Feature ID	BO-021	Air Temp. (degC)	28.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	5 Moderate branches move	
Tablet	AECOM12	Precipitation	none	
Start Date	9/16/2015 1:10:19 PM	Cloud Cover	0.00	
End Date	9/16/2015 1:41:12 PM			

# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonia surveys

Observation Notes

1407

No species observed. Feature very dry, sphagnum moss very brown. Shrub cover thick with the exception of the bog edges.



Observation Location

Latitude:45.881875,Longitude:-80.620178,Altitude:203.5,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:09/16/2015 01:23:37 EDT

Map Number

BO-017

Field Crew

TOM SHORNEY, KASEY MCKENZIE

1344

Feature ID

BO-017

Project Number

60341251

Air Temp. (degC)

27.00

Weather Notes

Tablet

AECOM12

Wind Speed (beaufort)

4 Small branches move

Start Date

9/16/2015 1:59:02 PM

Precipitation

none

End Date

9/16/2015 2:26:01 PM

Cloud Cover

0.00

## Wildlife Observations

Species

Branched Bartonia surveys

Observation Notes

1410

No species observed. Majority of feature dry. 60-70% 60 -72 shrub cover. Sphagnum moss brown. only patches of associates.



Observation Location

Latitude:45.886258,Longitude:-80.625094,Altitude:201.4,Speed:0.041155554,Accuracy:1.8,Provider:gps,Time:09/16/2015 02:24:51 EDT

Map Number

BO-030

Field Crew

AMI ARSENAULT NATALIYA SIMONOVA JOHANNA PERZ

1347

# Wildlife Observations

Feature ID	BO-030	Air Temp. (degC)	22.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	4 Small branches move	
Tablet	AECOM6	Precipitation	none	
Start Date	9/16/2015 10:12:33 AM	Cloud Cover	0.00	
End Date	9/16/2015 10:39:19 AM			

## Wildlife Observations

Species

Observation Notes 1413

Majority of Polygon is treed rock barren forest (black spruce tamarack and jack pine) and open bedrock. In small depression between rock barrens where there is sphagnum mosses, Kalmia polifolia is dominant, as well as Vaccinium angustifolium. Soils if pres



## Observation Location

Latitude:45.857198,Longitude:-80.682698,Altitude:185.6,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:09/16/2015 10:14:17 EDT

Map Number  Field Crew  1350

Feature ID	BO-027	Air Temp. (degC)	25.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	4 Small branches move	
Tablet	AECOM6	Precipitation	none	
Start Date	9/16/2015 11:48:29 AM	Cloud Cover	0.00	
End Date	9/16/2015 11:59:33 AM			



# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonias Surveys

Observation Notes

1416

Black spruce tamarack swamp. >60 cover, not suitable for BB growth. Sphagnum dominate ground cover. Shrub layer abundant with Aronia melanocarpa. Ground dry. Much better habitat for BB to the west of our polygon ~125m (fen) that connects to larger op



Observation Location

Latitude:45.85748,Longitude:-80.677835,Altitude:188.0,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:09/16/2015 11:50:25 EDT

Map Number

BO-025

Field Crew

AMI ARSENAULT NATALIYA SIMONOVA JOHANNA PERZ

1353

Feature ID

BO-025

Project Number

60341251

Air Temp. (degC)

25.00

Weather Notes

Tablet

AECOM6

Wind Speed (beaufort)

4 Small branches move

Start Date

9/16/2015 12:36:18 PM

Precipitation

none

End Date

9/16/2015 12:42:09 PM

Cloud Cover

0.00

## Wildlife Observations

Species

Branched Bartonias Survey

Observation Notes

1419

Small black spruce swamp in-between rock barrens. >60% cover. Aronia melanocarpa and Nemopanthus mucronatus dominant, shading out ground species. Dry ground. No open spaces receiving direct sunlight. Not ideal habitat for BB. Did not observe BB.



Observation Location

Latitude:45.857671,Longitude:-80.675506,Altitude:188.0,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:09/16/2015 12:37:59 EDT

Map Number

BO-024

Field Crew

AMI ARSENAULT NATALIYA SIMONOVA JOHANNA PERZ

1356

# Wildlife Observations

Feature ID	BO-024	Air Temp. (degC)	25.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	4 Small branches move	
Tablet	AECOM6	Precipitation	none	
Start Date	9/16/2015 12:52:42 PM	Cloud Cover	0.00	
End Date	9/16/2015 1:32:35 PM			

## Wildlife Observations

Species

Observation Notes 1422

Surrounded by treed and open rock barren. Black spruce swamp. Aronia melanocarpa and Chamaedaphne mucronatus dominating shrub layer >80%. Some Labrador tea which indicates moist organic material substrate at one time. No open areas receiving direct sunl



## Observation Location

Latitude:45.856645,Longitude:-80.675791,Altitude:186.9,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:09/16/2015 12:54:29 EDT

Map Number  Field Crew  1359

Feature ID	BO-010	Air Temp. (degC)	25.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	4 Small branches move	
Tablet	AECOM6	Precipitation	none	
Start Date	9/16/2015 1:37:17 PM	Cloud Cover	0.00	
End Date	9/16/2015 2:00:28 PM			

# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonia Suvey

Observation Notes

1425

North east arm of polygon spruce swamp. Huckleberry and leatherleaf dominating shrub layer, outstanding ground species. Dry crunchy Sphagnum. Walking further south into polygon body is very shrubby and shade by Nemopanthus mucronatus and Alder. Not idea



Observation Location

Latitude:45.854915,Longitude:-80.675315,Altitude:182.6,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:09/16/2015 01:40:38 EDT

Map Number

BO-023

Field Crew

AMI ARSENAULT NATALIYA SIMONOVA JOHANNA PERZ

1362

Feature ID

BO-023

Project Number

60341251

Air Temp. (degC)

25.00

Weather Notes

Tablet

AECOM6

Wind Speed (beaufort)

4 Small branches move

Start Date

9/16/2015 2:56:37 PM

Precipitation

none

End Date

9/16/2015 3:10:40 PM

Cloud Cover

0.00

## Wildlife Observations

Species

Branched Bartonia Surveys

Observation Notes

1428

Black spruce dominant swamp surrounded by bedrock. Heavily shaded. Not ideal habitat for BB. Did not observe BB.



Observation Location

Latitude:45.855312,Longitude:-80.691139,Altitude:185.9,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:09/16/2015 02:58:24 EDT

Map Number

BO-026

Field Crew

AMI ARSENAULT NATALIYA SIMONOVA JOHANNA PERZ

1365

# Wildlife Observations

Feature ID	<input type="text" value="BO-026"/>	Air Temp. (degC)	<input type="text" value="25.00"/>	Weather Notes
Project Number	<input type="text" value="60341251"/>	Wind Speed (beaufort)	<input type="text" value="4 Small branches move"/>	<input type="text"/>
Tablet	<input type="text" value="AECOM6"/>	Precipitation	<input type="text" value="none"/>	
Start Date	<input type="text" value="9/16/2015 3:10:44 PM"/>	Cloud Cover	<input type="text" value="0.00"/>	
End Date	<input type="text" value="9/16/2015 3:23:37 PM"/>			

## Wildlife Observations

Species

Observation Notes

Just west of access trail - Black spruce swamp with white spruce and some tamarack and white pine. Shrubs >80% cover, Aronia melanocarpa, Labrador tea, Kalmia polifolia and Chamaedaphne mucronatus. Very dry Sphagnum. Further west into polygon Carex ol



## Observation Location

Latitude:45.852882,Longitude:-80.691894,Altitude:184.7,Speed:0.10803334,Accuracy:1.8,Provider:gps,Time:09/16/2015 03:12:18 EDT

Map Number	<input type="text" value="BO-020"/>	Field Crew	<input type="text" value="JULIE ELLIS AMY INGRISELLI"/>	1368
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Feature ID	<input type="text" value="BO-020"/>	Air Temp. (degC)	<input type="text" value="20.00"/>	Weather Notes
Project Number	<input type="text" value="60341251"/>	Wind Speed (beaufort)	<input type="text" value="2 Slight breeze felt on face"/>	<input type="text"/>
Tablet	<input type="text" value="AECOM4"/>	Precipitation	<input type="text" value="none"/>	
Start Date	<input type="text" value="9/16/2015 9:48:30 AM"/>	Cloud Cover	<input type="text" value="0.00"/>	
End Date	<input type="text" value="9/16/2015 10:49:36 AM"/>			

# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonia Surveys

Observation Notes

1434

Some associate species present (sphagnum, cottongrass, etc.) But shrub bog. Small amount of suitable micro habitat, 0% open water). Dry conditions, sphagnum is dry, shrub cover is >80, pocket of cattails. No branched bratonia found, habitat not idealPhot



Observation Location

Latitude:45.86692,Longitude:-80.653186,Altitude:170.1,Speed:0.020577777,Accuracy:2.4,Provider:gps,Time:09/16/2015 09:51:29 EDT

Map Number

BO-019

Field Crew

JULIE ELLIS AMY INGRISELLI

1371

Feature ID

BO-019

Project Number

60341251

Air Temp. (degC)

23.00

Weather Notes

Tablet

AECOM4

Wind Speed (beaufort)

3 Leaves move on twigs

Start Date

9/16/2015 10:58:43 AM

Precipitation

none

End Date

9/16/2015 11:37:43 AM

Cloud Cover

0.00

## Wildlife Observations

Species

Branched Bartonia Surveys

Observation Notes

1437

Small bog, a few associate species present (sphagnum, three-leaved Solomons seal, cranberry etc). Conditions are dry, sphagnum yellow, brittle. Suitable micro habitat but in general shrub cover is higher than ideal (40-50%). Photos 480-81 on Amy's camera



Observation Location

Latitude:45.86577228542186,Longitude:-80.65207622351824,Altitude:201.52200450450184,Speed:0.25717208,Accuracy:10.0,Provider:gps,Time:09/16/2015 11:01:29 EDT

Map Number

BO-015

Field Crew

JULIE ELLIS AMY INGRISELLI

1374

# Wildlife Observations

Feature ID	<input type="text" value="BO-015"/>			
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="25.00"/>	Weather Notes
Tablet	<input type="text" value="AECOM4"/>	Wind Speed (beaufort)	<input type="text" value="4 Small branches move"/>	<input type="text"/>
Start Date	<input type="text" value="9/16/2015 12:33:19 PM"/>	Precipitation	<input type="text" value="none"/>	
End Date	<input type="text" value="9/16/2015 1:53:16 PM"/>	Cloud Cover	<input type="text" value="0.00"/>	

## Wildlife Observations

Species

Observation Notes 1440

Bo-15. Heavy tree and shrub cover is not suitable. Small areas of suitable microhabitat (suitable open cover with associate species) were present but scarce. Few associate species are present (sphagnum, cottongrass). Conditions are dry; sphagnum yellow an



## Observation Location

Latitude:45.863406,Longitude:-80.646435,Altitude:187.6,Speed:0.48872223,Accuracy:2.1,Provider:gps,Time:09/16/2015 12:36:04 EDT

Map Number  Field Crew  1377

Feature ID	<input type="text" value="BO-012"/>			
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="25.00"/>	Weather Notes
Tablet	<input type="text" value="AECOM4"/>	Wind Speed (beaufort)	<input type="text" value="2 Slight breeze felt on face"/>	<input type="text"/>
Start Date	<input type="text" value="9/16/2015 2:55:05 PM"/>	Precipitation	<input type="text" value="none"/>	
End Date	<input type="text" value="9/16/2015 3:05:51 PM"/>	Cloud Cover	<input type="text" value="0.00"/>	

# Wildlife Observations

## Wildlife Observations

Species

Branched bartonia survey

Observation Notes

1443

Not suitable habitat; black spruce swamp with sphagnum and dense shrub layer. Heavy canopy and shrub cover. Photos 487-88 Amy's camera



Observation Location

Latitude:45.85667,Longitude:-80.64695,Altitude:189.6,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:09/16/2015 02:58:13 EDT

Map Number

BO-043

Field Crew

E. MCNAUGHTON , K. WASHBURN

1380

Feature ID

BO-043

Project Number

60341251

Air Temp. (degC)

18.00

Weather Notes

Tablet

AECOM15

Wind Speed (beaufort)

3 Leaves move on twigs

Start Date

9/16/2015 9:57:01 AM

Precipitation

none

End Date

9/16/2015 10:05:03 AM

Cloud Cover

0.00

## Wildlife Observations

Species

Branched Bartonia Survey

Observation Notes

1446

Habitat not suitable for branched Bartonia . More swamp than bog . High levels of Tamarack birch white pine



Observation Location

Latitude:45.825469,Longitude:-80.693583,Altitude:186.7,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:09/16/2015 09:58:51 EDT

Map Number

BO-013

Field Crew

E. MCNAUGHTON , K. WASHBURN

1383

# Wildlife Observations

Feature ID	BO-013	Air Temp. (degC)	22.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	4 Small branches move	
Tablet	AECOM15	Precipitation	none	
Start Date	9/16/2015 11:57:59 AM	Cloud Cover	0.00	
End Date	9/16/2015 12:22:05 PM			

## Wildlife Observations

Species

Observation Notes 1449

Habitat not suitable for branched Bartonia. Heavily treed and dry.



## Observation Location

Latitude:45.862319,Longitude:-80.656086,Altitude:183.0,Speed:0.087455556,Accuracy:2.25,Provider:gps,Time:09/16/2015 12:00:30 EDT

Map Number	BO-035	Field Crew	E. MCNAUGHTON K. WASHBURN	1386
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Feature ID	BO-035	Air Temp. (degC)	23.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	5 Moderate branches move	
Tablet	AECOM15	Precipitation	none	
Start Date	9/16/2015 12:22:56 PM	Cloud Cover	0.00	
End Date	9/16/2015 12:36:25 PM			



# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonia Survey

Observation Notes

1452

Compares favorably with branched Bartonia reference site



Observation Location

Latitude:45.86187,Longitude:-80.657309,Altitude:182.9,Speed:0.051444445,Accuracy:1.8,Provider:gps,Time:09/16/2015 12:24:46 EDT

Map Number BO-022

Field Crew K. WASHBURN , E . MCNAUGHTON

1389

Feature ID BO-022

Project Number 60341251

Air Temp. (degC)

25.00

Weather Notes

Tablet

AECOM15

Wind Speed (beaufort)

4 Small branches move

Start Date

9/16/2015 1:04:40 PM

Precipitation

none

End Date

9/16/2015 2:22:57 PM

Cloud Cover

0.00

## Wildlife Observations

Species

Branched Bartonia Survey

Observation Notes

1455

Great potential habitat. All associates except vergina chain fen . Compares favorably with reference site



Observation Location

Latitude:45.868429,Longitude:-80.662658,Altitude:196.6,Speed:0.03601111,Accuracy:1.75,Provider:gps,Time:09/16/2015 01:08:53 EDT

Map Number BO-037

Field Crew K. WASHBURN , E . MCNAUGHTON

1392

# Wildlife Observations

Feature ID	<input type="text" value="BO-037"/>	Air Temp. (degC)	<input type="text" value="25.00"/>	Weather Notes
Project Number	<input type="text" value="60341251"/>	Wind Speed (beaufort)	<input type="text" value="4 Small branches move"/>	<input type="text"/>
Tablet	<input type="text" value="AECOM15"/>	Precipitation	<input type="text" value="none"/>	
Start Date	<input type="text" value="9/16/2015 1:44:11 PM"/>	Cloud Cover	<input type="text" value="0.00"/>	
End Date	<input type="text" value="9/16/2015 1:52:28 PM"/>			

## Wildlife Observations

Species

Observation Notes 1458



## Observation Location

Map Number  Field Crew  1401

Feature ID	<input type="text" value="BO-31"/>	Air Temp. (degC)	<input type="text" value="25.00"/>	Weather Notes
Project Number	<input type="text" value="60341251"/>	Wind Speed (beaufort)	<input type="text" value="4 Small branches move"/>	<input type="text"/>
Tablet	<input type="text" value="AECOM4"/>	Precipitation	<input type="text" value="none"/>	
Start Date	<input type="text" value="9/17/2015 11:38:38 AM"/>	Cloud Cover	<input type="text" value="0.00"/>	
End Date	<input type="text" value="9/17/2015 12:34:08 PM"/>			

# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonia Surveys

Observation Notes

1464

Treed bog, within study area few associate plants are present (cranberry, sphagnum, etc.) But canopy and shrub cover is heavier than ideal; only ~15% open. No branched bartonia found. Photos 507- 508 Amy's camera. No open water, conditions are dry; pale,



Observation Location

Latitude:45.876299,Longitude:-80.64155,Altitude:188.9,Speed:0.025722222,Accuracy:3.0,Provider:gps,Time:09/17/2015 11:41:25 EDT

Map Number

BO-014

Field Crew

AMY INGRISELLI JULIE ELLIS

1404

Feature ID

BO-014

Project Number

60341251

Air Temp. (degC)

25.00

Weather Notes

Tablet

AECOM4

Wind Speed (beaufort)

3 Leaves move on twigs

Start Date

9/17/2015 1:26:01 PM

Precipitation

none

End Date

9/17/2015 2:01:23 PM

Cloud Cover

0.00

## Wildlife Observations

Species

Branched Bartonia Surveys

Observation Notes

1467

Shrub bog bordered by bedrock barren. Not suitable, canopy and shrub cover is higher than ideal, only ~15% open. Delineation was too coarse; much of the polygon was bedrock. Conditions are dry, sphagnum is dry. Few associate plants found (sphagnum, leath



Observation Location

Latitude:45.871942,Longitude:-80.634912,Altitude:188.1,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:09/17/2015 01:28:35 EDT

Map Number

BO-018

Field Crew

KASEY MCKENZIE & TOM SHORNEY

1413

# Wildlife Observations

Feature ID	BO-018	Air Temp. (degC)	24.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	1 Light air movement	
Tablet	AECOM12	Precipitation	none	
Start Date	9/17/2015 12:37:36 PM	Cloud Cover	0.00	
End Date	9/17/2015 12:55:38 PM			

## Wildlife Observations

Species

Observation Notes 1476

Treed bog, thick under story of alder, sedges, and ferns, dry, not the right habitat



## Observation Location

Latitude:45.872886,Longitude:-80.594433,Altitude:203.2,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:09/17/2015 12:48:34 EDT

Map Number  Field Crew  1422

Feature ID	BO-033	Air Temp. (degC)	22.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	3 Leaves move on twigs	
Tablet	AECOM7	Precipitation	none	
Start Date	9/17/2015 12:21:34 PM	Cloud Cover	0.00	
End Date	9/17/2015 12:51:48 PM			

# Wildlife Observations

## Wildlife Observations

Species

Branched Bartonia Survey

Observation Notes

1482

Open bog between rock barren. Extensive area has high Woodwardia virginicum cover. Good potential habitat in some patches with relatively low vegetative cover. Sphagnum / peat substrate present. Soils saturated but no open water present and many area



Observation Location

Latitude:45.86727,Longitude:-80.62849,Altitude:194.5,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:09/17/2015 12:22:37 EDT

Map Number

BO-032

Field Crew

E. MCNAUGHTON, J. PERZ

1425

Feature ID

BO-032

Project Number

60341251

Air Temp. (degC)

22.00

Weather Notes

Tablet

AECOM7

Wind Speed (beaufort)

5 Moderate branches move

Start Date

9/17/2015 1:04:47 PM

Precipitation

none

End Date

9/17/2015 1:17:58 PM

Cloud Cover

0.00

## Wildlife Observations

Species

Branched Bartonia Survey

Observation Notes

1485

Open bog between rock barren. Possible potential habitat for branched bartonia with relatively low vegetative cover. Sphagnum / peat substrate and Woodwardia virginicum present but dry conditions at time of survey. Dominated by Carex utriculat



Observation Location

Latitude:45.866296,Longitude:-80.629622,Altitude:189.7,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:09/17/2015 01:16:52 EDT

Map Number

BO-011

Field Crew

J.PERZ AND E. MCNAUGHTON

1428

# Wildlife Observations

Feature ID	BO-011	Air Temp. (degC)	24.00	Weather Notes
Project Number	60341251	Wind Speed (beaufort)	0 Calm	
Tablet	AECOM7	Precipitation	none	
Start Date	9/17/2015 1:45:47 PM	Cloud Cover	0.00	
End Date	9/17/2015 2:06:02 PM			

## Wildlife Observations

Species

Branched Bartonia Surveys

Observation Notes

1488

Shrub bog between rock barren not suitable habitat for bb. Greater than 60% shrub cover, sphagnum substrate, lack of many associate species and water (soil may have been saturated earlier in the season but dried out at time of survey)

Observation Location


Latitude:45.865654,Longitude:-80.637049,Altitude:197.3,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:09/17/2015 02:07:05 EDT



# Appendix C11


## 2015 Turtle Basking Surveys

# Snake/Turtle Basking - WEC


Map Number	N-M30	Field Crew	AMY INGRISELLI	3
Feature ID	Tu-n-m30-16	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	5.00	Weather Notes Windy but sun is shining. High of 11 today
Tablet	AECOM9	Wind Speed (beaufort)	5	
Start Date	4/27/2015 9:45:47 AM	Precipitation	0	
End Date	4/27/2015 10:44:40 AM	Cloud Cover	60.00	
Survey Type	Turtle	Vantage Point #	Tu-n-m30-16	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.880262,Longitude:-80.669592,Altitude:182.1,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:04/27/2015 10:16:10 EDT	Direction to exposure is north. Also surveyed from point at centre of wetland. Logs and grassy hummocks suitable for basking are present. Emergent vegetation dominated by grasses and Typha. Mean water depth estimated 1m			
Description of Reptile Evidence				
Species	Midland Painted Turtle			3
Estimated UTM or distance and direction from vantage point	Southwest approx 30m from vantage point.			
Estimated Length (cm)	25			
Total Observed	2			
Observed Behaviour	Basking			




# Snake/Turtle Basking - WEC

Map Number	N-M31	Field Crew	AMY INGRISELLI		12
Feature ID	Tu-n-m31-11	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	3		
Start Date	4/27/2015 11:17:34 AM	Precipitation	0		
End Date	4/27/2015 12:12:45 PM	Cloud Cover	70.00		
Survey Type	Turtle	Vantage Point #	Tu-n-m31-11	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Where photo of turtle was not possible, photo of where turtle was observed was taken		
Latitude:45.883702,Longitude:-80.676994,Altitude:190.0,Speed:0.0463,Accuracy:1.75,Provider:gps,Time:04/27/2015 11:24:56 EDT	Open water wetland between bedrock slopes, with logs, grassy hummocks and floating mats suitable for basking. Mean water depth estimated 1m or more. Veg dominated by grasses, leatherleaf				
Description of Reptile Evidence					
Species	Midland Painted Turtle				6
Estimated UTM or distance and direction from vantage point	Approximately 20 m northwest of vantage point				
Estimated Length (cm)	15				
Total Observed	1				
Observed Behaviour	Basking on log				

# Snake/Turtle Basking - WEC

Species	Emydoidea blandingii	9
Estimated UTM or distance and direction from vantage point	Approximately 40m southwest of vantage point	
Estimated Length (cm)	25	
Total Observed	1	
Observed Behaviour	Basking on bedrock shoreline	


# Snake/Turtle Basking - WEC

Map Number	N-M21	Field Crew	AMY INGRISELLI		9
Feature ID	Tu-n-m21-9	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	4		
Start Date	4/27/2015 2:27:45 PM	Precipitation	0		
End Date	4/27/2015 2:47:50 PM	Cloud Cover	95.00		
Survey Type	Turtle	Vantage Point #	Tu-n-m21-6	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Where photo of turtle not possible, photo of location/ habitat where it was spotted was taken. Vantage point on map had no open water, surveyed for basking turtles but mainly surveyed from indicated coordinates of open water wetland.		
Latitude:45.878307,Longitude:-80.646589,Altitude:185.9,Speed:0.67906666,Accuracy:2.4,Provider:gps,Time:04/27/2015 02:29:19 EDT		Open water wetland swamp with bedrock outcrops, logs and floating mats/hummocks of shrubs (leatherleaf) and grasses. Beaver dam and fen upstream. High organic matter. Heard spring peeper.			
Description of Reptile Evidence					
Species	Emydoidea blandingii				12
Estimated UTM or distance and direction from vantage point	20 m east of vantage point coordinates				
Estimated Length (cm)	30				
Total Observed	1				
Observed Behaviour	Basking on hummock				

# Snake/Turtle Basking - WEC

Map Number	N-M11	Field Crew	KRISTAN WASHBURN		12
Feature ID	TU-N-M11-8(1)	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes	
Tablet	AECOM15	Wind Speed (beaufort)	2		
Start Date	4/27/2015 9:35:13 AM	Precipitation	0		
End Date	4/27/2015 9:57:31 AM	Cloud Cover	15.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.869807,Longitude:-80.60559,Altitude:178.2,Speed:0.03601111,Accuracy:1.8,Provider:gps,Time:04/27/2015 09:56:56 EDT		Meadow marsh, beaver dam must have let go, now mostly dry			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M11	Field Crew	KRISTAN WASHBURN	15
Feature ID	TU-N-M11-8(2)	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	3	
Start Date	4/27/2015 10:05:03 AM	Precipitation	0	
End Date	4/27/2015 10:30:21 AM	Cloud Cover	25.00	
Survey Type	Turtle	Vantage Point #	2	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.869246,Longitude:-80.605905,Altitude:196.7,Speed:0.1337555,Accuracy:1.8,Provider:gps,Time:04/27/2015 10:12:58 EDT		Sedges with some dead trees for basking not a lot of water. Beaver dam must be limiting, about 1.5ft max depth mucky substrate		
Description of Reptile Evidence				
Species	Midland painted turtle			15
Estimated UTM or distance and direction from vantage point	17t 0530593 507544			
Estimated Length (cm)	15			
Total Observed	1			
Observed Behaviour	Basking			

# Snake/Turtle Basking - WEC

Map Number	N-M15	Field Crew	KRISTAN WASHBURN	21
Feature ID	TU-N-M15-15	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	4	
Start Date	4/27/2015 1:15:36 PM	Precipitation	0	
End Date	4/27/2015 1:38:49 PM	Cloud Cover	100.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions		Weather not ideal for turtle basking	
Latitude:45.868528,Longitude:-80.645299,Altitude:185.3,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:		Shrub shore fen with large open water area and floating mat		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	S-M31	Field Crew	KRISTAN WASHBURN	24
Feature ID	TU-S-M31-1(1)	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	1	
Start Date	4/28/2015 9:10:24 AM	Precipitation	0	
End Date	4/28/2015 9:30:54 AM	Cloud Cover	10.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.839923,Longitude:-80.655666,Altitude:175.8,Speed:0.14918889,Accuracy:3.9,Provider:gps,Time:04/28/2015 09:16:28 EDT		Open water marsh, some basking logs, and hummocks of grass		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC


Map Number	S-M31	Field Crew	KRISTAN WASHBURN	27
Feature ID	TU-S-M31-1(2)	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	1	
Start Date	4/28/2015 9:32:02 AM	Precipitation	0	
End Date	4/28/2015 9:53:30 AM	Cloud Cover	5.00	
Survey Type	Turtle	Vantage Point #	2	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.840667,Longitude:-80.656558,Altitude:178.2,Speed:0.025722222,Accuracy:2.4,Provider:gps,Time:04/28/2015 09:36:54 EDT		Open water some basking areas and grassy hummocks		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				




# Snake/Turtle Basking - WEC

Map Number	S-M34	Field Crew	KRISTAN WASHBURN	30
Feature ID	TU-S-M34-6	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	1	
Start Date	4/28/2015 10:30:57 AM	Precipitation	0	
End Date	4/28/2015 10:56:58 AM	Cloud Cover	5.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.829723,Longitude:-80.651878,Altitude:186.0,Speed:0.0463,Accuracy:3.3,Provider:gps,Time:04/28/2015 10:42:17 EDT		Emergent and ericaceous shrub wetland adjacent to open water community lots of one water pockets with mucky bottom for turtles. Not many logs to bask on but lots of hummocks.		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	S-M14	Field Crew	KRISTAN WASHBURN	273
Feature ID	TU-S-M14-2	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	4	
Start Date	4/28/2015 12:45:52 PM	Precipitation	0	
End Date	4/28/2015 1:36:26 PM	Cloud Cover	0.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.846966,Longitude:-80.635867,Altitude:190.4,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:04/28/2015 01:03:50 EDT		Mixture if floating sedge mats and open water, mucky bottom		
Description of Reptile Evidence				
Species	Blanding's Turtle			21
Estimated UTM or distance and direction from vantage point	320 degrees approximately 4th			
Estimated Length (cm)	31			
Total Observed	5			
Observed Behaviour	Basking			


# Snake/Turtle Basking - WEC


Species	Blanding's Turtle	24
Estimated UTM or distance and direction from vantage point	65m 300 degrees	
Estimated Length (cm)	15	
Total Observed	1	
Observed Behaviour	Basking	


Species	Midland Painted Turtle	27
Estimated UTM or distance and direction from vantage point	North 70m	
Estimated Length (cm)	18	
Total Observed	2	
Observed Behaviour	Basking and climbing up in floating mat	

Species	Blanding's Turtle	30
Estimated UTM or distance and direction from vantage point	100m 300 degrees	
Estimated Length (cm)	20	
Total Observed	1	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Species	Snapping Turtle		33
Estimated UTM or distance and direction from vantage point	300 east		
Estimated Length (cm)	45		
Total Observed	1		
Observed Behaviour	Basking		


Species	Blanding's Turtle		36
Estimated UTM or distance and direction from vantage point	20 degrees 90m		
Estimated Length (cm)	20		
Total Observed	1		
Observed Behaviour	Basking		

Species	Midland Painted Turtle		39
Estimated UTM or distance and direction from vantage point	4 degrees 90m		
Estimated Length (cm)	15		
Total Observed	1		
Observed Behaviour	Climbing out of water to bask		

# Snake/Turtle Basking - WEC

Map Number	N-M28	Field Crew	AMY INGRISELLI		42
Feature ID	Tu-n-m28-10	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	3		
Start Date	4/28/2015 9:51:43 AM	Precipitation	0		
End Date	4/28/2015 10:16:26 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	Tu-n-m28-10	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Tree swallows and northern flickers nesting in snag in wetland. Also observed white-throats sparrow, Sandhill crane, American robin, song sparrow, northern flicker, house wren, red breasted nuthatch, Canada goose (pair on shoreline).		
Latitude:45.867305,Longitude:-80.663841,Altitude:183.9,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:04/28/2015 09:53:31 EDT		From vantage point facing northeast to open water beaver pond. Vegetation at time of survey was some grassy hummocks (20%). Bedrock shoreline with few mud and grass flats. Floating logs and hummocks suitable for basking present but not abundant.			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	AMY INGRISELLI		57
Feature ID	Tu-n-m33-3	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	5		
Start Date	4/28/2015 2:00:41 PM	Precipitation	0		
End Date	4/28/2015 2:30:45 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	Tu-n-m33-3	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Not able to photograph turtle, took photo of basking location where it was observed. Tree swallows nesting in snag, 1 mallard		
Latitude:45.860913,Longitude:-80.667227,Altitude:181.5,Speed:0.041155554,Accuracy:1.8,Provider:gps,Time:04/28/2015 02:08:42 EDT		Open water wetland with mainly bedrock shorelines and bedrock islands. Little aquatic vegetation observed (15% cover) . Logs and grassy shorelines for basking were scarce.			
Description of Reptile Evidence					
Species	Emydoidea blandingii				45
Estimated UTM or distance and direction from vantage point	Approximately 20 m west of vantage point				
Estimated Length (cm)	20				
Total Observed	1				
Observed Behaviour	Basking on bedrock island.				

# Snake/Turtle Basking - WEC

Map Number	N-m48	Field Crew	AMY INGRISELLI		60
Feature ID	Tu-n-m48-13	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	3		
Start Date	4/29/2015 11:28:20 AM	Precipitation	0		
End Date	4/29/2015 11:50:21 AM	Cloud Cover	5.00		
Survey Type	Turtle	Vantage Point #	Tu-n-m48-13	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Heard American bittern, northern flicker, song sparrow. Bittern west of vantage poi t		
Latitude:45.872292,Longitude:-80.712653,Altitude:183.2,Speed:0.20063333,Accuracy:2.1,Provider:gps,Time:04/29/2015 11:29:25 EDT	Open water wetland with bedrock shorelines and many floating mats and hummocks of leatherleaf. Open water approximately 70%. No floating or emergent veg observed.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-m46	Field Crew	AMY INGRISELLI		66
Feature ID	Tu-n-m46-14	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	3		
Start Date	4/29/2015 1:18:56 PM	Precipitation	0		
End Date	4/29/2015 1:50:04 PM	Cloud Cover	10.00		
Survey Type	Turtle	Vantage Point #	Tu-n-48-14		
Vantage Point Location		Description of local habitat conditions		Where photo of turtle was not possible, photo of location/habitat where observed was taken	
Latitude:45.859484,Longitude:-80.696858,Altitude:184.8,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:04/29/2015 01:20:08 EDT		Open water wetland bordered by shore fen. No floating or emergent vegetation observed. Water depth unknown but greater than 1 m, detritus. Other than shoreline fen, structures for Basil g such as logs, boulders etc are scarce. Suitable overwintering,			
Description of Reptile Evidence					
Species	Blanding's Turtle				48
Estimated UTM or distance and direction from vantage point	15 m northeast from vantage point				
Estimated Length (cm)	20				
Total Observed	2				
Observed Behaviour	Basking on shoreline				



# Snake/Turtle Basking - WEC

Map Number	N-M38	Field Crew	TOM SHORNEY, OLGA HROPACH		216
Feature ID	TU-N-M38-12	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	3		
Start Date	4/30/2015 1:37:15 PM	Precipitation	0		
End Date	4/30/2015 2:18:29 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Completed 2 vantage points, but determined this to be the most suitable		
Latitude:45.866718,Longitude:-80.688823,Altitude:188.0,Speed:0.0463,Accuracy:2.4,Provider:gps,Time:04/30/2015 02:16:27 EDT	Open water surrounded by bog which includes vegetation such as bog rosemary, leatherleaf, laurel, tamarack and black spruce. Shoreline consists of a combination of rock, vegetation and some muck.				
Description of Reptile Evidence					
Species	Midland Painted Turtle				51
Estimated UTM or distance and direction from vantage point	Approximately 20 m from vantage point to the south				
Estimated Length (cm)	15				
Total Observed	2				
Observed Behaviour	Floating/ basking				

# Snake/Turtle Basking - WEC


Species	Midland Painted Turtle	54
Estimated UTM or distance and direction from vantage point	Southeast shore of pond	
Estimated Length (cm)	13	
Total Observed	8	
Observed Behaviour	Basking within vegetation along shore	

Species	Blanding's Turtle	57
Estimated UTM or distance and direction from vantage point	Southeast shore	
Estimated Length (cm)	16	
Total Observed	9	
Observed Behaviour	Basking in vegetation along shore	


# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KRISTAN WASHBURN	75
Feature ID	TU-S-M17-4	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	0	
Start Date	4/29/2015 10:10:24 AM	Precipitation	0	
End Date	4/29/2015 10:29:26 AM	Cloud Cover	10.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.833011,Longitude:-80.632496,Altitude:189.8,Speed:0.041155554,Accuracy:1.8,Provider:gps,Time:04/29/2015 10:21:56 EDT	Original turtle survey point had broken beaver dam with fast current so likely no turtles Moved vantage point more north to bigger wetland. Wetland is surrounded by rock. No evidence of abundant aquatic vegetation although early. Some basking logs but not			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KRISTAN WASHBURN	156
Feature ID	TU-S-M17-7	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	2	
Start Date	4/29/2015 10:45:44 AM	Precipitation	0	
End Date	4/29/2015 11:05:56 AM	Cloud Cover	10.00	
Survey Type	Turtle	Vantage Point #	2	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.831618,Longitude:-80.634734,Altitude:189.5,Speed:0.07716667,Accuracy:1.25,Provider:gps,Time:04/29/2015 10:48:14 EDT		Open water with a mixture of sedges, mucky bottom, some basking logs		
Description of Reptile Evidence				
Species	Blanding's Turtle			60
Estimated UTM or distance and direction from vantage point	528423 5075434			
Estimated Length (cm)	28			
Total Observed	1			
Observed Behaviour	Basking			

# Snake/Turtle Basking - WEC

Species	Blanding's Turtle	63
Estimated UTM or distance and direction from vantage point	528443 5075326 17t	
Estimated Length (cm)	33	
Total Observed	1	
Observed Behaviour	Basking	


# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KRISTAN WASHBURN		84
Feature ID	Tu-S-M17-5	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM15	Wind Speed (beaufort)	0		
Start Date	4/29/2015 11:30:50 AM	Precipitation	0		
End Date	4/29/2015 11:51:33 AM	Cloud Cover	10.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.830436,Longitude:-80.62553,Altitude:193.1,Speed:0.08231111,Accuracy:1.8,Provider:gps,Time:04/29/2015 11:32:19 EDT		Water levels low, some pockets of open water mixed with sedges, mucky bottom			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC


Map Number	S-m33	Field Crew	KRISTAN WASHBURN	93
Feature ID	Tu-S-M33-20	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	2	
Start Date	4/30/2015 10:15:16 AM	Precipitation	0	
End Date	4/30/2015 10:52:33 AM	Cloud Cover	75.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.825852,Longitude:-80.648033,Altitude:189.7,Speed:0.03601111,Accuracy:1.8,Provider:gps,Time:04/30/2015 10:35:49 EDT		Open water wetland surrounded by emergent vegetation, and some basking logs		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	S-M40	Field Crew	KRISTAN WASHBURN	306
Feature ID	Tu-S-M40-19	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	0	
Start Date	4/30/2015 11:56:31 AM	Precipitation	0	
End Date	4/30/2015 12:22:40 PM	Cloud Cover	15.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.817028,Longitude:-80.653868,Altitude:197.2,Speed:0.11317778,Accuracy:2.1,Provider:gps,Time:04/30/2015 12:07:19 EDT	Open water wetland surrounded by rock with some floating mats and basking logs			
Description of Reptile Evidence				
Species	Blanding's Turtle			66
Estimated UTM or distance and direction from vantage point	SO 35m			
Estimated Length (cm)	20			
Total Observed	1			
Observed Behaviour	Basking			




# Snake/Turtle Basking - WEC


Species	Midland Painted Turtle	69
Estimated UTM or distance and direction from vantage point	25m east	
Estimated Length (cm)	10	
Total Observed	1	
Observed Behaviour	Basking	

Species	Midland Painted Turtle	72
Estimated UTM or distance and direction from vantage point	20m ne	
Estimated Length (cm)	10	
Total Observed	2	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Map Number	S-m7	Field Crew	AMY INGRISELLI		105
Feature ID	Tu-s-m7-17	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	3		
Start Date	4/30/2015 9:51:34 AM	Precipitation	0		
End Date	4/30/2015 10:12:16 AM	Cloud Cover	50.00		
Survey Type	Turtle	Vantage Point #	Tu-s-m7-17	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Additional Notes		
Latitude:45.848986,Longitude:-80.601034,Altitude:199.5,Speed:0.2263555,Accuracy:1.5,Provider:gps,Time:04/30/2015 09:46:35 EDT	Beaver pond with approximately 40% open water. Numerous hummocks and mounds of vegetation (grasses, shrubs, conifers) as well as logs for basking. Vegetation and organic matter abundant, estimated mean water depth 1m		Heard field sparrow, northern flicker, belted kingfisher, red breasted nuthatch, yellow-bellied Sapsucker, American bittern (north of vantage point), red winged blackbird and song sparrow. More open water in the wetland east of vantage point with man		
Description of Reptile Evidence					
Species	Blanding's Turtle				75
Estimated UTM or distance and direction from vantage point	Approximately 5 m from vantage point				
Estimated Length (cm)	20				
Total Observed	1				
Observed Behaviour	Swimming, searching for basking spot				

# Snake/Turtle Basking - WEC

Map Number	N-m2	Field Crew	AMY INGRISELLI JME MAXWELL CARLA KAARPA		114
Feature ID	Tu-n-m2-18	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	22.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	3		
Start Date	4/30/2015 1:55:48 PM	Precipitation	0		
End Date	4/30/2015 2:15:07 PM	Cloud Cover	10.00		
Survey Type	Turtle	Vantage Point #	Tu-n-m2-18	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.884893,Longitude:-80.577467,Altitude:205.4,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:04/30/2015 01:57:16 EDT	Beaver one with lodge, logs and grassy shorelines suitable for Basil g. Depth over 1m. Floating and emergent vegetation observed.				
Description of Reptile Evidence					
Species	Midland Painted Turtle				78
Estimated UTM or distance and direction from vantage point	15 m northeast of vantage point				
Estimated Length (cm)	20				
Total Observed	2				
Observed Behaviour	Basking on log				


# Snake/Turtle Basking - WEC

Map Number	S-50	Field Crew	AMY INGRISELLI		144
Feature ID	Tu-s-m50-7	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	1		
Start Date	5/1/2015 10:49:34 AM	Precipitation	0		
End Date	5/1/2015 11:18:19 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	Tu-s-m50-7	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Midland painted turtles observed north of vantage point, habitat within and adjacent to corridor was surveyed.		
Latitude:45.826456,Longitude:-80.709257,Altitude:191.5,Speed:0.03601111,Accuracy:2.0,Provider:gps,Time:05/01/2015 10:53:33 EDT		At the vantage point within road corridor, wetland with approximately 40% open water. Many hummocks with grasses and shrubs above beaver dam. Open channel through hummocks. Open water pond upstream.			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC


Map Number	A-M01	Field Crew	ADAM, NATALIYA	252
Feature ID	TU-A-M01-22	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes
Tablet	AECOM7	Wind Speed (beaufort)	2	
Start Date	5/7/2015 10:12:25 AM	Precipitation	0	
End Date	5/7/2015 10:32:55 AM	Cloud Cover	0.00	
Survey Type	Turtle	Vantage Point #	TU-A-M01-22	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.889933,Longitude:-80.563388,Altitude:199.6,Speed:0.15433334,Accuracy:2.1,Provider:gps,Time:05/07/2015 10:34:16 EDT		Large pond in old quarry, appears deepJuniper covering western shoreNo basking logs		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	A-M01	Field Crew	ADAM, NATALIYA		1530
Feature ID	TU-A-M01-21	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	17.00	Weather Notes	
Tablet	AECOM7	Wind Speed (beaufort)	3		
Start Date	5/7/2015 11:10:54 AM	Precipitation	0		
End Date	5/7/2015 11:31:24 AM	Cloud Cover	5.00		
Survey Type	Turtle	Vantage Point #	TU-A-M01-21	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.890045,Longitude:-80.557538,Altitude:192.3,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:05/07/2015 11:09:23 EDT		Large beaver pond, many basking logs and dead stumps, significant submergent vegetation, 1.5 feet deepPond surrounded by white cedar, black spruce, red maple			
Description of Reptile Evidence					
Species	Midland Painted Turtle				150
Estimated UTM or distance and direction from vantage point	57				
Estimated Length (cm)	25				
Total Observed	1				
Observed Behaviour	Basking				


# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	153
Estimated UTM or distance and direction from vantage point	30	
Estimated Length (cm)	15	
Total Observed	2	
Observed Behaviour	Basking	

Species	Midland Painted Turtle	156
Estimated UTM or distance and direction from vantage point	35	
Estimated Length (cm)	17	
Total Observed	3	
Observed Behaviour	Basking	

Species	Emydoidea blandingii	159
Estimated UTM or distance and direction from vantage point	35	
Estimated Length (cm)	20	
Total Observed	1	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	162
Estimated UTM or distance and direction from vantage point	30	
Estimated Length (cm)	15	
Total Observed	1	
Observed Behaviour	Basking	


Species	Midland Painted Turtle	165
Estimated UTM or distance and direction from vantage point	20	
Estimated Length (cm)	15	
Total Observed	3	
Observed Behaviour	Basking	




# Snake/Turtle Basking - WEC

Map Number	A-M02	Field Crew	ADAM, NATALIYA	783
Feature ID	TU-A-M02-23	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes
Tablet	AECOM7	Wind Speed (beaufort)	4	
Start Date	5/7/2015 1:45:37 PM	Precipitation	0	
End Date	5/7/2015 2:07:32 PM	Cloud Cover	0.00	
Survey Type	Turtle	Vantage Point #	TU-A-M02-23	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.890615,Longitude:-80.545712,Altitude:196.3,Speed:0.041155554,Accuracy:2.4,Provider:gps,Time:05/07/2015 01:49:10 EDT		Large beaver pond, surrounded by mixed forest (spruce, white pine, red maple, white birch). Pond 1-2 feet deep		
Description of Reptile Evidence				
Species	Midland Painted Turtle			168
Estimated UTM or distance and direction from vantage point	12			
Estimated Length (cm)	10			
Total Observed	4			
Observed Behaviour	2 swimming,, 2 basking			

# Snake/Turtle Basking - WEC

Species	Emydoidea blandingii		171
Estimated UTM or distance and direction from vantage point	60		
Estimated Length (cm)	30		
Total Observed	1		
Observed Behaviour	Basking		

Species	Midland Painted Turtle		174
Estimated UTM or distance and direction from vantage point	70		
Estimated Length (cm)	17		
Total Observed	2		
Observed Behaviour	Basking		

# Snake/Turtle Basking - WEC

Map Number	S-M50	Field Crew	JOHANNA PERZ, ROB CONOHAN, KEVIN FLOOD		303
Feature ID	TU-S-M50-7	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	3	Cool breeze and sunny	
Start Date	5/13/2015 12:37:36 PM	Precipitation	0		
End Date	5/13/2015 12:57:41 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.826434,Longitude:-80.709166,Altitude:188.6,Speed:0.010288889,Accuracy:1.75,Provider:gps,Time:05/13/2015 12:41:36 EDT	Alder swamp riparian area bordering beaver pond complex and meadow marsh community. Water fairly deep enough in some areas to prevent total freezing. Limited basking logs present				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M34	Field Crew	JESSICA WALKER	312
Feature ID	TU-S-M34-6	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes Sunny and calm
Tablet	AECOM8	Wind Speed (beaufort)	2	
Start Date	5/13/2015 12:27:16 PM	Precipitation	0	
End Date	5/13/2015 12:48:16 PM	Cloud Cover	0.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions		Additional Notes	
Latitude:45.829763,Longitude:-80.651868,Altitude:187.4,Speed:0.041155554,Accuracy:2.1,Provider:gps,Time:05/13/2015 12:28:40 EDT	Open water with some vegetation patches and logs.		One blandings turtle and three suspected painted turtles observed on approach on log. Jumped into water.	
Description of Reptile Evidence				
Species	Midland Painted Turtle			186
Estimated UTM or distance and direction from vantage point	West 300 meters			
Estimated Length (cm)	20			
Total Observed	4			
Observed Behaviour	Basking			

# Snake/Turtle Basking - WEC

Map Number	S-M31	Field Crew	JESSICA WALKER AND ADAM MCCLELLAND		315
Feature ID	TU-S-M31-1(1)	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM8	Wind Speed (beaufort)	4		
Start Date	5/13/2015 2:22:46 PM	Precipitation	0		
End Date	5/13/2015 2:42:23 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.839988,Longitude:-80.655651,Altitude:180.6,Speed:0.03601111,Accuracy:1.8,Provider:gps,Time:05/13/2015 02:23:59 EDT	Large open wetland with emergent vegetation and fallen snags				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M31	Field Crew	JESSICA WALKER AND ADAM MCCLELLAND		1284
Feature ID	TU-S-M31-1(2)	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM8	Wind Speed (beaufort)	3		
Start Date	5/13/2015 3:18:18 PM	Precipitation	0		
End Date	5/13/2015 3:46:05 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	2	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Lots of turtles at far south end. Identification based largely on shell shape.		
Latitude:45.840674,Longitude:-80.656651,Altitude:179.4,Speed:0.06173333,Accuracy:1.8,Provider:gps,Time:05/13/2015 03:20:54 EDT	Very large openwater wetland with rick barren island. Edges with some emergent vegetation and fallen logs.				
Description of Reptile Evidence					
Species	Midland Painted Turtle				189
Estimated UTM or distance and direction from vantage point	South by 350m				
Estimated Length (cm)	15				
Total Observed	2				
Observed Behaviour	Basking on log				

# Snake/Turtle Basking - WEC

Species	Blanding's Turtle	192
Estimated UTM or distance and direction from vantage point	South 450m	
Estimated Length (cm)	25	
Total Observed	1	
Observed Behaviour	Basking	
Species	Midland Painted Turtle	195
Estimated UTM or distance and direction from vantage point	South 250m	
Estimated Length (cm)	20	
Total Observed	4	
Observed Behaviour	Basking	
Species	Snapping Turtle	198
Estimated UTM or distance and direction from vantage point	200m south	
Estimated Length (cm)	35	
Total Observed	1	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC


Map Number	S-M7	Field Crew	SARAH RICHER, BILL MCLEOD		330
Feature ID	TU-S-M7-17	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM18	Wind Speed (beaufort)	2		
Start Date	5/13/2015 4:05:56 PM	Precipitation	0		
End Date	5/13/2015 4:25:31 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.848975,Longitude:-80.601024,Altitude:206.9,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:05/13/2015 04:15:55 EDT	Loads of standing water, scattered emergent aquatic veg in tufts				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KRISTAN WASHBURN & KASEY MCKENZIE		333
Feature ID	TU-S-M17-4(1)	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	2		
Start Date	5/13/2015 10:33:50 AM	Precipitation	0		
End Date	5/13/2015 10:54:05 AM	Cloud Cover	5.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.833035,Longitude:-80.632493,Altitude:188.4,Speed:0.07202222,Accuracy:2.7,Provider:gps,Time:05/13/2015 10:48:15 EDT	Open water wetland with little vegetation surrounded by rock				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KRISTAN WASHBURN & KASEY MCKENZIE		336
Feature ID	TU-S-M17-4(2)	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	2		
Start Date	5/13/2015 11:00:45 AM	Precipitation	0		
End Date	5/13/2015 11:20:10 AM	Cloud Cover	5.00		
Survey Type	Turtle	Vantage Point #	2	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.83175,Longitude:-80.634613,Altitude:185.3,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:05/13/2015 11:16:11 EDT	Open water wetland with emergent sedges				
Description of Reptile Evidence					
Species	Blanding's Turtle				204
Estimated UTM or distance and direction from vantage point	45.83231, -80.63323				
Estimated Length (cm)	32				
Total Observed	1				
Observed Behaviour	Basking				


# Snake/Turtle Basking - WEC


Map Number	S-M17	Field Crew	KRISTAN WASHBURN & KASEY MCKENZIE		342
Feature ID	TU-S-M17-5	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	2		
Start Date	5/13/2015 12:10:24 PM	Precipitation	0		
End Date	5/13/2015 12:34:33 PM	Cloud Cover	5.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.830461,Longitude:-80.625489,Altitude:189.5,Speed:0.07202222,Accuracy:2.1,Provider:gps,Time:05/13/2015 12:36:36 EDT	Open water wetland with some floating plants and emergent				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M14	Field Crew	KRISTAN WASHBURN & KASEY MCKENZIE		1053
Feature ID	Tu-s-m14-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	2		
Start Date	5/13/2015 2:34:14 PM	Precipitation	0		
End Date	5/13/2015 3:01:35 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.846927,Longitude:-80.635824,Altitude:179.9,Speed:0.030866666,Accuracy:2.7,Provider:gps,Time:05/13/2015 02:35:18 EDT	Open water wetland with lots of emergent veg and flag logs				
Description of Reptile Evidence					
Species	Blanding's Turtle				210
Estimated UTM or distance and direction from vantage point	West 120m				
Estimated Length (cm)	20				
Total Observed	1				
Observed Behaviour	Basking				

# Snake/Turtle Basking - WEC


Species	Snapping Turtle		213
Estimated UTM or distance and direction from vantage point	250 degrees 50m		
Estimated Length (cm)	45		
Total Observed	1		
Observed Behaviour	Basking		

Species	Midland Painted Turtle		216
Estimated UTM or distance and direction from vantage point	230 degrees 40m		
Estimated Length (cm)	10		
Total Observed	1		
Observed Behaviour	Basking		

# Snake/Turtle Basking - WEC

Map Number	N-M2	Field Crew	JULIE AYESHA		354
Feature ID	Tu-n-m2-18	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	1		
Start Date	5/13/2015 11:51:20 AM	Precipitation	0		
End Date	5/13/2015 12:15:22 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		No turtles observed		
Latitude:45.885028,Longitude:-80.57768,Altitude:200.7,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:05/13/2015 12:12:53 EDT	Large pond at least 1 m deep with beaver lodge and dam. Treed rock barren on either side. Open grassy sunny banks. Abundance of logs for basking pond lily and other veg abundant				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M31	Field Crew	ADAM, AYESHA	390
Feature ID	TU-N-M31-11	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes
Tablet	AECOM11	Wind Speed (beaufort)	4	
Start Date	5/14/2015 9:54:08 AM	Precipitation	0	
End Date	5/14/2015 10:15:20 AM	Cloud Cover	5.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.883426,Longitude:-80.676897,Altitude:189.1,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:05/14/2015 09:56:05 EDT	3 logs and 2 rock outcrops suitable for basking, water 2 feet deep, emergent vegetation cover 20%			
Description of Reptile Evidence				
Species	Emydoidea blandingii			228
Estimated UTM or distance and direction from vantage point	65			
Estimated Length (cm)	25			
Total Observed	4			
Observed Behaviour	Basking			

# Snake/Turtle Basking - WEC

Map Number	N-M30	Field Crew	ADAM, AYESHA	2358
Feature ID	TU-N-M30-16	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes
Tablet	AECOM11	Wind Speed (beaufort)	4	
Start Date	5/14/2015 11:20:36 AM	Precipitation	0	
End Date	5/14/2015 11:42:42 AM	Cloud Cover	5.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions		Turtle dived as we arrived so species and other features could not be determined	
Latitude:45.879665,Longitude:-80.670265,Altitude:181.2,Speed:0.25722224,Accuracy:2.1,Provider:gps,Time:05/14/2015 11:28:29 EDT	Large wetland associated with lake. Hummocks of Sphagnum and grass. Some floating logs.			
Description of Reptile Evidence				
Species	Unconfirmed species			231
Estimated UTM or distance and direction from vantage point	35			
Estimated Length (cm)	15			
Total Observed	1			
Observed Behaviour	Basking			



# Snake/Turtle Basking - WEC

Species	Emydoidea blandingii	234
Estimated UTM or distance and direction from vantage point	100	
Estimated Length (cm)	18	
Total Observed	1	
Observed Behaviour	Basking	

Species	Midland Painted Turtle	237
Estimated UTM or distance and direction from vantage point	100	
Estimated Length (cm)	13	
Total Observed	1	
Observed Behaviour	Basking	

Species	Emydoidea blandingii	240
Estimated UTM or distance and direction from vantage point	120	
Estimated Length (cm)	20	
Total Observed	1	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC


Species	Midland Painted Turtle	243
Estimated UTM or distance and direction from vantage point	120	
Estimated Length (cm)	10	
Total Observed	2	
Observed Behaviour	Basking	

Species	Midland Painted Turtle	246
Estimated UTM or distance and direction from vantage point	120	
Estimated Length (cm)	15	
Total Observed	2	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Map Number	N-M11	Field Crew	TOM SHORNEY, RICHARD PERAULT		402
Feature ID	TU-N-M11-8(1)	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes	
Tablet	AECOM6	Wind Speed (beaufort)	1		
Start Date	5/14/2015 9:38:56 AM	Precipitation	0		
End Date	5/14/2015 10:02:50 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	TU-N-M11-8	Additional Notes	
Vantage Point Location	Description of local habitat conditions		No turtles observed. Several spot heard calling		
Latitude:45.869174,Longitude:-80.60578,Altitude:187.0,Speed:0.05658889,Accuracy:2.1,Provider:gps,Time:05/14/2015 09:59:41 EDT	Vegetated marsh with several logs and rocky shores for basking. Appears to be muddy bottom, with beaver dam on western edge				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M15	Field Crew	TOM SHORNEY, RICHARD PERREAULT		408
Feature ID	TU-N-M15-15	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM6	Wind Speed (beaufort)	3		
Start Date	5/14/2015 2:05:27 PM	Precipitation	0		
End Date	5/14/2015 2:25:11 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.869672,Longitude:-80.645122,Altitude:178.4,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:05/14/2015 02:14:51 EDT		Large pond with vegetated/muddy. Banks.			
Description of Reptile Evidence					
Species	Compares favourably to Blanding's turtle				249
Estimated UTM or distance and direction from vantage point	Approximately. 350m southwest basking on bank				
Estimated Length (cm)	15				
Total Observed	1				
Observed Behaviour	Basking				

# Snake/Turtle Basking - WEC

Map Number	S-M40	Field Crew	ROB CONOHAN, JOHANNA PERZ, DAVE NORMAN		414
Feature ID	TU-S-M40-19	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	4		
Start Date	5/14/2015 2:00:31 PM	Precipitation	0		
End Date	5/14/2015 2:20:37 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.817074,Longitude:-80.653968,Altitude:181.2,Speed:0.066877775,Accuracy:2.1,Provider:gps,Time:05/14/2015 02:09:13 EDT	Large pond 50m wide by 400m long. Limited basking logs available				
Description of Reptile Evidence					
Species	Blanding's Turtle				252
Estimated UTM or distance and direction from vantage point	50m				
Estimated Length (cm)	35				
Total Observed	3				
Observed Behaviour	Basking				


# Snake/Turtle Basking - WEC

Map Number	N-M46	Field Crew	JULIE ELLIS & KASEY MCKENZIE		420
Feature ID	TU-N-M46-14	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	2		
Start Date	5/14/2015 11:00:31 AM	Precipitation	0		
End Date	5/14/2015 11:25:35 AM	Cloud Cover	5.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.859182,Longitude:-80.696583,Altitude:179.2,Speed:0.03601111,Accuracy:1.75,Provider:gps,Time:05/14/2015 11:26:19 EDT		Open water wetland with rock barren and boggy edges, minimal basking areas			
Description of Reptile Evidence					
Species	Blanding's Turtle				255
Estimated UTM or distance and direction from vantage point	300 m N of vantage point				
Estimated Length (cm)	20				
Total Observed	1				
Observed Behaviour	Basking on floating mat near shore				

# Snake/Turtle Basking - WEC


Map Number	N-M48	Field Crew	JULIE KASEY		426
Feature ID	Tu-n-m48-13	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	1		
Start Date	5/14/2015 1:15:41 PM	Precipitation	0		
End Date	5/14/2015 1:46:58 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		No reptiles		
Latitude:45.872341,Longitude:-80.712788,Altitude:174.2,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:05/14/2015 01:13:14 EDT		Wetland surrounded by rock barren , large islands of Sphagnum with some shubs and trees. sphagnum around edges deep water over 50 cm			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M38	Field Crew	KRISTAN WASHBURN		858
Feature ID	TU-N-M38-12	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM4	Wind Speed (beaufort)	4		
Start Date	5/14/2015 11:00:04 AM	Precipitation	0		
End Date	5/14/2015 11:21:12 AM	Cloud Cover	10.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.866745,Longitude:-80.688817,Altitude:186.1,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:05/14/2015 11:07:51 EDT	Shrub shore fen with open water in the middle				
Description of Reptile Evidence					
Species	[REDACTED]				258
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Species	Blanding's Turtle	261
Estimated UTM or distance and direction from vantage point	216 degrees 80m	
Estimated Length (cm)	20	
Total Observed	2	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	KRISTAN WASHBURN	432
Feature ID	TU-N-M33-3	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes
Tablet	AECOM4	Wind Speed (beaufort)	4	
Start Date	5/14/2015 1:44:37 PM	Precipitation	0	
End Date	5/14/2015 2:07:19 PM	Cloud Cover	5.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.860219,Longitude:-80.666467,Altitude:169.3,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:05/14/2015 02:08:36 EDT	Open water wetland			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	N-M28	Field Crew	WALKER AND CARMICHAEL		882
Feature ID	TU-N-M28-10	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM8	Wind Speed (beaufort)	1		
Start Date	5/14/2015 10:05:12 AM	Precipitation	0		
End Date	5/14/2015 10:27:51 AM	Cloud Cover	10.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Beaver observed in wetland		
Latitude:45.867349,Longitude:-80.66394,Altitude:0.0,Speed:0.14918889,Accuracy:100.0,Provider:gps,Time:05/14/2015 10:17:51 EDT		Open water wetland with logs and dead trees.			
Description of Reptile Evidence					
Species	Midland Painted Turtle				264
Estimated UTM or distance and direction from vantage point	175				
Estimated Length (cm)	20				
Total Observed	4				
Observed Behaviour	Basking				

# Snake/Turtle Basking - WEC

Species	Blanding's Turtle	267
Estimated UTM or distance and direction from vantage point	175m	
Estimated Length (cm)	25	
Total Observed	1	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Map Number	N-M21	Field Crew	ADAM, AYESHA		477
Feature ID	TU-N-M21-9	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	11.00	Weather Notes	
Tablet	AECOM6	Wind Speed (beaufort)	4		
Start Date	5/19/2015 10:42:01 AM	Precipitation	0		
End Date	5/19/2015 10:56:13 AM	Cloud Cover	100.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.878336,Longitude:-80.646659,Altitude:190.7,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:05/19/2015 10:42:45 EDT		Open fen, several small logs(may be too small for basking), veg cover 50%, water depth 15 cm			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M50	Field Crew	ADAM, AYESHA		483
Feature ID	TU-S-M50-7	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	11.00	Weather Notes	
Tablet	AECOM6	Wind Speed (beaufort)	5		
Start Date	5/19/2015 3:09:28 PM	Precipitation	0		
End Date	5/19/2015 3:28:27 PM	Cloud Cover	90.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.82653,Longitude:-80.70919,Altitude:190.6,Speed:0.066877775,Accuracy:1.5,Provider:gps,Time:05/19/2015 03:10:08 EDT		Two beaver dams separating 3 small ponds, no logs, basking sites on edges of ponds and patches of vegetation, 50% veg cover			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M33	Field Crew	JOHANNA PERZ, HEATHER KIME		486
Feature ID	TU-S-M33-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	9.00	Weather Notes	
Tablet	AECOM5	Wind Speed (beaufort)	4	Humid	
Start Date	5/19/2015 1:54:16 PM	Precipitation	0		
End Date	5/19/2015 2:13:51 PM	Cloud Cover	100.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Moose and sandhill crane observed on southern swampy edge of marsh that has a number of snags. Spring peepers heard and a pair of king birds also observed		
Latitude:45.82567,Longitude:-80.647255,Altitude:186.8,Speed:0.051444445,Accuracy:1.5,Provider:gps,Time:05/19/2015 02:03:49 EDT	Beaver pond with water >2 m deep and a few grassy hummocks and rocky islands, a number of logs that could be potential basking sites for turtles . Surrounding habitat is mixedwood forests				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M34	Field Crew	JOHANNA PERZ, HEATHER KIME		492
Feature ID	TU-S-M34-6	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	9.00	Weather Notes	
Tablet	AECOM5	Wind Speed (beaufort)	4	Humid and intermittent sunshine	
Start Date	5/19/2015 2:59:40 PM	Precipitation	0		
End Date	5/19/2015 3:19:06 PM	Cloud Cover	90.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.829808,Longitude:-80.651346,Altitude:191.0,Speed:0.1389,Accuracy:1.5,Provider:gps,Time:05/19/2015 03:08:28 EDT		Marsh near open water, a lot of emergent vegetation, few logs for basking			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Map Number	A-M02	Field Crew	KRISTAN WASHBURN		516
Feature ID	TU-A-M02-23	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	11.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	2		
Start Date	5/19/2015 9:10:40 AM	Precipitation	0		
End Date	5/19/2015 9:30:22 AM	Cloud Cover	40.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.890553,Longitude:-80.545751,Altitude:176.1,Speed:0.05658889,Accuracy:2.4,Provider:gps,Time:05/19/2015 09:24:18 EDT	Open water wetland with some basking logs surrounds by rocks. Some floating vegetation.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	A-M01	Field Crew	KRISTAN WASHBURN	525
Feature ID	TU-A-M01-21	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	2	
Start Date	5/19/2015 10:47:19 AM	Precipitation	0	
End Date	5/19/2015 11:08:12 AM	Cloud Cover	80.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.890047,Longitude:-80.557491,Altitude:173.5,Speed:0.08231111,Accuracy:2.1,Provider:gps,Time:05/19/2015 10:52:59 EDT		Open water wetland with basking logs and floating vegetation... would expect to see turtles		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	A-M01	Field Crew	KRISTAN WASHBURN	531
Feature ID	TU-A-M01-22	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	3	
Start Date	5/19/2015 11:35:31 AM	Precipitation	0	
End Date	5/19/2015 11:55:59 AM	Cloud Cover	80.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.889755,Longitude:-80.562825,Altitude:211.1,Speed:0.1389,Accuracy:2.7,Provider:gps,Time:05/19/2015 11:36:02 EDT	Old quarry no veg lots of rocks			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	N-M2	Field Crew	KRISTAN WASHBURN	534
Feature ID	TU-N-M02-18	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	2	
Start Date	5/19/2015 12:15:17 PM	Precipitation	1	
End Date	5/19/2015 12:35:55 PM	Cloud Cover	95.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.884848,Longitude:-80.577678,Altitude:194.8,Speed:0.0051444443,Accuracy:1.8,Provider:gps,Time:05/19/2015 12:24:30 EDT		Beaver pond with basking logs and floating vegetation		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	N-M21	Field Crew	CASEY O'DRISCOLL	552
Feature ID	TU-N-M21-9	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	4	
Start Date	5/20/2015 11:15:41 AM	Precipitation	0	
End Date	5/20/2015 11:36:57 AM	Cloud Cover	5.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.878536,Longitude:-80.646573,Altitude:186.7,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:05/20/2015 11:16:57 EDT	Semi-open water pond/bog. Emergent and floating vegetation abundant. Floating grass mats and emerging exposed rock surfaces also abundant. Basking logs rare within study area. Depth of water approximately .5-1m deep.			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC


Map Number	N-M31	Field Crew	CASEY O'DRISCOLL	555
Feature ID	TU-N-M31-11	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	5	
Start Date	5/20/2015 1:24:39 PM	Precipitation	0	
End Date	5/20/2015 1:45:09 PM	Cloud Cover	10.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions		Specimen spooked and retreated to water while attempting to capture a better observation photograph.	
Latitude:45.883568,Longitude:-80.677443,Altitude:185.9,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:05/20/2015 01:26:02 EDT	Large open water pond. Some basking logs and floating grass mats present. Some floating aquatic vegetation present. Water body impacted by winds due to large fetch. Depth of water approximately 2-3m.			
Description of Reptile Evidence				
Species	Blanding's Turtle			270
Estimated UTM or distance and direction from vantage point	50m south			
Estimated Length (cm)	20			
Total Observed	1			
Observed Behaviour	Basking on emerging log			

# Snake/Turtle Basking - WEC

Map Number	N-M30	Field Crew	CASEY O'DRISCOLL	1674
Feature ID	TU-N-M30-16	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	5	
Start Date	5/20/2015 2:16:23 PM	Precipitation	0	
End Date	5/20/2015 2:38:43 PM	Cloud Cover	10.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions		Blandings and painted turtle 40m from vantage point retreated back to water before photograph could be taken.	
Latitude:45.879384,Longitude:-80.670114,Altitude:190.8,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:05/20/2015 02:17:36 EDT		Small back bay of large open water pond. Floating and emergent aquatic vegetation present. Floating grass mats abundant. Basking logs rare. Water depth approximately 1m deep.		
Description of Reptile Evidence				
Species	Blanding's Turtle			273
Estimated UTM or distance and direction from vantage point	40m north			
Estimated Length (cm)	20			
Total Observed	1			
Observed Behaviour	Basking on floating grass mat.			

# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	276
Estimated UTM or distance and direction from vantage point	40m north	
Estimated Length (cm)	17	
Total Observed	1	
Observed Behaviour	Basking on floating grass mat	


Species	Midland Painted Turtle	279
Estimated UTM or distance and direction from vantage point	80m northwest	
Estimated Length (cm)	15	
Total Observed	2	
Observed Behaviour	Basking/mating on log	




# Snake/Turtle Basking - WEC

Map Number	N-M15	Field Crew	TOM SHORNEY, AMI ARSENAULT		585
Feature ID	TU-N-M15-15	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	5		
Start Date	5/20/2015 10:00:08 AM	Precipitation	0		
End Date	5/20/2015 10:26:15 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.868534,Longitude:-80.6453,Altitude:183.2,Speed:0.08231111,Accuracy:1.8,Provider:gps,Time:05/20/2015 10:25:47 EDT		Large wetland. Vegetated banks with some mud along shore. Several beaver lodges and logs observed for basking.			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	TU-S-M33	Field Crew	JOHANNA PERZ		1188
Feature ID	TU-S-M33-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM5	Wind Speed (beaufort)	2		
Start Date	5/20/2015 11:29:10 AM	Precipitation	0		
End Date	5/20/2015 11:49:42 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Mama bear with at least one cub observed just south of route to plot. Also saw a Blanding turtle near this vantage point following turtle survey (during snake survey)		
Latitude:45.825595,Longitude:-80.647734,Altitude:196.9,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:05/20/2015 11:33:09 EDT		Beaver pond with rock barren on western edge and gramminoid edge on eastern side, lots of logs and graminoid and moss covered hummocks			
Description of Reptile Evidence					
Species	Snapping Turtle				285
Estimated UTM or distance and direction from vantage point	40				
Estimated Length (cm)	50				
Total Observed	1				
Observed Behaviour	Briefly basking on grassy hummock before diving				


# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	288
Estimated UTM or distance and direction from vantage point	40	
Estimated Length (cm)	20	
Total Observed	1	
Observed Behaviour	Briefly basking near snapping turtle, also dove	


# Snake/Turtle Basking - WEC

Map Number	S-M33	Field Crew	JOHANNA PERZ		597
Feature ID	TU-S-M33-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM5	Wind Speed (beaufort)	2		
Start Date	5/20/2015 11:29:21 AM	Precipitation	0		
End Date	5/20/2015 11:49:40 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	2	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.825786,Longitude:-80.647522,Altitude:197.6,Speed:0.19548889,Accuracy:1.5,Provider:gps,Time:05/20/2015 11:41:55 EDT	Lots of small moss and gramminoid hummocks, lots of logs although few occupied and many a good distance away				
Description of Reptile Evidence					
Species	Blanding's Turtle				291
Estimated UTM or distance and direction from vantage point	30				
Estimated Length (cm)	30				
Total Observed	1				
Observed Behaviour	Basking on moss hummock near dead snags/debris				

# Snake/Turtle Basking - WEC

Map Number	N-M46	Field Crew	KASEY MCKENZIE		1212
Feature ID	TU-N-M46-14	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	2		
Start Date	5/20/2015 10:10:49 AM	Precipitation	0		
End Date	5/20/2015 10:41:22 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.859261,Longitude:-80.696765,Altitude:0.0,Speed:0.1852,Accuracy:100.0,Provider:gps,Time:05/20/2015 10:25:04 EDT	Open water wetland, not many Basking spots, turtles using bog floating mats on edge of wetland				
Description of Reptile Evidence					
Species	Snapping Turtle				294
Estimated UTM or distance and direction from vantage point	30m				
Estimated Length (cm)	40				
Total Observed	3				
Observed Behaviour	Basking				


# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	297
Estimated UTM or distance and direction from vantage point	30m	
Estimated Length (cm)	15	
Total Observed	1	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Map Number	N-M48	Field Crew	KASEY MCKENZIE		612
Feature ID	TU-N-M48-13	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	3		
Start Date	5/20/2015 12:07:51 PM	Precipitation	0		
End Date	5/20/2015 12:24:12 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.872356,Longitude:-80.712381,Altitude:184.2,Speed:0.051444445,Accuracy:2.1,Provider:gps,Time:05/20/2015 12:12:40 EDT	Many bog like islands/floating mats and a few logs for basking, many standing dead small trees				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M38	Field Crew	KASEY MCKENZIE		615
Feature ID	TU-N-M38-12	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	4		
Start Date	5/20/2015 1:45:08 PM	Precipitation	0		
End Date	5/20/2015 2:02:24 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.869843,Longitude:-80.692398,Altitude:181.8,Speed:0.03601111,Accuracy:1.75,Provider:gps,Time:05/20/2015 01:55:27 EDT	No basking logs present; turtles using floating mats on edges				
Description of Reptile Evidence					
Species	Midland Painted Turtle				300
Estimated UTM or distance and direction from vantage point	20m				
Estimated Length (cm)	15				
Total Observed	6				
Observed Behaviour	Basking				



# Snake/Turtle Basking - WEC

Map Number	S-M31	Field Crew	ADAM MCCLELLAND	2472
Feature ID	TU-S-M31-1(2)	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	7.00	Weather Notes
Tablet	AECOM2	Wind Speed (beaufort)	4	
Start Date	5/20/2015 9:26:08 AM	Precipitation	0	
End Date	5/20/2015 9:46:38 AM	Cloud Cover	0.00	
Survey Type	Turtle	Vantage Point #	2	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.840645,Longitude:-80.656569,Altitude:191.0,Speed:0.015433333,Accuracy:1.25,Provider:gps,Time:05/20/2015 09:26:57 EDT		Very large beaver pond, numerous fallen logs suitable for basking, small patch of vegetation cover		
Description of Reptile Evidence				
Species	Midland Painted Turtle			303
Estimated UTM or distance and direction from vantage point	100 m			
Estimated Length (cm)	20			
Total Observed	3			
Observed Behaviour	Basking			

# Snake/Turtle Basking - WEC

Species	Emydoidea blandingii	306
Estimated UTM or distance and direction from vantage point	220 m	
Estimated Length (cm)	30	
Total Observed	1	
Observed Behaviour	Basking	
Species	Emydoidea blandingii	309
Estimated UTM or distance and direction from vantage point	220 m	
Estimated Length (cm)	25	
Total Observed	1	
Observed Behaviour	Basking	
Species	Unconfirmed species	312
Estimated UTM or distance and direction from vantage point	230 m	
Estimated Length (cm)	15	
Total Observed	1	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Map Number	S-M31	Field Crew	ADAM MCCLELLAND	621
Feature ID	TU-S-M31-1(1)	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	7.00	Weather Notes
Tablet	AECOM2	Wind Speed (beaufort)	4	
Start Date	5/20/2015 10:07:32 AM	Precipitation	0	
End Date	5/20/2015 10:27:30 AM	Cloud Cover	0.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.840051,Longitude:-80.655421,Altitude:185.9,Speed:0.07202222,Accuracy:2.1,Provider:gps,Time:05/20/2015 10:08:26 EDT		Very large beaver pond, several small fallen logs, significant veg cover close to shore, shaded in the morning		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	S-M14	Field Crew	ADAM MCCLELLAND	627
Feature ID	TU-S-M14-2	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	11.00	Weather Notes
Tablet	AECOM2	Wind Speed (beaufort)	5	
Start Date	5/20/2015 12:59:02 PM	Precipitation	0	
End Date	5/20/2015 1:19:28 PM	Cloud Cover	0.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.848148,Longitude:-80.635942,Altitude:190.4,Speed:0.010288889,Accuracy:1.75,Provider:gps,Time:05/20/2015 12:59:56 EDT	Large open wetland, several basking logs, significant emergent veg cover			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	S-M14	Field Crew	ADAM MCCLELLAND	633
Feature ID	TU-S-M14-2	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes
Tablet	AECOM2	Wind Speed (beaufort)	5	
Start Date	5/20/2015 2:24:50 PM	Precipitation	0	
End Date	5/20/2015 2:42:40 PM	Cloud Cover	0.00	
Survey Type	Turtle	Vantage Point #	2	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.846957,Longitude:-80.635779,Altitude:198.7,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:05/20/2015 02:24:14 EDT	Large open wetland, several basking logs, 50% veg cover, water depth 15 cm			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	SARAH RICHER	636
Feature ID	TU-S-M17-4(1)	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes Was -2 C this morning at Joe's camp
Tablet	AECOM3	Wind Speed (beaufort)	3	
Start Date	5/20/2015 11:20:31 AM	Precipitation	0	
End Date	5/20/2015 11:40:41 AM	Cloud Cover	0.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.833018,Longitude:-80.632485,Altitude:194.0,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:05/20/2015 11:29:23 EDT	Beaver pond, lots H2O & dead trees			
Description of Reptile Evidence				
Species	Midland Painted Turtle			318
Estimated UTM or distance and direction from vantage point	100m 40°NE			
Estimated Length (cm)	12			
Total Observed	1			
Observed Behaviour	Basking; pic is of habitat			

# Snake/Turtle Basking - WEC


Map Number	S-M17	Field Crew	SARAH RICHER	1278
Feature ID	TU-S-M17-4(2)	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes Was -2 C this morning at Joe's camp
Tablet	AECOM3	Wind Speed (beaufort)	4	
Start Date	5/20/2015 11:50:22 AM	Precipitation	0	
End Date	5/20/2015 12:10:30 PM	Cloud Cover	0.00	
Survey Type	Turtle	Vantage Point #	2	Additional Notes
Vantage Point Location	Description of local habitat conditions		Pied-billed grebe also present	
Latitude:45.831821,Longitude:-80.634592,Altitude:191.3,Speed:0.06173333,Accuracy:1.8,Provider:gps,Time:05/20/2015 12:13:25 EDT		Beaver pond dominated by Wild rice (?)		
Description of Reptile Evidence				
Species	Snapping Turtle			321
Estimated UTM or distance and direction from vantage point	100 m south			
Estimated Length (cm)	20			
Total Observed	1			
Observed Behaviour	Basking on log			

# Snake/Turtle Basking - WEC

Species	Unconfirmed species	324
Estimated UTM or distance and direction from vantage point	150m west	
Estimated Length (cm)	10	
Total Observed	2	
Observed Behaviour	Basking on waters edge	




# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	SARAH RICHER	645
Feature ID	TU-S-M17-5	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes Was -2 C this morning at Joe's camp
Tablet	AECOM3	Wind Speed (beaufort)	3	
Start Date	5/20/2015 1:38:40 PM	Precipitation	0	
End Date	5/20/2015 1:58:51 PM	Cloud Cover	0.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.830433,Longitude:-80.625511,Altitude:194.7,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:05/20/2015 01:55:03 EDT	Lots of Emergent veg in large mats, exposed mudflats along wetland edge, water level lower at this end of wetland			
Description of Reptile Evidence				
Species	Midland Painted Turtle			327
Estimated UTM or distance and direction from vantage point	130 m NW of point			
Estimated Length (cm)	12			
Total Observed	1			
Observed Behaviour	Basking on log			

# Snake/Turtle Basking - WEC

Map Number	N-M11	Field Crew	NATALIYA SIMONOVA JILL DEMAN		651
Feature ID	TU-N-M11-8(1)	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM7	Wind Speed (beaufort)	2	Forecast	
Start Date	5/20/2015 3:23:11 PM	Precipitation	0		
End Date	5/20/2015 3:23:24 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		No turtle on survey area. It is not good spot.		
Latitude:45.869188,Longitude:-80.605605,Altitude:188.7,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:05/20/2015 03:26:26 EDT		Marsh area open water table is small 10% Communities with mergent plants and submergent civer89%			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M33	Field Crew	OLGA HROPACH JOHANNA PERZ	726
Feature ID	TU-S-M33-20	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	17.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	3	
Start Date	5/28/2015 9:33:14 AM	Precipitation	0	
End Date	5/28/2015 9:58:00 AM	Cloud Cover	60.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.825412,Longitude:-80.646982,Altitude:189.3,Speed:0.36011112,Accuracy:2.4,Provider:gps,Time:05/28/2015 09:30:06 EDT	Beaver pond with many grassy hommocks, rock islands and basking logs. Edge dominated by grasses substrate includes muck and also bedrock.			
Description of Reptile Evidence				
Species	Blanding's Turtle			351
Estimated UTM or distance and direction from vantage point	North >100 m			
Estimated Length (cm)	30			
Total Observed	1			
Observed Behaviour	Basking			


# Snake/Turtle Basking - WEC

Map Number	S-M34	Field Crew	JOHANNA PERZ, OLGA HROPACH		735
Feature ID	TU-S-M34-6	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	1	Humid	
Start Date	5/28/2015 11:54:10 AM	Precipitation	0		
End Date	5/28/2015 12:15:23 PM	Cloud Cover	100.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.82956,Longitude:-80.651452,Altitude:195.5,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:05/28/2015 11:59:40 EDT	Open water pond with yellow lily and a few logs suitable for basking; also clumps of emergent vegetation and very shallow marsh on north side				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	A-M1	Field Crew	TOM SHORNEY, SARAH RICHER		747
Feature ID	TU-A-M01-22	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	21.00	Weather Notes	
Tablet	AECOM3	Wind Speed (beaufort)	1		
Start Date	5/28/2015 11:06:26 AM	Precipitation	0		
End Date	5/28/2015 11:26:14 AM	Cloud Cover	100.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Surrounded by high cliffs (15 m approx) that rise above water surface on all sides except for one access road		
Latitude:45.889793,Longitude:-80.562774,Altitude:210.1,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:05/28/2015 11:13:46 EDT	Old rock quarry; no basking logs but many rocks & boulders along waters edge & just below surface that can easily be accessed as basking surface				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	A-M1	Field Crew	TOM SHORNEY, SARAH RICHER		1500
Feature ID	TU-A-M01-21	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	23.00	Weather Notes	
Tablet	AECOM3	Wind Speed (beaufort)	1		
Start Date	5/28/2015 12:10:59 PM	Precipitation	0		
End Date	5/28/2015 12:30:11 PM	Cloud Cover	100.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.890509,Longitude:-80.5583,Altitude:0.0,Speed:0.087455556,Accuracy:100.0,Provider:gps,Time:05/28/2015 12:41:20 EDT		Beaver pond, MANY fallen dead trees for basking, pond 200m x 50m			
Description of Reptile Evidence					
Species	Midland Painted Turtle				357
Estimated UTM or distance and direction from vantage point	50-100 m south				
Estimated Length (cm)	12				
Total Observed	15				
Observed Behaviour	Basking				

# Snake/Turtle Basking - WEC


Species	Blanding's Turtle	360
Estimated UTM or distance and direction from vantage point	100 m s/sw	
Estimated Length (cm)	15	
Total Observed	1	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Map Number	A-M2	Field Crew	TOM SHORNEY	1506
Feature ID	TU-A-M02-23	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	24.00	Weather Notes
Tablet	AECOM3	Wind Speed (beaufort)	1	
Start Date	5/28/2015 1:50:18 PM	Precipitation	0	
End Date	5/28/2015 2:10:46 PM	Cloud Cover	100.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions		Photos are of habitat, turtles too far away to photograph with this crappy tablet camera. There is much more of this wetland we can't see	
Latitude:45.890646,Longitude:-80.545548,Altitude:193.0,Speed:0.010288889,Accuracy:1.75,Provider:gps,Time:05/28/2015 01:56:14 EDT		Huge wetland/beaver pond, rock islands, lots of logs		
Description of Reptile Evidence				
Species	Blanding's Turtle			363
Estimated UTM or distance and direction from vantage point	100 m south			
Estimated Length (cm)	15			
Total Observed	2			
Observed Behaviour	Basking			



# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	366
Estimated UTM or distance and direction from vantage point	100 m south	
Estimated Length (cm)	10	
Total Observed	2	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Map Number	S-m7	Field Crew	JASON NORONHA	777
Feature ID	Tu-s-m7-17	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes
Tablet	AECOM14	Wind Speed (beaufort)	0	
Start Date	5/29/2015 10:00:52 AM	Precipitation	0	
End Date	5/29/2015 10:20:25 AM	Cloud Cover	50.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions		Treed marsh ..not much deadfall	
Latitude:45.848805,Longitude:-80.600911,Altitude:202.3,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:05/29/2015 09:31:32 EDT				
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	N-M28	Field Crew	JOHANNA PERZ		792
Feature ID	TU-N-M28-10	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	2		
Start Date	5/29/2015 9:42:28 AM	Precipitation	0		
End Date	5/29/2015 10:03:51 AM	Cloud Cover	20.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.867252,Longitude:-80.664012,Altitude:192.0,Speed:0.0926,Accuracy:1.5,Provider:gps,Time:05/29/2015 09:47:08 EDT	Beaver pond with a few logs, numerous grassy mounds, snags. Edges of pond are steep rock barren on many sides				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M40	Field Crew	KRISTAN WASHBURN	795
Feature ID	TU-S-M40-19	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	2	
Start Date	5/29/2015 9:18:50 AM	Precipitation	0	
End Date	5/29/2015 9:38:23 AM	Cloud Cover	60.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.817069,Longitude:-80.65398,Altitude:185.9,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:05/29/2015 09:28:06 EDT		Open water wetland with emergent floating mats, and surrounded by rock		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	N-M48	Field Crew	TOM SHORNEY , SARAH RICHER		2448
Feature ID	TU-N-M48-13	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	22.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	6		
Start Date	5/29/2015 10:18:58 AM	Precipitation	0		
End Date	5/29/2015 10:52:28 AM	Cloud Cover	5.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.870699,Longitude:-80.713242,Altitude:181.2,Speed:0.0463,Accuracy:1.5,Provider:gps,Time:05/29/2015 10:25:48 EDT	Large pond feature with several mats of vegetation scattered throughtout. Shoreline is comprised of a combination of rock and shrub by vegetation.				
Description of Reptile Evidence					
Species					387
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Species	Snapping Turtle	390
Estimated UTM or distance and direction from vantage point	20 m west	
Estimated Length (cm)	20	
Total Observed	1	
Observed Behaviour	Basking on vegetated mat	

Species	Midland Painted Turtle	393
Estimated UTM or distance and direction from vantage point	60 southwest	
Estimated Length (cm)	15	
Total Observed	2	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Map Number	N-m31	Field Crew	JASON NORONHA. NATALIYA SIMONOVA		867
Feature ID	Tu-n-m31-11	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM14	Wind Speed (beaufort)	0		
Start Date	6/2/2015 9:08:21 AM	Precipitation	0		
End Date	6/2/2015 9:28:30 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.883355,Longitude:-80.6769,Altitude:188.3,Speed:0.06173333,Accuracy:1.5,Provider:gps,Time:06/02/2015 09:09:43 EDT		Lots of floating veg and deadfall logs			
Description of Reptile Evidence					
Species	Blanding turtles				408
Estimated UTM or distance and direction from vantage point	60				
Estimated Length (cm)	3				
Total Observed	2				
Observed Behaviour	Basking on a log close to a rock barren				


# Snake/Turtle Basking - WEC

Map Number	N-m30	Field Crew	JASON NORONHA. NATALIYA SIMONOVA		2610
Feature ID	Tu-n-m30-16	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM14	Wind Speed (beaufort)	1		
Start Date	6/2/2015 10:25:28 AM	Precipitation	0		
End Date	6/2/2015 10:45:07 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.879628,Longitude:-80.670204,Altitude:184.3,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:06/02/2015 10:30:44 EDT		Lots of dead fall logs. Marshy. Lots of floating veg			
Description of Reptile Evidence					
Species	Blanding's Turtle				411
Estimated UTM or distance and direction from vantage point	50 m N				
Estimated Length (cm)	3				
Total Observed	1				
Observed Behaviour	Basking on a log				




# Snake/Turtle Basking - WEC


Species	Blanding's Turtle	414
Estimated UTM or distance and direction from vantage point	60m N	
Estimated Length (cm)	4	
Total Observed	3	
Observed Behaviour	Basking on rock barren	


Species	Blanding turtles	417
Estimated UTM or distance and direction from vantage point	100m E	
Estimated Length (cm)	3	
Total Observed	6	
Observed Behaviour	Basking on same log	

# Snake/Turtle Basking - WEC

Map Number	N-M28	Field Crew	ADAM HEATHER MIKE		2637
Feature ID	TU-N-M28-10	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM2	Wind Speed (beaufort)	1		
Start Date	6/2/2015 12:12:03 PM	Precipitation	0		
End Date	6/2/2015 12:46:11 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.867197,Longitude:-80.663783,Altitude:178.6,Speed:0.041155554,Accuracy:2.1,Provider:gps,Time:06/02/2015 12:14:14 EDT	Pond with floating logs and standing dead trees. Vegetated islands also suitable for basking on edges. Some areas where water meets rock are suitable angles for basking.				
Description of Reptile Evidence					
Species	Emydoidea blandingii				420
Estimated UTM or distance and direction from vantage point	50 m northwest from vantage point 1				
Estimated Length (cm)	15				
Total Observed	2				
Observed Behaviour	Basking				

# Snake/Turtle Basking - WEC


Species	Midland Painted Turtle	423
Estimated UTM or distance and direction from vantage point	20 m NW from vantage point 1	
Estimated Length (cm)	20	
Total Observed	2	
Observed Behaviour	Basking	

Species	Midland Painted Turtle	426
Estimated UTM or distance and direction from vantage point	50 m NW of vantage point 1	
Estimated Length (cm)	12	
Total Observed	1	
Observed Behaviour	Basking	


# Snake/Turtle Basking - WEC

Map Number	A-M1	Field Crew	JOHANNA PERZ, ROB CONOHAN		903
Feature ID	TU-A-M1-22	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	1		
Start Date	6/2/2015 10:22:48 AM	Precipitation	0		
End Date	6/2/2015 10:42:18 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.889788,Longitude:-80.56259,Altitude:210.5,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:06/02/2015 10:25:15 EDT	Small, shallow pond with cattails on east side of centroid ; larger deep quarry on west side of plot centroid; both lack logs and hummocks for basking and not very suitable				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	A-M1	Field Crew	JOHANNA PERZ, ROB CONOHAN		1818
Feature ID	TU-A-M1-21	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	2		
Start Date	6/2/2015 11:00:05 AM	Precipitation	0		
End Date	6/2/2015 11:18:33 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.890552,Longitude:-80.558262,Altitude:201.2,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:06/02/2015 11:04:57 EDT		Large beave pond with countless logs and small sedge clumps; yellow pond lily			
Description of Reptile Evidence					
Species	Midland Painted Turtle				435
Estimated UTM or distance and direction from vantage point	50m south-east				
Estimated Length (cm)	20				
Total Observed	11				
Observed Behaviour	Basking on logs and vegetation				

# Snake/Turtle Basking - WEC

Species	Blanding's Turtle	438
Estimated UTM or distance and direction from vantage point	40m south-east	
Estimated Length (cm)	30	
Total Observed	2	
Observed Behaviour	Basking on log	

# Snake/Turtle Basking - WEC

Map Number	A-M2	Field Crew	ROB CONOHAN, JOHANNA PERZ		1824
Feature ID	TU-A-M2-23	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	1		
Start Date	6/2/2015 12:00:27 PM	Precipitation	0		
End Date	6/2/2015 12:20:51 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.890583,Longitude:-80.545519,Altitude:190.6,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:06/02/2015 12:09:07 EDT		Large beaver pond with some logs and vegetation mats, yellow pond lily			
Description of Reptile Evidence					
Species	Blanding's Turtle				441
Estimated UTM or distance and direction from vantage point	50m south				
Estimated Length (cm)	30				
Total Observed	1				
Observed Behaviour	Basking				

# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	444
Estimated UTM or distance and direction from vantage point	50m south	
Estimated Length (cm)	15	
Total Observed	1	
Observed Behaviour	Basking	



# Snake/Turtle Basking - WEC

Map Number	N-M46	Field Crew	AMI ARSENAULT KRISTAN WASHBURN		924
Feature ID	TU-N-M46-14	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	1		
Start Date	6/2/2015 10:28:40 AM	Precipitation	0		
End Date	6/2/2015 10:48:41 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.859506,Longitude:-80.696799,Altitude:181.0,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:06/02/2015 10:30:24 EDT		Open water water course, good riparian vegetation. No basking logs or rocks in water course .			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	N-M48	Field Crew	AMI ARSENAULT KRISTAN WASHBURN		930
Feature ID	TU-N-M48-13	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	2		
Start Date	6/2/2015 11:34:19 AM	Precipitation	0		
End Date	6/2/2015 11:55:30 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.872249,Longitude:-80.712409,Altitude:175.2,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:06/02/2015 11:36:17 EDT	Large pond with many floating mats of vegetation. Dead snags in water.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC


Map Number	S-M14	Field Crew	AMI ARSENAULT		933
Feature ID	TU-S-M14-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	5		
Start Date	6/3/2015 8:34:39 AM	Precipitation	0		
End Date	6/3/2015 8:56:35 AM	Cloud Cover	30.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.848168,Longitude:-80.635916,Altitude:184.5,Speed:0.015433333,Accuracy:2.4,Provider:gps,Time:06/03/2015 08:35:24 EDT	Bedrock cliffs surrounding nice wetland with logs of dead snags and logs in water, as well as thick vegetation growth in riparian zone and Hummocks in wetland. No turtles observed. Walked south along wetland ~50 looking for turtles.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M31	Field Crew	AMI ARSENAULT	2826
Feature ID	TU-S-M31-1(2)	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes
Tablet	AECOM12	Wind Speed (beaufort)	4	
Start Date	6/3/2015 10:29:09 AM	Precipitation	0	
End Date	6/3/2015 10:50:21 AM	Cloud Cover	35.00	
Survey Type	Turtle	Vantage Point #	2	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.839893,Longitude:-80.655436,Altitude:187.1,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/03/2015 10:29:44 EDT	Vantage point located west of snake survey location. Large beaver pond with bedrock outcrops and some fallen logs in water. Aquatic veg in water.			
Description of Reptile Evidence				
Species	Blanding's Turtle			447
Estimated UTM or distance and direction from vantage point	20m			
Estimated Length (cm)	25			
Total Observed	2			
Observed Behaviour	Basking on log in water			

# Snake/Turtle Basking - WEC

Species	Blanding's Turtle	450
Estimated UTM or distance and direction from vantage point	50m	
Estimated Length (cm)	25	
Total Observed	1	
Observed Behaviour	Basking on rock outcrops in grasses beside pond	

Species	Midland Painted Turtle	453
Estimated UTM or distance and direction from vantage point	55	
Estimated Length (cm)	10	
Total Observed	1	
Observed Behaviour	Basking on log in pond	


# Snake/Turtle Basking - WEC

Map Number	S-M31	Field Crew	AMI ARSENAULT	945
Feature ID	TU-S-M31(1)	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes Wispy clouds
Tablet	AECOM12	Wind Speed (beaufort)	5	
Start Date	6/3/2015 11:10:41 AM	Precipitation	0	
End Date	6/3/2015 11:31:12 AM	Cloud Cover	60.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.840713,Longitude:-80.656437,Altitude:184.2,Speed:0.0051444443,Accuracy:2.1,Provider:gps,Time:06/03/2015 10:58:25 EDT	Vantage point north west of first vantage point, across the pond . No new turtles observed. Lots of logs in water and rock outcrops. A bit windy and overcast for majority of survey time .			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC


Map Number	S-M34	Field Crew	AMI ARSENAULT		948
Feature ID	TU-S-M34-6	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	4	Almost overcast but still bright	
Start Date	6/3/2015 12:26:23 PM	Precipitation	0		
End Date	6/3/2015 12:47:53 PM	Cloud Cover	80.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.829544,Longitude:-80.651525,Altitude:190.1,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:06/03/2015 12:27:13 EDT	Large beaver pond with lots of Aquatic veg (pondweed). Some standing snags. Lots of grasses along riparian sections, leading to rock barren outcrops.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M33	Field Crew	AMI ARSENAULT	1908
Feature ID	TU-S-M33-20	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes
Tablet	AECOM12	Wind Speed (beaufort)	4	
Start Date	6/3/2015 1:37:37 PM	Precipitation	0	
End Date	6/3/2015 1:59:44 PM	Cloud Cover	60.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.825813,Longitude:-80.64752,Altitude:184.8,Speed:0.066877775,Accuracy:1.8,Provider:gps,Time:06/03/2015 01:39:13 EDT	Large beaver pond. Vantage point on rock barren outcrop. Lots of pondweed. Tree stumps in water. Tall dead snags.			
Description of Reptile Evidence				
Species	Blanding's Turtle			456
Estimated UTM or distance and direction from vantage point	50m			
Estimated Length (cm)	20			
Total Observed	1			
Observed Behaviour	Basking on fallen log in water			




# Snake/Turtle Basking - WEC

Species	Blanding's Turtle	459
Estimated UTM or distance and direction from vantage point	60m	
Estimated Length (cm)	30	
Total Observed	1	
Observed Behaviour	Basking on dead log near riparian grass	


# Snake/Turtle Basking - WEC


Map Number	N-M15	Field Crew	KRISTAN WASHBURN	990
Feature ID	TU-N-M15-15	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	4	
Start Date	6/3/2015 8:55:20 AM	Precipitation	0	
End Date	6/3/2015 9:18:23 AM	Cloud Cover	30.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.868466,Longitude:-80.645383,Altitude:182.2,Speed:0.0051444443,Accuracy:1.8,Provider:gps,Time:06/03/2015 09:03:52 EDT	Open water with floating mats of sphagnum and ericsceous shrubs			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	N-M38	Field Crew	KRISTAN WASHBURN	4980
Feature ID	TU-N-M38-12	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	4	
Start Date	6/3/2015 12:50:17 PM	Precipitation	0	
End Date	6/3/2015 1:15:56 PM	Cloud Cover	25.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.866821,Longitude:-80.68891,Altitude:188.4,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:06/03/2015 01:02:07 EDT	Shrub shore fen with open water in the middle.			
Description of Reptile Evidence				
Species	Blanding's Turtle			462
Estimated UTM or distance and direction from vantage point	230 degrees 90m			
Estimated Length (cm)	30			
Total Observed	1			
Observed Behaviour	Basking with a painted turtle in his back			


# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	465
Estimated UTM or distance and direction from vantage point	230 degrees 90m	
Estimated Length (cm)	10	
Total Observed	1	
Observed Behaviour	Basking	


Species	Blanding's Turtle	468
Estimated UTM or distance and direction from vantage point	241 degrees 90m	
Estimated Length (cm)	20	
Total Observed	2	
Observed Behaviour	Basking	

Species	Blanding's Turtle	471
Estimated UTM or distance and direction from vantage point	254 degrees 90m	
Estimated Length (cm)	32	
Total Observed	1	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Species	Blanding's Turtle	474
Estimated UTM or distance and direction from vantage point	235 degrees 60m	
Estimated Length (cm)	35	
Total Observed	1	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Map Number	N-M2	Field Crew	KRISTAN WASHBURN	999
Feature ID	TU-N-M02-18	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	22.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	3	
Start Date	6/3/2015 2:55:34 PM	Precipitation	0	
End Date	6/3/2015 3:25:02 PM	Cloud Cover	5.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.885171,Longitude:-80.577016,Altitude:187.5,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:06/03/2015 03:09:42 EDT	Open water marsh lots of floating and emergent plants and basking logs			
Description of Reptile Evidence				
Species	Blanding's Turtle			477
Estimated UTM or distance and direction from vantage point	203 degrees 30m			
Estimated Length (cm)	35			
Total Observed	1			
Observed Behaviour	Basking on log			

# Snake/Turtle Basking - WEC

Map Number	S-M7	Field Crew	OLGA HROPACH SARAH RICHER		2022
Feature ID	TU-S-M7-17	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	17.00	Weather Notes	
Tablet	AECOM5	Wind Speed (beaufort)	1		
Start Date	6/2/2015 1:35:58 PM	Precipitation	0		
End Date	6/2/2015 1:55:50 PM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.849517,Longitude:-80.601445,Altitude:199.8,Speed:0.5658889,Accuracy:1.8,Provider:gps,Time:06/02/2015 01:51:53 EDT	Beaver pond , active beaver lodge with fresh chewed trees, lots of logs and veg mats for basking				
Description of Reptile Evidence					
Species	Blanding's Turtle				480
Estimated UTM or distance and direction from vantage point	18 m east				
Estimated Length (cm)	15				
Total Observed	1				
Observed Behaviour	Basking				

# Snake/Turtle Basking - WEC

Species	Snapping turtle	483
Estimated UTM or distance and direction from vantage point	100 m east	
Estimated Length (cm)	20	
Total Observed	2	
Observed Behaviour	Basking	




# Snake/Turtle Basking - WEC

Map Number	S-M40	Field Crew	KASEY & CASEY		1014
Feature ID	TU-S-M40-19	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM7	Wind Speed (beaufort)	2		
Start Date	6/4/2015 10:11:54 AM	Precipitation	0		
End Date	6/4/2015 10:33:48 AM	Cloud Cover	20.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Saw one individual poke it's head out a couple times, not enough to ID		
Latitude:45.81706,Longitude:-80.653989,Altitude:185.6,Speed:0.05658889,Accuracy:1.5,Provider:gps,Time:06/04/2015 10:15:15 EDT	Marsh with many floating mats and bog edges, some dead standing trees				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	S-M50	Field Crew	ADAM HEATHER RON		1023
Feature ID	TU-S-M50-7	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM4	Wind Speed (beaufort)	3		
Start Date	6/4/2015 10:08:36 AM	Precipitation	0		
End Date	6/4/2015 10:28:55 AM	Cloud Cover	20.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.826749,Longitude:-80.709085,Altitude:178.7,Speed:0.066877775,Accuracy:2.4,Provider:gps,Time:06/04/2015 10:18:29 EDT	Two beaver dams create 3 sections of standing water with so. Vegetation including speckled alder, ferns, and emergents. Some basking logs at present but only a few. Site is bordered by mixed swamp. Water depth less than 2 m. Minimal. South-facing basking				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	S-M7	Field Crew	KASEY & NATALIYA		1035
Feature ID	TU-S-M7-17	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	22.00	Weather Notes	
Tablet	AECOM7	Wind Speed (beaufort)	2		
Start Date	6/9/2015 2:54:54 PM	Precipitation	0		
End Date	6/9/2015 3:14:10 PM	Cloud Cover	25.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.848938,Longitude:-80.601056,Altitude:197.3,Speed:0.0926,Accuracy:2.1,Provider:gps,Time:06/09/2015 02:56:32 EDT	Small section of bigger wetland, grassy patches, a lot of floating veg and some trees				
Description of Reptile Evidence					
Species	Snapping Turtle				486
Estimated UTM or distance and direction from vantage point	7m W				
Estimated Length (cm)	30				
Total Observed	1				
Observed Behaviour	Swimming and checking us out				

# Snake/Turtle Basking - WEC

Map Number	s-m31	Field Crew	JULIE ELLIS		2076
Feature ID	Tu-s-m31-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM18	Wind Speed (beaufort)	1		
Start Date	6/9/2015 9:08:45 AM	Precipitation	0		
End Date	6/9/2015 9:28:55 AM	Cloud Cover	10.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Forgot to take GPS coordinates during survey, took at second vantage point		
Latitude:45.84001,Longitude:-80.655539,Altitude:187.8,Speed:0.04115554,Accuracy:2.1,Provider:gps,Time:06/09/2015 09:53:08 EDT		Large wetland beaver pond and woodland adjacent , many banks logs and rocks for basking			
Description of Reptile Evidence					
Species	Midland Painted Turtle				489
Estimated UTM or distance and direction from vantage point	50 m north				
Estimated Length (cm)	25				
Total Observed	1				
Observed Behaviour	Basking				

# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	492
Estimated UTM or distance and direction from vantage point	50 m south	
Estimated Length (cm)	20	
Total Observed	1	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Map Number	S-m31	Field Crew	JULIE	1041
Feature ID	Tu-s-m31-1	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes
Tablet	AECOM18	Wind Speed (beaufort)	1	
Start Date	6/9/2015 9:32:55 AM	Precipitation	0	
End Date	6/9/2015 9:57:10 AM	Cloud Cover	10.00	
Survey Type	Turtle	Vantage Point #	2	Additional Notes
Vantage Point Location	Description of local habitat conditions		No turtles	
Latitude:45.840014,Longitude:-80.655539,Altitude:188.0,Speed:0.051444445,Accuracy:1.75,Provider:gps,Time:06/09/2015 09:56:07 EDT	Large wetland beaver pond and woodland adjacent , many banks logs and rocks for basking			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC


Map Number	S-m34	Field Crew	JULIE ELLIS		1047
Feature ID	Tu-s-m34-6	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM18	Wind Speed (beaufort)	2		
Start Date	6/9/2015 11:40:27 AM	Precipitation	0		
End Date	6/9/2015 12:01:34 PM	Cloud Cover	10.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		None		
Latitude:45.829595,Longitude:-80.651873,Altitude:188.7,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:06/09/2015 11:54:00 EDT		Large wetland between 2 Rock barrens			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-m33	Field Crew	JULIE ELLIS		1050
Feature ID	TU-S-M33-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM18	Wind Speed (beaufort)	0		
Start Date	6/9/2015 12:40:33 PM	Precipitation	0		
End Date	6/9/2015 1:03:37 PM	Cloud Cover	15.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.825718,Longitude:-80.647463,Altitude:184.1,Speed:0.29837778,Accuracy:1.5,Provider:gps,Time:06/09/2015 01:04:57 EDT		Very large wetland with rocky islands, logs. Emergent and submergent cover. Forest on the north, rock barren on the south.			
Description of Reptile Evidence					
Species	Blanding's Turtle				495
Estimated UTM or distance and direction from vantage point	200 m north east of vantage point				
Estimated Length (cm)	20				
Total Observed	1				
Observed Behaviour	Basking on log at edge on opposite side of wetland				




# Snake/Turtle Basking - WEC

Map Number	S-M14	Field Crew	JOHANNA PERZ		1056
Feature ID	TU-S-M14-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	1	Wispy	
Start Date	6/9/2015 9:05:34 AM	Precipitation	0		
End Date	6/9/2015 9:25:20 AM	Cloud Cover	7.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Alarm calling killdeer pair, turtle spotted at northern edge of complex		
Latitude:45.847938,Longitude:-80.63615,Altitude:192.9,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:06/09/2015 09:27:48 EDT		Marsh with emergent vegetation (cattails, sedge), mosaic of vegetation mats and water of varying depths, a number of logs that would be suitable for basking are also present			
Description of Reptile Evidence					
Species	Midland Painted Turtle				498
Estimated UTM or distance and direction from vantage point	100				
Estimated Length (cm)	20				
Total Observed	1				
Observed Behaviour	Basking at surface of shallow water				


# Snake/Turtle Basking - WEC


Map Number	S-M17	Field Crew	JOHANNA PERZ		1062
Feature ID	TU-S-M17-4(1)	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	1		
Start Date	6/9/2015 10:53:28 AM	Precipitation	0		
End Date	6/9/2015 10:13:34 AM	Cloud Cover	20.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.833016,Longitude:-80.632476,Altitude:195.5,Speed:0.0051444443,Accuracy:1.5,Provider:gps,Time:06/09/2015 10:54:51 EDT	Deep beaver pond, no emergent vegetation, a number of snags but few logs; better habitat along north eastern edge with yellow pond lily and more logs				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	JOHANNA PERZ		3204
Feature ID	TU-S-M17-5	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	1	Humid	
Start Date	6/9/2015 11:47:45 AM	Precipitation	0		
End Date	6/9/2015 12:30:27 PM	Cloud Cover	15.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.832017,Longitude:-80.626295,Altitude:187.1,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:06/09/2015 12:22:34 EDT	Plot centroid was in an unsuitable location of wetland complex (very shallow water, mostly mud and emergent vegetation - cattails, sedges; searched where wetland opened up and water was deeper, along north eastern edge. In this part of wetland, water is				
Description of Reptile Evidence					
Species	Midland Painted Turtle				501
Estimated UTM or distance and direction from vantage point	30				
Estimated Length (cm)	20				
Total Observed	2				
Observed Behaviour	Basking on sphagnum hummock, 10m apart				

# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	504
Estimated UTM or distance and direction from vantage point	50	
Estimated Length (cm)	20	
Total Observed	1	
Observed Behaviour	Basking on mat of sedge	

Species	Blanding's Turtle	507
Estimated UTM or distance and direction from vantage point	25	
Estimated Length (cm)	25	
Total Observed	1	
Observed Behaviour	Basking on hummock of sphagnum and sedge	



# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	JOHANNA PERZ		1074
Feature ID	TU-S-M17-4(2)	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	3		
Start Date	6/9/2015 1:31:39 PM	Precipitation	0		
End Date	6/9/2015 1:53:53 PM	Cloud Cover	50.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.831688,Longitude:-80.63468,Altitude:186.4,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:06/09/2015 01:43:07 EDT		Large meadow marsh heavily vegetated with gramminoids, some open water with some clumps of vegetation, few logs for basking			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	TOM SHORNEY , DAN MCPARLAND		5475
Feature ID	TU-N-M33-3	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM5	Wind Speed (beaufort)	5		
Start Date	6/11/2015 11:32:33 AM	Precipitation	0		
End Date	6/11/2015 12:57:40 PM	Cloud Cover	15.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.860957,Longitude:-80.66727,Altitude:192.6,Speed:0.06173333,Accuracy:2.1,Provider:gps,Time:06/11/2015 11:36:49 EDT	Large open water pond with floating vegetation in locations. Rocky shores with shrubs and grasses. Downed woody debris throughout offering basking opportunities				
Description of Reptile Evidence					
Species	Blanding's Turtle				510
Estimated UTM or distance and direction from vantage point	50 m west of vantage point				
Estimated Length (cm)	15				
Total Observed	1				
Observed Behaviour	Basking				

# Snake/Turtle Basking - WEC


Species	Midland Painted Turtle	600
Estimated UTM or distance and direction from vantage point	100 m north of vantage point	
Estimated Length (cm)	8	
Total Observed	1	
Observed Behaviour	Basking	
Species	Midland Painted Turtle	603
Estimated UTM or distance and direction from vantage point	100 m northwest of vantage point	
Estimated Length (cm)	10	
Total Observed	2	
Observed Behaviour	Bssking	
Species	Blanding's Turtle	606
Estimated UTM or distance and direction from vantage point	150 m northwest	
Estimated Length (cm)	15	
Total Observed	1	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC


Species	Midland Painted Turtle	609
Estimated UTM or distance and direction from vantage point	150 m west	
Estimated Length (cm)	10	
Total Observed	4	
Observed Behaviour	Basking	




# Snake/Turtle Basking - WEC

Map Number	S-M50	Field Crew	JOHANNA PERZ	2232
Feature ID	TU-S-M50-7(1)	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	0	
Start Date	6/15/2015 2:33:12 PM	Precipitation	0	
End Date	6/15/2015 3:06:30 PM	Cloud Cover	100.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions		Note one Blandings turtle may have been a Midland Painted turtle; species not confirmed because distance too far	
Latitude:45.826665,Longitude:-80.709868,Altitude:202.5,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:06/15/2015 02:44:33 EDT		Beaver pond with abundant emergent vegetation, vegetation mats, land logs		
Description of Reptile Evidence				
Species	Snapping Turtle			516
Estimated UTM or distance and direction from vantage point	50			
Estimated Length (cm)	50			
Total Observed	1			
Observed Behaviour	Basking and moving			


# Snake/Turtle Basking - WEC

Species	Blanding's Turtle	519
Estimated UTM or distance and direction from vantage point	50 and 70m south	
Estimated Length (cm)	35	
Total Observed	2	
Observed Behaviour	Basking on sedge mound	

# Snake/Turtle Basking - WEC

Map Number	S-M50	Field Crew	JOHANNA PERZ		2238
Feature ID	TU-S-M50-7(2)	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	1	Hazy, sun parking through	
Start Date	6/15/2015 3:06:41 PM	Precipitation	0		
End Date	6/15/2015 3:21:24 PM	Cloud Cover	100.00		
Survey Type	Turtle	Vantage Point #	2	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.826869,Longitude:-80.710054,Altitude:199.8,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:06/15/2015 03:07:40 EDT	Beaver pond and marsh with open water, sedge mounds, logs for basking, shrubs and sedge along banks				
Description of Reptile Evidence					
Species	Midland paints turtle				522
Estimated UTM or distance and direction from vantage point	50 west				
Estimated Length (cm)	15				
Total Observed	1				
Observed Behaviour	Basking on log				

# Snake/Turtle Basking - WEC

Species	Blanding's Turtle	525
Estimated UTM or distance and direction from vantage point	50m nw	
Estimated Length (cm)	20	
Total Observed	2	
Observed Behaviour	Basking on log and sedge mound	


# Snake/Turtle Basking - WEC

Map Number	N-M30	Field Crew	SARAH RICHER		1122
Feature ID	TU-N-M30-16	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM19	Wind Speed (beaufort)	0	Very foggy	
Start Date	6/15/2015 9:28:40 AM	Precipitation	0		
End Date	6/15/2015 9:57:53 AM	Cloud Cover	100.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.879304,Longitude:-80.670108,Altitude:185.2,Speed:0.0051444443,Accuracy:2.4,Provider:gps,Time:06/15/2015 09:31:35 EDT		Lots of open water surrounded by emergent vegetation, mostly aquatic sedges, with plenty of logs, veg mats and flat rocks for basking			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	N-M21	Field Crew	SARAH RICHER		2262
Feature ID	TU-N-M21-9	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	26.00	Weather Notes	
Tablet	AECOM19	Wind Speed (beaufort)	0	Very muggy	
Start Date	6/15/2015 2:50:12 PM	Precipitation	0		
End Date	6/15/2015 3:10:27 PM	Cloud Cover	80.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Flushed from log on our approach; photo is of habitat		
Latitude:45.878307,Longitude:-80.646515,Altitude:188.5,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:06/15/2015 02:57:11 EDT		Lots of open water surrounded and interspersed with emergent vegetation, mostly aquatic shrubs and sedges, with plenty of logs, veg mats, small rock islands and flat rocks for basking			
Description of Reptile Evidence					
Species	Blanding's Turtle				528
Estimated UTM or distance and direction from vantage point	100m SE				
Estimated Length (cm)	15				
Total Observed	1				
Observed Behaviour	Basking				

# Snake/Turtle Basking - WEC


Species	Midland Painted Turtle	531
Estimated UTM or distance and direction from vantage point	100m SE	
Estimated Length (cm)	10	
Total Observed	2	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC


Map Number	N-M31	Field Crew	SARAH RICHER	2274
Feature ID	TU-N-M31-11	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes
Tablet	AECOM19	Wind Speed (beaufort)	2	
Start Date	6/16/2015 8:37:53 AM	Precipitation	0	
End Date	6/16/2015 9:57:13 AM	Cloud Cover	0.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.883713,Longitude:-80.677141,Altitude:188.2,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:06/16/2015 08:47:55 EDT	Beaver pond; lots of open water with small rock islands, logs and veg mats for basking			
Description of Reptile Evidence				
Species	Midland Painted Turtle			534
Estimated UTM or distance and direction from vantage point	50 m west of vantage point			
Estimated Length (cm)	8			
Total Observed	1			
Observed Behaviour	Basking			



# Snake/Turtle Basking - WEC

Species	Blanding's Turtle	537
Estimated UTM or distance and direction from vantage point	200 m SSW	
Estimated Length (cm)	15	
Total Observed	1	
Observed Behaviour	Basking on rocky shoreline	

# Snake/Turtle Basking - WEC

Map Number	N-M2	Field Crew	SARAH RICHER	1140
Feature ID	TU-N-M2-18	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	25.00	Weather Notes
Tablet	AECOM19	Wind Speed (beaufort)	1	
Start Date	6/16/2015 12:04:36 PM	Precipitation	0	
End Date	6/16/2015 12:24:45 PM	Cloud Cover	50.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.885072,Longitude:-80.577172,Altitude:205.4,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:06/16/2015 12:18:56 EDT	Long beaver pond (with active colony), separated into at least 2 water bodies by a beaver dam covered in grass. Lots of open water and fallen logs for basking, aquatic sedges and grasses dominate between open water and surrounding forest			
Description of Reptile Evidence				
Species	Midland Painted Turtle			540
Estimated UTM or distance and direction from vantage point	Several different basking logs throughout wetland			
Estimated Length (cm)	8			
Total Observed	10			
Observed Behaviour	Basking			


# Snake/Turtle Basking - WEC

Map Number	N-M46	Field Crew	JOHANNA PERZ		1152
Feature ID	TU-N-M46-14	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	3		
Start Date	6/16/2015 11:09:02 AM	Precipitation	0		
End Date	6/16/2015 11:29:06 AM	Cloud Cover	30.00		
Survey Type	Turtle	Vantage Point #	1		
Vantage Point Location	Description of local habitat conditions				
Latitude:45.858951,Longitude:-80.697521,Altitude:198.4,Speed:0.0463,Accuracy:1.5,Provider:gps,Time:06/16/2015 11:25:37 EDT	Deep, open water; little emergent vegetation and few logs; no vegetation mats; vegetation characteristic of peatlands on banks including black spruce, tamarack, pitcher plant, Sphagnum, Labrador tea				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	N-M48	Field Crew	JOHANNA PERZ		1158
Feature ID	TU-N-M48-13	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	3		
Start Date	6/16/2015 12:39:47 PM	Precipitation	0		
End Date	6/16/2015 12:59:45 PM	Cloud Cover	35.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.872283,Longitude:-80.71248,Altitude:188.8,Speed:0.10288889,Accuracy:1.75,Provider:gps,Time:06/16/2015 12:41:10 EDT		Large beaver pond with large Sphagnum and sheep laurel mats; numerous snags but few logs; surrounding habitat is jack pine rock barren			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	N-M38	Field Crew	JOHANNA PERZ		1161
Feature ID	TU-N-M38-12	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	2		
Start Date	6/16/2015 3:32:31 PM	Precipitation	0		
End Date	6/16/2015 3:52:08 PM	Cloud Cover	15.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.866646,Longitude:-80.688997,Altitude:183.6,Speed:0.03601111,Accuracy:1.5,Provider:gps,Time:06/16/2015 03:40:13 EDT	Long/narrow deep water body surrounded by peatland vegetation, few vegetation mats or logs for basking				
Description of Reptile Evidence					
Species	Blanding's Turtle				546
Estimated UTM or distance and direction from vantage point	50m east				
Estimated Length (cm)	25				
Total Observed	2				
Observed Behaviour	Basking in water at shore and other moving in veg				


# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	JOHANNA PERZ	1185
Feature ID	TU-N-M33-3	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	2	
Start Date	6/17/2015 10:03:12 AM	Precipitation	0	
End Date	6/17/2015 10:23:12 AM	Cloud Cover	95.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions		Low confidence in sighting	
Latitude:45.8615,Longitude:-80.667524,Altitude:189.6,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:06/17/2015 10:04:24 EDT		Large pond with several snags; few vegetation mats or logs; emergent vegetation and pond lily near shore		
Description of Reptile Evidence				
Species	Blanding's Turtle			552
Estimated UTM or distance and direction from vantage point	100			
Estimated Length (cm)	25			
Total Observed	1			
Observed Behaviour	Was on stump then into water			


# Snake/Turtle Basking - WEC

Map Number	N-M28	Field Crew	JOHANNA PERZ		5970
Feature ID	TU-N-M28-10	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	21.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	3		
Start Date	6/17/2015 1:10:11 PM	Precipitation	0		
End Date	6/17/2015 1:31:24 PM	Cloud Cover	95.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.867479,Longitude:-80.663877,Altitude:182.9,Speed:0.63276666,Accuracy:1.5,Provider:gps,Time:06/17/2015 01:37:31 EDT	Large beaver dam and pond with about 3 beaver lodges , several vegetation (sedge) mats with sandy/muddy banks. Quite a number of logs for basking and many snags				
Description of Reptile Evidence					
Species	Blanding's Turtle				555
Estimated UTM or distance and direction from vantage point	60				
Estimated Length (cm)	30				
Total Observed	3				
Observed Behaviour	Basking on log				

# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	558
Estimated UTM or distance and direction from vantage point	75	
Estimated Length (cm)	25	
Total Observed	1	
Observed Behaviour	Basking on log	

Species	Midland Painted Turtle	561
Estimated UTM or distance and direction from vantage point	85	
Estimated Length (cm)	15	
Total Observed	1	
Observed Behaviour	Basking on log	


Species	Blanding's Turtle	564
Estimated UTM or distance and direction from vantage point	100	
Estimated Length (cm)	30	
Total Observed	7	
Observed Behaviour	Basking on log	




# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	567
Estimated UTM or distance and direction from vantage point	100	
Estimated Length (cm)	20	
Total Observed	1	
Observed Behaviour	Basking on log with painted	

# Snake/Turtle Basking - WEC

Map Number	N-M15	Field Crew	JOHANNA PERZ		1197
Feature ID	TU-N-M15-15	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	21.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	2		
Start Date	6/17/2015 3:09:54 PM	Precipitation	0		
End Date	6/17/2015 3:30:20 PM	Cloud Cover	75.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.868611,Longitude:-80.645348,Altitude:195.0,Speed:0.010288889,Accuracy:2.0,Provider:gps,Time:06/17/2015 03:11:17 EDT	Expansive pond with few large vegetation mats, surrounded by treed and open fen and jack pine rock barren; opposite shore difficult to examine for turtles because of distance. Few logs present				
Description of Reptile Evidence					
Species	Midland Painted Turtle				570
Estimated UTM or distance and direction from vantage point	80				
Estimated Length (cm)	30				
Total Observed	1				
Observed Behaviour	Basking on Sphagnum hummock close to fen				

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KRISTAN WASHBURN AND AYESHA PRASAD		1200
Feature ID	TU-S-M17-4(1)	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM4	Wind Speed (beaufort)	2		
Start Date	6/17/2015 12:30:20 PM	Precipitation	0		
End Date	6/17/2015 1:07:24 PM	Cloud Cover	50.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		I have good pictures on my camera		
Latitude:45.832723,Longitude:-80.632732,Altitude:170.7,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:06/17/2015 12:44:50 EDT		Open water wetland with some floating leaved surrounded by rock.			
Description of Reptile Evidence					
Species	Blanding's Turtle				573
Estimated UTM or distance and direction from vantage point	528526 5075533				
Estimated Length (cm)	40				
Total Observed	1				
Observed Behaviour	Making his way to upper wetland				

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KRISTAN WASHBURN AND AYESHA PRASAD		1203
Feature ID	TU-S-M17-4(2)	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM4	Wind Speed (beaufort)	2		
Start Date	6/17/2015 1:00:40 PM	Precipitation	0		
End Date	6/17/2015 1:20:45 PM	Cloud Cover	50.00		
Survey Type	Turtle	Vantage Point #	2	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.831746,Longitude:-80.634541,Altitude:163.0,Speed:0.07202222,Accuracy:2.1,Provider:gps,Time:06/17/2015 01:10:59 EDT	Emergent dominant open water wetland with some basking logs				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KRISTAN AYESHA RONNIE		1206
Feature ID	TU-S-M17-5	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM4	Wind Speed (beaufort)	4		
Start Date	6/17/2015 1:36:03 PM	Precipitation	0		
End Date	6/17/2015 1:56:11 PM	Cloud Cover	90.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.830453,Longitude:-80.625548,Altitude:184.6,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:06/17/2015 01:43:32 EDT	Interspersed emergent vegetation on floating mats. With some basking logs. Rock barren on 3 sides .				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M40	Field Crew	KASEY & JASON		1209
Feature ID	TU-S-M40-19	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	21.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	1		
Start Date	6/16/2015 9:53:05 AM	Precipitation	0		
End Date	6/16/2015 10:13:10 AM	Cloud Cover	0.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.816571,Longitude:-80.655272,Altitude:183.5,Speed:0.041155554,Accuracy:1.8,Provider:gps,Time:	Lots of floating vegetation (sedges , rushes) few dead fall logs.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	A-M2	Field Crew	ROB MIKE	1218
Feature ID	TU-A-M2-23	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM1	Wind Speed (beaufort)	3	
Start Date	6/19/2015 9:15:54 AM	Precipitation	0	
End Date	6/19/2015 9:35:50 AM	Cloud Cover	25.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.890584,Longitude:-80.545438,Altitude:208.5,Speed:0.05658889,Accuracy:2.4,Provider:gps,Time:06/19/2015 09:28:26 EDT		Large pond surrounded by spruce forest. Numerous standing snags and basking logs.		
Description of Reptile Evidence				
Species	Midland Painted Turtle			576
Estimated UTM or distance and direction from vantage point	75m south			
Estimated Length (cm)	30			
Total Observed	4			
Observed Behaviour	Basking on log			

# Snake/Turtle Basking - WEC

Map Number	A-M1	Field Crew	ROB MIKE	2448
Feature ID	TU-A-M1-21	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM1	Wind Speed (beaufort)	3	
Start Date	6/19/2015 10:10:52 AM	Precipitation	0	
End Date	6/19/2015 10:30:00 AM	Cloud Cover	25.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.890032,Longitude:-80.557487,Altitude:208.7,Speed:0.09774444,Accuracy:2.1,Provider:gps,Time:06/19/2015 10:18:41 EDT		Large pond. 75% of water surface covered in floating aquatics. Numerous basking logs		
Description of Reptile Evidence				
Species	Blanding's Turtle			579
Estimated UTM or distance and direction from vantage point	50m west			
Estimated Length (cm)	45			
Total Observed	1			
Observed Behaviour	Basking			



# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	582
Estimated UTM or distance and direction from vantage point	75m west	
Estimated Length (cm)	30	
Total Observed	5	
Observed Behaviour	Basking	


# Snake/Turtle Basking - WEC

Map Number	A-M1	Field Crew	ROB CONOHAN MIKE AGAWASHGI		1230
Feature ID	TU-A-M1-22	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	3		
Start Date	6/19/2015 11:14:21 AM	Precipitation	0		
End Date	6/19/2015 11:34:25 AM	Cloud Cover	25.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.889779,Longitude:-80.562768,Altitude:214.9,Speed:0.07716667,Accuracy:2.1,Provider:gps,Time:06/19/2015 11:15:48 EDT	Pond at basin of rock quarry. No basking logs. Only 30m section of vegetated shoreline.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	N-M21	Field Crew	ROB DANIEL	1233
Feature ID	TU-N-M21-9	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM1	Wind Speed (beaufort)	3	
Start Date	6/19/2015 12:46:12 PM	Precipitation	0	
End Date	6/19/2015 1:06:20 PM	Cloud Cover	25.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.878494,Longitude:-80.646519,Altitude:190.7,Speed:0.0051444443,Accuracy:1.5,Provider:gps,Time:06/19/2015 12:47:52 EDT	Pond with very limited open water due to lower water levels. Sedge leatherleaf dominant.			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	SARAH RICHER	2484
Feature ID	TU-N-M33-3	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes
Tablet	AECOM7	Wind Speed (beaufort)	1	
Start Date	6/19/2015 11:40:51 AM	Precipitation	0	
End Date	6/19/2015 12:00:59 PM	Cloud Cover	0.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions		Photos are of their habitat, camera cannot capture the individual turtles	
Latitude:45.860871,Longitude:-80.667158,Altitude:184.9,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:06/19/2015 11:53:15 EDT		Large wetland with lots of open water , smooth rock islands, fallen logs; emergent aquatic veg mostly along edges, lots of floating aquatic veg		
Description of Reptile Evidence				
Species	Blanding's Turtle			591
Estimated UTM or distance and direction from vantage point	120 m west/southwest			
Estimated Length (cm)	15			
Total Observed	2			
Observed Behaviour	Basking			

# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	594
Estimated UTM or distance and direction from vantage point	130 m west	
Estimated Length (cm)	10	
Total Observed	8	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	JOHANNA PERZ		1248
Feature ID	TU-S-M17-4(1)	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	3		
Start Date	6/19/2015 11:45:15 AM	Precipitation	0		
End Date	6/19/2015 12:11:35 PM	Cloud Cover	10.00		
Survey Type	Turtle	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Additional Notes		
Latitude:45.833016,Longitude:-80.632541,Altitude:196.7,Speed:0.03601111,Accuracy:1.8,Provider:gps,Time:06/19/2015 11:50:45 EDT	Beaver pond with lots of logs and floating vegetation (water lily), muddy shores may be potential nesting sites		Another team that immediately prior to survey walked 30 meters south of vantage point reported two blandings and a painted turtle		
Description of Reptile Evidence					
Species	Midland Painted Turtle				597
Estimated UTM or distance and direction from vantage point	100				
Estimated Length (cm)	25				
Total Observed	2				
Observed Behaviour	Basking on log				

# Snake/Turtle Basking - WEC


Map Number	S-M17	Field Crew	JOHANNA PERZ	1251
Feature ID	TU-S-M17-4(2)	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	3	
Start Date	6/19/2015 12:15:58 PM	Precipitation	0	
End Date	6/19/2015 12:35:25 PM	Cloud Cover	10.00	
Survey Type	Turtle	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.831802,Longitude:-80.634549,Altitude:195.7,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:06/19/2015 12:21:11 EDT	Open water marsh with high gramminoid cover, few logs			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Appendix C12

## 2015 Snake Basking Surveys



# Snake/Turtle Basking - WEC

Map Number	N-M14	Field Crew	KRISTAN WASHBURN	18
Feature ID	SN-N-M14-1	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	4	
Start Date	4/27/2015 12:24:00 PM	Precipitation	0	
End Date	4/27/2015 12:24:19 PM	Cloud Cover	100.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.869912,Longitude:-80.63272,Altitude:192.4,Speed:0.030866666,Accuracy:1.75,Provider:gps,Time:04/27/2015 12:25:15 EDT		Rock barren between 2 wetlands		
Description of Reptile Evidence				
Species	Massasauga Rattlesnake			18
Estimated UTM or distance and direction from vantage point	17t 0528505 507662			
Estimated Length (cm)	36			
Total Observed	1			
Observed Behaviour	Basking			

# Snake/Turtle Basking - WEC

Map Number	S-M34	Field Crew	KRISTAN WASHBURN	33
Feature ID	SN-S-M34-1	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	3	
Start Date	4/28/2015 11:33:07 AM	Precipitation	0	
End Date	4/28/2015 11:55:02 AM	Cloud Cover	0.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.832194,Longitude:-80.642704,Altitude:192.5,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:04/28/2015 11:33:37 EDT	South facing slope with rocks and cracks to access below frost line			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	S-M14	Field Crew	KRISTAN WASHBURN	36
Feature ID	SN-S-M14-2	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	3	
Start Date	4/28/2015 12:32:55 PM	Precipitation	0	
End Date	4/28/2015 12:54:51 PM	Cloud Cover	0.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.844034,Longitude:-80.633522,Altitude:199.8,Speed:0.06173333,Accuracy:1.5,Provider:gps,Time:04/28/2015 12:33:25 EDT	Southeast facing slope with cracks to frost line, some vegetation nearby			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	N-M27	Field Crew	AMY INGRISSELLI		45
Feature ID	SN-n-m27-01	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	2		
Start Date	4/28/2015 10:36:18 AM	Precipitation	0		
End Date	4/28/2015 11:00:30 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	SN-n-m27-01	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.865316,Longitude:-80.660804,Altitude:185.0,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:04/28/2015 10:37:55 EDT		Rolling bedrock with occasional fissures, boulders, shrubs for cover (30% canopy) with conifer/Sphagnum wetland nearby			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M27	Field Crew	AMY INGRISELLI		48
Feature ID	SN-n-m27-02	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	1		
Start Date	4/28/2015 11:07:25 AM	Precipitation	0		
End Date	4/28/2015 11:30:45 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	SN-n-m27-02	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.861494,Longitude:-80.656693,Altitude:180.2,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:04/28/2015 11:08:29 EDT		Rolling bedrock with occasional cracks, fissures and boulders. Cover from trees and juniper (60%)			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	AMY INGRISELLI	51
Feature ID	SN-n-m33-01	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	4	
Start Date	4/28/2015 12:08:57 PM	Precipitation	0	
End Date	4/28/2015 12:30:16 PM	Cloud Cover	0.00	
Survey Type	Snake	Vantage Point #	SN-n-m33-01	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.857529,Longitude:-80.663115,Altitude:178.2,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:04/28/2015 12:09:59 EDT	Basking in Sphagnum and shrub of a conifer swamp.. wet Sphagnum, laurel, leatherleaf. Swamp between bedrock			
Description of Reptile Evidence				
Species	Northern Watersnake			42
Estimated UTM or distance and direction from vantage point	5m southwest from vantage point			
Estimated Length (cm)	75			
Total Observed	1			
Observed Behaviour	Basking in sphagnum of conifer swamp			

# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	AMY INGRISELLI		54
Feature ID	SN-n-m33-03	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	4		
Start Date	4/28/2015 12:36:39 PM	Precipitation	0		
End Date	4/28/2015 12:58:49 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	SN-n-m33-03	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.857491,Longitude:-80.664542,Altitude:184.5,Speed:0.08231111,Accuracy:2.4,Provider:gps,Time:04/28/2015 12:38:13 EDT	Pile of boulders on slope, facing west towards open water wetland				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-m48	Field Crew	AMY INGRISELLI		63
Feature ID	SN-n-m48-13	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	3		
Start Date	4/29/2015 12:16:26 PM	Precipitation	0		
End Date	4/29/2015 12:39:17 PM	Cloud Cover	5.00		
Survey Type	Snake	Vantage Point #	SN-n-48-13	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Saw four gray jay		
Latitude:45.867274,Longitude:-80.706828,Altitude:186.9,Speed:0.0463,Accuracy:1.8,Provider:gps,Time:04/29/2015 12:25:23 EDT		This area is a mix of flat bedrock, scattered clusters of boulder, bedrock with crafts and fissures, bog wetlands in low-lying areas between bedrock. Conifers and shrubs for cover, approximately 50% open canopy			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Map Number	<input type="text" value="N-m46"/>	Field Crew	<input type="text" value="AMY INGRISELLI"/>		69
Feature ID	<input type="text" value="SN-n-m46-14"/>	Study Area	<input type="text" value="WEC"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="16.00"/>	Weather Notes	
Tablet	<input type="text" value="AECOM9"/>	Wind Speed (beaufort)	<input type="text" value="4"/>		
Start Date	<input type="text" value="4/29/2015 2:09:28 PM"/>	Precipitation	<input type="text" value="0"/>		
End Date	<input type="text" value="4/29/2015 2:30:20 PM"/>	Cloud Cover	<input type="text" value="40.00"/>		
Survey Type	<input type="text" value="Snake"/>	Vantage Point #	<input type="text" value="SN-n-46-14"/>	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.857109,Longitude:-80.692076,Altitude:188.4,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:04/29/2015 02:12:26 EDT		Bedrock with cracks and boulders, facing south. Bog next to bedrock, scattered juniper and jack pine for cover			
Description of Reptile Evidence					
Species	<input type="text"/>				
Estimated UTM or distance and direction from vantage point	<input type="text"/>				
Estimated Length (cm)	<input type="text"/>				
Total Observed	<input type="text"/>				
Observed Behaviour	<input type="text"/>				

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KRISTAN WASHBURN		81
Feature ID	SN-S-M17-7	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM15	Wind Speed (beaufort)	2		
Start Date	4/29/2015 11:10:26 AM	Precipitation	0		
End Date	4/29/2015 11:30:29 AM	Cloud Cover	15.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.832284,Longitude:-80.632603,Altitude:179.6,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:04/29/2015 11:10:41 EDT		Rock outcrop a Jacen to wetland with nice hole that may access below permafrost			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KRISTAN WASHBURN	87
Feature ID	Sn-s-m17-5	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	1	
Start Date	4/29/2015 11:46:09 AM	Precipitation	0	
End Date	4/29/2015 12:07:52 PM	Cloud Cover	10.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.830449,Longitude:-80.625541,Altitude:193.8,Speed:0.03601111,Accuracy:2.1,Provider:gps,Time:04/29/2015 11:46:59 EDT		Rock barren adjacent to vegetated areas		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	S-M31	Field Crew	KRISTAN WASHBURN	90
Feature ID	Sn-s-m31-2	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	2	
Start Date	4/30/2015 9:07:36 AM	Precipitation	0	
End Date	4/30/2015 9:27:16 AM	Cloud Cover	75.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.840066,Longitude:-80.654841,Altitude:166.7,Speed:0.6121889,Accuracy:1.75,Provider:gps,Time:04/30/2015 09:07:39 EDT		Rick barren adjacent to alder swamp		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	S-M33	Field Crew	KRISTAN WASHBURN		96
Feature ID	SN-S-M33-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM15	Wind Speed (beaufort)	2		
Start Date	4/30/2015 10:52:40 AM	Precipitation	0		
End Date	4/30/2015 11:12:56 AM	Cloud Cover	75.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.825845,Longitude:-80.648023,Altitude:189.6,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:04/30/2015 10:38:49 EDT	Southeast facing slope with broken rocks and adjacent open rock barren				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M40	Field Crew	KRISTAN WASHBURN		99
Feature ID	SN-S-M40-19	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM15	Wind Speed (beaufort)	3		
Start Date	4/30/2015 11:45:21 AM	Precipitation	0		
End Date	4/30/2015 12:05:37 PM	Cloud Cover	15.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.817744,Longitude:-80.653322,Altitude:183.4,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:04/30/2015 11:51:32 EDT		Rock barren adjacent to southeast faint slope			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-m7	Field Crew	AMY INGRISELLI	108
Feature ID	SN-s-m7-17	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	2	
Start Date	4/30/2015 10:33:20 AM	Precipitation	0	
End Date	4/30/2015 10:54:53 AM	Cloud Cover	75.00	
Survey Type	Snake	Vantage Point #	SN-s-m7-17	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.84747,Longitude:-80.599812,Altitude:215.8,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:04/30/2015 10:34:33 EDT	Lichen-covered bedrock outcrop in forest. Moist, low-lying conifer swamp adjacent to rock. Open canopy with some cover by occasional conifer and juniper. Occasional fissure, pile of boulders facing south.			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC


Map Number	S-m7	Field Crew	AMY INGRISELLI		111
Feature ID	SN-s-m7-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	4		
Start Date	4/30/2015 10:58:52 AM	Precipitation	0		
End Date	4/30/2015 11:18:23 AM	Cloud Cover	75.00		
Survey Type	Snake	Vantage Point #	SN-s-m7-2	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.846464,Longitude:-80.598155,Altitude:213.2,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:04/30/2015 11:00:14 EDT	Rolling, lichen-covered bedrock with pile of boulders. Juniper, occasional conifer, bracken fern and blueberry provide cover. Open canopy over bedrock. Conifer swamp adjacent to bedrock.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Map Number	N-m2	Field Crew	AMY INGRISELLI JME MAXWELL CARLA		117
Feature ID	SN-n-m2-18	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	22.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	4		
Start Date	4/30/2015 2:19:35 PM	Precipitation	0		
End Date	4/30/2015 2:41:30 PM	Cloud Cover	10.00		
Survey Type	Snake	Vantage Point #	SN-n-m2-18	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.884861,Longitude:-80.577388,Altitude:200.6,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:04/30/2015 02:20:31 EDT		Nice pile of boulders on slope, faces south and beaver pond. Bedrock with shrubs for cover			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-50	Field Crew	AMY INGRISELLI	141
Feature ID	SN-s-m50-7	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	1	
Start Date	5/1/2015 10:19:28 AM	Precipitation	0	
End Date	5/1/2015 10:39:45 AM	Cloud Cover	0.00	
Survey Type	Snake	Vantage Point #	SN-s-m50-7	Additional Notes
Vantage Point Location	Description of local habitat conditions		Garter snake was basking on moss-covered boulders in light shining through conifers. Nice habitat.	
Latitude:45.827147,Longitude:-80.709873,Altitude:188.5,Speed:0.0926,Accuracy:1.5,Provider:gps,Time:05/01/2015 10:25:32 EDT	Rolling, broken bedrock with open canopy and good cover from shrubs and logs/blowdown. Bedrock surrounded by moss and lichen-covered large boulders and conifer swamp.			
Description of Reptile Evidence				
Species	Eastern Gartersnake			105
Estimated UTM or distance and direction from vantage point	15 m northwest of vantage point			
Estimated Length (cm)	50			
Total Observed	1			
Observed Behaviour	Basking on moss covered rocks			

# Snake/Turtle Basking - WEC

Map Number	N-M9	Field Crew	JOHANNA PEREZ, SARAH RICHER		240
Feature ID	SN-N-M9-18	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	1		
Start Date	5/7/2015 9:41:14 AM	Precipitation	0		
End Date	5/7/2015 10:02:12 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.885517,Longitude:-80.630228,Altitude:197.3,Speed:0.030866666,Accuracy:1.5,Provider:gps,Time:05/07/2015 09:42:30 EDT	There are multiple locations suitable for gestation consisting of south facing rock piles with crevices and structure for cover (jack pine, dead wood, juniper shrub cover); also potential hibernaculum (swh form)				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M19	Field Crew	SARAH RICHER		243
Feature ID	SN-N-M19-19	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	2	Cloud cover very wispy, thin	
Start Date	5/7/2015 12:35:42 PM	Precipitation	0		
End Date	5/7/2015 12:55:46 PM	Cloud Cover	20.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Wish these forms let us take a picture of the feature		
Latitude:45.886028,Longitude:-80.654871,Altitude:185.8,Speed:0.20577778,Accuracy:1.5,Provider:gps,Time:05/07/2015 12:42:10 EDT	Open rock with lichen and moss cover; scattered juniper and jack pine & white pine, lots of deadfall, lots of varied structure with rolling open area complexed with narrow Sphagnum filled wet depressions				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M40	Field Crew	JOHANNA PEREZ, SARAH RICHER		246
Feature ID	SN-N-M40-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	24.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	0		
Start Date	5/7/2015 2:51:22 PM	Precipitation	0		
End Date	5/7/2015 3:12:43 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.880507,Longitude:-80.691618,Altitude:186.5,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:05/07/2015 03:13:08 EDT	Rock barren with crevices, cover from overhanging thin and flat rocks, shrubs (junipers), and deadwood that can be used as refuge for gestating snakes. Nearby vegetation primarily consisting of jack pine. Depressions in terrain with black spruce and Spha				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	A-M01	Field Crew	ADAM, NATALIYA		249
Feature ID	SN-A-M01-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM7	Wind Speed (beaufort)	3		
Start Date	5/7/2015 9:28:27 AM	Precipitation	0		
End Date	5/7/2015 9:48:21 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	SN-A-M01-1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.889699,Longitude:-80.56251,Altitude:210.0,Speed:0.025722222,Accuracy:1.75,Provider:gps,Time:05/07/2015 09:30:46 EDT		Rock barren bordering pond and deciduous forest, canopy cover 60%, juniper covering 50% of rock barren			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	A-M02	Field Crew	ADAM, NATALIYA	258
Feature ID	SN-A-M02-2	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes
Tablet	AECOM7	Wind Speed (beaufort)	4	
Start Date	5/7/2015 1:25:24 PM	Precipitation	0	
End Date	5/7/2015 1:45:04 PM	Cloud Cover	5.00	
Survey Type	Snake	Vantage Point #	SN-A-M02-2	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.890923,Longitude:-80.545585,Altitude:197.3,Speed:0.025722222,Accuracy:2.1,Provider:gps,Time:05/07/2015 01:33:42 EDT	Rock barren overlooking beaver pond, and bordering mixed forest. Juniper cover 50%			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	A-M03	Field Crew	ADAM, NATALIYA		264
Feature ID	SN-A-M03-3	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	21.00	Weather Notes	
Tablet	AECOM7	Wind Speed (beaufort)	4		
Start Date	5/7/2015 2:48:10 PM	Precipitation	0		
End Date	5/7/2015 3:08:07 PM	Cloud Cover	5.00		
Survey Type	Snake	Vantage Point #	SN-A-M03-3	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.890761,Longitude:-80.543775,Altitude:204.7,Speed:0.025722222,Accuracy:1.75,Provider:gps,Time:	Elevated open rock barren mostly covered with moss and juniper. Sparse tree cover; white pine, spruce, white birch, red maple, trembling aspen				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Map Number	S-M50	Field Crew	JOHANNA PERZ, ROB CONOHAN, KEVIN FLOOD		306
Feature ID	SN-S-M50-7	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	3		
Start Date	5/13/2015 2:01:55 PM	Precipitation	0		
End Date	5/13/2015 2:21:11 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.827271,Longitude:-80.710036,Altitude:185.7,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:05/13/2015 02:06:08 EDT		White pine, white spruce forest adjacent to large pond and rock barren.			
Description of Reptile Evidence					
Species	Eastern Gartersnake				183
Estimated UTM or distance and direction from vantage point	@ vantage point				
Estimated Length (cm)	30				
Total Observed	1				
Observed Behaviour	Basking				


# Snake/Turtle Basking - WEC

Map Number	S-M34	Field Crew	JESSICA WALKER AND ADAM MCCLELLAND		309
Feature ID	SN-S-M34-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM8	Wind Speed (beaufort)	2	Sunny	
Start Date	5/13/2015 10:55:17 AM	Precipitation	0		
End Date	5/13/2015 11:16:05 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.831793,Longitude:-80.643238,Altitude:183.0,Speed:0.07202222,Accuracy:1.5,Provider:gps,Time:05/13/2015 10:56:47 EDT		Facing south exposed side of rock barren. Fallen logs and some hiding places under rocks. Lots of crevices in rock barren.			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M31	Field Crew	JESSICA WALKER AND ADAM MCCLELLAND		318
Feature ID	SN-S-M31-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM8	Wind Speed (beaufort)	5	Sunny but wind is chilly	
Start Date	5/13/2015 2:46:23 PM	Precipitation	0		
End Date	5/13/2015 3:07:44 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.839894,Longitude:-80.654891,Altitude:180.4,Speed:0.0051444443,Accuracy:1.8,Provider:gps,Time:05/13/2015 02:47:12 EDT	Edge of rock barren and conifer stand. Junipers and moss on barren. Patches of Sphagnum within conifer stands.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M7	Field Crew	BILL MCLEOD, SARAH RICHER		324
Feature ID	SN-N-M7-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	17.00	Weather Notes	
Tablet	AECOM18	Wind Speed (beaufort)	2		
Start Date	5/13/2015 2:45:19 PM	Precipitation	0		
End Date	5/13/2015 3:10:17 PM	Cloud Cover	5.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.846351,Longitude:-80.598622,Altitude:213.6,Speed:0.06173333,Accuracy:1.8,Provider:gps,Time:05/13/2015 02:50:34 EDT	Many rock piles, surrounded by mostly conifer forest, scattered live & dead standing snags on open rock area and lots of juniper and scattered deadfall for cover				
Description of Reptile Evidence					
Species	Smooth Greensnake				201
Estimated UTM or distance and direction from vantage point	N 45.84663, W 080.59827				
Estimated Length (cm)	20				
Total Observed	1				
Observed Behaviour	Basking in sun when first seen, then hid in shade				

# Snake/Turtle Basking - WEC

Map Number	N-M7	Field Crew	SARAH RICHER. BILL MCLEOD		327
Feature ID	SN-N-M7-17	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM18	Wind Speed (beaufort)	2		
Start Date	5/13/2015 3:20:18 PM	Precipitation	0		
End Date	5/13/2015 3:45:35 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		None found		
Latitude:45.847587,Longitude:-80.599823,Altitude:187.4,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:05/13/2015 03:46:19 EDT		Rock baron junipers dead logs flat rocks with entry areas small Grasses			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KRISTAN WASHBURN & KASEY MCKENZIE		339
Feature ID	SN-S-M17-7	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	3		
Start Date	5/13/2015 11:40:09 AM	Precipitation	0		
End Date	5/13/2015 12:00:18 PM	Cloud Cover	5.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.832391,Longitude:-80.632584,Altitude:185.6,Speed:0.21606667,Accuracy:1.8,Provider:gps,Time:05/13/2015 11:51:29 EDT		Rocky outcrop adjacent to wetland			
Description of Reptile Evidence					
Species	Northern Watersnake				207
Estimated UTM or distance and direction from vantage point	17T NL 28486 75482				
Estimated Length (cm)	35				
Total Observed	1				
Observed Behaviour	Swimming				

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KRISTAN WASHBURN & KASEY MCKENZIE		345
Feature ID	SN-S-M17-5	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	2		
Start Date	5/13/2015 12:10:44 PM	Precipitation	0		
End Date	5/13/2015 12:37:02 PM	Cloud Cover	5.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.830462,Longitude:-80.625484,Altitude:188.9,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:05/13/2015 12:39:11 EDT	Rocky outcrop adjacent to wetlands				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M14	Field Crew	KRISTAN WASHBURN & KASEY MCKENZIE		348
Feature ID	SN-S-M14-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	2		
Start Date	5/13/2015 2:10:17 PM	Precipitation	0		
End Date	5/13/2015 2:30:29 PM	Cloud Cover	5.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.844074,Longitude:-80.633627,Altitude:179.2,Speed:0.0,Accuracy:2.1,Provider:gps,Time:05/13/2015 02:12:23 EDT		Rocky are with juniper and scattered rocks			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Map Number	N-M2	Field Crew	AYESHA PRASAD		357
Feature ID	SN-N-M2-18	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	1		
Start Date	5/13/2015 11:50:15 AM	Precipitation	0		
End Date	5/13/2015 12:10:39 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Rocks with deep cracks along beaver pond		
Latitude:45.885213,Longitude:-80.577503,Altitude:202.4,Speed:0.04115554,Accuracy:1.5,Provider:gps,Time:05/13/2015 12:18:24 EDT					
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M19	Field Crew	JULIE AYESHA		360
Feature ID	SN-N-M19-19	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	2		
Start Date	5/13/2015 4:05:05 PM	Precipitation	0		
End Date	5/13/2015 4:28:26 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		No snakes observed		
Latitude:45.885892,Longitude:-80.654991,Altitude:182.8,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:05/13/2015 04:30:58 EDT		Rbt3-2 with Bogs interspersed Deep sphagnum Cracks and scattered boulders			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M40	Field Crew	ADAM, AYESHA		396
Feature ID	SN-N-M40-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM11	Wind Speed (beaufort)	4		
Start Date	5/14/2015 1:34:53 PM	Precipitation	0		
End Date	5/14/2015 1:54:11 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.880452,Longitude:-80.691805,Altitude:176.8,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:05/14/2015 01:36:01 EDT		Rock barren, roughly 50% juniper cover, some jack pine and white pine. Moss and lichen growing on rocks			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M9	Field Crew	ADAM, AYESHA		399
Feature ID	SN-N-M9-18	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM11	Wind Speed (beaufort)	4		
Start Date	5/14/2015 2:58:42 PM	Precipitation	0		
End Date	5/14/2015 3:18:55 PM	Cloud Cover	5.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.88549,Longitude:-80.630475,Altitude:194.0,Speed:0.68421113,Accuracy:1.8,Provider:gps,Time:05/14/2015 03:09:56 EDT	Rock barrens covered with moss and lichen, some jack pine and juniper, some deadfall				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M14	Field Crew	TOM SHORNEY, RICHARD PERREAULT		405
Feature ID	SN-N-M14-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM6	Wind Speed (beaufort)	2		
Start Date	5/14/2015 12:35:25 PM	Precipitation	0		
End Date	5/14/2015 12:51:01 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.869926,Longitude:-80.63273,Altitude:182.7,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:05/14/2015 12:50:41 EDT	Rock fissures/ rock barren, bordered by bog.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M40	Field Crew	ROB CONOHAN, JOHANNA PERZ, DAVE NORMAN		411
Feature ID	SN-S-M40-19	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	4		
Start Date	5/14/2015 2:00:02 PM	Precipitation	0		
End Date	5/14/2015 2:20:09 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.817088,Longitude:-80.653975,Altitude:181.6,Speed:0.12346666,Accuracy:1.8,Provider:gps,Time:05/14/2015 02:06:00 EDT		Treed Rock Barren			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M46	Field Crew	JULIE ELLIS & KASEY MCKENZIE		417
Feature ID	SN-N-M46-14	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	2		
Start Date	5/14/2015 10:18:39 AM	Precipitation	0		
End Date	5/14/2015 10:34:20 AM	Cloud Cover	15.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		No observations		
Latitude:45.85716,Longitude:-80.691884,Altitude:181.3,Speed:0.22635555,Accuracy:1.5,Provider:gps,Time:05/14/2015 10:21:22 EDT		Big stretch of rock barren running north south, great hibernacula			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M48	Field Crew	JULIE KASEY		423
Feature ID	Sn-n-m48-13	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	1		
Start Date	5/14/2015 12:31:05 PM	Precipitation	0		
End Date	5/14/2015 12:51:26 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		No reptiles		
Latitude:45.867009,Longitude:-80.706945,Altitude:173.9,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:05/14/2015 12:31:40 EDT		Rock barren Bogs adjacent , deep wide cracks and scattered boulders 40% cover junipers.			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Map Number	N-m33	Field Crew	KRISTAN WASHBURN	435
Feature ID	SN-N-M33-3	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes
Tablet	AECOM4	Wind Speed (beaufort)	4	
Start Date	5/14/2015 2:16:22 PM	Precipitation	0	
End Date	5/14/2015 2:35:50 PM	Cloud Cover	5.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.857535,Longitude:-80.664534,Altitude:176.1,Speed:0.066877775,Accuracy:2.1,Provider:gps,Time:05/14/2015 02:22:16 EDT		South facing rock slope adjacent to wetland		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	KRISTAN WASHBURN	438
Feature ID	SN-N-M33-1	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes
Tablet	AECOM4	Wind Speed (beaufort)	3	
Start Date	5/14/2015 2:37:01 PM	Precipitation	0	
End Date	5/14/2015 2:57:30 PM	Cloud Cover	5.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.857631,Longitude:-80.663066,Altitude:175.0,Speed:0.010288889,Accuracy:2.7,Provider:gps,Time:05/14/2015 02:41:02 EDT		Open rock		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	N-M27	Field Crew	WALKER AND CARMICHAEL		444
Feature ID	SN-N-M27-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM8	Wind Speed (beaufort)	3		
Start Date	5/14/2015 11:23:50 AM	Precipitation	0		
End Date	5/14/2015 11:42:38 AM	Cloud Cover	5.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Massassauga rattlesnake observed close to survey location. Reported in wildlife form.		
Latitude:45.865171,Longitude:-80.661341,Altitude:183.8,Speed:0.19034444,Accuracy:2.1,Provider:gps,Time:05/14/2015 11:27:21 EDT		Rock barren with treed soft moss areas			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M27	Field Crew	WALKER AND CARMICHAEL		447
Feature ID	SN-N-M27-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM8	Wind Speed (beaufort)	3		
Start Date	5/14/2015 12:37:02 PM	Precipitation	0		
End Date	5/14/2015 12:57:39 PM	Cloud Cover	5.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.861494,Longitude:-80.657101,Altitude:176.5,Speed:0.041155554,Accuracy:1.8,Provider:gps,Time:05/14/2015 12:38:24 EDT	Rock barren with fissures, pockets of treed habitat very little bog habitat directly adjacent. More suitable for gestation				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M50	Field Crew	ADAM, AYESHA		480
Feature ID	SN-S-M50-7	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	11.00	Weather Notes	
Tablet	AECOM6	Wind Speed (beaufort)	5		
Start Date	5/19/2015 3:02:57 PM	Precipitation	0		
End Date	5/19/2015 3:25:24 PM	Cloud Cover	90.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.827178,Longitude:-80.709869,Altitude:199.8,Speed:0.025722222,Accuracy:1.5,Provider:gps,Time:05/19/2015 03:03:42 EDT		Rock barren bordering coniferous forest and wetland			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M33	Field Crew	JOHANNA PERZ, HEATHER KIME		489
Feature ID	SN-S-M33-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	9.00	Weather Notes	
Tablet	AECOM5	Wind Speed (beaufort)	5	Humid	
Start Date	5/19/2015 2:15:32 PM	Precipitation	0		
End Date	5/19/2015 2:35:16 PM	Cloud Cover	100.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.825008,Longitude:-80.647679,Altitude:192.9,Speed:0.0051444443,Accuracy:1.5,Provider:gps,Time:05/19/2015 02:20:21 EDT	Rock barren with crevices, Jack Pine, junipers, dead wood				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	A-M02	Field Crew	KRISTAN WASHBURN	519
Feature ID	SN-a-m02-2	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	11.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	2	
Start Date	5/19/2015 9:40:58 AM	Precipitation	0	
End Date	5/19/2015 10:00:29 AM	Cloud Cover	40.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.890714,Longitude:-80.545605,Altitude:181.1,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:05/19/2015 09:46:23 EDT	Southeast facing rock slope			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	A-M03	Field Crew	KRISTAN WASHBURN		522
Feature ID	Sn-A-M03-03	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	11.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	2		
Start Date	5/19/2015 10:01:31 AM	Precipitation	0		
End Date	5/19/2015 10:27:10 AM	Cloud Cover	80.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.890431,Longitude:-80.543535,Altitude:205.7,Speed:0.10288889,Accuracy:1.8,Provider:gps,Time:05/19/2015 10:05:49 EDT	Large rock outcrop				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Map Number	A-M01	Field Crew	KRISTAN WASHBURN	528
Feature ID	SN-A-M01-01	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	3	
Start Date	5/19/2015 11:02:38 AM	Precipitation	0	
End Date	5/19/2015 11:35:44 AM	Cloud Cover	80.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.889753,Longitude:-80.562118,Altitude:212.1,Speed:0.31381112,Accuracy:1.8,Provider:gps,Time:05/19/2015 11:21:13 EDT	Rock outcrop with scattered vegetation			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	N-M2	Field Crew	KRISTAN WASHBURN	537
Feature ID	SN-N-M02-18	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	2	
Start Date	5/19/2015 12:35:19 PM	Precipitation	1	
End Date	5/19/2015 12:55:12 PM	Cloud Cover	90.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.885159,Longitude:-80.577686,Altitude:192.4,Speed:0.38583332,Accuracy:2.1,Provider:gps,Time:05/19/2015 12:44:32 EDT	Rock outcrop and shoreline of wetland			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	N-M19	Field Crew	CASEY O'DRISCOLL	549
Feature ID	SN-N-M19-19	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	11.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	4	
Start Date	5/20/2015 10:15:37 AM	Precipitation	0	
End Date	5/20/2015 10:36:53 AM	Cloud Cover	0.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions		Appears to be good gestation habitat even though no snakes or evidence were observed.	
Latitude:45.885993,Longitude:-80.654878,Altitude:190.2,Speed:0.041155554,Accuracy:1.25,Provider:gps,Time:05/20/2015 10:16:57 EDT	Large south facing rock barren. Common juniper and Sheep laurel dominant shrub cover. Leaf litter and woody debris abundant around rock barren. Loose rock not in abundance within study area. Exposed rock abundant.			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	N-M14	Field Crew	AMI TOM	588
Feature ID	SN-N-M14-1	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes
Tablet	AECOM10	Wind Speed (beaufort)	4	
Start Date	5/20/2015 11:29:29 AM	Precipitation	0	
End Date	5/20/2015 11:50:54 AM	Cloud Cover	0.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.869926,Longitude:-80.63267,Altitude:197.3,Speed:0.030866666,Accuracy:1.5,Provider:gps,Time:05/20/2015 11:31:14 EDT		Large mostly flat bedrock, some small boulders. Moss, juniper and jack pine as cover.		
Description of Reptile Evidence				
Species	Massasauga Rattlesnake			282
Estimated UTM or distance and direction from vantage point	12m west of vantage point			
Estimated Length (cm)	70			
Total Observed	1			
Observed Behaviour	Rattled tail and coiled upon discovery.			

# Snake/Turtle Basking - WEC

Map Number	S-M34	Field Crew	JOHANNA PERZ		591
Feature ID	SN-S-M34-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM5	Wind Speed (beaufort)	2		
Start Date	5/20/2015 10:05:55 AM	Precipitation	0		
End Date	5/20/2015 10:25:33 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.83156,Longitude:-80.643472,Altitude:193.1,Speed:0.030866666,Accuracy:1.5,Provider:gps,Time:05/20/2015 10:25:47 EDT	Suitable snake gestation habitat. Rock barren with high complexity for refuge (low juniper and other shrubs; white pine and Jack pine saplings; downed woody vegetation and shrubs; near water body, wetlands and mixed forest, deep crevices in bedrock).				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M33	Field Crew	JOHANNA PERZ		600
Feature ID	SN-S-M33-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM5	Wind Speed (beaufort)	2		
Start Date	5/20/2015 11:56:36 AM	Precipitation	0		
End Date	5/20/2015 12:16:17 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Coordinates taken at end of snakw survey. Snake survey began near where turtle basking survey concluded		
Latitude:45.825602,Longitude:-80.64865,Altitude:197.7,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:05/20/2015 12:13:54 EDT	Rock barren with high complexity provided by low lying shrubs and dead wood. Dominant vegetation is Jack pine,white pine with poplars in areas between exposed bedrock				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC


Map Number	N-M46	Field Crew	KASEY MCKENZIE		603
Feature ID	SN-N-M46-14	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	11.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	1		
Start Date	5/20/2015 9:41:13 AM	Precipitation	0		
End Date	5/20/2015 9:55:14 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Rock not warm enough yet; great habitat		
Latitude:45.857006,Longitude:-80.692189,Altitude:180.2,Speed:0.015433333,Accuracy:1.8,Provider:gps,Time:05/20/2015 09:43:36 EDT		Rolling rock barren, lots of juniper and loose rock			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M48	Field Crew	KASEY MCKENZIE		609
Feature ID	SN-N-M48-13	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	2		
Start Date	5/20/2015 11:16:44 AM	Precipitation	0		
End Date	5/20/2015 11:43:52 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.867061,Longitude:-80.706978,Altitude:181.8,Speed:0.020577777,Accuracy:2.0,Provider:gps,Time:05/20/2015 11:20:30 EDT		Lots of loose rock and piles; many juniper bushes for cover and open flat rock for basking			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Map Number	S-M31	Field Crew	ADAM MCCLELLAND	624
Feature ID	SN-S-M31-2	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes
Tablet	AECOM2	Wind Speed (beaufort)	4	
Start Date	5/20/2015 10:38:41 AM	Precipitation	0	
End Date	5/20/2015 10:58:35 AM	Cloud Cover	0.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.83992,Longitude:-80.654896,Altitude:182.9,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:05/20/2015 10:39:32 EDT	Rock barren surrounded by coniferous forest, 50% shrub cover			
Description of Reptile Evidence				
Species	Massasauga Rattlesnake			315
Estimated UTM or distance and direction from vantage point	2 m			
Estimated Length (cm)	40			
Total Observed	1			
Observed Behaviour	Basking			

# Snake/Turtle Basking - WEC

Map Number	S-M14	Field Crew	ADAM MCCLELLAND	630
Feature ID	SN-S-M14-2	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes
Tablet	AECOM2	Wind Speed (beaufort)	5	
Start Date	5/20/2015 1:44:04 PM	Precipitation	0	
End Date	5/20/2015 2:03:29 PM	Cloud Cover	0.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.844306,Longitude:-80.63382,Altitude:193.6,Speed:0.07202222,Accuracy:1.5,Provider:gps,Time:05/20/2015 01:44:53 EDT	Rock barren, 60% veg cover (juniper), significant deadfall			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	SARAH RICHER	642
Feature ID	SN-S-M17-7	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes Was -2 C this morning at Joe's camp
Tablet	AECOM3	Wind Speed (beaufort)	4	
Start Date	5/20/2015 12:45:31 PM	Precipitation	0	
End Date	5/20/2015 1:05:43 PM	Cloud Cover	0.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.832269,Longitude:-80.632465,Altitude:199.5,Speed:0.00 51444443,Accuracy:1.8,Provider:gps, Time:05/20/2015 12:56:33 EDT	Rock, pines, lots of deadfall			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	SARAH RICHER		648
Feature ID	SN-N-M17-5	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM3	Wind Speed (beaufort)	4	Was -2 C this morning at Joe's camp	
Start Date	5/20/2015 2:00:20 PM	Precipitation	0		
End Date	5/20/2015 2:20:57 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.830437,Longitude:-80.625509,Altitude:196.1,Speed:0.0463,Accuracy:1.8,Provider:gps,Time:05/20/2015 02:04:47 EDT		Open rock next to large wetland; plenty of cover objects including juniper, flat rocks, deadfall			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M33	Field Crew	JOHANNA PERZ, OLGA HROPACH		729
Feature ID	SN-S-M33-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	1		
Start Date	5/28/2015 9:33:27 AM	Precipitation	0		
End Date	5/28/2015 9:53:50 AM	Cloud Cover	50.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.825526,Longitude:-80.647248,Altitude:195.1,Speed:0.020577777,Accuracy:1.8,Provider:gps,Time:05/28/2015 09:55:23 EDT	Rock barren with conifer forested depressions, adequate refuge provided by logs, snags, crevices in rock; dominant species is jack pine and juniper				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M34	Field Crew	JOHANNA PERZ, OLGA HROPACH		732
Feature ID	SN-S-M34-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	1	Humid	
Start Date	5/28/2015 11:00:27 AM	Precipitation	0		
End Date	5/28/2015 11:20:46 AM	Cloud Cover	95.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.831756,Longitude:-80.64325,Altitude:203.7,Speed:0.015433333,Accuracy:2.1,Provider:gps,Time:05/28/2015 11:02:19 EDT	Rock pile on rock barren with black huckleberry, juniper, and dead wood				
Description of Reptile Evidence					
Species	Five-lined Skink				354
Estimated UTM or distance and direction from vantage point	1				
Estimated Length (cm)	10				
Total Observed	1				
Observed Behaviour	Curled and skurried once startled				

# Snake/Turtle Basking - WEC

Map Number	A-M1	Field Crew	TOM SHORNEY , SARAH RICHER		738
Feature ID	SN-A-M01-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	2		
Start Date	5/28/2015 11:29:19 AM	Precipitation	0		
End Date	5/28/2015 11:49:13 AM	Cloud Cover	90.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.889719,Longitude:-80.562397,Altitude:207.3,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:05/28/2015 11:30:18 EDT	Shrub rock end barren dominate by juniperus communis. Several suitable habitat for skink gestation including rotting logs, small rocks and cracks which may provide access to below the frostline				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	A-M2	Field Crew	TOM SHORNEY, SARAH RICHER		744
Feature ID	SN-A-M03-3	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	2		
Start Date	5/28/2015 2:25:54 PM	Precipitation	0		
End Date	5/28/2015 2:50:25 PM	Cloud Cover	75.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.890443,Longitude:-80.543224,Altitude:0.0,Speed:0.0463,Accuracy:100.0,Provider:gps,Time:05/28/2015 02:46:05 EDT	Large barren feature primarily covered in blueberry and juniper. Feature provides several basking opportunities as well as gestation habitat.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Map Number	S-m7	Field Crew	JASON NORONHA	771
Feature ID	SN-n-m7-2	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes
Tablet	AECOM14	Wind Speed (beaufort)	1	
Start Date	5/29/2015 9:06:25 AM	Precipitation	0	
End Date	5/29/2015 9:24:21 AM	Cloud Cover	60.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions		No snakes	
Latitude:45.846536,Longitude:-80.597997,Altitude:203.9,Speed:0.30352223,Accuracy:2.7,Provider:gps,Time:05/29/2015 09:06:59 EDT		Rock barren		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	S-m7	Field Crew	JASON NORONHA	774
Feature ID	Sn-n-m7-17	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes
Tablet	AECOM14	Wind Speed (beaufort)	1	
Start Date	5/29/2015 9:30:15 AM	Precipitation	0	
End Date	5/29/2015 9:45:24 AM	Cloud Cover	70.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.847343,Longitude:-80.59975,Altitude:204.2,Speed:0.05658889,Accuracy:2.1,Provider:gps,Time:05/29/2015 09:16:44 EDT	Open Rock barren			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	N-M40	Field Crew	AYESHA, JASON ASHAWASEGAI		780
Feature ID	SN-N-M40-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM6	Wind Speed (beaufort)	4		
Start Date	5/29/2015 9:00:20 AM	Precipitation	0		
End Date	5/29/2015 9:22:30 AM	Cloud Cover	30.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.8806,Longitude:-80.69168,Altitude:184.4,Speed:0.025722222,Accuracy:1.5,Provider:gps,Time:05/29/2015 09:01:57 EDT	East-facing jack pine treed rock barren with deep cracks. Potential hibernaculum.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M9	Field Crew	AYESHA JASON ASHAWASEGAI		783
Feature ID	SN-N-M9-18	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	17.00	Weather Notes	
Tablet	AECOM6	Wind Speed (beaufort)	3		
Start Date	5/29/2015 10:22:52 AM	Precipitation	0		
End Date	5/29/2015 10:45:45 AM	Cloud Cover	40.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.885509,Longitude:-80.630263,Altitude:193.9,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:05/29/2015 10:46:45 EDT					
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M27	Field Crew	JOHANNA PERZ		786
Feature ID	SN-N-M27-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	1	Hazy, humid	
Start Date	5/29/2015 8:38:19 AM	Precipitation	0		
End Date	5/29/2015 8:58:36 AM	Cloud Cover	25.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.861433,Longitude:-80.656678,Altitude:191.4,Speed:0.0051444443,Accuracy:1.5,Provider:gps,Time:05/29/2015 08:39:59 EDT	Rock barren with stunted jack pine, juniper, dead trees and logs, and crevices. Sphagnum and tamarack swamp/treed fen on northern side				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M27	Field Crew	JOHANNA PERZ		789
Feature ID	SN-N-M27-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	1		
Start Date	5/29/2015 9:15:44 AM	Precipitation	0		
End Date	5/29/2015 9:35:50 AM	Cloud Cover	25.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.865281,Longitude:-80.660778,Altitude:192.0,Speed:0.0463,Accuracy:1.5,Provider:gps,Time:05/29/2015 09:18:00 EDT	Rock barren with adequate complexity provided by logs, junipers, crevices in rock barren. Small wet area in depressions and larger peatland on east side				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M40	Field Crew	KRISTAN WASHBURN	798
Feature ID	SN-S-M40-19	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes
Tablet	AECOM15	Wind Speed (beaufort)	2	
Start Date	5/29/2015 9:39:26 AM	Precipitation	0	
End Date	5/29/2015 9:59:00 AM	Cloud Cover	50.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.81707,Longitude:-80.653962,Altitude:0.0,Speed:0.020577777,Accuracy:100.0,Provider:gps,Time:05/29/2015 10:17:28 EDT		Scattered rock outcrops and vegetation		
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				


# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	JAMES, AYESHA, MIKE		2583
Feature ID	SN-N-M33-3	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	19.00	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	1		
Start Date	6/1/2015 3:45:48 PM	Precipitation	0		
End Date	6/1/2015 4:25:40 PM	Cloud Cover	10.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.861269,Longitude:-80.667389,Altitude:175.2,Speed:0.19548889,Accuracy:9.3,Provider:gps,Time:06/01/2015 03:53:56 EDT					
Description of Reptile Evidence					
Species	Midland Painted Turtle				399
Estimated UTM or distance and direction from vantage point	5078800 525650				
Estimated Length (cm)	12				
Total Observed	2				
Observed Behaviour	Sunning				



# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	402
Estimated UTM or distance and direction from vantage point	5078550 525750	
Estimated Length (cm)	12	
Total Observed	1	
Observed Behaviour	Sunning	

Species	Blanding's Turtle	405
Estimated UTM or distance and direction from vantage point	525900 5078475	
Estimated Length (cm)	20	
Total Observed	2	
Observed Behaviour	Sunning	

# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	KAMSTRA, PRASAD		864
Feature ID	SN-N-M33-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM10	Wind Speed (beaufort)	1		
Start Date	6/1/2015 5:06:42 PM	Precipitation	0		
End Date	6/1/2015 5:18:37 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.857562,Longitude:-80.663149,Altitude:179.4,Speed:0.030866666,Accuracy:2.1,Provider:gps,Time:06/01/2015 05:10:58 EDT		Not a. Suitable hibernation site. Not good deep crevices or tanks. Some potential site. as gestacion -uoo			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M27	Field Crew	ADAM HEATHER MIKE		873
Feature ID	SN-N-M27-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM2	Wind Speed (beaufort)	2		
Start Date	6/2/2015 10:32:17 AM	Precipitation	0		
End Date	6/2/2015 10:53:19 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.861399,Longitude:-80.656662,Altitude:182.3,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:06/02/2015 10:34:41 EDT		Rock barren with juniper and jack pine lots of downed woody debris / basking logs. Lots of rock debris for cover. Variable slopes so multiple sunning directions. Likely several metres above water depth.			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M27	Field Crew	ADAM HEATHER MIKE		876
Feature ID	SN-N-M27-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM2	Wind Speed (beaufort)	1		
Start Date	6/2/2015 11:24:38 AM	Precipitation	0		
End Date	6/2/2015 11:47:15 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.865221,Longitude:-80.660883,Altitude:178.3,Speed:0.051444445,Accuracy:2.5,Provider:gps,Time:06/02/2015 11:26:35 EDT	Rock ban with jack pine and juniper. Lots of done woody debris / basking logs. Variable topography so lots of sunning directions. Likely several metres above water table.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M46	Field Crew	AMI ARSENAULT KRISTAN WASHBURN		921
Feature ID	SN-N-M46-14	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	1		
Start Date	6/2/2015 10:08:10 AM	Precipitation	0		
End Date	6/2/2015 10:30:00 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.856991,Longitude:-80.692157,Altitude:184.9,Speed:0.0051444443,Accuracy:1.8,Provider:gps,Time:06/02/2015 10:10:28 EDT	Rock barren with treed and shrub vegetation. Located near fen.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M48	Field Crew	AMI ARSENAULT KRISTAN WASHBURN		927
Feature ID	SN-N-M48-13	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	2		
Start Date	6/2/2015 11:15:36 AM	Precipitation	0		
End Date	6/2/2015 11:35:53 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.867164,Longitude:-80.706992,Altitude:172.8,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:06/02/2015 11:18:15 EDT	Large Bedrock location , tree and shrub vegetation.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M14	Field Crew	AMI ARSENAULT	936
Feature ID	SN-S-M14-2	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes
Tablet	AECOM12	Wind Speed (beaufort)	5	
Start Date	6/3/2015 9:08:11 AM	Precipitation	0	
End Date	6/3/2015 9:28:15 AM	Cloud Cover	35.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.844076,Longitude:-80.633429,Altitude:188.6,Speed:0.08745556,Accuracy:1.5,Provider:gps,Time:06/03/2015 09:08:59 EDT	Large boulders and deep crevices on the north west site of observation location. Lots of vegetation for cover and somw dead logs. No snakes observed.			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	S-M31	Field Crew	AMI ARSENAULT	939
Feature ID	SN-S-M31-2	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes Wispy clouds
Tablet	AECOM12	Wind Speed (beaufort)	4	
Start Date	6/3/2015 10:18:29 AM	Precipitation	0	
End Date	6/3/2015 10:38:36 AM	Cloud Cover	50.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.840104,Longitude:-80.654829,Altitude:185.5,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/03/2015 10:19:08 EDT	Heavily vegetated barren with juniper and white pine. Some large dead logs and fallen trees. Deep crevices in barren and junipers. Flat barren on north side, crevices and boulders on south facing slope. No snakes observed.			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				



# Snake/Turtle Basking - WEC

Map Number	S-M34	Field Crew	AMI ARSENAULT	951
Feature ID	SN-S-M34-1	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM12	Wind Speed (beaufort)	4	
Start Date	6/3/2015 1:04:50 PM	Precipitation	0	
End Date	6/3/2015 1:25:52 PM	Cloud Cover	80.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.832204,Longitude:-80.642678,Altitude:192.2,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:06/03/2015 01:05:32 EDT	Large bedrock outcrop beside large beaver pond. More of a flat area than anything; no crevices available for shelter. Vegetated by juniper and white pine, as well as grasses and mosses. Logs litter some areas of barren. No snakes observed.			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	S-M33	Field Crew	AMI ARSENAULT		957
Feature ID	SN-S-M33-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM12	Wind Speed (beaufort)	4		
Start Date	6/3/2015 2:00:35 PM	Precipitation	0		
End Date	6/3/2015 2:10:05 PM	Cloud Cover	40.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.82582,Longitude:-80.647569,Altitude:183.5,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:06/03/2015 02:01:28 EDT		Large rock barren with beside beaver pond. Jack pine trees growing in barren, along with grasses mosses and ferns. Large flat rock, good for basking, Not many boulders with crevices for shelter. No snakes observed.			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M14	Field Crew	KRISTAN WASHBURN	993
Feature ID	SN-N-M14-1	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	4	
Start Date	6/3/2015 9:50:40 AM	Precipitation	0	
End Date	6/3/2015 10:10:15 AM	Cloud Cover	25.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.869928,Longitude:-80.632667,Altitude:183.6,Speed:0.15433334,Accuracy:1.8,Provider:gps,Time:06/03/2015 10:03:23 EDT	Bedrock surrounded by fen			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	N-M2	Field Crew	KRISTAN WASHBURN	1002
Feature ID	SN-N-M02-18	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	22.00	Weather Notes
Tablet	AECOM9	Wind Speed (beaufort)	3	
Start Date	6/3/2015 3:15:41 PM	Precipitation	0	
End Date	6/3/2015 3:35:04 PM	Cloud Cover	0.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.885149,Longitude:-80.576982,Altitude:194.0,Speed:0.03601111,Accuracy:3.0,Provider:gps,Time:	Shoreline of wetland			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	S-M7	Field Crew	OLGA HROPACH SARAH RICHER		1005
Feature ID	SN-N-M7-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	25.00	Weather Notes	
Tablet	AECOM5	Wind Speed (beaufort)	1	25 degrees in the sun	
Start Date	6/2/2015 12:26:06 PM	Precipitation	0		
End Date	6/2/2015 12:44:56 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Walking search survey; conditions may have been too hot for bssking. No snakes observed.		
Latitude:45.846609,Longitude:-80.598367,Altitude:197.6,Speed:0.06173333,Accuracy:1.8,Provider:gps,Time:06/02/2015 12:35:56 EDT	Rock barren with lots of vegetation cover including bracken fern, juniper bushes, white pine saplings and low sweet blueberry. Lots of rocks and crevices in the rock barren for hiding and potential gestation sites.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M7	Field Crew	OLGA HROPACH, SARAH RICHER		1008
Feature ID	SN-N-M7-17	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	25.00	Weather Notes	
Tablet	AECOM5	Wind Speed (beaufort)	1		
Start Date	6/2/2015 12:55:09 PM	Precipitation	0		
End Date	6/2/2015 1:15:06 PM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Site also borders a small boggy area adjacent to large trees by gestation area; lots of sphagnum, access to tree rooting zone along small slope		
Latitude:45.847443,Longitude:-80.599883,Altitude:201.1,Speed:0.29837778,Accuracy:1.8,Provider:gps,Time:06/02/2015 12:59:57 EDT		Rock barren with lots of vegetation cover including bracken fern, juniper bushes, white pine saplings and low sweet blueberry. Lots of rocks and crevices in the rock barren for hiding and potential gestation sites.			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M40	Field Crew	KASEY & CASEY		1017
Feature ID	SN-S-M40-19	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM7	Wind Speed (beaufort)	1		
Start Date	6/4/2015 10:45:26 AM	Precipitation	0		
End Date	6/4/2015 11:04:56 AM	Cloud Cover	20.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.81777,Longitude:-80.65344,Altitude:187.1,Speed:0.015433333,Accuracy:1.5,Provider:gps,Time:06/04/2015 10:47:25 EDT	Treed rock barren adjacent to marsh, lots of vegetation for cover and deadfall				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M50	Field Crew	ADAM HEATHER RON	1020
Feature ID	SN-S-M50-7	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes
Tablet	AECOM4	Wind Speed (beaufort)	2	
Start Date	6/4/2015 9:38:08 AM	Precipitation	0	
End Date	6/4/2015 9:58:25 AM	Cloud Cover	15.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.827087,Longitude:-80.709835,Altitude:187.8,Speed:0.066877775,Accuracy:1.8,Provider:gps,Time:06/04/2015 09:40:58 EDT	Small patches of bare rock with juniper, raspberry, ferns, herbs and grasses. Lots of cover under rocks. Lots of downed woody debris. Approximately 3 m above water table.			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				



# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	AYESHA JAMES		1026
Feature ID	SN-N-M33-3	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM6	Wind Speed (beaufort)	2		
Start Date	6/1/2015 4:52:51 PM	Precipitation	0		
End Date	6/1/2015 5:13:22 PM	Cloud Cover	5.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.857486,Longitude:-80.664483,Altitude:183.6,Speed:0.010288889,Accuracy:2.0,Provider:gps,Time:06/01/2015 05:01:01 EDT	Juniper-covered rock barren with pile of large rocks at base; next to wetland/beaver pond				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M7	Field Crew	KASEY & NATALIYA		1029
Feature ID	SN-S-M7-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	22.00	Weather Notes	
Tablet	AECOM7	Wind Speed (beaufort)	3		
Start Date	6/9/2015 1:49:12 PM	Precipitation	0		
End Date	6/9/2015 2:00:05 PM	Cloud Cover	20.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Not a good spot for a snake survey		
Latitude:45.846372,Longitude:-80.598129,Altitude:177.8,Speed:0.1389,Accuracy:2.7,Provider:gps,Time:06/09/2015 01:53:36 EDT		Small rock barren area, highly vegetated with only a few spots open to full sun, no loose rock for cover			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M7	Field Crew	KASEY & NATALIYA		1032
Feature ID	SN-S-M7-17	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	22.00	Weather Notes	
Tablet	AECOM7	Wind Speed (beaufort)	1		
Start Date	6/9/2015 2:03:04 PM	Precipitation	0		
End Date	6/9/2015 2:15:48 PM	Cloud Cover	20.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.847328,Longitude:-80.599732,Altitude:199.3,Speed:0.041155554,Accuracy:2.4,Provider:gps,Time:06/09/2015 02:05:01 EDT	Open rolling rock barren, outlined with white pine, loose rock and juniper for cover				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-m31	Field Crew	JULIE ELLIS		1044
Feature ID	SN-s-m31-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM18	Wind Speed (beaufort)	1		
Start Date	6/9/2015 10:10:29 AM	Precipitation	0		
End Date	6/9/2015 10:27:42 AM	Cloud Cover	15.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		No snakes		
Latitude:45.83971,Longitude:-80.654675,Altitude:191.5,Speed:0.010288889,Accuracy:2.1,Provider:gps,Time:06/09/2015 10:32:06 EDT		Rock barren woodland and small wetbogs adjacent. 75% juniper cover quite shaded. Fissured rock, few scattered rocks			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-m33	Field Crew	JULIE ELLIS		1053
Feature ID	Sn-s-m33-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM18	Wind Speed (beaufort)	1		
Start Date	6/9/2015 1:16:36 PM	Precipitation	0		
End Date	6/9/2015 1:37:20 PM	Cloud Cover	15.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		No snakes		
Latitude:45.825708,Longitude:-80.647473,Altitude:181.7,Speed:0.10288889,Accuracy:1.8,Provider:gps,Time:06/09/2015 01:17:07 EDT	Mostly north facing rock barren. Fissures rock under juniper. Forested rock barren adjacent				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M14	Field Crew	JOHANNA PERZ	1059
Feature ID	SN-S-M14-2	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes
Tablet	AECOM1	Wind Speed (beaufort)	1	
Start Date	6/9/2015 9:49:10 AM	Precipitation	0	
End Date	6/9/2015 10:09:17 AM	Cloud Cover	5.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.844078,Longitude:-80.633559,Altitude:204.5,Speed:0.0463,Accuracy:2.1,Provider:gps,Time:06/09/2015 09:50:13 EDT	Treed rock barren with jack pine and red maple, juniper, deciduous shrubs some exposed bedrock, lots of woody debris			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	JOHANNA PERZ		1065
Feature ID	SN-S-M17-7	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	1		
Start Date	6/9/2015 11:16:01 AM	Precipitation	0		
End Date	6/9/2015 11:36:25 AM	Cloud Cover	15.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.832313,Longitude:-80.632519,Altitude:198.5,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:06/09/2015 11:21:31 EDT	Treed rock barren with high tree cover (dominant species is white pine followed by jack pine); also high complexity provided by shrub cover (junipers) and logs				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	JOHANNA PERZ		1071
Feature ID	SN-S-M17-5	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	3		
Start Date	6/9/2015 1:47:29 PM	Precipitation	0		
End Date	6/9/2015 1:07:40 PM	Cloud Cover	25.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.830105,Longitude:-80.62526,Altitude:194.3,Speed:0.03601111,Accuracy:1.75,Provider:gps,Time:06/09/2015 01:03:09 EDT	Treed rock barren with jack pine, exposed bedrock and complexity provided by shrubs, saplings, rock crevices/piles and woody debris				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KASEY & NATALIYA		1077
Feature ID	SN-S-M17-5	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	22.00	Weather Notes	
Tablet	AECOM7	Wind Speed (beaufort)	1		
Start Date	6/11/2015 12:53:15 PM	Precipitation	0		
End Date	6/11/2015 1:03:54 PM	Cloud Cover	20.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.830437,Longitude:-80.625675,Altitude:192.6,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:06/11/2015 12:56:27 EDT	Highly elevated rock barren west of large wetland area				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	KASEY & NATALIYA		1080
Feature ID	SN-S-M17-7	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	22.00	Weather Notes	
Tablet	AECOM7	Wind Speed (beaufort)	1		
Start Date	6/11/2015 1:25:48 PM	Precipitation	0		
End Date	6/11/2015 1:41:54 PM	Cloud Cover	30.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.832354,Longitude:-80.632562,Altitude:182.2,Speed:0.030866666,Accuracy:1.8,Provider:gps,Time:06/11/2015 01:26:58 EDT		Treed rock barren S of 2 connecting wetlands			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M40	Field Crew	KRISTAN WASHBURN AND JAMES KAMSTRA		1098
Feature ID	SN-N-M40-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM16	Wind Speed (beaufort)	2		
Start Date	6/11/2015 8:39:20 AM	Precipitation	0		
End Date	6/11/2015 8:59:01 AM	Cloud Cover	10.00		
Survey Type	Snake	Vantage Point #		Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.880509,Longitude:-80.691601,Altitude:186.0,Speed:0.0051444443,Accuracy:1.5,Provider:gps,Time:06/11/2015 08:47:26 EDT	Rock barren with an abundance of juniper. Does not appear to have any cracks to below the frost line.				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	N-M09	Field Crew	KRISTAN WASHBURN AND JAMES KAMSTRA		1101
Feature ID	SN-N-M9-18	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM16	Wind Speed (beaufort)	2		
Start Date	6/11/2015 10:25:47 AM	Precipitation	0		
End Date	6/11/2015 10:45:07 AM	Cloud Cover	5.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.885451,Longitude:-80.630448,Altitude:194.9,Speed:0.015433333,Accuracy:1.75,Provider:gps,Time:06/11/2015 10:32:54 EDT		Rock barren with abundant juniper and blueberry vegetation. Large crack in one rock that may go below the frost line			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M19	Field Crew	KRISTAN WASHBURNAND JAMES KAMSTRA		1104
Feature ID	SN-N-M19-19	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM16	Wind Speed (beaufort)	2		
Start Date	6/11/2015 9:38:55 AM	Precipitation	0		
End Date	6/11/2015 9:58:43 AM	Cloud Cover	10.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.885979,Longitude:-80.654862,Altitude:172.8,Speed:0.05658889,Accuracy:1.8,Provider:gps,Time:06/11/2015 09:43:40 EDT	Rock barrenwitha mixture of juniper and grasses				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	JOHANNA PERZ		1107
Feature ID	SN-S-M17-7	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	1	Humid	
Start Date	6/15/2015 9:57:49 AM	Precipitation	0		
End Date	6/15/2015 10:18:14 AM	Cloud Cover	100.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Coordinates taken at location of sighting		
Latitude:45.832461,Longitude:-80.631945,Altitude:203.1,Speed:0.8128222,Accuracy:1.5,Provider:gps,Time:06/15/2015 10:05:32 EDT		Treed rock barren with little exposed rock and high shrub and tree cover. Dominant species are jack pine, white pine, blueberry, sheep laurel juniper			
Description of Reptile Evidence					
Species	Eastern Gartersnake				513
Estimated UTM or distance and direction from vantage point	0				
Estimated Length (cm)	40				
Total Observed	1				
Observed Behaviour	Curled under sweet fern and blueberry shrubs				

# Snake/Turtle Basking - WEC

Map Number	S-M17	Field Crew	JOHANNA PERZ		1110
Feature ID	SN-S-M17-5	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	0	Humid	
Start Date	6/15/2015 10:33:13 AM	Precipitation	0		
End Date	6/15/2015 10:53:40 AM	Cloud Cover	100.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.830367,Longitude:-80.625605,Altitude:207.5,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:06/15/2015 10:34:40 EDT					
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	S-M50	Field Crew	JOHANNA PERZ	1113
Feature ID	SN-S-M50-7	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	0	Can see sun peeking through
Start Date	6/15/2015 2:10:10 PM	Precipitation	0	
End Date	6/15/2015 2:30:28 PM	Cloud Cover	100.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.827145,Longitude:-80.709841,Altitude:207.2,Speed:0.00 51444443,Accuracy:2.1,Provider:gps, Time:06/15/2015 02:21:19 EDT				
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				



# Snake/Turtle Basking - WEC

Map Number	N-M40	Field Crew	SARAH RICHER		1125
Feature ID	SN-N-M40-20	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM19	Wind Speed (beaufort)	0	Very foggy & muggy	
Start Date	6/15/2015 11:35:20 AM	Precipitation	0		
End Date	6/15/2015 12:55:46 PM	Cloud Cover	100.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.880545,Longitude:-80.691603,Altitude:192.3,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:06/15/2015 11:40:39 EDT		Treed rock barren, jack pine and juniper dominated, many rock shelves, boulders, and fallen woody debris present			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	N-M19	Field Crew	SARAH RICHER		1128
Feature ID	SN-N-M19-19	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	25.00	Weather Notes	
Tablet	AECOM19	Wind Speed (beaufort)	0	Very muggy	
Start Date	6/15/2015 1:22:59 PM	Precipitation	0		
End Date	6/15/2015 1:42:19 PM	Cloud Cover	100.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.886002,Longitude:-80.654879,Altitude:188.1,Speed:0.2778,Accuracy:1.25,Provider:gps,Time:06/15/2015 01:25:32 EDT	Treed rock barren, jack pine and juniper dominated, many rock shelves, boulders, and fallen woody debris present				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M9	Field Crew	AMI AMY	1134
Feature ID	SN-N-M9-18	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM12	Wind Speed (beaufort)	4	
Start Date	6/15/2015 2:10:13 PM	Precipitation	0	
End Date	6/15/2015 2:30:58 PM	Cloud Cover	50.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.885297,Longitude:-80.630552,Altitude:199.0,Speed:0.4269889,Accuracy:1.5,Provider:gps,Time:06/15/2015 02:10:48 EDT	Flat bedrock with moss, lichen, common juniper, jack pine, large tooth aspen and red maples. Some fallen logs providing shade, good sized boulders. No snakes observed.			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	N-M2	Field Crew	SARAH RICHER		1143
Feature ID	SN-N-M2-18	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	25.00	Weather Notes	
Tablet	AECOM19	Wind Speed (beaufort)	1		
Start Date	6/16/2015 12:28:05 PM	Precipitation	0		
End Date	6/16/2015 12:48:15 PM	Cloud Cover	50.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		Northern Red-bellied snake observed while en route to site, approximately 150 m north of vantage point		
Latitude:45.884918,Longitude:-80.577848,Altitude:213.5,Speed:0.3704,Accuracy:2.0,Provider:gps,Time:06/16/2015 12:35:46 EDT		Treed rock barren adjacent to large wetland surrounded by predominantly deciduous forest			
Description of Reptile Evidence					
Species	Massasauga Rattlesnake				543
Estimated UTM or distance and direction from vantage point	65 m North of point				
Estimated Length (cm)	20				
Total Observed	1				
Observed Behaviour	Basking in sun beside cover objects				

# Snake/Turtle Basking - WEC

Map Number	N-M14	Field Crew	SARAH RICHER		1146
Feature ID	SN-N-M14-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	25.00	Weather Notes	
Tablet	AECOM19	Wind Speed (beaufort)	3		
Start Date	6/16/2015 2:50:02 PM	Precipitation	0		
End Date	6/16/2015 3:10:08 PM	Cloud Cover	50.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.869877,Longitude:-80.632777,Altitude:188.4,Speed:0.03601111,Accuracy:1.75,Provider:gps,Time:06/16/2015 02:54:46 EDT	Jack pine acidic Treed rock barren mosaic with lakebank sedge fen; lots of boulders and rock shelves and crevices, and fallen woody debris				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M46	Field Crew	JOHANNA PERZ	1149
Feature ID	SN-N-M46-14	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	2	
Start Date	6/16/2015 10:27:03 AM	Precipitation	0	
End Date	6/16/2015 10:47:24 AM	Cloud Cover	2.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions			
Latitude:45.857052,Longitude:-80.692105,Altitude:188.8,Speed:0.025722222,Accuracy:1.8,Provider:gps,Time:06/16/2015 10:35:31 EDT	Jack pine rock barren with a lot of exposed rock ; shrub cover, crevices and woody debris present; adjacent to peatland			
Description of Reptile Evidence				
Species				
Estimated UTM or distance and direction from vantage point				
Estimated Length (cm)				
Total Observed				
Observed Behaviour				

# Snake/Turtle Basking - WEC

Map Number	N-M48	Field Crew	JOHANNA PERZ		1155
Feature ID	SN-N-M48-13	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	3		
Start Date	6/16/2015 11:58:59 AM	Precipitation	0		
End Date	6/16/2015 12:18:50 PM	Cloud Cover	25.00		
Survey Type	Snake	Vantage Point #	1		
Vantage Point Location	Description of local habitat conditions				
Latitude:45.867513,Longitude:-80.706704,Altitude:200.2,Speed:0.8385444,Accuracy:1.5,Provider:gps,Time:06/16/2015 12:04:13 EDT	Jack pine rock barren with a lot of exposed rock; wet Sphagnum bogs in depressions; deep crevices and abundant juniper and blueberry shrubs for refuge; near large water body				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	JOHANNA PERZ		1179
Feature ID	SN-N-M33-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	17.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	0		
Start Date	6/17/2015 8:57:54 AM	Precipitation	0		
End Date	6/17/2015 9:17:05 AM	Cloud Cover	100.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.857528,Longitude:-80.663067,Altitude:196.2,Speed:0.020577777,Accuracy:1.75,Provider:gps,Time:06/17/2015 08:59:06 EDT		Jack pine rock barren, exposed bedrock but with high cover of junipers, blunder and woody debris			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	JOHANNA PERZ		1182
Feature ID	SN-N-M33-3	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	0	Humid	
Start Date	6/17/2015 9:23:00 AM	Precipitation	0		
End Date	6/17/2015 9:43:35 AM	Cloud Cover	98.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.857465,Longitude:-80.664379,Altitude:192.1,Speed:0.09774444,Accuracy:1.5,Provider:gps,Time:06/17/2015 09:24:24 EDT		Jack pine rock barren adjacent to beaver pond.			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	<input type="text" value="N-M27"/>	Field Crew	<input type="text" value="JOHANNA PERZ"/>		1188
Feature ID	<input type="text" value="SN-N-M27-2"/>	Study Area	<input type="text" value="WEC"/>		
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="20.00"/>	Weather Notes	
Tablet	<input type="text" value="AECOM13"/>	Wind Speed (beaufort)	<input type="text" value="2"/>		
Start Date	<input type="text" value="6/17/2015 12:05:30 PM"/>	Precipitation	<input type="text" value="0"/>		
End Date	<input type="text" value="6/17/2015 12:25:40 PM"/>	Cloud Cover	<input type="text" value="75.00"/>		
Survey Type	<input type="text" value="Snake"/>	Vantage Point #	<input type="text" value="1"/>	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.861396,Longitude:-80.656709,Altitude:190.6,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:06/17/2015 12:06:51 EDT		Jack pine rock barren adjacent to bog; dominant vegetation includes jack pine and juniper; lots of exposed bedrock although crevices, woody debris and shrubs provide refuge.			
Description of Reptile Evidence					
Species	<input type="text"/>				
Estimated UTM or distance and direction from vantage point	<input type="text"/>				
Estimated Length (cm)	<input type="text"/>				
Total Observed	<input type="text"/>				
Observed Behaviour	<input type="text"/>				

# Snake/Turtle Basking - WEC

Map Number	N-M27	Field Crew	JOHANNA PERZ		1191
Feature ID	SN-N-M27-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	21.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	2		
Start Date	6/17/2015 12:37:32 PM	Precipitation	0		
End Date	6/17/2015 12:57:35 PM	Cloud Cover	75.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.865344,Longitude:-80.660837,Altitude:186.5,Speed:0.020577777,Accuracy:1.5,Provider:gps,Time:06/17/2015 12:38:50 EDT					
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	S-M40	Field Crew	KASEY & JASON		1212
Feature ID	SN-S-M40-19	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM20	Wind Speed (beaufort)	2		
Start Date	6/16/2015 10:21:48 AM	Precipitation	0		
End Date	6/16/2015 10:34:58 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.817767,Longitude:-80.653462,Altitude:189.0,Speed:0.03601111,Accuracy:1.8,Provider:gps,Time:06/16/2015 10:28:47 EDT	Highly elevated treed rock barren NW of wetland, lots of loose rock and veg cover				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					


# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	SARAH RICHER		1236
Feature ID	SN-N-M33-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM7	Wind Speed (beaufort)	1		
Start Date	6/19/2015 9:35:02 AM	Precipitation	0		
End Date	6/19/2015 9:56:41 AM	Cloud Cover	0.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location		Description of local habitat conditions			
Latitude:45.857627,Longitude:-80.66313,Altitude:180.5,Speed:0.025722222,Accuracy:1.5,Provider:gps,Time:06/19/2015 09:36:10 EDT		Treed rock barren, lots of low shrubs and fallen woody debris, some small boulders and rock shelves and crevices			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	SARAH RICHER	2478
Feature ID	SN-N-M33-3	Study Area	WEC	
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes
Tablet	AECOM7	Wind Speed (beaufort)	1	
Start Date	6/19/2015 10:10:47 AM	Precipitation	0	
End Date	6/19/2015 10:30:09 AM	Cloud Cover	0.00	
Survey Type	Snake	Vantage Point #	1	Additional Notes
Vantage Point Location	Description of local habitat conditions		I recognize that this is not a turtle survey spot, but the station is right beside a wetland and the turtles were highly visible. No snakes observed	
Latitude:45.857368,Longitude:-80.664641,Altitude:186.2,Speed:0.025722222,Accuracy:1.5,Provider:gps,Time:06/19/2015 10:33:26 EDT	Treed rock barren adjacent to active beaver pond/wetland. Lots of rubble along a slope, that slopes towards the adjacent wetland; lots of fallen woody debris, low shrubs, and cover rocks			
Description of Reptile Evidence				
Species	Blanding's Turtle			585
Estimated UTM or distance and direction from vantage point	80 m NW			
Estimated Length (cm)	15			
Total Observed	3			
Observed Behaviour	Basking			

# Snake/Turtle Basking - WEC

Species	Midland Painted Turtle	588
Estimated UTM or distance and direction from vantage point	Multiple basking points, 50-120 m away	
Estimated Length (cm)	10	
Total Observed	11	
Observed Behaviour	Basking	

# Snake/Turtle Basking - WEC

Map Number	S-M40	Field Crew	JOHANNA		1245
Feature ID	SN-S-M40-19	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	3		
Start Date	6/19/2015 9:27:43 AM	Precipitation	0		
End Date	6/19/2015 9:47:12 AM	Cloud Cover	5.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.817663,Longitude:-80.653336,Altitude:184.4,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:06/19/2015 09:32:17 EDT	Jack pine rock barren adjacent to gramminoid marsh with open water; crevices, juniper sweet fern, and woody debris present				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					



# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	TOM SHORNEY , DAN MCPARLAND		1254
Feature ID	SN-N-M33-3	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM5	Wind Speed (beaufort)	5		
Start Date	6/11/2015 1:04:57 PM	Precipitation	0		
End Date	6/11/2015 1:21:20 PM	Cloud Cover	65.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions				
Latitude:45.857491,Longitude:-80.664552,Altitude:185.8,Speed:0.051444445,Accuracy:2.1,Provider:gps,Time:06/11/2015 01:20:39 EDT	Barren community adjacent to pond feature. Boulders with juniper ideal for basking. Several crevices offering refuge to below frostline. Habitat ideal for snakes				
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Snake/Turtle Basking - WEC

Map Number	N-M33	Field Crew	TOM SHORNEY, DAN MCPARLAND		1257
Feature ID	SN-N-M33-1	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM5	Wind Speed (beaufort)	5		
Start Date	6/11/2015 1:27:02 PM	Precipitation	0		
End Date	6/11/2015 1:49:01 PM	Cloud Cover	15.00		
Survey Type	Snake	Vantage Point #	1	Additional Notes	
Vantage Point Location	Description of local habitat conditions		No snakes observed		
Latitude:45.857595,Longitude:-80.66311,Altitude:182.1,Speed:0.010288889,Accuracy:1.8,Provider:gps,Time:06/11/2015 01:44:24 EDT		Rock barren adjacent to bog. Several flat rocks which could provide cover. Juniper/ blueberry occupying approximately 50% of the community			
Description of Reptile Evidence					
Species					
Estimated UTM or distance and direction from vantage point					
Estimated Length (cm)					
Total Observed					
Observed Behaviour					

# Appendix C13

## 2015 Spring Raptor Migration Surveys







Table C13: 2015 Spring Raptor Migration Survey Results - HIWEC Study Area

Round No.	3				4			
Survey Date	Flowerpot Bay		Marker Island		Marker Island		Marker Island	
Survey Station	28-Apr-15		30-Apr-15		5-May-15		06-May-15	
Temperature (°C)	7		10		8		12	
Wind (Beaufort Scale) <sup>1</sup>	2		2		1		1	
Relative Cloud Cover (%)	10		80		20		0	
Precipitation	none		none		none		none	
Start Time	8:30		9:00		9:00		9:00	
End Time	14:30		15:02		15:00		15:00	

Raptors																						
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Height (m)	Direction of Flight <sup>6</sup>	Time Observed	Number Observed	Height (m)	Direction of Flight <sup>6</sup>	Time Observed	Number Observed	Height (m)	Direction of Flight <sup>6</sup>	Time Observed	Number Observed	Height (m)	Direction of Flight <sup>6</sup>	Time Observed
AMKE	American Kestrel	<i>Falco sparverius</i>	-	-	-	S4					1	50	WNW	13:36								
AMKE	American Kestrel	<i>Falco sparverius</i>	-	-	-	S4									1	80	WNW	10:15				
AMKE	American Kestrel	<i>Falco sparverius</i>	-	-	-	S4													1	40	NW	12:17
AMKE	American Kestrel	<i>Falco sparverius</i>	-	-	-	S4																
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2	1	80	NE	8:30												
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2	1	100	SW	8:35												
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2	1	120	N	10:23												
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2	1	100	N	10:55												
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2	1	100	NNE	12:00												
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2					2	150	NNE	10:50								
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2					2	150	NNW	12:12								
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2								1	100	NNW	11:05					
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2												1	200	NNW	10:04	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2												1	150	N	11:07	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2												1	10	SE	14:30	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5	1	120	N	9:52												
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5	1	120	N	10:10												
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5	1	100	NW	11:35												
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5									2	200	NNE	11:04				
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5													3	100	NNE	10:18
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5													2	100	NNW	10:31
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5													1	100	NNE	10:48
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5													2	100	NNW	12:21
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5													1	70	WNW	13:05
BWHA	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4					1	80	NNW	13:27								
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4					1	40	N	13:54								
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5																
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5																
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5																
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5																
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5																
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5	1	20	W	8:52												
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5	1	80	N	9:50												
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5	1	40	W	10:48												
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5																
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5					1	30	NNE	10:16								
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5									2	20	NE	11:40				
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5									2	100	N	13:12				
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5													2	20	NNW	9:30
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5																
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5																
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5																
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5																
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5																
MERL	Merlin	<i>Falco columbarius</i>	-	-	-	S5																





# Table C13: 2015 Spring Raptor Migration Survey Results - HIWEC Study Area

							3				4			
							Flowerpot Bay		Marker Island		Marker Island		Marker Island	
							28-Apr-15		30-Apr-15		5-May-15		06-May-15	
							7		10		8		12	
							2		2		1		1	
							10		80		20		0	
							none		none		none		none	
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5								
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5								
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5								
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5								
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5								
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5								
NOPI	Northern Pintail	<i>Anas acuta</i>	-	-	-	S5								
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5								
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5								
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5								
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5	2	100	S	9:55				
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5					3	70	W	10:50

**Notes:**

- 1. Wind (Beaufort Scale):**  
0 (Less than 1 Km/h), 1 (1 - 5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)
- 2. Endangered Species Act 2007 (ESA) Status**  
END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.  
NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.
- 3. Species at Risk Act 2002 (SARA) Status**  
END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.  
No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.  
NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.  
Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.
- 4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**  
END (Endangered) – A species facing imminent extirpation or extinction throughout its range.  
THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction  
SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.  
NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.
- 5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System (S-rank)**  
S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.  
S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
S5 - Very common and demonstrably secure in Ontario.  
SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
S#? - Rank uncertain.
- 6 - Flight Direction Codes**  
N - North  
NNE - North to Northeast  
NE - Northeast  
ENE - East to Northeast  
E - East  
ESE - East to Southeast  
SE - Southeast  
SSE - South to Southeast  
S - South  
SSW - South to Southwest  
SW - Southwest  
WSW - West to Southwest  
W - West  
WNW - West to Northwest  
NW - Northwest  
NNW - North to Northwest

**References:**  
Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especes/faq/faq-eng.htm>  
Ministry of Natural Resources and Forestry (MNRF), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>  
Ministry of Natural Resources and Forestry (MNRF), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>

**Table C13: 2015 Spring Raptor Migration Survey Results - HIWEC Study Area**

Round No.	5				6			
Survey Date	Marker Island		Flowerpot Bay		Marker Island		Flowerpoint Bay	
Survey Station	12-May-15		14-May-15		19-May-15		21-May-15	
Temperature (°C)	8		10		8		14	
Wind (Beaufort Scale) <sup>1</sup>	4		3		4		4	
Relative Cloud Cover (%)	100		0		80		0	
Precipitation	none		none		none		none	
Start Time	9:25		8:45		9:00		8:45	
End Time	15:25		14:45		15:00		14:45	

Raptors																							
Code	Common Name	Scientific Name	ESA Status <sup>2</sup>	SARA Status <sup>3</sup>	COSEWIC Status <sup>4</sup>	NHIC S-Rank <sup>5</sup>	Number Observed	Height (m)	Direction of Flight <sup>6</sup>	Time Observed	Number Observed	Height (m)	Direction of Flight <sup>6</sup>	Time Observed	Number Observed	Height (m)	Direction of Flight <sup>6</sup>	Time Observed	Number Observed	Height (m)	Direction of Flight <sup>6</sup>	Time Observed	
AMKE	American Kestrel	<i>Falco sparverius</i>	-	-	-	S4																	
AMKE	American Kestrel	<i>Falco sparverius</i>	-	-	-	S4																	
AMKE	American Kestrel	<i>Falco sparverius</i>	-	-	-	S4																	
AMKE	American Kestrel	<i>Falco sparverius</i>	-	-	-	S4																	
AMKE	American Kestrel	<i>Falco sparverius</i>	-	-	-	S4	1	60	NW	10:45													
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2	1	80	WNW	9:25													
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2	1	60	N	10:52													
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2	1	110	WNW	14:30													
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2					1	110	NW	9:50									
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2					1	80	E	10:23									
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2					2	100	N	10:44									
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2					1	120	NW	13:11									
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2									1	80	ENE	10:23		1	80	W	8:45
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2														1	150	NW	12:15
BAEA	Bald Eagle	<i>Haliaeetus leucocephalus</i>	SC	NAR	NAR	S2														1	100	SW	12:41
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																	
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																	
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																	
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																	
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																	
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																	
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																	
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																	
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																	
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																	
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																	
BWAH	Broad-winged Hawk	<i>Buteo platypterus</i>	-	-	-	S5																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	
COHA	Cooper's Hawk	<i>Accipiter cooperii</i>	NAR	-	-	S4																	

**Table C13: 2015 Spring Raptor Migration Survey Results - HIWEC Study Area**

							Round No.	5				6					
							Survey Date	Marker Island		Flowerpot Bay		Marker Island		Flowerpoint Bay			
							Survey Station	12-May-15		14-May-15		19-May-15		21-May-15			
							Temperature (°C)	8		10		8		14			
							Wind (Beaufort Scale) <sup>1</sup>	4		3		4		4			
							Relative Cloud Cover (%)	100		0		80		0			
							Precipitation	none		none		none		none			
N/A	Accipiter sp.	-	-	-	-	-											
N/A	Accipiter sp.	-	-	-	-	-											
N/A	Accipiter sp.	-	-	-	-	-											
N/A	Accipiter sp.	-	-	-	-	-						1	80	E	10:53		
N/A	Accipiter sp.	-	-	-	-	-						1	80	E	11:08		
N/A	Accipiter sp.	-	-	-	-	-						2	60	E	11:19		
NOGO	Northern Goshawk	<i>Accipiter gentilis atricapillus</i>	-	-	-	S4	1	60	WNW	12:08							
NOGO	Northern Goshawk	<i>Accipiter gentilis atricapillus</i>	-	-	-	S4											
NOHA	Northern Harrier	<i>Circus cyaneus</i>	-	-	-	S4											
NSWO	Northern Saw-whet Owl	<i>Aegolius acadicus</i>	-	-	-	S4											
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5											
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5											
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5											
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5											
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5											
OSPR	Osprey	<i>Pandion haliaetus</i>	-	-	-	S5											
PEFA	Peregrine Falcon	<i>Falco peregrinus</i>	SC	SC	SC	S3B											
PEFA	Peregrine Falcon	<i>Falco peregrinus</i>	SC	SC	SC	S3B											
RTHA	Red-tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4											
RTHA	Red-tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4											
RTHA	Red-tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4	1	70	N	12:02							
RTHA	Red-tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4	1	60	W	14:52							
RTHA	Red-tailed Hawk	<i>Buteo jamaicensis</i>	-	-	-	S4						1	60	E	10:16		
SSHA	Sharp-shinned Hawk	<i>Accipiter striatus</i>	-	-	-	S5											
SSHA	Sharp-shinned Hawk	<i>Accipiter striatus</i>	-	-	-	S5											
SSHA	Sharp-shinned Hawk	<i>Accipiter striatus</i>	-	-	-	S5											
SSHA	Sharp-shinned Hawk	<i>Accipiter striatus</i>	-	-	-	S5											
SSHA	Sharp-shinned Hawk	<i>Accipiter striatus</i>	-	-	-	S5				1	100	NNW	10:00				
SSHA	Sharp-shinned Hawk	<i>Accipiter striatus</i>	-	-	-	S5				1	50	NW	10:38				
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5	5	100	N	9:46							
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5					8	80	N	9:00			
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5											
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5						8	50	N	9:08		
TUVU	Turkey Vulture	<i>Cathartes aura</i>	-	-	-	S5								5	100	E	9:00
<b>Incidental Wildlife</b>																	
<b>Code</b>	<b>Common Name</b>	<b>Scientific Name</b>	<b>ESA</b>	<b>SARA</b>	<b>COSEWIC</b>	<b>S-rank</b>											
ABDU	American Black Duck	<i>Anas rubripes</i>	-	-	-	S4	3	30	SSW	11:00							
AMCR	American Crow	<i>Corvus brachyrhynchos</i>	-	-	-	S5											
AWPE	American White Pelican	<i>Pelecanus erythrorhynchos</i>	THR	-	-	S2B						3	100	SE	13:40		
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5											
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5											
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5											
CAGO	Canada Goose	<i>Branta canadensis</i>	-	-	-	S5											
COLO	Common Loon	<i>Gavia immer</i>	-	-	-	S5											
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5											
COME	Common Merganser	<i>Mergus merganser</i>	-	-	-	S5											
CORA	Common Raven	<i>Corvus corax</i>	-	-	-	S5											
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5											
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5											
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5											
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5											
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5											
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5											
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5											
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5											
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5											
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5											

**Table C13: 2015 Spring Raptor Migration Survey Results - HIWEC Study Area**

							5				6			
							Marker Island		Flowerpot Bay		Marker Island		Flowerpoint Bay	
							12-May-15		14-May-15		19-May-15		21-May-15	
							8		10		8		14	
							4		3		4		4	
							100		0		80		0	
							none		none		none		none	
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5								
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5								
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5								
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5								
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5								
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5								
NOPI	Northern Pintail	<i>Anas acuta</i>	-	-	-	S5								
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5								
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5								
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5								
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5								
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5								

**Notes:**

- 1. Wind (Beaufort Scale):**  
0 (Less than 1 Km/h), 1 (1 - 5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)
- 2. Endangered Species Act 2007 (ESA) Status**  
END (Endangered) – A species facing imminent extinction or extirpation in Ontario.  
THR (Threatened) – Any native species that, on the basis of the best available scientific evidence, is at risk of becoming endangered throughout all or a large portion of its Ontario range if the limiting factors are not reversed.  
SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.  
NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.
- 3. Species at Risk Act 2002 (SARA) Status**  
END (Schedule 1) – These species are listed as Endangered under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
THR (Schedule 1) – These species are listed as Threatened under Schedule 1 of SARA and receive species and habitat protection under SARA, as well as recovery strategies and action plans.  
SC (Schedule 1) – These species are listed as Special Concern under Schedule 1 of SARA and receive management initiatives under SARA to prevent them from becoming endangered and threatened.  
No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.  
NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.  
Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.
- 4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**  
END (Endangered) – A species facing imminent extirpation or extinction throughout its range.  
THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction  
SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.  
NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.
- 5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System (S-rank)**  
S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.  
S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.  
S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.  
S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.  
S5 - Very common and demonstrably secure in Ontario.  
SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.  
S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.  
S#? - Rank uncertain.
- 6 - Flight Direction Codes**  
N - North  
NNE - North to Northeast  
NE - Northeast  
ENE - East to Northeast  
E - East  
ESE - East to Southeast  
SE - Southeast  
SSE - South to Southeast  
S - South  
SSW - South to Southwest  
SW - Southwest  
WSW - West to Southwest  
W - West  
WNW - West to Northwest  
NW - Northwest  
NNW - North to Northwest

**References:**  
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Ministry of Natural Resources and Forestry (MNRF), 2014b: Natural Heritage Methodology. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/natural-heritage-methodology>



**Table C13: 2015 Spring Raptor Migration Survey Results - HIWEC Study Area**

							Round No.	Total Number of Individuals Observed	Total of Number of Individuals per Species
							Survey Date		
							Survey Station		
							Temperature (°C)		
							Wind (Beaufort Scale) <sup>1</sup>		
							Relative Cloud Cover (%)		
							Precipitation		
N/A	Accipiter sp.	-	-	-	-	-		1	7
N/A	Accipiter sp.	-	-	-	-	-		1	
N/A	Accipiter sp.	-	-	-	-	-		1	
N/A	Accipiter sp.	-	-	-	-	-		1	
N/A	Accipiter sp.	-	-	-	-	-		1	
N/A	Accipiter sp.	-	-	-	-	-		2	
NOGO	Northern Goshawk	Accipiter gentilis atricapillus	-	-	-	S4		1	3
NOGO	Northern Goshawk	Accipiter gentilis atricapillus	-	-	-	S4		2	
NOHA	Northern Harrier	Circus cyaneus	-	-	-	S4		1	1
NSWO	Northern Saw-whet Owl	Aegolius acadicus	-	-	-	S4		1	1
OSPR	Osprey	Pandion haliaetus	-	-	-	S5		1	8
OSPR	Osprey	Pandion haliaetus	-	-	-	S5		2	
OSPR	Osprey	Pandion haliaetus	-	-	-	S5		1	
OSPR	Osprey	Pandion haliaetus	-	-	-	S5		2	
OSPR	Osprey	Pandion haliaetus	-	-	-	S5		1	
OSPR	Osprey	Pandion haliaetus	-	-	-	S5		1	
PEFA	Peregrine Falcon	Falco peregrinus	SC	SC	SC	S3B		1	2
PEFA	Peregrine Falcon	Falco peregrinus	SC	SC	SC	S3B		1	
RTHA	Red-tailed Hawk	Buteo jamaicensis	-	-	-	S4		1	5
RTHA	Red-tailed Hawk	Buteo jamaicensis	-	-	-	S4		1	
RTHA	Red-tailed Hawk	Buteo jamaicensis	-	-	-	S4		1	
RTHA	Red-tailed Hawk	Buteo jamaicensis	-	-	-	S4		1	
RTHA	Red-tailed Hawk	Buteo jamaicensis	-	-	-	S4		1	
SSHA	Sharp-shinned Hawk	Accipiter striatus	-	-	-	S5		3	10
SSHA	Sharp-shinned Hawk	Accipiter striatus	-	-	-	S5		2	
SSHA	Sharp-shinned Hawk	Accipiter striatus	-	-	-	S5		1	
SSHA	Sharp-shinned Hawk	Accipiter striatus	-	-	-	S5		2	
SSHA	Sharp-shinned Hawk	Accipiter striatus	-	-	-	S5		1	
SSHA	Sharp-shinned Hawk	Accipiter striatus	-	-	-	S5		1	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		2	88
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		3	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		4	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		3	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		1	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		1	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		3	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		1	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		1	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		1	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		5	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		1	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		12	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		12	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		12	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		5	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		8	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		8	
TUVU	Turkey Vulture	Cathartes aura	-	-	-	S5		5	
								205	
<b>Incidental Wildlife</b>									
Code	Common Name	Scientific Name	ESA	SARA	COSEWIC	S-rank			
ABDU	American Black Duck	Anas rubripes	-	-	-	S4		3	
AMCR	American Crow	Corvus brachyrhynchos	-	-	-	S5		1	
AWPE	American White Pelican	Pelecanus erythrorhynchos	THR	-	-	S2B		3	
CAGO	Canada Goose	Branta canadensis	-	-	-	S5		58	
CAGO	Canada Goose	Branta canadensis	-	-	-	S5		150	
CAGO	Canada Goose	Branta canadensis	-	-	-	S5		120	
CAGO	Canada Goose	Branta canadensis	-	-	-	S5		80	
COLO	Common Loon	Gavia immer	-	-	-	S5		2	
COME	Common Merganser	Mergus merganser	-	-	-	S5		4	
COME	Common Merganser	Mergus merganser	-	-	-	S5		2	
CORA	Common Raven	Corvus corax	-	-	-	S5		1	
DCCO	Double-crested Cormorant	Phalacrocorax auritus	-	-	-	S5		2	
DCCO	Double-crested Cormorant	Phalacrocorax auritus	-	-	-	S5		6	
DCCO	Double-crested Cormorant	Phalacrocorax auritus	-	-	-	S5		5	
DCCO	Double-crested Cormorant	Phalacrocorax auritus	-	-	-	S5		4	
DCCO	Double-crested Cormorant	Phalacrocorax auritus	-	-	-	S5		1	
DCCO	Double-crested Cormorant	Phalacrocorax auritus	-	-	-	S5		14	
DCCO	Double-crested Cormorant	Phalacrocorax auritus	-	-	-	S5		18	
DCCO	Double-crested Cormorant	Phalacrocorax auritus	-	-	-	S5		12	
DCCO	Double-crested Cormorant	Phalacrocorax auritus	-	-	-	S5		8	

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							Round No.	Total Number of Individuals Observed	Total of Number of Individuals per Species
							Survey Date		
							Survey Station		
							Temperature (°C)		
							Wind (Beaufort Scale) <sup>1</sup>		
							Relative Cloud Cover (%)		
							Precipitation		
DCCO	Double-crested Cormorant	<i>Phalacrocorax auritus</i>	-	-	-	S5		21	
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5		2	
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5		2	
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5		3	
HEGU	Herring Gull	<i>Larus argentatus</i>	-	-	-	S5		2	
MALL	Mallard	<i>Anas platyrhynchos</i>	-	-	-	S5		3	
NOPI	Northern Pintail	<i>Anas acuta</i>	-	-	-	S5		2	
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5		10	
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5		1	
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5		2	
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5		2	
SACR	Sandhill Crane	<i>Grus canadensis tabida</i>	-	-	-	S5		3	
								<b>547</b>	

**Notes:**

**1. Wind (Beaufort Scale):**

0 (Less than 1 Km/h), 1 (1 -5 Km/h), 2 (6 - 11 Km/h), 3 (12 - 19 Km/h), 4 (20 - 28 Km/h), 5 (29 - 38 Km/h), 6 (39 - 49 Km/h), 7 (50 - 61 Km/h), 8 (62 - 74 Km/h), 9 (75 - 88 Km/h), 10 (89 - 102 Km/h), 11 (103 - 117 Km/h), 12 (118 - 133 Km/h)

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END (Endangered) – A species facing imminent extinction or extirpation in Ontario.

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No Status (No Schedule) – These species are evaluated and designated by COSEWIC but are not listed under Schedule 1 and therefore do not receive protection under SARA.

NAR (Not at Risk) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the status

ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

Not Applicable (N / A) – These species have either been assessed by COSEWIC as Not at Risk or there is not enough data to assess the

status ranking of the species and therefore these are not listed on Schedule 1 nor do they receive protection under SARA.

**4. The Committee on the Status of Endangered Wildlife in Canada (COSEWIC) Status**

END (Endangered) – A species facing imminent extirpation or extinction throughout its range.

THR (Threatened) – A species likely to become endangered if nothing is done to reverse the factors leading to its extirpation or extinction

SC (Special Concern) – A species of special concern because of characteristics that make it particularly sensitive to human activities or natural events, but does not include an extirpated, endangered or threatened species.

NAR (Not at Risk) – A species that has been evaluated and found to be not at risk.

**5. The Natural Heritage Information Centre (NHIC) Provincial Ranking System ( S-rank)**

S1 - Extremely rare in Ontario; usually five (5) or fewer occurrences in the province or very few remaining individuals; often especially vulnerable to extirpation.

S2 - Very rare in Ontario; usually between five (5) and 20 occurrences in the province or with many individuals in fewer occurrences; often susceptible to extirpation.

S3 - Rare to uncommon in Ontario; usually between 20 and 100 occurrences in the province; may have fewer occurrences, but with a large number of individuals in some populations; may be susceptible to large-scale disturbances.

S4 - Common and apparently secure in Ontario; usually with more than 100 occurrences in the province.

S5 - Very common and demonstrably secure in Ontario.

SH - Possibly Extirpated (Historical). Species or community occurred historically in the nation or province, and there is some possibility that it may be rediscovered. Its presence may not have been verified in the past 20-40 years.

S#S# - A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species or community.

S#? - Rank uncertain.

**6 - Flight Direction Codes**

N- North

NNE - North to Northeast

NE - Northeast

ENE - East to Northeast

E - East

ESE - East to Southeast

SE - Southeast

SSE - South to Southeast

S - South

SSW - South to Southwest

SW - Southwest

WSW - West to Southwest

W - West

WNW - West to Northwest

NW - Northwest

NNW - North to Northwest

**References:**

Government of Canada, 2009: Frequently Asked Questions: What are the SARA schedules? Accessed on February 2015. Available: <http://www.dfo-mpo.gc.ca/species-especes/faq/faq-eng.htm>

Ministry of Natural Resources and Forestry (MNRF), 2014a: How Species at Risk are protected. Accessed September 2015. Available: <http://www.ontario.ca/environment-and-energy/how-species-risk-are-protected>

# Migratory Bird

Map Number	N/A	Field Crew	ROB CONOHAN, SEAN MCGUIRE	12
Feature ID	N/A			
Project Number	60342151	Air Temp. (degC)	6.00	Weather Notes
Tablet	AECOM8	Wind Speed (beaufort)	3	
Start Date	4/15/2015 9:00:48 AM	Precipitation	0	
End Date	4/15/2015 5:09:01 PM	Cloud Cover	0.00	
Point Count ID	Joe's Cabin Boat Launch	Additional Notes		
Point Count Location	Boat Launch Location at UTM: 528476-5078337			
Latitude:;,Longitude:;,Altitude:;,Speed:;,Accuracy:;,Provider:;,Time:				
Observations				
Observation Time	09:50:00	Species	Turkey Vulture	
Number of Observations	1	Behaviour	1	
Height (m)	100	Direction of Flight	0	
Distance from Observer (m)	1000	Direction of Observation	0	
Observation Notes				
87				
Observation Time	09:50:00	Species	Northern Pintail	
Number of Observations	2	Behaviour	2	
Height (m)	10	Direction of Flight	8	
Distance from Observer (m)	500	Direction of Observation	4	
Observation Notes				
90				
Observation Time	09:52:00	Species	Double-crested Cormorant	
Number of Observations	1	Behaviour	1	
Height (m)	38	Direction of Flight	4	
Distance from Observer (m)	1000	Direction of Observation	11	
Observation Notes				
93				



# Migratory Bird

Observation Time	10:00:00	Species	Double-crested Cormorant
Number of Observations	1	Behaviour	1
Height (m)	25	Direction of Flight	4
Distance from Observer (m)	500	Direction of Observation	12
Observation Notes			
96			
Observation Time	10:05:00	Species	Herring Gull
Number of Observations	1	Behaviour	1
Height (m)	35	Direction of Flight	8
Distance from Observer (m)	1000	Direction of Observation	12
Observation Notes			
99			
Observation Time	10:51:00	Species	Turkey Vulture
Number of Observations	3	Behaviour	1
Height (m)	40	Direction of Flight	8
Distance from Observer (m)	500	Direction of Observation	0
Observation Notes			
102			
Observation Time	10:20:00	Species	Sharp-shinned Hawk
Number of Observations	1	Behaviour	1
Height (m)	50	Direction of Flight	12
Distance from Observer (m)	500	Direction of Observation	4
Observation Notes			
105			
Observation Time	10:25:00	Species	Herring Gull
Number of Observations	1	Behaviour	0
Height (m)	200	Direction of Flight	8
Distance from Observer (m)	200	Direction of Observation	8
Observation Notes			
108			

# Migratory Bird

Observation Time	10:35:00	Species	Sharp-shinned Hawk
Number of Observations	1	Behaviour	1
Height (m)	35	Direction of Flight	4
Distance from Observer (m)	600	Direction of Observation	4
Observation Notes			
111			
Observation Time	10:50:00	Species	Turkey Vulture
Number of Observations	1	Behaviour	0
Height (m)	300	Direction of Flight	0
Distance from Observer (m)	1000	Direction of Observation	0
Observation Notes			
114			
Observation Time	10:52:00	Species	Herring Gull
Number of Observations	1	Behaviour	0
Height (m)	250	Direction of Flight	0
Distance from Observer (m)	500	Direction of Observation	0
Observation Notes			
117			
Observation Time	11:05:00	Species	Turkey Vulture
Number of Observations	1	Behaviour	1
Height (m)	100	Direction of Flight	0
Distance from Observer (m)	500	Direction of Observation	2
Observation Notes			
120			
Observation Time	11:35:00	Species	Sandhill Crane
Number of Observations	7	Behaviour	0
Height (m)	150	Direction of Flight	0
Distance from Observer (m)	500	Direction of Observation	12
Observation Notes			
123			

# Migratory Bird

Observation Time	12:00:00	Species	Common Merganser
Number of Observations	2	Behaviour	2
Height (m)	10	Direction of Flight	4
Distance from Observer (m)	150	Direction of Observation	0
Observation Notes			
126			
Observation Time	00:05:00	Species	Sharp-shinned Hawk
Number of Observations	1	Behaviour	2
Height (m)	15	Direction of Flight	0
Distance from Observer (m)	50	Direction of Observation	0
Observation Notes			
129			
Observation Time	12:15:00	Species	Turkey Vulture
Number of Observations	1	Behaviour	2
Height (m)	18	Direction of Flight	0
Distance from Observer (m)	2000	Direction of Observation	4
Observation Notes			
132			
Observation Time	12:20:00	Species	Turkey Vulture
Number of Observations	1	Behaviour	1
Height (m)	80	Direction of Flight	2
Distance from Observer (m)	500	Direction of Observation	2
Observation Notes			
135			
Observation Time	12:25:00	Species	Turkey Vulture
Number of Observations	3	Behaviour	2
Height (m)	80	Direction of Flight	4
Distance from Observer (m)	1000	Direction of Observation	8
Observation Notes			
138			

# Migratory Bird

Observation Time	13:00:00	Species	Turkey Vulture
Number of Observations	1	Behaviour	1
Height (m)	75	Direction of Flight	12
Distance from Observer (m)	150	Direction of Observation	0
Observation Notes			
141			
Observation Time	13:05:00	Species	Herring Gull
Number of Observations	2	Behaviour	2
Height (m)	15	Direction of Flight	4
Distance from Observer (m)	50	Direction of Observation	0
Observation Notes			
144			
Observation Time	13:45:00	Species	Double-crested Cormorant
Number of Observations	2	Behaviour	2
Height (m)	15	Direction of Flight	4
Distance from Observer (m)	75	Direction of Observation	0
Observation Notes			
147			
Observation Time	14:15:00	Species	Mallard
Number of Observations	3	Behaviour	2
Height (m)	10	Direction of Flight	4
Distance from Observer (m)	50	Direction of Observation	0
Observation Notes			
150			
Observation Time	14:55:00	Species	Northern Saw-whet Owl
Number of Observations	1	Behaviour	11
Height (m)	3	Direction of Flight	0
Distance from Observer (m)	5	Direction of Observation	0
Observation Notes	Bird observed calling from tree beside hawk watch location		
153			

# Migratory Bird

Observation Time	15:15:00	Species	Turkey Vulture
Number of Observations	1	Behaviour	1
Height (m)	25	Direction of Flight	8
Distance from Observer (m)	1500	Direction of Observation	0
Observation Notes			
156			
Observation Time	15:20:00	Species	Turkey Vulture
Number of Observations	1	Behaviour	1
Height (m)	45	Direction of Flight	0
Distance from Observer (m)	75	Direction of Observation	1
Observation Notes			
159			
Observation Time	15:30:00	Species	Common Merganser
Number of Observations	1	Behaviour	2
Height (m)	15	Direction of Flight	0
Distance from Observer (m)	50	Direction of Observation	0
Observation Notes			
162			
Observation Time	15:52:00	Species	Turkey Vulture
Number of Observations	1	Behaviour	1
Height (m)	45	Direction of Flight	4
Distance from Observer (m)	1000	Direction of Observation	1
Observation Notes			
165			

# Migratory Bird

Map Number	N/A	Field Crew	ROBERT CONOHAN	15
Feature ID	N/A			
Project Number	60341251	Air Temp. (degC)	3.00	Weather Notes Calm in the morning, winds coming from the south in the afternoon.
Tablet	AECOM8	Wind Speed (beaufort)	2	
Start Date	4/16/2015 9:15:04 AM	Precipitation	0	
End Date	4/17/2015 2:30:18 PM	Cloud Cover	75.00	
Point Count ID	Flower Pot Bay	Additional Notes		
Point Count Location	Point count location across from Flower Pot Bay at UTM 527199-5077568			
Latitude:;Longitude:;Altitude:;Speed:;Accuracy:;Provider:;Time:				
<b>Observations</b>				
Observation Time	09:15:00	Species	Merlin	
Number of Observations	1	Behaviour	2	
Height (m)	10	Direction of Flight	4	
Distance from Observer (m)	50	Direction of Observation	4	
Observation Notes				
168				
Observation Time	09:30:00	Species	Sandhill Crane	
Number of Observations	3	Behaviour	1	
Height (m)	30	Direction of Flight	8	
Distance from Observer (m)	500	Direction of Observation	4	
Observation Notes				
171				
Observation Time	10:30:00	Species	Turkey Vulture	
Number of Observations	1	Behaviour	1	
Height (m)	50	Direction of Flight	0	
Distance from Observer (m)	150	Direction of Observation	0	
Observation Notes				
174				

# Migratory Bird

Observation Time	10:45:00	Species	Herring Gull
Number of Observations	1	Behaviour	0
Height (m)	151	Direction of Flight	4
Distance from Observer (m)	10	Direction of Observation	0
Observation Notes			
177			
Observation Time	10:47:00	Species	Double-crested Cormorant
Number of Observations	1	Behaviour	1
Height (m)	75	Direction of Flight	4
Distance from Observer (m)	200	Direction of Observation	0
Observation Notes			
180			
Observation Time	10:52:00	Species	Double-crested Cormorant
Number of Observations	5	Behaviour	1
Height (m)	75	Direction of Flight	4
Distance from Observer (m)	150	Direction of Observation	0
Observation Notes			
183			
Observation Time	11:10:00	Species	Common Merganser
Number of Observations	2	Behaviour	2
Height (m)	15	Direction of Flight	4
Distance from Observer (m)	100	Direction of Observation	12
Observation Notes			
186			
Observation Time	11:10:00	Species	Turkey Vulture
Number of Observations	2	Behaviour	0
Height (m)	150	Direction of Flight	4
Distance from Observer (m)	500	Direction of Observation	3
Observation Notes			
189			

# Migratory Bird

Observation Time	11:15:00	Species	Turkey Vulture
Number of Observations	1	Behaviour	1
Height (m)	25	Direction of Flight	5
Distance from Observer (m)	150	Direction of Observation	0
Observation Notes			
192			
Observation Time	11:20:00	Species	Sharp-shinned Hawk
Number of Observations	2	Behaviour	1
Height (m)	25	Direction of Flight	12
Distance from Observer (m)	350	Direction of Observation	1
Observation Notes			
195			
Observation Time	11:20:00	Species	Red-tailed Hawk
Number of Observations	1	Behaviour	4
Height (m)	15	Direction of Flight	4
Distance from Observer (m)	200	Direction of Observation	2
Observation Notes	Adult		
198			
Observation Time	11:45:00	Species	Sandhill Crane
Number of Observations	1	Behaviour	0
Height (m)	300	Direction of Flight	0
Distance from Observer (m)	500	Direction of Observation	2
Observation Notes			
201			
Observation Time	11:30:00	Species	Herring Gull
Number of Observations	1	Behaviour	0
Height (m)	150	Direction of Flight	4
Distance from Observer (m)	80	Direction of Observation	14
Observation Notes			
204			



# Migratory Bird

Observation Time	11:45:00	Species	Double-crested Cormorant
Number of Observations	3	Behaviour	1
Height (m)	30	Direction of Flight	4
Distance from Observer (m)	50	Direction of Observation	13
Observation Notes			
207			
Observation Time	12:00:00	Species	Double-crested Cormorant
Number of Observations	4	Behaviour	1
Height (m)	30	Direction of Flight	12
Distance from Observer (m)	50	Direction of Observation	4
Observation Notes			
210			
Observation Time	12:05:00	Species	Merlin
Number of Observations	1	Behaviour	5
Height (m)	10	Direction of Flight	11
Distance from Observer (m)	150	Direction of Observation	12
Observation Notes	Female Merlin conducting a hunting flight across inlet and into forest canopy		
213			
Observation Time	12:44:00	Species	Sandhill Crane
Number of Observations	2	Behaviour	0
Height (m)	240	Direction of Flight	0
Distance from Observer (m)	500	Direction of Observation	0
Observation Notes			
216			
Observation Time	12:20:00	Species	American Crow
Number of Observations	1	Behaviour	2
Height (m)	15	Direction of Flight	10
Distance from Observer (m)	25	Direction of Observation	0
Observation Notes			
219			

# Migratory Bird

Observation Time	12:24:00	Species	Sharp-shinned Hawk
Number of Observations	1	Behaviour	0
Height (m)	151	Direction of Flight	10
Distance from Observer (m)	1500	Direction of Observation	14
Observation Notes			
222			
Observation Time	13:25:00	Species	Double-crested Cormorant
Number of Observations	1	Behaviour	2
Height (m)	18	Direction of Flight	4
Distance from Observer (m)	150	Direction of Observation	0
Observation Notes			
225			
Observation Time	13:25:00	Species	Common Raven
Number of Observations	1	Behaviour	2
Height (m)	15	Direction of Flight	0
Distance from Observer (m)	200	Direction of Observation	2
Observation Notes			
228			
Observation Time	13:29:00	Species	Herring Gull
Number of Observations	2	Behaviour	1
Height (m)	22	Direction of Flight	12
Distance from Observer (m)	50	Direction of Observation	6
Observation Notes			
231			
Observation Time	13:55:00	Species	Common Merganser
Number of Observations	1	Behaviour	2
Height (m)	15	Direction of Flight	14
Distance from Observer (m)	100	Direction of Observation	0
Observation Notes	Male		
234			

# Migratory Bird

Observation Time	02:10:00	Species	Merlin
Number of Observations	1	Behaviour	2
Height (m)	15	Direction of Flight	8
Distance from Observer (m)	1000	Direction of Observation	4
Observation Notes	Light phased columbarius		
237			

Observation Time	14:30:00	Species	Turkey Vulture
Number of Observations	2	Behaviour	1
Height (m)	30	Direction of Flight	12
Distance from Observer (m)	200	Direction of Observation	4
Observation Notes			
240			

Map Number	N/A	Field Crew	SARAH RICHER, MATT HERBERT	18
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Feature ID	N/A			
Project Number	60341251	Air Temp. (degC)	6.00	Weather Notes Gusts to Beaufort 4
Tablet	AECOM8	Wind Speed (beaufort)	3	
Start Date	4/21/2015 8:37:54 AM	Precipitation	1	
End Date	4/21/2015 1:55:30 PM	Cloud Cover	100.00	

Point Count ID	Boat launch	Additional Notes
Point Count Location	Wind from SW all day, light rain at beginning of day for half hour, then snow briefly; rain stopped around 12:00 pm	
Latitude:45.858055,Longitude:-80.633256,Altitude:184.3,Speed:0.10288889,Accuracy:2.4,Provider:gps,Time:04/21/2015 08:43:42 EDT		

Observations			
Observation Time	09:00:00	Species	Bald eagle
Number of Observations	1	Behaviour	1
Height (m)	25	Direction of Flight	4
Distance from Observer (m)	700	Direction of Observation	2
Observation Notes	Adult, flying along north side of inlet		
243			

# Migratory Bird

Observation Time	09:25:00	Species	Bald eagle
Number of Observations	1	Behaviour	1
Height (m)	30	Direction of Flight	4
Distance from Observer (m)	50	Direction of Observation	2
Observation Notes	1st year, perched on ice for 2 minutes before it flew east along inlet after flying in from west, climbed higher to between 50-100m. Reappeared 10 min later, flew west along north side of inlet, lingered among treetops and continued north out of sight		
246			
Observation Time	09:38:00	Species	Merlin
Number of Observations	1	Behaviour	2
Height (m)	15	Direction of Flight	8
Distance from Observer (m)	5	Direction of Observation	2
Observation Notes	Flew over inlet into trees behind boat launch		
249			
Observation Time	11:37:00	Species	Bald eagle
Number of Observations	1	Behaviour	1
Height (m)	50	Direction of Flight	9
Distance from Observer (m)	800	Direction of Observation	12
Observation Notes	Adult, flew west along north side of inlet, then flew south out of sight into trees SW of Joe's cabin		
252			
Observation Time	12:38:00	Species	Osprey
Number of Observations	1	Behaviour	1
Height (m)	40	Direction of Flight	12
Distance from Observer (m)	50	Direction of Observation	12
Observation Notes	Flew west along south side of inlet, out of sight southwest of Joe's cabin		
255			
Observation Time	12:56:00	Species	American Kestrel
Number of Observations	1	Behaviour	1
Height (m)	30	Direction of Flight	13
Distance from Observer (m)	475	Direction of Observation	0
Observation Notes	Flew west and disappeared low into trees likely due to gusting winds		
258			

# Migratory Bird

Observation Time	13:07:00	Species	Broad-winged hawk
Number of Observations	1	Behaviour	1
Height (m)	30	Direction of Flight	12
Distance from Observer (m)	475	Direction of Observation	0
Observation Notes			
261			
Observation Time	13:10:00	Species	Bald eagle
Number of Observations	1	Behaviour	1
Height (m)	80	Direction of Flight	3
Distance from Observer (m)	450	Direction of Observation	0
Observation Notes	Adult, flew/soared along north side of inlet from west to east until out of view		
264			
Observation Time	13:26:00	Species	Broad-winged hawk
Number of Observations	1	Behaviour	1
Height (m)	80	Direction of Flight	3
Distance from Observer (m)	600	Direction of Observation	2
Observation Notes	Flew ENE along north side of inlet, ranged from 20-100 m as it soared, between 400 m away when first seen to 1 km away when it disappeared		
267			
Observation Time	13:41:00	Species	Cooper's Hawk
Number of Observations	1	Behaviour	9
Height (m)	18	Direction of Flight	2
Distance from Observer (m)	30	Direction of Observation	9
Observation Notes	Dove after a Merlin		
270			
Observation Time	13:41:00	Species	Merlin
Number of Observations	1	Behaviour	2
Height (m)	20	Direction of Flight	8
Distance from Observer (m)	30	Direction of Observation	7
Observation Notes	Chasing/mobbing a cooper's hawk		
273			

# Migratory Bird

Observation Time	10:30:00	Species	Double-crested Cormorant
Number of Observations	14	Behaviour	1
Height (m)	80	Direction of Flight	4
Distance from Observer (m)	400	Direction of Observation	0
Observation Notes			
276			
Observation Time	10:45:00	Species	Double-crested Cormorant
Number of Observations	18	Behaviour	0
Height (m)	110	Direction of Flight	4
Distance from Observer (m)	450	Direction of Observation	14
Observation Notes			
279			
Observation Time	11:20:00	Species	Double-crested Cormorant
Number of Observations	12	Behaviour	1
Height (m)	50	Direction of Flight	4
Distance from Observer (m)	500	Direction of Observation	0
Observation Notes			
282			
Observation Time	12:25:00	Species	Double-crested Cormorant
Number of Observations	8	Behaviour	0
Height (m)	120	Direction of Flight	1
Distance from Observer (m)	600	Direction of Observation	2
Observation Notes			
285			
Observation Time	13:15:00	Species	Double-crested Cormorant
Number of Observations	21	Behaviour	0
Height (m)	100	Direction of Flight	3
Distance from Observer (m)	600	Direction of Observation	1
Observation Notes			
288			

# Migratory Bird

Observation Time	12:00:00	Species	Turkey Vulture
Number of Observations	4	Behaviour	0
Height (m)		Direction of Flight	
Distance from Observer (m)		Direction of Observation	
Observation Notes	Flying at all heights; lower than 20 m, between 20-100m, and more than 100m - data sheet does not allow for multiple selection. Flying at various distances from observer Flying from various/all directions from observer location Maximum of 4 observed through		
291			

Observation Time	11:00:00	Species	Canada Goose
Number of Observations	58	Behaviour	0
Height (m)		Direction of Flight	3
Distance from Observer (m)	800	Direction of Observation	0
Observation Notes	Observed from beginning to end of survey period. Flying from 20 m to more than 100 m high; data sheet does not allow for multiple selection. Flying at various distances and from various directions from observer		
294			

Map Number	N/A	Field Crew	SARAH RICHER	21
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Feature ID	FLOWERPOT HAWK WATCH			
Project Number	60341251	Air Temp. (degC)	-3.00	Weather Notes
Tablet	AECOM8	Wind Speed (beaufort)	4	Wind NW for most of day, switching to North intermittently, was from West very briefly (20 min); gusts to Beaufort 5
Start Date	4/23/2015 9:28:38 AM	Precipitation	0	
End Date	4/23/2015 1:45:17 PM	Cloud Cover	100.00	

Point Count ID	Flowerpot hawkwatch	Additional Notes	
Point Count Location	Actual point count location N 45.85133, W 80.64932		
Latitude:, Longitude:, Altitude:, Speed:, Accuracy:, Provider:, Time:			

Observations			
Observation Time	11:19:00	Species	Merlin
Number of Observations	1	Behaviour	2
Height (m)	2	Direction of Flight	0
Distance from Observer (m)	4	Direction of Observation	0
Observation Notes	Flew from rocks just in front of me, proceeded directly north across the inlet flying extremely low across the water, 1-2 metres above water surface the entire way, obviously fighting hard against the wind		
297			

# Migratory Bird

Observation Time	10:38:00	Species	Turkey Vulture
Number of Observations	1	Behaviour	1
Height (m)	30	Direction of Flight	12
Distance from Observer (m)	400	Direction of Observation	0
Observation Notes	One flying low along north side of inlet, height ranging from just above trees ~20 m to approx 30 m		
300			

Map Number	N/A	Field Crew	SARAH RICHER	24
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Feature ID	N/A			
Project Number	60341251	Air Temp. (degC)	7.00	Weather Notes Temp rose to 17 C by end of survey, wind N Beaufort 2 at start, switched to West and Beaufort 4 at 11:30
Tablet	AECOM14	Wind Speed (beaufort)	2	
Start Date	4/28/2015 8:30:46 AM	Precipitation	0	
End Date	4/28/2015 2:30:40 PM	Cloud Cover	10.00	

Point Count ID	Hawk watch flowerpot	Additional Notes	
Point Count Location	Point is at N 45.85112, W 80.64961		
Latitude:;Longitude:;Altitude:;Speed:;Accuracy:;Provider:;Time:			

Observations			
Observation Time	08:30:00	Species	Bald eagle
Number of Observations	1	Behaviour	1
Height (m)	80	Direction of Flight	2
Distance from Observer (m)	100	Direction of Observation	4
Observation Notes	Adult, Hunting		
303			

Observation Time	08:35:00	Species	Bald eagle
Number of Observations	1	Behaviour	1
Height (m)	100	Direction of Flight	10
Distance from Observer (m)	400	Direction of Observation	4
Observation Notes	3rd year bird		
306			



# Migratory Bird

Observation Time	08:52:00	Species	Merlin
Number of Observations	1	Behaviour	2
Height (m)	20	Direction of Flight	12
Distance from Observer (m)	20	Direction of Observation	12
Observation Notes	Adult female, watched us for 4 minutes, flying around us and examining us from different angles, retreated west/southwest, likely on territory		
309			
Observation Time	09:25:00	Species	Accipiter sp.
Number of Observations	1	Behaviour	0
Height (m)	120	Direction of Flight	0
Distance from Observer (m)	1500	Direction of Observation	12
Observation Notes	Started low, soared high on thermal before heading north		
312			
Observation Time	09:50:00	Species	Merlin
Number of Observations	1	Behaviour	1
Height (m)	80	Direction of Flight	0
Distance from Observer (m)	400	Direction of Observation	2
Observation Notes			
315			
Observation Time	09:52:00	Species	Broad-winged Hawk
Number of Observations	1	Behaviour	0
Height (m)	120	Direction of Flight	0
Distance from Observer (m)	120	Direction of Observation	1
Observation Notes			
318			
Observation Time	10:10:00	Species	Broad-winged Hawk
Number of Observations	1	Behaviour	0
Height (m)	120	Direction of Flight	0
Distance from Observer (m)	1800	Direction of Observation	13
Observation Notes	Ranged 20-150+ m high while flying		
321			

# Migratory Bird

Observation Time	10:23:00	Species	Bald eagle
Number of Observations	1	Behaviour	0
Height (m)	120	Direction of Flight	0
Distance from Observer (m)	1500	Direction of Observation	14
Observation Notes	Height of flight range from 20-150+ m high, flew along south shore of inlet to within 30 m of observer then proceeded east		
324			
Observation Time	10:48:00	Species	Merlin
Number of Observations	1	Behaviour	1
Height (m)	40	Direction of Flight	12
Distance from Observer (m)	400	Direction of Observation	12
Observation Notes	Adult male		
327			
Observation Time	10:55:00	Species	Bald eagle
Number of Observations	1	Behaviour	1
Height (m)	100	Direction of Flight	0
Distance from Observer (m)	1500	Direction of Observation	14
Observation Notes	Soared on thermal to rise then steady flight NW		
330			
Observation Time	11:25:00	Species	Accipiter sp.
Number of Observations	1	Behaviour	0
Height (m)	150	Direction of Flight	0
Distance from Observer (m)	800	Direction of Observation	2
Observation Notes			
333			
Observation Time	11:35:00	Species	Broad-winged Hawk
Number of Observations	1	Behaviour	1
Height (m)	100	Direction of Flight	14
Distance from Observer (m)	1500	Direction of Observation	14
Observation Notes			
336			

# Migratory Bird

Observation Time	12:00:00	Species	Bald eagle
Number of Observations	1	Behaviour	0
Height (m)	100	Direction of Flight	1
Distance from Observer (m)	800	Direction of Observation	2
Observation Notes	Adult		
339			
Observation Time	12:55:00	Species	Osprey
Number of Observations	2	Behaviour	1
Height (m)	70	Direction of Flight	0
Distance from Observer (m)	30	Direction of Observation	12
Observation Notes	Pair flying together, one hunting in Flowerpot bay, other hubting in thr bay beside us across from Flowerpot bay		
342			
Observation Time	09:55:00	Species	Sandhill Crane
Number of Observations	2	Behaviour	0
Height (m)	100	Direction of Flight	8
Distance from Observer (m)	100	Direction of Observation	0
Observation Notes	Flying together, calling		
345			
Observation Time	10:31:00	Species	Common Loon
Number of Observations	2	Behaviour	1
Height (m)	100	Direction of Flight	0
Distance from Observer (m)	100	Direction of Observation	0
Observation Notes			
348			

# Migratory Bird

Map Number	<input type="text" value="N/A"/>	Field Crew	<input type="text" value="SARAH RICHER"/>		27
Feature ID	<input type="text" value="N/A"/>				
Project Number	<input type="text" value="60341251"/>	Air Temp. (degC)	<input type="text" value="10.00"/>	Weather Notes	
Tablet	<input type="text" value="AECOM14"/>	Wind Speed (beaufort)	<input type="text" value="2"/>	<input type="text" value="Wind from NE"/>	
Start Date	<input type="text" value="4/30/2015 9:00:38 AM"/>	Precipitation	<input type="text" value="0"/>		
End Date	<input type="text" value="4/30/2015 3:02:59 PM"/>	Cloud Cover	<input type="text" value="80.00"/>		
Point Count ID	<input type="text" value="Hawk watch Marker Island"/>	Additional Notes			
Point Count Location	<input type="text" value="Actual point location is at N 45.84420, W 80.72063"/>				
Latitude:,Longitude:,Altitude:,Speed:,Accuracy:,Provider:,Time:					
Observations					
Observation Time	<input type="text" value="10:16:00"/>	Species	<input type="text" value="Merlin"/>		
Number of Observations	<input type="text" value="1"/>	Behaviour	<input type="text" value="1"/>		
Height (m)	<input type="text" value="30"/>	Direction of Flight	<input type="text" value="1"/>		
Distance from Observer (m)	<input type="text" value="50"/>	Direction of Observation	<input type="text" value="15"/>		
Observation Notes	<input type="text"/>				
351					
Observation Time	<input type="text" value="10:50:00"/>	Species	<input type="text" value="Bald eagle"/>		
Number of Observations	<input type="text" value="2"/>	Behaviour	<input type="text" value="0"/>		
Height (m)	<input type="text" value="150"/>	Direction of Flight	<input type="text" value="1"/>		
Distance from Observer (m)	<input type="text" value="1000"/>	Direction of Observation	<input type="text" value="0"/>		
Observation Notes	<input type="text" value="1 adult female, 1 3rd year immature male, soaring together on thermal after rising from ground, then steadily heading north/northeast"/>				
354					
Observation Time	<input type="text" value="11:16:00"/>	Species	<input type="text" value="Red-tailed Hawk"/>		
Number of Observations	<input type="text" value="1"/>	Behaviour	<input type="text" value="0"/>		
Height (m)	<input type="text" value="120"/>	Direction of Flight	<input type="text" value="0"/>		
Distance from Observer (m)	<input type="text" value="500"/>	Direction of Observation	<input type="text" value="3"/>		
Observation Notes	<input type="text"/>				
357					

# Migratory Bird

Observation Time	11:41:00	Species	Northern Harrier
Number of Observations	1	Behaviour	1
Height (m)	40	Direction of Flight	0
Distance from Observer (m)	100	Direction of Observation	2
Observation Notes	Adult male		
360			
Observation Time	12:12:00	Species	Bald eagle
Number of Observations	2	Behaviour	0
Height (m)	150	Direction of Flight	15
Distance from Observer (m)	100	Direction of Observation	1
Observation Notes	Both 2nd year immatures		
363			
Observation Time	13:19:00	Species	Sharp-shinned hawk
Number of Observations	2	Behaviour	0
Height (m)	120	Direction of Flight	1
Distance from Observer (m)	800	Direction of Observation	4
Observation Notes			
366			
Observation Time	13:27:00	Species	Cooper's Hawk
Number of Observations	1	Behaviour	1
Height (m)	80	Direction of Flight	15
Distance from Observer (m)	800	Direction of Observation	0
Observation Notes			
369			
Observation Time	13:36:00	Species	American Kestrel
Number of Observations	1	Behaviour	1
Height (m)	50	Direction of Flight	13
Distance from Observer (m)	700	Direction of Observation	2
Observation Notes			
372			

# Migratory Bird

Observation Time	13:54:00	Species	Cooper's Hawk
Number of Observations	1	Behaviour	1
Height (m)	40	Direction of Flight	0
Distance from Observer (m)	50	Direction of Observation	4
Observation Notes			
375			
Observation Time	14:50:00	Species	Osprey
Number of Observations	1	Behaviour	1
Height (m)	80	Direction of Flight	1
Distance from Observer (m)	700	Direction of Observation	4
Observation Notes			
378			
Observation Time	12:00:00	Species	Turkey Vulture
Number of Observations	12	Behaviour	0
Height (m)	100	Direction of Flight	0
Distance from Observer (m)	100	Direction of Observation	0
Observation Notes	Turkey vultures at all heights, all distances and directions from observer, throughout survey period		
381			

# Migratory Bird

Map Number	N/A	Field Crew	SARAH RICHER	30
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Feature ID	MARKER ISLAND			
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes Fogginess cleared temporarily from 8:30-9:00; fog rolled back in at 9:45, cleared at 10:10. Temperature rose to approximately 17 C by 1:00 pm. Day started with wind from west, switched to southwest at around 11:00 am, increased to Beaufort 2 with gusts
Tablet	AECOM9	Wind Speed (beaufort)	1	
Start Date	5/5/2015 9:00:52 AM	Precipitation	0	
End Date	5/5/2015 3:00:57 PM	Cloud Cover	20.00	

Point Count ID	Marker island	Additional Notes
Point Count Location		
Latitude:45.843956,Longitude:-80.720698,Altitude:181.4,Speed:0.0463,Accuracy:3.9,Provider:gps,Time:05/05/2015 10:30:55 EDT		

Observations			
Observation Time	09:30:00	Species	Peregrine Falcon
Number of Observations	1	Behaviour	0
Height (m)	100	Direction of Flight	14
Distance from Observer (m)	50	Direction of Observation	12
Observation Notes			
384			

Observation Time	10:15:00	Species	American Kestrel
Number of Observations	1	Behaviour	1
Height (m)	80	Direction of Flight	13
Distance from Observer (m)	1600	Direction of Observation	0
Observation Notes			
387			

# Migratory Bird

Observation Time	10:43:00	Species	Turkey Vulture
Number of Observations	12	Behaviour	0
Height (m)	100	Direction of Flight	0
Distance from Observer (m)	2000	Direction of Observation	0
Observation Notes	At least 12, flying at all heights above the water, all distances from observer from directly overhead to around 2 km away, going in all directions except south		
390			
Observation Time	11:01:00	Species	Osprey
Number of Observations	2	Behaviour	0
Height (m)	200	Direction of Flight	1
Distance from Observer (m)	500	Direction of Observation	6
Observation Notes	Started low above the trees approximately 20 m high, circled progressively higher to approximately 500-700 m as they moved northward over the inlet		
393			
Observation Time	11:04:00	Species	Broad-winged Hawk
Number of Observations	2	Behaviour	0
Height (m)	200	Direction of Flight	1
Distance from Observer (m)	500	Direction of Observation	6
Observation Notes	Same thermal as the 2 Osprey; Started low above the trees approximately 20 m high, circled progressively higher to approximately 500-700 m as they moved northward over the inlet		
396			
Observation Time	11:05:00	Species	Bald eagle
Number of Observations	1	Behaviour	0
Height (m)	100	Direction of Flight	15
Distance from Observer (m)	2000	Direction of Observation	2
Observation Notes	Started low above the trees approximately 40 m high on north side of inlet, circled progressively higher to approximately 800 -1500 m up as it moved north/northwest over the inlet until it was a tiny black dot. Either an adult or 3rd-4th year bird		
399			
Observation Time	11:33:00	Species	Osprey
Number of Observations	1	Behaviour	1
Height (m)	80	Direction of Flight	5
Distance from Observer (m)	800	Direction of Observation	5
Observation Notes			
402			



# Migratory Bird

Observation Time	11:40:00	Species	Merlin
Number of Observations	2	Behaviour	2
Height (m)	20	Direction of Flight	2
Distance from Observer (m)	200	Direction of Observation	6
Observation Notes	Calling repeatedly, likely a mated pair setting up a territory		
405			
Observation Time	12:05:00	Species	Peregrine Falcon
Number of Observations	1	Behaviour	1
Height (m)	50	Direction of Flight	0
Distance from Observer (m)	10	Direction of Observation	12
Observation Notes	Flew directly overhead of us at our survey point, then flew higher to 50-80 m up, flying steadily north		
408			
Observation Time	12:06:00	Species	Accipiter sp.
Number of Observations	1	Behaviour	0
Height (m)	150	Direction of Flight	0
Distance from Observer (m)	1500	Direction of Observation	3
Observation Notes	Sharp-shinned or Cooper's Hawk, too far to be certain		
411			
Observation Time	13:12:00	Species	Merlin
Number of Observations	2	Behaviour	0
Height (m)	100	Direction of Flight	0
Distance from Observer (m)	1000	Direction of Observation	3
Observation Notes	Starts just over treetops 20 m above water and flew direct across inlet, then soared high in circle on thermal to over 100 m +, continuing north		
414			
Observation Time	09:15:00	Species	Canada Goose
Number of Observations	150	Behaviour	0
Height (m)	120	Direction of Flight	14
Distance from Observer (m)	2000	Direction of Observation	3
Observation Notes			
417			

# Migratory Bird

Observation Time	09:18:00	Species	Canada Goose
Number of Observations	120	Behaviour	0
Height (m)	100	Direction of Flight	15
Distance from Observer (m)	2000	Direction of Observation	1
Observation Notes			
420			
Observation Time	09:28:00	Species	Canada Goose
Number of Observations	80	Behaviour	1
Height (m)	50	Direction of Flight	1
Distance from Observer (m)	50	Direction of Observation	12
Observation Notes			
423			
Observation Time	10:50:00	Species	Sandhill Crane
Number of Observations	3	Behaviour	1
Height (m)	70	Direction of Flight	12
Distance from Observer (m)	200	Direction of Observation	15
Observation Notes	3 flying together from north side of inlet, flew west and landed on islands northwest of our current survey point, called repeatedly while flying and after landing, proceeded to forage		
426			

# Migratory Bird

Map Number	N/A	Field Crew	SARAH RICHER	33
Feature ID	MARKER ISLAND			
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes Wind SW, Beaufort 1, water like a mirror, sunny
Tablet	AECOM9	Wind Speed (beaufort)	1	
Start Date	5/6/2015 9:00:12 AM	Precipitation	0	
End Date	5/6/2015 3:00:23 PM	Cloud Cover	0.00	
Point Count ID	Marker Island	Additional Notes		
Point Count Location				
Latitude:45.843975,Longitude:-80.720697,Altitude:184.3,Speed:0.020577777,Accuracy:2.1,Provider:gps,Time:05/06/2015 09:01:40 EDT				
Observations				
Observation Time	09:30:00	Species	Merlin	
Number of Observations	2	Behaviour	1	
Height (m)	20	Direction of Flight	15	
Distance from Observer (m)	800	Direction of Observation	1	
Observation Notes				
429				
Observation Time	09:40:00	Species	Osprey	
Number of Observations	1	Behaviour	1	
Height (m)	80	Direction of Flight	15	
Distance from Observer (m)	1000	Direction of Observation	2	
Observation Notes				
432				
Observation Time	09:45:00	Species	Turkey Vulture	
Number of Observations	12	Behaviour	6	
Height (m)	100	Direction of Flight	2	
Distance from Observer (m)	100	Direction of Observation	2	
Observation Notes	All TUVU flying at all heights in all directions at all distances to observer, soaring in kettles together throughout the day all around the inlet up and down both north and south sides			
435				

# Migratory Bird

Observation Time	10:04:00	Species	Bald eagle
Number of Observations	1	Behaviour	0
Height (m)	200	Direction of Flight	15
Distance from Observer (m)	1500	Direction of Observation	1
Observation Notes	Adult; Spotted soaring in circles just above the treetops approx 20 m high on north side, then began soaring higher and higher moving steadily north as it circled high until it was too high to see		
438			
Observation Time	10:18:00	Species	Broad-winged Hawk
Number of Observations	3	Behaviour	1
Height (m)	100	Direction of Flight	1
Distance from Observer (m)	200	Direction of Observation	4
Observation Notes	Soaring together on thermals, rising steadily higher to more than 150m +		
441			
Observation Time	10:31:00	Species	Broad-winged Hawk
Number of Observations	2	Behaviour	1
Height (m)	100	Direction of Flight	15
Distance from Observer (m)	1800	Direction of Observation	0
Observation Notes	Soaring together on thermals, rising steadily higher to more than 150m +		
444			
Observation Time	10:48:00	Species	Broad-winged Hawk
Number of Observations	1	Behaviour	1
Height (m)	100	Direction of Flight	1
Distance from Observer (m)	300	Direction of Observation	4
Observation Notes	Soaring on thermal, rising/circling steadily higher to more than 150m +		
447			
Observation Time	11:07:00	Species	Bald eagle
Number of Observations	1	Behaviour	0
Height (m)	150	Direction of Flight	0
Distance from Observer (m)	400	Direction of Observation	4
Observation Notes	3rd year immature bird, circled from 50 m up to 200+ m soaring on south side of inlet and then soared in a straight line nothing going north		
450			

# Migratory Bird

Observation Time	12:17:00	Species	American Kestrel
Number of Observations	1	Behaviour	1
Height (m)	40	Direction of Flight	14
Distance from Observer (m)	1800	Direction of Observation	1
Observation Notes			
453			
Observation Time	12:21:00	Species	Broad-winged Hawk
Number of Observations	2	Behaviour	0
Height (m)	100	Direction of Flight	15
Distance from Observer (m)	500	Direction of Observation	4
Observation Notes			
456			
Observation Time	13:05:00	Species	Broad-winged Hawk
Number of Observations	1	Behaviour	1
Height (m)	70	Direction of Flight	13
Distance from Observer (m)	1500	Direction of Observation	2
Observation Notes			
459			
Observation Time	14:30:00	Species	Bald eagle
Number of Observations	1	Behaviour	4
Height (m)	10	Direction of Flight	6
Distance from Observer (m)	1300	Direction of Observation	14
Observation Notes	Adult. Perched on dead tree on island approximately 2 km away to the NW for at least 1.5 hours, then at 2:30 flew southeast to perch on cedar tree on island approximately 1300 m away still to the NW; still remained there when we ended the count.		
462			

# Migratory Bird

Map Number	N/A	Field Crew	SARAH RICHER	36
Feature ID	MARKER ISLAND			
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes Very thin spitting rain during very brief periods, on and off. Wind from the southwest, 20km/hr with gusts up to 40 km/hr. Temperature predicted to be no more than 11 C today
Tablet	AECOM18	Wind Speed (beaufort)	4	
Start Date	5/12/2015 9:25:05 AM	Precipitation	0	
End Date	5/12/2015 3:25:00 PM	Cloud Cover	100.00	
Point Count ID	Marker island	Additional Notes		
Point Count Location	Bluetooth being wonky, actual location is N 45.84420, W 80.72063			
Latitude:,Longitude:,Altitude:,Speed:,Accuracy:,Provider:,Time:				
Observations				
Observation Time	09:25:00	Species	Bald eagle	
Number of Observations	1	Behaviour	1	
Height (m)	80	Direction of Flight	13	
Distance from Observer (m)	1000	Direction of Observation	1	
Observation Notes	Adult			
465				
Observation Time	09:46:00	Species	Turkey Vulture	
Number of Observations	5	Behaviour	6	
Height (m)	100	Direction of Flight	0	
Distance from Observer (m)	100	Direction of Observation	1	
Observation Notes	All are flying at all distances from and directions from observer, at all heights above water 0-100+ m up, soaring all around at all times throughout the survey period			
468				
Observation Time	10:45:00	Species	American Kestrel	
Number of Observations	1	Behaviour	1	
Height (m)	60	Direction of Flight	14	
Distance from Observer (m)	800	Direction of Observation	14	
Observation Notes				
471				

# Migratory Bird

Observation Time	10:52:00	Species	Bald eagle
Number of Observations	1	Behaviour	1
Height (m)	60	Direction of Flight	0
Distance from Observer (m)	1500	Direction of Observation	1
Observation Notes	Adult, being divebombed by a Merlin		
474			
Observation Time	11:00:00	Species	American Black Duck
Number of Observations	3	Behaviour	1
Height (m)	30	Direction of Flight	9
Distance from Observer (m)	50	Direction of Observation	6
Observation Notes			
477			
Observation Time	10:52:00	Species	Merlin
Number of Observations	1	Behaviour	9
Height (m)	40	Direction of Flight	2
Distance from Observer (m)	1500	Direction of Observation	0
Observation Notes	Divebombing an adult Bald eagle		
480			
Observation Time	12:02:00	Species	Red-tailed Hawk
Number of Observations	1	Behaviour	1
Height (m)	70	Direction of Flight	0
Distance from Observer (m)	200	Direction of Observation	3
Observation Notes			
483			
Observation Time	12:08:00	Species	Northern Goshawk
Number of Observations	1	Behaviour	1
Height (m)	60	Direction of Flight	13
Distance from Observer (m)	1800	Direction of Observation	1
Observation Notes			
486			

# Migratory Bird

Observation Time	12:27:00	Species	Merlin
Number of Observations	2	Behaviour	2
Height (m)	10	Direction of Flight	11
Distance from Observer (m)	1000	Direction of Observation	14
Observation Notes			
489			
Observation Time	14:30:00	Species	Bald eagle
Number of Observations	1	Behaviour	0
Height (m)	110	Direction of Flight	13
Distance from Observer (m)	100	Direction of Observation	14
Observation Notes	2nd year immature. Flew overhead of point directly north across inlet, then fought the S/SW winds by flapping against them, heading west/southwest out of sight		
492			
Observation Time	14:52:00	Species	Red-tailed Hawk
Number of Observations	1	Behaviour	1
Height (m)	60	Direction of Flight	12
Distance from Observer (m)	1800	Direction of Observation	1
Observation Notes	Along north side of inlet		
495			



# Migratory Bird

Map Number	N/A	Field Crew	SARAH RICHER	39
Feature ID	FLOWERPOT			
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes Wind from west 8:45-9:15; SW 9:15-12:30, west 12:30-1:00, southwest 1:00-2:45
Tablet	AECOM18	Wind Speed (beaufort)	3	
Start Date	5/14/2015 8:45:55 AM	Precipitation	0	
End Date	5/14/2015 2:45:45 PM	Cloud Cover	0.00	
Point Count ID	Flowerpot	Additional Notes		
Point Count Location				
Latitude:45.851163,Longitude:-80.649553,Altitude:199.0,Speed:0.020577777,Accuracy:100.0,Provider:gps,Time:05/14/2015 09:36:32 EDT				
Observations				
Observation Time	09:30:00	Species	Merlin	
Number of Observations	1	Behaviour	1	
Height (m)	80	Direction of Flight	0	
Distance from Observer (m)	20	Direction of Observation	4	
Observation Notes				
498				
Observation Time	09:50:00	Species	Bald eagle	
Number of Observations	1	Behaviour	0	
Height (m)	110	Direction of Flight	14	
Distance from Observer (m)	500	Direction of Observation	12	
Observation Notes	Adult on thermal			
501				
Observation Time	10:00:00	Species	Sharp-shinned Hawk	
Number of Observations	1	Behaviour	0	
Height (m)	100	Direction of Flight	15	
Distance from Observer (m)	600	Direction of Observation	12	
Observation Notes				
504				

# Migratory Bird

Observation Time	10:23:00	Species	Bald eagle
Number of Observations	1	Behaviour	6
Height (m)	80	Direction of Flight	4
Distance from Observer (m)	50	Direction of Observation	12
Observation Notes	3rd year immature, flew directly overhead along south shore of inlet		
507			
Observation Time	10:38:00	Species	Sharp-shinned Hawk
Number of Observations	1	Behaviour	1
Height (m)	50	Direction of Flight	14
Distance from Observer (m)	400	Direction of Observation	0
Observation Notes			
510			
Observation Time	10:44:00	Species	Bald eagle
Number of Observations	2	Behaviour	1
Height (m)	100	Direction of Flight	0
Distance from Observer (m)	600	Direction of Observation	12
Observation Notes	Both 2nd year birds, flew in together, perched around inlet for an hour, fighting over perching spots, landed often around Flash's cabin, proceeded to circle west/northwest at increasing heights above water to approximately 100-ish m		
513			
Observation Time	09:00:00	Species	Turkey vulture
Number of Observations	8	Behaviour	1
Height (m)	80	Direction of Flight	0
Distance from Observer (m)	300	Direction of Observation	0
Observation Notes	Turkey Vultures flying in all directions, at all distances from observer, at all directions from observer, at all heights above water, throughout the survey period; impossible to tell which are moving through and which are staying/foraging around the inle		
516			
Observation Time	13:11:00	Species	Bald eagle
Number of Observations	1	Behaviour	0
Height (m)	120	Direction of Flight	14
Distance from Observer (m)	800	Direction of Observation	6
Observation Notes	Adult, flew up from trees south of bay across from Flowerpot, circled high and to the NW		
519			

# Migratory Bird

Observation Time	13:40:00	Species	American White Pelican
Number of Observations	3	Behaviour	1
Height (m)	100	Direction of Flight	6
Distance from Observer (m)	200	Direction of Observation	3
Observation Notes	Three gliding together, between 60-120 m high		
522			

Observation Time	13:51:00	Species	Cooper's Hawk
Number of Observations	1	Behaviour	1
Height (m)	30	Direction of Flight	8
Distance from Observer (m)	100	Direction of Observation	4
Observation Notes			
525			

Map Number	N/A	Field Crew	SARAH RICHER	45
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Feature ID	MARKER ISLAND			
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes Winds west, Beaufort 4-5; changed to WSW @11am
Tablet	AECOM3	Wind Speed (beaufort)	4	
Start Date	5/19/2015 9:00:23 AM	Precipitation	0	
End Date	5/19/2015 3:00:34 PM	Cloud Cover	80.00	

Point Count ID	Marker island	Additional Notes	
Point Count Location			
Latitude:45.843965,Longitude:-80.720756,Altitude:0.0,Speed:0.10803334,Accuracy:100.0,Provider:gps,Time:05/19/2015 09:08:18 EDT			

Observations			
Observation Time	09:08:00	Species	Turkey Vulture
Number of Observations	8	Behaviour	1
Height (m)	50	Direction of Flight	0
Distance from Observer (m)	100	Direction of Observation	0
Observation Notes	All obs of these species are at all heights above ground, in all directions, at all distances from observer, in all directions from observer, through survey period		
531			

# Migratory Bird

Observation Time	09:55:00	Species	Broad-winged Hawk
Number of Observations	2	Behaviour	1
Height (m)	70	Direction of Flight	13
Distance from Observer (m)	1500	Direction of Observation	1
Observation Notes			
534			
Observation Time	10:16:00	Species	Red-tailed Hawk
Number of Observations	1	Behaviour	1
Height (m)	60	Direction of Flight	4
Distance from Observer (m)	1500	Direction of Observation	1
Observation Notes			
537			
Observation Time	10:23:00	Species	Bald eagle
Number of Observations	1	Behaviour	1
Height (m)	80	Direction of Flight	3
Distance from Observer (m)	1800	Direction of Observation	1
Observation Notes	2nd year immature bird		
540			
Observation Time	10:53:00	Species	Accipiter sp.
Number of Observations	1	Behaviour	1
Height (m)	80	Direction of Flight	4
Distance from Observer (m)	1800	Direction of Observation	0
Observation Notes	Sharp-shinned or Cooper's		
543			
Observation Time	11:08:00	Species	Accipiter sp.
Number of Observations	1	Behaviour	1
Height (m)	80	Direction of Flight	4
Distance from Observer (m)		Direction of Observation	14
Observation Notes	Sharp-shinned or Cooper's		
546			

# Migratory Bird

Observation Time	11:19:00	Species	Accipiter sp.
Number of Observations	2	Behaviour	1
Height (m)	60	Direction of Flight	4
Distance from Observer (m)	1800	Direction of Observation	13
Observation Notes	either Sharp-shinned or Cooper's, flying in the same kettle as two northern Goshawks		
549			
Observation Time	11:19:00	Species	Northern Goshawk
Number of Observations	2	Behaviour	1
Height (m)	60	Direction of Flight	4
Distance from Observer (m)	1800	Direction of Observation	0
Observation Notes	Flying in the same kettle as two Accipiter sp		
552			
Observation Time	12:14:00	Species	Broad-winged hawk
Number of Observations	1	Behaviour	1
Height (m)	40	Direction of Flight	0
Distance from Observer (m)	50	Direction of Observation	4
Observation Notes			
555			
Observation Time	12:37:00	Species	Merlin
Number of Observations	1	Behaviour	9
Height (m)	50	Direction of Flight	2
Distance from Observer (m)	1100	Direction of Observation	4
Observation Notes	Divebombing two ravens		
558			

# Migratory Bird

Map Number	N/A	Field Crew	SARAH RICHER	48
Feature ID	N/A			
Project Number	60341251	Air Temp. (degC)	14.00	Weather Notes Winds from W/SW, Gusts to Beaufort 5
Tablet	AECOM3	Wind Speed (beaufort)	4	
Start Date	5/21/2015 8:45:36 AM	Precipitation	0	
End Date	5/21/2015 2:45:01 PM	Cloud Cover	0.00	
Point Count ID	Flowerpot	Additional Notes		
Point Count Location	Temp 14 at highest today, but cooled to 9 by survey end. Winds from W/SW until 10:00, then West for rest of survey, Gusts to Beaufort 5; cloud cover 0% at start, 100% by 1:30; even though winds at our level on ground are from the west (as both felt and as seen in direction of waves), clouds above have been steadily moving south all day as though pushed by winds from the north at their height			
Latitude:45.851145,Longitude:-80.64962,Altitude:182.9,Speed:0.010288889,Accuracy:1.5,Provider:gps,Time:05/21/2015 08:49:51 EDT				
<b>Observations</b>				
Observation Time	08:45:00	Species	Bald Eagle	
Number of Observations	1	Behaviour	1	
Height (m)	80	Direction of Flight	12	
Distance from Observer (m)	300	Direction of Observation	0	
Observation Notes	Adult, Flying in earnest along north shore of inlet; possibly/likely part of the locally nesting pair			
561				
Observation Time	09:00:00	Species	Turkey Vulture	
Number of Observations	5	Behaviour	1	
Height (m)	100	Direction of Flight	4	
Distance from Observer (m)	50	Direction of Observation	0	
Observation Notes	At least 5 separate individuals, flying at all heights above water surface, all distances from observer, in all directions from observer & throughout survey period. Same individuals soaring around inlet all day			
564				
Observation Time	10:00:00	Species	Merlin	
Number of Observations	1	Behaviour	9	
Height (m)	40	Direction of Flight	4	
Distance from Observer (m)	300	Direction of Observation	0	
Observation Notes	Divebombing a passing raven			
567				

# Migratory Bird

Observation Time	12:10:00	Species	Cooper's Hawk
Number of Observations	1	Behaviour	1
Height (m)	70	Direction of Flight	0
Distance from Observer (m)	50	Direction of Observation	4
Observation Notes			
570			
Observation Time	12:15:00	Species	Bald Eagle
Number of Observations	1	Behaviour	0
Height (m)	150	Direction of Flight	14
Distance from Observer (m)	500	Direction of Observation	10
Observation Notes	Adult, flew up from trees on south side of inlet, circled high & proceeded northwest		
573			
Observation Time	12:41:00	Species	Bald Eagle
Number of Observations	1	Behaviour	1
Height (m)	100	Direction of Flight	10
Distance from Observer (m)	350	Direction of Observation	10
Observation Notes	3rd year immature, circled up from trees on south side of inlet & proceeded southwest		
576			