Henvey Inlet Wind LP

Henvey Inlet Wind

Henvey Inlet Wind Energy Centre

Natural Environment Assessment: Evaluation of Importance Report

Final Draft

Henvey Inlet Wind LP

Henvey Inlet Wind

Natural Heritage Assessment:
Evaluation of Importance Report – Final Draft

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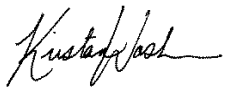

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List of Acronyms and Glossary

ANSI	Area of Natural and Scientific Interest
Candidate Important Wildlife Habitat	Potential area of wildlife habitat that may be considered important using procedures established or accepted by the Ministry of Natural Resources and Forestry.
Confirmed Important Wildlife Habitat	Area of important wildlife habitat verified using procedures established or accepted by the Ministry of Natural Resources and Forestry.
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
COSSARO	Committee on the Status of Species at Risk in Ontario
CLI	Canada Land Inventory
DFO	Fisheries and Oceans Canada

Dripline	The area defined by the outermost circumference of a tree canopy.
EC-CWS	Environment Canada – Canadian Wildlife Service
EIS	Environmental Impact Study
ELC	Ecological Land Classification; refers to ecological units defined on the basis of bedrock, climate (temperature, precipitation), physiography (soils, slope, aspect) and corresponding vegetation.
ESA	Environmental Sensitive Area
Feathering of blades	Pitching of turbine blades out of the wind so the turbine does not capture the wind and will not produce power.
Federal SAR	Species listed as Endangered or Threatened under Schedule 1 of the federal *Species at Risk Act*, 2002.
Frac-out	Escape of drilling mud into the environment as a result of a spill, tunnel collapse or the rupture of mud to the surface.
Generalized Candidate Important Wildlife Habitat	Potential wildlife habitats listed in Appendix D of the Natural Heritage Assessment Guide for Renewable Energy Projects (MNRF, 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.
GIS	Geographic Information System
HIFN	Henvey Inlet First Nation
HIWEC	Henvey Inlet Wind Energy Centre
HIWEC Location	The area encompassing all construction activities and HIWEC components.
Important	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.
IWH	Important Wildlife Habitats
LIO	Land Information Ontario
MNRF	Ontario Ministry of Natural Resources and Forestry
MOECC	Ontario Ministry of Environment and Climate Change
Natural Feature	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.
NHIC	Natural Heritage Information Centre
NRVIS	Natural Resource Value and Information System
NTS	National Topographic System
OGS	Ontario Geological Survey

OGSR	Oil, Gas and Salt Resources
OPA	Ontario Power Authority
OWES	Ontario Wetland Evaluation System
PIW	Provincially Important Wetland
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 *Species at Risk Act*, 2002.
REA	Renewable Energy Approval
SAR	Species at Risk, including both Federal SAR (species listed as Endangered or Threatened under Schedule 1 of the federal Species at Risk Act, 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 Species at Risk Act, 2002).
SARA	Federal Species at Risk Act, 2002
SARO	Species at Risk In Ontario
SOCC	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 Species at Risk Act, 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.
SWHTG	Significant Wildlife Habitat Technical Guide
UTM	Universal Transverse Mercator
Wetland	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.
Wildlife Habitat	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.
Woodland	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* (MNRF, 2010) and the *Ontario Wetland Evaluation System – Northern Manual* (MNRF, 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
Conservation Reserves	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.
Wetlands	All wetlands features that were confirmed in or within 120 m of the HIWEC location and were carried forward to the EOI.
Important Wildlife Habitat	The following Candidate or Generalized Candidate IWH types were identified within 120 m of the HIWEC location and were carried forward to EOI: • 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; • Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf; • Amphibian Breeding Habitat (Woodland and Wetland); • Mast Producing Areas; • Marsh Bird Breeding Habitat; • Black Tern Habitat; • Eastern Wood-peewee Habitat; • Prairie Warbler Habitat; • Wood Thrush Habitat; • Yellow Rail Habitat; • Mottled Darner Habitat; • Horned Clubtail Habitat; • Pine Imperial Moth Habitat; • Eastern Wolf Habitat; • Common Five-lined Skink Habitat; • Eastern Ribbonsnake Habitat; • Milksnake Habitat; • Northern Map Turtle Habitat; and • Snapping Turtle Habitat.

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

Feature	Results of Site Investigation
Federal Species At Risk	Potential habitat for the following Federal Species at Risk[1] was identified during the Site Investigation: • Western Chorus Frog; • Canada Warbler; • Chimney Swift; • Common Nighthawk; • Eastern Whip-poor-will; • Golden-winged Warbler; • Least Bittern; • Olive-sided Flycatcher; • Little Brown Bat; • Northern Myotis; • Tri-coloured Bat; • Branched Bartonia; • Blanding's Turtle; • Eastern Foxsnake; • Eastern Hog-nosed Snake; • Eastern Musk Turtle; • Massasauga Rattlesnake; and • Kirtland's Warbler.

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 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;
- Denning sites for Mink, Otter, Marten, Fisher and Eastern Wolf;
- 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;
  - Eastern Wolf;
  - 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, 2015a);
- *Summary of 2011, 2012 and 2013 Passerine Migration Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015b);
- *Summary of 2013 Waterfowl Migration Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015c);
- *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015d);
- *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e);
- Summary of 2011, 2012 and 2013 Bat Acoustic Monitoring Surveys – Henvey Inlet Wind Energy Centre Study Area (AECOM, 2015f);
- *Summary of 2013 Ecosite Classification and Rare Flora Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015g); and
- *Summary of 2013 Incidental Wildlife Observations – Henvey Inlet Wind Energy Centre and Route A and Route B Transmission Line Study Areas* (AECOM, 2015h).

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, 2015i; hereafter referred to as the Records Review).

2.3.1 Seasonal Concentration Areas of Animals

2.3.1.1 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, 2015c; 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 evaluated 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* (MNRF, 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 (MNRF, 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.

2.3.1.1.1 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, 2015c; 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.

2.3.1.1.2 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.

2.3.1.1.3 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.

2.3.1.2 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* (MNRF, 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.

2.3.1.3 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* (MNRF, 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 / opening 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 co-ordinates) 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. These 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.

2.3.1.4 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 ≤ 10 ha in size;
- One snag / cavity tree will be surveyed for each hectare in features that are ≤ 30 ha in size; and
- A maximum of 30 snags / cavity trees will be surveyed for features that are ≥ 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* (MNRF, 2012b),a candidate bat maternity colony is to be confirmed as IWH upon confirmation of use by 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 (*Lasionycteris 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.

2.3.1.5 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, 2015e; 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* (MNRF, 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.

2.3.1.5.1 2011 and 2012 Herpetological Surveys

According to the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; 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.

2.3.1.5.2 2013 Herpetological Surveys

According to the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; 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.

2.3.1.5.3 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.

2.3.1.5.4 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.

2.3.1.6 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, 2015e; 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* (MNRF, 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 Gartnersnake (*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.

2.3.1.6.1 2011 and 2012 Herpetological Surveys

According to the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; 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.

2.3.1.6.2 2013 Herpetological Surveys

According to the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; 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.

2.3.1.6.3 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.

2.3.1.6.4 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.

2.3.1.7 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 2.3.1.1** above, as well as incidental observations recorded during the 2014 and 2015 Site Investigation, were used to evaluated 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* (MNRF, 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.

2.3.1.8 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 (MNRF, 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 (MNRF, 1997b). Deer move to these areas in early winter, before snow depths reach 20 cm (MNRF, 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 (MNRF, 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 (MNRF, 1997a; MNRF, 1997b).

The MNRF 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.

2.3.2 Rare Vegetation Communities

2.3.2.1 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.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRF, 2012b), a Candidate Cliff and Talus Slope feature is to be 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*), which is rare in Ecoregion 5E, or Rocky Mountain Woodsia (*Woodsia scopulina* ssp. *Laurentiana*) will also be considered important.

Pre-construction EOI surveys to evaluate the importance of the six (6) Candidate Cliff and Talus Slope features may be completed in 2015 or 2016, or the features may be treated as important. Qualified Biologists would visit each feature on a single occasion to confirm the presence / absence of the characteristic plant species for this IWH type. Field personnel would be trained on how to identify the characteristic plant species and would search the feature for the presence of these species. The presence of any of the characteristic plant species would be recorded.

2.3.2.2 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* (MNRF, 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 virginiensis*);
- 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.

2.3.2.3 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.

2.3.2.4 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.

Pre-construction EOI surveys to evaluate the importance of these features may be conducted in 2015 or 2016, or the features may be treated as important. 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 would be conducted within each Candidate Old-growth Forest feature to confirm approximate age, boundary and disturbance level. The minimum level of effort is ten (10) survey points with a minimum 50 m spacing along a liner transect oriented to cover the greatest possible area of each stand. In larger stands, more points may be needed at 50 m intervals to adequately cover the area.

At each survey point, the following information would be 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 will be performed and recorded in addition to the above:

- A prism sweep will be completed at each plot centroid to characterize the diameter of trees in representative portions of each stand;
- Within each prism sweep all stems ≥ 40 cm will be measured using a diameter breast height (DBH) tape, and the UTM co-ordinates, size, height and species of each tree ≥ 40 cm will be recorded;
- Within a 15 m radius of the plot centroid tree, height and a tree core taken at 1.3 m (breast height) will be collected from one dominant canopy tree (the largest tree within the prism sweep). This should result in a minimum of ten (10) tree cores per forest stand. Tree rings will be counted and true age will be determined by adding breast height, age and a species-specific growth factor when available (MNRF, 1998); and
- Any disturbance indicators noted at each plot will also be recorded. Disturbance indicators may include evidence of recent logging, older logging, exotic species, etc.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRF, 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). The boundaries of Old-growth Forest features would also be confirmed during these pre-construction EOI surveys.

2.3.2.5 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* (MNRF, 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.

2.3.3 Specialized Habitats for Wildlife

2.3.3.1 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, 2015d; 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* (MNRF, 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.

2.3.3.1.1 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, 2015d; 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.

2.3.3.1.2 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, 2015d; 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.

2.3.3.1.3 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.

2.3.3.1.4 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.

2.3.3.2 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.

2.3.3.3 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, 2015d; 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 2.3.3.1**. 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* (MNRF, 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 (*Bueto platypterus*);
- Sharp-shinned Hawk (*Accipiter striatus*);
- Merlin (*Falco columbarius*);
- Barred Owl (*Stix varia*);
- Red-shouldered Hawk (*Bueto lineatus*);
- Cooper's Hawk (*Accipter cooperii*); and
- Northern Goshawk (*Accipter 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.

2.3.3.4 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, 2015e; 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 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 dependant on slope, riparian vegetation and adjacent land use, is to be considered part of the IWH feature (MNRF, 2012b).

2.3.3.4.1 2011 and 2012 Surveys

According to the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; 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.

2.3.3.4.2 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.

2.3.3.5 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* (MNRF, 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.

2.3.3.6 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 burreeds (*Sparganium* spp.) (Ranta, 1997).Those features confirmed to contain ≥ 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 ≥ 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* (MNRF, 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.

2.3.3.7 Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf

A total of four (4) Candidate Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf features were carried forward to the EOI due to their proximity to proposed HIWEC infrastructure and presence of potential Fisher or Eastern Wolf dens.

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 pre-construction EOI surveys, each Candidate Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf feature would be surveyed on two (2) occasions between April 1 and May 31, when young are likely to be in the den. Each survey will be conducted at least two (2) weeks apart. Upon first arriving at a Candidate Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf feature, the site would be approached quietly and scanned with binoculars from a distance to determine if mammals are present and inhabiting the den.

If no mammals are observed, the den would be examined for the presence of tracks, hair and / or scat. Should the mammal species be uncertain, hair or scat for samples would be collected for DNA analysis. Photographs of the den, both close-up and in context of surrounding habitat, would also be taken.

If den appears to be occupied with a candidate species, a wildlife trip camera would be set up. The camera would be placed at a distance that would not be too obvious to the inhabitants but close enough that animals using the den could be clearly seen and identified. The wildlife camera would be left in place for at least a week before it was retrieved and the footage examined for wildlife use of the den.

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, photographs and description of any mammal evidence observed (e.g., hair, tracks, scat).

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRF, 2012b), a Candidate Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf feature is to be confirmed as IWH if there is any evidence of use by American Mink (*Mustela vison*), North American River Otter (*Lontra canadensis)*, American Marten (*Martes americana*), Fisher (*Martes pennanti*) or Eastern Wolf (*Canis lupus lycaon*). In additional, a 200 m radius around an Eastern Wolf den, or a 100 m radius around any of the other listed species will also be considered important.

2.3.3.8 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, 2015e; 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 wooded areas and wetlands that contain a variety of potentially suitable amphibian breeding habitats. Treed rock barrens (RBT) were considered as part of wooded areas, 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 Leaopard 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.

2.3.3.8.1 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, 2015e; 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.

2.3.3.8.2 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.

2.3.3.8.3 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.

2.3.3.9 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.

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 pre-construction EOI surveys, each Candidate Mast Producing Areas feature would be surveyed on one (1) occasion which may be undertaken at any time of year; however, surveys are recommended to take place in late summer or early autumn when masting may be observed. The canopy of Candidate Mast Producing Areas feature would be examined for the presence of American Beech (*Fagus grandifolia*) and / or Red Oak (*Quercus rubra*). Three prism sweeps would be taken in each Candidate Mast Producing Areas feature, unless there clearly is less than 50% cover of American Beech and / or Red Oak. The diameter at breast height (DBH) of the ten (10) largest trees in the feature would be measured and recorded. The average DBH of the stand would be estimated. Finally, representative photographs would be taken of the stand.

The following information would also be 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 contain a composition of approximately 50% or more of American Beech and / or Red Oak. Features must also have at least ten (10) American Beech and / or Red Oak trees in the 40 cm to 65 cm DBH range to be considered important.

2.3.4 Habitat for Species of Conservation Concern

2.3.4.1 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, 2015d; 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 2.3.3.1**.

According to the *Draft Ecoregion 5E Criterion Schedule Addendum to the SWHTG* (MNRF, 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.

2.3.4.2 Habitat for Specific Species of Conservation Concern (SOCC)

2.3.4.2.1 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 2.3.4.1**. Any feature with confirmed breeding of Black Tern will be considered important.

2.3.4.2.2 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, 2015d; 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 2.3.3.1**. Any feature with confirmed breeding of Eastern Wood-pewee will be considered important.

2.3.4.2.3 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, 2015d; 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 2.3.3.1**. Any Candidate Precambrian Rock Barren Feature with confirmed breeding of Prairie Warbler will be considered important.

2.3.4.2.4 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, 2015d; 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 2.3.3.1**. Any feature with confirmed breeding of Wood Thrush will be considered important.

2.3.4.2.5 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 2.3.4.1**. Any feature with confirmed breeding of Yellow Rail will be considered important.

2.3.4.2.6 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.

2.3.4.2.7 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.

2.3.4.2.8 Eastern Wolf (Canis lupus lycaon)

A total of four (4) Candidate Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf features were identified as potentially suitable dens for Eastern Wolf and carried forward to the EOI due to their proximity to proposed HIWEC infrastructure.

Candiate Eastern Wolf Habitat features will be evaluated as part of Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf as described in **Section 2.3.3.7**. Any active Eastern Wolf den will be considered important.

2.3.4.2.9 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 2.3.3.4**.

2.3.4.2.10 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 2.3.1.6**. Any feature with confirmed presence of Eastern Ribbonsnake will be considered important.

2.3.4.2.11 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 2.3.1.6**. Any feature with confirmed presence of Milksnake will be considered important.

2.3.4.2.12 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 2.3.1.5** and **Section 2.3.3.4**, respectively. Any feature with confirmed presence of Northern Map Turtle will be considered important.

2.3.4.2.13 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 2.3.1.5** and **Section 2.3.3.4**, respectively. Any feature with confirmed presence of Snapping Turtle will be considered important.

2.3.5 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 (MNRF, 2012a), all Generalized Candidate IWH features were treated as important and carried forward to the EIS.

2.4 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[2], 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.

2.4.1 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 2.3.3.8**. The results of these surveys were analyzed for observations of Western Chorus Frog.

2.4.2 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 2.3.3.1**. 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. *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.*

2.4.3 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 2.3.3.1**. The results from these surveys were analyzed for observations of Chimney Swift, and the locations where Chimney Swift was observed were identified and mapped.

2.4.4 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 Are*a (AECOM, 2015d; 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.

2.4.4.1 2011 Surveys

As described in the *Summary of 2011, 2012 and 2013 Breeding Bird Surveys – Henvey Inlet Wind Energy Centre Study Are*a (AECOM, 2015d; 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.

2.4.4.2 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, 2015d; 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.

2.4.4.3 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 comparable to the data recorded by human observers as described in **Section 2.3.3.8**.

2.4.5 Eastern Whip-poor-will (Caprimulgus 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 Are*a (AECOM, 2015d; 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 2.4.4**.

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.

2.4.6 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 2.3.3.1**. 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.

2.4.7 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.

2.4.8 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 2.3.3.1.** 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.

2.4.9 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 Are*a (AECOM, 2015f; 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.

2.4.9.1 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 Are*a (AECOM, 2015f; 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.

2.4.9.2 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 Are*a (AECOM, 2015f; 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.

2.4.10 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 Are*a (AECOM, 2015f; refer to Appendix A of the Records Review). The methods by which these surveys were conducted are described in **Section 2.4.9**. The results from these surveys were analyzed for observations of Northern Myotis.

2.4.11 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 Are*a (AECOM, 2015f; refer to Appendix A of the Records Review). The methods by which these surveys were conducted are described in **Section 2.4.9**. The results from these surveys were analyzed for observations of Tri-colored Bat.

2.4.12 Branched Bartonia (Bartonia paniculata ssp. Paniculata)

Species-specific surveys to confirm the presence / absence, abundance and distribution of this species will be completed in the fall of 2015. The methods for these surveys were adapted from the following four (4) documents:

- *Information Bulletin: Alberta Native Plan 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 Bartonia in Canada* (COSEWIC, 2003), the habitat of Branched Bartonia 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 Bartonia habitat in Ontario as very wet Sphagnum bogs on the Canadian Shield between low ridges of granitized rock. There are a total of 52 Bog features overlapped by the HIWEC location that will be searched for Branched Bartonia.

Branched Bartonia 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*).

Prior to conducting this pre-construction survey, the surveyors will familiarize themselves with the identification characteristics of Branched Bartonia provided in **Table 2-1**.

Table 2-1: Identification Characteristics of Branched Bartonia

Structure	Characteristics
General	• Branched Bartonia, 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).
Stem	• Green or purple, angled, occasionally twinning (climbing) (COSEWIC, 2003); • Stems very slender (MNFI, 2000); and • Stems erect, scrambling or twinning (USDA Forest Service, 2003).
Leaves	• Reduced to minute scales arranged in an essentially alternate fashion (COSEWIC, 2003); • Very small scale-like leaves (MNFI, 2000); and • Lower most leaves always alternate (USDA Forest Service, 2003).
Inflorescence / Flowers	• Usually a panicle of few to numerous small white 4-lobed flowers and divergent or curved ascending branches (COSEWIC, 2003); • Tiny (2.5 to 4 mm) flowers with lanceolate petals that taper to a sharp apex (MNFI, 2000); • Flower cluster is a raceme or panicle that is usually 5 to 10 cm long (USDA Forest Service, 2003); • Flower stalks are 2 to 25 mm long slender and ascending or arched and divergent (USDA Forest Service, 2003); and • Flowers with four sepals and petals, flowers greenish-white, cream-white or pale pink (USDA Forest Service, 2003).
Seeds / Fruit	• Capsule tapers to a blunt tip and averages 4.2 mm long (COSEWIC, 2003) and • The seeds average 0.19 mm long and 0.12 mm wide with 1000 to 1500 per capsule (Gillett, 1959; Gillett, 1963).
Flowering / Fruiting Period	• August to October (MNFI, 2000).

Each of the identified bogs will be searched on one (1) occasion by qualified Biologists in mid-September. Qualified Biologists will walk slow meandering transects along the length of each bog in search of Branched Bartonia. Tall vegetation will need to be pushed aside while walking to appropriately search for the species. Several stops will be made while walking 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 will be

required to adequately determine presence / absence per hectare of bog habitat (Adapted from: Henderson, 2009; California Natural Resources Agency, 2009). The survey effort will vary based on the size of each bog. No sample specimens of Branched Bartonia or species thought to be Branched Bartonia will be collected at any time.

The following information will be recorded during each surveyed:

- 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 is found at any of the identified bogs, a more detailed survey will be completed to assess population density for that bog. Linear transects, spaced roughly 2 m apart in tall vegetation and 5 m apart in short and open vegetation, will be conducted to identify all occurrences of the plant. The surveyors will scan an approximate one (1) to two (2) metre berth on either side of the transect for the species (Adapted from: Henderson, 2009).

The following information will be recorded where Branched Bartonia is 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).

2.4.13 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 2.3.1.5** and **Section 2.3.3.4**, 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.

2.4.14 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 2.3.1.6**. The results from these surveys were analyzed for observations of Eastern Foxsnake, and the locations where Eastern Foxsnake was observed were identified and mapped.

2.4.15 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 2.3.1.6**. 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.

2.4.16 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 2.3.1.5** and **Section 2.3.3.4**, 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.

2.4.17 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 2.3.1.6**. The results from these surveys were analyzed for observations of Massasauga Rattlesnake, and the locations where Massasauga Rattlesnake was observed were identified and mapped.

2.4.18 Kirtland's Warbler (Setophaga kirtlandii)

In addition to the breeding bird surveys completed in 2015 as described in **Section 2.3.3.1**, 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 2.3.3.1**.

2.5 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 Are*a (AECOM, 2015a; 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.

2.5.1 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;
- UTMs 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 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 and James Kamstra (refer to **Appendix A** for qualifications) between August 11 and September 8, 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**.

3.3.1 Seasonal Concentration Areas of Animals

3.3.1.1 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.

3.3.1.1.1 2013 Spring Waterfowl Migration Surveys

The results of the 2013 spring waterfowl migration surveys are summarized below in **Table 3-1**. Detailed results and field notes are presented in the *Summary of 2013 Waterfowl Migration Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015c; refer to Appendix A of the Records Review).

Table 3-1: 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)*	
Survey 1	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.
Survey 2	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.
Survey 3	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.
Survey 4	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.
Survey 5	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.

3.3.1.1.2 2013 Fall Waterfowl Migration Surveys

The results of the 2013 fall 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, 2015c; refer to Appendix A of the Records Review).

Table 3-2: 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)*	
Survey 1	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.
Survey 2	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.
Survey 3	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.
Survey 4	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.
Survey 5	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.
Survey 6	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.

3.3.1.1.3 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 3-3**.

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 3-3: 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)*	
Survey 1	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.

3.3.1.1.4 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 3-4**. 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 3-4: 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)*	
Survey 1	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.
Survey 2	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* (MNRF, 2012b). Therefore, no IWH features were carried forward to the EIS for this IWH type.

3.3.1.2 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 3-5**. 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 3-5: 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)*	
Round 1	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.
Round 2	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.

3.3.1.3 Bat Hibernacula

A total of one (1) Candidate Bat Hibernacula feature was identified through the Site Investigation and carried forward to the EOI. For the purposes of this submission, this Candidate IWH was treated as important and carried forward to the EIS, with the commitment to analyze data from the pre-construction EOI survey data as described in **Section 2.3.1.3**.

3.3.1.4 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 2.3.1.4**.

3.3.1.5 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 2.3.1.5**. 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.

3.3.1.6 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 2.3.1.6**. 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.

3.3.1.7 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 3-6**.

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, 2015d). 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* (MNRF, 2012b). Therefore, no IWH features were carried forward to the EIS for this IWH type.

3.3.1.8 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 2.3.1.8**.

Table 3-6: Pre-construction EOI Survey Results for Candidate Colonially-nesting Bird Breeding Habitat (Trees / Shrubs) Features

Feature ID		2014 Fall Aerial Surveys	2015 Spring Aerial Surveys		2014 and 2015 Site Investigations	Species and Number of Nests	Determination of Importance
	Date, Survey Start and End Times, and Weather Conditions	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 %			
BIRD-01	*Results*	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).
BIRD-02	*Results*	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).
BIRD-05	*Results*	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).
BIRD-07	*Results*	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).
BIRD-08	*Results*	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).
BIRD-09	*Results*	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 MNRF during Records Review.	Not IWH. Presence of Great Blue Heron nests is not in sufficient numbers (<10).

Table 3-6: Pre-construction EOI Survey Results for Candidate Colonially-nesting Bird Breeding Habitat (Trees / Shrubs) Features

Feature ID		2014 Fall Aerial Surveys	2015 Spring Aerial Surveys		2014 and 2015 Site Investigations	Species and Number of Nests	Determination of Importance
	Date, Survey Start and End Times, and Weather Conditions	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 %			
BIRD-10	*Results*	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 MNRF during Records Review.	Not IWH. Presence of Great Blue Heron nests is not in sufficient numbers (<10).
BIRD-11	*Results*	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).

3.3.2 Rare Vegetation Communities

3.3.2.1 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. For the purposes of this submission, these Candidate IWH features was 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 2.3.2.1**.

3.3.2.2 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.

3.3.2.3 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 2.3.2.3**.

3.3.2.4 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. 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 2.3.2.4**.

3.3.2.5 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.

3.3.3 Specialized Habitats for Wildlife

3.3.3.1 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 2.3.3.1**. 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.

3.3.3.2 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 2.3.3.2**.

3.3.3.3 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 2.3.3.3**. 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.

3.3.3.4 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 2.3.3.4**.

3.3.3.5 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 2015 to evaluate the importance of these features as described in **Section 2.3.3.5**.

3.3.3.6 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 2.3.3.6**.

3.3.3.7 Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf

A total of four (4) Candidate Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf 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 2.3.3.7**.

3.3.3.8 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.

3.3.3.8.1 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, 2015e; 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 MNRF (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.

3.3.3.8.2 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 3-7** and field notes for vernal pool assessments and salamander surveys are provided in **Appendix C**. The protocol as described in **Section 2.3.3.8** 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 seven (7) 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, ABH-108 and ABH-192).

For the purpose of this submission, the remaining 57 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 2.3.3.8**.

Figure 3-1: 2015 Amphibian Acoustic Monitoring Stations

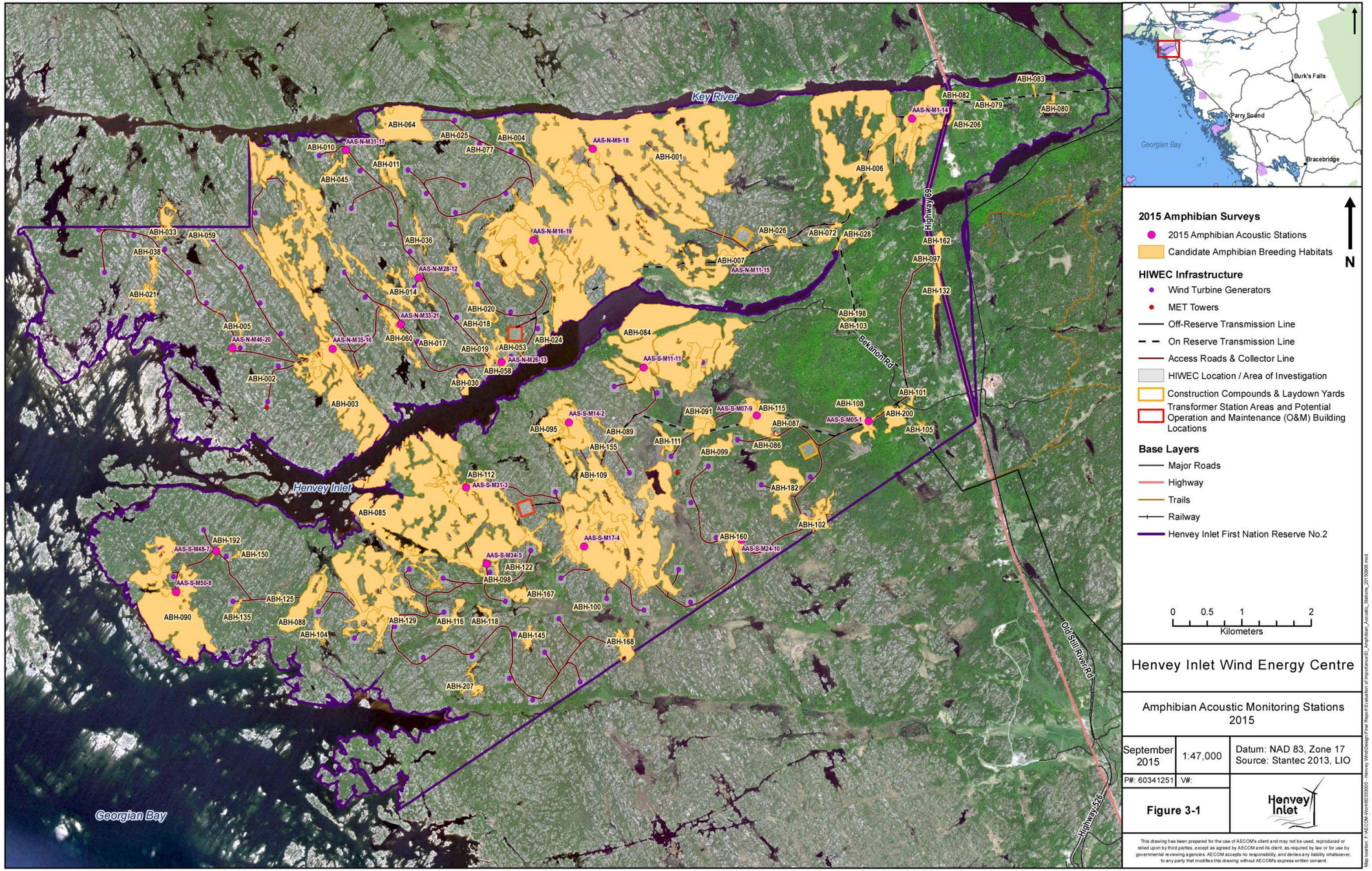


Table 3-7: 2015 Pre-construction EOI Survey Results for Amphibian Breeding Habitat (Wetland and Woodland) Features

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-001 (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 (*Charales* sp.) also present.	*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: 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.
		Results	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.	
ABH-001 (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.	*Date, Time and Weather Conditions*	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	
		Results	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.	
ABH-003 (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.	*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 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	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 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.	
ABH-006 (Station AAS-N-M1-14)	Vernal pool 50 m by 10 m in size, and 0.40 m deep. Located in alder (*Alnus* 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.	*Date, Time and Weather Conditions*	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	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 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.	
ABH-007 (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 (*Calla* sp.) and marsh marigold (*Caltha palustris*) also present. Vegetation cover of 50%.	*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: 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.
		Results	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 3-7: 2015 Pre-construction EOI Survey Results for 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-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.	*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: 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.	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 (*Myriophyllum* sp.) and White Water Lily (*Nymphaea* 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.	*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: 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.	No amphibians observed.	
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 (*Alnus incana*) present. Standing water present in small scattered pools. Water was dark and clear, with depth of 0.20 m.	*Date, Time and Weather Conditions*	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	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.	No amphibians observed.	
ABH-059 (Station AAS-N-M46-20)	Wetland with dense mats of Sphagnum moss. Area was approximately 200 m by15 m in size. Vegetation also includes sedges, cotton grass (*Eriphorum* sp.), Leatherleaf, Tamarack, and Jack Pine (*Pinus banksiana*). Channel present; no pools. Maximum 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: 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	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.	No amphibians observed.	

Table 3-7: 2015 Pre-construction EOI Survey Results for 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-060 (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 2m. Minnows observed during first visit.	*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: 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.	No amphibians observed.	
ABH-084 (Station AAS-S-M11-11)	Tamarack and Black Spruce swamp surrounded by woodlands. Open pool surrounded by alder, with sedges and cattails (*Typha* sp.); approximately 15 m by 3 m in size. Abundant deadfall. Water depth of approximately 0.20 m.	*Date, Time and Weather Conditions*	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.	A total of 12 Green Frog larvae, seven (7) Northern Leopard Frog larvae, one (1) American Toad larva, and one (1) Eastern Newt adult were observed.	
ABH-085 (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 (*Scirpus* sp.), grasses, milfoil, White Water Lily, Sheep Laurel (*Kalmia angustifolia*), and Winterberry (*Ilex verticillata*). 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.	*Date, Time and Weather Conditions*	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.	One (1) Green frog adult, one (1) adult Spring Peeper and one (1) American Bullfrog larvae observed.	
ABH-090 (Station AAS-S-M50-8)	Speckled alder swamp bordering beaver pond and meadow marsh. Sedges, grasses, water lilies, and *Equisetum* 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.	*Date, Time and Weather Conditions*	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.	A total of 50 Green Frog larvae observed.	

Table 3-7: 2015 Pre-construction EOI Survey Results for 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	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 (*Carex utriculata*), Bullrush species, Sweet Gale (*Myrica gale*), watershield (*Brasenia* 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 (*Fraxinus nigra*), with Balsam Fir (*Abies balsamea*) and Trembling Aspen (*Populus tremuloides*). Shrub layer dominated by Speckled Alder (*Alnus incana*) and Wild Raisin (*Viburnum nudum*). Herbaceous species include Sensitive Fern (*Onoclea sensibilis*) 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 (*Spirea alba*). Yellow Pond Lilies (*Nuphar lutea*) 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 (*Carex lacustris*), 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, 2013 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 3-7: 2015 Pre-construction EOI Survey Results for 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 (*Picea glauca*), White Pine (*Pinus strobus*), sedges, and Canada Bluejoint (*Calamagrostis canadensis*) 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.	*Date, Time and Weather Conditions*	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	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	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.	

3.3.3.9 Calibration of Acoustic Monitoring Equipment

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 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.

3.3.3.10 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. 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 2.3.3.9**.

3.3.4 Habitat for Species of Conservation Concern

3.3.4.1 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 2.3.4.1**. 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.

3.3.4.2 Habitats of Specific Species of Conservation Concern (SOCC)

3.3.4.2.1 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 2.3.4.2.1**. 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.

3.3.4.2.2 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 2.3.4.2.2**. 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.

3.3.4.2.3 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 2.3.4.2.3**. 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.

3.3.4.2.4 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 2.3.4.2.4**. 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.

3.3.4.2.5 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 2.3.4.2.5**. 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.

3.3.4.2.6 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 2.3.4.2.6**.

3.3.4.2.7 Pine Imperial Moth

A total of 58 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 71 of these IWH features were carried forward to the EIS.

3.3.4.2.8 Eastern Wolf

A total of four (4) Candidate Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf features were identified as potentially suitable denning sites for Eastern Wolf 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 2.3.4.2.8**.

3.3.4.2.9 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.

3.3.4.2.10 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 2.3.4.2.10**. 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.

3.3.4.2.11 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 2.3.4.2.11**. 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.

3.3.4.2.12 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 2.3.4.2.12**. 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.

3.3.4.2.13 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 2.3.4.2.13**. 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.

3.3.5 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 (MNRF, 2012a), all Generalized Candidate IWH features were treated as important and carried forward to the EIS.

3.4 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[3], 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.

3.4.1 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 3.3.3.8**. 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. *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.*

3.4.2 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, 2015d; 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.

3.4.3 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, 2015d; 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, 2015b; 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.

3.4.4 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 Are*a (AECOM, 2015d; refer to Appendix A of the Records Review). Incidental observations of Common Nighthawk were also recorded in 2012 during breeding bird surveys (AECOM, 2015d; refer to Appendix A of the Records Review).

The results of the crepuscular breeding bird surveys completed in 2015 are summarized in **Table 3-8**. 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.

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.

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

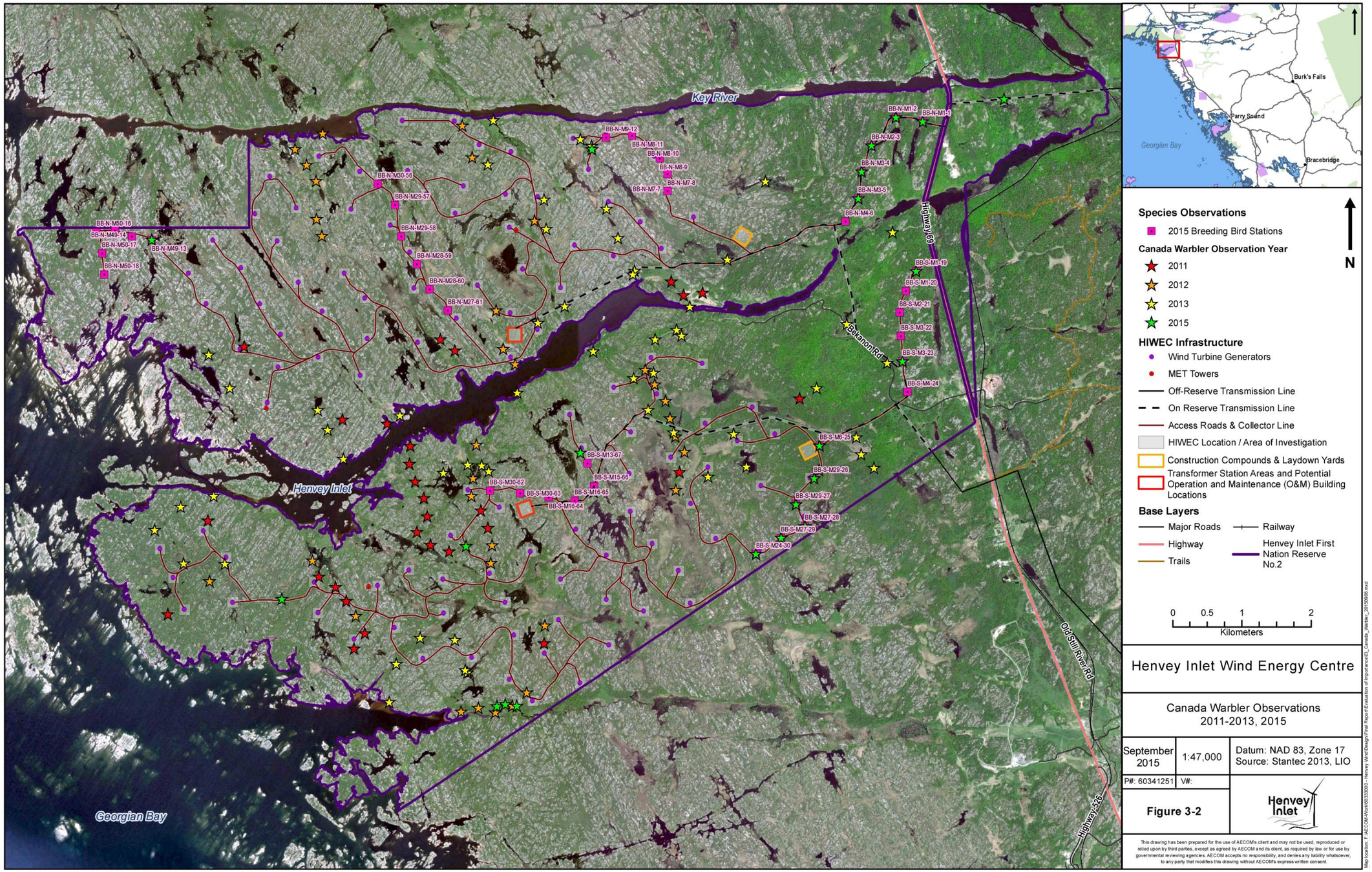


Figure 3-3: Common Nighthawk Observations 2011-2013, 2015

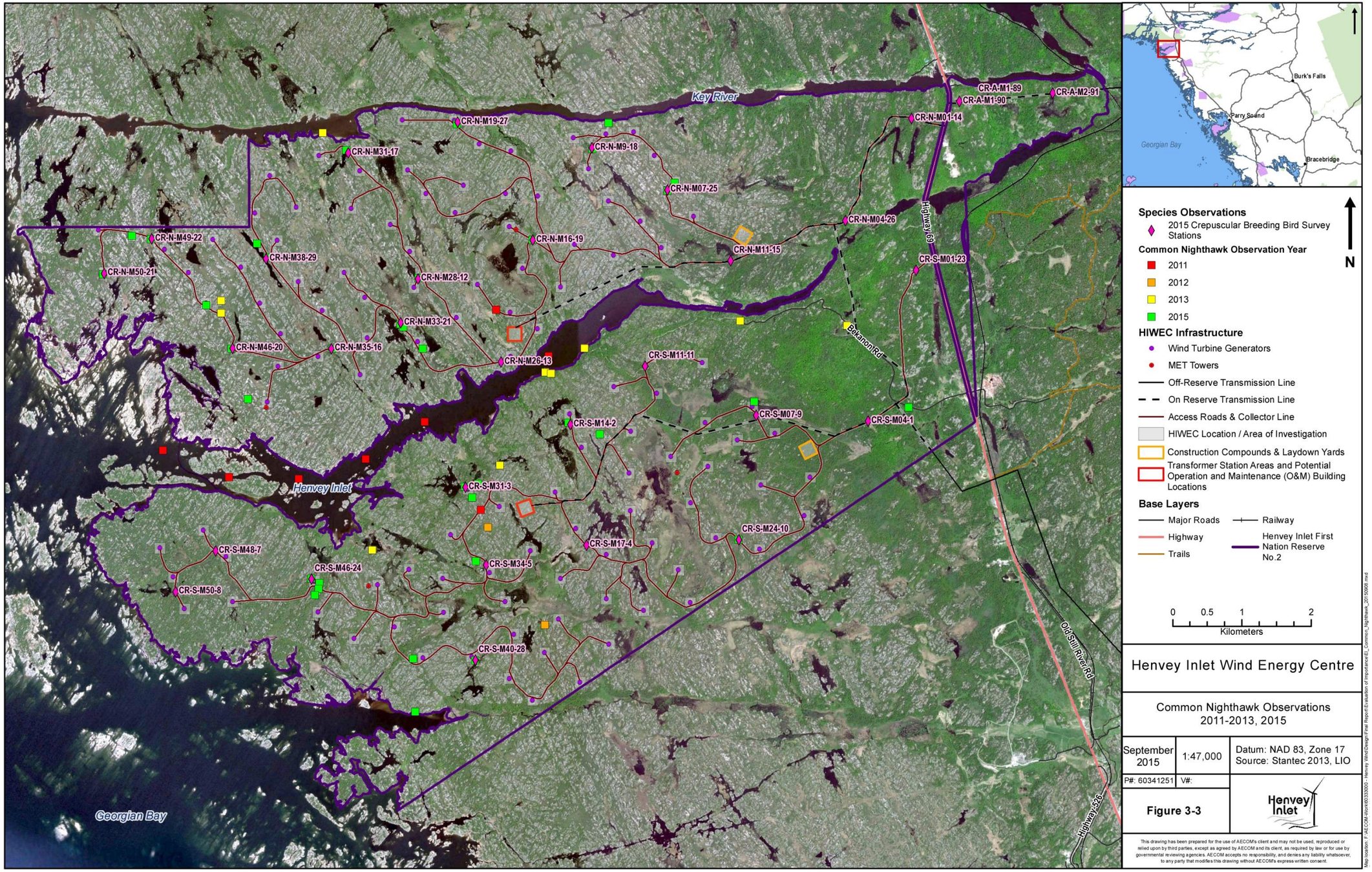


Table 3-8: 2015 Pre-construction Crepuscular Breeding Bird Survey Results for Common Nighthawk

Station		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence
CR-N-M38-29	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected at morning. No data at dusk available due to equipment malfunction.	

Table 3-8: 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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M14-2	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-N-35-16	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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 3-8: 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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-N-M31-17	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	Results						
CR-N-M1-14	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	Results						
CR-S-M11-11	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	Results						
CR-S-M04-1	*Date, Survey Start and End Times, and Weather Conditions*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M07-9	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	

Table 3-8: 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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	Results						
CR-S-M01-23	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M46-24	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	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.
	Results	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	*Date, Survey Start and End Times, Weather Condition and Moon Phase*	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	Results						
CR-A-M1-89	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-A-M1-90	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-A-M2-91	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	

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.

3.4.5 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, 2015d; 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.

3.4.6 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, 2015d; 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 3-9**. 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.

3.4.7 Olive-sided Flycatcher

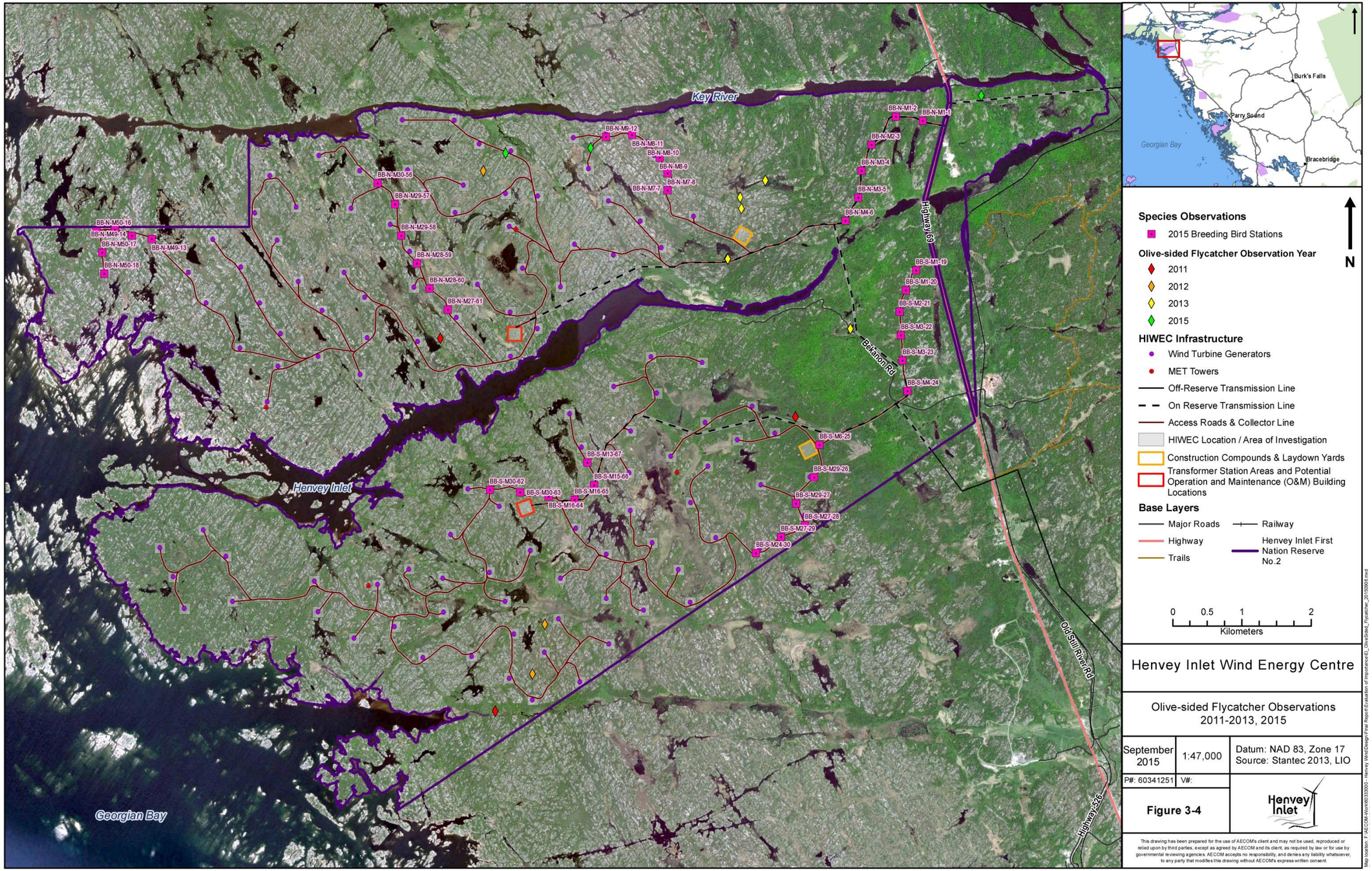
Breeding bird surveys to confirm the presence / absence, abundance and distribution of this species within the HIWEC study area were completed in 2011, 2012, 2013, and 2015. The results of the breeding bird surveys completed by LGL and Stantec in 2011, 2012 and 2013 are provided in the *Summary of 2011,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

Several observations of Olive-sided Flycatcher were recorded though 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.

Table 3-9: 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 *Carex aquatilis*. Some areas of open water.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	No Least Bittern heard calling.	No Least Bittern heard calling.	
LB-S-M33-3	Shallow aquatic marsh dominated by Lakebank Sedge.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	No Least Bittern heard calling.	No Least Bittern heard calling.	
LB-S-M35-4	Fen dominated by Leatherleaf, Sweet Gale and graminoids. Occasional snags.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	No Least Bittern heard calling.	No Least Bittern heard calling.	

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



3.4.8 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 Are*a (AECOM, 2015d; refer to Appendix A of the Records Review). Incidental observations of Eastern Whip-poor-will were also recorded in 2011, 2012 and 2013 (AECOM, 2015d; refer to Appendix A of the Records Review).

The results of the crepuscular breeding bird surveys completed in 2015 are summarized in **Table 3-10**. 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 3.4.4**.

3.4.9 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, 2015f; 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.

3.4.10 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, 2015f; 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.

3.4.11 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, 2015f; 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 3-5: Eastern Whip-poor-will Observations 2011-2013, 2015

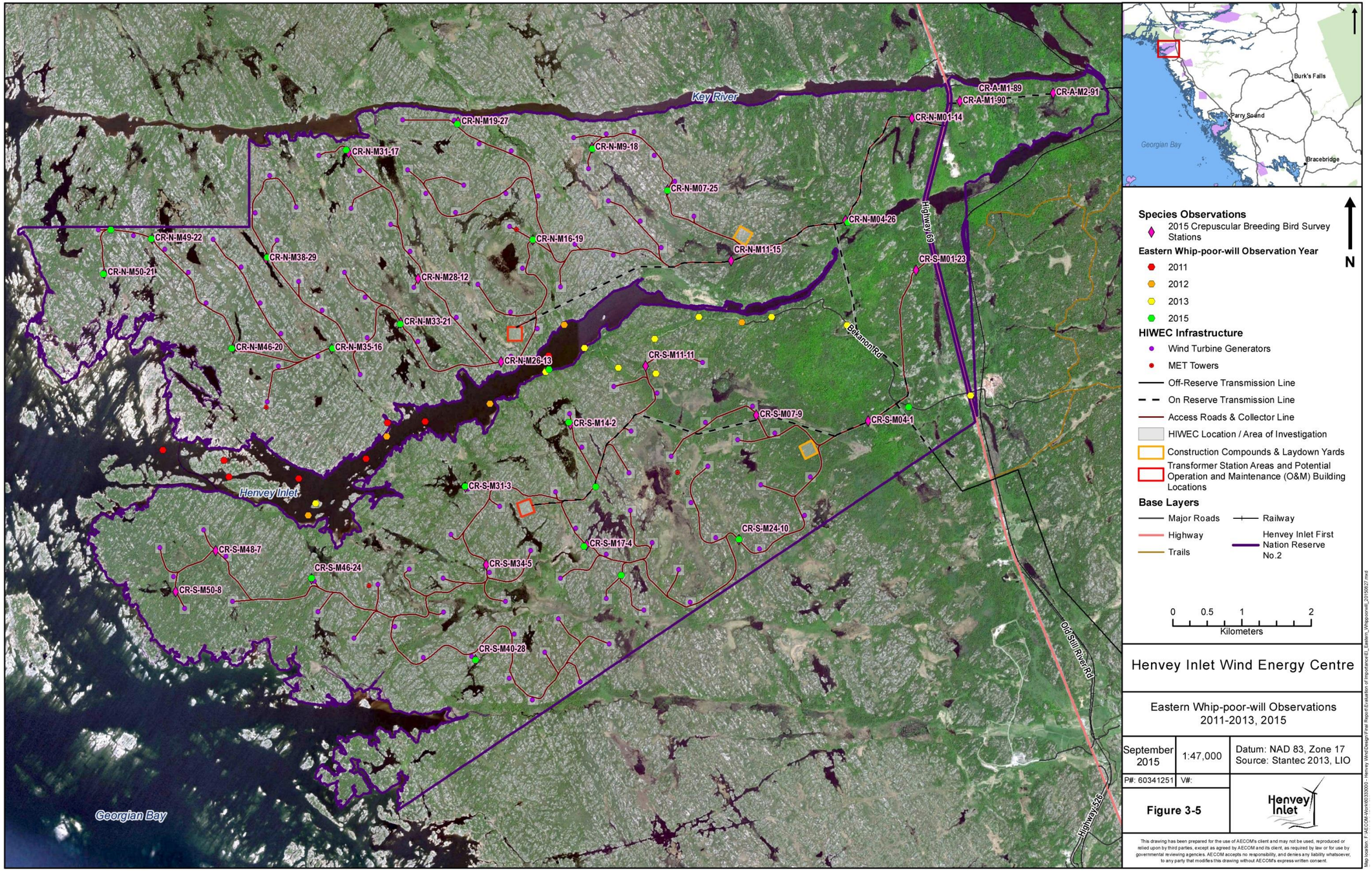


Table 3-10: 2015 Pre-construction Crepuscular Breeding Bird Survey Results for Eastern Whip-poor-will

Station		Round 1	Round 2	Round 3	Round 4	Round 5	Presence / Absence
CR-N-M38-29	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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 3-10: 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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M14-2	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	None detected.	Faint song detected at morning.	None detected.	None detected.	None detected.	
CR-N-M11-15	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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 3-10: 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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-N-M26-13	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	Results						
CR-N-M1-14	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	Results						
CR-S-M11-11	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	Results						
CR-S-M04-1	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M07-9	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M24-10	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	None detected.	Detected at least one (1) individual singing.	None detected.	None detected.	None detected.	
CR-S-M31-3	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	Results						
CR-S-M01-23	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-S-M46-24	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	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 3-10: 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	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	Equipment malfunction; no sound data recorded during recommended or secondary survey windows.					No data available due to equipment malfunction.
	Results						
CR-A-M1-89	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-A-M1-90	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.
	Results	None detected.	None detected.	None detected.	None detected.	None detected.	
CR-A-M2-91	*Date, Survey Start and End Times, Weather Conditions and Moon Phases*	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.	

3.4.12 Branched Bartonia

Species-specific surveys to confirm the presence / absence, abundance and distribution of this species will be completed in the fall of 2015. For the purpose of this submission, this species is carried forward to the EIS, with a commitment to complete pre-construction surveys as described in **Section 2.4.12**.

3.4.13 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, 2015e; refer to Appendix A of the Records Review).

The results of the turtle basking surveys completed in 2015 are summarized in **Table 3-11**. 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.

3.4.14 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, 2015e; 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 3-12** below; no Eastern Foxsnakes were observed during these surveys.

One (1) Eastern Foxsnakes was recorded near the shoreline of Georgian Bay in 2011 and one (1) was recorded along the shoreline of the Key River in 2013; the exact locations of these observations are mapped on Figures 3-1 and 3-3 of the *Summary of 2011, 2012 and 2013 Herpetological Surveys – Henvey Inlet Wind Energy Centre Study Area* (AECOM, 2015e; refer to Appendix A of the Records Review). This species was not recorded in the HIWEC study area in 2014 or 2015. This species was carried forward to the EIS.

3.4.15 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, 2015e; 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 3-12** below; no Eastern Foxsnakes 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.

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

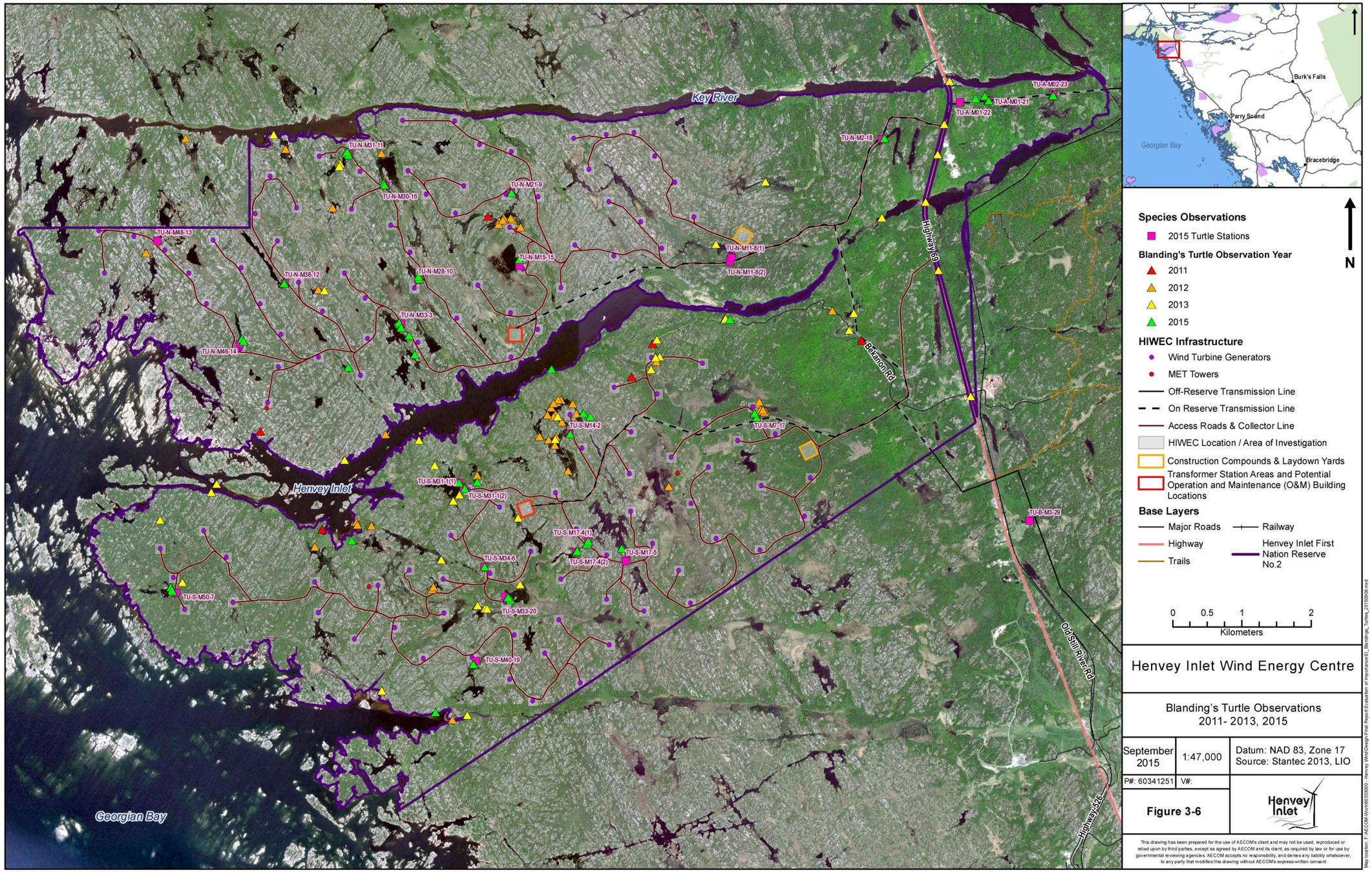


Table 3-11: 2015 Pre-construction Turtle Basking Survey Results for Turtle Species at Risk

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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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 3-11: 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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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 (*Sarracenia purpurea*), Labrador Tea (*Rhododendron groenlandicum*). No logs present, few vegetation mats along shoreline.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	April 28, 2015 12:45 – 13:36 Wind (Beaufort Scale): 4 Cloud Cover: 0% Temperature: 15°C Precipitation: None	May13, 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.
		Results	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 3-11: 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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	No turtles observed.	Four (4) Midland Painted Turtles observed.	No turtles observed.	No turtles observed.	No turtles observed.	

Table 3-11: 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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	

3.4.16 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, 2015e; refer to Appendix A of the Records Review). The results of the 2015 turtle basking surveys are summarized in **Table 3-11** 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, 2015e). 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.

3.4.17 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, 2015e; refer to Appendix A of the Records Review). The results of the 2015 snake basking surveys are summarized in **Table 3-12**.

Massausaga 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 3-7**. This species is relatively common and widespread throughout the HIWEC study area and therefore it was carried forward to the EIS.

Figure 3-7: Massasauga Rattlesnake Observations 2011-2015

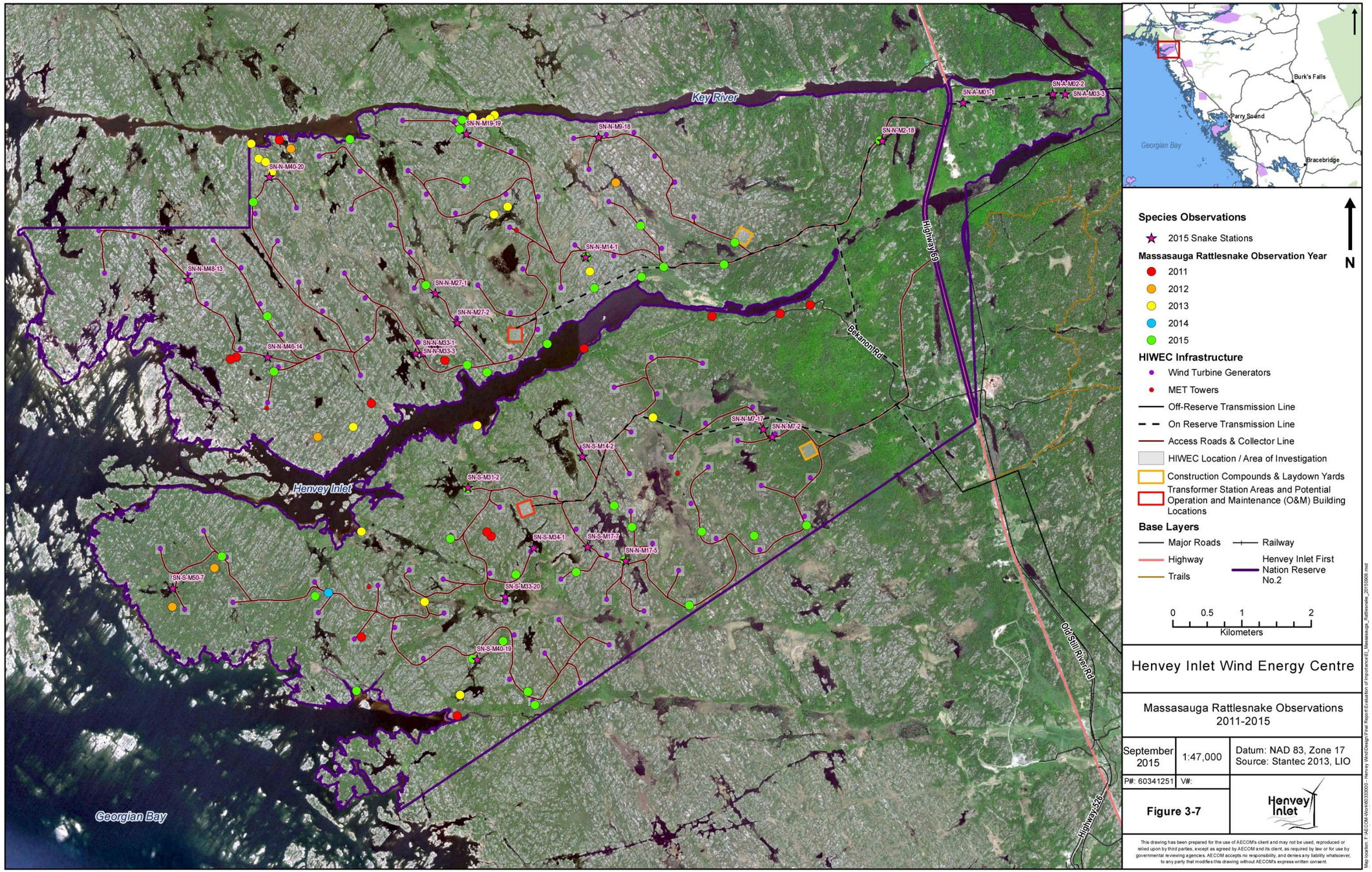


Table 3-12: 2015 Pre-construction Snake Basking Survey Results

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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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).	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	

Table 3-12: 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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	No snakes observed.	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	No snakes observed.	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	No snakes observed.	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	No snakes observed.	One (1) Smooth Greensnake observed.	No snakes 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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	No snakes observed.	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	No snakes observed.	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	No snakes observed.	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	No snakes observed.	One (1) Northern Watersnake observed.	No snakes observed.	No snakes observed.	One (1) Eastern Gartersnake observed.	

Table 3-12: 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.	*Date, Survey Start and End Times, and Weather Conditions*	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.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 9:39 – 9:59 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 Massausaga Rattlesnake observed.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	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.	*Date, Survey Start and End Times, and Weather Conditions*	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 Massausaga Rattlesnake observed.
		Results	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	No snakes observed.	

3.4.18 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, 2015d; 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 2.4.18**), 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 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.

3.5 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, 2015a; 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 3-13 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 3-13: 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

3.6 Summary of Features Carried Forward to the Environmental Impact Study

Table 3-14 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 3-14: Summary of Natural Features Carried Forward to the EIS

Feature	Natural Features Carried Forward to the EIS
Conservation Reserves	The North Georgian Bay Shoreline and Islands Conservation Reserve was carried forward to the EIS.
Important Wetlands	Four (4) wetland features were evaluated and confirmed to be important, and carried forward to the EIS.
Important Wildlife Habitat	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): • Bat Hibernacula; • Bat Maternity Colonies; • Turtle Wintering Areas; • Reptile Hibernacula; • Deer Yarding Areas; • Cliffs and Talus Slopes; • Precambrian Rock Barrens; • Sand Barrens; • Old-growth Forest; • Bogs; • Waterfowl Nesting Areas; • Bald Eagle and Osprey Nesting, Foraging and Perching Habitat; • Woodland Raptor Nesting Habitat; • Turtle Lizard and Nesting Areas; • Seeps and Springs; • Aquatic Feeding Habitat; • Denning Sites for Mink, Otter, Marten, Fisher and Eastern Wolf; • Amphibian Breeding Habitat (Woodland and Wetland); • Mast producing Areas; • Marsh Bird Breeding Habitat;

Feature	Natural Features Carried Forward to the EIS
	• Habitat for Specific SOCC, including: – Black Tern; – Eastern Wood-pewee; – Prairie Warbler; – Wood Thrush; – Yellow Rail; – Horned Clubtail; – Mottled Darner; – Pine Imperial Moth; – Eastern Wolf; – Common Five-linked Skink; – Eastern Ribbonsnake; – Milksnake; – Northern Map Turtle; and – Snapping Turtle. The following IWH features were evaluated and determined not to be IWH. These were not carried forward to the EIS: • Waterfowl Stopover and Staging Areas (Aquatic); • Shorebird Migratory Stopover Areas; and • Colonially-Nesting Bird Breeding Habitat (Trees / Shrubs). The following Generalized Candidate IWH features were carried forward to the EIS: • 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.
Federal Species at Risk	The following Federal Species At Risk were carried forward to the EIS: • Canada Warbler; • Common Nighthawk; • Olive-sided Flycatcher; • Eastern Whip-poor-will; • Little Brown Bat; • Northern Bat; • Tri-coloured Bat; • Branched Bartonia; • Blanding's Turtle; • Eastern Foxsnake; • Eastern Hog-nosed Snake; • Eastern Musk Turtle; • Massausaga Rattlesnake; and • Kirtland's Warbler. The following Federal Species at Risk were not carried forward to the EIS: • Western Chorus Frog; • Chimney Swift; • Golden-winged Warbler; and • Least Bittern.

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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

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 orthoaerial 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 latiffolia),* 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.)

Official Name:	Henvey Inlet Wetland WET-001				
Evaluation Edition:	1st	**Version:**	1.3	**Wetland ID.:**	WET-001
Wetland Significance:	Year/Month Last Evaluated			Not Evaluated	
	Year/Month Last Updated				

Special Planning Considerations:	Federal Land	**Scores**	
Wetland Area:	1158.82	Biological:	207
Dentention Area:	NA/Coastal Wetlands	Social:	158
Catchment Area:	NA/Coastal Wetlands	Hydrological:	86
Coastal Unit Area:	1159.00	Special Features:	250
OMNR Source	Parry Sound District MNR	Overall:	701
Information Source	Field Observation: AECOM, 2015		
Submitted by:	Kristan Washburn	**Date**	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 Summery Form

Wetland Name: Henvey Inlet Wetland WET-001

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	0.94	Palustrine	Fibric	m	1	5	0.05		m- *Sphagnum spp.*	see attached flora and fauna lists	
1	m	Fen	mF	4	3.91	Palustrine	Fibric	m	1	5	0.20		m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	3.63	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.38	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	2.93	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	7.11	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	6.44	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	1.61	Palustrine	Fibric	ne, re	2	50	0.81	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
1	c	Swamp	cS	10	3.53	Palustrine	Fibric	c*, ls, gc, m	4	0	-		c-*Picea mariana,* ls- *Chamaedaphne calyculata* , gc- *Mainthemum trifolium* , m-*Sphagnum*	see attached flora and fauna lists	
1	m	Fen	mF	4	0.37	Palustrine	Fibric	m	1	5	0.02		m- *Sphagnum spp.*	see attached flora and fauna lists	
1	m	Fen	mF	4	0.19	Palustrine	Fibric	m	1	5	0.01		m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	2.23	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	6.10	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
1	m	Fen	mF	4	1.91	Palustrine	Fibric	m	1	5	0.10		m- *Sphagnum spp.*	see attached flora and fauna lists	
1	c	Swamp	cS	18	0.00	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
1	c	Swamp	cS	18	0.41	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
1	c	Swamp	cS	18	0.98	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.26	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
1	c	Swamp	cS	18	1.35	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
1	c	Swamp	cS	18	2.27	Lacustrine	Fibric	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
1	c	Swamp	cS	18	2.15	Lacustrine	Fibric	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* 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- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum 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- *Sphagnum 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- *Sphagnum spp.*	see attached flora and fauna lists	
1	su	Marsh	suW	1	4.03	Palustrine	Fibric	su*, gc	2	90	3.63	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	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- *Sphagnum spp.*	see attached flora and fauna lists	
1	f	Marsh	fW	1	2.44	Palustrine	Fibric	f	1	90	2.20	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
1	su	Marsh	suW	1	1.37	Palustrine	Fibric	su*, gc	2	90	1.23	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
1	su	Marsh	suW	1	0.35	Palustrine	Fibric	su*, gc	2	90	0.32	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
1	m	Fen	mF	4	0.66	Palustrine	Fibric	m	1	5	0.03		m- *Sphagnum spp.*	see attached flora and fauna lists	
1	m	Fen	mF	4	0.16	Palustrine	Fibric	m	1	5	0.01		m- *Sphagnum spp.*	see attached flora and fauna lists	
1	m	Fen	mF	4	0.08	Palustrine	Fibric	m	1	5	0.00		m- *Sphagnum spp.*	see attached flora and fauna lists	
1	m	Fen	mF	4	0.36	Palustrine	Fibric	m	1	10	0.04	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.09	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
1	c	Swamp	cS	18	0.41	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
1	ls	Fen	lsF	19	1.68	Palustrine	Fibric	ls*,gc,m	3	0	-		ls-*Kalmia angustifolia* , gc-*Mainthemum trifolium* , m-*Sphagnum spp.*	see attached flora and fauna lists	
1	su	Marsh	suW	1	1.75	Palustrine	Fibric	su*, gc	2	90	1.58	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
1	m	Fen	mF	4	1.48	Palustrine	Fibric	m	1	10	0.15	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.43	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.06	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.04	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ts	Swamp	tsS	3	3.14	Palustrine	Fibric	ts*, ls, gc, m	4	0	-		ts- *Alnus incana,* ls- *Chamaedaphne calyculata* , gc- *Mainthemum canadense* , m- *Mainthemum*	see attached flora and fauna lists	
1	ts	Swamp	tsS	3	5.00	Palustrine	Fibric	ts*, ls, gc, m	4	0	-		ts- *Alnus incana,* ls- *Chamaedaphne calyculata* , gc- *Mainthemum canadense* , m- *Mainthemum*	see attached flora and fauna lists	
1	c	Swamp	cS	16	2.52	Palustrine	Fibric	c*, ls, m	3	0	-		c- *Picea mariana* , ls- *Chamaedaphne calyculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
1	ne	Bog	neB	2	7.60	Isolated	Fibric	ne	1	0	-		ne- *Carex spp.*	see attached flora and fauna lists	
1	c	Swamp	cS	16	0.56	Palustrine	Fibric	c*, ls, m	3	0	-		c- *Picea mariana* , ls- *Chamaedaphne calyculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
2	m	Fen	mF	4	1.24	Palustrine	Fibric	m	1	10	0.12	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
2	m	Fen	mF	4	1.48	Palustrine	Humic-Mesic	m	1	10	0.15	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
2	m	Fen	mF	4	1.14	Palustrine	Fibric	m	1	10	0.11	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
2	c	Bog	cB	3	0.18	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
2	m	Fen	mF	4	5.50	Palustrine	Humic-Mesic	m	1	5	0.27		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
2	ls	Fen	lsF	12	0.21	Palustrine	Fibric	ls*, ne, m	3	0	-		ls- *Chamaedaphne calyculata* , ne- *Carex spp.* , m- *Sphagnum spp.*	see attached flora and fauna lists	
2	m	Fen	mF	4	0.55	Palustrine	Fibric	m	1	5	0.03		m- *Sphagnum spp.*	see attached flora and fauna lists	
2	c	Swamp	cS	1	0.10	Palustrine	Clay-Loam	c*,ts,ls,m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
2	c	Bog	cB	2	3.16	Isolated	Fibric	c*, ls, ne, m	4	0	-		c- *Picea mariana* , ls- *Chamaedaphne calyculata* , ne- *Carex spp* , m- *Sphagnum spp* .	see attached flora and fauna lists	
2	m	Bog	mB	1	0.36	Isolated	Fibric	ls, ne, m*	3	0	-		ne- *Carex utriculata* , ls- *vaccinium oxycoccos, m- Sphagnum spp.*	see attached flora and fauna lists	
2	ls	Fen	lsF	2	0.32	Palustrine	Fibric	ls*, ne, m	3	0	-		ls- *Chaemadaphne calyculata,* ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
2	ls	Bog	lsB	1	0.43	Isolated	Fibric	ls*, gc, m	3	0	-		ls- *Chamaedaphne calyculata, Kalmia angulatigolium* , gc- *Mainthemum trifolium,* m-	see attached flora and fauna lists	
2	ls	Swamp	lsS	1	1.72	Palustrine	Fibric	ls*,gc,ne	3	0	-		ls- *Chamaedaphne calyculata, gc- Osmunda regalis, ne- Carex spp.*	see attached flora and fauna lists	
2	ls	Fen	lsF	15	0.18	Palustrine	Fibric	ls*, gc, m	3	0	-		ls- *Chamaedaphne calyculata* , gc- *mainthemum trifolium* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	su	Marsh	suW	1	3.33	Palustrine	Clay-Loam	su*, gc	2	90	3.00	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.67	Palustrine	Silt-Marl	ne, re	2	50	0.33	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	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-*Carex aquatilis* , re-*Typha lattifolia* , m- *Sphagnum spp* .	see attached flora and fauna lists	
3	m	Fen	mF	4	2.55	Palustrine	Fibric	m	1	5	0.13		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.78	Palustrine	Fibric	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	ls	Fen	lsF	5	1.37	Palustrine	Fibric	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	ls	Fen	lsF	5	3.97	Palustrine	Fibric	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	c	Swamp	cS	10	2.66	Palustrine	Silt-Marl	c*, ls, gc, m	4	0	-		c-*Picea mariana,* ls- *Chamaedaphne calyculata* , gc- *Mainthemum trifolium* , m-*Sphagnum*	see attached flora and fauna lists	
3	c	Swamp	cS	10	5.83	Palustrine	Humic-Mesic	c*, ls, gc, m	4	0	-		c-*Picea mariana,* ls- *Chamaedaphne calyculata* , gc- *Mainthemum trifolium* , m-*Sphagnum*	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.95	Palustrine	Humic-Mesic	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	0.44	Palustrine	Fibric	ne, re	2	50	0.22	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.13	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
3	m	Fen	mF	4	0.08	Palustrine	Humic-Mesic	m	1	5	0.00		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.71	Palustrine	Humic-Mesic	m	1	5	0.04		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.08	Palustrine	Humic-Mesic	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	1.90	Palustrine	Humic-Mesic	ne, re	2	50	0.95	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.51	Palustrine	Fibric	ne, re	2	50	0.26	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	

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3	ts	Swamp	tsS	13	0.39	Palustrine	Fibric	ts*, ls, m	3	0	-		ts- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.23	Palustrine	Fibric	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	ls	Fen	lsF	5	1.00	Palustrine	Fibric	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	ls	Fen	lsF	5	0.51	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	ls	Fen	lsF	5	2.42	Palustrine	Fibric	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	ne	Marsh	neM	6	2.06	Palustrine	Humic-Mesic	ne, re	2	50	1.03	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.62	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	c	Swamp	cS	18	0.95	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
3	m	Fen	mF	4	2.13	Palustrine	Humic-Mesic	m	1	5	0.11		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	18	2.84	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
3	m	Fen	mF	4	0.95	Palustrine	Humic-Mesic	m	1	5	0.05		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	1.40	Palustrine	Humic-Mesic	m	1	5	0.07		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.53	Palustrine	Humic-Mesic	m	1	5	0.03		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.68	Palustrine	Humic-Mesic	m	1	5	0.03		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.27	Palustrine	Fibric	m	1	5	0.01		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.81	Palustrine	Fibric	m	1	5	0.04		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.10	Palustrine	Fibric	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	c	Swamp	cS	18	1.74	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	m	Fen	mF	4	0.04	Palustrine	Humic-Mesic	m	1	5	0.00		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	3.61	Palustrine	Fibric	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	ls	Fen	lsF	5	7.44	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	0.61	Palustrine	Fibric	m	1	5	0.03		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.51	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	c	Swamp	cS	18	2.48	Palustrine	Humic-Mesic	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	1.38	Palustrine	Fibric	f	1	90	1.24	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	3.36	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	

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3	c	Swamp	cS	18	0.95	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	0.07	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	0.77	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	c	Swamp	cS	18	0.08	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	ne	Marsh	neM	6	0.00	Palustrine	Sand	re,ne*,m	3	50	0.00	HM	ne-*Carex aquatilis* , re-*Typha lattifolia* , m- *Sphagnum spp* .	see attached flora and fauna lists	
3	ne	Marsh	neM	6	2.21	Palustrine	Clay-Loam	ne, re	2	50	1.11	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.08	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	f	Marsh	fW	1	2.87	Palustrine	Humic-Mesic	f	1	90	2.59	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	c	Swamp	cS	18	3.24	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	0.85	Palustrine	Humic-Mesic	re,ne*,m	3	50	0.43	HM	ne-*Carex aquatilis* , re-*Typha lattifolia* , m- *Sphagnum spp* .	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.01	Palustrine	Fibric	ne, re	2	50	0.00	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	ne	Marsh	neM	6	2.54	Palustrine	Clay-Loam	ne, re	2	50	1.27	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.02	Palustrine	Humic-Mesic	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	0.88	Palustrine	Humic-Mesic	su*, gc	2	90	0.79	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	f	Marsh	fW	1	14.91	Palustrine	Fibric	f	1	90	13.42	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	f	Marsh	fW	1	1.57	Palustrine	Sand	f	1	90	1.41	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.62	Palustrine	Clay-Loam	f	1	90	0.56	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.55	Palustrine	Fibric	m	1	5	0.03		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.00	Palustrine	Fibric	m	1	5	0.00		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.01	Palustrine	Humic-Mesic	f	1	90	0.01	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	f	Marsh	fW	1	4.56	Palustrine	Humic-Mesic	f	1	90	4.10	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	f	Marsh	fW	1	6.46	Palustrine	Fibric	f	1	90	5.82	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.21	Palustrine	Fibric	m	1	5	0.01		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.11	Palustrine	Fibric	su*, gc	2	90	0.10	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.62	Palustrine	Fibric	su*, gc	2	90	0.56	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	m	Fen	mF	4	1.13	Palustrine	Fibric	m	1	5	0.06		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	su	Marsh	suW	1	0.07	Palustrine	Humic-Mesic	su*, gc	2	90	0.07	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	su	Marsh	suW	1	4.66	Palustrine	Fibric	su*, gc	2	90	4.20	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.11	Palustrine	Fibric	su*, gc	2	90	0.10	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.10	Palustrine	Fibric	su*, gc	2	90	0.09	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	h	Swamp	hS	2	0.07	Lacustrine	Fibric	h*,ts, ls, gc	4	0	-		h- *Fraxinus nigra*, ts- *Alnus incana* , ls- *Rubus pubescens* , gs- *Mainthemum candense*	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.61	Palustrine	Humic-Mesic	ne, re	2	50	0.31	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	c	Bog	cB	3	0.42	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis*, m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Bog	cB	3	0.43	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis*, m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.19	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum*, 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- *Sphagnum 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- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis*, m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.75	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	c	Swamp	cS	18	1.57	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum*, m-	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.07	Palustrine	Fibric	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	ne	Marsh	neM	6	1.28	Palustrine	Silt-Marl	ne, re	2	50	0.64	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	9.34	Palustrine	Fibric	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	f	Marsh	fW	1	9.10	Palustrine	Fibric	f	1	90	8.19	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	ts	Swamp	tsS	13	0.84	Lacustrine	Fibric	ts*, ls, m	3	25	0.21	HM	ts- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum 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-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
3	ts	Swamp	tsS	13	1.03	Palustrine	Silt-Marl	ts*, ls, m	3	0	-		ts- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.74	Palustrine	Fibric	m	1	10	0.07	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	4.96	Palustrine	Fibric	m	1	10	0.50	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.91	Riverine	Sand	ne, re	2	50	0.45	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	ne	Marsh	neM	7	1.01	Riverine	Sand	re,ne*,m	3	50	0.51	HM	ne-*Carex aquatilis* , re-*Typha lattifolia* , m- *Sphagnum spp* .	see attached flora and fauna lists	
3	c	Swamp	cS	18	2.16	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	m	Fen	mF	4	1.65	Lacustrine	Fibric	m	1	10	0.16	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	

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3	su	Marsh	suW	1	0.79	Palustrine	Humic-Mesic	su*, gc	2	90	0.71	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.49	Palustrine	Humic-Mesic	m	1	10	0.05	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.40	Palustrine	Humic-Mesic	m	1	10	0.04	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.94	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.42	Palustrine	Fibric	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	ls	Fen	lsF	5	0.19	Palustrine	Fibric	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	0.23	Palustrine	Humic-Mesic	m	1	10	0.02	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.29	Palustrine	Fibric	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	c	Swamp	cS	18	0.79	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	m	Fen	mF	4	0.23	Palustrine	Fibric	m	1	10	0.02	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.75	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	m	Fen	mF	4	2.54	Palustrine	Fibric	m	1	10	0.25	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.14	Palustrine	Fibric	m	1	10	0.01	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.69	Palustrine	Fibric	m	1	10	0.07	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.55	Palustrine	Fibric	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	su	Marsh	suW	1	0.48	Palustrine	Fibric	su*, gc	2	90	0.43	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.44	Palustrine	Fibric	su*, gc	2	90	0.39	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	f	Marsh	fW	1	1.67	Palustrine	Fibric	f	1	90	1.50	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	f	Marsh	fW	1	3.40	Palustrine	Fibric	f	1	90	3.06	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.01	Palustrine	Fibric	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	c	Swamp	cS	18	0.81	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	m	Fen	mF	4	2.46	Palustrine	Fibric	m	1	10	0.25	HM	m- *Sphagnum 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-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.65	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	c	Swamp	cS	18	0.77	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	ts	Swamp	tsS	13	0.95	Lacustrine	Sand	ts*, ls, m	3	25	0.24	HM	ts- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	

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3	ne	Marsh	neM	7	5.48	Palustrine	Sand	re,ne*,m	3	50	2.74	HM	ne-Carex aquatilis, re-Typha lattifolia, 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 lattifolia*	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, Potomogeton 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 lattifolia*	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 lattifolia*	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, Potomogeton 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, Potomogeton 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, Potomogeton 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	

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3	ls	Fen	lsF	5	0.60	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	ls	Fen	lsF	5	0.20	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	ls	Fen	lsF	5	0.25	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	0.30	Palustrine	Fibric	m	1	10	0.03	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.15	Palustrine	Clay-Loam	f	1	90	0.14	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	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	m	Fen	mF	4	0.15	Palustrine	Fibric	m	1	10	0.02	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.17	Palustrine	Fibric	m	1	10	0.02	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.12	Palustrine	Humic-Mesic	su*, gc	2	90	0.11	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.25	Palustrine	Humic-Mesic	m	1	10	0.02	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.60	Riverine	Fibric	su*, gc	2	90	0.54	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	f	Marsh	fW	1	7.55	Palustrine	Fibric	f	1	90	6.79	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	m	Fen	mF	4	1.45	Palustrine	Fibric	m	1	10	0.14	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.65	Palustrine	Humic-Mesic	m	1	10	0.07	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.39	Palustrine	Fibric	m	1	10	0.04	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	f	Marsh	fW	1	1.83	Palustrine	Clay-Loam	f	1	90	1.64	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.49	Lacustrine	Humic-Mesic	f	1	90	0.44	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.31	Riverine	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	f	Marsh	fW	1	0.55	Palustrine	Fibric	f	1	90	0.49	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	f	Marsh	fW	1	8.09	Palustrine	Silt-Marl	f	1	90	7.28	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.39	Palustrine	Fibric	m	1	10	0.04	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.65	Palustrine	Silt-Marl	f	1	90	0.59	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	su	Marsh	suW	1	3.74	Lacustrine	Humic-Mesic	su*, gc	2	90	3.37	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.51	Palustrine	Clay-Loam	su*, gc	2	90	0.46	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.61	Palustrine	Clay-Loam	su*, gc	2	90	0.55	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.08	Palustrine	Fibric	su*, gc	2	90	0.07	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	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- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.10	Palustrine	Silt-Marl	su*, gc	2	90	0.09	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	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-*Carex aquatilis* , re-*Typha lattifolia* , m- *Sphagnum spp* .	see attached flora and fauna lists	
3	m	Fen	mF	4	0.36	Palustrine	Fibric	m	1	10	0.04	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	f	Marsh	fW	1	1.75	Palustrine	Fibric	f	1	90	1.57	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	m	Fen	mF	4	1.31	Palustrine	Fibric	m	1	10	0.13	HM	m- *Sphagnum 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-Carex aquatilis, re-Typha lattifolia, m- Sphagnum spp.	see attached flora and fauna lists	
3	m	Fen	mF	4	1.08	Riverine	Fibric	m	1	10	0.11	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.31	Palustrine	Fibric	m	1	10	0.03	HM	m- *Sphagnum 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-*Carex aquatilis* , re-*Typha lattifolia* , m- *Sphagnum spp* .	see attached flora and fauna lists	
3	m	Fen	mF	4	1.15	Palustrine	Fibric	m	1	10	0.11	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.23	Palustrine	Fibric	su*, gc	2	90	0.21	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	m	Fen	mF	4	1.20	Palustrine	Fibric	m	1	10	0.12	HM	m- *Sphagnum 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-*Carex aquatilis* , re-*Typha lattifolia* , m- *Sphagnum spp* .	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.49	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.24	Palustrine	Fibric	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	c	Swamp	cS	18	0.75	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	ls	Fen	lsF	5	0.10	Palustrine	Fibric	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	ts	Swamp	tsS	13	0.16	Palustrine	Fibric	ts*, ls, m	3	0	-		ts- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	6.30	Lacustrine	Fibric	m	1	10	0.63	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.93	Lacustrine	Fibric	m	1	10	0.09	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	1.04	Lacustine	Fibric	m	1	10	0.10	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	1.21	Lacustrine	Fibric	m	1	10	0.12	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	2.76	Lacustrine	Humic-Mesic	m	1	10	0.28	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Bog	cB	3	0.07	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.08	Palustrine	Sand	ne, re	2	50	0.04	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	

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3	h	Swamp	hS	2	0.84	Lacustrine	Fibric	h*,ts, ls, gc	4	0	-		h- *Fraxinus nigra,* ts- *Alnus incana* , ls- *Rubus pubescens* , gs- *Mainthemum candense*	see attached flora and fauna lists	
3	ts	Swamp	tsS	13	0.03	Palustrine	Humic-Mesic	ts*, ls, m	3	0	-		ts- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.40	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	c	Bog	cB	3	0.34	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Bog	cB	3	2.21	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.05	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* 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- *Sphagnum spp.*	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- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	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	ls	Fen	lsF	5	0.50	Palustrine	Fibric	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	c	Swamp	cS	8	1.26	Palustrine	Humic-Mesic	c*,h,ts,gc, m	5	0	-		c- *Pinus strobus* , ts-*Nemopanthus mucronatus* , gc-*Mainthemum canadense* , m- *Sphagnum*	see attached flora and fauna lists	
3	ne	Marsh	neM	7	0.71	Lacustrine	Sand	re,ne*,m	3	50	0.36	HM	ne-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
3	ne	Marsh	neM	7	0.52	Lacustrine	Sand	re,ne*,m	3	50	0.26	HM	ne-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
3	ne	Marsh	neM	7	0.42	Riverine	Fibric	re,ne*,m	3	50	0.21	HM	ne-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
3	m	Bog	mB	2	0.55	Isolated	Fibric	m	1	0	-		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Bog	cB	3	0.34	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.38	Palustrine	Fibric	m	1	10	0.04	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.19	Palustrine	Fibric	m	1	10	0.02	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	2.45	Palustrine	Fibric	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	ne	Marsh	neM	6	2.09	Lacustrine	Sand	ne, re	2	50	1.04	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	su	Marsh	suW	1	3.69	Palustrine	Fibric	su*, gc	2	90	3.32	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	m	Fen	mF	4	15.98	Palustrine	Fibric	m	1	5	0.80		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ne	Marsh	neM	6	7.30	Lacustrine	Fibric	ne, re	2	50	3.65	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	2.63	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	ls	Fen	lsF	5	4.53	Palustrine	Fibric	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	ls	Fen	lsF	5	1.94	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	

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3	ls	Fen	lsF	5	0.12	Palustrine	Fibric	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	ls	Fen	lsF	5	1.98	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	ls	Fen	lsF	5	0.60	Palustrine	Fibric	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	9.96	Palustrine	Fibric	m	1	5	0.50		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.04	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	0.67	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
3	ls	Fen	lsF	5	2.59	Palustrine	Fibric	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	ls	Fen	lsF	5	2.24	Palustrine	Fibric	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	ne	Marsh	neM	6	0.85	Palustrine	Clay-Loam	ne, re	2	50	0.43	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.78	Palustrine	Silt-Marl	ne, re	2	50	0.39	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	m	Fen	mF	4	4.14	Palustrine	Fibric	m	1	5	0.21		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	f	Marsh	fW	1	3.67	Palustrine	Fibric	f	1	90	3.31	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	1.74	Palustrine	Fibric	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	f	Marsh	fW	1	4.96	Palustrine	Fibric	f	1	90	4.46	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.01	Palustrine	Humic-Mesic	su*, gc	2	90	0.01	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.09	Palustrine	Humic-Mesic	su*, gc	2	90	0.08	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	f	Marsh	fW	1	2.66	Riverine	Fibric	f	1	90	2.40	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.05	Palustrine	Humic-Mesic	su*, gc	2	90	0.05	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.00	Palustrine	Humic-Mesic	su*, gc	2	90	0.00	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	m	Fen	mF	4	0.26	Palustrine	Fibric	m	1	5	0.01		m- *Sphagnum spp.*	see attached flora and fauna lists	
3	f	Marsh	fW	1	3.41	Palustrine	Fibric	f	1	90	3.07	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	su	Marsh	suW	1	0.54	Palustrine	Clay-Loam	su*, gc	2	90	0.49	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.10	Palustrine	Humic-Mesic	f	1	90	0.09	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.11	Palustrine	Humic-Mesic	f	1	90	0.10	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.05	Palustrine	Humic-Mesic	f	1	90	0.05	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.34	Palustrine	Humic-Mesic	f	1	90	0.31	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	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- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	2.27	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	ls	Fen	lsF	5	7.27	Palustrine	Fibric	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	ne	Fen	neF	1	1.66	Palustrine	Fibric	ls, ne*	2	0	-		ls- *Kalmia polifolia,* ne- *Carex aquatilis*	see attached flora and fauna lists	
3	ls	Fen	lsF	13	2.01	Palustrine	Fibric	ls*, ne, m	3	0	-		ls- *Ledum groenlandicum* , ne- *Carex spp.*, m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.03	Palustrine	Fibric	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	f	Marsh	fW	1	0.02	Palustrine	Fibric	f	1	90	0.02	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	ne	Marsh	neM	1	0.88	Palustrine	Fibric	ne,m	2	25	0.22	HM	ne- *Carex spp.* , m- *Sphagnum spp*	see attached flora and fauna lists	
3	ts	Swamp	tsS	11	1.32	Palustrine	Fibric	ts*, ls, gc, m	4	0	-		ts- *Alnus incana, ls-* Spiraea alba, gc- *Mainthemum canadense* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ts	Swamp	tsS	13	2.57	Palustrine	Fibric	ts*, ls, m	3	0	-		ts- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ts	Swamp	tsS	6	0.86	Palustrine	Fibric	ts*,ls, ne, m	4	0	-		ts- *Alnus incana* , ls- *Chamaedaphne calyculata* , ne- *Carex spp.* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.82	Palustrine	Sand	ne, re	2	50	0.41	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	ne	Marsh	neM	1	2.99	Lacustrine	Fibric	ne*,m	2	25	0.75	HM	ne-*Carex aquatilis* , m- *Sphagnum 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-*Alnus incana* , ls- *Rubus idaeus* , gc- *Mainthemum canadensis*	see attached flora and fauna lists	
3	ne	Fen	neF	3	3.38	Palustrine	Humic-Mesic	ne	1	0	-		ne- Carex spp.	see attached flora and fauna lists	
3	c	Swamp	cS	6	2.47	Palustrine	Fibric	c*, ls, gc	3	0	-		c- *Picea mariana* , ls-*Chamaedaphne calyculata* , gc- *Mainthemum trifolium*	see attached flora and fauna lists	
3	ls	Fen	lsF	10	0.88	Palustrine	Fibric	ls*, m	2	0	-		ls- *Myrica gale* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	1	1.46	Palustrine	Fibric	ls, ne, m*	3	5	0.07		ls- *Chamaedaphne calyculata* , ne- *Carex spp.* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	13	1.00	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- *Picea mariana , ts- Nemopanthus mucronatus* , ls- K*almia angustifolia*	see attached flora and fauna lists	
3	c	Swamp	cS	12	1.32	Palustrine	Sand	c*, ls, gc,m	4	0	-		c- *Picea mariana* , ls- *Chamaedaphne calyculata,* gc- *Mainthemum trifolium*	see attached flora and fauna lists	
3	ts	Swamp	tsS	8	5.87	Palustrine	Fibric	c, ts*, gc, m	4	0	-		c- *Larix laricina* , ts- *Nemopanthus mucronatus,* gc- *Mainthemum canadense,* m - *Sphagnum*	see attached flora and fauna lists	
3	c	Fen	cF	1	2.62	Palustrine	Fibric	c*,ls, ne	3	0	-		c- *Larix laricina* , ls- *Chamaedaphne calyculata* , ne- *Carex utriculata*	see attached flora and fauna lists	
3	c	Swamp	cS	8	1.52	Palustrine	Fibric	c*,h,ts,gc, m	5	0	-		c- *Pinus strobus* , ts-*Nemopanthus mucronatus* , gc-*Mainthemum canadense* , m- *Sphagnum*	see attached flora and fauna lists	
3	c	Swamp	cS	8	0.36	Palustrine	Fibric	c*,h,ts,gc, m	5	0	-		c- *Pinus strobus* , ts-*Nemopanthus mucronatus* , gc-*Mainthemum canadense* , m- *Sphagnum*	see attached flora and fauna lists	
3	ls	Fen	lsF	9	0.48	Palustrine	Fibric	ls*, ne, m	3	0	-		ls- *Chamaedaphne calyculata* , ne-*Eriophorum virginicum* , m- *Sphagnum*	see attached flora and fauna lists	
3	ts	Swamp	tsS	4	0.69	Palustrine	Fibric	ts*, ls, ne	3	0	-		ts- Alnus incana, ls- *Spiraea alba* , ne- *Carex lacustris*	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- *Carex oligosperma* , be- *Menyanthes trifoliata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	su	Marsh	suW	1	3.13	Palustrine	Fibric	su,f	2	90	2.82	LM	su- *Potamogeton spp.* , f- *Nuphar variegatum*	see attached flora and fauna lists	
3	f	Marsh	fW	1	0.00	Palustrine	Clay-Loam	f	1	90	0.00	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.55	Riverine	Fibric	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	f	Marsh	fW	1	1.66	Palustrine	Fibric	f	1	90	1.49	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	ne	Fen	neF	2	0.44	Palustrine	Fibric	ls, ne*	2	0	-		ls- *Chamaedaphne calyculata* , ne- *Carex spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	16	0.22	Palustrine	Fibric	c*, ls, m	3	0	-		c- *Picea mariana,* ls- *Ledum groenlandicum* , m- Sphagnum spp.	see attached flora and fauna lists	
3	c	Bog	cB	4	1.71	Isolated	Humic-Mesic	c*, ts, ls, gc	4	0	-		c- *Picea mariana* , ts- *Vibernum cassinoides* , ls- *Ledum groenlandicum* , gc- *Woodwardia*	see attached flora and fauna lists	
3	ls	Fen	lsF	18	0.17	Palustrine	Fibric	ls*, m	2	0	-		ls-*Chamaedaphne calyculata* , m- *Sphagnum spp*	see attached flora and fauna lists	
3	ne	Marsh	neM	7	0.32	Palustrine	Fibric	re,ne*,m	3	50	0.16	HM	ne-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.34	Palustrine	Fibric	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	ls	Fen	lsF	18	0.20	Palustrine	Fibric	ls*, m	2	0	-		ls-*Chamaedaphne calyculata* , m- *Sphagnum spp*	see attached flora and fauna lists	
3	c	Bog	cB	3	0.10	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Bog	cB	3	0.72	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ne	Marsh	neM	7	0.03	Palustrine	Fibric	re,ne*,m	3	50	0.01	HM	ne-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
3	c	Swamp	cS	15	1.84	Palustrine	Sand	c*, ts, gc, m	4	0	-		c- *Picea mariana,* ts- *Nemopanthus mucronatus,* gc- M*ainthemum trifolium* , m-	see attached flora and fauna lists	
3	c	Swamp	cS	7	2.40	Palustrine	Fibric	c*, ls, m	3	0	-		c- *Picea mariana,* ls- *Kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	13	1.40	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana , ts- Nemopanthus mucronatus* , ls- K*almia angustifolia*	see attached flora and fauna lists	
3	ts	Fen	tsF	1	3.34	Palustrine	Fibric	c, ts*, ls, gc	4	0	-		c- *Picea mariana,* ts- *Nemopanthus mucronatus,* ls- V*accinium angustifolium, 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- *Myrica gale* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	13	2.19	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- *Picea mariana , ts- Nemopanthus mucronatus* , ls- K*almia angustifolia*	see attached flora and fauna lists	
3	c	Swamp	cS	10	0.75	Palustrine	Silt-Marl	c*, ls, gc, m	4	0	-		c-*Picea mariana,* ls- *Chamaedaphne calyculata* , gc- *Mainthemum trifolium* , m-*Sphagnum*	see attached flora and fauna lists	
3	ls	Fen	lsF	4	0.83	Palustrine	Fibric	ls*, ne, be, gc, m	5	0	-		ls-*Chamaedaphne calyculata* , ne- *Carex lacustris* , be- *Menyanthes trifolata, gc- Mainthemum trifolium* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ts	Swamp	tsS	9	2.07	Palustrine	Fibric	ts*, ne, m	3	0	-		ts- *Alnus incana* , ne- *Carex spp., m- Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.61	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c-*Picea mariana* , ts- *Nemopanthus mucronatus* , ls-*Chamaedaphne calyculata,* m- *Sphagnum*	see attached flora and fauna lists	

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3	ls	Fen	lsF	18	0.04	Palustrine	Fibric	ls*, m	2	0	-		ls-*Chamaedaphne calyculata* , m- *Sphagnum spp*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.00	Palustrine	Fibric	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	c	Swamp	cS	18	0.01	Palustrine	Humic-Mesic	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	0.53	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	3	3.09	Lacustrine	Clay-Loam	ne	1	25	0.77	HM	ne- *Carex aquatilis*	see attached flora and fauna lists	
3	ne	Marsh	neM	3	0.13	Lacustrine	Clay-Loam	ne	1	25	0.03	HM	ne- *Carex aquatilis*	see attached flora and fauna lists	
3	ne	Marsh	neM	6	0.01	Palustrine	Fibric	ne, re	2	50	0.01	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
3	c	Swamp	cS	4	10.37	Palustrine	Sand	c*,ls,gc,m	4	0	-		c- *Picea mariana* , ls- *Kalmia polifolia, Ledum groenlandicum* , gc- *Maianthemum trifolium* , m- *Sphagnum spp*	see attached flora and fauna lists	
3	ls	Fen	lsF	17	2.77	Palustrine	Fibric	c, ls*, ne, m	4	0	-		c- *Larix laricina,* ls- *Chamaedaphne calyculata,* ne- *Carex aquatilis* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Swamp	lsS	2	8.93	Palustrine	Fibric	ts, ls*, ne, be	4	0	-		ts- *Alnus incana* , ls- *myrica gale* , ne- *Carex lacustris* , be- *Calla palustris*	see attached flora and fauna lists	
3	ls	Bog	lsB	1	0.09	Isolated	Fibric	ls*, gc, m	3	0	-		ls- *Chamaedaphne calyculata, Kalmia angulatigolium* , gc- *Mainthemum trifolium,* 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- P*icea mariana* , ls- *Ledum groenlandicum* , ne *Carex lacustris* , gc- *Mainthemum trifolium* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Fen	lsF	5	0.00	Palustrine	Fibric	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	c	Swamp	cS	8	0.00	Palustrine	Fibric	c*,h,ts,gc, m	5	0	-		c- *Pinus strobus* , ts-*Nemopanthus mucronatus* , gc-*Mainthemum canadense* , m- *Sphagnum*	see attached flora and fauna lists	
3	ts	Swamp	tsS	2	1.95	Palustrine	Fibric	ts*, gc, ne, m	4	0	-		ts- *Alnus incana,* ls- *Vaccinium angustifolium, gc- Mainthemum canadense, ne-* Carix lacustris	see attached flora and fauna lists	
3	c	Swamp	cS	11	3.02	Palustrine	Humic-Mesic	c*, ls, ne, m	4	0	-		c- *Picea mariana* , ls- *Chamaedaphne calyculata* , ne- *Carex spp.* , m- *Sphagnum spp*	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-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
3	ne	Bog	neB	1	6.04	Isolated	Humic-Mesic	ne*, m	2	0	-		ne- *Carex aquatilis* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	13	5.58	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- *Picea mariana , ts- Nemopanthus mucronatus* , ls- K*almia angustifolia*	see attached flora and fauna lists	
3	c	Swamp	cS	9	0.65	Palustrine	Humic-Mesic	c*, ls,gc,m	4	0	-		c-*Larix laricina* , *gc- Mainthemum trifolium* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	9	1.77	Palustrine	Clay-Loam	c*, ls,gc,m	4	0	-		c-*Larix laricina* , *gc- Mainthemum trifolium* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	*Swamp*	cS	9	1.43	Palustrine	Sand	c*, ls, gc, m	4	0	-		c-*Larix laricina* , *gc- Mainthemum trifolium* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	6	4.69	Palustrine	Fibric	c*, ls, gc	3	0	-		c- *Picea mariana* , ls-*Chamaedaphne calyculata* , gc- *Mainthemum trifolium*	see attached flora and fauna lists	
3	ls	Bog	lsB	3	2.04	Isolated	Humic-Mesic	ls*, gc, m	3	0	-		ls- *Kalmia angustifolia* , gc- *Mainthemum canadense* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	18	1.45	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	

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3	c	Swamp	cS	18	1.33	Palustrine	Clay-Loam	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	5	14.59	Lacustrine	Clay-Loam	ts, ne*	2	25	3.65	HM	ts- *Alnus incana* , 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- Chamaedaphne calyculata, ne- Carex spp. , m- Sphagnum spp.	see attached flora and fauna lists	
3	c	Swamp	cS	5	2.78	Palustrine	Sand	c*,ls,m	3	0	-		c- *Picea mariana* , ls- *Ledum groenlandicum* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	7	0.57	Palustrine	Fibric	c*, ls, m	3	0	-		c- *Picea mariana,* ls- *Kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	3	0.15	Palustrine	Fibric	c*, ts,ls,ne	4	0	-		c- *Larix laricina* , ts- *Larix laricina* , ls-*Ledum groenlandicum* , ne- *Carex spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	3	0.67	Palustrine	Fibric	c*, ts,ls,ne	4	0	-		c- *Larix laricina* , ts- *Larix laricina* , ls-*Ledum groenlandicum* , ne- *Carex spp.*	see attached flora and fauna lists	
3	ne	Fen	neF	1	5.13	Palustrine	Fibric	ls, ne*	2	0	-		ls- *Kalmia polifolia* , ne- *Carex spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	17	3.86	Palustrine	Fibric	c*, ls, gc, m	4	0	-		c- *Larix laricina* , ls- *Ledum groenlandicum* , gc- *Mainthemum candense* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	19	6.30	Palustrine	Fibric	c*, ts, m	3	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	10	4.88	Palustrine	Fibric	c*, ls, gc, m	4	0	-		c-*Picea mariana,* ls- *Chamaedaphne calyculata* , gc- *Mainthemum trifolium* , m-*Sphagnum*	see attached flora and fauna lists	
3	c	Swamp	cS	6	5.16	Palustrine	Fibric	c*, ls, gc	3	0	-		c- *Picea mariana* , ls-*Chamaedaphne calyculata* , gc- *Mainthemum trifolium*	see attached flora and fauna lists	
3	c	Swamp	cS	18	0.22	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
3	ls	Fen	lsF	16	4.15	Palustrine	Humic-Mesic	ls*, re, ne, m	4	0	-		ls- Chaemaedaphne calyculata, re- typha lattifolia, ne- Phragmites spp., m- Sphagnum	see attached flora and fauna lists	
3	ls	Fen	lsF	12	11.89	Palustrine	Humic-Mesic	ls*, ne m	3	0	-		ls- *Chamaedaphne calyculata,* ne- Carex spp., m- Sphagnum spp.	see attached flora and fauna lists	
3	c	Swamp	cS	12	14.16	Palustrine	Fibric	c*, ls, gc,m	4	0	-		c- *Picea mariana* , ls- *Chamaedaphne calyculata,* gc- *Mainthemum trifolium*	see attached flora and fauna lists	
3	ls	Fen	lsF	8	2.33	Palustrine	Fibric	ls*, m	2	0	-		ls- *Chamaedaphne calyculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	7	5.55	Palustrine	Sand	c*, ls, m	3	0	-		c- *Picea mariana,* ls- *Kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	15	7.62	Palustrine	Humic-Mesic	c*, ts, gc, m	4	0	-		c- *Larix laricina* , ts- *Nemopanthus mucronatus* , gc- *mainthemum canadense* , m- *Sphagnum*	see attached flora and fauna lists	
3	c	Swamp	cS	12	8.54	Palustrine	Humic-Mesic	c*, ls, gc,m	4	0	-		c- *Picea mariana* , ls- *Chamaedaphne calyculata,* gc- *Mainthemum trifolium*	see attached flora and fauna lists	
3	c	Bog	cB	1	6.13	Isolated	Humic-Mesic	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	13	0.11	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- *Picea mariana , ts- Nemopanthus mucronatus* , ls- K*almia angustifolia*	see attached flora and fauna lists	
3	c	Swamp	cS	12	2.11	Palustrine	Fibric	c*, ls, gc,m	4	0	-		c- *Picea mariana* , ls- *Chamaedaphne calyculata,* gc- *Mainthemum trifolium*	see attached flora and fauna lists	
3	c	Swamp	cS	13	2.53	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- *Picea mariana , ts- Nemopanthus mucronatus* , ls- K*almia angustifolia*	see attached flora and fauna lists	
3	ts	Fen	tsF	2	7.83	Palustrine	Fibric	ts*, ls, ne, gc, m	5	0	-		ts- *P icea mariana* , ls- L*edum groenlandicum* , ne- *Carex lacustris* , gc- *Mainthemum trifolium* ,	see attached flora and fauna lists	
3	c	Swamp	cS	2	7.44	Palustrine	Fibric	c*, ts, ls	3	0	-		c- *Picea mariana , ts- Nemopanthus mucronatus* , ls- K*almia angustifolia*	see attached flora and fauna lists	

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3	c	Swamp	cS	13	11.73	Palustrine	Clay-Loam	c*, ts, ls, m	4	0	-		c- *Picea mariana* , *ts- Nemopanthus mucronatus* , ls- K*almia angustifolia*	see attached flora and fauna lists	
3	c	Swamp	cS	18	2.09	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	2	0.23	Palustrine	Sand	c*, ts, ls	3	0	-		c- *Picea mariana* , *ts- Nemopanthus mucronatus* , ls- K*almia angustifolia*	see attached flora and fauna lists	
3	m	Fen	mF	1	10.90	Palustrine	Fibric	ls, ne, m*	3	5	0.55		ls - *Chamaedaphne calyculata,* m- *Sphagnum spp.* Ne- *Carex utriculata*	see attached flora and fauna lists	
3	ls	Bog	lsB	4	0.00	Isolated	Fibric	ls*, m	2	0	-		ls- Chamaedaphne calyculata, m- Sphagnum spp.	see attached flora and fauna lists	
3	ls	Fen	lsF	14	0.01	Palustrine	Fibric	ls*, m	2	0	-		ls- Chamaedaphne calyculata, m- Sphagnum spp.	see attached flora and fauna lists	
3	ls	Bog	lsB	4	0.00	Isolated	Fibric	ls, m	2	0	-		ls- Chamaedaphne calyculata, m- Sphagnum spp.	see attached flora and fauna lists	
3	f	Marsh	fW	1	9.54	Palustrine	Humic-Mesic	f	1	90	8.59	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
3	ls	Swamp	lsS	2	2.04	Palustrine	Clay-Loam	ts, ls*, ne, be	4	0	-		ts- *Alnus incana* , ls- *myrica gale* , ne- *Carex lacustris* , be- *Calla palustris*	see attached flora and fauna lists	
3	c	Swamp	cS	5	1.20	Palustrine	Humic-Mesic	c*,ls,m	3	0	-		c- *Picea mariana* , ls- *Ledum groenlandicum* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Bog	lsB	3	4.38	Isolated	Fibric	ls*, gc, m	3	0	-		ls- *Kalmia angustifolia* , gc- *Mainthemum canadense* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	18	2.19	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	ne	Marsh	neM	4	0.39	Palustrine	Sand	ls, ne	2	25	0.10	HM	ls- *Chamaedaphne calyculata* , ne-C*arex spp.*	see attached flora and fauna lists	
3	ls	fen	lsF	7	4.69	Palustrine	Humic-Mesic	ls*,m	2	0	-		ls- *Ledum groenlandicum, m- Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	15	2.08	Palustrine	Fibric	c*, ts, gc, m	4	0	-		c- *Picea mariana,* ts- *Nemopanthus mucronatus,* gc- M*ainthemum trifolium* , m-	see attached flora and fauna lists	
3	c	Swamp	cS	3	1.30	Palustrine	Humic-Mesic	c*, ts,ls,ne	4	0	-		c- *Larix laricina* , ts- *Larix laricina* , ls-*Ledum groenlandicum* , ne- *Carex spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	10	1.49	Palustrine	Sand	c*, ls, gc, m	4	0	-		c-*Picea mariana,* ls- *Chamaedaphne calyculata* , gc- *Mainthemum trifolium* , m-*Sphagnum*	see attached flora and fauna lists	
3	ts	Swamp	tsS	5	7.99	Palustrine	Fibric	ts*, gc, ne	3	0	-		ts- *Alnus incana* , gc- *Onoclea sensibilis* , ne- *Carex lacustris*	see attached flora and fauna lists	
3	ne	Fen	neF	3	0.15	Palustrine	Humic-Mesic	ne	1	0	-		ne- *Carex spp.*	see attached flora and fauna lists	
3	ne	Fen	neF	3	0.61	Palustrine	Humic-Mesic	ne	1	0	-		ne- *Carex spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	6	1.34	Palustrine	Fibric	c*, ls, gc	3	0	-		c- *Picea mariana* , ls-*Chamaedaphne calyculata* , gc- *Mainthemum trifolium*	see attached flora and fauna lists	
3	c	Swamp	cS	6	0.29	Palustrine	Humic-Mesic	c*, ls, gc	3	0	-		c- *Picea mariana* , ls-*Chamaedaphne calyculata* , gc- *Mainthemum trifolium*	see attached flora and fauna lists	
3	c	Swamp	cS	13	1.93	Palustrine	Clay-Loam	c*, ts, ls, m	4	0	-		c- *Picea mariana* , *ts- Nemopanthus mucronatus* , ls- K*almia angustifolia*	see attached flora and fauna lists	
3	c	Swamp	cS	8	0.32	Palustrine	Fibric	c*,h,ts,gc, m	5	0	-		c- *Pinus strobus* , ts-*Nemopanthus mucronatus* , gc-*Mainthemum canadense* , m- *Sphagnum*	see attached flora and fauna lists	
3	ts	Swamp	tsS	10	1.08	Palustrine	Fibric	ts*, ls, ne	3	0	-		ts- *Alnus incana,* ls- *Spiraea alba* , ne- *Carex spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	10	0.61	Palustrine	Silt-Marl	c*, ls, gc, m	4	0	-		c-*Picea mariana,* ls- *Chamaedaphne calyculata* , gc- *Mainthemum trifolium* , m-*Sphagnum*	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-*Picea mariana,* ls- *Chamaedaphne calyculata* , gc- *Mainthemum trifolium* , m-*Sphagnum*	see attached flora and fauna lists	
3	c	Bog	cB	1	0.60	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Bog	lsB	2	0.19	Isolated	Fibric	ls*, ne, m	3	0	-		ls- *Chamedaphne calyculata* , ne- *Carex spp.* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	ls	Bog	lsB	2	0.65	Isolated	Fibric	ls*, ne, m	3	0	-		ls- *Chamedaphne calyculata* , ne- *Carex spp.* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	m	Fen	mF	3	0.95	Palustrine	Humic-Mesic	ne, m*	2	5	0.05		ne- *Eriophorum viridicarinatum* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	14	1.37	Palustrine	Humic-Mesic	c*, gc, m	3	0	-		c- *Picea mariana* , gc- *Mainthemem canadense* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	14	7.93	Palustrine	Fibric	c*, gc, m	3	0	-		c- *Picea mariana* , gc- *Mainthemem canadense* , m- *Sphagnum spp.*	see attached flora and fauna lists	
3	c	Swamp	cS	6	3.19	Palustrine	Fibric	c*, ls, gc	3	0	-		c- *Picea mariana* , ls-*Chamaedaphne calyculata* , gc- *Mainthemum trifolium*	see attached flora and fauna lists	
3	c	Swamp	cS	12	2.20	Palustrine	Fibric	c*, ls, gc,m	4	0	-		c- *Picea mariana* , ls- *Chamaedaphne calyculata,* gc- *Mainthemum trifolium*	see attached flora and fauna lists	
3	ne	Marsh	neM	6	1.46	Lacustrine	Fibric	ne, re	2	50	0.73	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	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- *Populus tremuloides* , c- P*inus bankisaina* , ts- *Alnus incana,* ls- *Spiraea alba* , gc- *Mainthemum canadense,* ne- *Grass 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-*Carex aquatilis* , re-*Typha lattifolia* , m- *Sphagnum 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-*Carex aquatilis* , re-*Typha lattifolia* , m- *Sphagnum 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- *Picea mariana* , ts- *Alnus incana* , ne- *Carex spp., gc- Mainthemum canadense* , m-	see attached flora and fauna lists	
7	c	Swamp	cS	8	1.67	Palustrine	Fibric	c*,h,ts,gc, m	5	0	-		c- *Pinus strobus* , ts-*Nemopanthus mucronatus* , gc-*Mainthemum canadense* , m- *Sphagnum*	see attached flora and fauna lists	
7	ls	Fen	lsF	5	2.02	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
7	c	Bog	cB	3	0.09	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
7	c	Bog	cB	3	1.14	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
7	c	Bog	cB	3	0.71	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
7	ls	Fen	lsF	5	0.78	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
7	f	Marsh	fW	1	0.39	Palustrine	Sand	f	1	90	0.35	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
7	c	Bog	cB	3	0.26	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
7	c	Bog	cB	3	0.12	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
7	c	Bog	cB	3	0.48	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum 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-Carex aquatilis, re-Typha lattifolia, 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
7	ts	Swamp	tsS	14	0.93	Palustrine	Sand	ts*,m	2	0	-		ts-*Alnus incana* , m-*sphagnum spp.*	see attached flora and fauna lists	
7	ls	Bog	lsB	5	1.07	Isolated	Fibric	ls*, ne, m	3	0	-		ls- *Chamaedaphne calyculata* , ne- *Carex utriculatai, m- Sphagnum sp.*	see attached flora and fauna lists	
7	ne	Marsh	neM	7	0.00	Palustrine	Sand	re,ne*,m	3	50	0.00	HM	ne-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
7	c	Swamp	cS	24	6.20	Palustrine	Sand	c*	1	0	-		c-*Pinus strobus*	see attached flora and fauna lists	
7	c	Swamp	cS	20	5.21	Palustrine	Sand	c*,h, ls	3	0	-		c-*Picea mariana* ,h- *Betula papyrifera* ls-*Gaylussachia buccata*	see attached flora and fauna lists	
7	c	Swamp	cS	21	0.22	Palustrine	Sand	c*,m	2	0	-		c-*Picea mariana* , m-*Sphagnum spp.*	see attached flora and fauna lists	
7	ls	Fen	lsF	3	2.48	Palustrine	Fibric	c, ls*,gc, ne, m	5	0	-		c-*Larix laricina* ls- *Chamaedaphne calyculata* , gc- *Mainthemum trifolium* , ne- *Carex spp* , m- *Sphagnum spp*	see attached flora and fauna lists	
8	c	Bog	cB	3	1.16	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
8	c	Swamp	cS	8	6.76	Palustrine	Sand	c*,h,ts,gc, m	5	0	-		c- *Pinus strobus* , ts-*Nemopanthus mucronatus* , gc-*Mainthemum canadense* , m- *Sphagnum*	see attached flora and fauna lists	
9	c	Swamp	cS	18	10.78	Palustrine	Silt-Marl	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
9	ls	Fen	lsF	5	0.72	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne-*Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
9	ls	Fen	lsF	5	4.34	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne-*Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
9	ts	Swamp	tsS	13	1.78	Palustrine	Fibric	ts*, ls, m	3	0	-		ts- *Alnus incana* , ls- *kalmia angustifolia* , m-*Sphagnum spp.*	see attached flora and fauna lists	
9	c	Swamp	cS	18	15.09	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
10	c	Swamp	cS	18	0.02	Palustrine	Silt-Marl	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
10	f	Marsh	fW	1	1.33	Palustrine	Silt-Marl	f	1	90	1.19	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
10	f	Marsh	fW	1	2.42	Palustrine	Fibric	f	1	90	2.18	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
10	c	Swamp	cS	18	2.25	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
10	h	Swamp	hS	2	0.34	Palustrine	Clay-Loam	h*,ts, ls, gc	4	0	-		h- *Fraxinus nigra,* ts- *Alnus incana* , ls- *Rubus pubescens* , gs- *Mainthemum candense*	see attached flora and fauna lists	
10	f	Marsh	fW	1	1.71	Palustrine	Fibric	f	1	90	1.54	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
10	su	Marsh	suW	1	0.05	Palustrine	Clay-Loam	su*, gc	2	90	0.05	LM	su- *Utricularia spp, Potomogeton spp.,* gc-*Triadenum fraseria*	see attached flora and fauna lists	
10	ne	Marsh	neM	6	0.39	Palustrine	Clay-Loam	ne, re	2	50	0.20	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
10	ne	Marsh	neM	6	0.36	Palustrine	Fibric	ne, re	2	50	0.18	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
10	f	Marsh	fW	1	3.33	Palustrine	Sand	f	1	90	2.99	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
10	f	Marsh	fW	1	0.32	Palustrine	Silt-Marl	f	1	90	0.29	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	

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10	c	Swamp	cS	18	0.63	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
10	c	Swamp	cS	18	0.00	Palustrine	Sand	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
10	c	Swamp	cS	20	2.62	Palustrine	Sand	c*, h, ts, gc, be	5	0	-		ts- *Thuja occidentalis* , h-*Fraxinus nigra* , ts- *Acer rubrum,* gc- *Mainthemum canadense* , be- *Calla palustris*	see attached flora and fauna lists	
10	c	Swamp	cS	21	1.48	Palustrine	Clay-Loam	c*, h, ts, gc, m	5	0	-		c- *Thuja occidentalis* , h- B*etula allegeniensis* , ts- *Abies balsamea* , gc-*Trientalis borealis* , m- *Sphagnum spp.*	see attached flora and fauna lists	
11	ne	Marsh	neM	7	5.06	Riverine	Sand	re,ne*,m	3	50	2.53	HM	ne-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
11	su	Marsh	suW	1	0.01	Palustrine	Sand	su*, gc	2	90	0.01	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
11	ne	Marsh	neM	7	0.43	Riverine	Sand	re,ne*,m	3	50	0.21	HM	ne-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
11	su	Marsh	suW	1	2.08	Riverine	Sand	su*, gc	2	90	1.87	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
11	ne	Marsh	neM	7	0.92	Riverine	Sand	re,ne*,m	3	50	0.46	HM	ne-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
11	ne	Marsh	neM	7	0.75	Riverine	Sand	re,ne*,m	3	50	0.38	HM	ne-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
11	ne	Marsh	neM	7	0.00	Palustrine	Sand	re,ne*,m	3	50	0.00	HM	ne-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
11	su	Marsh	suW	1	0.00	Palustrine	Sand	su*, gc	2	90	0.00	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
11	ts	Swamp	tsS	1	0.19	Riverine	Sand	ts*, ne	2	25	0.05	HM	ts- *Alnus incana, ne- Carex crinita*	see attached flora and fauna lists	
11	su	Marsh	suW	1	0.02	Riverine	Sand	su*, gc	2	90	0.02	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	ls	Fen	lsF	5	0.69	Palustrine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
12	ne	Marsh	neM	6	1.30	Palustrine	Humic-Mesic	ne, re	2	50	0.65	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
12	h	Swamp	hS	2	9.45	Palustrine	Humic-Mesic	h*,ts, ls, gc	4	0	-		h- *Fraxinus nigra,* ts- *Alnus incana* , ls- *Rubus pubescens* , gs- *Mainthemum candense*	see attached flora and fauna lists	
12	h	Swamp	hS	2	6.11	Palustrine	Fibric	h*,ts, ls, gc	4	0	-		h- *Fraxinus nigra,* ts- *Alnus incana* , ls- *Rubus pubescens* , gs- *Mainthemum candense*	see attached flora and fauna lists	
12	h	Swamp	hS	2	0.55	Palustrine	Humic-Mesic	h*,ts, ls, gc	4	0	-		h- *Fraxinus nigra,* ts- *Alnus incana* , ls- *Rubus pubescens* , gs- *Mainthemum candense*	see attached flora and fauna lists	
12	m	Fen	mF	4	7.26	Palustrine	Fibric	m	1	5	0.36		m- *Sphagnum spp.*	see attached flora and fauna lists	
12	ls	Fen	lsF	5	1.34	Riverine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
12	ne	Marsh	neM	6	1.85	Palustrine	Fibric	ne, re	2	50	0.93	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
12	ts	Swamp	tsS	13	2.58	Palustrine	Fibric	ts*, ls, m	3	0	-		ts- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	0.18	Palustrine	Fibric	m	1	5	0.01		m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	1.68	Palustrine	Fibric	m	1	5	0.08		m- *Sphagnum spp.*	see attached flora and fauna lists	

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12	m	Fen	mF	4	0.16	Palustrine	Fibric	m	1	5	0.01		m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	0.54	Palustrine	Fibric	m	1	5	0.03		m- *Sphagnum spp.*	see attached flora and fauna lists	
12	c	Swamp	cS	8	5.86	Palustrine	Fibric	c*,h,ts,gc, m	5	0	-		c- *Pinus strobus* , ts-*Nemopanthus mucronatus* , gc-*Mainthemum canadense* , m- *Sphagnum*	see attached flora and fauna lists	
12	ne	Marsh	neM	6	1.81	Palustrine	Fibric	ne, re	2	50	0.91	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
12	ne	Marsh	neM	6	3.81	Palustrine	Fibric	ne, re	2	50	1.90	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.46	Palustrine	Humic-Mesic	su*, gc	2	90	0.42	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.33	Palustrine	Humic-Mesic	su*, gc	2	90	0.30	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	m	Fen	mF	4	1.02	Palustrine	Fibric	m	1	5	0.05		m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	0.57	Palustrine	Fibric	m	1	5	0.03		m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	0.06	Palustrine	Fibric	m	1	5	0.00		m- *Sphagnum spp.*	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.61	Palustrine	Fibric	su*, gc	2	90	0.54	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	su	Marsh	suW	1	1.00	Palustrine	Fibric	su*, gc	2	90	0.90	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	m	Fen	mF	4	0.68	Palustrine	Fibric	m	1	5	0.03		m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	1.77	Palustrine	Fibric	m	1	5	0.09		m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	1.46	Palustrine	Fibric	m	1	5	0.07		m- *Sphagnum spp.*	see attached flora and fauna lists	
12	f	Marsh	fW	1	3.59	Palustrine	Fibric	f	1	90	3.23	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
12	h	Swamp	hS	2	2.42	Palustrine	Fibric	h*,ts, ls, gc	4	0	-		h- *Fraxinus nigra,* ts- *Alnus incana* , ls- *Rubus pubescens* , gs- *Mainthemum candense*	see attached flora and fauna lists	
12	ne	Marsh	neM	6	0.02	Palustrine	Fibric	ne, re	2	50	0.01	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
12	ts	Swamp	tsS	13	1.13	Palustrine	Humic-Mesic	ts*, ls, m	3	0	-		ts- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	
12	h	Swamp	hS	2	0.30	Palustrine	Humic-Mesic	h*,ts, ls, gc	4	0	-		h- *Fraxinus nigra,* ts- *Alnus incana* , ls- *Rubus pubescens* , gs- *Mainthemum candense*	see attached flora and fauna lists	
12	c	Bog	cB	3	0.59	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum 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- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	
12	c	Swamp	cS	18	1.11	Palustrine	Fibric	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
12	ne	Marsh	neM	6	3.97	Palustrine	Fibric	ne, re	2	50	1.99	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
12	m	Fen	mF	4	0.45	Palustrine	Fibric	m	1	5	0.02		m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	0.81	Palustrine	Fibric	m	1	10	0.08	HM	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
12	m	Fen	mF	4	0.77	Palustrine	Fibric	m	1	10	0.08	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
12	c	Bog	cB	3	3.41	Isolated	Humic-Mesic	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
12	ls	Fen	lsF	5	1.76	Riverine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	4.04	Riverine	Fibric	m	1	10	0.40	HM	m- *Sphagnum 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-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.56	Palustrine	Humic-Mesic	su*, gc	2	90	0.51	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	m	Fen	mF	4	1.02	Palustrine	Fibric	m	1	10	0.10	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
12	ls	Fen	lsF	5	1.01	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	
12	ls	Fen	lsF	5	6.64	Riverine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	1.30	Riverine	Fibric	m	1	10	0.13	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
12	c	Bog	cB	3	1.42	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum 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-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
12	ls	Fen	lsF	5	0.52	Riverine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne- *Carex utriculata* , m- *Sphagnum 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- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.16	Palustrine	Humic-Mesic	su*, gc	2	90	0.14	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	f	Marsh	fW	1	2.81	Riverine	Sand	f	1	90	2.53	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.31	Palustrine	Humic-Mesic	su*, gc	2	90	0.28	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	f	Marsh	fW	1	1.31	Riverine	Fibric	f	1	90	1.18	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
12	m	Fen	mF	4	0.40	Palustrine	Humic-Mesic	m	1	10	0.04	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	0.26	Riverine	Fibric	m	1	10	0.03	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	0.42	Riverine	Fibric	m	1	10	0.04	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.19	Palustrine	Sand	su*, gc	2	90	0.18	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	f	Marsh	fW	1	1.05	Riverine	Fibric	f	1	90	0.95	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
12	f	Marsh	fW	1	4.70	Riverine	Fibric	f	1	90	4.23	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.54	Palustrine	Fibric	su*, gc	2	90	0.48	LM	su- *Utricularia spp, Potomogeton spp.,* gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	f	Marsh	fW	1	2.80	Riverine	Humic-Mesic	f	1	90	2.52	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	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- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.03	Palustrine	Fibric	su*, gc	2	90	0.03	LM	su- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	h	Swamp	hS	2	0.18	Palustrine	Fibric	h*,ts, ls, gc	4	0	-		h- *Fraxinus nigra*, ts- *Alnus incana* , ls- *Rubus pubescens* , gs- *Mainthemum candense*	see attached flora and fauna lists	
12	ts	Swamp	tsS	13	0.36	Riverine	Fibric	ts*, ls, m	3	25	0.09	HM	ts- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum 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-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
12	c	Bog	cB	3	0.43	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis*, m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	0.57	Palustrine	Fibric	m	1	10	0.06	HM	m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	0.40	Palustrine	Fibric	m	1	10	0.04	HM	m- *Sphagnum 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- *Pinus strobus* , ts-*Nemopanthus mucronatus* , gc-*Mainthemum canadense* , m- *Sphagnum*	see attached flora and fauna lists	
12	ts	Swamp	tsS	13	1.53	Riverine	Fibric	ts*, ls, m	3	25	0.38	HM	ts- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	
12	ts	Swamp	tsS	13	0.00	Palustrine	Humic-Mesic	ts*, ls, m	3	0	-		ts- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum spp.*	see attached flora and fauna lists	
12	m	Fen	mF	4	1.02	Riverine	Fibric	m	1	5	0.05		m- *Sphagnum spp.*	see attached flora and fauna lists	
12	c	Bog	cB	3	1.26	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis*, m- *Sphagnum spp.*	see attached flora and fauna lists	
12	c	Bog	cB	3	1.03	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis*, m- *Sphagnum spp.*	see attached flora and fauna lists	
12	c	Bog	cB	3	3.24	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis*, m- *Sphagnum 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-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
12	ne	Marsh	neM	6	0.00	Palustrine	Humic-Mesic	ne, re	2	50	0.00	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	see attached flora and fauna lists	
12	ls	Fen	lsF	5	1.78	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	
12	m	Fen	mF	4	2.73	Riverine	Fibric	m	1	5	0.14		m- *Sphagnum spp.*	see attached flora and fauna lists	
12	ls	Fen	lsF	18	1.95	Palustrine	Fibric	ts, ls*, m	3	0	-		ts- *Alnus incana*, ls-*Chamaedaphne calyculata, m- Sphagnum moss*	see attached flora and fauna lists	
12	ts	Swamp	tsS	13	3.88	Palustrine	Fibric	ts*, ls, m	3	0	-		ts- *Alnus incana* , ls- *kalmia angustifolia* , m- *Sphagnum 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-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
12	c	Swamp	cS	16	1.83	Palustrine	Fibric	c*, ls, m	3	0	-		c- *Picea mariana* , ls- *Chamaedaphne calyculata, m* - Sphagnum 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- Chamaedaphne calyculata, re- Typha lattifolia, ne- Carex spp. , m- Sphagnum 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- *Utricularia spp, Potomogeton spp.*, gc- *Triadenum fraseria*	see attached flora and fauna lists	
12	ls	Fen	lsF	11	0.30	Palustrine	Fibric	ls*, ne, m	3	0	-		ls- Chamaedaphne calyculata, ne- Carex spp. , 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
12	m	Swamp	mS	1	0.23	Palustrine	Fibric	ls, ne, gc, m*	4	0	-		ls- *Chamaedaphne calyculata* , ne- *Carex spp.,* gc- *Mainthemum trifolium* , m- *Sphagnum spp*	see attached flora and fauna lists	
12	c	Bog	cB	4	0.20	Isolated	Fibric	c*, ts, ls, gc	4	0	-		c- *Picea mariana* , ts- *Vibernum cassinoides* , ls- *Ledum groenlandicum* , gc- *Woodwardia*	see attached flora and fauna lists	
12	c	Swamp	cS	19	0.23	Palustrine	Fibric	c*, ts, gc,m	4	0	-		c-*Picea mariana,* ts-N*emopanthus mucronatus* , gc-*Gaultheria procumbens, m-* Sphagnum spp.	see attached flora and fauna lists	
12	ne	Marsh	neM	7	0.36	Palustrine	Sand	re,ne*,m	3	50	0.18	HM	ne-Carex aquatilis, re-Typha lattifolia, m-Sphagnum spp.	see attached flora and fauna lists	
12	h	Swamp	hS	4	1.47	Lacustrine at rivermouth	Fibric	h*, ts, gc	3	0	-		h-*Populus tremuloides* , ts-*Alnus incana* , gc-*Mainthemum canadense*	see attached flora and fauna lists	
12	ts	Swamp	tsS	7	1.26	Palustrine	Fibric	ts*, ne	2	0	-		ts- *Alnus incana,* ne- *Calmagrostis canadensis*	see attached flora and fauna lists	
12	ls	Bog	lsB	5	1.22	Isolated	Humic-Mesic	ls	1	0	-		ls-*Chamaedaphne calyculata*	see attached flora and fauna lists	
12	ls	Fen	lsF	6	0.33	Palustrine	Fibric	c,ls*,m	3	0	-		c- *Larix laricina* ., ls- *Ledum groenlandicum,* m-*Sphangum spp.*	see attached flora and fauna lists	
12	c	Swamp	cS	22	2.89	Palustrine	Humic-Mesic	c*, m	2	0	-		c- *Picea mariana* , m- *Sphagnum spp.*	see attached flora and fauna lists	
12	ts	Swamp	tsS	1	5.51	Riverine	Fibric	ts*, ne	2	25	1.38	HM	ts- Alnus incana, ne- Carex spp.	see attached flora and fauna lists	
12	ne	Fen	neF	4	0.22	Palustrine	Fibric	ts, ls, ne*, m	4	0	-		ts- *Nemopanthus mucronatus* , ls-*Chamaedaphne calyculata* , gc- *Mainthemum canadense* , m- *Sphagnum spp*	see attached flora and fauna lists	
12	ls	Bog	lsB	4	2.60	Isolated	Fibric	ls, m	2	0	-		ls- Chamaedaphne calyculata, m- Sphagnum spp.	see attached flora and fauna lists	
12	h	Swamp	hS	2	6.11	Riverine	Fibric	h*,ts, ls, gc	4	0	-		h- *Fraxinus nigra,* ts- *Alnus incana* , ls- *Rubus pubescens* , gs- *Mainthemum candense*	see attached flora and fauna lists	
12	ne	Fen	neF	4	2.74	Palustrine	Humic-Mesic	ts, ls, ne*, m	4	0	-		ts- *Nemopanthus mucronatus* , ls-*Chamaedaphne calyculata* , gc- *Mainthemum canadense* , m- *Sphagnum spp*	see attached flora and fauna lists	
12	m	Swamp	mS	1	1.09	Palustrine	Humic-Mesic	ls, ne, gc, m*	4	0	-		ls- *Chamaedaphne calyculata* , ne- *Carex spp.,* gc- *Mainthemum trifolium* , m- *Sphagnum spp*	see attached flora and fauna lists	
12	h	Swamp	hS	1	2.55	Palustrine	Fibric	h*,ts,ls, gc	4	0	-		h- *Fraxinus nigra, ts-Acer Spicatum* , ls- *Rubus pubescens* gc- *Aralia nudicaulis*	see attached flora and fauna lists	
12	ls	Fen	lsF	5	1.79	Riverine	Fibric	c,ls*,ne,m	4	0	-		c- *Larix laricina* , ts- *Kalmia angustifolia* , ne-*Carex utriculata* , m- *Sphagnum spp.*	see attached flora and fauna lists	
12	su	Marsh	suW	1	0.23	Palustrine	Sand	su*, gc	2	90	0.20	LM	su- *Utricularia spp, Potomogeton spp.,* gc-*Triadenum fraseria*	see attached flora and fauna lists	
12	c	Swamp	cS	17	1.20	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana,* ts- *Nemopanthus mucranatus,* ls- *Chaemadaphne calyculata* , m-	see attached flora and fauna lists	
12	ts	Swamp	tsS	2	0.31	Palustrine	Sand	ts*, gc, ne, m	4	0	-		ts- *Alnus incana,* ls- *Vaccinium angustifolium, gc- Mainthemum canadense, ne-* Carix lacustris	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- *Spiraea alba,* re- *Thypha lattifolia* , ne- *Carex spp .,* m- *Sphagnum spp.*	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- *Spiraea alba, r* e- *Thypha lattifolia* , ne- *Carex spp .,* m- *Sphagnum spp.*	see attached flora and fauna lists	
12	c	Swamp	cS	11	0.08	Palustrine	Humic-Mesic	c*, ls, ne, m	4	0	-		c- *Picea mariana* , ls- *Chamaedaphne calyculata* , ne- *Carex aquatica* , m- *Sphagnum*	see attached flora and fauna lists	
13	f	Marsh	fW	1	6.85	Palustrine	Sand	f	1	90	6.16	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
13	ne	Marsh	neM	6	2.75	Palustrine	Sand	ne, re	2	50	1.38	HM	ne-*Carex aquatilis* , re- *Typha lattifolia*	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- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
13	c	Bog	cB	3	0.83	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
13	c	Bog	cB	3	1.06	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
13	c	Bog	cB	3	0.56	Isolated	Fibric	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
13	ts	Swamp	tsS	15	4.28	Palustrine	Fibric	c,ts*, ls, gc	4	0	-		c-*Picea mariana* , ts-*Viburnum cassinoides* , ls- *Vaccinium angustifolium* , gs-Cornus canadensis	see attached flora and fauna lists	
13	c	Swamp	cS	23	0.72	Palustrine	Fibric	c*,ts,m	3	0	-		c-*Picea mariana* , ts-*Abies balsamea* , m- *Sphagnum*	see attached flora and fauna lists	
13	f	Marsh	fW	1	1.09	Palustrine	Sand	f	1	90	0.98	LM	f- *Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
14	ls	Fen	lsF	5	0.13	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	
14	ls	Fen	lsF	5	1.27	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	
15	m	Fen	mF	4	0.69	Palustrine	Humic-Mesic	m	1	5	0.03		m- *Sphagnum spp.*	see attached flora and fauna lists	
15	c	Bog	cB	3	0.63	Isolated	Humic-Mesic	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
16	c	Swamp	cS	18	1.36	Palustrine	Humic-Mesic	c*, ts, ls, m	4	0	-		c- *Picea mariana* , ts- *Nemopanthus mucronatus* , ls- *Ledum groenlandicum,* m-	see attached flora and fauna lists	
16	c	Bog	cB	3	0.57	Isolated	Humic-Mesic	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	see attached flora and fauna lists	
16	c	Bog	cB	3	1.98	Isolated	Humic-Mesic	c*, ls, gc, m	4	0	-		c- *Picea mariana* , ls- Kalmia polifolia, gc- *Mainthemum canadensis,* m- *Sphagnum spp.*	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:		1158.82

(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	Lime-stone	Sand	Humic-Mesic	Fibric	Granite
<2800	12	11	9	7	7	6	4
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 in soil type	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**

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)	9

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)	2

1.2 BIODIVERSITY

1.2.1 Number of Wetland Types

(Check only one)

	one	=	9	points
	two	=	13	
	three	=	20	
X	four	=	30	

Number of Wetland Types Score *(maximum 30 points)*	30

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	
=	32.5

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	
=	26.5

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	
=	3.0

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)
	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

** "Mixed forest" is defined as either 25% coniferous trees distributed singly or in clumps in deciduous forest, or 25% deciduous treesdistributed 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.*

Score 1 point for each feature checked, up to a maximum of 7 points.

Diversity of Surrounding Habitat Score (maximum 7 points)	7

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 wetlaI1d 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
	Hydrologica11y 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)	8

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 l00	=	15
	101 to 125	=	18
	126 to 150	=	21
	151 to 175	=	24
	176 to 200	=	27
30	>200	=	30

Interspersion Score (maximum 30 points)	**30**

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
14	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)	**14**

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

Wetland size (ha)	<37	37-48	49-60	61-72	73-84	85-96	97- 108	109-120	121- 132	>132
<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 5O points)	**50**

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- l00 ha	=	9
	101-200 ha	=	12
18	>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.

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.

12	Present	=	12 pts
	Absent	=	0
	Fishing not permitted	=	0

Source of information:

Field Observation; A. Ingriselli, 2015

Commercial Fish Score (maximum 12 points)	12

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	3	Beaver (*Castor canadensis*)	Field Observation: AECOM 215, Stantec, 2013
2	3	Long-tailed Weasel (*Mustela fenata*)	Field Observation: Stantec, 2013
3	3	Muskrat (*Ondatra zibethicus*)	Field Observation: Stantec, 2013
4	3	North American River Otter (L*ontra canadensis*)	Field Observation: AECOM 2015, Stantec, 2013
5	3	Northern Raccoon (*Procyon lotor*)	Field Observation: Stantec, 2013
6	3	Red fox (*Vulpes vulpes*)	Field Observation: AECOM 2015, Stantec, 2013
7	3	Red Squirrel (*Tamiasciurus hudsonicus*)	Field Observation: AECOM 215, Stantec, 2013
	21	Subtotal	

Furbearer Score *(maximum 12 points)*	12

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.

Intensity of Use	Type of Wetland-Associated Use					
	Hunting		Nature Enjoyment/ Ecosystem Study		Fishing	
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)	28

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

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:

Source of information:

Kristan Washburn, 2015

Absence of Human Disturbance Score (maximum 7 points)	7

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:

Source of information:

Educational Uses Score (maximum 20 points)	0

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:

Source of information:

Field Observation: Kristan Washburn, 2015

Facilities and Programs Score (maximum 8 points)	0

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	
5	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	
5	Subtotal:			

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

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

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

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 <2,500 or cottage community	
Within or adjoiningg settlement	40 points		26 points		16 points	16
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	
		0		0		16

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

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	0.92	x	10	=	9.20
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	0.08	x	8	=	0.64
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)*	10

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	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)	19

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

30.0	Significant	=	30 pts
	Not Significant	=	0
	Unknown	=	0
30	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Natio, 2015

2.8.2 Cultural Heritage

	Significant	=	30 pts
	Not Significant	=	0
0.0	Unknown	=	0
0	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

Aboriginal Values/Cultural Heritage Score	30.0
(maximum 30 points)	

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 lak area is less than 0.1,→ score 0 points for this section

[x]

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 weltand 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 From 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 l00 points)*	0

3.2 GROUNDWATER RECHARGE

3.2.1 Site Type

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

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 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	0
Isolated	10	5
Palustine	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

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, agriculature, or other activities which alter the natural vegetation cover in and extensive manner.

Choose one

	>50% if 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
	Scondary 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 loacl 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
x	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 **0**

3.3.3 Vegetation Form

Choose the category that best describes the vegetation of the wetland

		Score
x	Trees, shrubs or herbs (h,c, ts, ls, gc)	8.0
	Emergents, submergenets (ne, re, be, f, ff, su)	10
	Little or no vegetation (u)	0

Dominant Vegetation form Score (*maximum 10 points*) **8**

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
x	Marshes and swamps with more than 50% coverage by organic soil	=	9
	Wetland with less than 10% soils organic	=	0

Carbon Sink Score (maximum 5 points) **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)	8

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 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:

Groundwater Discharge Score (maximum 30 points)	15

4.0 SPECIAL FEATURES

COMPONENT

4.1 RARITY

4.1.1 Wetland Types

Wetland type (*Check one or more)*

x	Bog
x	Fen
x	Swamp
x	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			
0	Total				

For each species score 250 points. (Score is cumulative, no maximum score)

Additional Notes/Comments:
None observed. Field observation: AECOM, 2014-2015

Reproductive Habitat for Endangered or Threatened Species (no maximum)	0

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	*Emydoidea blandingii*	Basking	Numerous 2011-2015	AECOM, 2015
75	Massasauga	*Sistrurus catenatus*	Basking	Numerous 2011-2015	AECOM, 2015
75	[redacted]	[redacted]	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:

Traditional Habitat for Endangered or Threatened Species (*no maximum)*	300

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

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)*	**105**

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	0
(no maximum)	

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			
	#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)	0

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			
	#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)*	0

4.1.2.7 Species of Special Status

Black Duck

Suitable breeding habitat present and withing assessment range (Figure 25)

Assessmnet Category	Check One	Points	
20-40 Indicated Paris/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)*	15

ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
PTERIDOPHYTES	**FERNS & ALLIES**							
Woodwardia virginica	Virginia Chain Fern	10	-5	0	S4	G5	-	-
Pteridium aquilinum var. latiusculum	Eastern Bracken-fern	2	3	0	S5	G5T	-	-
Dryopteris marginalis	Marginal Wood Fern	5	3	0	S5	G5	-	-
Dryopteris cristata	Crested Wood Fern	7	-5	0	S5	G5	-	-
Onoclea sensibilis	Sensitive Fern	4	-3	0	S5	G5	-	-
Athyrium filix-femina	Lady Fern						-	-
Gymnocarpium dryopteris	Oak Fern	7	0	0	S5	G5	-	-
Dryopteris carthusiana	Spinulose Wood Fern	5	-2	0	S5	G5	-	-
Matteuccia struthiopteris	Ostrich Fern	5	-3	0	S5	G5	-	-
Dryopteris sp.	Wood Fern						-	-
Equisetum sylvaticum	Wood Horsetail	7	-3	0	S5	G5	-	-
Equisetum arvense	Field Horsetail	0	0	0	S5	G5	-	-
Equisetum fluviatile	Water Horsetail	7	-5	0	S5	G5	-	-
Equisetum hyemale var. affine	Scouring-rush	2	-2	0	S5	G5T5	-	-
Lycopodium dendroideum	Prickly Tree Club-moss	7	0	0	S5	G5	-	-
Lycopodiella inundata	Nothern Bog Club-moss	9	-5	0	S5	G5	-	-
Huperzia lucidula	Shining Fir-moss	7	-1	0	S5	G5	-	-
Osmunda regalis var. spectabilis	Royal Fern	7	-5	0	S5	G5T	-	-
Osmunda cinnamomea	Cinnamon Fern	7	-3	0	S5	G5	-	-
Osmunda claytoniana	Interrupted Fern	7	-1	0	S5	G5	-	-
Polypodium virginianum	Rock Polypody Fern	6	5	0	S5	G5	-	-
Thelypteris palustris var. pubescens	Marsh Fern	5	-4	0	S5	G5T?	-	-
Phegopteris connectilis	Northern Beech Fern	8	5	0	S5	G5	-	-
GYMNOSPERMS	**CONIFERS**							
Juniperus communis	Common Juniper	4	3	0	S5	G5	-	-
Thuja occidentalis	Eastern White Cedar	4	-3	0	S5	G5	-	-
Larix laricina	Tamarack	7	-3	0	S5	G5	-	-
Picea mariana	Black Spruce	8	-3	0	S5	G5	-	-
Pinus banksiana	Jack Pine	9	3	0	S5	G5	-	-
Pinus strobus	Eastern White Pine	4	3	0	S5	G5	-	-
Picea glauca	White Spruce	6	3	0	S5	G5	-	-
Abies balsamea	Balsam Fir	5	-3	0	S5	G5	-	-
DICOTYLEDONS	**DICOTS**							
Acer rubrum	Red Maple	4	0	0	S5	G5	-	-
Acer spicatum	Mountain Maple	6	3	0	S5	G5	-	-
Rhus typhina	Staghorn Sumac				S5	G5	-	-
Toxicodendron radicans ssp. negundo	Poison-ivy	5	-1	0	S5	G5T	-	-
Sium suave	Hemlock Water-parsnip	4	-5	0	S5	G5	-	-
Apocynum androsaemifolium ssp. androsaemifolium	Spreading Dogbane	3	5	0	S5	G5T?	-	-
Nemopanthus mucronatus	Mountain-holly	8	-5	0	S5	G5	-	-
Ilex verticillata	Winterberry	5	-4	0	S5	G5	-	-
Ilex mucronata	Catberry				S5	G5	-	-
Ilex sp.							-	-
Aralia nudicaulis	Wild Sarsaparilla	4	3	0	S5	G5	-	-
Eurybia macrophylla	Large-leaved Aster	5	5	0	S5	G5	-	-
Lactuca biennis	Biennial Lettuce	6	0	0	S5	G5	-	-
Solidago rugosa ssp. rugosa	Rough Goldenrod	4	-1	0	S5	G5T?	-	-
Symphyotrichum umbellatus var. umbellatus	Flat-top White Aster	6	-3	0	S5	G5T?	-	-
Eupatorium maculatum	Spotted Joe-pye-weed	3	-5	0	S5	G5T5	-	-
Euthamia graminifolia	Flat-topped Bushy Goldenrod	2	-2	0	S5	G5	-	-
Solidago canadensis	Canada Goldenrod	1	3	0	S5	G5	-	-
Symphyotrichum puniceum var. puniceum	Purple-stemmed Aster	0	0	0	S5	G5T?	-	-
Hieracium aurantiacum	Devil's Paintbrush	0	5	-2	SE5	G?	-	-
Arctium minus	Common Burdock						-	-
Solidago sp.	Goldenrod						-	-
Aster sp.	Aster						-	-
Eupatorium perfoliatum	Perfoliate Thoroughwort/Boneset	2	-4	0	S5	G5	-	-
Leucanthemum vulgare	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 Scehdule 1
Symphyotrichum sp.							-	-
Eutrochium maculatum	Spotted Joe Pye Weed						-	-
Symphyotrichum borealis	Rush Aster	10	-5	0	S5	G5	-	-
Bidens cernua	Stick-tight	2	-5	0	S5	G5	-	-
Anaphalis margaritacea	Pearly Everlasting	3	5	0	S5	G5	-	-
Impatiens capensis	Spotted Touch-me-not	4	-3	0	S5	G5	-	-
Alnus incana spp. rugosa	Speckled Alder	6	-5	0	S5	G5T5	-	-
Betula papyrifera	White Birch	0	2	0	S5	G5	-	-
Corylus cornuta	Beaked Hazel	5	5	0	S5	G5T	-	-
Cardamine diphylla	Two-leaved Toothwort	7	5	0	S5	G5	-	-
Armoracia lacustris	Lake-cress						-	-
Brasenia schreberi	Water-shield	7	-5	0	S5	G5	-	-
Diervilla lonicera	Bush Honeysuckle	5	5	0	S5	G5	-	-
Viburnum nudum var. cassinoides	Northern Wild Raisin						-	-
Sambucus nigra ssp. canadensis	Common Elderberry						-	-
Sambucus canadensis	American Elderberry						-	-
Symphoricarpos albus	Snowberry	7	4	0	S5	G5	-	-
Viburnum lentago	Nannyberry	4	-1	0	S5	G5	-	-
Sambucus sp.	Elderberry						-	-
Cornus canadensis	Bunchberry	7	0	0	S5	G5	-	-
Cornus stolonifera	Red-osier Dogwood				S5	G5	-	-
Cornus racemosa	Red Panicled Dogwood/Gray dogwood	2	-2	0	S5	G5?	-	-
Cornus sericea	Red-osier Dogwood	2	-3	0	S5	G5	-	-
Drosera rotundifolia	Round-leaved Sundew	7	-5	0	S5	G5	-	-
Arctostaphylos uva-ursi	Common Bearberry	8	5	0	S5	G5	-	-
Chamaedaphne calyculata	Leatherleaf	9	-5	0	S5	G5	-	-
Gaultheria procumbens	Wintergreen	6	3	0	S5	G5	-	-
Kalmia angustifolia	Sheep Laurel	9	0	0	S5	G5	-	-
Kalmia polifolia	Bog Laurel	10	-5	0	S5	G5	-	-
Ledum groenlandicum	Labrador-tea	9	-5	0	S5	G5	-	-
Vaccinium angustifolium	Low Sweet Blueberry	6	3	0	S5	G5	-	-
Vaccinium oxycoccos	Small Cranberry	10	-5	0	S5	G5	-	-
Vaccinium myrtilloides	Velvet-leaf Blueberry	7	-2	0	S5	G5	-	-
Andromeda polifolia ssp. glaucophylla	Bog Rosemary	10	-5	0	S5	G5T5	-	-
Gaylussacia baccata	Black Huckleberry	8	3	0	S4	G5	-	-
Andromeda polifolia ssp. polifolia	Wild Rosemary	0	0	0	S4	G5T5	-	-
Vaccinium macrocarpon	Large Cranberry	10	-5	0	S4S5	G4	-	-
Quercus rubra	Red Oak	6	3	0	S5	G5	-	-
Corydalis sp.	Corydalis						-	-
Geranium bicknellii	Bicknell's Crane's-bill	5	5	0	S4	G5	-	-
Ribes glandulosum	Skunk Currant	6	-3	0	S5	G5	-	-
Ribes triste	Wild Red Currant	6	-5	0	S5	G5	-	-
Ribes americanum	Wild Black Currant	4	-3	0	S5	G5	-	-
Ribes lacustre	Swamp Black Currant	7	-3	0	S5	G5	-	-
Ribes sp.							-	-
Ribes cynosbati	Prickly Gooseberry	4	5	0	S5	G5	-	-
Ribes hirtellum	Smooth Gooseberry	6	-3	0	S5	G5	-	-
Triadenum fraseri	Fraser's St. John's-wort	7	-5	0	S5	G4G5	-	-
Hypericum perforatum	Common St. John's-wort	0	5	-3	SE5	G?	-	-
Myriophyllum sibiricum	Pale Water-milfoil	0	-5	0	S5	G5	-	-
Myriophyllum sp.							-	-
Proserpinaca palustris	Field Mermaid-weed	7	-5	0	S4	G5	-	-
Myriophyllum verticillatum	Whorled Water-milfoil	7	-5	0	S5	G5	-	-
Mentha arvensis	American Wild Mint	3	-3	0	S5		-	-
Lycopus uniflorus	Northern Water-horehound	5	-5	0	S5	G5	-	-
Utricularia intermedia	Flat-leaved Bladderwort	8	-5	0	S5	G5	-	-
Utricularia vulgaris	Greater Bladderwort	4	-5	0	S5	G5	-	-
Menyanthes trifoliata	Three-leaved Buckbean	9	-5	0	S5	G5	-	-
Myrica gale	Sweet Gale	6	-5	0	S5	G5	-	-
Comptonia peregrina	Sweetfern	7	5	0	S5	G5	-	-
Nymphaea odorata	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 Scehdule 1
Nuphar variegata	Bulhead Pond-lily	4	-5	0	S5	G5	-	-
Nymphaea sp.	Water-lily						-	-
Nuphar sp.	Pond-lily						-	-
Nuphar lutea ssp. pumila	Yellow Pond-lily						-	-
Fraxinus nigra	Black Ash	7	-4	0	S5	G5	-	-
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade	3	3	0	S5	G5T5	-	-
Epilobium ciliatum	Hairy Willow-herb				S5	G5	-	-
Epilobium angustifolium	Fireweed						-	-
Polygonum cilinode	Fringed Black Bindweed	2	5	0	S5	G5	-	-
Polygonum sp.							-	-
Polygonum amphibium	Water Smartweed	5	-5	0	S5	G5	-	-
Trientalis borealis ssp. borealis	Star-flower	6	-1	0	S5	G5T?	-	-
Lysimachia thyrsiflora	Tufted Loosestrife	7	-5	0	S5	G5	-	-
Lysimachia terrestris	Swamp Loosestrife	6	-5	0	S5	G5	-	-
Lysimachia ciliata	Fringed Loosestrife	4	-3	0	S5	G5	-	-
Lysimachia sp.	Loosestrife						-	-
Pyrola asarifolia	Pink Pyrola	7	-3	0	S5	G5	-	-
Chimaphila umbellata	Common Pipsissewa				S5	G5	-	-
Aquilegia canadensis	Wild Columbine	5	1	0	S5	G5	-	-
Coptis trifolia		7	-3	0	S5	G5T5	-	-
Caltha palustris	Marsh-marigold	5	-5	0	S5	G5	-	-
Actaea rubra	Red Baneberry	5	5	0	S5	G5	-	-
Clematis virginiana	Virgin's-bower	3	0	0	S5	G5	-	-
Ranunculus abortivus	Kidney-leaf Buttercup	2	-2	0	S5	G5	-	-
Ranunculus recurvatus var. recurvatus	Hooked Buttercup	4	-3	0	S5	G5	-	-
Thalictrum pubescens	Tall Meadow-rue	5	-2	0	S5	G5	-	-
Ranunculus pensylvanicus	Bristly Buttercup	3	-5	0	S5	G5	-	-
Anemone canadensis	Canada Anemone	3	-3	0	S5	G5	-	-
Ranunculus acris	Tall Buttercup	0	0	-2	SE5	G5	-	-
Thalictrum dasycarpum	Purple Meadow-rue	8	-2	0	S4?	G5	-	-
Amelanchier arborea	Downy Juneberry	0	3	0	S5	G5	-	-
Aronia melanocarpa	Black chokeberry	7	-3	0	S5	G5	-	-
Fragaria vesca ssp. americana	Woodland Strawberry	4	4	0	S5	G5T?	-	-
Prunus pumila	Sand Cherry						-	-
Rubus idaeus	Red Raspberry	0	0	0	SE1	G5T5	-	-
Rubus pubescens	Dwarf Raspberry	4	-4	0	S5	G5	-	-
Prunus virginiana	Choke Cherry						-	-
Rubus flagellaris	Prickly Raspberry	4	4	0	S4	G5	-	-
Spiraea latifolia	Broad-leaved Meadow-sweet				S5	G5	-	-
Amelanchier laevis	Smooth Juneberry	5	5	0	S5	G4G5Q	-	-
Spiraea alba	Narrow-leaved Meadow-sweet	3	-4	0	S5	G5	-	-
Geum aleppicum	Yellow Avens	2	-1	0	S5	G5	-	-
Rubus allegheniensis	Alleghany Blackberry	2	2	0	S5	G5	-	-
Rubus hispidus	Trailing Blackberry	6	-3	0	S4S5	G5	-	-
Spiraea tomentosa	Tomentose Meadow-sweet	5	-3	0	S4S5	G5	-	-
Comarum palustre	Marsh Cinquefoil						-	-
Spiraea sp.	Meadow-sweet						-	-
Fragaria virginiana	Virginia Strawberry						-	-
Prunus serotina	Black Cherry	3	3	0	S5	G5	-	-
Rosa palustris	Marsh Rose	7	-5	0	S5	G5	-	-
Sorbus americana	American Mountain-ash	8	-1	0	S5	G5	-	-
Potentilla norvegica	Norwegian cinquefoil				S5	G5	-	-
Potentilla arguta	Tall Cinquefoil	7	5	0	S4	G5	-	-
Galium aparine	Cleavers	4	3	0	S5	G5	-	-
Galium triflorum	Sweet-scented Bedstraw	4	2	0	S5	G5	-	-
Galium palustre	Marsh Bedstraw	5	-5	0	S5	G5	-	-
Populus tremuloides	Trembling Aspen	2	0	0	S5	G5	-	-
Salix sp.	Willow						-	-
Salix petiolaris	Slender Willow	3	-4	0	S5	G4	-	-
Populus grandidentata	Large-tooth Aspen	5	3	0	S5	G5	-	-
Salix bebbiana	Long-beaked Willow	4	-4	0	S5	G5	-	-
Salix discolor	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 Scehdule 1
Salix pyrifolia	Balsam Willow	10	-4	0	S5	G5	-	-
Comandra umbellata	Bastard Toad-flax	6	3	0	S5	G5	-	-
Sarracenia purpurea	Pitcher-plant	10	-5	0	S5	G5	-	-
Ulmus americana	White Elm	3	-2	0	S5	G5?	-	-
Urtica dioica ssp. dioica	European Stinging Nettle	0	-1	-1	SE2	G5T?	-	-
Laportea canadensis	Wood Nettle	6	-3	0	S5	G5	-	-
Viola macloskeyi	Smooth White Violet				S5	G5	-	-
Viola cucullata	Marsh Blue Violet	5	-5	0	S5	G4G5	-	-
Viola canadensis	Canada Violet	6	5	0	S5	G5	-	-
Viola palustris	Marsh Violet	0	0	0	SU	G5	-	-
MONOCOTYLEDONS	**MONOCOTS**							
Arisaema triphyllum	Small Jack-in-the-pulpit	5	-2	0	S5	G5T5	-	-
Calla palustris	Wild Calla	8	-5	0	S5	G5	-	-
Eriophorum sp.	Cotton-grass						-	-
Scirpus cyperinus	Wool-grass	4	-5	0	S5	G5	-	-
Carex sp.							-	-
Carex aquatilis	Aquatic Sedge	7	-5	0	S5	G5	-	-
Carex deweyana	Dewey's Sedge	6	4	0	S5	G5	-	-
Carex stricta	Tussock Sedge	4	-5	0	S5	G5	-	-
Carex blanda	Woodland Sedge	3	0	0	S5	G5?	-	-
Carex crinita	Fringed Sedge	6	-4	0	S5	G5	-	-
Carex gracillima	Graceful Sedge	4	3	0	S5	G5	-	-
Carex intumescens	Bladder Sedge	6	-4	0	S5	G5	-	-
Carex lacustris	Lake-bank Sedge	5	-5	0	S5	G5	-	-
Carex arctata	Drooping Wood Sedge	5	5	0	S5	G5?	-	-
Eriophorum virginicum	Virginia Cotton-grass	10	-5	0	S5	G5	-	-
Scirpus sp.	Bulrush						-	-
Carex utriculata	Beaked Sedge	7	-5	0	S5	G5	-	-
Eriophorum vaginatum ssp. spissum	Sheathed Cotton-grass	10	-5	0	S5	G5T5	-	-
Dulichium arundinaceum	Reed-like Three-way Sedge	7	-5	0	S5	G5	-	-
Scirpus atrovirens	Dark-green Bulrush	3	-5	0	S5	G5?	-	-
Eriophorum viridi-carinatum	Thin-leaved Cotton-grass	9	-5	0	S5	G4	-	-
Carex magellanica ssp. irrigua	Stunted Sedge	10	-5	0	S5	G5T?	-	-
Carex oligosperma	Few-seeded Sedge	10	-5	0	S4	G4	-	-
Carex tenuiflora	Sparse-flowered Sedge	10	-5	0	S5	G5	-	-
Carex canescens ssp. canescens	Silvery Sedge	7	-5	0	S5	G5T?	-	-
Carex disperma	Soft-leaved Sedge	8	-5	0	S5	G5	-	-
Scirpus microcarpus	Small-fruited Bulrush	4	-5	0	S5	G5	-	-
Carex interior	Inland Sedge	6	-5	0	S5	G5	-	-
Carex lasiocarpa	Slender Sedge	8	-5	0	S5	G5	-	-
Carex brunnescens ssp. brunnescens	Brownish Sedge	7	-3	0	S5	G5T?	-	-
Carex echinata ssp. echinata	Prickly Sedge	7	-5	0	S5	G5T5	-	-
Carex scoparia	Pointed Broom Sedge	5	-3	0	S5	G5	-	-
Carex pellita	Woolly Sedge	4	-5	0	S5	G5	-	-
Carex stipata	Awl-fruited Sedge	3	-5	0	S5	G5	-	-
Carex lupulina	Hop Sedge	6	-5	0	S5	G5	-	-
Carex siccata	Silvery-flowered Hay Sedge	0	0	0	S5	G5	-	-
Iris versicolor	Multi-coloured Blue-flag	5	-5	0	S5	G5	-	-
Iris sp.	Iris						-	-
Sisyrinchium montanum	Montane Blue-eyed-grass	0	-1	0	S5	G5	-	-
Juncus effusus	Common rush	0	0	0			-	-
Juncus bufonius	Toad Rush	1	-4	0	S5	G5	-	-
Juncus validus	Roundhead Rush						-	-
Juncus sp.	Rush						-	-
Lemna minor	Lesser Duckweed	2	-5	0	S5	G5	-	-
Maianthemum canadense	Wild Lily-of-the-valley	5	0	0	S5	G5	-	-
Maianthemum trifolium	Three-leaved Solomon's Seal	10	-5	0	S5	G5	-	-
Polygonatum pubescens	Hairy Solomon's Seal	5	5	0	S5	G5	-	-
Clintonia borealis	Bluebead-lily	7	-1	0	S5	G5	-	-
Trillium erectum	Purple Trillium	6	1	0	S5	G5	-	-
Trillium grandiflorum	White Trillium	5	5	0	S5	G5	-	-
Cypripedium acaule	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 Scehdule 1
Poa sp.							-	-
Calamagrostis canadensis	Blue-joint Grass	4	-5	0	S5	G5	-	-
Deschampsia flexuosa	Common Hairgrass	8	5	0	S5	G5	-	-
Brachyelytrum erectum	Bearded Short-husk	7	5	0	S4S5	G5	-	-
Glyceria striata	Fowl Meadow Grass	3	-5	0	S5	G5	-	-
Cinna latifolia	Broad-leaved Reed Grass	7	-4	0	S5	G5	-	-
Phragmites australis	Common Reed	0	-4	0	S5	G5	-	-
Poa palustris	Fowl Meadow Grass	5	-4	0	S5	G5	-	-
Phalaris arundinacea	Reed Canary Grass	0	-4	0	S5	G5	-	-
Poa annua	Annual Blue Grass	0	1	-2	SE5	G?	-	-
Bromus inermis	Awnless Brome				SNA	G5TNR	-	-
Agrostis stolonifera	Redtop	0	-3	0	S5	G5	-	-
Pontederia cordata	Heart-leaved Pickerel-weed	7	-5	0	S5	G5	-	-
Sparganium emersum ssp. acaule	Stemless Bur-reed	0	0	0	SU		-	-
Sparganium angustifolium	Narrow-leaved Bur-reed	9	-5	0	S4?	G5	-	-
Sparganium fluctuans	Floating Bur-reed	9	-5	0	S4?	G5	-	-
Sparganium eurycarpum	Broad-fruited Bur-reed	3	-5	0	S5	G5	-	-
Typha latifolia	Broad-leaved Cattail	3	-5	0	S5	G5	-	-
Typha angustifolia	Narrow-leaved Cattail	3	-5	0	S5	G5	-	-
Typha sp.	Cattail						-	-
ASCOMYCETES	**LICHENS**							
Cladonia rangiferina	Grey Reindeer Lichen				S5	G5	-	-
BRYOPSIDA	**MOSSES**							
Aulacomnium palustre	Glow Moss				S5	G5	-	-
Dicranum polysetum	Wavy Moss				S5	G5	-	-
Dicranum montanum	Montane Dicranum Moss				S5	G5	-	-
Dicranum ontariense	Ontario Dicranum Moss				S5	G4G5	-	-
Polytrichum sp.	Haircap Moss						-	-
Polytrichum commune	Common Haircap Moss				S5	G5	-	-
Polytrichum strictum	Bog Haircap Moss				S5	G4	-	-
SPHAGNOPSIDA	**MOSSES**							
Sphagnum sp.	Peat Moss						-	-
Sphagnum girgensohnii	Common Green Peat Moss				S5	G5	-	-
Sphagnum capillifolium	Northern Peat Moss				S5	G5	-	-
Sphagnum angustifolium	Cuspidate Peat Moss				S5	G5	-	-
Sphagnum squarrosum	Squarrose Peat Moss				S5	G5	-	-
Sphagnum fuscum	Common Brown Sphagnum				S5	G5	-	-
AVIFAUNA								
Corvus brachyrhynchos	American Crow				S5B	G5	-	-
Picoides dorsalis	American Three-toed Woodpecker				S4	G5	-	-
Scolopax minor	American Woodcock				S4B	G5	-	-
Haliaeetus leucocephalus	Bald Eagle				S2N, S4B	G5	SC	-
Strix varia	Barred Owl				S5	G5	-	-
Setophaga castanea	Bay-breasted Warbler				S5B	G5	-	-
Mniotilta varia	Black-and-white Warbler				S5B	G5	-	-
Picoides arcticus	Black-backed Woodpecker				S4	G5	-	-
Poecile atricapillus	Black-capped Chickadee				S5	G5	-	-
Setophaga virens	Black-throated Green Warbler				S5B	G5	-	-
Cyanocitta cristata	Blue Jay				S5	G5	-	-
Buteo platypterus	Broad-winged Hawk				S5B	G5	-	-
Bucephala albeola	Bufflehead				S4	G5	-	-
Branta canadensis	Canada Goose				S5	G5	-	-
Cardellina pusilla	Canada Warbler				S4B	G5	THR	THR
Setophaga pensylvanica	Chestnut-sided Warbler				S5B	G5	-	-
Gavia immer	Common Loon				S5B,S5N	G5	-	-
Chordeiles minor	Common Nighthawk				S4B	G4	SC	THR
Geothlypis trichas	Common Yellowthroat				S5B	G5	-	-
Junco hyemalis	Dark-eyed Junco				S5	G5	-	-
Picoidese pubescens	Downy Woodpecker				S5	G5	-	-
Sayornis phoebe	Eastern Pheobe				S5B	G5	-	-
Caprimulgus vociferus	Eastern Whip-poor-will				S4B	G5	THR	THR
Contopus virens	Eastern Wood-Pewee				S4B	G5	-	-

ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX WEEDINESS INDEX		PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
Regulus satrapa	Golden-crowned Kinglet				S5B	G5	-	-
Perisoreus canadensis	Gray Jay				S5	G5	-	-
Ardea herodias	Great blue Heron				S4	G5	-	-
Tringa melanoleuca	Greater Yellowlegs				S4B, S4N	G5	-	-
Picoides villosus	Hairy Woodpecker				S5	G5	-	-
unknown	Hawk Sp.				-	-	-	-
Catharus guttatus	Hermit Thrush				S5B	G5	-	-
Charadrius vociferus	Killdeer				S5B, S5N	G5	-	-
Setophaga kirtlandii	Kirtland's Warbler				S1B	G1	END	END
Anas platyrhynchos	Mallard				S5	G5	-	-
Oreothlypis ruficapilla	Nashville Warbler				S5B	G5	-	-
Colaptes auratus	Northern Flicker				S4B	G5	-	-
Accipiter gentilis	Northern Goshawk				S4	G5	-	-
Parkesia noveboracensis	Northern Waterthrush				S5B	G5	-	-
Contopus cooperi	Olive-sided Flycatcher				S4B	G4	SC	THR
Pandion haliaetus	Osprey				S5B	G5	-	-
Seiurus aurocapilla	Ovenbird				S4B	G5	-	-
Hylatomus pileatus	Pileated Woodpecker				S5	G5	-	-
Pinicola enucleator	Pine Grosbeak				S4B	G5	-	-
Corvus corax	Common Raven				S5	G5	-	-
Sitta canadensis	Red-breasted Nuthatch				S5	G5	-	-
Vireo olivaceus	Red-eyed Vireo				S5B	G5	-	-
Buteo jamaicensis	Red-tailed Hawk				S5	G5	-	-
Aythya collaris	Ring-neck Duck				S5	G5	-	-
Bonasa umbellus	Ruffed Grouse				S4	G5	-	-
Euphagus carolinus	Rusty Blackbird				S4B	G4	-	SC
Grus canadensis	Sandhill Crane				S5B	G5	-	-
Falcipennis canadensis	Spruce Grouse				S5	G5	-	-
Picoides dorsalis	Three-toded Woodpecker				S4	G5	-	-
Cathartes aura	Turkey Vulture				S5B	G5	-	-
Zonotrichia albicollis	White-throated Sparrow				S5B	G5	-	-
Troglodytes troglodytes	Winter Wren				S5B	G5	-	-
Aix sponsa	Wood Duck				S5	G5	-	-
Hylocichla mustelina	Wood Thrush				S4B	G5	-	THR
Setophaga petechia	Yellow Warbler				S5B	G5	-	-
Sphyrapicus varius	Yellow-bellied Sapsucker				S5B	G5	-	-
Setophaga coronata	Yellow-rumped Warbler				S5B	G5	-	-
HERPETOFAUNA								
Lithobates catesbeianus	American Bullfrog				S4	G5	-	-
Anaxyrus americanus	American Toad				S5	G5	-	-
Emydoidea blandingii	Blanding's Turtle				S3	G4	THR	THR
Plestiodon fasciatus pop. 2	Common Five-lined Skink (Southern Shield population)				S3	G5T3	SC	SC
Thamnophis sirtalis sirtalis	Eastern Gartersnake				S5	G5T5	-	-
Hemidactylium scutatum	Four-toed Salamander				S4	G5	-	-
Lithobates clamitans	Green Frog				S5	G5	-	-
Hyla versicolor	Gray Treefrog				S5	G5	-	-
Sistrurus catenatus 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	-	-
MAMMALS								
American Marten	American Marten				S5	G5	-	-
Beaver	Beaver				S5	G5	-	-
Black Bear	Black Bear				S5	G5	-	-

ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX WEEDINESS INDEX		PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
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	-	-
Lynx (sighting unconfirmed)	Lynx (sighting unconfirmed)				S5	G5	-	-
Fox	Fox				S5	G5	-	-
Wolf Sp.	Wolf Sp.				-	-	-	-
INSECT								
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	50
Known to have nested within the past 5 years			= 25	
Active feeding area (great blue heron excluded)			= 15	
None known			= 0	
Total:				50

Additional Notes/Comments:
Field Observation: J. Kamstra, May 13, 2015.

Colonial Waterbird Nesting Score *(maximum 50 points)*	50

4.2.2 Winter Cover for Wildlife

Score highest appropriate category. Include rationale/sources of information.

	Provincially significant	=	l00 pts
	Significant in Ecoregion	=	50
	Significant in Ecodistrict	=	25
	Locally significant	=	10
0	Little or poor winter cover	=	0
0			

Species/habitat/vegetation community scored (e.g., winter deer cover in hemlock swamp, S3 and S4b):
Field observation; Kristan Washburn, 2015

Source of information:
Discussions with Aylmer District Office

Winter Cover for Wildlife Score *(maximum 100 points)*	0

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 poss ble/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)	20

4.2.4 Waterfowl Breeding

Check highest level of significance.

	Nationally/internationally significant	=	150 pts
	Provincially significant	=	l00
	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)	10

4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area

Check highest level of significance.

	Nationally / internationally significant	=	150 pts
	Provincially significant	=	l00
	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)	10

4.2.6 Ungulate Habitat

EVALUATION:

Score (1) + (2) + one of (3) to (6)

15	1. Ungulate summer cover	=	15	*(Score is cumulative for a maximum possible score of 100)*
	2. Mineral licks	=	50	
	3. Moose aquatic feeding area Class 1	=	0	
	4. Moose aquatic feeding area Class 2	=	10	Ungulat Habitat Score (*maximum 100 points)* 15
	5. Moose aquatic feeding area Class 3	=	20	
	6. Moose aquatic feeding area Class 4	=	35	

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
x	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
x	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,	l00 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
x	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*
x	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 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	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 *(maximum 25 points)*		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

4.2.7.2 Migration and Staging Habitat

Step 1:

[ ]	Staging or Migration Habitat is not present in the wetland	Go to Step 4, Score 0 points
[ ]	Staging or Migration Habitat is present in the wetland significance of the habitat is known	Go to Step 2
[x]	Staging or Migration Habitat is present in the wetland 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.

[ ]	Significant in Ecoregion	Score 25 points in Step 4
[ ]	Significant in Ecodistrict	Score 15 points in Step 4
[ ]	Locally Significant	Score 10 points in Step 4
[ ]	Fish staging and/or migration habitat present, but not as above	Score 5 points in Step 4

Source of information:

Field observation; AECOM, 2015

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to bethe dominant site type). Refer to Site Types recorded earlier (section 1.1.3). Attach documentation.

[ ]	Wetland is riverine at rivermouth or lacustrine at rivermouth	Score 25 points in Step 4
[ ]	Wetland is riverine,within 0.75 km of rivermouth	Score 15 points in Step 4
[ ]	Wetland is lacustrine,within 0.75 km of rivermouth	Score 10 points in Step 4
[5]	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)*	5

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)*	9

4.4 Great Lakes Coastal Wetlands

Choose one only. Only coastal wetland units may be scored.

	wetland < 10 ha	=	0 pts
	wetland 10- 50 ha	=	25
	wetland 51 -lOO ha	=	50
x	wetland > 100 ha	=	75

Great Lakes Coastal Wetland Score *(maximum 75 points)*	75

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]):

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 doumneted.

Field observation: AECOM, 2015

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
x	Feeding area for osprey
	Not as above

5.3.2 Common Loon

Check all that apply

x	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:

Additional Comments:

No additional comments.

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.

Additional Notes/Comments (e.g., adjacent lands, etc)

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

12.3	1.1.1	Growing Degree-Days/Soils
8.9	1.1.2	Wetland Type
2.1	1.1.3	Site Type

1.2 BIODIVERSITY

30.0	1.2.1	Number of Wetland Types
45.0	1.2.2	Vegetation Communities
7.0	1.2.3	Diversity of Surrounding Habitat
8.0	1.2.4	Proximinty to Other Wetlands
30.0	1.2.5	Interspersion
14.0	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

14	2.1.1 Wood Products
2	2.1.2 Low Bush Cranberry
0	2.1.3 Wild Rice
12	2.1.4 Commerical Fish (Bait Fish and/or Coarse Fish)
12	2.1.5 Furbearers

28 2.2 RECREATIONAL ACTIVITIES

2.3 LANDSCAPE AESTHETICS

3	2.3.1 Distinctness
7	2.3.2 Absence of Human Disturbance

2.4 EDUCATION AND PUBLIC AWARENESS

0	2.4.1 Educational Uses
0	2.4.2 Facilities and Programs
5	2.4.3 Research and Studies

16 2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT

10 2.6 OWNERSH1P

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

0	3.1 FLOOD ATTENUATION
	3.2 WATER QUALITY IMPROVEMENT
17.4	3.2.1 Site Type
4.0	3.2.2 Soil Recharge Potential
	3.3 WATER QUALITY IMPROVEMENT
24	3.3.1 Watershed Improvement Factor
0.0	3.3.2 Adjacent and Watershed Land Use
8.0	3.3.3. Vegetation Form
9	3.4 CARBON SINK
8	3.5 SHORELINE EROSION CONTROL
15	3.6 GROUNDWATER DISCHARGE
86	Subtotal
86	TOTAL (Hydrological Component)

4.0 SPECIAL FEATURES COMPONENT

4.1 RARITY

70	4.1.1	Wetlands
	4.1.2	Species
0	4.1.2.1	Reproductive Habitat for an Endangered or Threatened Species
300	4.1.2.2	Traditional Migration or Feeding Habitat for an Endangered or Threatened Species
105	4.1.2.3	Provincially Significant Animal Species
0	4.1.2.4	Provincially Significant Plant Species
0	4.1.2.5	Regionally Significant Species
0	4.1.2.6	Locally Significant Species
15	4.1.2.7	Species of Special Status

4.2 SIGNIFICANT FEATURES OR HABITATS

50	4.2.1	Colonial Waterbirds
0	4.2.2	Winter Cover for Wildlife
20	4.2.3	Waterfowl Staging and/or Moulting Areas
10	4.2.4	Waterfowl Breeding
10	4.2.5	Migratory Passerine, Shorebird or Raptor Stopover Area
15	4.2.6	Ungulate Habitat
37	4.2.7	Fish Habitat

9	4.3 ECOSYSTEM AGE
75	4.4 GREAT LAKES COASTAL WETLANDS
646	Subtotal
250	TOTAL (Special Features Component)

SUMMARY OF EVALUATION RESULT

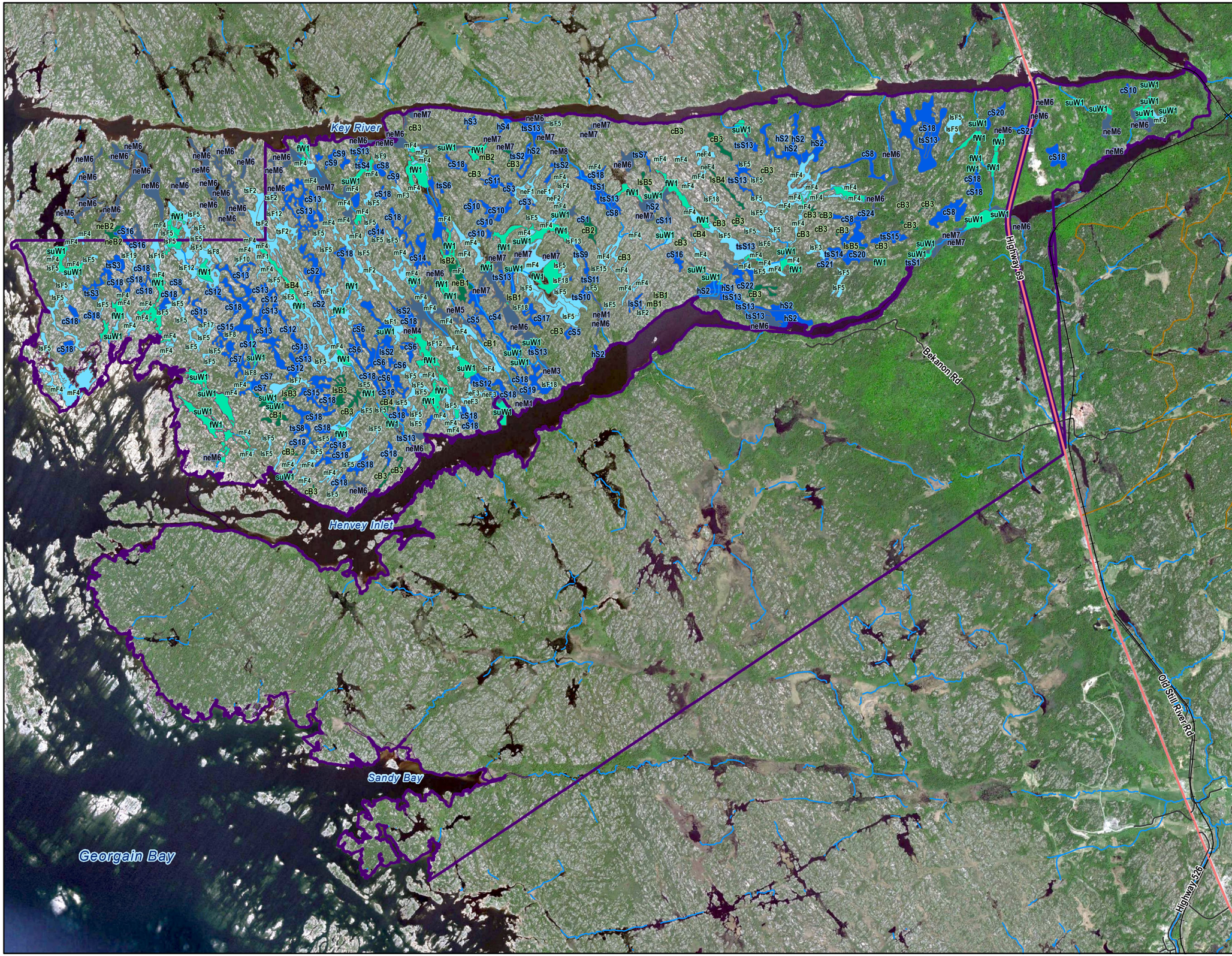
207	1.0	TOTAL FOR BIOLOGICAL COMPONENT
158	2.0	TOTAL FOR SOCIAL COMPONENT
86	3.0	TOTAL FOR HYDROLOGICAL COMPONENT
250	4.0	TOTAL FOR SPECIAL FEATURES COMPONENT
701		TOTAL WETLAND SCORE

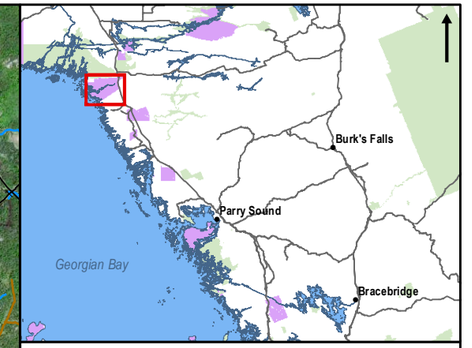
FOR MNR USE ONLY	
MNR Reviewer (Name & Position)	
Reviewer Comments	
MNR Approver (Name & Position)	
Approval Date	

WET-01

9
67
121
59
2
0
6
9
10
17
14
29
44
61
31
21
0

Total Count = 500





N

OWES Communities

- Bog
- Fen
- Swamp
- Open Water Marsh
- Marsh

Base Layers

- Major Roads
- Highway
- Trails
- Railway
- Watercourses
- Henvey Inlet First Nation Reserve No.2

0 0.5 1 2
Kilometers

Henvey Inlet Wind Energy Centre

OWES Communities - Complex WET-01

September 2015	1:47,000	Datum: NAD 83, Zone 17 Source: LIO
P#: 60341251	V#:	

Figure 2

Map location: F:\AECOM-Work\60333000 - Henvey Wind\Design\Final Report\Site Investigation\Wetlands_OWES_20150908.mxd
Date Saved: 9/8/2015 3:33:22 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 orthoaerial photography from 2013. This wetland complex is approximately 254 ha is 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 lattifolia*), 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.)

Official Name:	Henvey Inlet Wetland WET-002						
Evaluation Edition:	1st	**Version:**	1.3	**Wetland ID.:**	WET-002		
Wetland Significance:	Year/Month Last Evaluated			Not Evaluated			
	Year/Month Last Updated						
Special Planning Considerations:		Federal Land		**Scores**			
Wetland Area:	254.00			Biological:	186		
Dentention Area:	NA/Coastal Wetlands			Social:	152		
Catchment Area:	NA/Coastal Wetlands			Hydrological:	90		
Coastal Unit Area:	254.00			Special Features:	250		
OMNR Source	Parry Sound District MNR			Overall:	678		
Information Source	Field Observation: AECOM, 2015						
Submitted by:	Kristan Washburn			**Date**	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 Summery 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 , ls-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	-		*ls-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 , ls-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	-		*ls-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 papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, ls-Ilex mucronata, Viburnum cassinoides, 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 , ls-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	-		*ls-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 papyifera, m-Sphagnum moss, gc-Maianthemum canadensis ,Cornus canadensis, ls-Ilex mucronata, Viburnum cassinoides, 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 , ls-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	-		*ls-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 , ls-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	-		*c-Larix laricina, Pinus banksiana, m-Sphagnum spp, ne-Carex oligosperma,Carex stricta, gc- Thelypteris palustris*	see attached flora and fauna lists	
7	ne	Marsh	neM	6	0.034762	Palustrine	Fibric	ne*,m,gc	4	50	0.02	HM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
7	m	Bog	mB	1	0.253588	Isolated	Sand	m*,ne	2	0	-		*m-Sphagnum spp, ne- Carex spp,Eriophorum vaginatum*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.777117	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	0.706164	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	
3	ne	Fen	neF	5	1.277382	Palustrine	Clay-Loam	ne*,m,ls	3	5	0.06		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
6	ts	Swamp	tsS	4	1.69085	Lacustrine	Fibric	ts*,ne,m	3	0	-		*ts-Alnus incana,ne- Carex lasiocarpa ,Carex lacustrina , m-Sphagnum spp*	see attached flora and fauna lists	
5	f	Marsh	fW	1	0.365999	Palustrine	Humic-Mesic	f*,ff	2	90	0.33	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
5	f	Marsh	fW	1	1.009819	Palustrine	Humic-Mesic	f*,ff	2	90	0.91	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.600642	Palustrine	Humic-Mesic	ne*,m,gc	4	50	0.30	HM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.839156	Palustrine	Humic-Mesic	ne*,m,gc	4	50	0.42	HM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	f	Marsh	fW	1	3.727377	Palustrine	Sand	f*,ff	2	90	3.35	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	3.662307	Palustrine	Sand	ne*,m,gc	3	50	1.83	HM	*ne-Carex spp, m- Sphagnum spp,gc-Potentilla palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.322051	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	f	Marsh	fW	1	1.969778	Palustrine	Fibric	f*,ff	2	90	1.77	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.8523	Palustrine	Sand	f*,ff	2	90	0.77	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.748369	Palustrine	Sand	ne*,m,ls	3	5	0.04		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	su	Marsh	suW	1	0.724759	Palustrine	Sand	su	1	90	0.65	LM	*su*	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.278639	Palustrine	Fibric	f*,ff	2	90	0.25	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	f	Marsh	fW	1	4.566456	Palustrine	Fibric	f*,ff	2	90	4.11	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
5	f	Marsh	fW	1	0.302733	Palustrine	Sand	f*,ff	2	90	0.27	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
5	f	Marsh	fW	1	3.086446	Palustrine	Granite	f*,ff	2	90	2.78	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.09898	Palustrine	Sand	ne*,m,gc	3	50	0.05	HM	*ne-Carex spp, m- Sphagnum spp,gc-Potentilla palustris*	see attached flora and fauna lists	
10	ls	Fen	lsF	5	1.099968	Palustrine	Fibric	ls*,m,ne	1	0	-		*ls-Chamaedaphne calyculata ,Kalmia angustifolia ,Kalmia polifolia, m-Sphagnum spp , ne- Carex spp, Eriophorum spp*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.480284	Palustrine	Fibric	ne*,m,ls	3	5	0.02		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.309616	Palustrine	Fibric	ne*,m,ls	3	5	0.02		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.630341	Palustrine	Fibric	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	ne	Fen	neF	5	2.901037	Palustrine	Sand	ne*,m,ls	3	5	0.15		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.367895	Palustrine	Sand	ne*,m,ls	3	5	0.02		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
6	ne	Fen	neF	5	0.507139	Palustrine	Fibric	ne*,m,ls	3	5	0.03		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
6	ne	Fen	neF	5	0.326039	Palustrine	Fibric	ne*,m,ls	3	5	0.02		*ne-Carex spp, m- Sphagnum spp , ls-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
6	ne	Fen	neF	5	0.105889	Palustrine	Fibric	ne*,m,ls	3	5	0.01		*ne-Carex spp, m- Sphagnum spp , ls-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 , ls-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 , ls-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 , ls-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 , ls-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, ls-Ilex mucronata, Viburnum*	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, ls-Ilex mucronata, Viburnum*	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, ls-Ilex mucronata, Viburnum*	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 , ls-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 , ls-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 , ls-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	-		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	0.661806	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	ne	Fen	neF	5	0.663094	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	ne	Fen	neF	5	0.364836	Palustrine	Fibric	ne*,m,ls	3	5	0.02		ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	c	Fen	cF	5	0.508057	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	1.654816	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	
10	c	Swamp	cS	2	1.373517	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	
6	ts	Swamp	tsS	4	1.267249	Lacustrine	Fibric	ts*,ne,m	3	0	-		ts-Alnus incana,ne- Carex lasiocarpa ,Carex lacustrina , m-Sphagnum spp	see attached flora and fauna lists	
6	ne	Marsh	neM	6	0.9271	Palustrine	Fibric	ne*,m,gc	4	50	0.46	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
6	ts	Swamp	tsS	4	0.958226	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	
5	ts	Swamp	tsS	4	0.577436	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	
5	ts	Swamp	tsS	4	1.808672	Lacustrine	Humic-Mesic	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	
5	ne	Marsh	neM	6	0.365041	Palustrine	Humic-Mesic	ne*,m,gc	4	50	0.18	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	3.515033	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	Fen	neF	5	1.112884	Palustrine	Sand	ne*,m,ls	3	5	0.06		ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	ne	Fen	neF	5	3.982306	Palustrine	Sand	ne*,m,ls	3	5	0.20		ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris	see attached flora and fauna lists	
1	m	Bog	mB	6	0.483299	Isolated	Sand	m*	1	0	-		m-Sphagnum spp., gc-Vaccinium oxycoccus	see attached flora and fauna lists	
1	c	Fen	cF	5	0.92166	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	
5	ls	Swamp	lsS	1	0.438146	Palustrine	Humic-Mesic	ls*	1	0	-		ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia	see attached flora and fauna lists	
1	c	Fen	cF	5	0.527179	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	Fen	cF	5	1.325884	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	1.646553	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	c	Fen	cF	5	1.797201	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	Fen	cF	5	1.069293	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	3.44865	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	
7	c	Fen	cF	5	0.024219	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	
8	m	Bog	mB	6	1.817571	Isolated	Sand	m*	1	0	-		m-Sphagnum spp., gc-Vaccinium oxycoccus	see attached flora and fauna lists	
7	ne	Marsh	neM	6	1.187323	Palustrine	Fibric	ne*,m,gc	4	50	0.59	HM	ne-Carex spp , m-Sphagnum , gc-Viola palustris	see attached flora and fauna lists	
7	m	Bog	mB	1	1.541114	Isolated	Sand	m*,ne	2	0	-		m-Sphagnum spp, ne- Carex spp,Eriophorum vaginatum	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.975045	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	ts	Swamp	tsS	6	2.052467	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	

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	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
5	f	Marsh	fW	1	0.025384	Palustrine	Humic-Mesic	f*,ff	2	90	0.02	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.537369	Palustrine	Humic-Mesic	ne*,m,gc	4	50	0.27	HM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.166491	Palustrine	Sand	ne*,m,gc	4	50	0.08	HM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
5	c	Fen	cF	5	0.784805	Palustrine	Humic-Mesic	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	f	Marsh	fW	1	0.110242	Palustrine	Sand	f*,ff	2	90	0.10	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.043675	Palustrine	Fibric	f*,ff	2	90	0.94	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	c	Fen	cF	5	0.559749	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	0.228902	Palustrine	Fibric	ne*,m,ls	3	5	0.01		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
5	ne	Fen	neF	5	0.751001	Palustrine	Sand	ne*,m,ls	3	5	0.04		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
5	ne	Marsh	neM	1	0.171369	Palustrine	Sand	ne*,gc	2	50	0.09	HM	*ne-Carex crinita ,Onoclea sensibilis ,gs- Calamagrostis canadensis*	see attached flora and fauna lists	
5	ne	Fen	neF	5	0.456182	Palustrine	Sand	ne*,m,ls	3	5	0.02		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.085529	Palustrine	Sand	f*,ff	2	90	0.08	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.114223	Palustrine	Sand	ne*,m,ls	3	5	0.01		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
7	ne	Marsh	neM	1	0.167089	Palustrine	Fibric	ne*,gc	2	50	0.08	HM	*ne-Carex crinita ,Onoclea sensibilis ,gs- Calamagrostis canadensis*	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.458605	Palustrine	Fibric	ne*,m,ls	3	5	0.02		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
5	su	Marsh	suW	1	0.681875	Palustrine	Sand	su	1	100	0.68	LM	*su*	see attached flora and fauna lists	
5	ne	Fen	neF	5	0.336832	Palustrine	Sand	ne*,m,ls	3	5	0.02		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	su	Marsh	suW	1	0.842321	Palustrine	Clay-Loam	su	1	100	0.84	LM	*su*	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.057865	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	m	Bog	mB	6	0.498631	Isolated	Fibric	m*	1	0	-		*m-Sphagnum spp., gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
1	m	Bog	mB	6	0.590884	Isolated	Sand	m*	1	0	-		*m-Sphagnum spp., gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.787486	Palustrine	Fibric	ts*,ne,m	3	0	-		*ts-Alnus incana,ne- Carex lasiocarpa ,Carex lacustrina , m-Sphagnum spp*	see attached flora and fauna lists	
8	ne	Fen	neF	5	0.094881	Palustrine	Sand	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
5	c	Swamp	cS	2	0.18909	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, caylussacia, baccata*	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.19567	Palustrine	Sand	ne*,m,gc	4	50	0.10	HM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.14172	Palustrine	Sand	ne*,m,gc	4	50	0.07	HM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ne	Marsh	neM	1	0.048425	Palustrine	Fibric	ne*,gc	2	50	0.02	HM	*ne-Carex crinita ,Onoclea sensibilis ,gs- Calamagrostis canadensis*	see attached flora and fauna lists	
1	h	Swamp	hS	1	0.332252	Palustrine	Fibric	h*	1	0	-		*h-Acer rubrum*	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.195376	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	gc	Swamp	gcS	1	1.083792	Palustrine	Sand	gc*	5	0	-		*gc-Gaultheria procumbens*	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	-		*ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica*	see attached flora and fauna lists	
1	m	Bog	mB	6	0.37176	Isolated	Sand	m*	1	0	-		*m-Sphagnum spp., gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
7	c	Swamp	cS	2	1.133986	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*	see attached flora and fauna lists	
7	ne	Marsh	neM	1	0.080094	Palustrine	Sand	ne*,gc	2	50	0.04	HM	*ne-Carex crinita ,Onoclea sensibilis ,gs- Calamagrostis canadensis*	see attached flora and fauna lists	
7	m	Bog	mB	1	0.141104	Isolated	Fibric	m*,ne	2	0	-		*m-Sphagnum spp, ne- Carex spp,Eriophorum vaginatum*	see attached flora and fauna lists	
10	ls	Swamp	lsS	1	2.162134	Palustrine	Sand	ls*	1	0	-		*ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia*	see attached flora and fauna lists	
7	ts	Swamp	tsS	4	0.943415	Palustrine	Sand	ts*,ne,m	3	0	-		*ts-Alnus incana,ne- Carex lasiocarpa ,Carex lacustrina , m-Sphagnum spp*	see attached flora and fauna lists	
7	ne	Marsh	neM	6	0.38931	Palustrine	Fibric	ne*,m,gc	4	50	0.19	HM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
8	m	Bog	mB	6	0.162283	Isolated	Fibric	m*	1	0	-		*m-Sphagnum spp., gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
8	m	Bog	mB	6	0.126955	Isolated	Sand	m*	1	0	-		*m-Sphagnum spp., gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
8	m	Bog	mB	6	0.216604	Isolated	Sand	m*	1	0	-		*m-Sphagnum spp., gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
8	m	Bog	mB	6	0.264088	Isolated	Sand	m*	1	0	-		*m-Sphagnum spp., gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
8	m	Bog	mB	6	0.440968	Isolated	Sand	m*	1	0	-		*m-Sphagnum spp., gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
6	ne	Fen	neF	5	0.774868	Palustrine	Sand	ne*,m,ls	3	5	0.04		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	m	Bog	mB	6	0.504455	Isolated	Sand	m*	1	0	-		*m-Sphagnum spp., gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
1	m	Bog	mB	1	0.357453	Isolated	Sand	m*,ne	2	0	-		*m-Sphagnum spp, ne- Carex lacustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	1.260324	Palustrine	Fibric	ne*,m,ls	3	5	0.06		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	2.023214	Palustrine	Sand	ls*	1	0	-		*ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.006228	Palustrine	Sand	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.108932	Palustrine	Sand	ne*,m,ls	3	5	0.01		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.004868	Palustrine	Sand	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	c	Fen	cF	5	0.054306	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	1.312868	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	
7	ne	Fen	neF	5	0.229366	Palustrine	Fibric	ne*,m,ls	3	5	0.01		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.098742	Palustrine	Fibric	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.00203	Palustrine	Fibric	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.868195	Palustrine	Fibric	f*,ff	2	90	1.68	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
5	f	Marsh	fW	1	5.547617	Palustrine	Granite	f*,ff	2	90	4.99	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
7	f	Marsh	fW	1	3.750054	Palustrine	Fibric	f*,ff	2	90	3.38	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.220974	Palustrine	Sand	ne*,m,ls	3	5	0.01		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
7	ne	Fen	neF	5	0.006414	Palustrine	Sand	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-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
7	f	Marsh	fW	1	6.125705	Palustrine	Fibric	f*,ff	2	90	5.51	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
7	f	Marsh	fW	1	0.025671	Palustrine	Fibric	f*,ff	2	90	0.02	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	gc	Swamp	gcS	2	4.298298	Palustrine	Sand	gc*,ts	2	0	-		*gc-Ilex verticillata, ts-Alnus incana*	see attached flora and fauna lists	
1	m	Fen	mF	4	1.586798	Palustrine	Sand	m*,gc	2	5	0.08		*m-Sphagnum spp, gc- Woodwardia virginica , Osmunda regalis*	see attached flora and fauna lists	
1	m	Fen	mF	4	0.000069	Palustrine	Sand	m*,gc	2	5	0.00		*m-Sphagnum spp, gc- Woodwardia virginica,Maianthemum trifolia*	see attached flora and fauna lists	
1	m	Fen	mF	4	0.557835	Palustrine	Sand	m*,gc	2	5	0.03		*m-Sphagnum spp, gc- Woodwardia virginica , Osmunda regalis*	see attached flora and fauna lists	
5	c	Swamp	cS	1	1.086952	Palustrine	Sand	c*	1	0	-		*c-Picea mariana ,larix laricina*	see attached flora and fauna lists	
1	re	Marsh	reM	3	0.930892	Palustrine	Clay-Loam	re*,ne	2	90	0.84	LM	*re-Typha latifolia, ne-Carix spp*	see attached flora and fauna lists	
7	f	Marsh	fW	1	1.096846	Palustrine	Sand	f*,ff	2	90	0.99	LM	*f-Brasenia schreberi*	see attached flora and fauna lists	
1	m	Swamp	mS	5	0.21638	Palustrine	Clay-Loam	m*,gc,ne	3	0	-		*m-Sphagnum spp , gc- Osmunda regalis , ne-Carex spp.*	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.192901	Palustrine	Clay-Loam	ts*,ne,m	3	0	-		*ts-Alnus incana,ne- Carex lasiocarpa ,Carex lacustrina , m-Sphagnum spp*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.121822	Palustrine	Fibric	ts*,m, gc	3	0	-		*ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica*	see attached flora and fauna lists	
5	c	Bog	cB	5	1.44483	Isolated	Humic-Mesic	c*,m,gc	3	0	-		*c-Larix laricina, m-Sphagnum spp, gs- Mainthemum trifolium*	see attached flora and fauna lists	
5	c	Swamp	cS	2	0.457053	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*	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.003042	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	m	Bog	mB	6	0.671642	Isolated	Sand	m*	1	0	-		*m-Sphagnum spp., gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
1	m	Bog	mB	6	1.055974	Isolated	Sand	m*	1	0	-		*m-Sphagnum spp., gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
7	ne	Marsh	neM	1	0.130456	Palustrine	Sand	ne*, gc	2	50	0.07	HM	*ne-Carex stricta, Carex lacustra*	see attached flora and fauna lists	
7	ts	Marsh	tsW	8	0.129663	Palustrine	Sand	ts*,ne	2	50	0.06	HM	*ts-Spiraea tomentosa , ne-grass spp,carex brunnescens*	see attached flora and fauna lists	
8	h	Swamp	hS	1	0.358658	Palustrine	Sand	h*	1	0	-		*h-Betula papyrifera, Acer rubrum*	see attached flora and fauna lists	
7	ne	Marsh	neM	1	0.423977	Palustrine	Fibric	ne*, gc	2	50	0.21	HM	*ne-Carex stricta, Carex lacustra*	see attached flora and fauna lists	
1	ts	Swamp	tsS	2	0.339615	Palustrine	Fibric	ts*	1	0	-		*ts-Alnus incana, Ilex verticillata ,Nemopanthus mucronatus*	see attached flora and fauna lists	
1	c	Bog	cB	5	1.006523	Isolated	Sand	c*,m,gc	3	0	-		*c-Larix laricina, m-Sphagnum spp, gs- Mainthemum trifolium*	see attached flora and fauna lists	
7	ne	Swamp	neS	1	2.334062	Palustrine	Sand	ne*, gc	2	0	-		*ne-Carex utriculata, gc-Osmunda regalis*	see attached flora and fauna lists	
4	ne	Marsh	neM	6	0.000564	Palustrine	Humic-Mesic	ne*,m,gc	3	50	0.00	HM	*ne-Carex spp, m- Sphagnum spp,gc-Potentilla palustris*	see attached flora and fauna lists	
4	ts	Swamp	tsS	6	0.000203	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	ts	Swamp	tsS	6	0.000255	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	
5	ls	Fen	lsF	5	0.000283	Palustrine	Humic-Mesic	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	
5	ts	Swamp	tsS	6	0.000262	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	
5	ts	Swamp	tsS	6	0.000159	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	
5	ts	Swamp	tsS	6	0.00006	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	

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	-		*ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.000775	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	ts	Swamp	tsS	6	0.003432	Palustrine	Fibric	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	ts	Swamp	tsS	6	0.003432	Palustrine	Fibric	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	ts	Swamp	tsS	6	0.000034	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	0.000039	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	ts	Swamp	tsS	6	0.000785	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	ls	Fen	lsF	5	0.000886	Palustrine	Fibric	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	ne	Marsh	neM	6	0.000886	Palustrine	Fibric	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	0.001966	Palustrine	Fibric	ne*,m,gc	3	50	0.00	HM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.000501	Palustrine	Fibric	f*,ff	2	90	0.00	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.000501	Palustrine	Fibric	f*,ff	2	90	0.00	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.000947	Palustrine	Sand	f*,ff	2	90	0.00	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.000947	Palustrine	Sand	f*,ff	2	90	0.00	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.000141	Palustrine	Sand	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	ts	Swamp	tsS	6	0.000141	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	ts	Swamp	tsS	6	0.000329	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	ls	Fen	lsF	5	0.000317	Palustrine	Sand	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	f	Marsh	fW	1	0.011406	Palustrine	Fibric	f*,ff	2	90	0.01	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.002757	Palustrine	Fibric	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	ls	Fen	lsF	5	0.000082	Palustrine	Sand	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	ls	Fen	lsF	5	0.000391	Palustrine	Fibric	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	f	Marsh	fW	1	0.000606	Palustrine	Fibric	f*,ff	2	90	0.00	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.001124	Palustrine	Sand	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	
5	ls	Fen	lsF	5	0.00011	Palustrine	Sand	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	
5	ls	Fen	lsF	5	0.00121	Palustrine	Fibric	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	ls	Fen	lsF	5	0.000018	Palustrine	Sand	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	
5	ls	Fen	lsF	5	0.000007	Palustrine	Humic-Mesic	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	
5	ls	Fen	lsF	5	0.000054	Palustrine	Humic-Mesic	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	
7	f	Marsh	fW	1	0.000924	Palustrine	Fibric	f*,ff	2	90	0.00	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
7	f	Marsh	fW	1	0.000924	Palustrine	Fibric	f*,ff	2	90	0.00	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	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	0.000022	Palustrine	Fibric	f*,ff	2	90	0.00	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.158241	Palustrine	Sand	f*,ff	2	90	0.14	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.91349	Palustrine	Clay-Loam	f*,ff	2	90	1.72	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
5	f	Marsh	fW	1	0.069698	Palustrine	Sand	f*,ff	2	90	0.06	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
5	f	Marsh	fW	1	0.000071	Palustrine	Humic-Mesic	f*,ff	2	90	0.00	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
5	f	Marsh	fW	1	0.000006	Palustrine	Humic-Mesic	f*,ff	2	90	0.00	LM	*f- Polygonum amphibium,Nuphar variegatum ff- Lemna minor*	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000103	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	
5	ts	Swamp	tsS	6	0.000203	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	
5	ts	Swamp	tsS	6	0.000037	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	
5	ts	Swamp	tsS	6	0.000004	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	
5	ls	Fen	lsF	5	0.00003	Palustrine	Sand	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	
5	m	Bog	mB	1	0.000029	Isolated	Sand	m*,ne	2	0	-		*m-Sphagnum spp, ne- Carex spp,Eriophorum vaginatum*	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000049	Palustrine	Fibric	ts*,m, gc	3	0	-		*ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica*	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000051	Palustrine	Fibric	ts*,m, gc	3	0	-		*ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica*	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000001	Palustrine	Fibric	ts*,m, gc	3	0	-		*ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica*	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000001	Palustrine	Fibric	ts*,m, gc	3	0	-		*ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica*	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000081	Palustrine	Fibric	ts*,m, gc	3	0	-		*ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica*	see attached flora and fauna lists	
5	ne	Marsh	neM	6	0.000049	Palustrine	Fibric	ne*,m,gc	3	50	0.00	HM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
5	su	Marsh	suW	1	0.000003	Palustrine	Granite	su	1	90	0.00	LM	*su*	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000059	Palustrine	Fibric	ts*,m, gc	3	0	-		*ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica*	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000021	Palustrine	Fibric	ts*,m, gc	3	0	-		*ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc-Maianthemum trifolia, Woodwardia virginica*	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000231	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	
5	ts	Swamp	tsS	6	0.000002	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	
5	ls	Fen	lsF	5	0.000018	Palustrine	Sand	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	ls	Fen	lsF	5	0.000107	Palustrine	Sand	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	ts	Swamp	tsS	6	0.000062	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	0.000003	Palustrine	Sand	ne*,m,gc	3	50	0.00	HM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
5	ts	Swamp	tsS	2	0.000099	Palustrine	Sand	ts*	1	0	-		*ts-Alnus incana, Ilex verticillata ,Nemopanthus mucronatus*	see attached flora and fauna lists	
1	ls	Fen	lsF	1	0.97313	Palustrine	Fibric	ls*	1	0	-		*ls-Chamaedaphne calyculata ,Rhododendron groenlandica*	see attached flora and fauna lists	
1	m	Swamp	mS	4	0.474339	Palustrine	Sand	m*,gc	2	0	-		*m-Sphagnum spp, gc- Maianthemum trifolia*	see attached flora and fauna lists	
5	ts	Swamp	tsS	6	0.000017	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	

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, Gaylussacia baccata*	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, Gaylussacia baccata*	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.	1	142.85
Wetland Unit No.	2	2.42
Wetland Unit No.	3	1.28
Wetland Unit No.	4	8.12
Wetland Unit No.	5	35.00
Wetland Unit No.	6	12.15
Wetland Unit No.	7	35.25
Wetland Unit No.	8	4.37
Wetland Unit No.	9	0.65
Wetland Unit No.	10	10.90
Wetland Unit No.	11	1.20
Wetland Unit Totals:		254.19

(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	Lime-stone	Sand	Humic-Mesic	Fibric	Granite
<2800	12	11	9	7	7	6	4
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 in soil type	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)	9

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)	2

1.2 BIODIVERSITY

1.2.1 Number of Wetland Types

(Check only one)

	one	=	9	points
	two	=	13	
	three	=	20	
30	four	=	30	

Number of Wetland Types Score *(maximum 30 points)*	**30**

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	
=	**16.5**

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	
=	**6.5**

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	
=	**0.0**

SubTotal:	**23**

Vegetation Communities Score (maximum 45 points)	**23**

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)
	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

** "Mixed forest" is defined as either 25% coniferous trees distributed singly or in clumps in deciduous forest, or 25% deciduous treesdistributed 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.*

Score 1 point for each feature checked, up to a maximum of 7 points.

Diversity of Surrounding Habitat Score (maximum 7 points)	7

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 wetlaI1d 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
	Hydrologica11y 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)	8

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 l00	=	15
	101 to 125	=	18
	126 to 150	=	21
	151 to 175	=	24
	176 to 200	=	27
30	>200	=	30

Interspersion Score (maximum 30 points)	30

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
14	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)	14

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

Wetland size (ha)	<37	37-48	49-60	61-72	73-84	85-96	97- 108	109-120	121- 132	>132
<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 5O points)	50

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.

12	Present	=	12 pts
	Absent	=	0
	Fishing not permitted	=	0

Source of information:

Field Observation; A. Ingriselli, 2015

Commercial Fish Score (maximum 12 points)	12

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	3	Beaver (*Castor canadensis*)	Field Observation: AECOM 215, Stantec, 2013
2	3	Long-tailed Weasel (*Mustela fenata*)	Field Observation: Stantec, 2013
3	3	Muskrat (*Ondatra zibethicus*)	Field Observation: Stantec, 2013
4	3	North American River Otter (L*ontra canadensis*)	Field Observation: AECOM 2015, Stantec, 2013
5	3	Northern Raccoon (*Procyon lotor*)	Field Observation: Stantec, 2013
6	3	Red fox (*Vulpes vulpes*)	Field Observation: AECOM 2015, Stantec, 2013
7	3	Red Squirrel (*Tamiasciurus hudsonicus*)	Field Observation: AECOM 215, Stantec, 2013
	21	Subtotal	

Furbearer Score *(maximum 12 points)*	12

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.

Intensity of Use	Type of Wetland-Associated Use					
	Hunting		Nature Enjoyment/ Ecosystem Study		Fishing	
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)	28

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

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:

Source of information:

Kristan Washburn, 2015

Absence of Human Disturbance Score (maximum 7 points)	7

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:

Source of information:

Educational Uses Score (maximum 20 points)	0

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:

Source of information:

Field Observation: Kristan Washburn, 2015

Facilities and Programs Score (maximum 8 points)	0

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	
5	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	
5	Subtotal:			

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

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

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

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 <2,500 or cottage community	
Within or adjoiningg settlement	40 points		26 points		16 points	16
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	
		0		0		16

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

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	0.92	x	10	=	9.20
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	0.08	x	8	=	0.64
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)*	10

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	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)	18

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

30.0	Significant	=	30 pts
	Not Significant	=	0
	Unknown	=	0
30	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

2.8.2 Cultural Heritage

	Significant	=	30 pts
	Not Significant	=	0
0.0	Unknown	=	0
0	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

Aboriginal Values/Cultural Heritage Score	30.0
(maximum 30 points)	

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 lak area is less than 0.1,→ score 0 points for this section

[x]

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 weltand 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 From 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 l00 points)*	0

3.2 GROUNDWATER RECHARGE

3.2.1 Site Type

Wetland> 50% lacustrine (by area) or located on the St. Mary's River					=	0
Wetland not as above. Calculate final score as follows:						
FA of isolated or palustrine wetland	=	0.93	x	20	=	18.63
FA of riverine wetland	=	0.00	x	5	=	0.00
FA of lacustrine wetland (when wetland is <50% lacustrine)	=	0.07	x	0	=	0.00
		Sub Total:				18.63

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 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	0
Isolated	10	5
Palustine	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

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, agriculature, or other activities which alter the natural vegetation cover in and extensive manner.

Choose one

	>50% if 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
	Scondary 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 loacl 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
x	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 **0**

3.3.3 Vegetation Form

Choose the category that best describes the vegetation of the wetland

		Score
x	Trees, shrubs or herbs (h,c, ts, ls, gc)	8.0
	Emergents, submergenets (ne, re, be, f, ff, su)	10
	Little or no vegetation (u)	0

Dominant Vegetation form Score (*maximum 10 points*) **8**

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
x	Marshes and swamps with more than 50% coverage by organic soil	=	9
	Wetland with less than 10% soils organic	=	0

Carbon Sink Score (maximum 9 points) **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)	15

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 the dominant type in the wetland.

Wetland Characteristics	Potential for Discharge						
	None to Little		Some		High		
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

Groundwater Discharge Score (maximum 30 points)	11

4.0 SPECIAL FEATURES

COMPONENT

4.1 RARITY

4.1.1 Wetland Types

Wetland type (*Check one or more)*

x	Bog
x	Fen
x	Swamp
x	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			
0	Total				

For each species score 250 points. (Score is cumulative, no maximum score)

Additional Notes/Comments:
None observed. Field observation; AECOM, 2015

Reproductive Habitat for Endangered or Threatened Species (no maximum)	0

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	*Emydoidea blandingii*	Basking	Numerous 2011-2015	AECOM, 2015
75	Massasauga	*Sistrurus catenatus*	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:

Traditional Habitat for Endangered or Threatened Species (*no maximum)*	225

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	Multipe	AECOM, 2015
	#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	95
(no maximum)	

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	0
(no maximum)	

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			
	#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)	0

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			
	#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)*	0

4.1.2.7 Species of Special Status

Black Duck

Suitable breeding habitat present and withing assessment range (Figure 25)

Assessmnet Category	Check One	Points	
20-40 Indicated Paris/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)*	15

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
PTERIDOPHYTES	**FERNS & ALLIES**							
Woodwardia virginica	Virginia Chain Fern	10	-5	0	S4	G5	-	-
Pteridium aquilinum var. latiusculum	Eastern Bracken-fern	2	3	0	S5	G5T	-	-
Dryopteris marginalis	Marginal Wood Fern	5	3	0	S5	G5	-	-
Dryopteris cristata	Crested Wood Fern	7	-5	0	S5	G5	-	-
Onoclea sensibilis	Sensitive Fern	4	-3	0	S5	G5	-	-
Athyrium filix-femina	Lady Fern						-	-
Gymnocarpium dryopteris	Oak Fern	7	0	0	S5	G5	-	-
Dryopteris carthusiana	Spinulose Wood Fern	5	-2	0	S5	G5	-	-
Matteuccia struthiopteris	Ostrich Fern	5	-3	0	S5	G5	-	-
Dryopteris sp.	Wood Fern						-	-
Equisetum sylvaticum	Wood Horsetail	7	-3	0	S5	G5	-	-
Equisetum arvense	Field Horsetail	0	0	0	S5	G5	-	-
Equisetum fluviatile	Water Horsetail	7	-5	0	S5	G5	-	-
Equisetum hyemale var. affine	Scouring-rush	2	-2	0	S5	G5T5	-	-
Lycopodium dendroideum	Prickly Tree Club-moss	7	0	0	S5	G5	-	-
Lycopodiella inundata	Nothern Bog Club-moss	9	-5	0	S5	G5	-	-
Huperzia lucidula	Shining Fir-moss	7	-1	0	S5	G5	-	-
Osmunda regalis var. spectabilis	Royal Fern	7	-5	0	S5	G5T	-	-
Osmunda cinnamomea	Cinnamon Fern	7	-3	0	S5	G5	-	-
Osmunda claytoniana	Interrupted Fern	7	-1	0	S5	G5	-	-
Polypodium virginianum	Rock Polypody Fern	6	5	0	S5	G5	-	-
Thelypteris palustris var. pubescens	Marsh Fern	5	-4	0	S5	G5T?	-	-
Phegopteris connectilis	Northern Beech Fern	8	5	0	S5	G5	-	-
GYMNOSPERMS	**CONIFERS**							
Juniperus communis	Common Juniper	4	3	0	S5	G5	-	-
Thuja occidentalis	Eastern White Cedar	4	-3	0	S5	G5	-	-
Larix laricina	Tamarack	7	-3	0	S5	G5	-	-
Picea mariana	Black Spruce	8	-3	0	S5	G5	-	-
Pinus banksiana	Jack Pine	9	3	0	S5	G5	-	-
Pinus strobus	Eastern White Pine	4	3	0	S5	G5	-	-
Picea glauca	White Spruce	6	3	0	S5	G5	-	-
Abies balsamea	Balsam Fir	5	-3	0	S5	G5	-	-
DICOTYLEDONS	**DICOTS**							
Acer rubrum	Red Maple	4	0	0	S5	G5	-	-
Acer spicatum	Mountain Maple	6	3	0	S5	G5	-	-
Rhus typhina	Staghorn Sumac				S5	G5	-	-
Toxicodendron radicans ssp. negundo	Poison-ivy	5	-1	0	S5	G5T	-	-
Sium suave	Hemlock Water-parsnip	4	-5	0	S5	G5	-	-
Apocynum androsaemifolium ssp. androsaemifolium	Spreading Dogbane	3	5	0	S5	G5T?	-	-
Nemopanthus mucronatus	Mountain-holly	8	-5	0	S5	G5	-	-
Ilex verticillata	Winterberry	5	-4	0	S5	G5	-	-
Ilex mucronata	Catberry				S5	G5	-	-
Ilex sp.							-	-
Aralia nudicaulis	Wild Sarsaparilla	4	3	0	S5	G5	-	-
Eurybia macrophylla	Large-leaved Aster	5	5	0	S5	G5	-	-
Lactuca biennis	Biennial Lettuce	6	0	0	S5	G5	-	-
Solidago rugosa ssp. rugosa	Rough Goldenrod	4	-1	0	S5	G5T?	-	-
Symphyotrichum umbellatus var. umbellatus	Flat-top White Aster	6	-3	0	S5	G5T?	-	-
Eupatorium maculatum	Spotted Joe-pye-weed	3	-5	0	S5	G5T5	-	-
Euthamia graminifolia	Flat-topped Bushy Goldenrod	2	-2	0	S5	G5	-	-
Solidago canadensis	Canada Goldenrod	1	3	0	S5	G5	-	-
Symphyotrichum puniceum var. puniceum	Purple-stemmed Aster	0	0	0	S5	G5T?	-	-
Hieracium aurantiacum	Devil's Paintbrush	0	5	-2	SE5	G?	-	-
Arctium minus	Common Burdock						-	-
Solidago sp.	Goldenrod						-	-
Aster sp.	Aster						-	-
Eupatorium perfoliatum	Perfoliate Thoroughwort/Boneset	2	-4	0	S5	G5	-	-
Leucanthemum vulgare	Ox-eye Daisy	0	5	-1	SE5	G?	-	-

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
Symphyotrichum sp.							-	-
Eutrochium maculatum	Spotted Joe Pye Weed						-	-
Symphyotrichum borealis	Rush Aster	10	-5	0	S5	G5	-	-
Bidens cernua	Stick-tight	2	-5	0	S5	G5	-	-
Anaphalis margaritacea	Pearly Everlasting	3	5	0	S5	G5	-	-
Impatiens capensis	Spotted Touch-me-not	4	-3	0	S5	G5	-	-
Alnus incana spp. rugosa	Speckled Alder	6	-5	0	S5	G5T5	-	-
Betula papyrifera	White Birch	0	2	0	S5	G5	-	-
Corylus cornuta	Beaked Hazel	5	5	0	S5	G5T	-	-
Cardamine diphylla	Two-leaved Toothwort	7	5	0	S5	G5	-	-
Armoracia lacustris	Lake-cress						-	-
Brasenia schreberi	Water-shield	7	-5	0	S5	G5	-	-
Diervilla lonicera	Bush Honeysuckle	5	5	0	S5	G5	-	-
Viburnum nudum var. cassinoides	Northern Wild Raisin						-	-
Sambucus nigra ssp. canadensis	Common Elderberry						-	-
Sambucus canadensis	American Elderberry						-	-
Symphoricarpos albus	Snowberry	7	4	0	S5	G5	-	-
Viburnum lentago	Nannyberry	4	-1	0	S5	G5	-	-
Sambucus sp.	Elderberry						-	-
Cornus canadensis	Bunchberry	7	0	0	S5	G5	-	-
Cornus stolonifera	Red-osier Dogwood				S5	G5	-	-
Cornus racemosa	Red Panicled Dogwood/Gray dogwood	2	-2	0	S5	G5?	-	-
Cornus sericea	Red-osier Dogwood	2	-3	0	S5	G5	-	-
Drosera rotundifolia	Round-leaved Sundew	7	-5	0	S5	G5	-	-
Arctostaphylos uva-ursi	Common Bearberry	8	5	0	S5	G5	-	-
Chamaedaphne calyculata	Leatherleaf	9	-5	0	S5	G5	-	-
Gaultheria procumbens	Wintergreen	6	3	0	S5	G5	-	-
Kalmia angustifolia	Sheep Laurel	9	0	0	S5	G5	-	-
Kalmia polifolia	Bog Laurel	10	-5	0	S5	G5	-	-
Ledum groenlandicum	Labrador-tea	9	-5	0	S5	G5	-	-
Vaccinium angustifolium	Low Sweet Blueberry	6	3	0	S5	G5	-	-
Vaccinium oxycoccos	Small Cranberry	10	-5	0	S5	G5	-	-
Vaccinium myrtilloides	Velvet-leaf Blueberry	7	-2	0	S5	G5	-	-
Andromeda polifolia ssp. glaucophylla	Bog Rosemary	10	-5	0	S5	G5T5	-	-
Gaylussacia baccata	Black Huckleberry	8	3	0	S4	G5	-	-
Andromeda polifolia ssp. polifolia	Wild Rosemary	0	0	0	S4	G5T5	-	-
Vaccinium macrocarpon	Large Cranberry	10	-5	0	S4S5	G4	-	-
Quercus rubra	Red Oak	6	3	0	S5	G5	-	-
Corydalis sp.	Corydalis						-	-
Geranium bicknellii	Bicknell's Crane's-bill	5	5	0	S4	G5	-	-
Ribes glandulosum	Skunk Currant	6	-3	0	S5	G5	-	-
Ribes triste	Wild Red Currant	6	-5	0	S5	G5	-	-
Ribes americanum	Wild Black Currant	4	-3	0	S5	G5	-	-
Ribes lacustre	Swamp Black Currant	7	-3	0	S5	G5	-	-
Ribes sp.							-	-
Ribes cynosbati	Prickly Gooseberry	4	5	0	S5	G5	-	-
Ribes hirtellum	Smooth Gooseberry	6	-3	0	S5	G5	-	-
Triadenum fraseri	Fraser's St. John's-wort	7	-5	0	S5	G4G5	-	-
Hypericum perforatum	Common St. John's-wort	0	5	-3	SE5	G?	-	-
Myriophyllum sibiricum	Pale Water-milfoil	0	-5	0	S5	G5	-	-
Myriophyllum sp.							-	-
Proserpinaca palustris	Field Mermaid-weed	7	-5	0	S4	G5	-	-
Myriophyllum verticillatum	Whorled Water-milfoil	7	-5	0	S5	G5	-	-
Mentha arvensis	American Wild Mint	3	-3	0	S5		-	-
Lycopus uniflorus	Northern Water-horehound	5	-5	0	S5	G5	-	-
Utricularia intermedia	Flat-leaved Bladderwort	8	-5	0	S5	G5	-	-
Utricularia vulgaris	Greater Bladderwort	4	-5	0	S5	G5	-	-
Menyanthes trifoliata	Three-leaved Buckbean	9	-5	0	S5	G5	-	-
Myrica gale	Sweet Gale	6	-5	0	S5	G5	-	-
Comptonia peregrina	Sweetfern	7	5	0	S5	G5	-	-

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
Nymphaea odorata	Fragrant Water-lily	0	0	0	S5	G5	-	-
Nuphar variegata	Bulhead Pond-lily	4	-5	0	S5	G5	-	-
Nymphaea sp.	Water-lily						-	-
Nuphar sp.	Pond-lily						-	-
Nuphar lutea ssp. pumila	Yellow Pond-lily						-	-
Fraxinus nigra	Black Ash	7	-4	0	S5	G5	-	-
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade	3	3	0	S5	G5T5	-	-
Epilobium ciliatum	Hairy Willow-herb				S5	G5	-	-
Epilobium angustifolium	Fireweed						-	-
Polygonum cilinode	Fringed Black Bindweed	2	5	0	S5	G5	-	-
Polygonum sp.							-	-
Polygonum amphibium	Water Smartweed	5	-5	0	S5	G5	-	-
Trientalis borealis ssp. borealis	Star-flower	6	-1	0	S5	G5T?	-	-
Lysimachia thyrsiflora	Tufted Loosestrife	7	-5	0	S5	G5	-	-
Lysimachia terrestris	Swamp Loosestrife	6	-5	0	S5	G5	-	-
Lysimachia ciliata	Fringed Loosestrife	4	-3	0	S5	G5	-	-
Lysimachia sp.	Loosestrife						-	-
Pyrola asarifolia	Pink Pyrola	7	-3	0	S5	G5	-	-
Chimaphila umbellata	Common Pipsissewa				S5	G5	-	-
Aquilegia canadensis	Wild Columbine	5	1	0	S5	G5	-	-
Coptis trifolia		7	-3	0	S5	G5T5	-	-
Caltha palustris	Marsh-marigold	5	-5	0	S5	G5	-	-
Actaea rubra	Red Baneberry	5	5	0	S5	G5	-	-
Clematis virginiana	Virgin's-bower	3	0	0	S5	G5	-	-
Ranunculus abortivus	Kidney-leaf Buttercup	2	-2	0	S5	G5	-	-
Ranunculus recurvatus var. recurvatus	Hooked Buttercup	4	-3	0	S5	G5	-	-
Thalictrum pubescens	Tall Meadow-rue	5	-2	0	S5	G5	-	-
Ranunculus pensylvanicus	Bristly Buttercup	3	-5	0	S5	G5	-	-
Anemone canadensis	Canada Anemone	3	-3	0	S5	G5	-	-
Ranunculus acris	Tall Buttercup	0	0	-2	SE5	G5	-	-
Thalictrum dasycarpum	Purple Meadow-rue	8	-2	0	S4?	G5	-	-
Amelanchier arborea	Downy Juneberry	0	3	0	S5	G5	-	-
Aronia melanocarpa	Black chokeberry	7	-3	0	S5	G5	-	-
Fragaria vesca ssp. americana	Woodland Strawberry	4	4	0	S5	G5T?	-	-
Prunus pumila	Sand Cherry						-	-
Rubus idaeus	Red Raspberry	0	0	0	SE1	G5T5	-	-
Rubus pubescens	Dwarf Raspberry	4	-4	0	S5	G5	-	-
Prunus virginiana	Choke Cherry						-	-
Rubus flagellaris	Prickly Raspberry	4	4	0	S4	G5	-	-
Spiraea latifolia	Broad-leaved Meadow-sweet				S5	G5	-	-
Amelanchier laevis	Smooth Juneberry	5	5	0	S5	G4G5Q	-	-
Spiraea alba	Narrow-leaved Meadow-sweet	3	-4	0	S5	G5	-	-
Geum aleppicum	Yellow Avens	2	-1	0	S5	G5	-	-
Rubus allegheniensis	Alleghany Blackberry	2	2	0	S5	G5	-	-
Rubus hispidus	Trailing Blackberry	6	-3	0	S4S5	G5	-	-
Spiraea tomentosa	Tomentose Meadow-sweet	5	-3	0	S4S5	G5	-	-
Comarum palustre	Marsh Cinquefoil						-	-
Spiraea sp.	Meadow-sweet						-	-
Fragaria virginiana	Virginia Strawberry						-	-
Prunus serotina	Black Cherry	3	3	0	S5	G5	-	-
Rosa palustris	Marsh Rose	7	-5	0	S5	G5	-	-
Sorbus americana	American Mountain-ash	8	-1	0	S5	G5	-	-
Potentilla norvegica	Norwegian cinquefoil				S5	G5	-	-
Potentilla arguta	Tall Cinquefoil	7	5	0	S4	G5	-	-
Galium aparine	Cleavers	4	3	0	S5	G5	-	-
Galium triflorum	Sweet-scented Bedstraw	4	2	0	S5	G5	-	-
Galium palustre	Marsh Bedstraw	5	-5	0	S5	G5	-	-
Populus tremuloides	Trembling Aspen	2	0	0	S5	G5	-	-
Salix sp.	Willow						-	-
Salix petiolaris	Slender Willow	3	-4	0	S5	G4	-	-

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
Populus grandidentata	Large-tooth Aspen	5	3	0	S5	G5	-	-
Salix bebbiana	Long-beaked Willow	4	-4	0	S5	G5	-	-
Salix discolor	Pussy Willow	3	-3	0	S5	G5	-	-
Salix pyrifolia	Balsam Willow	10	-4	0	S5	G5	-	-
Comandra umbellata	Bastard Toad-flax	6	3	0	S5	G5	-	-
Sarracenia purpurea	Pitcher-plant	10	-5	0	S5	G5	-	-
Ulmus americana	White Elm	3	-2	0	S5	G5?	-	-
Urtica dioica ssp. dioica	European Stinging Nettle	0	-1	-1	SE2	G5T?	-	-
Laportea canadensis	Wood Nettle	6	-3	0	S5	G5	-	-
Viola macloskeyi	Smooth White Violet				S5	G5	-	-
Viola cucullata	Marsh Blue Violet	5	-5	0	S5	G4G5	-	-
Viola canadensis	Canada Violet	6	5	0	S5	G5	-	-
Viola palustris	Marsh Violet	0	0	0	SU	G5	-	-
MONOCOTYLEDONS	**MONOCOTS**							
Arisaema triphyllum	Small Jack-in-the-pulpit	5	-2	0	S5	G5T5	-	-
Calla palustris	Wild Calla	8	-5	0	S5	G5	-	-
Eriophorum sp.	Cotton-grass						-	-
Scirpus cyperinus	Wool-grass	4	-5	0	S5	G5	-	-
Carex sp.							-	-
Carex aquatilis	Aquatic Sedge	7	-5	0	S5	G5	-	-
Carex deweyana	Dewey's Sedge	6	4	0	S5	G5	-	-
Carex stricta	Tussock Sedge	4	-5	0	S5	G5	-	-
Carex blanda	Woodland Sedge	3	0	0	S5	G5?	-	-
Carex crinita	Fringed Sedge	6	-4	0	S5	G5	-	-
Carex gracillima	Graceful Sedge	4	3	0	S5	G5	-	-
Carex intumescens	Bladder Sedge	6	-4	0	S5	G5	-	-
Carex lacustris	Lake-bank Sedge	5	-5	0	S5	G5	-	-
Carex arctata	Drooping Wood Sedge	5	5	0	S5	G5?	-	-
Eriophorum virginicum	Virginia Cotton-grass	10	-5	0	S5	G5	-	-
Scirpus sp.	Bulrush						-	-
Carex utriculata	Beaked Sedge	7	-5	0	S5	G5	-	-
Eriophorum vaginatum ssp. spissum	Sheathed Cotton-grass	10	-5	0	S5	G5T5	-	-
Dulichium arundinaceum	Reed-like Three-way Sedge	7	-5	0	S5	G5	-	-
Scirpus atrovirens	Dark-green Bulrush	3	-5	0	S5	G5?	-	-
Eriophorum viridi-carinatum	Thin-leaved Cotton-grass	9	-5	0	S5	G4	-	-
Carex magellanica ssp. irrigua	Stunted Sedge	10	-5	0	S5	G5T?	-	-
Carex oligosperma	Few-seeded Sedge	10	-5	0	S4	G4	-	-
Carex tenuiflora	Sparse-flowered Sedge	10	-5	0	S5	G5	-	-
Carex canescens ssp. canescens	Silvery Sedge	7	-5	0	S5	G5T?	-	-
Carex disperma	Soft-leaved Sedge	8	-5	0	S5	G5	-	-
Scirpus microcarpus	Small-fruited Bulrush	4	-5	0	S5	G5	-	-
Carex interior	Inland Sedge	6	-5	0	S5	G5	-	-
Carex lasiocarpa	Slender Sedge	8	-5	0	S5	G5	-	-
Carex brunnescens ssp. brunnescens	Brownish Sedge	7	-3	0	S5	G5T?	-	-
Carex echinata ssp. echinata	Prickly Sedge	7	-5	0	S5	G5T5	-	-
Carex scoparia	Pointed Broom Sedge	5	-3	0	S5	G5	-	-
Carex pellita	Woolly Sedge	4	-5	0	S5	G5	-	-
Carex stipata	Awl-fruited Sedge	3	-5	0	S5	G5	-	-
Carex lupulina	Hop Sedge	6	-5	0	S5	G5	-	-
Carex siccata	Silvery-flowered Hay Sedge	0	0	0	S5	G5	-	-
Iris versicolor	Multi-coloured Blue-flag	5	-5	0	S5	G5	-	-
Iris sp.	Iris						-	-
Sisyrinchium montanum	Montane Blue-eyed-grass	0	-1	0	S5	G5	-	-
Juncus effusus	Common rush	0	0	0			-	-
Juncus bufonius	Toad Rush	1	-4	0	S5	G5	-	-
Juncus validus	Roundhead Rush						-	-
Juncus sp.	Rush						-	-
Lemna minor	Lesser Duckweed	2	-5	0	S5	G5	-	-
Maianthemum canadense	Wild Lily-of-the-valley	5	0	0	S5	G5	-	-
Maianthemum trifolium	Three-leaved Solomon's Seal	10	-5	0	S5	G5	-	-

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
Polygonatum pubescens	Hairy Solomon's Seal	5	5	0	S5	G5	-	-
Clintonia borealis	Bluebead-lily	7	-1	0	S5	G5	-	-
Trillium erectum	Purple Trillium	6	1	0	S5	G5	-	-
Trillium grandiflorum	White Trillium	5	5	0	S5	G5	-	-
Cypripedium acaule	Moccasin Flower	7	-3	0	S5	G5	-	-
Poa sp.							-	-
Calamagrostis canadensis	Blue-joint Grass	4	-5	0	S5	G5	-	-
Deschampsia flexuosa	Common Hairgrass	8	5	0	S5	G5	-	-
Brachyelytrum erectum	Bearded Short-husk	7	5	0	S4S5	G5	-	-
Glyceria striata	Fowl Meadow Grass	3	-5	0	S5	G5	-	-
Cinna latifolia	Broad-leaved Reed Grass	7	-4	0	S5	G5	-	-
Phragmites australis	Common Reed	0	-4	0	S5	G5	-	-
Poa palustris	Fowl Meadow Grass	5	-4	0	S5	G5	-	-
Phalaris arundinacea	Reed Canary Grass	0	-4	0	S5	G5	-	-
Poa annua	Annual Blue Grass	0	1	-2	SE5	G?	-	-
Bromus inermis	Awnless Brome				SNA	G5TNR	-	-
Agrostis stolonifera	Redtop	0	-3	0	S5	G5	-	-
Pontederia cordata	Heart-leaved Pickerel-weed	7	-5	0	S5	G5	-	-
Sparganium emersum ssp. acaule	Stemless Bur-reed	0	0	0	SU		-	-
Sparganium angustifolium	Narrow-leaved Bur-reed	9	-5	0	S4?	G5	-	-
Sparganium fluctuans	Floating Bur-reed	9	-5	0	S4?	G5	-	-
Sparganium eurycarpum	Broad-fruited Bur-reed	3	-5	0	S5	G5	-	-
Typha latifolia	Broad-leaved Cattail	3	-5	0	S5	G5	-	-
Typha angustifolia	Narrow-leaved Cattail	3	-5	0	S5	G5	-	-
Typha sp.	Cattail						-	-
ASCOMYCETES	**LICHENS**							
Cladonia rangiferina	Grey Reindeer Lichen				S5	G5	-	-
BRYOPSIDA	**MOSSES**							
Aulacomnium palustre	Glow Moss				S5	G5	-	-
Dicranum polysetum	Wavy Moss				S5	G5	-	-
Dicranum montanum	Montane Dicranum Moss				S5	G5	-	-
Dicranum ontariense	Ontario Dicranum Moss				S5	G4G5	-	-
Polytrichum sp.	Haircap Moss						-	-
Polytrichum commune	Common Haircap Moss				S5	G5	-	-
Polytrichum strictum	Bog Haircap Moss				S5	G4	-	-
SPHAGNOPSIDA	**MOSSES**							
Sphagnum sp.	Peat Moss						-	-
Sphagnum girgensohnii	Common Green Peat Moss				S5	G5	-	-
Sphagnum capillifolium	Northern Peat Moss				S5	G5	-	-
Sphagnum angustifolium	Cuspidate Peat Moss				S5	G5	-	-
Sphagnum squarrosum	Squarrose Peat Moss				S5	G5	-	-
Sphagnum fuscum	Common Brown Sphagnum				S5	G5	-	-
AVIFAUNA								
Corvus brachyrhynchos	American Crow				S5B	G5	-	-
Picoides dorsalis	American Three-toed Woodpecker				S4	G5	-	-
Scolopax minor	American Woodcock				S4B	G5	-	-
Haliaeetus leucocephalus	Bald Eagle				S2N, S4B	G5	SC	-
Strix varia	Barred Owl				S5	G5	-	-
Setophaga castanea	Bay-breasted Warbler				S5B	G5	-	-
Mniotilta varia	Black-and-white Warbler				S5B	G5	-	-
Picoides arcticus	Black-backed Woodpecker				S4	G5	-	-
Poecile atricapillus	Black-capped Chickadee				S5	G5	-	-
Setophaga virens	Black-throated Green Warbler				S5B	G5	-	-
Cyanocitta cristata	Blue Jay				S5	G5	-	-
Buteo platypterus	Broad-winged Hawk				S5B	G5	-	-
Bucephala albeola	Bufflehead				S4	G5	-	-
Branta canadensis	Canada Goose				S5	G5	-	-
Cardellina pusilla	Canada Warbler				S4B	G5	THR	THR
Setophaga pensylvanica	Chestnut-sided Warbler				S5B	G5	-	-
Gavia immer	Common Loon				S5B,S5N	G5	-	-

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
Chordeiles minor	Common Nighthawk				S4B	G4	SC	THR
Geothlypis trichas	Common Yellowthroat				S5B	G5	-	-
Junco hyemalis	Dark-eyed Junco				S5	G5	-	-
Picoidese pubescens	Downy Woodpecker				S5	G5	-	-
Sayornis phoebe	Eastern Pheobe				S5B	G5	-	-
Caprimulgus vociferus	Eastern Whip-poor-will				S4B	G5	THR	THR
Contopus virens	Eastern Wood-Pewee				S4B	G5	-	-
Regulus satrapa	Golden-crowned Kinglet				S5B	G5	-	-
Perisoreus canadensis	Gray Jay				S5	G5	-	-
Ardea herodias	Great blue Heron				S4	G5	-	-
Tringa melanoleuca	Greater Yellowlegs				S4B, S4N	G5	-	-
Picoides villosus	Hairy Woodpecker				S5	G5	-	-
unknown	Hawk Sp.				-	-	-	-
Catharus guttatus	Hermit Thrush				S5B	G5	-	-
Charadrius vociferus	Killdeer				S5B, S5N	G5	-	-
Setophaga kirtlandii	Kirtland's Warbler				S1B	G1	END	END
Anas platyrhynchos	Mallard				S5	G5	-	-
Oreothlypis ruficapilla	Nashville Warbler				S5B	G5	-	-
Colaptes auratus	Northern Flicker				S4B	G5	-	-
Accipiter gentilis	Northern Goshawk				S4	G5	-	-
Parkesia noveboracensis	Northern Waterthrush				S5B	G5	-	-
Contopus cooperi	Olive-sided Flycatcher				S4B	G4	SC	THR
Pandion haliaetus	Osprey				S5B	G5	-	-
Seiurus aurocapilla	Ovenbird				S4B	G5	-	-
Hylatomus pileatus	Pileated Woodpecker				S5	G5	-	-
Pinicola enucleator	Pine Grosbeak				S4B	G5	-	-
Corvus corax	Common Raven				S5	G5	-	-
Sitta canadensis	Red-breasted Nuthatch				S5	G5	-	-
Vireo olivaceus	Red-eyed Vireo				S5B	G5	-	-
Buteo jamaicensis	Red-tailed Hawk				S5	G5	-	-
Aythya collaris	Ring-neck Duck				S5	G5	-	-
Bonasa umbellus	Ruffed Grouse				S4	G5	-	-
Euphagus carolinus	Rusty Blackbird				S4B	G4	-	SC
Grus canadensis	Sandhill Crane				S5B	G5	-	-
Falcipennis canadensis	Spruce Grouse				S5	G5	-	-
Picoides dorsalis	Three-toded Woodpecker				S4	G5	-	-
Cathartes aura	Turkey Vulture				S5B	G5	-	-
Zonotrichia albicollis	White-throated Sparrow				S5B	G5	-	-
Troglodytes troglodytes	Winter Wren				S5B	G5	-	-
Aix sponsa	Wood Duck				S5	G5	-	-
Hylocichla mustelina	Wood Thrush				S4B	G5	-	THR
Setophaga petechia	Yellow Warbler				S5B	G5	-	-
Sphyrapicus varius	Yellow-bellied Sapsucker				S5B	G5	-	-
Setophaga coronata	Yellow-rumped Warbler				S5B	G5	-	-
HERPETOFAUNA								
Lithobates catesbeianus	American Bullfrog				S4	G5	-	-
Anaxyrus americanus	American Toad				S5	G5	-	-
Emydoidea blandingii	Blanding's Turtle				S3	G4	THR	THR
Plestiodon fasciatus pop. 2	Common Five-lined Skink (Southern Shield population)				S3	G5T3	SC	SC
Thamnophis sirtalis sirtalis	Eastern Gartersnake				S5	G5T5	-	-
Hemidactylium scutatum	Four-toed Salamander				S4	G5	-	-
Lithobates clamitans	Green Frog				S5	G5	-	-
Hyla versicolor	Gray Treefrog				S5	G5	-	-
Sistrurus catenatus 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	-	-

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
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	-	-
MAMMALS								
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	-	-
Lynx (sighting unconfirmed)	Lynx (sighting unconfirmed)				S5	G5	-	-
Fox	Fox				S5	G5	-	-
Wolf Sp.	Wolf Sp.				-	-	-	-
INSECT								
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	
Active feeding area (great blue heron excluded)			=	15	
None known			=	0	0
Total:					0

Additional Notes/Comments:
None Observed: 2011-2015

Colonial Waterbird Nesting Score *(maximum 50 points)*	0

4.2.2 Winter Cover for Wildlife

Score highest appropriate category. Include rationale/sources of information.

	Provincially significant	=	l00 pts
	Significant in Ecoregion	=	50
	Significant in Ecodistrict	=	25
	Locally significant	=	10
0	Little or poor winter cover	=	0
0			

Species/habitat/vegetation community scored (e.g., winter deer cover in hemlock swamp, S3 and S4b):
Field observation; Kristan Washburn, 2015

Source of information:
Discussions with Aylmer District Office

Winter Cover for Wildlife Score *(maximum 100 points)*	0

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			= l00		
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 Bufflead 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)	20

4.2.4 Waterfowl Breeding

Check highest level of significance.

	Nationally/internationally significant	=	150 pts
	Provincially significant	=	l00
	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-002 wetland complex. Exact location and vegetation community undetermined.

Source of information:

Field observation: LGL, 2011-2012

Waterfowl Breeding Score (maximum 100 points)	10

4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area

Check highest level of significance.

	Nationally / internationally significant	=	150 pts
	Provincially significant	=	l00
	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)	10

4.2.6 Ungulate Habitat

EVALUATION:

Score (1) + (2) + one of (3) to (6)

15	1. Ungulate summer cover	=	15	*(Score is cumulative for a maximum possible score of 100)*
	2. Mineral licks	=	50	
	3. Moose aquatic feeding area Class 1	=	0	
	4. Moose aquatic feeding area Class 2	=	10	Ungulat Habitat Score (*maximum 100 points)* 15
	5. Moose aquatic feeding area Class 3	=	20	
	6. Moose aquatic feeding area Class 4	=	35	

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
x	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
x	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,	l00 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
x	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*
[x]	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 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	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 *(maximum 25 points)*		**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	**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)	=	**14.6**
D. Score from Step 5 (High Marsh)	=	**11.0**
E. Score from Step 6 (Swamp)	=	**2.0**
Subtotal:		**27.6**

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)	**28**

4.2.7.2 Migration and Staging Habitat

Step 1:

[ ]	Staging or Migration Habitat is not present in the wetland	Go to Step 4, Score 0 points
[ ]	Staging or Migration Habitat is present in the wetland significance of the habitat is known	Go to Step 2
[x]	Staging or Migration Habitat is present in the wetland 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.

[ ]	Significant in Ecoregion	Score 25 points in Step 4
[ ]	Significant in Ecodistrict	Score 15 points in Step 4
[ ]	Locally Significant	Score 10 points in Step 4
[ ]	Fish staging and/or migration habitat present, but not as above	Score 5 points in Step 4

Source of information:

Field observation; AECOM, 2015

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to bethe dominant site type). Refer to Site Types recorded earlier (section 1.1.3). Attach documentation.

[ ]	Wetland is riverine at rivermouth or lacustrine at rivermouth	Score 25 points in Step 4
[ ]	Wetland is riverine,within 0.75 km of rivermouth	Score 15 points in Step 4
[ ]	Wetland is lacustrine,within 0.75 km of rivermouth	Score 10 points in Step 4
[5]	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)*	5

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)*	8

4.4 Great Lakes Coastal Wetlands

Choose one only. Only coastal wetland units may be scored.

	wetland < 10 ha	=	0 pts
	wetland 10- 50 ha	=	25
	wetland 51 -l00 ha	=	50
x	wetland > 100 ha	=	75

Great Lakes Coastal Wetland Score *(maximum 75 points)*	75

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]):

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 doumneted.

Field observation: AECOM, 2015

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
x	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
x	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:

Additional Comments:

No additional comments.

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.

Additional Notes/Comments (e.g., adjacent lands, etc)

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

13.3	1.1.1	Growing Degree-Days/Soils
9.2	1.1.2	Wetland Type
2.0	1.1.3	Site Type

1.2 BIODIVERSITY

30.0	1.2.1	Number of Wetland Types
23.0	1.2.2	Vegetation Communities
7.0	1.2.3	Diversity of Surrounding Habitat
8.0	1.2.4	Proximinty to Other Wetlands
30.0	1.2.5	Interspersion
14.0	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

9	2.1.1 Wood Products
2	2.1.2 Low Bush Cranberry
0	2.1.3 Wild Rice
12	2.1.4 Commerical Fish (Bait Fish and/or Coarse Fish)
12	2.1.5 Furbearers

28	2.2 RECREATIONAL ACTIVITIES

2.3 LANDSCAPE AESTHETICS

3	2.3.1 Distinctness
7	2.3.2 Absence of Human Disturbance

2.4 EDUCATION AND PUBLIC AWARENESS

0	2.4.1 Educational Uses
0	2.4.2 Facilities and Programs
5	2.4.3 Research and Studies

16	2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT
10	2.6 OWNERSH1P
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

0	3.1 FLOOD ATTENUATION
	3.2 WATER QUALITY IMPROVEMENT
18.6	3.2.1 Site Type
4.0	3.2.2 Soil Recharge Potential
	3.3 WATER QUALITY IMPROVEMENT
25	3.3.1 Watershed Improvement Factor
0.0	3.3.2 Adjacent and Watershed Land Use
8.0	3.3.3. Vegetation Form
9	3.4 CARBON SINK
15	3.5 SHORELINE EROSION CONTROL
11	3.6 GROUNDWATER DISCHARGE
90	Subtotal
90	TOTAL (Hydrological Component)

4.0 SPECIAL FEATURES COMPONENT

4.1 RARITY

70	4.1.1	Wetlands
	4.1.2	Species
0	4.1.2.1	Reproductive Habitat for an Endangered or Threatened Species
225	4.1.2.2	Traditional Migration or Feeding Habitat for an Endangered or Threatened Species
95	4.1.2.3	Provincially Significant Animal Species
0	4.1.2.4	Provincially Significant Plant Species
0	4.1.2.5	Regionally Significant Species
0	4.1.2.6	Locally Significant Species
15	4.1.2.7	Species of Special Status

4.2 SIGNIFICANT FEATURES OR HABITATS

0	4.2.1	Colonial Waterbirds
0	4.2.2	Winter Cover for Wildlife
20	4.2.3	Waterfowl Staging and/or Moulting Areas
10	4.2.4	Waterfowl Breeding
10	4.2.5	Migratory Passerine, Shorebird or Raptor Stopover Area
15	4.2.6	Ungulate Habitat
28	4.2.7	Fish Habitat

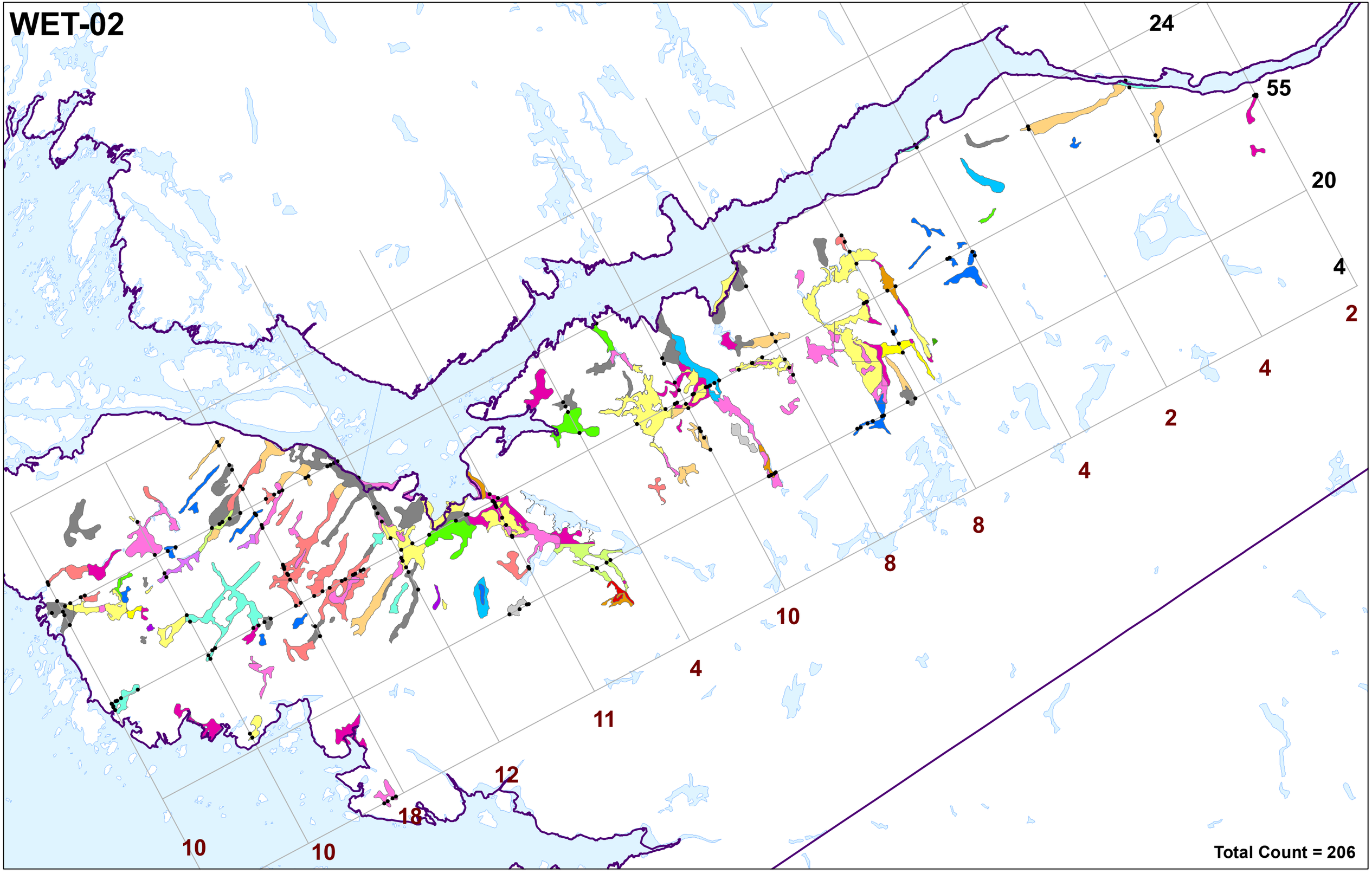
8	4.3 ECOSYSTEM AGE
75	4.4 GREAT LAKES COASTAL WETLANDS
501	Subtotal
250	TOTAL (Special Features Component)

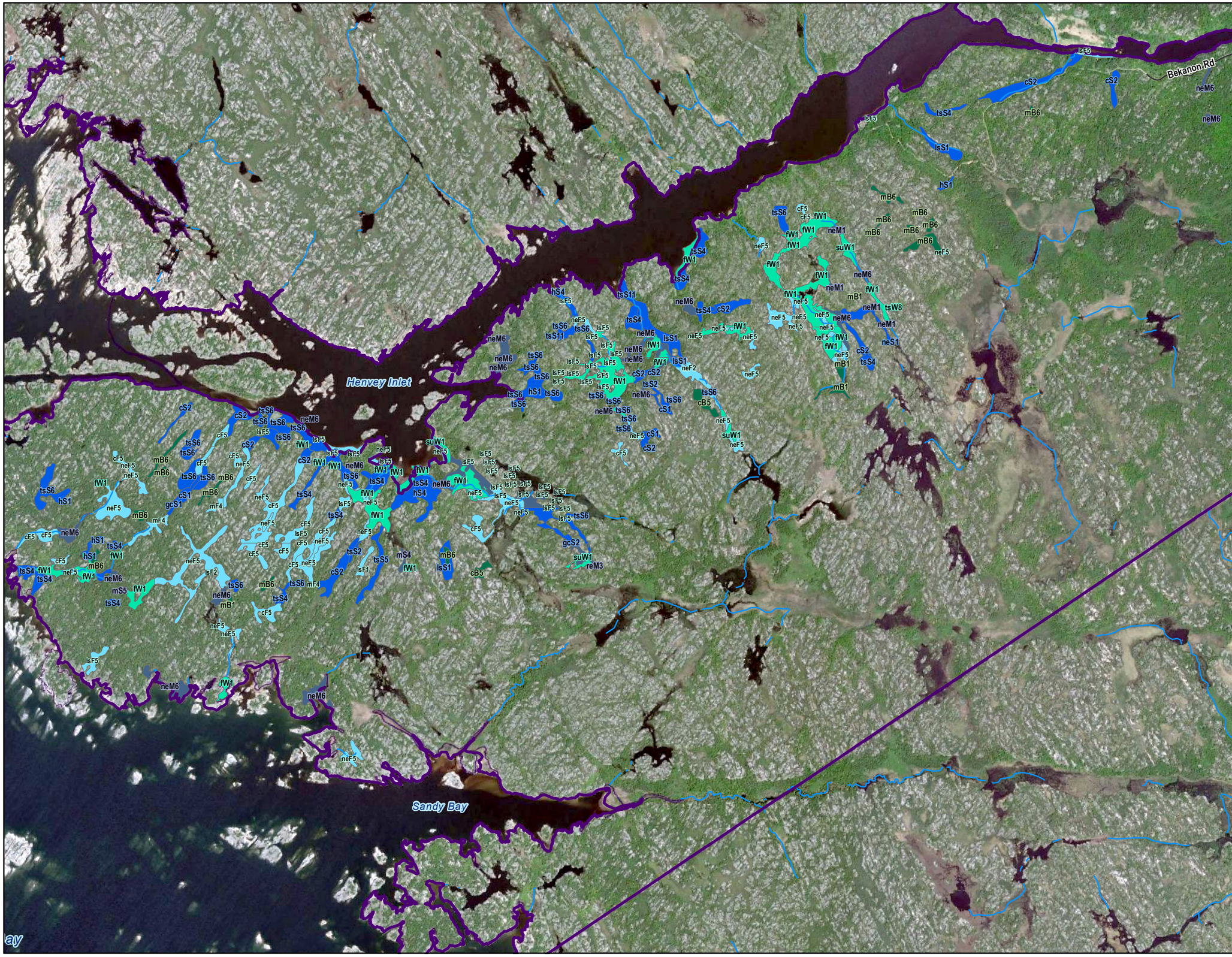
SUMMARY OF EVALUATION RESULT

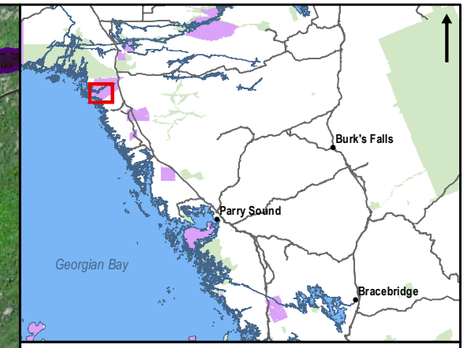
186	1.0	TOTAL FOR BIOLOGICAL COMPONENT
152	2.0	TOTAL FOR SOCIAL COMPONENT
90	3.0	TOTAL FOR HYDROLOGICAL COMPONENT
250	4.0	TOTAL FOR SPECIAL FEATURES COMPONENT
678		TOTAL WETLAND SCORE

FOR MNR USE ONLY	
MNR Reviewer (Name & Position)	
Reviewer Comments	
MNR Approver (Name & Position)	
Approval Date	

WET-02







N

OWES Communities

- Bog
- Fen
- Swamp
- Open Water Marsh
- Marsh

Base Layers

- Major Roads
- Highway
- Trails
- Railway
- Watercourses
- Henvey Inlet First Nation Reserve No.2

0 0.325 0.65 1.3
Kilometers

Henvey Inlet Wind Energy Centre

OWES Communities - Complex WET-02

September 2015	1:28,000	Datum: NAD 83, Zone 17 Source: LIO
P#: 60341251	V#:	

Figure 2

Map location: F:\AECOM-Work\60333000 - Henvey Wind\Design\Final Report\Site Investigation\Wetlands_OWES_20150908.mxd
Date Saved: 9/8/2015 3:53:22 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 orthoaerial photography from 2013. This wetland complex is approximately 957 ha is 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 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 lattifolia*), 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.)

Official Name:	Henvey Inlet Wetland WET-003				
Evaluation Edition:	1st	**Version:**	1.3	**Wetland ID.:**	WET-003
Wetland Significance:	Year/Month Last Evaluated		Not Evaluated		
	Year/Month Last Updated				

Special Planning Considerations:	Federal Land	**Scores**	
Wetland Area:	957.00	Biological:	204
Dentention Area:	NA/Coastal Wetlands	Social:	155
Catchment Area:	NA/Coastal Wetlands	Hydrological:	93
Coastal Unit Area:	957.00	Special Features:	250
OMNR Source	Parry Sound District MNR	Overall:	703
Information Source	Field Observation: AECOM, 2015		
Submitted by:	Kristan Washburn	**Date**	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

Summery 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	ls	Fen	lsF	5	1.10992	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	
3	ls	Fen	lsF	5	1.17353	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	
3	ls	Fen	lsF	5	1.32727	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	
2	ls	Fen	lsF	5	2.84364	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	
2	ts	Swamp	tsS	6	1.72728	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	
2	ls	Fen	lsF	5	0.9125	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	ne	Marsh	neM	6	5.02922	Palustrine	Clay-Loam	ne*,m,gc	4	50	2.51	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	c	Fen	cF	5	2.18642	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	0.32474	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	ts	Swamp	tsS	6	0.74816	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	1.06617	Palustrine	Sand	ne*,m,gc	3	50	0.53	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	2.12643	Lacustrine	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	Swamp	cS	2	0.1729	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	ls	Fen	lsF	5	0.05139	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	

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	-		*h-Acer rubrum, Betula papyrifera,Populus tremuloides, m- Sphagnum moss, gc-Cornus canadensis, Trientalis borealis*	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	-		*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	ls	Swamp	lsS	1	12.2984	Palustrine	Sand	ls*	1	0	-		*ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia*	see attached flora and fauna lists	
1	ne	Fen	neF	5	4.1462	Palustrine	Humic-Mesic	ne*,m,ls	3	5	0.21		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.53025	Palustrine	Fibric	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	ts	Swamp	tsS	4	0.55368	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	ne	Marsh	neM	6	1.16205	Palustrine	Sand	ne*,m,gc	4	50	0.58	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	2.87048	Palustrine	Sand	ne*,m,gc	4	50	1.44	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	c	Swamp	cS	2	10.3578	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	ls	Swamp	lsS	1	13.4749	Palustrine	Sand	ls*	1	0	-		*ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia*	see attached flora and fauna lists	
1	ne	Fen	neF	5	4.90996	Palustrine	Fibric	ne*,m,ls	3	5	0.25		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	c	Swamp	cS	2	1.60781	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, ls-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata*	see attached flora and fauna lists	
1	ne	Fen	neF	5	1.00889	Palustrine	Fibric	ne*,m,ls	3	5	0.05		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.08976	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	0.62302	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	ts	Swamp	tsS	6	1.24851	Lacustrine at River Mouth	Fibric	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	0.88336	Palustrine	Fibric	ne*,m,gc	3	50	0.44	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.01903	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	0.4565	Palustrine	Sand	ne*,m,gc	4	50	0.23	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	2.38164	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	f	Marsh	fW	1	1.09233	Palustrine	Fibric	f*,ff	2	90	0.98	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	f	Marsh	fW	1	5.54551	Palustrine	Sand	f*,ff	2	90	4.99	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.6187	Palustrine	Humic-Mesic	f*,ff	2	90	0.56	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.55184	Palustrine	Clay-Loam	f*,ff	2	90	0.50	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	f	Marsh	fW	1	3.05	Palustrine	Fibric	f*,ff	2	90	2.75	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.48061	Palustrine	Sand	ne*,m,ls	3	5	0.02		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.03325	Palustrine	Clay-Loam	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.04471	Palustrine	Clay-Loam	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.52864	Palustrine	Clay-Loam	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	ne	Fen	neF	5	0.37881	Palustrine	Clay-Loam	ne*,m,ls	3	5	0.02		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.08009	Palustrine	Clay-Loam	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.02498	Palustrine	Clay-Loam	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.48847	Palustrine	Clay-Loam	f*,ff	2	90	1.34	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.30195	Palustrine	Fibric	ne*,m,ls	3	5	0.02		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.51758	Palustrine	Fibric	ne*,m,ls	3	5	0.03		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	

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1	ne	Fen	neF	5	0.34739	Palustrine	Fibric	ne*,m,ls	3	5	0.02		*ne-Carex spp, m- Sphagnum spp , ls-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 , ls-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	-		*ls-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	-		*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	0.83819	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, ls-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, ls-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	

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1	h	Swamp	hS	4	5.12536	Lacustrine	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	ne	Fen	neF	5	0.3998	Palustrine	Sand	ne*,m,ls	3	5	0.02		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.67445	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	c	Swamp	cS	2	1.31609	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, ls-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata*	see attached flora and fauna lists	
1	c	Swamp	cS	2	2.2557	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	ne	Marsh	neM	6	1.70858	Palustrine	Fibric	ne*,m,gc	4	50	0.85	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	c	Swamp	cS	2	0.81408	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	
2	ts	Swamp	tsS	6	2.68256	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	ts	Swamp	tsS	4	1.14257	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	0.69846	Palustrine	Silt	ne*,m,gc	4	50	0.35	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	c	Fen	cF	5	0.74969	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	c	Swamp	cS	2	0.84164	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, ls-Ilex mucronata, Viburnum cassinoides, gaylussacia baccata*	see attached flora and fauna lists	

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1	c	Fen	cF	5	2.17364	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	ls	Fen	lsF	1	2.16627	Palustrine	Fibric	ls*	1	0	-		*ls-Chamaedaphne calyculata, Kalmia, polifolia,Vaccinium angustifolium*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.31394	Palustrine	Fibric	ne*,m,gc	4	50	0.16	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	4.69557	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	ts	Swamp	tsS	6	3.36624	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	
1	c	Fen	cF	5	1.80613	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	4.68003	Palustrine	Fibric	ne*,m,ls	3	5	0.23		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.41497	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	m	Bog	mB	6	1.58187	Isolated	Sand	m*	1	0	-		*m-Sphagnum, gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.87087	Palustrine	Humic-Mesic	ne*,m,gc	4	50	0.44	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	c	Fen	cF	5	7.62541	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	ls	Fen	lsF	5	9.55493	Palustrine	Humic-Mesic	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	ts	Swamp	tsS	6	3.18101	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	Fen	neF	5	4.83671	Palustrine	Humic-Mesic	ne*,m,ls	3	5	0.24		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.13954	Palustrine	Fibric	ne*,m,ls	3	5	0.01		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.48289	Palustrine	Sand	ne*,m,gc	4	50	0.24	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	1.11521	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	

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1	ls	Swamp	lsS	1	1.8608	Palustrine	Fibric	ls*	1	0	-		*ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia*	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	1.69803	Palustrine	Sand	ls*	1	0	-		*ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia*	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	1.49247	Palustrine	Silt	ls*	1	0	-		*ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia*	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	2.14995	Palustrine	Sand	ls*	1	0	-		*ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia*	see attached flora and fauna lists	
1	c	Fen	cF	5	0.77274	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	Fen	cF	5	0.64881	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	1	3.58504	Palustrine	Sand	ne*,gc	2	50	1.79	LM	*ne-Carex crinita ,Onoclea sensibilis ,gs-Calamagrostis canadensis*	see attached flora and fauna lists	
1	su	Marsh	suW	1	4.73055	Palustrine	Humic-Mesic	su	1	90	4.26	HM	*su*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	7.62527	Palustrine	Sand	ne*,m,gc	4	50	3.81	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	5.94337	Palustrine	Fibric	ne*,m,gc	4	50	2.97	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	2.71779	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	ts	Swamp	tsS	4	0.90714	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	c	Fen	cF	5	1.78305	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	0.57238	Palustrine	Silt	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	ts	Swamp	tsS	4	3.38486	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	0.89607	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	

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	-		*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	0.56823	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	1.27008	Palustrine	Sand	ne*,m,ls	3	5	0.06		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	f	Marsh	fW	1	5.69786	Palustrine	Sand	f*,ff	2	90	5.13	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.15784	Palustrine	Fibric	f*,ff	2	90	1.04	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	su	Marsh	suW	1	0.3029	Palustrine	Sand	su	1	100	0.30	HM	*su*	see attached flora and fauna lists	
1	f	Marsh	fW	1	3.79745	Palustrine	Sand	f*,ff	2	90	3.42	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	su	Marsh	suW	1	2.25697	Palustrine	Humic-Mesic	su	1	100	2.26	HM	*su*	see attached flora and fauna lists	
1	ne	Marsh	neM	1	1.72444	Palustrine	Fibric	ne*,gc	2	50	0.86	LM	*ne-Carex crinita ,Onoclea sensibilis ,gs-Calamagrostis canadensis*	see attached flora and fauna lists	
1	f	Marsh	fW	1	3.28782	Palustrine	Silt	f*,ff	2	90	2.96	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.07572	Palustrine	Silt	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.30044	Palustrine	Silt	ne*,m,ls	3	5	0.02		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.09196	Palustrine	Silt	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	f	Marsh	fW	1	2.59057	Palustrine	Fibric	f*,ff	2	90	2.33	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	ne	Fen	neF	5	0.927	Palustrine	Sand	ne*,m,ls	3	5	0.05		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	su	Marsh	suW	1	0.14507	Palustrine	Sand	su	1	100	0.15	HM	*su*	see attached flora and fauna lists	
1	c	Fen	cF	5	0.69702	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	0.6276	Palustrine	Silt	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	f	Marsh	fW	1	1.37516	Palustrine	Sand	f*,ff	2	90	1.24	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.40636	Palustrine	Sand	ne*,m,gc	4	50	0.20	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	2.15326	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	

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 , ls-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- Carix 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 , ls-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 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	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 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	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	-		*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	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	-		*ts-Alnus incana,ne- Carex lasiocarpa ,Carex lacustrina , m-Sphagnum spp*	see attached flora and fauna lists	
1	m	Bog	mB	6	0.23264	Isolated	Fibric	m*	1	0	-		*m-Sphagnum, gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
1	h	Swamp	hS	4	0.3661	Palustrine	Clay-Loam	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	h	Swamp	hS	1	0.7806	Palustrine	Clay-Loam	h*	3	0	-		*h-Betula papyrifera, Acer rubrum, Fraxinus nigra*	see attached flora and fauna lists	
1	ne	Fen	neF	5	2.86489	Palustrine	Sand	ne*,m,ls	3	5	0.14		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	h	Swamp	hS	4	1.651	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	c	Swamp	cS	2	0.93373	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	ts	Swamp	tsS	4	0.91189	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	0.49463	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	ts	Swamp	tsS	4	0.80414	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	0.56547	Isolated	Fibric	m*	1	0	-		*m-Sphagnum, gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.45316	Palustrine	Sand	f*,ff	2	90	0.41	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	c	Swamp	cS	2	1.66802	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	ls	Swamp	lsS	1	3.18882	Palustrine	Sand	ls*	1	0	-		*ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia*	see attached flora and fauna lists	
1	m	Bog	mB	6	0.2734	Isolated	Fibric	m*	1	0	-		*m-Sphagnum, gc-Vaccinium oxycoccus*	see attached flora and fauna lists	

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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	

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	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 , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	1.19911	Palustrine	Silt	ls*	1	0	-		*ls-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, ls-Ilex mucronata, Viburnum cassinoides, gaylussacia 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, ls-Ilex mucronata, Viburnum cassinoides, gaylussacia 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 , ls-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 , ls-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 , ls-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	c	Swamp	cS	2	0.01038	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, ls-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,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	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,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	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,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	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 ,Nymphea 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 ,Nymphea 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	

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1	c	Fen	cF	5	0.00818	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	ne	Marsh	neM	1	2.64717	Palustrine	Sand	ne*, gc	2	50	1.32	LM	*ne-Carex aquatilis, gc- Onoclea sensibilis*	see attached flora and fauna lists	
1	m	Fen	mF	4	2.20142	Palustrine	Sand	m*,gc	2	5	0.11		*m-Sphagnum spp, gc- Woodwardia virginica,Maianthemum trifolia*	see attached flora and fauna lists	
1	m	Fen	mF	4	1.06143	Palustrine	Sand	m*,gc	2	5	0.05		*m-Sphagnum spp, gc- Woodwardia virginica,Maianthemum trifolia*	see attached flora and fauna lists	
1	c	Fen	cF	5	0.0016	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	0.00555	Palustrine	Humic-Mesic	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ls	Fen	lsF	3	0.37444	Palustrine	Sand	ls*,m	2	0	-		*ls-Chamaedaphne calyculata, Kalmia angustifolia, m-sphagnum spp*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.00107	Palustrine	Sand	ne*,m,gc	3	50	0.00	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.67932	Palustrine	Fibric	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	ls	Fen	lsF	5	9.15484	Palustrine	Fibric	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	11.7799	Palustrine	Silt	h*	1	0	-		*h-Acer rubrum, Betula papyrifera , Populus tremuloides*	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	0.91292	Palustrine	Sand	ls*	1	0	-		*ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia*	see attached flora and fauna lists	
1	ls	Swamp	lsS	1	0.36834	Palustrine	Sand	ls*	1	0	-		*ls-Chamaedaphne calyculata ,Gaylussacia baccata, Kalmia angustifolia*	see attached flora and fauna lists	
1	ne	Marsh	neM	1	0.00374	Palustrine	Sand	ne*, gc	3	50	0.00	LM	*ne-Carex aquatilis, gc- Onoclea sensibilis*	see attached flora and fauna lists	
1	m	Bog	mB	6	0.22629	Isolated	Sand	m*	2	0	-		*m-Sphagnum, gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
1	ts	Swamp	tsS	2	0.37978	Palustrine	Humic-Mesic	ts*	1	0	-		*ts-Alnus incana, Ilex verticillata ,Nemopanthus mucronatus*	see attached flora and fauna lists	
1	ts	Swamp	tsS	2	0.20335	Palustrine	Sand	ts*	1	0	-		*ts-Alnus incana, Ilex verticillata ,Nemopanthus mucronatus*	see attached flora and fauna lists	
1	ts	Swamp	tsS	2	0.79477	Palustrine	Fibric	ts*	1	0	-		*ts-Alnus incana, Ilex verticillata ,Nemopanthus mucronatus*	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- Carix 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-Pteridum aquilinum, Chamaedaphne calyculata , Thalictrum pubescens*	see attached flora and fauna lists	

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1	h	Swamp	hS	2	3.86353	Palustrine	Silt	h*,c	2	0	-		*h-Populus tremuloides, betula papyrifera, c-Picea mariana*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	2.53306	Palustrine	Fibric	ts*,m,gc	3	0	-		*ts-Alnus incana, m-Sphagnum spp, gc-Vaccinium angustifolium*	see attached flora and fauna lists	
1	c	Fen	cF	5	1.28672	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	ls	Fen	lsF	2	6.0552	Palustrine	Sand	ls*,ts	2	0	-		*ls-Chamaedaphne calyculata , ts-Ilex mucronatum , Alnus incana*	see attached flora and fauna lists	
1	ts	Swamp	tsS	2	5.52469	Palustrine	Sand	ts*	2	0	-		*ts-Alnus incana, Ilex verticillata ,Nemopanthus mucronatus*	see attached flora and fauna lists	
1	h	Swamp	hS	3	2.87997	Palustrine	Clay-Loam	h*,gc	2	0	-		*h -Acer rubrum, Betula papyrifera, gc- Cornus canadensis, Trientalis borealis, Mainthemum canadense*	see attached flora and fauna lists	
1	ne	Fen	neF	5	1.18884	Palustrine	Sand	ne*,m,ls	3	5	0.06		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	8	0.9396	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	ne	Swamp	neS	3	2.03549	Palustrine	Fibric	ne*,m	2	0	-		*ne-Carex spp, m- Sphagnum spp*	see attached flora and fauna lists	
1	f	Marsh	fW	1	4.82448	Palustrine	Silt	f*,ff	2	90	4.34	HM	*f-Brasenia schreberi ,Nymphea alba , Nuphar lutea*	see attached flora and fauna lists	
1	ne	Marsh	neM	1	0.37381	Palustrine	Sand	ne*, gc	3	50	0.19	LM	*ne-Carex aquatilis, gc- Onoclea sensibilis*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	1.6E-05	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	ts	Swamp	tsS	6	1.6E-05	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	ts	Swamp	tsS	6	0.00116	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	9.4E-05	Palustrine	Sand	ne*,m,gc	3	50	0.00	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.00269	Palustrine	Fibric	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	0.00019	Palustrine	Sand	ne*,m,gc	3	50	0.00	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	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	-		*ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica*	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.00013	Palustrine	Sand	f*,ff	2	90	0.00	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	4.4E-05	Palustrine	Sand	ne*,m,gc	3	50	0.00	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.00302	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	ts	Swamp	tsS	6	0.00097	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	ls	Fen	lsF	5	0.00016	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	ne	Marsh	neM	6	2E-06	Palustrine	Fibric	ne*,m,gc	3	50	0.00	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	2E-06	Palustrine	Fibric	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	f	Marsh	fW	1	7.9E-05	Palustrine	Fibric	f*,ff	2	90	0.00	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	f	Marsh	fW	1	0.00314	Palustrine	Sand	f*,ff	2	90	0.00	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.00314	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	ts	Swamp	tsS	6	0.00157	Palustrine	Fibric	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	ts	Swamp	tsS	6	0.00157	Palustrine	Fibric	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	0.1235	Palustrine	Sand	ne*,m,gc	3	50	0.06	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.00265	Palustrine	Sand	ne*,m,gc	3	50	0.00	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	3E-06	Palustrine	Fibric	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
1	ts	Swamp	tsS	6	3E-06	Palustrine	Fibric	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	ls	Fen	lsF	5	3.6E-05	Palustrine	Fibric	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	ls	Fen	lsF	5	0.00097	Palustrine	Fibric	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	ts	Swamp	tsS	6	0.0002	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	m	Bog	mB	6	0.0002	Isolated	Sand	m*	1	0	-		*m-Sphagnum, gc-Vaccinium oxycoccus*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	1E-06	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	ls	Fen	lsF	5	0.00065	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	ts	Swamp	tsS	6	1.7281	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	Fen	neF	3	1.33197	Palustrine	Sand	ne*,m	2	5	0.07		*ne-Carex spp ,m- Sphagnum spp*	see attached flora and fauna lists	
1	ne	Marsh	neM	1	6.51217	Palustrine	Sand	ne*,ls,gc,	3	50	3.26	LM	*ne- Carex spp, gc-Lysimachia thyrsiflora , ls-Potentilla palustris*	see attached flora and fauna lists	
1	f	Marsh	fW	2	5.02424	Palustrine	Sand	f*	1	90	4.52	HM	*f-Brasenia schreberi ,Nymphea alba , Nuphar lutea*	see attached flora and fauna lists	
1	f	Marsh	fW	2	7.95494	Palustrine	Clay-Loam	f*	1	90	7.16	HM	*f-Nuphar variegatum, Nymphaea odorata, Brasenia schreberi*	see attached flora and fauna lists	
1	f	Marsh	fW	2	15.9291	Palustrine	Fibric	f*	1	90	14.34	HM	*f-Nupha variegatum ,Nupha pumila*	see attached flora and fauna lists	
1	h	Swamp	hS	4	10.5681	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	6	0.0034	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	ts	Swamp	tsS	6	0.00427	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	

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	-		*ts-Alnus incana, Nemopanthus mucronatus,m-Sphagnum spp, gc- Maianthemum trifolia, Woodwardia virginica*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	2E-06	Palustrine	Fibric	ne*,m,gc	3	50	0.00	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	9E-06	Palustrine	Fibric	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	9E-06	Palustrine	Fibric	ne*,m,gc	3	50	0.00	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.0002	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	f	Marsh	fW	1	0.0002	Palustrine	Sand	f*,ff	2	90	0.00	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	1E-06	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	f	Marsh	fW	1	1E-06	Palustrine	Sand	f*,ff	2	90	0.00	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.00006	Palustrine	Fibric	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	ls	Fen	lsF	5	1E-06	Palustrine	Fibric	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	ls	Fen	lsF	5	0.00003	Palustrine	Fibric	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	3E-06	Palustrine	Fibric	ne*,m,gc	3	50	0.00	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.00211	Palustrine	Sand	ne*,m,gc	3	50	0.00	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.0003	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	
1	ts	Swamp	tsS	6	0.00013	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	
1	ne	Fen	neF	5	0.0001	Palustrine	Fibric	ne*,m,ls	3	5	0.00		*ne-Carex spp, m- Sphagnum spp , ls-Vaccinium oxycoccus, Potentilla palustris*	see attached flora and fauna lists	

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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 larciana, 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 larcinia*	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-Alnus incana , gc-Nemophila maculata, h-Acer rubrum*	see attached flora and fauna lists	
1	ls	Bog	lsB	1	0.39523	Isolated	Sand	ls*	1	0	-		*ls-Chamaedaphne calyculata*	see attached flora and fauna lists	
1	ne	Fen	neF	1	18.986	Palustrine	Humic-Mesic	ne*,gc	2	5	0.95		*ne-Carex utriculata , gc-Sarracenia purpurea, Iris versicolor*	see attached flora and fauna lists	
1	gc	Swamp	gcS	2	0.57836	Palustrine	Sand	gc*,ts	2	0	-		*gc-Ilex verticilata,ts- Alnus incana*	see attached flora and fauna lists	
1	h	Swamp	hS	2	1.78723	Palustrine	Fibric	h*,c	2	0	-		*h-Fraxinus nigra, Acer rubrum , c-Picea mariana*	see attached flora and fauna lists	
1	c	Bog	cB	5	0.31522	Isolated	Fibric	c*,m,gc	3	0	-		*c-Larix larciana, m-Sphagnum spp, gs-Maimthimum trifolium*	see attached flora and fauna lists	
1	c	Swamp	cS	3	7.92719	Palustrine	Sand	c*,h	2	0	-		*c-Abies balsamea, Pinus strobus , h- Acer rubrum*	see attached flora and fauna lists	
1	h	Swamp	hS	5	0.56835	Palustrine	Sand	h*,gc,ls	3	0	-		*h-Acer rubrum, Betula papyrifera, Populous tremulodies, gc-Pterdium aquilinium, ls-Kalmia angustifolia*	see attached flora and fauna lists	
1	ts	Swamp	tsS	11	2.77718	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	
1	ts	Swamp	tsS	11	1.0372	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	
1	c	Swamp	cS	3	6.59569	Palustrine	Sand	c*,h	2	0	-		*c-Larix laricina, h- Acer rubrum ,Populus tremuloides*	see attached flora and fauna lists	
1	h	Swamp	hS	1	1.58467	Palustrine	Humic-Mesic	h*	1	0	-		*h-Acer rubrum,Betula papyrifera ,Populus tremuloides*	see attached flora and fauna lists	
1	gc	Swamp	gcS	1	3.68552	Palustrine	Sand	gc*	1	0	-		*gc-Trientalis borealis ,Dryopteris carthusiana, Onoclea sensibilis*	see attached flora and fauna lists	
1	ne	Marsh	neM	1	0.28685	Palustrine	Sand	ne*,gc	2	50	0.14	LM	*ne-Carex spp,Calla palustris , gc-Iris versicolor*	see attached flora and fauna lists	
1	h	Swamp	hS	1	2.3802	Palustrine	Humic-Mesic	h*	1	0	-		*h-Betula alleghaniensis, Fraxinus nigra, Acer rubrum, Acer saccharum*	see attached flora and fauna lists	
1	ne	Fen	neF	3	0.2505	Palustrine	Sand	ne*,m	2	5	0.01		*ne-Carex lasiocarpa, m- Sphagnum spp*	see attached flora and fauna lists	
1	ts	Swamp	tsS	4	0.46485	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	ts	Swamp	tsS	4	0.91504	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	ts	Swamp	tsS	9	0.57295	Palustrine	Sand	ts*,ls,ne	3	0	-		*ts-Alnus incana , ls- Rubus alleghensis, ne-Carex spp, Phalaris arundinacia*	see attached flora and fauna lists	
1	h	Swamp	hS	2	1.19657	Palustrine	Sand	h*,c	2	0	-		*h-Betula papyrifera,Populus tremuloides, Acer rubrum, c-Picea mariana*	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	*m-Sphagnum spp, ne- Carex lacustris ,Carex achinada*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	1.04899	Palustrine	Fibric	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	ls	Fen	lsF	5	1.83853	Palustrine	Fibric	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	ls	Swamp	lsS	4	0.33595	Palustrine	Silt	ls*,m,gc	3	0	-		*ls-Vaccinium angustifolium , m-Sphagnum spp, gc-Cornus canadensis ,Gaultheria procumbens, Rubus flagellaris*	see attached flora and fauna lists	
1	ne	Bog	neB	4	0.09671	Isolated	Sand	ne*	2	0	-		*ne-Carex oligosperma*	see attached flora and fauna lists	
1	ts	Swamp	tsS	6	0.51037	Palustrine	Fibric	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	m	Bog	mB	1	0.28471	Isolated	Sand	m*,ne	2	0	-		*m-Sphagnum spp, ne-Carex lacustris, Carex sp*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	0.40558	Palustrine	Sand	ls*,m,ne	3	0	-		*ls-Chamaedaphne calyculata, Kalmia angustifolia, m- Sphagnum spp, ne-Carex oligosperma*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	0.0017	Palustrine	Humic-Mesic	ne*,m,gc	3	50	0.00	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	m	Swamp	mS	1	0.06096	Palustrine	Silt	m*,ne	2	0	-		*m-Sphagnum moss, ne- Carex species*	see attached flora and fauna lists	
1	ne	Marsh	mM	7	0.37648	Palustrine	Silt	ne*ts,m,gc	4	50	0.19	LM	*ne-Carex spp ,ts- Myrica gale, m-Sphagnum spp, gc-Potentilla palustris*	see attached flora and fauna lists	
1	ne	Marsh	mM	7	1.21422	Palustrine	Sand	ne*ts,m,gc	4	50	0.61	LM	*ne-Carex spp ,ts- Myrica gale, m-Sphagnum spp, gc-potentilla palustris*	see attached flora and fauna lists	
1	m	Fen	mF	6	0.28267	Palustrine	Sand	m*	1	5	0.01		*m-Sphagnum spp*	see attached flora and fauna lists	
1	ne	Fen	neF	4	12.3906	Palustrine	Sand	ne*	1	5	0.62		*ne-Carex lasiocarpa ,Carex lacustris*	see attached flora and fauna lists	
1	ls	Fen	lsF	1	3.50664	Palustrine	Clay-Loam	ls*	1	0	-		*ls-Chamaedaphne calyculata, Kalmia, polifolia,Vaccinium angustifolium*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	31.0458	Palustrine	Clay-Loam	ne*,m,gc	3	50	15.52	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	15.079	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	ne	Marsh	neM	6	66.2713	Palustrine	Sand	ne*,m,gc	3	50	33.14	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	f	Marsh	fW	1	4.21353	Palustrine	Clay-Loam	f*,ff	2	90	3.79	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	f	Marsh	fW	1	2.77672	Palustrine	Fibric	f*,ff	2	90	2.50	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	f	Marsh	fW	1	1.95956	Palustrine	Clay-Loam	f*,ff	2	90	1.76	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	3.69807	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	f	Marsh	fW	1	3.26716	Palustrine	Fibric	f*,ff	2	90	2.94	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	18.969	Palustrine	Clay-Loam	ne*,m,gc	3	50	9.48	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ne	Marsh	neM	6	33.5839	Palustrine	Sand	ne*,m,gc	3	50	16.79	LM	*ne-Carex spp , m-Sphagnum , gc-Viola palustris*	see attached flora and fauna lists	
1	ls	Fen	lsF	5	2.58352	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	ls	Fen	lsF	5	3.24673	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	ls	Fen	lsF	5	0.83027	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	ls	Fen	lsF	5	1.25296	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	ls	Fen	lsF	5	5.80223	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	ls	Fen	lsF	5	1.88413	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	ls	Fen	lsF	5	0.99927	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	f	Marsh	fW	1	8.67384	Palustrine	Sand	f*,ff	2	90	7.81	HM	*f- Lemna minor, Polygonum amphibium,Nuphar variegatum*	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	ls	Fen	lsF	5	7.05165	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	

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.	1	942.70
Wetland Unit No.	2	8.17
Wetland Unit No.	3	6.11
Wetland Unit Totals:		956.98

(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.

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	Lime-stone	Sand	Humic-Mesic	Fibric	Granite
<2800	12	11	9	7	7	6	4
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 in soil type	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)	**16**

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)	10

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)	2

1.2 BIODIVERSITY

1.2.1 Number of Wetland Types

(Check only one)

	one	=	9	points
	two	=	13	
	three	=	20	
30	four	=	30	

Number of Wetland Types Score *(maximum 30 points)*	**30**

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	
=	**30.5**

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	
=	**6.5**

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	
=	**0.0**

SubTotal:	**37**

Vegetation Communities Score (maximum 45 points)	**37**

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)
	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

** "Mixed forest" is defined as either 25% coniferous trees distributed singly or in clumps in deciduous forest, or 25% deciduous treesdistributed 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.*

Score 1 point for each feature checked, up to a maximum of 7 points.

Diversity of Surrounding Habitat Score (maximum 7 points)	7

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 wetlaI1d 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
	Hydrologica11y 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)	8

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 l00	=	15
	101 to 125	=	18
	126 to 150	=	21
	151 to 175	=	24
	176 to 200	=	27
30	>200	=	30

Interspersion Score (maximum 30 points)	**30**

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
14	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)	**14**

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

Wetland size (ha)	<37	37-48	49-60	61-72	73-84	85-96	97- 108	109-120	121- 132	>132
<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 5O points)	**50**

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
x	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.

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.

12	Present	=	12 pts
	Absent	=	0
	Fishing not permitted	=	0

Source of information:

Field Observation; A. Ingriselli, 2015

Commercial Fish Score (maximum 12 points)	12

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	3	Beaver (*Castor canadensis*)	Field Observation: AECOM 215, Stantec, 2013
2	3	Long-tailed Weasel (*Mustela fenata*)	Field Observation: Stantec, 2013
3	3	Muskrat (*Ondatra zibethicus*)	Field Observation: Stantec, 2013
4	3	North American River Otter (L*ontra canadensis*)	Field Observation: AECOM 2015, Stantec, 2013
5	3	Northern Raccoon (*Procyon lotor*)	Field Observation: Stantec, 2013
6	3	Red fox (*Vulpes vulpes*)	Field Observation: AECOM 2015, Stantec, 2013
7	3	Red Squirrel (*Tamiasciurus hudsonicus*)	Field Observation: AECOM 215, Stantec, 2013
	21	Subtotal	

Furbearer Score *(maximum 12 points)*	12

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.

Intensity of Use	Type of Wetland-Associated Use					
	Hunting		Nature Enjoyment/ Ecosystem Study		Fishing	
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)	**28**

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

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:

Source of information:

Kristan Washburn, 2015

Absence of Human Disturbance Score (maximum 7 points)	7

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:

Source of information:

Educational Uses Score (maximum 20 points)	0

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:

Source of information:

Field Observation: Kristan Washburn, 2015

Facilities and Programs Score (maximum 8 points)	0

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	
5	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	
5	Subtotal:			

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

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

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

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 <2,500 or cottage community	
Within or adjoiningg settlement	40 points		26 points		16 points	16
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	
		0		0		16

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

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	0.92	x	10	=	9.20
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	0.08	x	8	=	0.64
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	10
(maximum 10 points)	

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	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)	18

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

30.0	Significant	=	30 pts
	Not Significant	=	0
	Unknown	=	0
30	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

2.8.2 Cultural Heritage

	Significant	=	30 pts
	Not Significant	=	0
0.0	Unknown	=	0
0	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

Aboriginal Values/Cultural Heritage Score	30.0
(maximum 30 points)	

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 lak area is less than 0.1,→ score 0 points for this section

[x]

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 weltand 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 From 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 l00 points)*	0

3.2 GROUNDWATER RECHARGE

3.2.1 Site Type

Wetland> 50% lacustrine (by area) or located on the St. Mary's River					=	0
Wetland not as above. Calculate final score as follows:						
FA of isolated or palustrine wetland	=	0.99	x	20	=	19.79
FA of riverine wetland	=	0.00	x	5	=	0.00
FA of lacustrine wetland (when wetland is <50% lacustrine)	=	0.01	x	0	=	0.00
	Sub Total:					19.79

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

3.2.2 Soil Recharge Potential

Select only one choice that ***best*** *describes the soils in 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	0
Isolated	10	5
Palustine	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	=	0.01	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

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, agriculature, or other activities which alter the natural vegetation cover in and extensive manner.

Choose one

	>50% if 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
	Scondary 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 loacl 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
x	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 **0**

3.3.3 Vegetation Form

Choose the category that best describes the vegetation of the wetland

		Score
x	Trees, shrubs or herbs (h,c, ts, ls, gc)	8.0
	Emergents, submergenets (ne, re, be, f, ff, su)	10
	Little or no vegetation (u)	0

Dominant Vegetation form Score (*maximum 10 points*) **8**

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
x	Marshes and swamps with more than 50% coverage by organic soil	=	9
	Wetland with less than 10% soils organic	=	0

Carbon Sink Score (maximum 9 points) **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)	15

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 the dominant type in the wetland.

Wetland Characteristics	Potential for Discharge						
	None to Little		Some		High		
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

Groundwater Discharge Score (maximum 30 points)	11

4.0 SPECIAL FEATURES

COMPONENT

4.1 RARITY

4.1.1 Wetland Types

Wetland type (*Check one or more)*

x	Bog
x	Fen
x	Swamp
x	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			
		#N/A			
250	Total				

For each species score 250 points. (Score is cumulative, no maximum score)

Additional Notes/Comments:
Field observation; AECOM, 2015

Reproductive Habitat for Endangered or Threatened Species (no maximum)	250

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	*Emydoidea blandingii*	Basking	Numerous 2011-2015	AECOM, 2015
75	Massasauga	*Sistrurus catenatus*	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:

Traditional Habitat for Endangered or Threatened Species (*no maximum)*	225

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	Multipe	AECOM, 2015
	#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	95
(no maximum)	

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	0
(no maximum)	

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			
	#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)	0

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			
	#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)*	0

4.1.2.7 Species of Special Status

Black Duck

Suitable breeding habitat present and withing assessment range (Figure 25)

Assessmnet Category	Check One	Points	
20-40 Indicated Paris/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)*	15

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
PTERIDOPHYTES	**FERNS & ALLIES**							
Woodwardia virginica	Virginia Chain Fern	10	-5	0	S4	G5	-	-
Pteridium aquilinum var. latiusculum	Eastern Bracken-fern	2	3	0	S5	G5T	-	-
Dryopteris marginalis	Marginal Wood Fern	5	3	0	S5	G5	-	-
Dryopteris cristata	Crested Wood Fern	7	-5	0	S5	G5	-	-
Onoclea sensibilis	Sensitive Fern	4	-3	0	S5	G5	-	-
Athyrium filix-femina	Lady Fern						-	-
Gymnocarpium dryopteris	Oak Fern	7	0	0	S5	G5	-	-
Dryopteris carthusiana	Spinulose Wood Fern	5	-2	0	S5	G5	-	-
Matteuccia struthiopteris	Ostrich Fern	5	-3	0	S5	G5	-	-
Dryopteris sp.	Wood Fern						-	-
Equisetum sylvaticum	Wood Horsetail	7	-3	0	S5	G5	-	-
Equisetum arvense	Field Horsetail	0	0	0	S5	G5	-	-
Equisetum fluviatile	Water Horsetail	7	-5	0	S5	G5	-	-
Equisetum hyemale var. affine	Scouring-rush	2	-2	0	S5	G5T5	-	-
Lycopodium dendroideum	Prickly Tree Club-moss	7	0	0	S5	G5	-	-
Lycopodiella inundata	Nothern Bog Club-moss	9	-5	0	S5	G5	-	-
Huperzia lucidula	Shining Fir-moss	7	-1	0	S5	G5	-	-
Osmunda regalis var. spectabilis	Royal Fern	7	-5	0	S5	G5T	-	-
Osmunda cinnamomea	Cinnamon Fern	7	-3	0	S5	G5	-	-
Osmunda claytoniana	Interrupted Fern	7	-1	0	S5	G5	-	-
Polypodium virginianum	Rock Polypody Fern	6	5	0	S5	G5	-	-
Thelypteris palustris var. pubescens	Marsh Fern	5	-4	0	S5	G5T?	-	-
Phegopteris connectilis	Northern Beech Fern	8	5	0	S5	G5	-	-
GYMNOSPERMS	**CONIFERS**							
Juniperus communis	Common Juniper	4	3	0	S5	G5	-	-
Thuja occidentalis	Eastern White Cedar	4	-3	0	S5	G5	-	-
Larix laricina	Tamarack	7	-3	0	S5	G5	-	-
Picea mariana	Black Spruce	8	-3	0	S5	G5	-	-
Pinus banksiana	Jack Pine	9	3	0	S5	G5	-	-
Pinus strobus	Eastern White Pine	4	3	0	S5	G5	-	-
Picea glauca	White Spruce	6	3	0	S5	G5	-	-
Abies balsamea	Balsam Fir	5	-3	0	S5	G5	-	-
DICOTYLEDONS	**DICOTS**							
Acer rubrum	Red Maple	4	0	0	S5	G5	-	-
Acer spicatum	Mountain Maple	6	3	0	S5	G5	-	-
Rhus typhina	Staghorn Sumac				S5	G5	-	-
Toxicodendron radicans ssp. negundo	Poison-ivy	5	-1	0	S5	G5T	-	-
Sium suave	Hemlock Water-parsnip	4	-5	0	S5	G5	-	-
Apocynum androsaemifolium ssp. androsaemifolium	Spreading Dogbane	3	5	0	S5	G5T?	-	-
Nemopanthus mucronatus	Mountain-holly	8	-5	0	S5	G5	-	-
Ilex verticillata	Winterberry	5	-4	0	S5	G5	-	-
Ilex mucronata	Catberry				S5	G5	-	-
Ilex sp.							-	-
Aralia nudicaulis	Wild Sarsaparilla	4	3	0	S5	G5	-	-
Eurybia macrophylla	Large-leaved Aster	5	5	0	S5	G5	-	-
Lactuca biennis	Biennial Lettuce	6	0	0	S5	G5	-	-
Solidago rugosa ssp. rugosa	Rough Goldenrod	4	-1	0	S5	G5T?	-	-
Symphyotrichum umbellatus var. umbellatus	Flat-top White Aster	6	-3	0	S5	G5T?	-	-
Eupatorium maculatum	Spotted Joe-pye-weed	3	-5	0	S5	G5T5	-	-
Euthamia graminifolia	Flat-topped Bushy Goldenrod	2	-2	0	S5	G5	-	-
Solidago canadensis	Canada Goldenrod	1	3	0	S5	G5	-	-
Symphyotrichum puniceum var. puniceum	Purple-stemmed Aster	0	0	0	S5	G5T?	-	-
Hieracium aurantiacum	Devil's Paintbrush	0	5	-2	SE5	G?	-	-
Arctium minus	Common Burdock						-	-
Solidago sp.	Goldenrod						-	-
Aster sp.	Aster						-	-
Eupatorium perfoliatum	Perfoliate Thoroughwort/Boneset	2	-4	0	S5	G5	-	-
Leucanthemum vulgare	Ox-eye Daisy	0	5	-1	SE5	G?	-	-
Symphyotrichum sp.							-	-
Eutrochium maculatum	Spotted Joe Pye Weed						-	-
Symphyotrichum borealis	Rush Aster	10	-5	0	S5	G5	-	-
Bidens cernua	Stick-tight	2	-5	0	S5	G5	-	-

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
Anaphalis margaritacea	Pearly Everlasting	3	5	0	S5	G5	-	-
Impatiens capensis	Spotted Touch-me-not	4	-3	0	S5	G5	-	-
Alnus incana spp. rugosa	Speckled Alder	6	-5	0	S5	G5T5	-	-
Betula papyrifera	White Birch	0	2	0	S5	G5	-	-
Corylus cornuta	Beaked Hazel	5	5	0	S5	G5T	-	-
Cardamine diphylla	Two-leaved Toothwort	7	5	0	S5	G5	-	-
Armoracia lacustris	Lake-cress						-	-
Brasenia schreberi	Water-shield	7	-5	0	S5	G5	-	-
Diervilla lonicera	Bush Honeysuckle	5	5	0	S5	G5	-	-
Viburnum nudum var. cassinoides	Northern Wild Raisin						-	-
Sambucus nigra ssp. canadensis	Common Elderberry						-	-
Sambucus canadensis	American Elderberry						-	-
Symphoricarpos albus	Snowberry	7	4	0	S5	G5	-	-
Viburnum lentago	Nannyberry	4	-1	0	S5	G5	-	-
Sambucus sp.	Elderberry						-	-
Cornus canadensis	Bunchberry	7	0	0	S5	G5	-	-
Cornus stolonifera	Red-osier Dogwood				S5	G5	-	-
Cornus racemosa	Red Panicled Dogwood/Gray dogwood	2	-2	0	S5	G5?	-	-
Cornus sericea	Red-osier Dogwood	2	-3	0	S5	G5	-	-
Drosera rotundifolia	Round-leaved Sundew	7	-5	0	S5	G5	-	-
Arctostaphylos uva-ursi	Common Bearberry	8	5	0	S5	G5	-	-
Chamaedaphne calyculata	Leatherleaf	9	-5	0	S5	G5	-	-
Gaultheria procumbens	Wintergreen	6	3	0	S5	G5	-	-
Kalmia angustifolia	Sheep Laurel	9	0	0	S5	G5	-	-
Kalmia polifolia	Bog Laurel	10	-5	0	S5	G5	-	-
Ledum groenlandicum	Labrador-tea	9	-5	0	S5	G5	-	-
Vaccinium angustifolium	Low Sweet Blueberry	6	3	0	S5	G5	-	-
Vaccinium oxycoccos	Small Cranberry	10	-5	0	S5	G5	-	-
Vaccinium myrtilloides	Velvet-leaf Blueberry	7	-2	0	S5	G5	-	-
Andromeda polifolia ssp. glaucophylla	Bog Rosemary	10	-5	0	S5	G5T5	-	-
Gaylussacia baccata	Black Huckleberry	8	3	0	S4	G5	-	-
Andromeda polifolia ssp. polifolia	Wild Rosemary	0	0	0	S4	G5T5	-	-
Vaccinium macrocarpon	Large Cranberry	10	-5	0	S4S5	G4	-	-
Quercus rubra	Red Oak	6	3	0	S5	G5	-	-
Corydalis sp.	Corydalis						-	-
Geranium bicknellii	Bicknell's Crane's-bill	5	5	0	S4	G5	-	-
Ribes glandulosum	Skunk Currant	6	-3	0	S5	G5	-	-
Ribes triste	Wild Red Currant	6	-5	0	S5	G5	-	-
Ribes americanum	Wild Black Currant	4	-3	0	S5	G5	-	-
Ribes lacustre	Swamp Black Currant	7	-3	0	S5	G5	-	-
Ribes sp.							-	-
Ribes cynosbati	Prickly Gooseberry	4	5	0	S5	G5	-	-
Ribes hirtellum	Smooth Gooseberry	6	-3	0	S5	G5	-	-
Triadenum fraseri	Fraser's St. John's-wort	7	-5	0	S5	G4G5	-	-
Hypericum perforatum	Common St. John's-wort	0	5	-3	SE5	G?	-	-
Myriophyllum sibiricum	Pale Water-milfoil	0	-5	0	S5	G5	-	-
Myriophyllum sp.							-	-
Proserpinaca palustris	Field Mermaid-weed	7	-5	0	S4	G5	-	-
Myriophyllum verticillatum	Whorled Water-milfoil	7	-5	0	S5	G5	-	-
Mentha arvensis	American Wild Mint	3	-3	0	S5		-	-
Lycopus uniflorus	Northern Water-horehound	5	-5	0	S5	G5	-	-
Utricularia intermedia	Flat-leaved Bladderwort	8	-5	0	S5	G5	-	-
Utricularia vulgaris	Greater Bladderwort	4	-5	0	S5	G5	-	-
Menyanthes trifoliata	Three-leaved Buckbean	9	-5	0	S5	G5	-	-
Myrica gale	Sweet Gale	6	-5	0	S5	G5	-	-
Comptonia peregrina	Sweetfern	7	5	0	S5	G5	-	-
Nymphaea odorata	Fragrant Water-lily	0	0	0	S5	G5	-	-
Nuphar variegata	Bulhead Pond-lily	4	-5	0	S5	G5	-	-
Nymphaea sp.	Water-lily						-	-
Nuphar sp.	Pond-lily						-	-
Nuphar lutea ssp. pumila	Yellow Pond-lily						-	-
Fraxinus nigra	Black Ash	7	-4	0	S5	G5	-	-
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade	3	3	0	S5	G5T5	-	-

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Epilobium ciliatum	Hairy Willow-herb				S5	G5	-	-
Epilobium angustifolium	Fireweed						-	-
Polygonum cilinode	Fringed Black Bindweed	2	5	0	S5	G5	-	-
Polygonum sp.							-	-
Polygonum amphibium	Water Smartweed	5	-5	0	S5	G5	-	-
Trientalis borealis ssp. borealis	Star-flower	6	-1	0	S5	G5T?	-	-
Lysimachia thyrsiflora	Tufted Loosestrife	7	-5	0	S5	G5	-	-
Lysimachia terrestris	Swamp Loosestrife	6	-5	0	S5	G5	-	-
Lysimachia ciliata	Fringed Loosestrife	4	-3	0	S5	G5	-	-
Lysimachia sp.	Loosestrife						-	-
Pyrola asarifolia	Pink Pyrola	7	-3	0	S5	G5	-	-
Chimaphila umbellata	Common Pipsissewa				S5	G5	-	-
Aquilegia canadensis	Wild Columbine	5	1	0	S5	G5	-	-
Coptis trifolia		7	-3	0	S5	G5T5	-	-
Caltha palustris	Marsh-marigold	5	-5	0	S5	G5	-	-
Actaea rubra	Red Baneberry	5	5	0	S5	G5	-	-
Clematis virginiana	Virgin's-bower	3	0	0	S5	G5	-	-
Ranunculus abortivus	Kidney-leaf Buttercup	2	-2	0	S5	G5	-	-
Ranunculus recurvatus var. recurvatus	Hooked Buttercup	4	-3	0	S5	G5	-	-
Thalictrum pubescens	Tall Meadow-rue	5	-2	0	S5	G5	-	-
Ranunculus pensylvanicus	Bristly Buttercup	3	-5	0	S5	G5	-	-
Anemone canadensis	Canada Anemone	3	-3	0	S5	G5	-	-
Ranunculus acris	Tall Buttercup	0	0	-2	SE5	G5	-	-
Thalictrum dasycarpum	Purple Meadow-rue	8	-2	0	S4?	G5	-	-
Amelanchier arborea	Downy Juneberry	0	3	0	S5	G5	-	-
Aronia melanocarpa	Black chokeberry	7	-3	0	S5	G5	-	-
Fragaria vesca ssp. americana	Woodland Strawberry	4	4	0	S5	G5T?	-	-
Prunus pumila	Sand Cherry						-	-
Rubus idaeus	Red Raspberry	0	0	0	SE1	G5T5	-	-
Rubus pubescens	Dwarf Raspberry	4	-4	0	S5	G5	-	-
Prunus virginiana	Choke Cherry						-	-
Rubus flagellaris	Prickly Raspberry	4	4	0	S4	G5	-	-
Spiraea latifolia	Broad-leaved Meadow-sweet				S5	G5	-	-
Amelanchier laevis	Smooth Juneberry	5	5	0	S5	G4G5Q	-	-
Spiraea alba	Narrow-leaved Meadow-sweet	3	-4	0	S5	G5	-	-
Geum aleppicum	Yellow Avens	2	-1	0	S5	G5	-	-
Rubus allegheniensis	Alleghany Blackberry	2	2	0	S5	G5	-	-
Rubus hispidus	Trailing Blackberry	6	-3	0	S4S5	G5	-	-
Spiraea tomentosa	Tomentose Meadow-sweet	5	-3	0	S4S5	G5	-	-
Comarum palustre	Marsh Cinquefoil						-	-
Spiraea sp.	Meadow-sweet						-	-
Fragaria virginiana	Virginia Strawberry						-	-
Prunus serotina	Black Cherry	3	3	0	S5	G5	-	-
Rosa palustris	Marsh Rose	7	-5	0	S5	G5	-	-
Sorbus americana	American Mountain-ash	8	-1	0	S5	G5	-	-
Potentilla norvegica	Norwegian cinquefoil				S5	G5	-	-
Potentilla arguta	Tall Cinquefoil	7	5	0	S4	G5	-	-
Galium aparine	Cleavers	4	3	0	S5	G5	-	-
Galium triflorum	Sweet-scented Bedstraw	4	2	0	S5	G5	-	-
Galium palustre	Marsh Bedstraw	5	-5	0	S5	G5	-	-
Populus tremuloides	Trembling Aspen	2	0	0	S5	G5	-	-
Salix sp.	Willow						-	-
Salix petiolaris	Slender Willow	3	-4	0	S5	G4	-	-
Populus grandidentata	Large-tooth Aspen	5	3	0	S5	G5	-	-
Salix bebbiana	Long-beaked Willow	4	-4	0	S5	G5	-	-
Salix discolor	Pussy Willow	3	-3	0	S5	G5	-	-
Salix pyrifolia	Balsam Willow	10	-4	0	S5	G5	-	-
Comandra umbellata	Bastard Toad-flax	6	3	0	S5	G5	-	-
Sarracenia purpurea	Pitcher-plant	10	-5	0	S5	G5	-	-
Ulmus americana	White Elm	3	-2	0	S5	G5?	-	-
Urtica dioica ssp. dioica	European Stinging Nettle	0	-1	-1	SE2	G5T?	-	-
Laportea canadensis	Wood Nettle	6	-3	0	S5	G5	-	-
Viola macloskeyi	Smooth White Violet				S5	G5	-	-

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Viola cucullata	Marsh Blue Violet	5	-5	0	S5	G4G5	-	-
Viola canadensis	Canada Violet	6	5	0	S5	G5	-	-
Viola palustris	Marsh Violet	0	0	0	SU	G5	-	-
MONOCOTYLEDONS	**MONOCOTS**							
Arisaema triphyllum	Small Jack-in-the-pulpit	5	-2	0	S5	G5T5	-	-
Calla palustris	Wild Calla	8	-5	0	S5	G5	-	-
Eriophorum sp.	Cotton-grass						-	-
Scirpus cyperinus	Wool-grass	4	-5	0	S5	G5	-	-
Carex sp.							-	-
Carex aquatilis	Aquatic Sedge	7	-5	0	S5	G5	-	-
Carex deweyana	Dewey's Sedge	6	4	0	S5	G5	-	-
Carex stricta	Tussock Sedge	4	-5	0	S5	G5	-	-
Carex blanda	Woodland Sedge	3	0	0	S5	G5?	-	-
Carex crinita	Fringed Sedge	6	-4	0	S5	G5	-	-
Carex gracillima	Graceful Sedge	4	3	0	S5	G5	-	-
Carex intumescens	Bladder Sedge	6	-4	0	S5	G5	-	-
Carex lacustris	Lake-bank Sedge	5	-5	0	S5	G5	-	-
Carex arctata	Drooping Wood Sedge	5	5	0	S5	G5?	-	-
Eriophorum virginicum	Virginia Cotton-grass	10	-5	0	S5	G5	-	-
Scirpus sp.	Bulrush						-	-
Carex utriculata	Beaked Sedge	7	-5	0	S5	G5	-	-
Eriophorum vaginatum ssp. spissum	Sheathed Cotton-grass	10	-5	0	S5	G5T5	-	-
Dulichium arundinaceum	Reed-like Three-way Sedge	7	-5	0	S5	G5	-	-
Scirpus atrovirens	Dark-green Bulrush	3	-5	0	S5	G5?	-	-
Eriophorum viridi-carinatum	Thin-leaved Cotton-grass	9	-5	0	S5	G4	-	-
Carex magellanica ssp. irrigua	Stunted Sedge	10	-5	0	S5	G5T?	-	-
Carex oligosperma	Few-seeded Sedge	10	-5	0	S4	G4	-	-
Carex tenuiflora	Sparse-flowered Sedge	10	-5	0	S5	G5	-	-
Carex canescens ssp. canescens	Silvery Sedge	7	-5	0	S5	G5T?	-	-
Carex disperma	Soft-leaved Sedge	8	-5	0	S5	G5	-	-
Scirpus microcarpus	Small-fruited Bulrush	4	-5	0	S5	G5	-	-
Carex interior	Inland Sedge	6	-5	0	S5	G5	-	-
Carex lasiocarpa	Slender Sedge	8	-5	0	S5	G5	-	-
Carex brunnescens ssp. brunnescens	Brownish Sedge	7	-3	0	S5	G5T?	-	-
Carex echinata ssp. echinata	Prickly Sedge	7	-5	0	S5	G5T5	-	-
Carex scoparia	Pointed Broom Sedge	5	-3	0	S5	G5	-	-
Carex pellita	Woolly Sedge	4	-5	0	S5	G5	-	-
Carex stipata	Awl-fruited Sedge	3	-5	0	S5	G5	-	-
Carex lupulina	Hop Sedge	6	-5	0	S5	G5	-	-
Carex siccata	Silvery-flowered Hay Sedge	0	0	0	S5	G5	-	-
Iris versicolor	Multi-coloured Blue-flag	5	-5	0	S5	G5	-	-
Iris sp.	Iris						-	-
Sisyrinchium montanum	Montane Blue-eyed-grass	0	-1	0	S5	G5	-	-
Juncus effusus	Common rush	0	0	0			-	-
Juncus bufonius	Toad Rush	1	-4	0	S5	G5	-	-
Juncus validus	Roundhead Rush						-	-
Juncus sp.	Rush						-	-
Lemna minor	Lesser Duckweed	2	-5	0	S5	G5	-	-
Maianthemum canadense	Wild Lily-of-the-valley	5	0	0	S5	G5	-	-
Maianthemum trifolium	Three-leaved Solomon's Seal	10	-5	0	S5	G5	-	-
Polygonatum pubescens	Hairy Solomon's Seal	5	5	0	S5	G5	-	-
Clintonia borealis	Bluebead-lily	7	-1	0	S5	G5	-	-
Trillium erectum	Purple Trillium	6	1	0	S5	G5	-	-
Trillium grandiflorum	White Trillium	5	5	0	S5	G5	-	-
Cypripedium acaule	Moccasin Flower	7	-3	0	S5	G5	-	-
Poa sp.							-	-
Calamagrostis canadensis	Blue-joint Grass	4	-5	0	S5	G5	-	-
Deschampsia flexuosa	Common Hairgrass	8	5	0	S5	G5	-	-
Brachyelytrum erectum	Bearded Short-husk	7	5	0	S4S5	G5	-	-
Glyceria striata	Fowl Meadow Grass	3	-5	0	S5	G5	-	-
Cinna latifolia	Broad-leaved Reed Grass	7	-4	0	S5	G5	-	-
Phragmites australis	Common Reed	0	-4	0	S5	G5	-	-
Poa palustris	Fowl Meadow Grass	5	-4	0	S5	G5	-	-

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Phalaris arundinacea	Reed Canary Grass	0	-4	0	S5	G5	-	-
Poa annua	Annual Blue Grass	0	1	-2	SE5	G?	-	-
Bromus inermis	Awnless Brome				SNA	G5TNR	-	-
Agrostis stolonifera	Redtop	0	-3	0	S5	G5	-	-
Pontederia cordata	Heart-leaved Pickerel-weed	7	-5	0	S5	G5	-	-
Sparganium emersum ssp. acaule	Stemless Bur-reed	0	0	0	SU		-	-
Sparganium angustifolium	Narrow-leaved Bur-reed	9	-5	0	S4?	G5	-	-
Sparganium fluctuans	Floating Bur-reed	9	-5	0	S4?	G5	-	-
Sparganium eurycarpum	Broad-fruited Bur-reed	3	-5	0	S5	G5	-	-
Typha latifolia	Broad-leaved Cattail	3	-5	0	S5	G5	-	-
Typha angustifolia	Narrow-leaved Cattail	3	-5	0	S5	G5	-	-
Typha sp.	Cattail						-	-
ASCOMYCETES	**LICHENS**							
Cladonia rangiferina	Grey Reindeer Lichen				S5	G5	-	-
BRYOPSIDA	**MOSSES**							
Aulacomnium palustre	Glow Moss				S5	G5	-	-
Dicranum polysetum	Wavy Moss				S5	G5	-	-
Dicranum montanum	Montane Dicranum Moss				S5	G5	-	-
Dicranum ontariense	Ontario Dicranum Moss				S5	G4G5	-	-
Polytrichum sp.	Haircap Moss						-	-
Polytrichum commune	Common Haircap Moss				S5	G5	-	-
Polytrichum strictum	Bog Haircap Moss				S5	G4	-	-
SPHAGNOPSIDA	**MOSSES**							
Sphagnum sp.	Peat Moss						-	-
Sphagnum girgensohnii	Common Green Peat Moss				S5	G5	-	-
Sphagnum capillifolium	Northern Peat Moss				S5	G5	-	-
Sphagnum angustifolium	Cuspidate Peat Moss				S5	G5	-	-
Sphagnum squarrosum	Squarrose Peat Moss				S5	G5	-	-
Sphagnum fuscum	Common Brown Sphagnum				S5	G5	-	-
AVIFAUNA								
Corvus brachyrhynchos	American Crow				S5B	G5	-	-
Picoides dorsalis	American Three-toed Woodpecker				S4	G5	-	-
Scolopax minor	American Woodcock				S4B	G5	-	-
Haliaeetus leucocephalus	Bald Eagle				S2N, S4B	G5	SC	-
Strix varia	Barred Owl				S5	G5	-	-
Setophaga castanea	Bay-breasted Warbler				S5B	G5	-	-
Mniotilta varia	Black-and-white Warbler				S5B	G5	-	-
Picoides arcticus	Black-backed Woodpecker				S4	G5	-	-
Poecile atricapillus	Black-capped Chickadee				S5	G5	-	-
Setophaga virens	Black-throated Green Warbler				S5B	G5	-	-
Cyanocitta cristata	Blue Jay				S5	G5	-	-
Buteo platypterus	Broad-winged Hawk				S5B	G5	-	-
Bucephala albeola	Bufflehead				S4	G5	-	-
Branta canadensis	Canada Goose				S5	G5	-	-
Cardellina pusilla	Canada Warbler				S4B	G5	THR	THR
Setophaga pensylvanica	Chestnut-sided Warbler				S5B	G5	-	-
Gavia immer	Common Loon				S5B,S5N	G5	-	-
Chordeiles minor	Common Nighthawk				S4B	G4	SC	THR
Geothlypis trichas	Common Yellowthroat				S5B	G5	-	-
Junco hyemalis	Dark-eyed Junco				S5	G5	-	-
Picoidese pubescens	Downy Woodpecker				S5	G5	-	-
Sayornis phoebe	Eastern Pheobe				S5B	G5	-	-
Caprimulgus vociferus	Eastern Whip-poor-will				S4B	G5	THR	THR
Contopus virens	Eastern Wood-Pewee				S4B	G5	-	-
Regulus satrapa	Golden-crowned Kinglet				S5B	G5	-	-
Perisoreus canadensis	Gray Jay				S5	G5	-	-
Ardea herodias	Great blue Heron				S4	G5	-	-
Tringa melanoleuca	Greater Yellowlegs				S4B, S4N	G5	-	-
Picoides villosus	Hairy Woodpecker				S5	G5	-	-
unknown	Hawk Sp.				-	-	-	-
Catharus guttatus	Hermit Thrush				S5B	G5	-	-
Charadrius vociferus	Killdeer				S5B, S5N	G5	-	-
Setophaga kirtlandii	Kirtland's Warbler				S1B	G1	END	END

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Anas platyrhynchos	Mallard				S5	G5	-	-
Oreothlypis ruficapilla	Nashville Warbler				S5B	G5	-	-
Colaptes auratus	Northern Flicker				S4B	G5	-	-
Accipiter gentilis	Northern Goshawk				S4	G5	-	-
Parkesia noveboracensis	Northern Waterthrush				S5B	G5	-	-
Contopus cooperi	Olive-sided Flycatcher				S4B	G4	SC	THR
Pandion haliaetus	Osprey				S5B	G5	-	-
Seiurus aurocapilla	Ovenbird				S4B	G5	-	-
Hylatomus pileatus	Pileated Woodpecker				S5	G5	-	-
Pinicola enucleator	Pine Grosbeak				S4B	G5	-	-
Corvus corax	Common Raven				S5	G5	-	-
Sitta canadensis	Red-breasted Nuthatch				S5	G5	-	-
Vireo olivaceus	Red-eyed Vireo				S5B	G5	-	-
Buteo jamaicensis	Red-tailed Hawk				S5	G5	-	-
Aythya collaris	Ring-neck Duck				S5	G5	-	-
Bonasa umbellus	Ruffed Grouse				S4	G5	-	-
Euphagus carolinus	Rusty Blackbird				S4B	G4	-	SC
Grus canadensis	Sandhill Crane				S5B	G5	-	-
Falcipennis canadensis	Spruce Grouse				S5	G5	-	-
Picoides dorsalis	Three-toded Woodpecker				S4	G5	-	-
Cathartes aura	Turkey Vulture				S5B	G5	-	-
Zonotrichia albicollis	White-throated Sparrow				S5B	G5	-	-
Troglodytes troglodytes	Winter Wren				S5B	G5	-	-
Aix sponsa	Wood Duck				S5	G5	-	-
Hylocichla mustelina	Wood Thrush				S4B	G5	-	THR
Setophaga petechia	Yellow Warbler				S5B	G5	-	-
Sphyrapicus varius	Yellow-bellied Sapsucker				S5B	G5	-	-
Setophaga coronata	Yellow-rumped Warbler				S5B	G5	-	-
HERPETOFAUNA								
Lithobates catesbeianus	American Bullfrog				S4	G5	-	-
Anaxyrus americanus	American Toad				S5	G5	-	-
Emydoidea blandingii	Blanding's Turtle				S3	G4	THR	THR
Plestiodon fasciatus pop. 2	Common Five-lined Skink (Southern Shield population)				S3	G5T3	SC	SC
Thamnophis sirtalis sirtalis	Eastern Gartersnake				S5	G5T5	-	-
Hemidactylium scutatum	Four-toed Salamander				S4	G5	-	-
Lithobates clamitans	Green Frog				S5	G5	-	-
Hyla versicolor	Gray Treefrog				S5	G5	-	-
Sistrurus catenatus 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	-	-
MAMMALS								
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 Scehdule 1
Lynx (sighting unconfirmed)	Lynx (sighting unconfirmed)				S5	G5	-	-
Fox	Fox				S5	G5	-	-
Wolf Sp.	Wolf Sp.				-	-	-	-
INSECT								
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	25
Active feeding area (great blue heron excluded)			=	15	
None known			=	0	
Total:					25

Additional Notes/Comments:
Field Observation: J. Kamstra, 2015

Colonial Waterbird Nesting Score *(maximum 50 points)*	25

4.2.2 Winter Cover for Wildlife

Score highest appropriate category. Include rationale/sources of information.

	Provincially significant	=	l00 pts
	Significant in Ecoregion	=	50
	Significant in Ecodistrict	=	25
	Locally significant	=	10
0	Little or poor winter cover	=	0
0			

Species/habitat/vegetation community scored (e.g., winter deer cover in hemlock swamp, S3 and S4b):
Field observation; Kristan Washburn, 2015

Source of information:
Discussions with Aylmer District Office

Winter Cover for Wildlife Score *(maximum 100 points)*	0

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			= l00		
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)	20

4.2.4 Waterfowl Breeding

Check highest level of significance.

	Nationally/internationally significant	=	150 pts
	Provincially significant	=	l00
	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)	10

4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area

Check highest level of significance.

	Nationally / internationally significant	=	150 pts
	Provincially significant	=	l00
	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)	10

4.2.6 Ungulate Habitat

EVALUATION:

Score (1) + (2) + one of (3) to (6)

15	1. Ungulate summer cover	=	15	*(Score is cumulative for a maximum possible score of 100)*
	2. Mineral licks	=	50	
	3. Moose aquatic feeding area Class 1	=	0	
	4. Moose aquatic feeding area Class 2	=	10	Ungulat Habitat Score (*maximum 100 points)* 15
	5. Moose aquatic feeding area Class 3	=	20	
	6. Moose aquatic feeding area Class 4	=	35	

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
x	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
x	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,	l00 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
x	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*
x	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 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	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 *(maximum 25 points)*		**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	**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)	=	**14.6**
D. Score from Step 5 (High Marsh)	=	**11.0**
E. Score from Step 6 (Swamp)	=	**2.0**
Subtotal:		**27.6**

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)	**28**

4.2.7.2 Migration and Staging Habitat

Step 1:

[ ]	Staging or Migration Habitat is not present in the wetland	Go to Step 4, Score 0 points
[ ]	Staging or Migration Habitat is present in the wetland significance of the habitat is known	Go to Step 2
[x]	Staging or Migration Habitat is present in the wetland 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.

[ ]	Significant in Ecoregion	Score 25 points in Step 4
[ ]	Significant in Ecodistrict	Score 15 points in Step 4
[ ]	Locally Significant	Score 10 points in Step 4
[ ]	Fish staging and/or migration habitat present, but not as above	Score 5 points in Step 4

Source of information:

Field observation; AECOM, 2015

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to bethe dominant site type). Refer to Site Types recorded earlier (section 1.1.3). Attach documentation.

[ ]	Wetland is riverine at rivermouth or lacustrine at rivermouth	Score 25 points in Step 4
[ ]	Wetland is riverine,within 0.75 km of rivermouth	Score 15 points in Step 4
[ ]	Wetland is lacustrine,within 0.75 km of rivermouth	Score 10 points in Step 4
[5]	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)*	5

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)*	6

4.4 Great Lakes Coastal Wetlands

Choose one only. Only coastal wetland units may be scored.

	wetland < 10 ha	=	0 pts
	wetland 10- 50 ha	=	25
	wetland 51 -l00 ha	=	50
x	wetland > 100 ha	=	75

Great Lakes Coastal Wetland Score *(maximum 75 points)*	75

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]):

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 doumneted.

Field observation: AECOM, 2015

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
x	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
x	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:

Additional Comments:

No additional comments.

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.

Additional Notes/Comments (e.g., adjacent lands, etc)

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

16.5	1.1.1	Growing Degree-Days/Soils
10.0	1.1.2	Wetland Type
2.0	1.1.3	Site Type

1.2 BIODIVERSITY

30.0	1.2.1	Number of Wetland Types
37.0	1.2.2	Vegetation Communities
7.0	1.2.3	Diversity of Surrounding Habitat
8.0	1.2.4	Proximinty to Other Wetlands
30.0	1.2.5	Interspersion
14.0	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

12	2.1.1 Wood Products
2	2.1.2 Low Bush Cranberry
0	2.1.3 Wild Rice
12	2.1.4 Commerical Fish (Bait Fish and/or Coarse Fish)
12	2.1.5 Furbearers

28 2.2 RECREATIONAL ACTIVITIES

2.3 LANDSCAPE AESTHETICS

3	2.3.1 Distinctness
7	2.3.2 Absence of Human Disturbance

2.4 EDUCATION AND PUBLIC AWARENESS

0	2.4.1 Educational Uses
0	2.4.2 Facilities and Programs
5	2.4.3 Research and Studies

16 2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT

10 2.6 OWNERSH1P

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

0	3.1 FLOOD ATTENUATION
	3.2 WATER QUALITY IMPROVEMENT
19.8	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
8.0	3.3.3. Vegetation Form
9	3.4 CARBON SINK
15	3.5 SHORELINE EROSION CONTROL
11	3.6 GROUNDWATER DISCHARGE
93	Subtotal
93	TOTAL (Hydrological Component)

4.0 SPECIAL FEATURES COMPONENT

4.1 RARITY

70	4.1.1 Wetlands	
	4.1.2 Species	
250	4.1.2.1	Reproductive Habitat for an Endangered or Threatened Species
225	4.1.2.2	Traditional Migration or Feeding Habitat for an Endangered or Threatened Species
95	4.1.2.3	Provincially Significant Animal Species
0	4.1.2.4	Provincially Significant Plant Species
0	4.1.2.5	Regionally Significant Species
0	4.1.2.6	Locally Significant Species
15	4.1.2.7	Species of Special Status

4.2 SIGNIFICANT FEATURES OR HABITATS

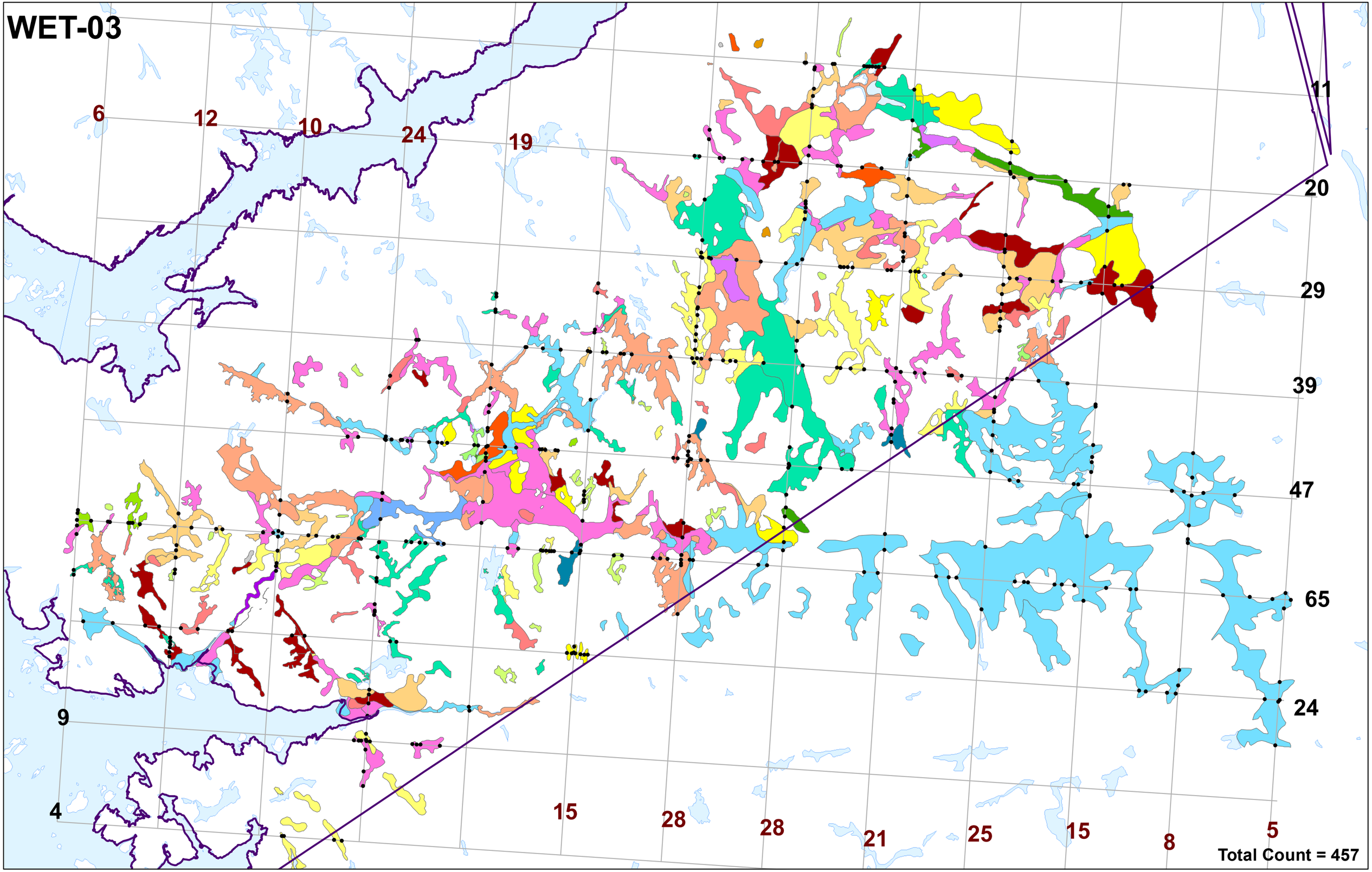
25	4.2.1 Colonial Waterbirds
0	4.2.2 Winter Cover for Wildlife
20	4.2.3 Waterfowl Staging and/or Moulting Areas
10	4.2.4 Waterfowl Breeding
10	4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area
15	4.2.6 Ungulate Habitat
28	4.2.7 Fish Habitat

6	4.3 ECOSYSTEM AGE
75	4.4 GREAT LAKES COASTAL WETLANDS
774	Subtotal
250	TOTAL (Special Features Component)

SUMMARY OF EVALUATION RESULT

204	1.0	TOTAL FOR BIOLOGICAL COMPONENT
155	2.0	TOTAL FOR SOCIAL COMPONENT
93	3.0	TOTAL FOR HYDROLOGICAL COMPONENT
250	4.0	TOTAL FOR SPECIAL FEATURES COMPONENT
703		TOTAL WETLAND SCORE

FOR MNR USE ONLY	
MNR Reviewer (Name & Position)	
Reviewer Comments	
MNR Approver (Name & Position)	
Approval Date	


WET-03
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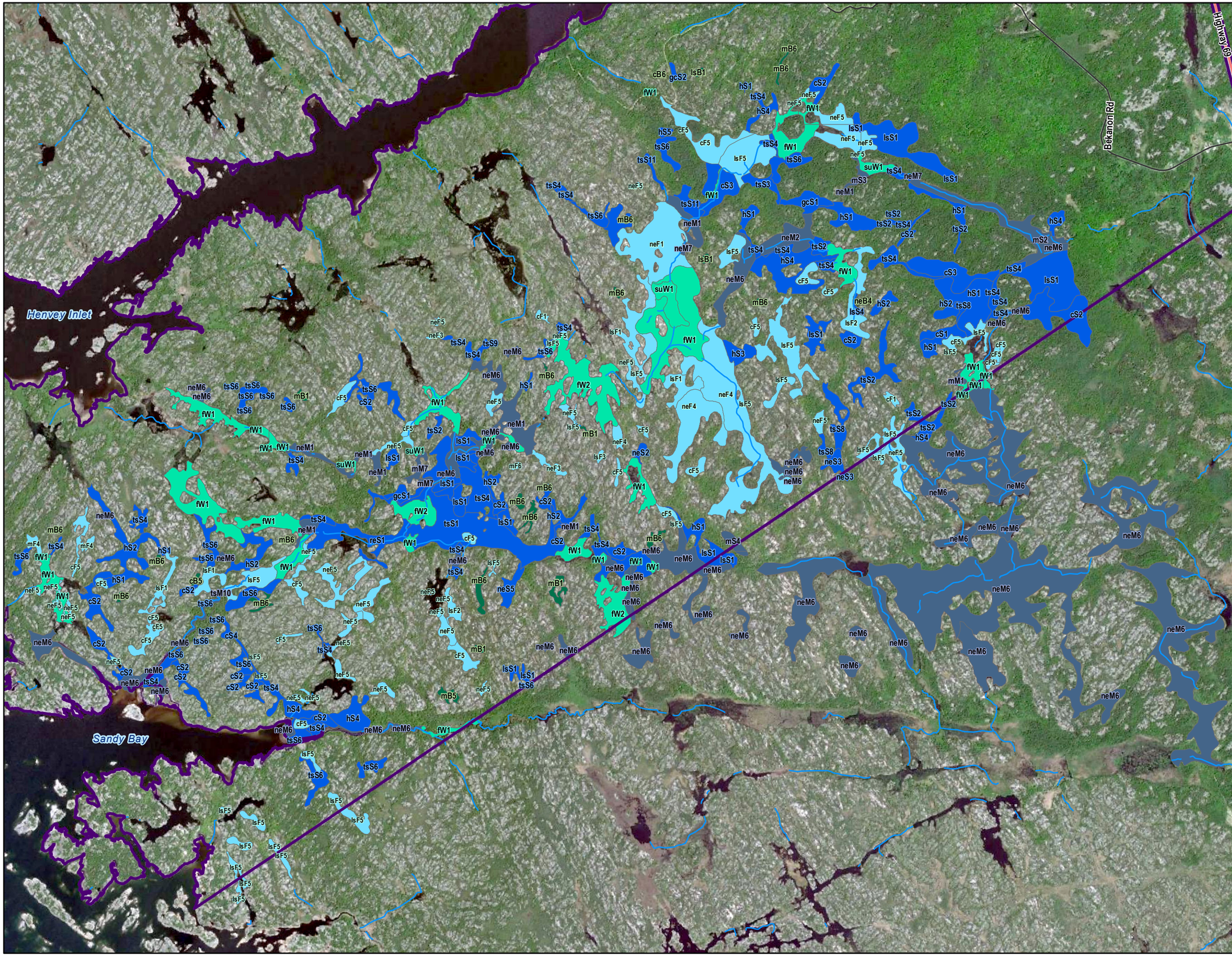

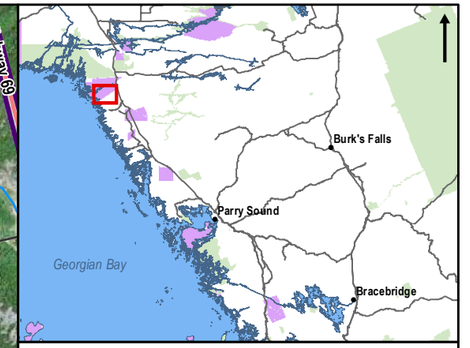

N

OWES Communities

- Bog
- Fen
- Swamp
- Open Water Marsh
- Marsh

Base Layers

- Major Roads
- Highway
- Trails
- Railway
- Watercourses
- Henvey Inlet First Nation Reserve No.2

0 0.325 0.65 1.3
Kilometers

Henvey Inlet Wind Energy Centre

OWES Communities - Complex WET-03

September 2015	1:28,000	Datum: NAD 83, Zone 17 Source: LIO
P#: 60341251	V#:	

Figure 2

Henvey Inlet

Map location: F:\AECOM\Work\60333000 - Henvey Wind\Design\Final Report\Site Investigation\Wetlands_OWES_20150908.mxd
Date Saved: 8/6/2015 3:52:22 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 orthoaerial 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 lattifolia*), 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 wetland 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 signficiant species.

Additional Information

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

Official Name:	Henvey Inlet Wetland WET-004				
Evaluation Edition:	1st	**Version:**	1.3	**Wetland ID.:**	WET-004
Wetland Significance:	Year/Month Last Evaluated		Not Evaluated		
	Year/Month Last Updated				

Special Planning Considerations:	Federal Land	**Scores**	
Wetland Area:	75.00	Biological:	170
Dentention Area:	NA/Coastal Wetlands	Social:	135
Catchment Area:	NA/Coastal Wetlands	Hydrological:	91
Coastal Unit Area:	75.00	Special Features:	250
OMNR Source	Parry Sound District MNR	Overall:	646
Information Source	Field Observation: AECOM, 2015		
Submitted by:	Kristan Washburn	**Date**	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 Summery 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.	1	11.42
Wetland Unit No.	2	61.63
Wetland Unit No.	3	1.48
Wetland Unit Totals:		74.53

(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	Lime-stone	Sand	Humic-Mesic	Fibric	Granite
<2800	12	11	9	7	7	6	4
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 in soil type	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)	12

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)	2

1.2 BIODIVERSITY

1.2.1 Number of Wetland Types

(Check only one)

	one	=	9	points
	two	=	13	
	three	=	20	
30	four	=	30	

Number of Wetland Types Score *(maximum 30 points)*	**30**

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	
=	**11.0**

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	
=	**2.0**

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	
=	**0.0**

SubTotal:	**13**

Vegetation Communities Score (maximum 45 points)	**13**

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)
	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

** "Mixed forest" is defined as either 25% coniferous trees distributed singly or in clumps in deciduous forest, or 25% deciduous treesdistributed 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.*

Score 1 point for each feature checked, up to a maximum of 7 points.

Diversity of Surrounding Habitat Score (maximum 7 points)	7

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
	Hydrologica11y 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)	8

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 l00	=	15
	101 to 125	=	18
	126 to 150	=	21
	151 to 175	=	24
	176 to 200	=	27
30	>200	=	30

Interspersion Score (maximum 30 points)	**30**

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
14	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)	**14**

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

Wetland size (ha)	<37	37-48	49-60	61-72	73-84	85-96	97- 108	109-120	121- 132	>132
<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 5O points)	**37**

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
x	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.

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.

12	Present	=	12 pts
	Absent	=	0
	Fishing not permitted	=	0

Source of information:

Field Observation; A. Ingriselli, 2015

Commercial Fish Score (maximum 12 points)	12

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	3	Beaver (*Castor canadensis*)	Field Observation: AECOM 215, Stantec, 2013
2	3	Long-tailed Weasel (*Mustela fenata*)	Field Observation: Stantec, 2013
3	3	Muskrat (*Ondatra zibethicus*)	Field Observation: Stantec, 2013
4	3	North American River Otter (L*ontra canadensis*)	Field Observation: AECOM 2015, Stantec, 2013
5	3	Northern Raccoon (*Procyon lotor*)	Field Observation: Stantec, 2013
6	3	Red fox (*Vulpes vulpes*)	Field Observation: AECOM 2015, Stantec, 2013
7	3	Red Squirrel (*Tamiasciurus hudsonicus*)	Field Observation: AECOM 215, Stantec, 2013
	21	Subtotal	

Furbearer Score *(maximum 12 points)*	12

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.

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

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

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:

Source of information:

Kristan Washburn, 2015

Absence of Human Disturbance Score (maximum 7 points)	7

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:

Source of information:

Educational Uses Score (maximum 20 points)	0

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:

Source of information:

Field Observation: Kristan Washburn, 2015

Facilities and Programs Score (maximum 8 points)	0

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	
5	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	
5	Subtotal:			

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

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

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

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 <2,500 or cottage community	
Within or adjoiningg settlement	40 points		26 points		16 points	16
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	
		0		0		16

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

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)*	10

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)	15

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

30.0	Significant	=	30 pts
	Not Significant	=	0
	Unknown	=	0
30	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

2.8.2 Cultural Heritage

	Significant	=	30 pts
	Not Significant	=	0
0.0	Unknown	=	0
0	Total:		

Additional Comments/Notes:

Communication: Henvey Inlet First Nation, 2015

Aboriginal Values/Cultural Heritage Score	30.0
(maximum 30 points)	

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 lak area is less than 0.1,→ score 0 points for this section

[x]

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 weltand 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 From 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 l00 points)*	0

3.2 GROUNDWATER RECHARGE

3.2.1 Site Type

Wetland> 50% lacustrine (by area) or located on the St. Mary's River					=	0
Wetland not as above. Calculate final score as follows:						
FA of isolated or palustrine wetland	=	0.96	x	20	=	19.17
FA of riverine wetland	=	0.04	x	5	=	0.18
FA of lacustrine wetland (when wetland is <50% lacustrine)	=	0.00	x	0	=	0.00
	Sub Total:					19.34

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 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	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

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, agriculature, or other activities which alter the natural vegetation cover in and extensive manner.

Choose one

	>50% if 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
	Scondary 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 loacl 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
x	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 **0**

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
x	Emergents, submergenets (ne, re, be, f, ff, su)	10
	Little or no vegetation (u)	0

Dominant Vegetation form Score (*maximum 10 points*) **10**

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
x	Wetland with less than 10% soils organic	=	0

Carbon Sink Score (maximum 9 points) **0**

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)	15

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 the dominant type in the wetland.

Wetland Characteristics	Potential for Discharge						
	None to Little		Some		High		
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

Groundwater Discharge Score (maximum 30 points)	15

4.0 SPECIAL FEATURES

COMPONENT

4.1 RARITY

4.1.1 Wetland Types

Wetland type (*Check one or more)*

x	Bog
x	Fen
x	Swamp
x	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			
		#N/A			
250	Total				

For each species score 250 points. (Score is cumulative, no maximum score)

Additional Notes/Comments:
Field observation; AECOM, 2015

Reproductive Habitat for Endangered or Threatened Species (no maximum)	250

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	*Emydoidea blandingii*	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:

Traditional Habitat for Endangered or Threatened Species (*no maximum)*	150

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)*	50

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	0
(no maximum)	

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			
	#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)	0

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			
	#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)*	0

4.1.2.7 Species of Special Status

Black Duck

Suitable breeding habitat present and withing assessment range (Figure 25)

Assessmnet Category	Check One	Points	
20-40 Indicated Paris/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)*	15

ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
PTERIDOPHYTES	**FERNS & ALLIES**							
Woodwardia virginica	Virginia Chain Fern	10	-5	0	S4	G5	-	-
Pteridium aquilinum var. latiusculum	Eastern Bracken-fern	2	3	0	S5	G5T	-	-
Dryopteris marginalis	Marginal Wood Fern	5	3	0	S5	G5	-	-
Dryopteris cristata	Crested Wood Fern	7	-5	0	S5	G5	-	-
Onoclea sensibilis	Sensitive Fern	4	-3	0	S5	G5	-	-
Athyrium filix-femina	Lady Fern						-	-
Gymnocarpium dryopteris	Oak Fern	7	0	0	S5	G5	-	-
Dryopteris carthusiana	Spinulose Wood Fern	5	-2	0	S5	G5	-	-
Matteuccia struthiopteris	Ostrich Fern	5	-3	0	S5	G5	-	-
Dryopteris sp.	Wood Fern						-	-
Equisetum sylvaticum	Wood Horsetail	7	-3	0	S5	G5	-	-
Equisetum arvense	Field Horsetail	0	0	0	S5	G5	-	-
Equisetum fluviatile	Water Horsetail	7	-5	0	S5	G5	-	-
Equisetum hyemale var. affine	Scouring-rush	2	-2	0	S5	G5T5	-	-
Lycopodium dendroideum	Prickly Tree Club-moss	7	0	0	S5	G5	-	-
Lycopodiella inundata	Nothern Bog Club-moss	9	-5	0	S5	G5	-	-
Huperzia lucidula	Shining Fir-moss	7	-1	0	S5	G5	-	-
Osmunda regalis var. spectabilis	Royal Fern	7	-5	0	S5	G5T	-	-
Osmunda cinnamomea	Cinnamon Fern	7	-3	0	S5	G5	-	-
Osmunda claytoniana	Interrupted Fern	7	-1	0	S5	G5	-	-
Polypodium virginianum	Rock Polypody Fern	6	5	0	S5	G5	-	-
Thelypteris palustris var. pubescens	Marsh Fern	5	-4	0	S5	G5T?	-	-
Phegopteris connectilis	Northern Beech Fern	8	5	0	S5	G5	-	-
GYMNOSPERMS	**CONIFERS**							
Juniperus communis	Common Juniper	4	3	0	S5	G5	-	-
Thuja occidentalis	Eastern White Cedar	4	-3	0	S5	G5	-	-
Larix laricina	Tamarack	7	-3	0	S5	G5	-	-
Picea mariana	Black Spruce	8	-3	0	S5	G5	-	-
Pinus banksiana	Jack Pine	9	3	0	S5	G5	-	-
Pinus strobus	Eastern White Pine	4	3	0	S5	G5	-	-
Picea glauca	White Spruce	6	3	0	S5	G5	-	-
Abies balsamea	Balsam Fir	5	-3	0	S5	G5	-	-
DICOTYLEDONS	**DICOTS**							
Acer rubrum	Red Maple	4	0	0	S5	G5	-	-
Acer spicatum	Mountain Maple	6	3	0	S5	G5	-	-
Rhus typhina	Staghorn Sumac				S5	G5	-	-
Toxicodendron radicans ssp. negundo	Poison-ivy	5	-1	0	S5	G5T	-	-
Sium suave	Hemlock Water-parsnip	4	-5	0	S5	G5	-	-
Apocynum androsaemifolium ssp. androsaemifolium	Spreading Dogbane	3	5	0	S5	G5T?	-	-
Nemopanthus mucronatus	Mountain-holly	8	-5	0	S5	G5	-	-
Ilex verticillata	Winterberry	5	-4	0	S5	G5	-	-
Ilex mucronata	Catberry				S5	G5	-	-
Ilex sp.							-	-
Aralia nudicaulis	Wild Sarsaparilla	4	3	0	S5	G5	-	-
Eurybia macrophylla	Large-leaved Aster	5	5	0	S5	G5	-	-
Lactuca biennis	Biennial Lettuce	6	0	0	S5	G5	-	-
Solidago rugosa ssp. rugosa	Rough Goldenrod	4	-1	0	S5	G5T?	-	-
Symphyotrichum umbellatus var. umbellatus	Flat-top White Aster	6	-3	0	S5	G5T?	-	-
Eupatorium maculatum	Spotted Joe-pye-weed	3	-5	0	S5	G5T5	-	-
Euthamia graminifolia	Flat-topped Bushy Goldenrod	2	-2	0	S5	G5	-	-
Solidago canadensis	Canada Goldenrod	1	3	0	S5	G5	-	-
Symphyotrichum puniceum var. puniceum	Purple-stemmed Aster	0	0	0	S5	G5T?	-	-
Hieracium aurantiacum	Devil's Paintbrush	0	5	-2	SE5	G?	-	-
Arctium minus	Common Burdock						-	-
Solidago sp.	Goldenrod						-	-
Aster sp.	Aster						-	-

ADDITIONAL SPECIES

SPECIES	COMMON NAME	COEFFICIENT OF CONSERVATISM	WETNESS INDEX	WEEDINESS INDEX	PROVINCIAL STATUS	GLOBAL STATUS	SARO	SARA Scehdule 1
Eupatorium perfoliatum	Perfoliate Thoroughwort/Boneset	2	-4	0	S5	G5	-	-
Leucanthemum vulgare	Ox-eye Daisy	0	5	-1	SE5	G?	-	-
Symphyotrichum sp.							-	-
Eutrochium maculatum	Spotted Joe Pye Weed						-	-
Symphyotrichum borealis	Rush Aster	10	-5	0	S5	G5	-	-
Bidens cernua	Stick-tight	2	-5	0	S5	G5	-	-
Anaphalis margaritacea	Pearly Everlasting	3	5	0	S5	G5	-	-
Impatiens capensis	Spotted Touch-me-not	4	-3	0	S5	G5	-	-
Alnus incana spp. rugosa	Speckled Alder	6	-5	0	S5	G5T5	-	-
Betula papyrifera	White Birch	0	2	0	S5	G5	-	-
Corylus cornuta	Beaked Hazel	5	5	0	S5	G5T	-	-
Cardamine diphylla	Two-leaved Toothwort	7	5	0	S5	G5	-	-
Armoracia lacustris	Lake-cress						-	-
Brasenia schreberi	Water-shield	7	-5	0	S5	G5	-	-
Diervilla lonicera	Bush Honeysuckle	5	5	0	S5	G5	-	-
Viburnum nudum var. cassinoides	Northern Wild Raisin						-	-
Sambucus nigra ssp. canadensis	Common Elderberry						-	-
Sambucus canadensis	American Elderberry						-	-
Symphoricarpos albus	Snowberry	7	4	0	S5	G5	-	-
Viburnum lentago	Nannyberry	4	-1	0	S5	G5	-	-
Sambucus sp.	Elderberry						-	-
Cornus canadensis	Bunchberry	7	0	0	S5	G5	-	-
Cornus stolonifera	Red-osier Dogwood				S5	G5	-	-
Cornus racemosa	Red Panicled Dogwood/Gray dogwood	2	-2	0	S5	G5?	-	-
Cornus sericea	Red-osier Dogwood	2	-3	0	S5	G5	-	-
Drosera rotundifolia	Round-leaved Sundew	7	-5	0	S5	G5	-	-
Arctostaphylos uva-ursi	Common Bearberry	8	5	0	S5	G5	-	-
Chamaedaphne calyculata	Leatherleaf	9	-5	0	S5	G5	-	-
Gaultheria procumbens	Wintergreen	6	3	0	S5	G5	-	-
Kalmia angustifolia	Sheep Laurel	9	0	0	S5	G5	-	-
Kalmia polifolia	Bog Laurel	10	-5	0	S5	G5	-	-
Ledum groenlandicum	Labrador-tea	9	-5	0	S5	G5	-	-
Vaccinium angustifolium	Low Sweet Blueberry	6	3	0	S5	G5	-	-
Vaccinium oxycoccos	Small Cranberry	10	-5	0	S5	G5	-	-
Vaccinium myrtilloides	Velvet-leaf Blueberry	7	-2	0	S5	G5	-	-
Andromeda polifolia ssp. glaucophylla	Bog Rosemary	10	-5	0	S5	G5T5	-	-
Gaylussacia baccata	Black Huckleberry	8	3	0	S4	G5	-	-
Andromeda polifolia ssp. polifolia	Wild Rosemary	0	0	0	S4	G5T5	-	-
Vaccinium macrocarpon	Large Cranberry	10	-5	0	S4S5	G4	-	-
Quercus rubra	Red Oak	6	3	0	S5	G5	-	-
Corydalis sp.	Corydalis						-	-
Geranium bicknellii	Bicknell's Crane's-bill	5	5	0	S4	G5	-	-
Ribes glandulosum	Skunk Currant	6	-3	0	S5	G5	-	-
Ribes triste	Wild Red Currant	6	-5	0	S5	G5	-	-
Ribes americanum	Wild Black Currant	4	-3	0	S5	G5	-	-
Ribes lacustre	Swamp Black Currant	7	-3	0	S5	G5	-	-
Ribes sp.							-	-
Ribes cynosbati	Prickly Gooseberry	4	5	0	S5	G5	-	-
Ribes hirtellum	Smooth Gooseberry	6	-3	0	S5	G5	-	-
Triadenum fraseri	Fraser's St. John's-wort	7	-5	0	S5	G4G5	-	-
Hypericum perforatum	Common St. John's-wort	0	5	-3	SE5	G?	-	-
Myriophyllum sibiricum	Pale Water-milfoil	0	-5	0	S5	G5	-	-
Myriophyllum sp.							-	-
Proserpinaca palustris	Field Mermaid-weed	7	-5	0	S4	G5	-	-
Myriophyllum verticillatum	Whorled Water-milfoil	7	-5	0	S5	G5	-	-
Mentha arvensis	American Wild Mint	3	-3	0	S5		-	-
Lycopus uniflorus	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 Scehdule 1
Utricularia intermedia	Flat-leaved Bladderwort	8	-5	0	S5	G5	-	-
Utricularia vulgaris	Greater Bladderwort	4	-5	0	S5	G5	-	-
Menyanthes trifoliata	Three-leaved Buckbean	9	-5	0	S5	G5	-	-
Myrica gale	Sweet Gale	6	-5	0	S5	G5	-	-
Comptonia peregrina	Sweetfern	7	5	0	S5	G5	-	-
Nymphaea odorata	Fragrant Water-lily	0	0	0	S5	G5	-	-
Nuphar variegata	Bulhead Pond-lily	4	-5	0	S5	G5	-	-
Nymphaea sp.	Water-lily						-	-
Nuphar sp.	Pond-lily						-	-
Nuphar lutea ssp. pumila	Yellow Pond-lily						-	-
Fraxinus nigra	Black Ash	7	-4	0	S5	G5	-	-
Circaea lutetiana ssp. canadensis	Enchanter's Nightshade	3	3	0	S5	G5T5	-	-
Epilobium ciliatum	Hairy Willow-herb				S5	G5	-	-
Epilobium angustifolium	Fireweed						-	-
Polygonum cilinode	Fringed Black Bindweed	2	5	0	S5	G5	-	-
Polygonum sp.							-	-
Polygonum amphibium	Water Smartweed	5	-5	0	S5	G5	-	-
Trientalis borealis ssp. borealis	Star-flower	6	-1	0	S5	G5T?	-	-
Lysimachia thyrsiflora	Tufted Loosestrife	7	-5	0	S5	G5	-	-
Lysimachia terrestris	Swamp Loosestrife	6	-5	0	S5	G5	-	-
Lysimachia ciliata	Fringed Loosestrife	4	-3	0	S5	G5	-	-
Lysimachia sp.	Loosestrife						-	-
Pyrola asarifolia	Pink Pyrola	7	-3	0	S5	G5	-	-
Chimaphila umbellata	Common Pipsissewa				S5	G5	-	-
Aquilegia canadensis	Wild Columbine	5	1	0	S5	G5	-	-
Coptis trifolia		7	-3	0	S5	G5T5	-	-
Caltha palustris	Marsh-marigold	5	-5	0	S5	G5	-	-
Actaea rubra	Red Baneberry	5	5	0	S5	G5	-	-
Clematis virginiana	Virgin's-bower	3	0	0	S5	G5	-	-
Ranunculus abortivus	Kidney-leaf Buttercup	2	-2	0	S5	G5	-	-
Ranunculus recurvatus var. recurvatus	Hooked Buttercup	4	-3	0	S5	G5	-	-
Thalictrum pubescens	Tall Meadow-rue	5	-2	0	S5	G5	-	-
Ranunculus pensylvanicus	Bristly Buttercup	3	-5	0	S5	G5	-	-
Anemone canadensis	Canada Anemone	3	-3	0	S5	G5	-	-
Ranunculus acris	Tall Buttercup	0	0	-2	SE5	G5	-	-
Thalictrum dasycarpum	Purple Meadow-rue	8	-2	0	S4?	G5	-	-
Amelanchier arborea	Downy Juneberry	0	3	0	S5	G5	-	-
Aronia melanocarpa	Black chokeberry	7	-3	0	S5	G5	-	-
Fragaria vesca ssp. americana	Woodland Strawberry	4	4	0	S5	G5T?	-	-
Prunus pumila	Sand Cherry						-	-
Rubus idaeus	Red Raspberry	0	0	0	SE1	G5T5	-	-
Rubus pubescens	Dwarf Raspberry	4	-4	0	S5	G5	-	-
Prunus virginiana	Choke Cherry						-	-
Rubus flagellaris	Prickly Raspberry	4	4	0	S4	G5	-	-
Spiraea latifolia	Broad-leaved Meadow-sweet				S5	G5	-	-
Amelanchier laevis	Smooth Juneberry	5	5	0	S5	G4G5Q	-	-
Spiraea alba	Narrow-leaved Meadow-sweet	3	-4	0	S5	G5	-	-
Geum aleppicum	Yellow Avens	2	-1	0	S5	G5	-	-
Rubus allegheniensis	Alleghany Blackberry	2	2	0	S5	G5	-	-
Rubus hispidus	Trailing Blackberry	6	-3	0	S4S5	G5	-	-
Spiraea tomentosa	Tomentose Meadow-sweet	5	-3	0	S4S5	G5	-	-
Comarum palustre	Marsh Cinquefoil						-	-
Spiraea sp.	Meadow-sweet						-	-
Fragaria virginiana	Virginia Strawberry						-	-
Prunus serotina	Black Cherry	3	3	0	S5	G5	-	-
Rosa palustris	Marsh Rose	7	-5	0	S5	G5	-	-
Sorbus americana	American Mountain-ash	8	-1	0	S5	G5	-	-

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Potentilla norvegica	Norwegian cinquefoil				S5	G5	-	-
Potentilla arguta	Tall Cinquefoil	7	5	0	S4	G5	-	-
Galium aparine	Cleavers	4	3	0	S5	G5	-	-
Galium triflorum	Sweet-scented Bedstraw	4	2	0	S5	G5	-	-
Galium palustre	Marsh Bedstraw	5	-5	0	S5	G5	-	-
Populus tremuloides	Trembling Aspen	2	0	0	S5	G5	-	-
Salix sp.	Willow						-	-
Salix petiolaris	Slender Willow	3	-4	0	S5	G4	-	-
Populus grandidentata	Large-tooth Aspen	5	3	0	S5	G5	-	-
Salix bebbiana	Long-beaked Willow	4	-4	0	S5	G5	-	-
Salix discolor	Pussy Willow	3	-3	0	S5	G5	-	-
Salix pyrifolia	Balsam Willow	10	-4	0	S5	G5	-	-
Comandra umbellata	Bastard Toad-flax	6	3	0	S5	G5	-	-
Sarracenia purpurea	Pitcher-plant	10	-5	0	S5	G5	-	-
Ulmus americana	White Elm	3	-2	0	S5	G5?	-	-
Urtica dioica ssp. dioica	European Stinging Nettle	0	-1	-1	SE2	G5T?	-	-
Laportea canadensis	Wood Nettle	6	-3	0	S5	G5	-	-
Viola macloskeyi	Smooth White Violet				S5	G5	-	-
Viola cucullata	Marsh Blue Violet	5	-5	0	S5	G4G5	-	-
Viola canadensis	Canada Violet	6	5	0	S5	G5	-	-
Viola palustris	Marsh Violet	0	0	0	SU	G5	-	-
MONOCOTYLEDONS	**MONOCOTS**							
Arisaema triphyllum	Small Jack-in-the-pulpit	5	-2	0	S5	G5T5	-	-
Calla palustris	Wild Calla	8	-5	0	S5	G5	-	-
Eriophorum sp.	Cotton-grass						-	-
Scirpus cyperinus	Wool-grass	4	-5	0	S5	G5	-	-
Carex sp.							-	-
Carex aquatilis	Aquatic Sedge	7	-5	0	S5	G5	-	-
Carex deweyana	Dewey's Sedge	6	4	0	S5	G5	-	-
Carex stricta	Tussock Sedge	4	-5	0	S5	G5	-	-
Carex blanda	Woodland Sedge	3	0	0	S5	G5?	-	-
Carex crinita	Fringed Sedge	6	-4	0	S5	G5	-	-
Carex gracillima	Graceful Sedge	4	3	0	S5	G5	-	-
Carex intumescens	Bladder Sedge	6	-4	0	S5	G5	-	-
Carex lacustris	Lake-bank Sedge	5	-5	0	S5	G5	-	-
Carex arctata	Drooping Wood Sedge	5	5	0	S5	G5?	-	-
Eriophorum virginicum	Virginia Cotton-grass	10	-5	0	S5	G5	-	-
Scirpus sp.	Bulrush						-	-
Carex utriculata	Beaked Sedge	7	-5	0	S5	G5	-	-
Eriophorum vaginatum ssp. spissum	Sheathed Cotton-grass	10	-5	0	S5	G5T5	-	-
Dulichium arundinaceum	Reed-like Three-way Sedge	7	-5	0	S5	G5	-	-
Scirpus atrovirens	Dark-green Bulrush	3	-5	0	S5	G5?	-	-
Eriophorum viridi-carinatum	Thin-leaved Cotton-grass	9	-5	0	S5	G4	-	-
Carex magellanica ssp. irrigua	Stunted Sedge	10	-5	0	S5	G5T?	-	-
Carex oligosperma	Few-seeded Sedge	10	-5	0	S4	G4	-	-
Carex tenuiflora	Sparse-flowered Sedge	10	-5	0	S5	G5	-	-
Carex canescens ssp. canescens	Silvery Sedge	7	-5	0	S5	G5T?	-	-
Carex disperma	Soft-leaved Sedge	8	-5	0	S5	G5	-	-
Scirpus microcarpus	Small-fruited Bulrush	4	-5	0	S5	G5	-	-
Carex interior	Inland Sedge	6	-5	0	S5	G5	-	-
Carex lasiocarpa	Slender Sedge	8	-5	0	S5	G5	-	-
Carex brunnescens ssp. brunnescens	Brownish Sedge	7	-3	0	S5	G5T?	-	-
Carex echinata ssp. echinata	Prickly Sedge	7	-5	0	S5	G5T5	-	-
Carex scoparia	Pointed Broom Sedge	5	-3	0	S5	G5	-	-
Carex pellita	Woolly Sedge	4	-5	0	S5	G5	-	-
Carex stipata	Awl-fruited Sedge	3	-5	0	S5	G5	-	-
Carex lupulina	Hop Sedge	6	-5	0	S5	G5	-	-

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Carex siccata	Silvery-flowered Hay Sedge	0	0	0	S5	G5	-	-
Iris versicolor	Multi-coloured Blue-flag	5	-5	0	S5	G5	-	-
Iris sp.	Iris						-	-
Sisyrinchium montanum	Montane Blue-eyed-grass	0	-1	0	S5	G5	-	-
Juncus effusus	Common rush	0	0	0			-	-
Juncus bufonius	Toad Rush	1	-4	0	S5	G5	-	-
Juncus validus	Roundhead Rush						-	-
Juncus sp.	Rush						-	-
Lemna minor	Lesser Duckweed	2	-5	0	S5	G5	-	-
Maianthemum canadense	Wild Lily-of-the-valley	5	0	0	S5	G5	-	-
Maianthemum trifolium	Three-leaved Solomon's Seal	10	-5	0	S5	G5	-	-
Polygonatum pubescens	Hairy Solomon's Seal	5	5	0	S5	G5	-	-
Clintonia borealis	Bluebead-lily	7	-1	0	S5	G5	-	-
Trillium erectum	Purple Trillium	6	1	0	S5	G5	-	-
Trillium grandiflorum	White Trillium	5	5	0	S5	G5	-	-
Cypripedium acaule	Moccasin Flower	7	-3	0	S5	G5	-	-
Poa sp.							-	-
Calamagrostis canadensis	Blue-joint Grass	4	-5	0	S5	G5	-	-
Deschampsia flexuosa	Common Hairgrass	8	5	0	S5	G5	-	-
Brachyelytrum erectum	Bearded Short-husk	7	5	0	S4S5	G5	-	-
Glyceria striata	Fowl Meadow Grass	3	-5	0	S5	G5	-	-
Cinna latifolia	Broad-leaved Reed Grass	7	-4	0	S5	G5	-	-
Phragmites australis	Common Reed	0	-4	0	S5	G5	-	-
Poa palustris	Fowl Meadow Grass	5	-4	0	S5	G5	-	-
Phalaris arundinacea	Reed Canary Grass	0	-4	0	S5	G5	-	-
Poa annua	Annual Blue Grass	0	1	-2	SE5	G?	-	-
Bromus inermis	Awnless Brome				SNA	G5TNR	-	-
Agrostis stolonifera	Redtop	0	-3	0	S5	G5	-	-
Pontederia cordata	Heart-leaved Pickerel-weed	7	-5	0	S5	G5	-	-
Sparganium emersum ssp. acaule	Stemless Bur-reed	0	0	0	SU		-	-
Sparganium angustifolium	Narrow-leaved Bur-reed	9	-5	0	S4?	G5	-	-
Sparganium fluctuans	Floating Bur-reed	9	-5	0	S4?	G5	-	-
Sparganium eurycarpum	Broad-fruited Bur-reed	3	-5	0	S5	G5	-	-
Typha latifolia	Broad-leaved Cattail	3	-5	0	S5	G5	-	-
Typha angustifolia	Narrow-leaved Cattail	3	-5	0	S5	G5	-	-
Typha sp.	Cattail						-	-
ASCOMYCETES	**LICHENS**							
Cladonia rangiferina	Grey Reindeer Lichen				S5	G5	-	-
BRYOPSIDA	**MOSSES**							
Aulacomnium palustre	Glow Moss				S5	G5	-	-
Dicranum polysetum	Wavy Moss				S5	G5	-	-
Dicranum montanum	Montane Dicranum Moss				S5	G5	-	-
Dicranum ontariense	Ontario Dicranum Moss				S5	G4G5	-	-
Polytrichum sp.	Haircap Moss						-	-
Polytrichum commune	Common Haircap Moss				S5	G5	-	-
Polytrichum strictum	Bog Haircap Moss				S5	G4	-	-
SPHAGNOPSIDA	**MOSSES**							
Sphagnum sp.	Peat Moss						-	-
Sphagnum girgensohnii	Common Green Peat Moss				S5	G5	-	-
Sphagnum capillifolium	Northern Peat Moss				S5	G5	-	-
Sphagnum angustifolium	Cuspidate Peat Moss				S5	G5	-	-
Sphagnum squarrosum	Squarrose Peat Moss				S5	G5	-	-
Sphagnum fuscum	Common Brown Sphagnum				S5	G5	-	-
AVIFAUNA								
Corvus brachyrhynchos	American Crow				S5B	G5	-	-
Picoides dorsalis	American Three-toed Woodpecker				S4	G5	-	-
Scolopax minor	American Woodcock				S4B	G5	-	-

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Haliaeetus leucocephalus	Bald Eagle				S2N, S4B	G5	SC	-
Strix varia	Barred Owl				S5	G5	-	-
Setophaga castanea	Bay-breasted Warbler				S5B	G5	-	-
Mniotilta varia	Black-and-white Warbler				S5B	G5	-	-
Picoides arcticus	Black-backed Woodpecker				S4	G5	-	-
Poecile atricapillus	Black-capped Chickadee				S5	G5	-	-
Setophaga virens	Black-throated Green Warbler				S5B	G5	-	-
Cyanocitta cristata	Blue Jay				S5	G5	-	-
Buteo platypterus	Broad-winged Hawk				S5B	G5	-	-
Bucephala albeola	Bufflehead				S4	G5	-	-
Branta canadensis	Canada Goose				S5	G5	-	-
Cardellina pusilla	Canada Warbler				S4B	G5	THR	THR
Setophaga pensylvanica	Chestnut-sided Warbler				S5B	G5	-	-
Gavia immer	Common Loon				S5B,S5N	G5	-	-
Chordeiles minor	Common Nighthawk				S4B	G4	SC	THR
Geothlypis trichas	Common Yellowthroat				S5B	G5	-	-
Junco hyemalis	Dark-eyed Junco				S5	G5	-	-
Picoidese pubescens	Downy Woodpecker				S5	G5	-	-
Sayornis phoebe	Eastern Pheobe				S5B	G5	-	-
Caprimulgus vociferus	Eastern Whip-poor-will				S4B	G5	THR	THR
Contopus virens	Eastern Wood-Pewee				S4B	G5	-	-
Regulus satrapa	Golden-crowned Kinglet				S5B	G5	-	-
Perisoreus canadensis	Gray Jay				S5	G5	-	-
Ardea herodias	Great blue Heron				S4	G5	-	-
Tringa melanoleuca	Greater Yellowlegs				S4B, S4N	G5	-	-
Picoides villosus	Hairy Woodpecker				S5	G5	-	-
unknown	Hawk Sp.				-	-	-	-
Catharus guttatus	Hermit Thrush				S5B	G5	-	-
Charadrius vociferus	Killdeer				S5B, S5N	G5	-	-
Setophaga kirtlandii	Kirtland's Warbler				S1B	G1	END	END
Anas platyrhynchos	Mallard				S5	G5	-	-
Oreothlypis ruficapilla	Nashville Warbler				S5B	G5	-	-
Colaptes auratus	Northern Flicker				S4B	G5	-	-
Accipiter gentilis	Northern Goshawk				S4	G5	-	-
Parkesia noveboracensis	Northern Waterthrush				S5B	G5	-	-
Contopus cooperi	Olive-sided Flycatcher				S4B	G4	SC	THR
Pandion haliaetus	Osprey				S5B	G5	-	-
Seiurus aurocapilla	Ovenbird				S4B	G5	-	-
Hylatomus pileatus	Pileated Woodpecker				S5	G5	-	-
Pinicola enucleator	Pine Grosbeak				S4B	G5	-	-
Corvus corax	Common Raven				S5	G5	-	-
Sitta canadensis	Red-breasted Nuthatch				S5	G5	-	-
Vireo olivaceus	Red-eyed Vireo				S5B	G5	-	-
Buteo jamaicensis	Red-tailed Hawk				S5	G5	-	-
Aythya collaris	Ring-neck Duck				S5	G5	-	-
Bonasa umbellus	Ruffed Grouse				S4	G5	-	-
Euphagus carolinus	Rusty Blackbird				S4B	G4	-	SC
Grus canadensis	Sandhill Crane				S5B	G5	-	-
Falcipennis canadensis	Spruce Grouse				S5	G5	-	-
Picoides dorsalis	Three-toded Woodpecker				S4	G5	-	-
Cathartes aura	Turkey Vulture				S5B	G5	-	-
Zonotrichia albicollis	White-throated Sparrow				S5B	G5	-	-
Troglodytes troglodytes	Winter Wren				S5B	G5	-	-
Aix sponsa	Wood Duck				S5	G5	-	-
Hylocichla mustelina	Wood Thrush				S4B	G5	-	THR
Setophaga petechia	Yellow Warbler				S5B	G5	-	-
Sphyrapicus varius	Yellow-bellied Sapsucker				S5B	G5	-	-

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Setophaga coronata	Yellow-rumped Warbler				S5B	G5	-	-
HERPETOFAUNA								
Lithobates catesbeianus	American Bullfrog				S4	G5	-	-
Anaxyrus americanus	American Toad				S5	G5	-	-
Emydoidea blandingii	Blanding's Turtle				S3	G4	THR	THR
Plestiodon fasciatus pop. 2	Common Five-lined Skink (Southern Shield population)				S3	G5T3	SC	SC
Thamnophis sirtalis sirtalis	Eastern Gartersnake				S5	G5T5	-	-
Hemidactylium scutatum	Four-toed Salamander				S4	G5	-	-
Lithobates clamitans	Green Frog				S5	G5	-	-
Hyla versicolor	Gray Treefrog				S5	G5	-	-
Sistrurus catenatus 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	-	-
MAMMALS								
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	-	-
Lynx (sighting unconfirmed)	Lynx (sighting unconfirmed)				S5	G5	-	-
Fox	Fox				S5	G5	-	-
Wolf Sp.	Wolf Sp.				-	-	-	-
INSECT								
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			=	50	
Known to have nested within the past 5 years			=	25	
Active feeding area (great blue heron excluded)			=	15	
None known			=	0	0
Total:					0

Additional Notes/Comments:
Not known

Colonial Waterbird Nesting Score *(maximum 50 points)*	0

4.2.2 Winter Cover for Wildlife

Score highest appropriate category. Include rationale/sources of information.

	Provincially significant	=	l00 pts
	Significant in Ecoregion	=	50
	Significant in Ecodistrict	=	25
	Locally significant	=	10
0	Little or poor winter cover	=	0
0			

Species/habitat/vegetation community scored (e.g., winter deer cover in hemlock swamp, S3 and S4b):
Field observation; Kristan Washburn, 2015

Source of information:
Discussions with Aylmer District Office

Winter Cover for Wildlife Score *(maximum 100 points)*	0

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		=	l00	
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

4.2.4 Waterfowl Breeding

Check highest level of significance.

	Nationally/internationally significant	=	150 pts
	Provincially significant	=	l00
	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

4.2.5 Migratory Passerine, Shorebird or Raptor Stopover Area

Check highest level of significance.

	Nationally / internationally significant	=	150 pts
	Provincially significant	=	l00
	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

4.2.6 Ungulate Habitat

EVALUATION:

Score (1) + (2) + one of (3) to (6)

15	1. Ungulate summer cover	=	15	*(Score is cumulative for a maximum possible score of 100)*
	2. Mineral licks	=	50	
	3. Moose aquatic feeding area Class 1	=	0	
	4. Moose aquatic feeding area Class 2	=	10	Ungulat Habitat Score (*maximum 100 points)* 15
	5. Moose aquatic feeding area Class 3	=	20	
	6. Moose aquatic feeding area Class 4	=	35	

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
x	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
x	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,	l00 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
x	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*
x	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 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	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 *(maximum 25 points)*		**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:

[ ]	Staging or Migration Habitat is not present in the wetland	Go to Step 4, Score 0 points
[ ]	Staging or Migration Habitat is present in the wetland significance of the habitat is known	Go to Step 2
[x]	Staging or Migration Habitat is present in the wetland 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.

[ ]	Significant in Ecoregion	Score 25 points in Step 4
[ ]	Significant in Ecodistrict	Score 15 points in Step 4
[ ]	Locally Significant	Score 10 points in Step 4
[ ]	Fish staging and/or migration habitat present, but not as above	Score 5 points in Step 4

Source of information:

Field observation; AECOM, 2015

Step 3: Select the highest appropriate category below based on presence of the designated site type (i.e. does not have to bethe dominant site type). Refer to Site Types recorded earlier (section 1.1.3). Attach documentation.

[ ]	Wetland is riverine at rivermouth or lacustrine at rivermouth	Score 25 points in Step 4
[ ]	Wetland is riverine,within 0.75 km of rivermouth	Score 15 points in Step 4
[ ]	Wetland is lacustrine,within 0.75 km of rivermouth	Score 10 points in Step 4
[5]	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)*	5

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 *(maximum 25 points)*	2

4.4 Great Lakes Coastal Wetlands

Choose one only. Only coastal wetland units may be scored.

	wetland < 10 ha	=	0 pts
	wetland 10- 50 ha	=	25
x	wetland 51 -l00 ha	=	50
	wetland > 100 ha	=	75

Great Lakes Coastal Wetland Score *(maximum 75 points)*	50

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]):

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 doumneted.

Field observation: AECOM, 2015

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
x	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
x	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:

Additional Comments:

No additional comments.

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.

Additional Notes/Comments (e.g., adjacent lands, etc)

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

16.9	1.1.1	Growing Degree-Days/Soils
12.2	1.1.2	Wetland Type
2.1	1.1.3	Site Type

1.2 BIODIVERSITY

30.0	1.2.1	Number of Wetland Types
13.0	1.2.2	Vegetation Communities
7.0	1.2.3	Diversity of Surrounding Habitat
8.0	1.2.4	Proximinty to Other Wetlands
30.0	1.2.5	Interspersion
14.0	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

3	2.1.1 Wood Products
2	2.1.2 Low Bush Cranberry
0	2.1.3 Wild Rice
12	2.1.4 Commerical Fish (Bait Fish and/or Coarse Fish)
12	2.1.5 Furbearers

20	2.2 RECREATIONAL ACTIVITIES

2.3 LANDSCAPE AESTHETICS

3	2.3.1 Distinctness
7	2.3.2 Absence of Human Disturbance

2.4 EDUCATION AND PUBLIC AWARENESS

0	2.4.1 Educational Uses
0	2.4.2 Facilities and Programs
5	2.4.3 Research and Studies

16	2.5 PROXIMITY TO AREAS OF HUMAN SETTLEMENT
10	2.6 OWNERSH1P
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

70	4.1.1	Wetlands
	4.1.2	Species
250	4.1.2.1	Reproductive Habitat for an Endangered or Threatened Species
150	4.1.2.2	Traditional Migration or Feeding Habitat for an Endangered or Threatened Species
50	4.1.2.3	Provincially Significant Animal Species
0	4.1.2.4	Provincially Significant Plant Species
0	4.1.2.5	Regionally Significant Species
0	4.1.2.6	Locally Significant Species
15	4.1.2.7	Species of Special Status

4.2 SIGNIFICANT FEATURES OR HABITATS

0	4.2.1	Colonial Waterbirds
0	4.2.2	Winter Cover for Wildlife
0	4.2.3	Waterfowl Staging and/or Moulting Areas
10	4.2.4	Waterfowl Breeding
10	4.2.5	Migratory Passerine, Shorebird or Raptor Stopover Area
15	4.2.6	Ungulate Habitat
12	4.2.7	Fish Habitat

2	4.3 ECOSYSTEM AGE
50	4.4 GREAT LAKES COASTAL WETLANDS
564	Subtotal
250	TOTAL (Special Features Component)

SUMMARY OF EVALUATION RESULT

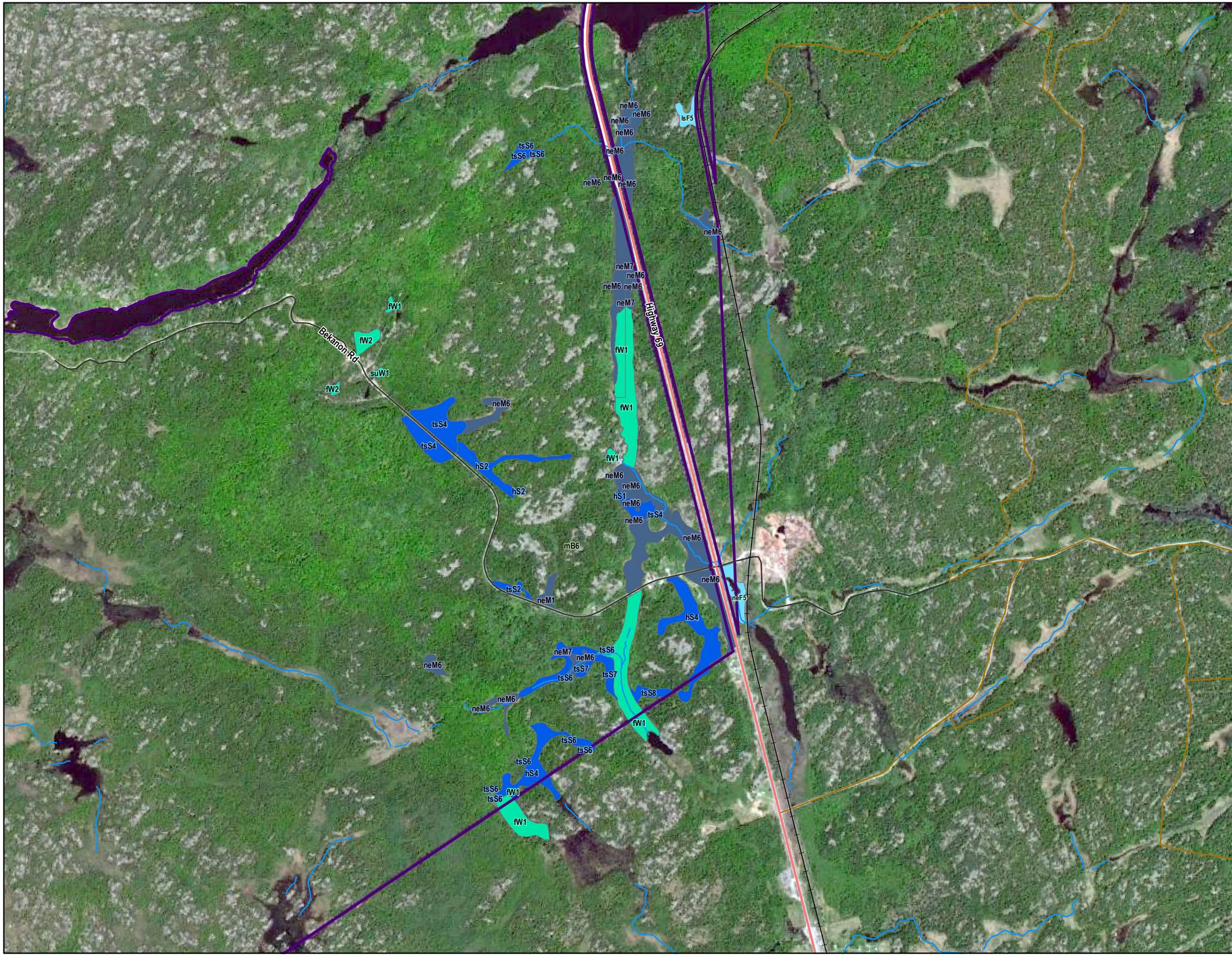
170	1.0	TOTAL FOR BIOLOGICAL COMPONENT
135	2.0	TOTAL FOR SOCIAL COMPONENT
91	3.0	TOTAL FOR HYDROLOGICAL COMPONENT
250	4.0	TOTAL FOR SPECIAL FEATURES COMPONENT
646		TOTAL WETLAND SCORE

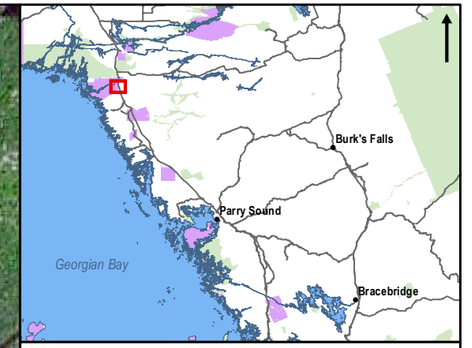
FOR MNR USE ONLY	
MNR Reviewer (Name & Position)	
Reviewer Comments	
MNR Approver (Name & Position)	
Approval Date	

WET-04

6
4
4
2
3
2
11
4
14
9
6
2
4
2
4
8
6
17
14
8

Total Count = 130





N

OWES Communities

- Bog
- Fen
- Swamp
- Open Water Marsh
- Marsh

Base Layers

- Major Roads
- Highway
- Trails
- Railway
- Watercourses
- Henvey Inlet First Nation Reserve No.2

0 0.2 0.4 0.8
Kilometers

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

Henvey Inlet

Map location: F:\AECOM\Work\60333000 - Henvey Wind\Design\Final Report\Site Investigation\Wetlands_OWES_20150908.mxd
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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

Survey Number					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
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
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
Way Point					34	35	36	37	38	39	40	41	42	43	44
Latitude					45.848847	45.828535	45.825487	45.827596	45.822630	45.813181	45.811898	45.814628	45.811824	45.819144	45.822749
Longitude					-80.569005	-80.586280	-80.591192	-80.595214	-80.602145	-80.619025	-80.658659	-80.674013	-80.674521	-80.680610	-80.652135
Easting					-	-	-	-	-	-	-	-	-	-	-
Northing					-	-	-	-	-	-	-	-	-	-	-
Temp. (^{o}C)					2	2	2	2	2	2	2	2	2	2	2
Wind (Beaufort Scale)[1]															
Relative Cloud Cover (%)					50	50	50	50	50	50	50	50	50	50	50
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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**									
ABDU	American Black Duck	*Anas rubripes*	-	-	-	S4									
BUFF	Bufflehead	*Bucephala albeola*	-	-	-	S4				4		2					
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5			2	2				6			2
COGO	Common Goldeneye	*Bucephala clangula*	-	-	-	S5											
COME	Common Merganser	*Mergus merganser*	-	-	-	S5						2		100			
HOME	Hooder Merganser	*Lophodytes cucullatus*	-	-	-	S5			1								
RNDU	Ring-Necked Duck	*Aythya collaris*	-	-	-	S5											
							Total Target Waterfowl Observed per Way Point:		**0**	**3**	**6**	**0**	**4**	**0**	**100**	**6**	**0**	**0**	**2**
Non-Target Waterfowl Observed																	
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5			2								
TRUS	Trumpeter Swan	*Cygnus buccinator*	-	-	-	S4											
WODU	Wood Duck	*Aix sponsa*	-	-	-	S5				2		2					
Incidential Wildlife/ Non-waterfowl Species Observed																	
Code	**Common Name**	**Scientific Name**	**ESA Status[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**									
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	-	-	S2											
COLO	Common Loon	*Gavia immer*	-	-	-	S5											
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5											
GBHE	Great Blue Heron	*Ardea herodias*	-	-	-	S4										1	
OSPR	Osprey	*Pandion haliaetus*				S5											
RTHA	Red-Tailed Hawk	*Buteo jamaicensis*	-	-	-	S4						1					
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	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)

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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. (^{o}C)							2	2	2	2	2	2	2	2	2	2				
Wind (Beaufort Scale)[1]																				
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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**														
ABDU	American Black Duck	*Anas rubripes*	-	-	-	S4								1						
BUFF	Bufflehead	*Bucephala albeola*	-	-	-	S4		4	2											
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5	2													
COGO	Common Goldeneye	*Bucephala clangula*	-	-	-	S5														
COME	Common Merganser	*Mergus merganser*	-	-	-	S5														
HOME	Hooder Merganser	*Lophodytes cucullatus*	-	-	-	S5									2					
RNDU	Ring-Necked Duck	*Aythya collaris*	-	-	-	S5														
						Total Target Waterfowl Observed per Way Point:	**2**	**4**	**2**	**0**	**0**	**0**	**0**	**1**	**2**	**0**				
Non-Target Waterfowl Observed																				
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5							2	2		2				
TRUS	Trumpeter Swan	*Cygnus buccinator*	-	-	-	S4														
WODU	Wood Duck	*Aix sponsa*	-	-	-	S5		2								2				
Incidential Wildlife/ Non-waterfowl Species Observed																				
Code	**Common Name**	**Scientific Name**	**ESA Status[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**														
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	-	-	S2														
COLO	Common Loon	*Gavia immer*	-	-	-	S5														
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5														
GBHE	Great Blue Heron	*Ardea herodias*	-	-	-	S4									5					
OSPR	Osprey	*Pandion haliaetus*				S5														
RTHA	Red-Tailed Hawk	*Buteo jamaicensis*	-	-	-	S4														
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5						1								
Stick Nests Observed																				
-	Number of Stick Nest	-	-	-	-	-					2 unoccupied stick nests				1 occupied stick nest by 1 Great Blue Heron					

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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						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. (^{o}C)						2	2	2	2	2	2	2	2	2	2	2	2
Wind (Beaufort Scale)[1]																	
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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**											
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BUFF	Bufflehead	*Bucephala albeola*	-	-	-	S4				2	10	20		4	10	2	10	15
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5				6			4			65		
COGO	Common Goldeneye	*Bucephala clangula*	-	-	-	S5												
COME	Common Merganser	*Mergus merganser*	-	-	-	S5												
HOME	Hooder Merganser	*Lophodytes cucullatus*	-	-	-	S5												
RNDU	Ring-Necked Duck	*Aythya collaris*	-	-	-	S5							2	15	10	15		
Total Target Waterfowl Observed per Way Point:								**0**	**0**	**8**	**10**	**20**	**4**	**2**	**19**	**20**	**82**	**10**	**15**
Non-Target Waterfowl Observed																			
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5												
TRUS	Trumpeter Swan	*Cygnus buccinator*	-	-	-	S4				2								
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RTHA	Red-Tailed Hawk	*Buteo jamaicensis*	-	-	-	S4												
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5			3									
Stick Nests Observed																		
-	Number of Stick Nest	-	-	-	-	-												

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Survey Number							1	1	1	1	1	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	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	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	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. (^{o}C)							2	2	2	2	2	2	2	2	2	2	2	2					
Wind (Beaufort Scale)[1]																							
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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COGO	Common Goldeneye	*Bucephala clangula*	-	-	-	S5							2										
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HOME	Hooder Merganser	*Lophodytes cucullatus*	-	-	-	S5																	
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Non-Target Waterfowl Observed																							
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5				2				2									
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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						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. (^{o}C)						2	2	2	2	2	2	2	2	2	2	2	2
Wind (Beaufort Scale)[1]																	
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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**											
ABDU	American Black Duck	*Anas rubripes*	-	-	-	S4											
BUFF	Bufflehead	*Bucephala albeola*	-	-	-	S4		2	4		2	2	12	4				
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5				2						2	4
COGO	Common Goldeneye	*Bucephala clangula*	-	-	-	S5											
COME	Common Merganser	*Mergus merganser*	-	-	-	S5											
HOME	Hooder Merganser	*Lophodytes cucullatus*	-	-	-	S5											
RNDU	Ring-Necked Duck	*Aythya collaris*	-	-	-	S5								12			
Total Target Waterfowl Observed per Way Point:							**0**	**2**	**4**	**2**	**2**	**2**	**12**	**16**	**0**	**0**	**2**	**4**
Non-Target Waterfowl Observed																	
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5				2					2	2	
TRUS	Trumpeter Swan	*Cygnus buccinator*	-	-	-	S4											
WODU	Wood Duck	*Aix sponsa*	-	-	-	S5								4			
Incidential Wildlife/ Non-waterfowl Species Observed																	
Code	**Common Name**	**Scientific Name**	**ESA Status[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**											
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	-	-	S2											
COLO	Common Loon	*Gavia immer*	-	-	-	S5			1								
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5		10	5								
GBHE	Great Blue Heron	*Ardea herodias*	-	-	-	S4											
OSPR	Osprey	*Pandion haliaetus*				S5											
RTHA	Red-Tailed Hawk	*Buteo jamaicensis*	-	-	-	S4											
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5											
Stick Nests Observed																	
-	Number of Stick Nest	-	-	-	-	-											

Notes: **1. Wind (Beaufort Scale):**
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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
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. (^{o}C)	2	2	2	2	2	2	2	2	2	2
Wind (Beaufort Scale)[1]										
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										
ABDU — American Black Duck — *Anas rubripes* — S4										
BUFF — Bufflehead — *Bucephala albeola* — S4	2		2	2			2	4		6
CAGO — Canada Goose — *Branta canadensis* — S5		1				2				2
COGO — Common Goldeneye — *Bucephala clangula* — S5										
COME — Common Merganser — *Mergus merganser* — S5										
HOME — Hooder Merganser — *Lophodytes cucullatus* — S5										
RNDU — Ring-Necked Duck — *Aythya collaris* — S5									2	
Total Target Waterfowl Observed per Way Point:	**2**	**1**	**2**	**2**	**0**	**2**	**2**	**4**	**2**	**8**
Non-Target Waterfowl Observed										
MALL — Mallard — *Anas platyrhynchos* — S5		2				2				2
TRUS — Trumpeter Swan — *Cygnus buccinator* — S4										
WODU — Wood Duck — *Aix sponsa* — S5										
Incidential Wildlife/ Non-waterfowl Species Observed										
BAEA — Bald Eagle — *Haliaeetus leucocephalus* — SC										
COLO — Common Loon — *Gavia immer* — S5										
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SACR — Sandhill Crane — *Grus canadensis tabida* — S5										
Stick Nests Observed										
- — Number of Stick Nest — -					3 unoccupied stick nests, 1 Great Blue Heron nearby					

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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. (^{o}C)	2	2	2	2	2	2	2	2	2	2	2	2
Wind (Beaufort Scale)[1]												
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												
ABDU — American Black Duck — *Anas rubripes* — ESA: - — SARA: - — COSEWIC: - — NHIC S-Rank: S4												
BUFF — Bufflehead — *Bucephala albeola* — ESA: - — SARA: - — COSEWIC: - — NHIC S-Rank: S4	2	10	2		2	10		10	10		8	15
CAGO — Canada Goose — *Branta canadensis* — ESA: - — SARA: - — COSEWIC: - — NHIC S-Rank: S5		2				10			6			
COGO — Common Goldeneye — *Bucephala clangula* — ESA: - — SARA: - — COSEWIC: - — NHIC S-Rank: S5												
COME — Common Merganser — *Mergus merganser* — ESA: - — SARA: - — COSEWIC: - — NHIC S-Rank: S5				2								
HOME — Hooder Merganser — *Lophodytes cucullatus* — ESA: - — SARA: - — COSEWIC: - — NHIC S-Rank: S5												
RNDU — Ring-Necked Duck — *Aythya collaris* — ESA: - — SARA: - — COSEWIC: - — NHIC S-Rank: S5							5		10	15		
Total Target Waterfowl Observed per Way Point:	**2**	**12**	**2**	**2**	**2**	**20**	**5**	**10**	**26**	**15**	**8**	**15**
Non-Target Waterfowl Observed												
MALL — Mallard — *Anas platyrhynchos* — ESA: - — SARA: - — COSEWIC: - — NHIC S-Rank: S5												
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DCCO — Double-crested Cormorant — *Phalacrocorax auritus* — ESA: - — SARA: - — COSEWIC: - — NHIC S-Rank: S5	2						1					
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Table C-1: 2015 Spring Waterfowl Migration Survey Results - HIWEC Study Area

							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. (^{o}C)	2	2	2	7	7	7	7	7	7	7	7
							Wind (Beaufort Scale)[1]				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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**												
ABDU	American Black Duck	*Anas rubripes*	-	-	-	S4												
BUFF	Bufflehead	*Bucephala albeola*	-	-	-	S4		6				3				3		
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5						4						
COGO	Common Goldeneye	*Bucephala clangula*	-	-	-	S5												
COME	Common Merganser	*Mergus merganser*	-	-	-	S5			4			10					3	
HOME	Hooder Merganser	*Lophodytes cucullatus*	-	-	-	S5												
RNDU	Ring-Necked Duck	*Aythya collaris*	-	-	-	S5												
							Total Target Waterfowl Observed per Way Point:	**6**	**4**	**0**	**0**	**17**	**0**	**0**	**0**	**3**	**3**	**0**
Non-Target Waterfowl Observed																		
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5												
TRUS	Trumpeter Swan	*Cygnus buccinator*	-	-	-	S4												
WODU	Wood Duck	*Aix sponsa*	-	-	-	S5												
Incidential Wildlife/ Non-waterfowl Species Observed																		
Code	**Common Name**	**Scientific Name**	**ESA Status[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**												
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	-	-	S2												
COLO	Common Loon	*Gavia immer*	-	-	-	S5												
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5							100	1	6			
GBHE	Great Blue Heron	*Ardea herodias*	-	-	-	S4											1	3
OSPR	Osprey	*Pandion haliaetus*				S5												
RTHA	Red-Tailed Hawk	*Buteo jamaicensis*	-	-	-	S4												
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	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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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. (^{o}C)								7	7	7	7	7	7	7	8
Wind (Beaufort Scale)[1]								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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**									
ABDU	American Black Duck	*Anas rubripes*	-	-	-	S4									
BUFF	Bufflehead	*Bucephala albeola*	-	-	-	S4							3		
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5							3	1	
COGO	Common Goldeneye	*Bucephala clangula*	-	-	-	S5									
COME	Common Merganser	*Mergus merganser*	-	-	-	S5									
HOME	Hooder Merganser	*Lophodytes cucullatus*	-	-	-	S5									
RNDU	Ring-Necked Duck	*Aythya collaris*	-	-	-	S5									
							Total Target Waterfowl Observed per Way Point:	**0**	**0**	**0**	**0**	**0**	**6**	**1**	**0**
Non-Target Waterfowl Observed															
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5									3
TRUS	Trumpeter Swan	*Cygnus buccinator*	-	-	-	S4									
WODU	Wood Duck	*Aix sponsa*	-	-	-	S5									
Incidential Wildlife/ Non-waterfowl Species Observed															
Code	**Common Name**	**Scientific Name**	**ESA Status[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**									
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	-	-	S2						1			
COLO	Common Loon	*Gavia immer*	-	-	-	S5									
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5							2		
GBHE	Great Blue Heron	*Ardea herodias*	-	-	-	S4		1			1				
OSPR	Osprey	*Pandion haliaetus*				S5									
RTHA	Red-Tailed Hawk	*Buteo jamaicensis*	-	-	-	S4									
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	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				

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						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. (^{o}C)						8	8	8	8	8	8	8	8	8	9	9
Wind (Beaufort Scale)[1]						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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**										
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CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5			2				1			
COGO	Common Goldeneye	*Bucephala clangula*	-	-	-	S5										
COME	Common Merganser	*Mergus merganser*	-	-	-	S5								1		1
HOME	Hooder Merganser	*Lophodytes cucullatus*	-	-	-	S5										
RNDU	Ring-Necked Duck	*Aythya collaris*	-	-	-	S5	2									
						Total Target Waterfowl Observed per Way Point:	**2**	**0**	**2**	**0**	**0**	**0**	**0**	**1**	**1**	**0**	**1**
Non-Target Waterfowl Observed																
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5		3		1	2	1				
TRUS	Trumpeter Swan	*Cygnus buccinator*	-	-	-	S4										
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-	Number of Stick Nest	-	-	-	-	-							2 stick nests with adult Great Blue Herons			

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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. (^{o}C)						9	9	9	9	9	9	9	9	10	10	10
Wind (Beaufort Scale)[1]						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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**										
ABDU	American Black Duck	*Anas rubripes*	-	-	-	S4		1									
BUFF	Bufflehead	*Bucephala albeola*	-	-	-	S4											
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5			6		1					8	
COGO	Common Goldeneye	*Bucephala clangula*	-	-	-	S5											
COME	Common Merganser	*Mergus merganser*	-	-	-	S5				1		2					
HOME	Hooder Merganser	*Lophodytes cucullatus*	-	-	-	S5											
RNDU	Ring-Necked Duck	*Aythya collaris*	-	-	-	S5							2				
							Total Target Waterfowl Observed per Way Point:	**1**	**6**	**1**	**1**	**2**	**2**	**0**	**0**	**0**	**8**	**0**
Non-Target Waterfowl Observed																	
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5								2			
TRUS	Trumpeter Swan	*Cygnus buccinator*	-	-	-	S4											
WODU	Wood Duck	*Aix sponsa*	-	-	-	S5											
Incidential Wildlife/ Non-waterfowl Species Observed																	
Code	**Common Name**	**Scientific Name**	**ESA Status[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**											
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	-	-	S2											
COLO	Common Loon	*Gavia immer*	-	-	-	S5											
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5						2		2			
GBHE	Great Blue Heron	*Ardea herodias*	-	-	-	S4										2	
OSPR	Osprey	*Pandion haliaetus*				S5											
RTHA	Red-Tailed Hawk	*Buteo jamaicensis*	-	-	-	S4											
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	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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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 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. (^{o}C)	
Wind (Beaufort Scale)[1]	
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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**		N / A
ABDU	American Black Duck	*Anas rubripes*	-	-	-	S4		2
BUFF	Bufflehead	*Bucephala albeola*	-	-	-	S4		265
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5		155
COGO	Common Goldeneye	*Bucephala clangula*	-	-	-	S5		2
COME	Common Merganser	*Mergus merganser*	-	-	-	S5		128
HOME	Hooder Merganser	*Lophodytes cucullatus*	-	-	-	S5		3
RNDU	Ring-Necked Duck	*Aythya collaris*	-	-	-	S5		172
							Total Target Waterfowl Observed per Way Point:	N / A
Non-Target Waterfowl Observed								
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5		36
TRUS	Trumpeter Swan	*Cygnus buccinator*	-	-	-	S4		2
WODU	Wood Duck	*Aix sponsa*	-	-	-	S5		14
Incidential Wildlife/ Non-waterfowl Species Observed								
Code	**Common Name**	**Scientific Name**	**ESA Status[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**		N / A
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	-	-	S2		1
COLO	Common Loon	*Gavia immer*	-	-	-	S5		1
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5		203
GBHE	Great Blue Heron	*Ardea herodias*	-	-	-	S4		18
OSPR	Osprey	*Pandion haliaetus*				S5		0
RTHA	Red-Tailed Hawk	*Buteo jamaicensis*	-	-	-	S4		1
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5		4
Stick Nests Observed								
-	Number of Stick Nest	-	-	-	-	-		17

Notes: **1. Wind (Beaufort Scale):**
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Helicopter Waterfowl Survey – Hemen

April 24/2015

James Kaunitz, Jessica Walker, Scott
start flight 9:50 from Parry Sound Airport Return at 14:00 pm

Start along T-line B- following Hydro corridor N from Parry Sound to N end of Nine Mile Lake, then W through Upper + Lower Marsh Lakes to Hwy 69, N on E side of Hwy 69 to Restonica Road. Flew over all small lakes of Honey Inlet ENR, first on S side of Inlet, then N side. Stopped Helicopter on south rock shoreline

Pt 2 – 2 BUFF
3 2 BUFF
4 4 BUFF
5 2 MOOSE 3 BUFF, 1 CAGO
6 5 BLDC
7 7 GBH nests – birds on some nests
8 8 GBH nests 2 BUFF
9 BAEA 1 ad 3 WODU
on nest 2 other Sticks nest
10 2 large stick nests
11 2 BUFF
12 stick nest 1 BLDC 2 MALL
13 5 BUFF
14 2 CAGO
16 3 WODU, 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

RS-

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 spots
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
49 2 stick nest No birds
50 1 SACR
51 2 MALL
52 2 MALL 1 BLDU
53 1 GBHE on stick nest, 4 adults roosting 2 HOME
54 2 WOOD 2 MALL
55 3 SACR
56 2 WOOD
57 2 TREES 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 large sticks nest, 1 bison 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 COME
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 cattail cover,
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 9 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 BUF
64 15 RNDU 6 CAGO, 2 BUF
65 10 BUFF
66 15 BUFF
67 2 COME 6 RNDU, 4 BUFF
68 10 BUFF
69 60 RNDU 2 DCCO 2MALL, 1 CAG
70 6 RNDU, 4 BUFF
71 4 BUF 2 CAGO
72 10 BUFF, 4 CAGO, 2 COGO
73 10 RNDU
74 10 BUFF, 2MALL
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, 2MALL,
83 2 BUFF 2 DCCO
84 2 BUFF
85 10 BUFF
86 V Lake 12 RNDU 4 BUFF

Ian Stanley
Carla Karpijaakko
James Kamotka

0834251
Henvey bird Survey

(1)

May 13/2015 — Waterfowl Survey

ROUTE B

P216 → 2 mallards ♂ ♀ MALL

P217 → 8 nests } heronry, some adults noted GBHE

P118 → ~ 4 nests }

P119 → heronry ~ 15, ~25 adults noted.

P120 → ~~heronry~~ osprey nest → one on, one flying

P121 → ~~1~~ 2 stick nests no birds

P122 → Snapping turtle → huge, in water.

P123 → 2 CAGO + 1 GBHE

124 → GBHE nest x3 + 1 MALL ♂ + 1 WOOD ♂

125 → 2 x BUFF

126 → ♀ ~~MERG~~ COME + 1 ~~[illegible]~~ DCO

127 → CAGO x 1

128 → CAGO x 5

129 → heronry 3 occupied nests + 2 nests

130 → CAGO x 1

131 → CAGO x 1

132 → BUFF x 1 + CAGO x 2

(2)

SACR

133 Sandhill Cranes x 2

134 GBHE → 1 adult on nest.

135 BAGO CAGO x 1

WEC

136 2 x MOOSE

137 CAGO x 4
Come x 10
BUFF x 3

138 Raft 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 heron on it

148 Immature Bald Eagle in flight

149 CAGO x 3 + 3 @ BUFF

150 CAGO x 1

151 MALL x 3 ♂

152 Diving RNDU 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, both w/ adults

159 CAGO x 1

160 COME flying x 1

161 Olympia marbled murrelet

162 COME x1

163 ARDU AMBL x1

164 CAGO x ~~8~~ 4 6

165 COME x1 ~~1 CAGO x1~~

166 CAGO x1

167 DCCO x2 + 2 COME

168 RNDU x2

169 DCCO x2 + ~~2 CAGO MALL~~

170 MALL x2

171 GBHE x2 in flight.

172 CAGO x ~~6~~ 8

173 ~~spotted~~ sandpiper

Weather - 6° to 18°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

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. (^{o}C)	13	15
Wind (Beaufort Scale)[1]	0	2
Relative Cloud Cover (%)	90	25
Precip.	None	None
Shorebirds Observed (Y/N)	**N**	**N**

Code	Common Name	Scientific Name	ESA Status[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]				Grand Total
Incidential Wildlife/ Non-waterfowl Species										
AMBI	American Bittern	*Botaurus lentiginosus*	-	-	-	S4			1	1
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5			16	16
CATE	Caspian Tern	*Sterna caspia*	-	-	-	S3			3	3
COLO	Common Loon	*Gavia immer*	-	-	-	S5			1	1
COME	Common Merganser	*Mergus merganser*	-	-	-	S5			2	2
COTE	Common Tern	*Sterna hirundo*	-	-	-	S4			68	68
DCCO	Double-Crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5			48	48
GBHE	Great Blue Heron	*Ardea herodias*	-	-	-	S4			2	2
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5			34	34
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5			3	3
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5			1	1
RBME	Red-Breasted Merganser	*Mergus serrator*	-	-	-	S4			2	2
RBGU	Ring-Billed Gull	*Larus delawarensis*	-	-	-	S5			272	272
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	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, Henvey 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

2015 Amphibian Surveys

Salamander Search

Map Number	N-M31	Field Crew	JAMES KAMSTRA HEATHER KIME	3
Feature ID	AAS-N-M31-17			
Project Number	60341251	Air Temp. (degC)	0.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	0	
Start Date	4/23/2015 9:48:40 AM	Precipitation	0	
End Date	4/23/2015 9:56:26 AM	Cloud Cover	100.00	
Survey Centroid	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)	1	Vernal Pool Length (m)	100	
Vernal Pool Width (m)	15	Water Present	True	
Vegetation Comments	Permanent beaver pond with a narrow fringe of leatherleaf and sedges. 20%	Survey Comments	Next to small beaver dam.	
Amphibians Observed	No			

Map Number	N-M28	Field Crew	JAMES KAMSTRA, HEATHER KIME	6
Feature ID	AAS-N-M28-12			
Project Number	60341251	Air Temp. (degC)	0.00	Weather Notes
Tablet	AECOM13	Wind Speed (beaufort)	3	
Start Date	4/23/2015 11:36:07 AM	Precipitation	0	
End Date	4/23/2015 11:48:15 AM	Cloud Cover	100.00	
Survey Centroid	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)	0	Vernal Pool Length (m)	20	
Vernal Pool Width (m)	20	Water Present	True	
Vegetation Comments	Sedge marsh & THICKET SWAMP below beaver dam	Survey Comments	Not vernal pool	
Amphibians Observed	No			

Map Number	N-M33	Field Crew	JAMES KAMSTRA, HEATHER KIME	9

Salamander Search

Feature ID	AAS-N-M33-21			
Project Number	60341251	Air Temp. (degC)	2.00	Weather Notes
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	

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

Map Number	S-M48	Field Crew	TOM SHORNEY, OLGA HROPACH	12

Feature ID	AAS-S-M48-7			
Project Number	60341251	Air Temp. (degC)	6.00	Weather Notes
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	

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

Map Number	S-M50	Field Crew	TOM SHORNEY, OLGA HROPACH	15

Salamander Search

Feature ID	AAS-S-M50-8			
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes
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	

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
Map Number	S-M31
Field Crew	TOM SHORNEY, OLGA HROPACH

18

Feature ID	AAS-S-M31-3			
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes
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	

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
Map Number	N-M46
Field Crew	TOM SHORNEY, OLGA HROPACH

21

Feature ID	AAS-N-M46-20			
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes
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	

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)	1	Vernal Pool Length (m)	
Vernal Pool Width (m)		Water Present	True
Vegetation Comments	Submergent Sphagnum moss 90% Emergent Cotton grass, leatherleaf, black spruce 80% Fringing Jackpine, white pine, tamarack 20%	Survey Comments	See vernal pool survey
Amphibians Observed	No		
Map Number	N-m35	Field Crew	BILL TOM OLGA

24

Feature ID	AAS-N-M35-16				
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	4		
Start Date	4/28/2015 1:06:13 PM	Precipitation	0		
End Date	4/28/2015 1:06:17 PM	Cloud Cover	0.00		

Survey Centroid			
Vernal Pool Depth (m)	0	Vernal Pool Length (m)	200
Vernal Pool Width (m)	25	Water Present	True
Vegetation Comments	Submergent: Sphagnum moss 60% cover. Emergent: Leatherleaf, Juncus sp, Carex sp, Alnus incana. 70% cover.	Survey Comments	See vernal pool form
Amphibians Observed	No		
Map Number	N-M26	Field Crew	BILL OLGA TOM

27

Feature ID	AAS-N-M26-13				
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	2		
Start Date	4/28/2015 2:45:24 PM	Precipitation	0		
End Date	4/28/2015 2:46:25 PM	Cloud Cover	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)	0	Vernal Pool Length (m)	0
Vernal Pool Width (m)		Water Present	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			
Amphibians Observed	No		
Map Number	N-M16	Field Crew	TOM SHORNEY OLGA HROPACH

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Feature ID	AAS-N-M16-19				
Project Number	60341251	Air Temp. (degC)	7.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	2		
Start Date	4/29/2015 10:22:15 AM	Precipitation	0		
End Date	4/29/2015 10:35:20 AM	Cloud Cover	40.00		

Survey Centroid			
Vernal Pool Depth (m)	0	Vernal Pool Length (m)	
Vernal Pool Width (m)		Water Present	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%		See vernal pool form Very little open water present	
Amphibians Observed	No		
Map Number	S-M50	Field Crew	ROB CONOHAN, KEVIN FLOOD, JOHANNA PERZ

33

Feature ID	AAS-S-M50-8				
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	3		
Start Date	5/13/2015 1:05:32 PM	Precipitation	0		
End Date	5/13/2015 1:35:36 PM	Cloud Cover	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

Feature ID	AAS-S-M48-7				
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
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		

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)	1	Vernal Pool Length (m)	200
Vernal Pool Width (m)	50	Water Present	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	No		

Execution Time 9/10/2015 8:52:28 AM Filter Start Date 4/1/2015 Filter End Date 7/10/2015

Salamander Search

Map Number	S-M05	Field Crew	SARAH RICHER BILL MCLEOD		45
Feature ID	Aas-s-m05-1				
Project Number	60341251	Air Temp. (degC)	9.00	Weather Notes	
Tablet	AECOM18	Wind Speed (beaufort)	2	Cool slight breeze	
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

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

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

9

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
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:

Vernal Pool Depth (m)	0	Vernal Pool Length (m)	250
Vernal Pool Width (m)	250	Water Present	True

Vegetation Comments	Survey Comments
Alder around edge, aquatic sedges throughout	Survey centroid Centre point taken while on rock barren beside acoustic monitor

Amphibians Observed	Yes

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

Observation Notes

Centre point of observation taken while on rock barren beside acoustic monitor. Too fast to photograph

Salamander Search

Species	Spring peeper
Life Stage	Adult
Number of Individuals	1
Search Type	Observation
Size (cm)	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		
Vernal Pool Depth (m)	0	Vernal Pool Length (m)	50
Vernal Pool Width (m)	0	Water Present	True

Vegetation Comments	Survey Comments
Grasses with some narrow leaved meadowsweet 30%cover	

Amphibians Observed	Yes

Species	Leopard frog	21
Life Stage	Adult	
Number of Individuals	1	
Search Type	Observation	
Size (cm)	8	

Observation Notes

Observation Notes

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)	0
Vernal Pool Length (m)	100
Vernal Pool Width (m)	100
Water Present	True

Vegetation Comments

Sedge dominant 1% cover

Survey Comments

Amphibians Observed	No
Map Number	S-M11
Field Crew	JULIE AYESHA

300

Feature ID	Aas-s-m11-11			
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes
Tablet	AECOM12	Wind Speed (beaufort)	2	
Start Date	5/13/2015 9:24:26 AM	Precipitation	0	
End Date	5/13/2015 10:19:07 AM	Cloud Cover	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)	60
Vernal Pool Length (m)	40
Vernal Pool Width (m)	20
Water Present	True

Vegetation Comments

Woodland on north east and west side , steep banks ponds completely surrounded by alder emergent and submergent veg downed logs abundant

Survey Comments

Amphibians Observed	Yes
Species	American toad
Life Stage	Larvae
Number of Individuals	15
Search Type	Observation
Size (cm)	1

24

Observation Notes

Small dark almost black tadpoles

Observation Notes

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

Observation Notes

6 cm egg masses clear jelly with tiny black centres Tamarack black spruce coniferous swamp Mass size of fist

27

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

Observation Notes

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Observation Notes

Species	Unknown eggs
Life Stage	Egg Mass
Number of Individuals	4 masses
Search Type	Observation
Size (cm)	10

Observation Notes

Long mass along branch

33

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

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

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

Amphibians Observed	No

Salamander Search

Map Number	N-M31	Field Crew	ADAM AYESHA RYAN	66

Feature ID	AAS-N-M31-17			
Project Number	60341251	Air Temp. (degC)	5.00	Weather Notes
Tablet	AECOM11	Wind Speed (beaufort)	1	
Start Date	5/14/2015 9:23:10 AM	Precipitation	0	
End Date	5/14/2015 9:42:12 AM	Cloud Cover	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		
Vernal Pool Depth (m)	45	Vernal Pool Length (m)	20
Vernal Pool Width (m)	8	Water Present	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	Yes

Species	American bulfrog		39
Life Stage	Adult		
Number of Individuals	1		
Search Type	Observation		
Size (cm)	8		

Observation Notes

Observation Notes

Map Number	N-M9	Field Crew	ADAM AYESHA RYAN	69

Feature ID	AAS-N-M9-18			
Project Number	60341251	Air Temp. (degC)	15.00	Weather Notes
Tablet	AECOM11	Wind Speed (beaufort)	2	
Start Date	5/14/2015 3:43:28 PM	Precipitation	0	
End Date	5/14/2015 3:54:37 PM	Cloud Cover	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

Alder thicket swamp with grasses. Stream flowing through.

Survey Comments

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

Carex sp. 50% cover

Survey Comments

Amphibians Observed	Yes
Species	Spring peepers
Life Stage	Adult
Number of Individuals	40 +
Search Type	Observation
Size (cm)	8

42

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)	3	Vernal Pool Length (m)	200
Vernal Pool Width (m)	500	Water Present	True
Vegetation Comments		Survey Comments	
Open. Water wetlands sit floating and emergentss 10% cover			
Amphibians Observed	No		
Map Number	N-M28	Field Crew	WALKER AND CARMICHAEL

87

Feature ID	Aas-n-M28-12				
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM8	Wind Speed (beaufort)	4		
Start Date	5/14/2015 10:52:14 AM	Precipitation	0		
End Date	5/14/2015 11:01:53 AM	Cloud Cover	5.00		

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)	2	Vernal Pool Length (m)	3
Vernal Pool Width (m)	4	Water Present	True
Vegetation Comments		Survey Comments	
Small beaver pond with little to no attachments site.			
Amphibians Observed	No		
Map Number	N-M31	Field Crew	JULIE ELLIS

90

Feature ID	AAS-N-M31-17				
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM21	Wind Speed (beaufort)	3		
Start Date	7/1/2015 10:02:50 AM	Precipitation	0		
End Date	7/1/2015 10:20:34 AM	Cloud Cover	100.00		

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)	2	Vernal Pool Length (m)	250
Vernal Pool Width (m)	20	Water Present	True
Vegetation Comments		Survey Comments	
Emergent leatherleaf, milfoil submergent		Fish netted	
Amphibians Observed	No		
Map Number	N-M09	Field Crew	JULIE ELLIS

93

Feature ID	AAS-N-M9-18				
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM21	Wind Speed (beaufort)	3		
Start Date	7/1/2015 12:52:33 PM	Precipitation	0		
End Date	7/1/2015 12:00:35 PM	Cloud Cover	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)	1	Vernal Pool Length (m)	100
Vernal Pool Width (m)	2	Water Present	True
Vegetation Comments		Survey Comments	
Alder thicket and Sedge fen		Long narrow creek ruining through fen and alder thicket	
Amphibians Observed	No		
Map Number	N-M1	Field Crew	JULIE ELLIS

96

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 2:17:23 PM	Precipitation	0		
End Date	7/1/2015 2:26:34 PM	Cloud Cover	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)	0
Vernal Pool Length (m)	0
Vernal Pool Width (m)	0
Water Present	False
Vegetation Comments	Alder thicket
Survey Comments	Dry, no water
Amphibians Observed	No
Map Number	N-M46
Field Crew	KORPIJAAKKO

99

Feature ID	AAS-N-M46-20
Project Number	60341251
Tablet	AECOM11
Start Date	7/1/2015 9:30:58 AM
End Date	7/1/2015 10:00:08 AM
Air Temp. (degC)	18.00
Wind Speed (beaufort)	2
Precipitation	0
Cloud Cover	100.00
Weather Notes	

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)	1
Vernal Pool Length (m)	0
Vernal Pool Width (m)	
Water Present	True
Vegetation Comments	LeatherleafCarex spTamarackJack line fringe
Survey Comments	No vernal pool locate. Dip netted into channels of water
Amphibians Observed	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	Survey Comments
LeatherleafCarex sp	Chsnnrlized stream between two High rock barrens. Not really any pools

Amphibians Observed	Yes

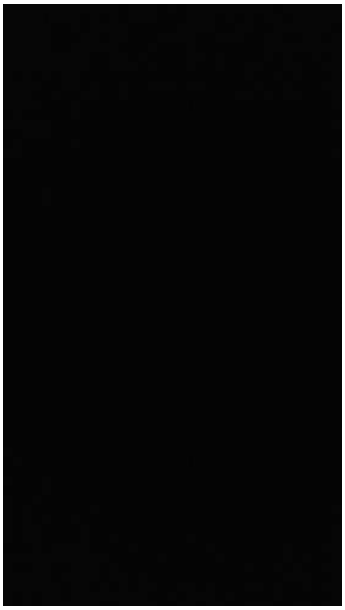
Species	Green frog	48
Life Stage	Adult	
Number of Individuals	1	
Search Type	Observation	
Size (cm)	6	

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

Nymphaea odoratus

Survey Comments

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	Weather Notes
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	

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

Dominant Carex with Callaand marsh marigold

Survey Comments

Amphibians Observed	Yes
Species	Leopard frog
Life Stage	Adult
Number of Individuals	1
Search Type	Dipnet
Size (cm)	7

51

Observation Notes

Observation Notes

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

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

Vernal Pool Depth (m)	0	Vernal Pool Length (m)	3
Vernal Pool Width (m)	15	Water Present	True

Vegetation Comments	Survey Comments
Some sedges and cattails but mostly just open vernal pool	

Amphibians Observed	Yes

Species	Green frog
Life Stage	Larvae
Number of Individuals	12
Search Type	Dipnet
Size (cm)	0

Observation Notes

Observation Notes

54

Salamander Search

Species	Leopard frog
Life Stage	Larvae
Number of Individuals	1
Search Type	Dipnet
Size (cm)	0

Observation Notes

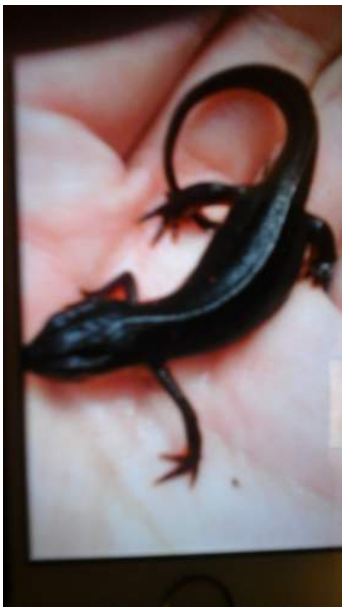
Observation Notes

57

Species	Eastern newt
Life Stage	Adult
Number of Individuals	1
Search Type	Dipnet
Size (cm)	7

Observation Notes

Observation Notes



60

Species	Leopard frog
Life Stage	Larvae
Number of Individuals	6
Search Type	Dipnet
Size (cm)	4

Observation Notes

Observation Notes

63

Salamander Search

66

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

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		
Vernal Pool Depth (m)	1	Vernal Pool Length (m)	5
Vernal Pool Width (m)	5	Water Present	True

Vegetation Comments

Sphagnum

Survey Comments

Amphibians Observed	No

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		
Vernal Pool Depth (m)	2	Vernal Pool Length (m)	100
Vernal Pool Width (m)	50	Water Present	True

Vegetation Comments	Survey Comments
Equisetum 60%Water lilies 10%	

Amphibians Observed	Yes
Species	Green frog
Life Stage	Larvae
Number of Individuals	50
Search Type	Dipnet
Size (cm)	2

69

Observation Notes

Observation Notes

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)	0	Vernal Pool Length (m)	5
Vernal Pool Width (m)	0	Water Present	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.			
Amphibians Observed	No		
Map Number	S-M14	Field Crew	KRISTAN WASHBURN

126

Feature ID	AAS-S-M14-2				
Project Number	60341251	Air Temp. (degC)	23.00	Weather Notes	
Tablet	AECOM4	Wind Speed (beaufort)	2		
Start Date	7/2/2015 11:21:55 AM	Precipitation	0		
End Date	7/2/2015 11:45:09 AM	Cloud Cover	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)	0	Vernal Pool Length (m)	400
Vernal Pool Width (m)	100	Water Present	True
Vegetation Comments	Survey Comments		
Dominant floatin-leaved either yellow and white pond lilly and an abundance of Carex spp. 50% cover.			
Amphibians Observed	No		
Map Number	N-M26	Field Crew	JOHANNA PERZ

129

Feature ID	AAS-N-M26-13				
Project Number	60341251	Air Temp. (degC)	19.00	Weather Notes	
Tablet	AECOM2	Wind Speed (beaufort)	4		
Start Date	7/1/2015 12:14:23 PM	Precipitation	0		
End Date	7/1/2015 12:15:58 PM	Cloud Cover	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)	0	Vernal Pool Length (m)	0
Vernal Pool Width (m)	0	Water Present	
Vegetation Comments		Survey Comments	
Tamarack and black spruce swamp, no standing water remains			
Amphibians Observed	No		
Map Number	S-M5	Field Crew	JOHANNA PERZ

Feature ID	AAS-S-M5-1				
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM2	Wind Speed (beaufort)	1		
Start Date	7/1/2015 1:49:26 PM	Precipitation	0		
End Date	7/1/2015 2:10:17 PM	Cloud Cover	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)	0	Vernal Pool Length (m)	10
Vernal Pool Width (m)	5	Water Present	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 ferm		Little standing water remains, only deep enough to dip net at 2 locations, some insect larva observed	
Amphibians Observed	No		

Salamander Search

Map Number	S-M34	Field Crew	JULIE ELLIS		135
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

Vernal Pool Depth (m)	1	Vernal Pool Length (m)	85
Vernal Pool Width (m)	20	Water Present	True

Vegetation Comments	Survey Comments
Sphagrum and emergent very dominate some floating plant also	Small minnow also caught

Amphibians Observed	Yes

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

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

Vernal Pool Depth (m)	0	Vernal Pool Length (m)	10
Vernal Pool Width (m)	45	Water Present	True

Vegetation Comments	Survey Comments
Grasses and carex dominate some floating waterlily, some small hummocks, a deeper channel eating to lager SAF	Green frog also heard calling

Amphibians Observed	Yes

Species	Bullfrog
Life Stage	Larvae
Number of Individuals	1
Search Type	D-Ring
Size (cm)	8

75

Observation Notes

Large in size, colour same body and tail, strong swimmer. White belly fits in tail apparent, dextral vent apparent

Observation Notes

Large in size, colour same body and tail, strong swimmer. White belly fits in tail apparent, dextral vent apparent

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

Observation Notes

Seen on ground near pool

Salamander Search

Map Number	N-M28	Field Crew	JOHANNA PERZ	282

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

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

Species	Brook stickleback hatchlings
Life Stage	Larvae
Number of Individuals	24
Search Type	Dipnet
Size (cm)	1

Observation Notes

Observation Notes

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Execution Time	9/10/2015 8:52:28 AM	Filter Start Date	4/1/2015	Filter End Date	7/10/2015

Salamander Search

Species	Brook stickleback hatchlings
Life Stage	Larvae
Number of Individuals	6
Search Type	Dipnet
Size (cm)	2

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

Species	Spring peeper		87
Life Stage	Larvae		
Number of Individuals	1		
Search Type	Dipnet		
Size (cm)	2		

Observation Notes

Observation Notes

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)	1	Vernal Pool Length (m)	35
Vernal Pool Width (m)	20	Water Present	True
Vegetation Comments		Survey Comments	
Sedge marsh with open water			
Amphibians Observed	No		

Vernal Pool

Map Number	AAS-S-M48	Field Crew	TOM SHORNEY	9

Feature ID	AAS-S-M48-7				
Project Number	60341251	Air Temp. (degC)	6.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	3	Beauty	
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		

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

6

Vernal Pool

Plant Layer	Trees
Species	Pinstro, tamarack
Percent Cover	35

9

Exposed Mud/Sand/Rock	Mud,Rock
Logs	Some fallen woody debris within pool. Nothing larger than 10 cm
Amphibians/egg masses observed	Na
Vernal Pool Comments	Occasional deep pocket. Abundance of sediment in feature

General Location Image

Feature Image

Map Number	AAS-S-M50	Field Crew	TOM SHORNEY, OLGA HROPACH		18
Feature ID	AAS-S-M50-8				
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	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
Species	Car sp, grass sp
Percent Cover	30

12

Plant Layer	Fringing
Species	Abies bals, pin strob, Acer rub
Percent Cover	80

15

Vernal Pool

Plant Layer	Trees
Species	Alnus incana
Percent Cover	20

Exposed Mud/Sand/Rock	Mud,Rock
Logs	Downed fall from beaver- all less then 10 dbh
Amphibians/egg masses observed	Na
Vernal Pool Comments	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

Map Number	AAS-S-M31	Field Crew	TOM SHORNEY, OLGA HROPACH		
Feature ID	AAS-S-M31-3				
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	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 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
Species	Grass and sedge species
Percent Cover	5

21

Plant Layer	Fringing
Species	Pinstrob, betpapy, white spruce
Percent Cover	40

24

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

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

27

Execution Time 9/8/2015 3:08:17 PM Filter Start Date 4/1/2015 Filter End Date 7/10/2015

Vernal Pool

Plant Layer	Emergent
Species	Cotton grass, leatherleaf, black spruce
Percent Cover	80

30

Vernal Pool

Plant Layer	Fringing
Species	Jackpine, white pine, tamarack
Percent Cover	20

33

Exposed Mud/Sand/Rock	None
Logs	Few branches which have fallen into fen
Amphibians/egg masses observed	No egg masses possibly as a result of the moving water
Vernal Pool Comments	Feature is a fen with slow running water through channel. Very. Linear feature

General Location Image

Feature Image

Map Number	N-M35	Field Crew	TOM SHORNEY BILL MCLEOD OLGA HROPACH		
Feature ID	AAS-N-M35-16				
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	3		

45

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
Species	Sphagnum moss
Percent Cover	60

36

Plant Layer	Emergent
Species	Leatherleaf, Juncus sp, Carex sp, Alnus incana
Percent Cover	70

39

Vernal Pool

Plant Layer	Fringing
Species	Pinus STROBUS, Larix. Laricina, Picea marina
Percent Cover	40

42

Exposed Mud/Sand/Rock	Rock
Logs	None
Amphibians/egg masses observed	None observed, habitat potential for egg masses given that there are a lot of vegetion to attach egg masses in the water.
Vernal Pool Comments	Slow moving channel through a fen, not a vernal pool or Pond.

General Location Image

Feature Image

Map Number	N-M26	Field Crew	BILL TOM OLGA		72
Feature ID	AAS -N-M26-13				
Project Number	60341251	Air Temp. (degC)	12.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	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	4/28/2015 2:32:04 PM	Precipitation	0
End Date	4/28/2015 2:43:57 PM	Cloud Cover	0.00

Water Present	Yes	Vernal Pool or Pond	
Maximum Water Depth (m)	0	Water Quality	Clear, dark
Length (m)	0	Width (m)	
Percent Open Water (emergent)	5	Percent Floating Plant Cover	0
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
None	Open rock Barren

Plant Layers

Plant Layer	Submergent	45
Species	Sphagnum moss	
Percent Cover	95	

Plant Layer	Emergent	48
Species	Leatherleaf	
Percent Cover	5	

Vernal Pool

Plant Layer	Trees
Species	Picea marina Alnus Incana
Percent Cover	80

Vernal Pool

Plant Layer	Fringing
Species	Tamarack, white pine, black spruce.
Percent Cover	60

54

Exposed Mud/Sand/Rock	Rock
Logs	None
Amphibians/egg masses observed	None
Vernal Pool Comments	Large wetlands feature interspersed with small pockets of water.

General Location Image

Feature Image

Map Number	AAS-N-M16	Field Crew	TOM SHORNEY, OLGA HROPACH		
Feature ID	AAS-N-M16-19				
Project Number	60341251	Air Temp. (degC)	7.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	1		

84

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	4/29/2015 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
Species	Pic Mari, tamarack, jackpine
Percent Cover	10

Vernal Pool

Plant Layer	Trees
Species	Leatherleath, speckled alder, black spruce
Percent Cover	70

66

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 then 10 cm. No potentially suitable wetlands within construction footprint on this map.

General Location Image

Feature Image

Map Number	B-M68	Field Crew	OLGA NATALIYA		48
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

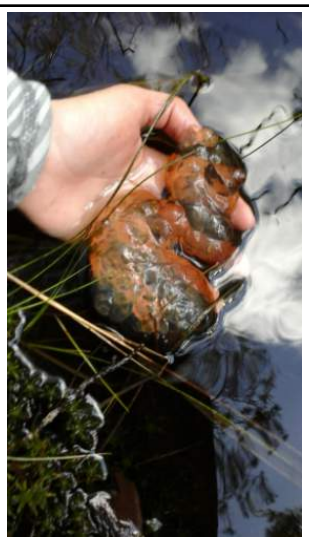
Plant Layers

Plant Layer	Submergent
Species	Vaccinium myrtilloides, Vaccinium angustifolia
Percent Cover	55

75

Exposed Mud/Sand/Rock	Rock
Logs	Few fallen down logs (3)
Amphibians/egg masses observed	At edge of verbal pool of off the open aquatic, 7 egg masses observed. White embryo inside no gelatinous layer. Suspect to be northern leopard frogs.
Vernal Pool Comments	Long channel coming off northeast from open aquatic with vernal pools surrounded by leatherleaf.

General Location Image



Feature Image

Map Number	B-M68a	Field Crew	OLGA NATALIYA

30

Feature ID	TU-B-M68a-60				
Project Number	60341251	Air Temp. (degC)	16.00	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	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

78

Plant Layer	Trees
Species	Unknown dead snag
Percent Cover	20

Exposed Mud/Sand/Rock	Mud

Logs	A lot of snags and downfall
Amphibians/egg masses observed	8 egg masses observed. Frog egg masses.
Vernal Pool Comments	

Vernal Pool

General Location Image		Feature Image	

Vernal Pool

Map Number	N-M31	Field Crew	JULIE ELLIS	132

Feature ID	AAS-N-M31-17			
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes
Tablet	AECOM21	Wind Speed (beaufort)	3	
Start Date	7/1/2015 9:44:24 AM	Precipitation	0	
End Date	7/1/2015 10:20:03 AM	Cloud Cover	100.00	

Water Present	Yes	Vernal Pool or Pond	
Maximum Water Depth (m)	2	Water Quality	Dark with tannins and organic matter
Length (m)	250	Width (m)	20
Percent Open Water (emergent)	80	Percent Floating Plant Cover	5
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
None	Rock barren, fen

Plant Layers

Plant Layer	Submergent
Species	Milfoil
Percent Cover	15

81

Vernal Pool

Plant Layer	Emergent
Species	Leatherleaf>narrow leaved cattail
Percent Cover	30

84

Plant Layer	Trees
Species	White pine
Percent Cover	5

87

Vernal Pool

Plant Layer	Floating
Species	White water lily
Percent Cover	5

90

Exposed Mud/Sand/Rock	Rock
Logs	Some 20-25 cm dbh logs
Amphibians/egg masses observed	None
Vernal Pool Comments	Nit a vernal pool, large wetlands

General Location Image

Feature Image

Map Number	N-M9	Field Crew	JULIE ELLIS		72
Feature ID	AAS-N-M9-18				
Project Number	60341251	Air Temp. (degC)	13.00	Weather Notes	
Tablet	AECOM21	Wind Speed (beaufort)	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	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

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	No	Vernal Pool or Pond	
Maximum Water Depth (m)	0	Water Quality	Na
Length (m)	0	Width (m)	0
Percent Open Water (emergent)	0	Percent Floating Plant Cover	0
Potential To Hold Water Until July?	No		

Human Influences Affecting Area	Describe area 100m behind you
	Mixed forest

Vernal Pool

Plant Layers

Plant Layer	Trees
Species	Alnus incana
Percent Cover	100

99

Exposed Mud/Sand/Rock	None
Logs	None
Amphibians/egg masses observed	None
Vernal Pool Comments	Completely dry

General Location Image

Feature Image

Map Number	N-M46	Field Crew	KORPIJAAKKO

42

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
Species	Leatherleaf
Percent Cover	75

102

Exposed Mud/Sand/Rock	
Logs	2. 10 cm diameter
Amphibians/egg masses observed	None
Vernal Pool Comments	No vernal pools. Just meandering narrow channels

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	Yes	Vernal Pool or Pond	
Maximum Water Depth (m)	2	Water Quality	
Length (m)		Width (m)	
Percent Open Water (emergent)	0	Percent Floating Plant Cover	
Potential To Hold Water Until July?	Yes		

Human Influences Affecting Area	Describe area 100m behind you
	Rock barrens elevated in both sides. No pool or pond. Channel is deeo 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		
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 eastRock barren all ariound

Plant Layers

Plant Layer	Floating
Species	Fragrant water lily
Percent Cover	20

105

Exposed Mud/Sand/Rock	
Logs	Scattered various sizes
Amphibians/egg masses observed	None
Vernal Pool Comments	This is more of a giant pond

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		
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
Species	Equisetum
Percent Cover	60

108

Exposed Mud/Sand/Rock	

Logs	Various40 cm diameter to 5 cm diameter
Amphibians/egg masses observed	Green frogs heard x3
Vernal Pool Comments	

Vernal Pool

General Location Image		Feature Image	

Vernal Pool

Map Number	S-M34	Field Crew	JULIE ELLIS	228

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
Species	Carex utriculata >Scirpus so> Myrica gale
Percent Cover	85

111

Vernal Pool

Plant Layer	Submergent
Species	Milfoil
Percent Cover	15

114

Plant Layer	Floating
Species	Watershield
Percent Cover	30

117

Vernal Pool

Plant Layer	Trees
Species	Pinus strobus >tammarack
Percent Cover	15

120

Exposed Mud/Sand/Rock	None
Logs	None
Amphibians/egg masses observed	3 adult Green frogs seen while betting plus 2 heard calling, no tadpoles or eggs, fish caught while netting
Vernal Pool Comments	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	S-M31	Field Crew	JULIE ELLIS		300
Feature ID	AAS-S-M31-3				
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM21	Wind Speed (beaufort)	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
Species	Carex sp> carex lacustris>Grss sp> Scirpus sp
Percent Cover	55

123

Plant Layer	Floating
Species	White water lily
Percent Cover	15

126

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

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 C4

2015 Acoustic Monitor Calibration

AECOM

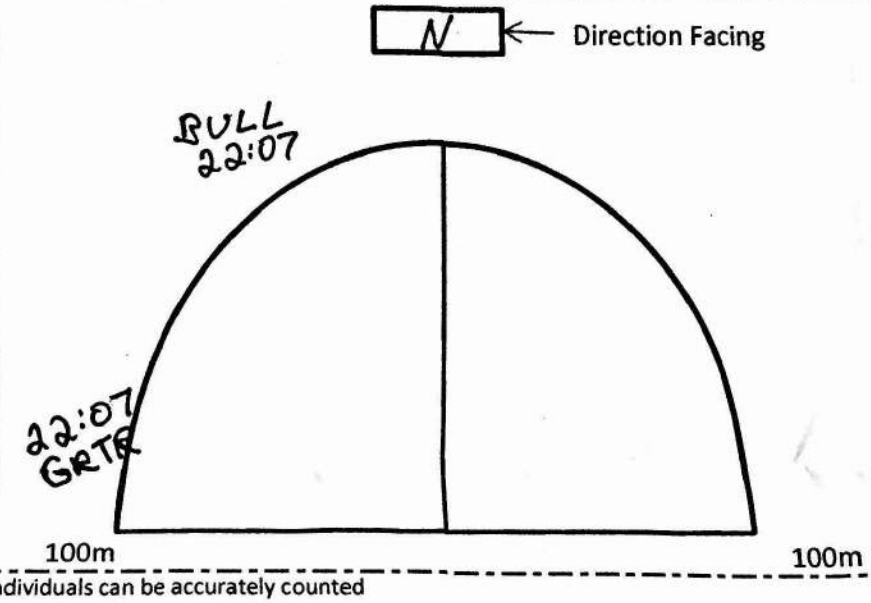
Amphibian - Frog - Data Form

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 Richer
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 Celsius 20
Precipitation (None, fog, drizzle,or rain) None

Species	IN	OUT
NONE		
AMTO		
BULL		1
CHFR		
MIFR		
GRTR		3
GRFR		
NLFR		
PIFR		
SPPE		
WOFR		



Code 1 - *not simultaneous*, number of individuals can be accurately counted
Code 2 - *some call simultaneous*, but number of individulas can be reliable estimated
Code 3 - *full chorus*, call continuous, numbers of indiviudals 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: 6-11km/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 appriciable effect	**3** - serious -continuous traffic nearby (6-10 cars)
	1 - slight - distant traffic (1 car)	**4**- profound -continous 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-Pickeral 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. Bear approached during survey.

AECOM

Crepuscular Bird Survey Form

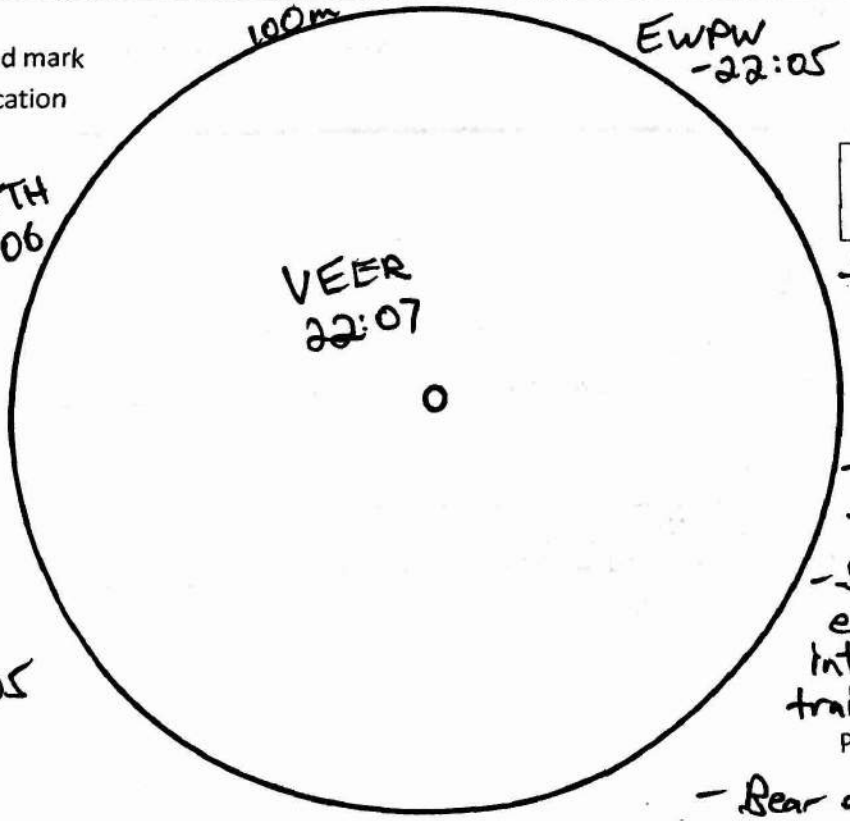
Project Name: Henvey
Point Count ID (i.e. BMB-01): AAS-S-M04-1
Date (DD/MM/YYYY): 24-06-2015
Start Time (i.e. 13:00hrs): 22:02
End Time (i.e. 13:00hrs): 22:07
Visit No.: 1
Photo No(s): —

Surveyor(s): Sarah Richer
Temperature (°C): 20
Wind (Beaufort Scale): 1
Cloud Cover (%): 80
UTM: 17T 532542 5077261
Habitat Types: SWM - Mixed swamp (Treed)

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)~~
~~EWPW~~				Time recorded
~~CONI~~				
Eastern Whippoorwill	S		1	22:05
Common Nighthawk	S		1	22:05
~~Ovenbird~~	~~S~~		~~+~~	~~(21:57)~~
Hermit Thrush	S		1	22:06
Veery	S	1		22:07

Draw habitat and mark Approximate location of observations



N

Direction (i.e. N, S, SE)

Habitat is primarily treed mixed swamp

- Microphones on monitor facing North and Southeast.
- Mosquitos extremely thick, loud, distracting.
- Survey restarted/extended due to interfering noise from trains and insects.
- Bear approached during survey.

Appendix C5

2015 Breeding Bird Surveys

Table C-5a: 2015 Breeding Bird Survey Results - HIWEC Study Area

							Point Count Survey Location ID	BB-N-M01-1											
							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)[1]	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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5				1	S								
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5										1	S		
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5								1	S				
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5		1	S										
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5		1	S	1	S			2	S				
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5		1	S										
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5								1	S				
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5													
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4								1	S				
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlypis trichas*	-	-	-	S5		1	S										
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4		1	S										
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5				1	S			2	S	1	S		
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5								1	S				
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5								1	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5		1	S										
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		4	S	1	S			4	S	1	S	2	S
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4						1	S						
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5						1	S	2	S				
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5								1	S			1	S
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4						1	S						
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5		1	S										
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4													
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5		1	S	1	S							1	S
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5		1	S			1	S						
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5								1	S				
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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 (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

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 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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID	BB-N-M01-2															
Survey No.	1						2									
Date	28-May-15						29-Jun-15									
Start Time	6:00						5:49									
End Time	6:10						5:59									
Temp. (^{o}C)	9						14									
Precipitation	None						none									
Wind (Beaufort Scale)[1]	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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5						1	S						
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5												1	S
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1	S										
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5								2	S			1	S
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5		1	S					2	S				
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5		1	S										
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		1	S			1	S			1	S	1	S
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4												1	S
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5								1	S				
COYE	Common Yellowthroat	*Geothlvphis trichas*	-	-	-	S5												1	S
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Mviarchus crinitus*	-	-	-	S4								1	S				
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		1	S			2	S	1	S	1	S	1	S
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5				1	S			1	S				
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		1	S										
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5		1	S										
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		1	S	1	S			3	S	2	S		
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5												1	S
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5								1	S				
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5								1	S			1	S
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5								1	S				
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5												1	S
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
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WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5				1	S			1	S				
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5				1	S								
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5				1	S	1	S						
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5								1	S				
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5		2	S					1	S			1	S

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.
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S5 - Very common and demonstrably secure in Ontario.
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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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Breeding Code Legend

OBSERVED	
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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID	BB-N-M02-3															
Survey No.	1						2									
Date	28-May-15						29-Jul-15									
Start Time	6:36						6:34									
End Time	6:46						6:44									
Temp. (°C)	9						14									
Precipitation	None						none									
Wind (Beaufort Scale)[1]	0						0									
Cloud Cover (%)	0						100									
Habitat Description	Mature deciduous forest															
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5										1	S		
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1	S							1	S		
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5										1	S		
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5		1	S										
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5													
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4												1	S
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5										1	S		
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5												1	S
COYE	Common Yellowthroat	*Geothlypis trichas*	-	-	-	S5		1	S			1	S	1	S	1	S		
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5										1	S		
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4						1	S						
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5		1	Flyover										
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		1	S							4	S	1	S
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5										1	S		
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5						1	S						
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		4	S			2	S	1	S			1	S
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S							1	S		
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4						1	S						
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
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TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4		1	S							2	S		
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5		1	S							1	S		
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5		2	S										
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YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5										1	NY		
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5						1	S			1	S		
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5				2	S					1	S		

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Breeding Code Legend

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POSSIBLE	
H	Species observed in its breeding season in suitable nesting habitat
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CF	Adult carying food for young
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2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID							BB-N-M03-4											
Survey No.							1						2					
Date							28-May-15						29-Jun-15					
Start Time							7:05						7:10					
End Time							7:15						7:20					
Temp. (^{o}C)							11						14					
Precipitation							None						none					
Wind (Beaufort Scale)[1]							1						0					
Cloud Cover (%)							0						100					
Habitat Description							Mature deciduous forest											
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5													
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1	S									1	S
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5		1	S										
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5								2	S				
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5				1	S								
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5												1	S
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		2	S							1	S		
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4										1	S		
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5								1	S				
COYE	Common Yellowthroat	*Geothlypis trichas*	-	-	-	S5													
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4		2	S			1	S						
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5						2	S	3	S			1	S
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		2	S					2	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		1	S			1	S	3	S			1	S
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4		2	S										
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5				1	S							1	S
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		2	S					2	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4				1	S								
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5													
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5										1	Flyover, H		
VEER	Veery	*Catharus fuscescens*	-	-	-	S4													
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5													
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5						1	S						
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5								1	NY				
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5						1	S						
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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.
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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 (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

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 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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

							Point Count Survey Location ID	BB-N-M03-5											
							Survey No.	1						2					
							Date	28-May-15						29-Jun-15					
							Start Time	7:29						7:43					
							End Time	7:39						7:53					
							Temp. (^{o}C)	11						14					
							Precipitation	None						none					
							Wind (Beaufort Scale)[1]	1						0					
							Cloud Cover (%)	0						100					
							Habitat Description	Mature deciduous forest with some treed rock barrens											
							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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5				1	S								
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5				1	S							1	S
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5												1	S
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5						1	S						
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5		1	S										
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		1	S	1	S			2	S				
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4										1	S		
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5								1	S				
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5												1	S
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5		1	S					1	S				
COYE	Common Yellowthroat	*Geothlypis trichas*	-	-	-	S5		2	S										
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4		2	S					1	S				
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5								1	S				
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5								3	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5						1	S						
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		1	S					1	S	1	S		
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4				2	S								
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		2	S	1	S			2	S	2	S		
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
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PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S					1	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4		1	S										
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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.
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 (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

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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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID	BB-N-M04-6															
Survey No.	1						2									
Date	28-May-15						29-Jun-15									
Start Time	8:02						8:21									
End Time	8:12						8:31									
Temp. (°C)	24						15									
Precipitation	None						none									
Wind (Beaufort Scale)[1]	1						0									
Cloud Cover (%)	0						100									
Habitat Description	Mature deciduous forest															
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5		1	S					1	S				
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5										1	S		
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5													
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5		1	S					1	S				
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5										1	S		
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5								1	S				
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		1	S					1	S	1	S		
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5										1	S		
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5						2	S						
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5													
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5		1	S										
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4		2	S					1	S				
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5						1	S						
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5		1	S										
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5													
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4										1	S		
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		4	S	1	S	1	S	5	NE				
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4										1	S		
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5		1	S							1	S		
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		2	S					2	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5													
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4		1	S										
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4		1	S					2	S				
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5													
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5						1	S						
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5		1	S					1	S				
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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:
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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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID	BB-N-M07-7											
Survey No.	1						2					
Date	1-Jun-15						30-Jun-15					
Start Time	8:10						8:38					
End Time	8:20						8:48					
Temp. (^{o}C)	9						20					
Precipitation	None						none					
Wind (Beaufort Scale)[1]	1						1					
Cloud Cover (%)	0						10					
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5				1	S	1	S						
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5		1	S										
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5												1	S
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5						1	S					1	S
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5												1	S
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5								1	S				
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5						1	S						
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4		1	S										
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5													
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5		1	S	1	S	2	S	2	S				
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5				1	S								
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4		1	S										
CORA	Common Raven	*Corvus corax*	-	-	-	S5		1	S										
COYE	Common Yellowthroat	*Geothlypis trichas*	-	-	-	S5		2	S	1	S			4	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4		1	S										
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		2	S					2	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5								1	S	1	S		
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4													
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5													
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5													
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4													
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5													
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5		2	S					3	S	1	FY		
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5		1	S			1	S	1	CF				
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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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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.
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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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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID	BB-N-M07-8											
Survey No.	1						2					
Date	1-Jun-15						30-Jun-15					
Start Time	7:27						7:44					
End Time	7:37						7:54					
Temp. (^{o}C)	8						16					
Precipitation	None						none					
Wind (Beaufort Scale)[1]	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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5		2	S									1	S
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5												1	S
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5												1	S
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5								2	S				
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5						1	S	1	S				
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5						1	S	1	S				
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5		1	S										
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4						1	S						
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		1	S							1	S		
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5								1	S				
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5		1	S					2	S				
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5		1	S							1	S		
COYE	Common Yellowthroat	*Geothlvphis trichas*	-	-	-	S5		2	S			1	S	2	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4								1	S				
GCFL	Great Crested Flycatcher	*Mviarchus crinitus*	-	-	-	S4													
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5						1	S					1	S
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		1	S	1	S	1	S	2	S			1	S
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5										1	S		
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		2	S	1	S							2	S
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4													
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4												1	S
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5						1	S						
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5													
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4													
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5													
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
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YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5		1	S					2	S			1	S
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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X	Species observed in its breeding season (no breeding evidence)
POSSIBLE	
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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 yound (nidifugous species), including incapable of sustained flight
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FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID							BB-N-M08-9											
Survey No.							1						2					
Date							1-Jun-15						30-Jun-15					
Start Time							6:56						7:19					
End Time							7:06						7:29					
Temp. (^{o}C)							7						16					
Precipitation							None						none					
Wind (Beaufort Scale)[1]							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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5		1	S					2	S				
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5		1	S							1	S		
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5				1	S								
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
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BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5													
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CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5				2	P								
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5		1	S					2	S				
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5				1	S								
COYE	Common Yellowthroat	*Geothlvphis trichas*	-	-	-	S5		3	S					3	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4								2	P				
GCFL	Great Crested Flycatcher	*Mviarchus crinitus*	-	-	-	S4						1	S						
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		2	S					2	S			2	S
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5								1	S				
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		1	S			1	S	3	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4													
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5						1	S	1	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5								2	S				
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5												1	S
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4		1	S										
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4													
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WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5													
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5		2	S			1	S	6	S				
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5						1	S						
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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.
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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 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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

							Point Count Survey Location ID	**BB-N-M08-10**											
							Survey No.	**1**						**2**					
							Date	**1-Jun-15**						**30-Jun-15**					
							Start Time	**6:32**						**6:40**					
							End Time	**6:42**						**6:50**					
							Temp. (°C)	**7**						**15**					
							Precipitation	**None**						**none**					
							Wind (Beaufort Scale)[1]	**1**						**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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**		**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	*Empidonax alnorum*	-	-	-	S5		2	S					2	S				
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5		1	S										
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5								1	S				
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5								1	S				
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5								1	S				
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5													
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5		1	S	150	Flyover								
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5								2	P				
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5		1	S					2	S				
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5		1	S			1	S	2	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5								1	S				
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5										1	S		
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5						2	S	3	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5		1	S					1	S				
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		2	S					1	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4													
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5						1	S						
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4		1	S										
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S					1	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
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SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5		1	S										
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Breeding Code Legend

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POSSIBLE	
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CF	Adult carying food for young
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NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID							BB-N-M08-11											
Survey No.							1						2					
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)[1]							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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5		1	S					1	S				
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5		1	S					1	S				
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5		1	S					1	S				
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5				1	S			2	S				
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5						1	S						
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5						1	S						
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5						1	S						
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5		1	S					1	S			1	S
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5										1	Flyover, S		
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5								1	S				
COYE	Common Yellowthroat	*Geothlypis trichas*	-	-	-	S5		2	S	1	S			3	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4						1	S	1	S				
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		1	S	1	S	1	S	4	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5				1	S								
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
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NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		2	S										
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4		1	S							1	S		
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
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RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
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RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
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SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5		1	S										
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TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4												3	S, flyover
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4													
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5		1	S										
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5		3	S	1	S			4	S				
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5													
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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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),
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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.
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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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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID							BB-N-M09-12											
Survey No.							1						2					
Date							2-Jun-15						30-Jun-15					
Start Time							5:52						5:32					
End Time							6:02						5:42					
Temp. (^{o}C)							4						13					
Precipitation							None						none					
Wind (Beaufort Scale)[1]							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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	
ALFL	Alder Flycatcher	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5								1	S				
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5		1	S										
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1	S										
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5										1	S		
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		2	S			1	S			1	S		
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5		2	S										
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5				1	S					1	S		
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5				1	S								
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5										1	S		
COYE	Common Yellowthroat	*Geothlypis trichas*	-	-	-	S5		1	S			1	S			1	S		
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
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EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4										2	P		
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
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HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5						3	S	2	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
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PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
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REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S					1	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	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-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
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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

							Point Count Survey Location ID	BB-N-M49-13											
							Survey No.	1						2					
							Date	29-May-15						1-Jul-15					
							Start Time	9:38						6:30					
							End Time	9:48						6:40					
							Temp. (^{o}C)	28						15					
							Precipitation	None						None					
							Wind (Beaufort Scale)[1]	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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5													
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5								1	S				
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1	S										
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4		1	S										
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5		1	S	1	S			1	S				
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4		1	S										
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5													
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4		1	S										
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5								1	S				
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5		2	S			1	S	1	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4		1	S										
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5								3	FL				
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5								1	S	1	S		
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5										1	S		
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		2	S					2	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4		1	Flyover										
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5										1	S		
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4													
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5				1	S								
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5		1	S					1	S				
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4													
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5								1	S				
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5		2	S					2	S	1	S		
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5													
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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 (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

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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID	BB-N-M49-14											
Survey No.	1						2					
Date	29-May-15						1-Jul-15					
Start Time	6:48						7:13					
End Time	6:58						7:23					
Temp. (^{o}C)	6						15					
Precipitation	None						None					
Wind (Beaufort Scale)[1]	1						2					
Cloud Cover (%)	10						100					
Habitat Description	Treed rock barren with a bog inclusion											
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5		4	S										
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5		1	S										
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5								1	S				
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1	S					1	S				
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5		1	S										
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5						1	S	1	S				
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5				1	S			1	S			1	S
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5		1	S										
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5								4	S				
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5		2	S										
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5								1	Flyover, H				
COME	Common Merganser	*Mergus merganser*	-	-	-	S5								1	Flyover, H				
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4								1	S				
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlypis trichas*	-	-	-	S5		3	S					2	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4												1	S
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5												1	S
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		2	S	1	S			1	S	1	S		
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5						1	S						
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		1	S					2	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4						1	S						
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5										1	s		
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		2	S										
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5												1	S
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5										1	S		
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5				1	S					1	S		
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5													
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4													
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5		1	S			1	S						
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5		3	S					2	S			1	S
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5		1	Flyover										
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5		1	S										
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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.
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SC (Special Concern) – A species that may become threatened or endangered due to a combination of biological characteristics and identified threats.
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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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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.
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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.
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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID							BB-N-M49-15											
Survey No.							1						2					
Date							29-May-15						1-Jul-15					
Start Time							7:13						7:46					
End Time							7:23						7:56					
Temp. (°C)							13						15					
Precipitation							None						None					
Wind (Beaufort Scale)[1]							1						3					
Cloud Cover (%)							10						100					
Habitat Description							Treed rock barren with bog inclusion											
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5													
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1	S					1	S				
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5		1	S										
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5						1	S						
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		1	S					2	S				
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5										3	S		
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5		1	Flyover							1	S		
COLO	Common Loon	*Gavia immer*	-	-	-	S5		1	S										
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5		1	S										
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5		1	S										
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5						2	S	2	S	1	S		
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5								1	S	1	S		
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		1	S			1	S	2	S				
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4						1	S						
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S			1	S			1	S		
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4		1	S										
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5													
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4													
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5													
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5		3	S					2	S				
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5										1	S		
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2015 Breeding Bird Survey Results - HIWEC Study Area

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References:
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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
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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
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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
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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)
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FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

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. (^{o}C)	19						15									
Precipitation	None						light rain									
Wind (Beaufort Scale)[1]	1						2									
Cloud Cover (%)	10						100									
Habitat Description	Treed Rock barren with many large coniferous trees															
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5													
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5								1	S				
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5										1	S		
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5		1	S										
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5								1	S				
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5						1	S						
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5						1	S						
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5										1	S		
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5												1	S
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5						2	S						
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		2	S	2	S			1	S	1	S		
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5		2	S									1	S
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		1	S					1	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		1	S	1	S			1	S			1	S
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		2	S							1	S		
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4		1	S										
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5						2	P	1	S				
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5													
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
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WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5								1	S				
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5		2	S										
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5		2	S	1	S								
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5													
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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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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.
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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.
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:
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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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID							BB-N-M50-17											
Survey No.							1						2					
Date							29-May-15						1-Jul-15					
Start Time							8:11						8:58					
End Time							8:21						9:08					
Temp. (^{o}C)							19						15					
Precipitation							None						none					
Wind (Beaufort Scale)[1]							3						3					
Cloud Cover (%)							0						100					
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5								1	S				
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5								1	S				
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5		3	S					2	S				
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5												1	S
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		2	S							1	S		
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5												1	S
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5		1	S			1	S						
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlypis trichas*	-	-	-	S5		2	S					2	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5								1	H, flyover				
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5								1	S				
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5								2	S	1	S		
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5		1	S										
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		1	S			1	S	1	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
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OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		3	S			1	S	1	S				
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RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5				1	S								
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S			1	S	1	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4		1	S										
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YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5		1	S										
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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Notes:

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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.
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B	Brood Patch on adult female or cloacal protuberance on adult male
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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)
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AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID							BB-N-M50-18											
Survey No.							1						2					
Date							29-May-15						1-Jul-15					
Start Time							8:46						9:28					
End Time							8:56						9:38					
Temp. (^{o}C)							20						16					
Precipitation							None						none					
Wind (Beaufort Scale)[1]							3						3					
Cloud Cover (%)							0						100					
Habitat Description							Treed rock barren next to Tamarack fen											
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5						1	S						
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5		1	S										
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5		1	S										
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1	S					1	S				
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5		2	S										
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5												1	S
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		3	S					2	S				
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5		45	flyovers			1	S						
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5						1	S	2	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5								2	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5												1	S
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5								1	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4								1	S				
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4								2	S				
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
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REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		2	S										
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4						1	S						
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SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5		1	S										
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
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WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5		1	S										
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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S5 - Very common and demonstrably secure in Ontario.
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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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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID	BB-S-M01-19															
Survey No.	1						2									
Date	2-Jun-15						2-Jul-15									
Start Time	9:30						8:58									
End Time	9:40						9:08									
Temp. (^{o}C)	12						15									
Precipitation	None						None									
Wind (Beaufort Scale)[1]	0						1									
Cloud Cover (%)	0						0									
Habitat Description	Deciduous forest															
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5													
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5						1	S						
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5				1	S								
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5						1	S						
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5		1	S										
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5						2	S	1	S			1	S
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4												1	S
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5								1	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5								1	S				
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4								1	S				
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		1	S										
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
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OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		2	S			1	S	3	S				
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
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PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4		1	S									1	S
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5						1	S	2	CF				
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S			1	S	1	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
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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 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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

							Point Count Survey Location ID	**BB-S-M01-20**											
							Survey No.	**1**						**2**					
							Date	**2-Jun-15**						**2-Jul-15**					
							Start Time	**8:53**						**8:24**					
							End Time	**9:03**						**8:34**					
							Temp. (°C)	**11**						**15**					
							Precipitation	**None**						**None**					
							Wind (Beaufort Scale)[1]	**1**						**1**					
							Cloud Cover (%)	**0**						**0**					
							Habitat Description	**Coniferous forest**											
							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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**		**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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5													
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5													
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5						2	S						
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5						1	S						
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5				1	S								
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5								1	S				
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		2	S					3	CF				
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5												1	S
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5													
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5								1	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		1	S	1	S			1	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		3	S	1	S	1	S	2	S				
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5		1	S					1	S				
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		2	S					1	S			1	S
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5													
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4													
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5													
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5													
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5		1	S					1	S				
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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 (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

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 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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID							BB-S-M02-21											
Survey No.							1						2					
Date							2-Jun-15						2-Jul-15					
Start Time							8:31						7:45					
End Time							8:41						7:55					
Temp. (°C)							11						12					
Precipitation							None						None					
Wind (Beaufort Scale)[1]							1						0					
Cloud Cover (%)							0						0					
Habitat Description							Coniferous forest											
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5													
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5													
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5		2	S										
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5		1	S					1	S				
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		1	S	1	S			2	S				
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5												1	X
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlypis trichas*	-	-	-	S5													
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4		1	S										
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5												1	S
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5						2	S					1	S
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5										1	S		
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5				1	S								
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		4	S					3	S				
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4		1	S										
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5						1	S	1	S				
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S					1	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5								1	S				
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5													
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4		1	S			2	S	1	S				
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5													
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5													
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5						1	S						
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5		1	S					1	S				
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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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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.
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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 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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID							BB-S-M03-22											
Survey No.							1						2					
Date							2-Jun-15						2-Jul-15					
Start Time							8:07						7:03					
End Time							8:17						7:13					
Temp. (^{o}C)							10						10					
Precipitation							None						None					
Wind (Beaufort Scale)[1]							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		1 - 3 min		3 - 5 min		5 - 10 min	
Code	Common Name	Scientific Name	ESA Status[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5		1	S										
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5						1	S						
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5												1	S
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5		1	S									1	S
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5		1	S										
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5						1	S					1	S
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5										1	S		
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4						1	S						
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5				1	S	1	S	1	S				
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5				1	S								
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5				1	S								
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5								2	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4								1	CF				
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5						1	S						
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		2	S					1	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5		1	S										
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		1	S					1	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5		1	S									1	S
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		4	S					3	S			2	S
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4		1	S										
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5										1	S		
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S					1	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5												1	S
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4													
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5													
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5													
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5		1	S									1	S
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5						1	S						
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5												1	S

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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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.
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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

							Point Count Survey Location ID	BB-S-M03-23											
							Survey No.	1						2					
							Date	2-Jun-15						2-Jul-15					
							Start Time	7:36						6:33					
							End Time	7:46						6:43					
							Temp. (^{o}C)	9						9					
							Precipitation	None						None					
							Wind (Beaufort Scale)[1]	0						0					
							Cloud Cover (%)	0						0					
							Habitat Description	Mixed forest in a wet patch dominated by Paper Birch, Black Spruce, Red Maple and ferns											
							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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5													
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5													
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5		1	S					1	S					
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5		1	S											
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5		1	S											
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5														
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4														
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5														
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		1	S	1	S	1	S	2	S					
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5														
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5														
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4												1	S	
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5														
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5														
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5														
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5														
COLO	Common Loon	*Gavia immer*	-	-	-	S5														
COME	Common Merganser	*Mergus merganser*	-	-	-	S5														
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4														
CORA	Common Raven	*Corvus corax*	-	-	-	S5														
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5														
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5														
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5														
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4														
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5														
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4														
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4						1	S							
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5		1	S					1	S					
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5														
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5														
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5														
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		3	S					1	S	1	S			
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5														
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5														
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5														
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4														
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		1	S	1	S									
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4								1	S					
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5														
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		4	S	1	S	1	S	2	S	1	S			
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5		1	S											
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5														
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5														
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4														
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4														
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5														
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S					1	S					
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5														
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4														
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4														
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5														
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4														
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5														
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5														
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5														
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4														
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5												1	S	
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4														
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5														
VEER	Veery	*Catharus fuscescens*	-	-	-	S4				1	S									
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5														
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5														
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5														
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5														
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4														
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5														
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5														
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5														
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5														
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5														

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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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.
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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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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID	BB-S-M04-24															
Survey No.	1						2									
Date	2-Jun-15						2-Jul-15									
Start Time	7:01						5:55									
End Time	7:11						6:05									
Temp. (^{o}C)	6						8									
Precipitation	None						None									
Wind (Beaufort Scale)[1]	0						0									
Cloud Cover (%)	0						0									
Habitat Description	Mixed forest															
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5													
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5		1	S	1	S								
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5								1	S				
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5												1	S
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5				1	S							1	S
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5				1	S								
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		2	S					1	S				
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5												1	S
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4													
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5						1	S						
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5								1	S				
COYE	Common Yellowthroat	*Geothlvphis trichas*	-	-	-	S5													
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4				1	S							1	S
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5				1	S								
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5						2	S					1	S
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5								1	S				
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4										1	S		
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		2	P					1	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		3	S			1	S	2	S				
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5								1	S				
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4		1	S					1	S				
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5		1	S							1	S		
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		2	S					2	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4				1	S								
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4								1	S				
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TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4				1	S			1	S				
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5												1	S
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5								1	S				
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
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CF	Adult carying food for young
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NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID	BB-S-M06-25															
Survey No.	1						2									
Date	3-Jun-15						3-Jul-15									
Start Time	6:06						5:41									
End Time	6:16						5:51									
Temp. (^{o}C)	9						10									
Precipitation	None						None									
Wind (Beaufort Scale)[1]	0						0									
Cloud Cover (%)	0						0									
Habitat Description	Mixed forest															
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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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BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5		1	S					2	S				
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
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BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		1	S	1	S			2	S	1	S		
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CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5						1	S						
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4				1	S	1	S						
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlypis trichas*	-	-	-	S5													
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4										1	S		
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5				1	S	1	S	2	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5													
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		2	S	1	S			2	S	1	S		
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
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PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S					1	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5		1	S										
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4		1	S							1	S		
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
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WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5													
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5		1	S							1	S	1	S
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5		2	S					1	S	1	S		
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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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END (Endangered) – A species facing imminent extinction or extirpation in Ontario.
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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.
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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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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID							BB-S-M29-26											
Survey No.							1						2					
Date							3-Jun-15						3-Jul-15					
Start Time							6:44						6:18					
End Time							6:54						6:28					
Temp. (^{o}C)							9						10					
Precipitation							None						None					
Wind (Beaufort Scale)[1]							0						0					
Cloud Cover (%)							0						0					
Habitat Description							Edge of thicket swamp and mixed forest											
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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5		1	S					1	S				
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1	S					1	S				
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5		1	S										
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5												1	S
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5												1	S
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5						1	S						
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		1	S			1	S	1	S				
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5				1	S								
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4		2	S					1	S				
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5												1	S
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5													
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5								2	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5		1	S					2	S				
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		1	S					1	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		2	S					3	S			1	S
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5												1	S
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4		1	S										
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5												1	S
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5								2	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4		1	S										
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OBSERVED	
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2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID							BB-S-M29-27											
Survey No.							1						2					
Date							3-Jun-15						3-Jul-05					
Start Time							7:26						6:58					
End Time							7:36						7:08					
Temp. (^{o}C)							10						11					
Precipitation							None						none					
Wind (Beaufort Scale)[1]							0						0					
Cloud Cover (%)							0						0					
Habitat Description							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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5		1	S					2	S				
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5								1	S				
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1	S										
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5				1	S								
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5												1	S
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5													
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5				1	S								
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4		1	S					1	S				
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlypis trichas*	-	-	-	S5		3	S					2	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4						1	S						
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		1	S					3	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5								1	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		2	S					2	S			1	S
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4										1	S		
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S					1	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4								1	S				
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5								1	S				
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4		1	S					1	S				
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5													
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5						1	S						
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5								2	S				
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5		1	S										
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5								1	S				

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.
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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 (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

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 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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID	BB-S-M27-28															
Survey No.	1						2									
Date	3-Jun-15						3-Jul-15									
Start Time	7:58						7:28									
End Time	8:08						7:38									
Temp. (^{o}C)	12						15									
Precipitation	None						None									
Wind (Beaufort Scale)[1]	1						0									
Cloud Cover (%)	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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5				1	S					1	S		
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5										1	S		
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5		1	S									1	S
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5						1	S	1	S				
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5		1	S										
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5													
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5		1	S							1	S		
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5													
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4				1	S			1	S				
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5								1	S				
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5		1	S					2	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5				1	S							1	S
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4												1	S
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
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HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		2	S					3	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		3	S					1	S				
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4		1	S					1	S				
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		1	S	1	S			1	S				
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
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RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5												1	S
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5				1	S			1	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
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YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5													
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

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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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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 (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

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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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

Point Count Survey Location ID	BB-S-M27-29															
Survey No.	1						2									
Date	3-Jun-15						3-Jul-15									
Start Time	8:28						8:57									
End Time	8:38						9:07									
Temp. (^{o}C)	13						18									
Precipitation	None						None									
Wind (Beaufort Scale)[1]	3						3									
Cloud Cover (%)	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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5		1	S										
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5										1	S		
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5								2	S				
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5		1	S									1	S
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5													
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4		1	S					2	S				
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5						1	S						
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlvphis trichas*	-	-	-	S5								1	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4				1	S								
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5						1	S	2	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5								1	S				
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		2	S	1	S							1	S
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		2	S			3	S	1	S			1	S
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4						1	S						
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5												1	S
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S					1	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5										1	S		
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4												1	S
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5													
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4				1	S							1	S
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5						1	S						
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5						1	S	1	S			1	S
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5		1	S										
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5		1	S					2	S				
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5		1	S										

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.
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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.
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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

2015 Breeding Bird Survey Results - HIWEC Study Area

							Point Count Survey Location ID	**BB-S-M24-30**											
							Survey No.	**1**						**2**					
							Date	**3-Jun-15**						**3-Jul-15**					
							Start Time	**9:01**						**9:27**					
							End Time	**9:11**						**9:37**					
							Temp. (°C)	**13**						**20**					
							Precipitation	**None**						**None**					
							Wind (Beaufort Scale)[1]	**4**						**2**					
							Cloud Cover (%)	**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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**		**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	*Empidonax alnorum*	-	-	-	S5													
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5													
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5													
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5		1	S							1	S		
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5										1	S		
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1	S					1	S				
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5								2	P				
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4													
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5								1	S				
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5		1	S										
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5										1	S		
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5						1	S						
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4		1	S			1	S						
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5						1	S						
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5		2	S										
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5		1	S			1	S	1	S				
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5													
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4													
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5												3	FL
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5						1	S	4	S				
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5													
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5						2	S						
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4								1	S				
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5				1	S								
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		2	S										
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S					1	S				
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5													
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4													
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5													
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4													
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5													
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4													
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5													
VEER	Veery	*Catharus fuscescens*	-	-	-	S4		1	S					1	S				
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5													
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5													
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5				1	S			1	S				
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5													
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5								1	S	1	S		
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													

Total individual birds observed 1493

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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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
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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
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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.
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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

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)[1]	
Cloud Cover (%)	
Habitat Description	
Survey Time Period	

Code	Common Name	Scientific Name	ESA Status[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		Grand Total
ALFL	Alder Flycatcher	*Empidonax alnorum*	-	-	-	S5		15
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5		8
AMGO	American Goldfinch	*Cardeulis tristis*	-	-	-	S5		4
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5		28
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5		22
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		37
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5		2
BBWA	Bay-breasted Warbler	*Dendroica castanea*	-	-	-	S5		3
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5		28
BEKI	Belted Kingfisher	*Cervle alcyon*	-	-	-	S4		1
BHVI	Blue-headed Vireo	*Vireo solitarius*	-	-	-	S5		19
BLBW	Blackburnian Warbler	*Dendroica fusca*	-	-	-	S5		22
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5		22
BRCR	Brown Creeper	*Certhia americana*	-	-	-	S5		3
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4		4
BTBW	Black-throated Blue Warbler	*Dendroica caerulescens*	-	-	-	S5		2
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		69
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		3
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5		206
CAWA	Canada Warbler	*Cardellina canadensis*	SC	THR Schedule 1	THR	S4		23
CMWA	Cape May Warbler	*Setophaga tigrina*	-	-	-	S5		2
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5		22
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5		29
COGR	Common Grackle	*Quiscalus quiscula*	-	-	-	S5		3
COLO	Common Loon	*Gavia immer*	-	-	-	S5		5
COME	Common Merganser	*Mergus merganser*	-	-	-	S5		1
CONI	Common Nighthawk	*Chordeiles minor*	SC	THR Schedule 1	THR	S4		2
CORA	Common Raven	*Corvus corax*	-	-	-	S5		14
COYE	Common Yellowthroat	*Geothlypis trichas*	-	-	-	S5		73
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5		5
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5		1
EAKI	Eastern Kingbird	*Tyrannus tyrannus*	-	-	-	S4		1
EAPH	Eastern Phoebe	*Sayornis phoebe*	-	-	-	S5		1
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4		8
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4		24
GCKI	Golden-crowned Kinglet	*Regulus satrapa*	-	-	-	S5		8
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5		9
HAWO	Hairy Woodpecker	*Picoides villosus*	-	-	-	S5		1
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5		1
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		121
HOWR	House Wren	*Troglodytes aedon*	-	-	-	S5		2
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5		1
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5		22
MOWA	Mourning Warbler	*Oporornis philadelphia*	-	-	-	S4		2
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		68
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4		12
NOWA	Northern Waterthrush	*Seiurus noveboracensis*	-	-	-	S5		8
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		146
PHVI	Philadelphia Vireo	*Vireo philadelphicus*	-	-	-	S5		1
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5		2
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5		5
PUFI	Purple Finch	*Carpodacus purpureus*	-	-	-	S4		14
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4		2
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5		23
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		68
RTHU	Ruby-throated Hummingbird	*Archilochus colubris*	-	-	-	S5		2
RUGR	Ruffed Grouse	*Bonasa umbellus*	-	-	-	S4		11
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4		6
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5		7
SCTA	Scarlet Tanager	*Piranga olivacea*	-	-	-	S4		2
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5		4
SPGR	Spruce Grouse	*Falcipennis canadensis*	-	-	-	S5		2
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5		9
SWTH	Swainson's Thrush	*Catharus ustulatus*	-	-	-	S4		5
TEWA	Tennessee Warbler	*Vermivora peregrina*	-	-	-	S5		1
TRES	Tree Swallow	*Tachycineta bicolor*	-	-	-	S4		3
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5		2
VEER	Veery	*Catharus fuscescens*	-	-	-	S4		25
VIRA	Virginia Rail	*Rallus limicola*	-	-	-	S5		1
WIFL	Willow Flycatcher	*Empidonax traillii*	-	-	-	S5		1
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5		1
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5		18
WOTH	Wood Thrush	*Hylocichla mustelina*	SC	-	THR	S4		2
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5		97
WWCR	White-winged Crossbill	*Loxia leucoptera*	-	-	-	S5		2
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5		16
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5		37
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5		11

2015 Breeding Bird Survey Results - HIWEC Study Area

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Breeding Code Legend

OBSERVED	
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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

Table C-5b: 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)[1]	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)		0 - 5 min (< 100 m)		0 - 5 min (> 100 m)	

Code	Common Name (KIWA tab)	Scientific Name	ESA Status[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Setophaga ruticilla*	-	-	-	S5													
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5										1		1	
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5													
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5		1		1								1	
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	HRSchedule 1	THR	S4													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5										2			
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5		1											
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5								1					
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4													
EWPW	Eastern Whip-poor-will	*Antrostomus vociferus*	THR	HRSchedule 1	THR	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		2											
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5		1											
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5													
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4								1					
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4								2					
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5												1	
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4												2	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5													
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5		1											
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5													
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5				1				1					
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5		1		1						1		1	
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5						1							
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													
N/A	Picoides sp.	Woodpecker Family	-	-	-	-													

Table C-5b: 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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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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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
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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.
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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.
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
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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs
NY	Nest with young seen or heard

Table C-5b: 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)[1]	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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Setophaga ruticilla*	-	-	-	S5													
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5				1				1					
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1											
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5													
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5		1						1					
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5													
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4													
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5													
CAWA	Canada Warbler	*Cardellina canadensis*	SC	HRSchedule 1	THR	S4													
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5													
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5		1								1			
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CORA	Common Raven	*Corvus corax*	-	-	-	S5													
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5				2		1						1	
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5													
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4				1									
EWPW	Eastern Whip-poor-will	*Antrostomus vociferus*	THR	HRSchedule 1	THR	S4												1	
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5								1				1	
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5								1					
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4						1		1					
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4													
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5		1											
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5													
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4													
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5													
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5													
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4								1					
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5								1					
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5				2				1				1	
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5		1		2				1					
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5													
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5		1		3				1		1		2	
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5													
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5						1				1			
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													
N/A	Picoides sp.	Woodpecker Family	-	-	-	-													

Table C-5b: 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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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs

Table C-5b: 2015 Breeding Bird Surveys Targeting Kirtland's Warbler - HIWEC Study Area

Point Count Survey Location ID	BB-N-M27-Extra A				BB-N-M22-Extra B				BB-S-M13-67			
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)[1]	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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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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AMRO	American Robin	*Turdus migratorius*	-	-	-	S5				2		1							
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5										1	S		
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5										1	S	1	S
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5													
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5								1					
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4										2	S		
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COLO	Common Loon	*Gavia immer*	-	-	-	S5												1	S
COME	Common Merganser	*Mergus merganser*	-	-	-	S5													
CORA	Common Raven	*Corvus corax*	-	-	-	S5								1					
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5		1				1				1	S		
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5										2	S		
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4		1								1	S		
EWPW	Eastern Whip-poor-will	*Antrostomus vociferus*	THR	HRSchedule 1	THR	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4													
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HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5													
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		1		1				1		1	S		
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5													
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NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4								1					
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WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5				2		1				2	S		
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5										1	CF		
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5		1											
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5													
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Notes:

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S5 - Very common and demonstrably secure in Ontario.
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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:
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 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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs

Table C-5b: 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)[1]	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)		0 - 5 min (< 100 m)		0 - 5 min (> 100 m)	

Code	Common Name (KIWA tab)	Scientific Name	ESA Status[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		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	*Setophaga ruticilla*	-	-	-	S5										1	S		
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5													
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1	S			1	S			1	A		
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5				1	S								
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5										1	S		
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5										1	S		
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4		2	S			1	S						
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5													
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5						1	S						
CAWA	Canada Warbler	*Cardellina canadensis*	SC	HRSchedule 1	THR	S4		1	S										
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5						1	S			1	S		
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5													
COLO	Common Loon	*Gavia immer*	-	-	-	S5													
COME	Common Merganser	*Mergus merganser*	-	-	-	S5		1	Flyover, X										
CORA	Common Raven	*Corvus corax*	-	-	-	S5								1	S				
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5		2	S			4	S			1	S		
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5										1	S		
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4		2	S			2	S			1	S		
EWPW	Eastern Whip-poor-will	*Antrostomus vociferus*	THR	HRSchedule 1	THR	S4													
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4		1	S										
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5													
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5		1	S			1	S						
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5										1	S		
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5													
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5										1	CF		
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5										2	S		
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4													
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		2	S			1	S						
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5													
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5				1	S								
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4										1	S		
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5		1	S										
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5		1	S			1	S						
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4		1	S	1	S								
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5				2	S								
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5													
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5										1	S		
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5		1	S					1	S	1	S		
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5													
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5						3	S			3	S		
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5						1	A						
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5										1	S		
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5						2	S						
N/A	Picoides sp.	Woodpecker Family	-	-	-	-												1	S

Table C-5b: 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.
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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.
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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.

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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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs

Table C-5b: 2015 Breeding Bird Surveys Targeting Kirtland's Warbler - HIWEC Study Area

Point Count Survey 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)[1]	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[2]	SARA Status[3]	COSEWIC Status[4]	NHIC S-Rank[5]		Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Number Observed	Highest Breeding Evidence	Total
AMRE	American Redstart	*Setophaga ruticilla*	-	-	-	S5										1
AMRO	American Robin	*Turdus migratorius*	-	-	-	S5		1	S			1	S			9
BAWW	Black-and-white Warbler	*Mniotilta varia*	-	-	-	S5		1	S							6
BBCU	Black-billed Cuckoo	*Coccyzus erythropthalmus*	-	-	-	S5						1	S			4
BCCH	Black-capped Chickadee	*Poecile atricapillus*	-	-	-	S5										6
BLJA	Blue Jay	*Cyanocitta cristata*	-	-	-	S5										2
BRTH	Brown Thrasher	*Toxostoma rufum*	-	-	-	S4										5
BTNW	Black-throated Green Warbler	*Dendroica virens*	-	-	-	S5		1	S			1	S			2
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5								1	H	2
CAWA	Canada Warbler	*Cardellina canadensis*	SC	HRSchedule 1	THR	S4						1	S			3
CEDW	Cedar Waxwing	*Bombycilla cedrorum*	-	-	-	S5						2	D			4
CHSP	Chipping Sparrow	*Spizella passerina*	-	-	-	S5										4
COLO	Common Loon	*Gavia immer*	-	-	-	S5										1
COME	Common Merganser	*Mergus merganser*	-	-	-	S5						1	Flyover, X			2
CORA	Common Raven	*Corvus corax*	-	-	-	S5				1	S					3
COYE	Common Yellowthroat	*Geothlyphis trichas*	-	-	-	S5		3	S			4	S			22
CSWA	Chestnut-sided Warbler	*Dendroica pensylvanica*	-	-	-	S5										4
EATO	Eastern Towhee	*Pipilio erythrophthalmus*	-	-	-	S4						1	S			9
EWPW	Eastern Whip-poor-will	*Antrostomus vociferus*	THR	HRSchedule 1	THR	S4										1
GCFL	Great Crested Flycatcher	*Myiarchus crinitus*	-	-	-	S4										1
GRJA	Gray Jay	*Perisoreus canadensis*	-	-	-	S5		3	FY			1	S			4
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5										2
HETH	Hermit Thrush	*Catharus guttatus*	-	-	-	S5		1	S			1	S			11
LISP	Lincoln's Sparrow	*Melospiza lincolnii*	-	-	-	S5						1	S			1
MAWA	Magnolia Warbler	*Dendroica magnolia*	-	-	-	S5										2
NAWA	Nashville Warbler	*Vermivora ruficapilla*	-	-	-	S5		2	S			1	S			7
NOFL	Northern Flicker	*Colaptes auratus*	-	-	-	S4										4
OVEN	Ovenbird	*Seiurus aurocapillus*	-	-	-	S4		1	S							7
PIWA	Pine Warbler	*Dendroica pinus*	-	-	-	S5										2
PIWO	Pileated Woodpecker	*Dryocopus pileatus*	-	-	-	S5										2
RBGR	Rose-breasted Grosbeak	*Pheucticus ludovicianus*	-	-	-	S4										1
RBNU	Red-breasted Nuthatch	*Sitta canadensis*	-	-	-	S5		1	S			1	S			3
REVI	Red-eyed Vireo	*Vireo olivaceus*	-	-	-	S5										5
RWBL	Red-winged Blackbird	*Agelaius phoeniceus*	-	-	-	S4										6
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5										3
SOSP	Song Sparrow	*Melospiza melodia*	-	-	-	S5						2	S			9
SWSP	Swamp Sparrow	*Melospiza georgiana*	-	-	-	S5		2	S	1	S					8
WISN	Wilson's Snipe	*Gallinago delicata*	-	-	-	S5										4
WIWR	Winter Wren	*Troglodytes troglodytes*	-	-	-	S5										2
WTSP	White-throated Sparrow	*Zonotrichia albicollis*	-	-	-	S5		3	S			4	CF			30
YBSA	Yellow-bellied Sapsucker	*Sphyrapicus varius*	-	-	-	S5										2
YRWA	Yellow-rumped Warbler	*Dendroica coronata*	-	-	-	S5						2	S			7
YWAR	Yellow Warbler	*Dendroica petechia*	-	-	-	S5										2
N/A	Picoides sp.	Woodpecker Family	-	-	-	-				1	S					2
														Total individual birds observed		217

Table C-5b: 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.
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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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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
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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.
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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 yound (nidifugous species), including incapable of sustained flight
AE	Adult leaving or entering nest sites in circumstances indicating occupied nest
FS	Adult carying fecal sac
CF	Adult carying food for young
NE	Nest containing eggs

Appendix C6

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: Leatherleaf, sweetgale fes, some sedge, many snags

Visit Number: 1

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

Suvey Notes

North west

Bird Observations

Survey Type	LEBI
Observation Time	07:02:00
Species	COYE
Breeding Evidence	S
< 100m	6
> 100m	
Flyovers	

3

Execution Time 9/8/2015 1:51:37 PM Filter Start Date 4/1/2015 Filter End Date 7/10/2015

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	Leather leaf and sweet gale FES, few cattails
Visit Number	1

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

Suvey Notes

Speaker oriented in west direction

Bird Observations

Survey Type	LEBI	12
Observation Time	07:31:00	
Species	SACR	
Breeding Evidence	S	
< 100m	0	
> 100m		
Flyovers	1	

Survey Type	LEBI	15
Observation Time	07:32:00	
Species	WISN	
Breeding Evidence	S	
< 100m	1	
> 100m		
Flyovers		

Least Bittern - WEC

Survey Type	LEBI
Observation Time	07:33:00
Species	COYE
Breeding Evidence	S
< 100m	3
> 100m	
Flyovers	

18

Survey Type	LEBI
Observation Time	07:36:00
Species	TRES
Breeding Evidence	S
< 100m	1
> 100m	
Flyovers	0

21

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	Shallow aquatic marsh dominated by lakebank sedge
Visit Number	1

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

Suvey Notes

Speaker facing south east direction

Bird Observations

Survey Type	Least bittern survey
Observation Time	08:48:00
Species	RWBL
Breeding Evidence	Observed
< 100m	2
> 100m	
Flyovers	

24

Survey Type	Least bittern survey
Observation Time	08:49:00
Species	EAKI
Breeding Evidence	Probable
< 100m	2
> 100m	
Flyovers	

27

Least Bittern - WEC

Survey Type	Least bittern survey
Observation Time	08:57:00
Species	COYE
Breeding Evidence	Observed
< 100m	1
> 100m	
Flyovers	

30

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

Suvey 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
Observation Time	06:42:00
Species	GBHE
Breeding Evidence	Observed
< 100m	
> 100m	
Flyovers	1

33

Survey Type	Least bittern survey point count
Observation Time	06:42:00
Species	RWBL
Breeding Evidence	Probable
< 100m	3
> 100m	
Flyovers	

36

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	Cattail and carex aquatilis marsh with open water
Visit Number	1

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

Suvey Notes

Speaker facing in west direction, a bit of static from speakers

Bird Observations

Survey Type	LEBI	39
Observation Time	07:16:00	
Species	AMBI	
Breeding Evidence	S	
< 100m	1	
> 100m		
Flyovers		

Survey Type	LEBI	42
Observation Time	07:13:00	
Species	COYE	
Breeding Evidence	S	
< 100m	4	
> 100m		
Flyovers		

Least Bittern - WEC

Survey Type	LEBI
Observation Time	07:18:00
Species	RWBL
Breeding Evidence	S
< 100m	1
> 100m	
Flyovers	

45

Survey Type	LEBI
Observation Time	07:16:00
Species	SACR
Breeding Evidence	S
< 100m	2
> 100m	
Flyovers	1

48

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	Shrub fen, graminoid and open water present
Visit Number	2

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

Suvey Notes

Speakers oriented in North west direction

Bird Observations

Survey Type	LB
Observation Time	07:16:00
Species	SWSP
Breeding Evidence	S
< 100m	3
> 100m	
Flyovers	

84

Survey Type	LB
Observation Time	07:17:00
Species	ALFL
Breeding Evidence	S
< 100m	1
> 100m	
Flyovers	

87

Least Bittern - WEC

Survey Type	LB
Observation Time	07:18:00
Species	COYE
Breeding Evidence	S
< 100m	2
> 100m	
Flyovers	

90

Survey Type	LB
Observation Time	07:19:00
Species	RWBL
Breeding Evidence	S
< 100m	2
> 100m	
Flyovers	

93

Survey Type	LB
Observation Time	07:16:00
Species	SOSP
Breeding Evidence	CF
< 100m	2
> 100m	
Flyovers	

96

Map Number	S-M35	Field Crew	JOHANNA PERZ

165

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

Suvey Notes

Cattails present and numerous snags; speakers oriented in west direction

Bird Observations

Survey Type	LB
Observation Time	07:42:00
Species	SWSP
Breeding Evidence	S
< 100m	3
> 100m	
Flyovers	

99

Least Bittern - WEC

Survey Type	LB
Observation Time	07:43:00
Species	RWBL
Breeding Evidence	S
< 100m	1
> 100m	
Flyovers	

102

Survey Type	LB
Observation Time	07:45:00
Species	SOSP
Breeding Evidence	S
< 100m	1
> 100m	
Flyovers	

105

Survey Type	LB
Observation Time	07:50:00
Species	COYE
Breeding Evidence	S
< 100m	1
> 100m	
Flyovers	

108

Map Number	S-M33	Field Crew	JOHANNA PERZ	168

Execution Time	9/8/2015 1:51:37 PM	Filter Start Date	4/1/2015	Filter End Date	7/10/2015

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	Wide leaved sedge fen
Visit Number	2

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

Suvey Notes

GCFL heard on route to survey location

Bird Observations

Survey Type	LB
Observation Time	08:37:00
Species	ALFL
Breeding Evidence	S
< 100m	1
> 100m	
Flyovers	

111

Least Bittern - WEC

Survey Type	LB
Observation Time	08:37:00
Species	RWBL
Breeding Evidence	A
< 100m	3
> 100m	
Flyovers	

123

Survey Type	LB
Observation Time	08:40:00
Species	SWSP
Breeding Evidence	S
< 100m	1
> 100m	
Flyovers	

126

Survey Type	LB
Observation Time	08:46:00
Species	COYE
Breeding Evidence	S
< 100m	2
> 100m	
Flyovers	

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		

Execution Time 9/8/2015 1:51:37 PM Filter Start Date 4/1/2015 Filter End Date 7/10/2015

Least Bittern - WEC

Habitat Type	Large cattail marsh with some open water
Visit Number	2

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

Suvey Notes

Speakers oriented in west direction

Bird Observations

Survey Type	LB	114
Observation Time	11:05:00	
Species	COYE	
Breeding Evidence	S	
< 100m	3	
> 100m		
Flyovers		

Survey Type	LB	117
Observation Time	11:06:00	
Species	SOSP	
Breeding Evidence	S	
< 100m	2	
> 100m		
Flyovers		

Least Bittern - WEC

Survey Type	LB
Observation Time	11:21:00
Species	SWSP
Breeding Evidence	S
< 100m	2
> 100m	
Flyovers	

120

Appendix C7

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	
Tablet	AECOM9	Wind Speed (beaufort)	5	Windy but sun is shining. High of 11 today	
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

Where photo of turtle was not possible, photo of where turtle was observed was taken

Vantage Point Location

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

Description of local habitat conditions

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

9

Species	Emydoidea blandingii
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

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.

Vantage Point Location

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

Description of local habitat conditions

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:0.13375555,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

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

Description of local habitat conditions

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
Estimated UTM or distance and direction from vantage point	300 east
Estimated Length (cm)	45
Total Observed	1
Observed Behaviour	Basking

33

Species	Blanding's Turtle
Estimated UTM or distance and direction from vantage point	20 degrees 90m
Estimated Length (cm)	20
Total Observed	1
Observed Behaviour	Basking

36

Species	Midland Painted Turtle
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

39

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	Additional Notes
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.	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).

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		Not able to photograph turtle, took photo of basking location where it was observed. Tree swallows nesting in snag, 1 mallard
Vantage Point Location	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	
Description of local habitat conditions	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 poi t	
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

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

Description of local habitat conditions

Open water wetland with bedrock shorelines and many floating mats and hummocks of leatherleaf. Open water approximately 70%. No floating or emergent veg observed.

Heard American bittern, northern flicker, song sparrow. Bittern west of vantage poi t

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	Additional Notes
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

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

Description of local habitat conditions

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

63

Species	Blanding's Turtle
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 vegetstion, 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	Additional Notes
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

69

Species	Midland Painted Turtle
Estimated UTM or distance and direction from vantage point	25m east
Estimated Length (cm)	10
Total Observed	1
Observed Behaviour	Basking

72

Species	Midland Painted Turtle
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

Vantage Point Location	Description of local habitat conditions	Additional Notes
Latitude:45.848986,Longitude:-80.601034,Altitude:199.5,Speed:0.22635555,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	Additional Notes
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	Additional Notes
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.	Midland painted turtles observed north of vantage point, habitat within and adjacent to corridor was surveyed.

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

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

Description of local habitat conditions

Large beaver pond, many basking logs and dead stumps, significant submergent vegetation, 1.5 feet deepPond surrounded by white cedar, black spruce, red maple

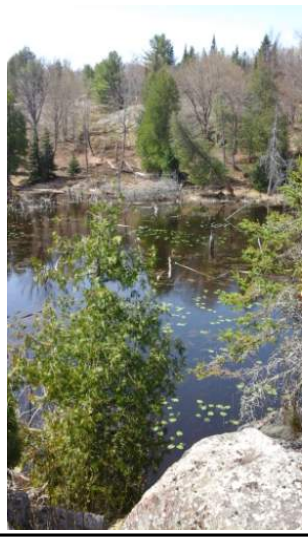
Description of Reptile Evidence

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

153

Species	Midland Painted Turtle
Estimated UTM or distance and direction from vantage point	30
Estimated Length (cm)	15
Total Observed	2
Observed Behaviour	Basking



156

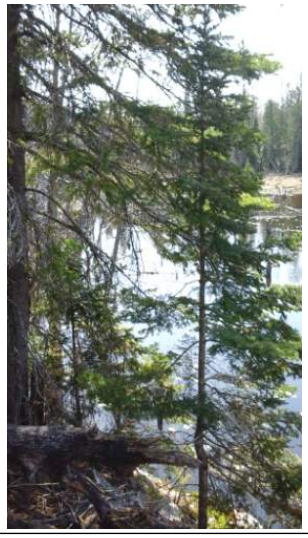
Species	Midland Painted Turtle
Estimated UTM or distance and direction from vantage point	35
Estimated Length (cm)	17
Total Observed	3
Observed Behaviour	Basking

159

Species	Emydoidea blandingii
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

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

Description of local habitat conditions

Large beaver pond, surrounded by mixed forest (spruce, white pine, red maple, white birch). Pond 1-2 feet deep

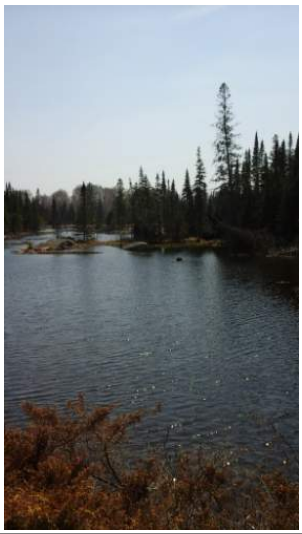
Description of Reptile Evidence

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

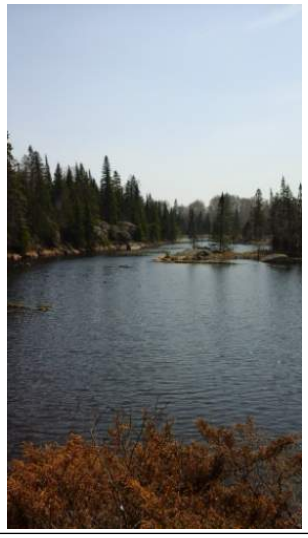
171

Species	Emydoidea blandingii
Estimated UTM or distance and direction from vantage point	60
Estimated Length (cm)	30
Total Observed	1
Observed Behaviour	Basking



174

Species	Midland Painted Turtle
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	
Tablet	AECOM8	Wind Speed (beaufort)	2	Sunny and calm	
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	
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

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

Description of local habitat conditions

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	Additional Notes
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	

Execution Time 9/9/2015 10:55:58 AM Filter Start Date 4/1/2015 Filter End Date 7/20/2015

Snake/Turtle Basking - WEC

213

Species	Snapping Turtle
Estimated UTM or distance and direction from vantage point	250 degrees 50m
Estimated Length (cm)	45
Total Observed	1
Observed Behaviour	Baskung

216

Species	Midland Painted Turtle
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	Additional Notes
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	No turtles 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-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	Turtle dived as we arrived so species and other features could not be determined		

Vantage Point Location	Description of local habitat conditions
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	Additional Notes
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	No turtles observed. Several spot heard calling

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	Additional Notes
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	Additional Notes
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	No reptiles

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

261

Species	Blanding's Turtle
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

267

Species	Blanding's Turtle
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	Additional Notes
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	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

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	Specimen spooked and retreated to water while attempting to capture a better observation photograph.		

Vantage Point Location	Description of local habitat conditions
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	Additional Notes
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.	Blandings and painted turtle 40m from vantage point retreated back to water before photograph could be taken.

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.	

Execution Time	9/9/2015 10:55:58 AM	Filter Start Date	4/1/2015	Filter End Date	7/20/2015

Snake/Turtle Basking - WEC

276

Species	Midland Painted Turtle
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

279

Species	Midland Painted Turtle
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	Additional Notes
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	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)

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	

Execution Time	9/9/2015 10:55:58 AM	Filter Start Date	4/1/2015	Filter End Date	7/20/2015

Snake/Turtle Basking - WEC

288

Species	Midland Painted Turtle
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	Additional Notes
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

297

Species	Midland Painted Turtle
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	Additional Notes
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

306

Species	Emydoidea blandingii
Estimated UTM or distance and direction from vantage point	220 m
Estimated Length (cm)	30
Total Observed	1
Observed Behaviour	Basking

309

Species	Emydoidea blandingii
Estimated UTM or distance and direction from vantage point	220 m
Estimated Length (cm)	25
Total Observed	1
Observed Behaviour	Basking

312

Species	Unconfirmed species
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	
Tablet	AECOM3	Wind Speed (beaufort)	3	Was -2 C this morning at Joe's camp	
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 H20 & dead trees	

Description of Reptile Evidence

Species	Midland Painted Turtle	318
Estimated UTM or distance and direction from vantage point	100m 40Â°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	
Tablet	AECOM3	Wind Speed (beaufort)	4	Was -2 C this morning at Joe's camp	
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	
Tablet	AECOM3	Wind Speed (beaufort)	3	Was -2 C this morning at Joe's camp	
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	
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%	No turtle on survey area. It is not good spot.

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	Additional Notes
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

Surrounded by high cliffs (15 m approx) that rise above water surface n all sides except for one access road

Vantage Point Location

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

Description of local habitat conditions

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	Additional Notes
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

366

Species	Midland Painted Turtle
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

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 local habitat conditions

Treed marsh ..not much 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-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 aresuible 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 quary 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	Additional Notes
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	

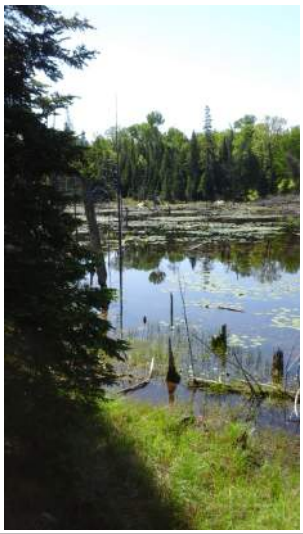
Description of Reptile Evidence

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

438

Species	Blanding's Turtle
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

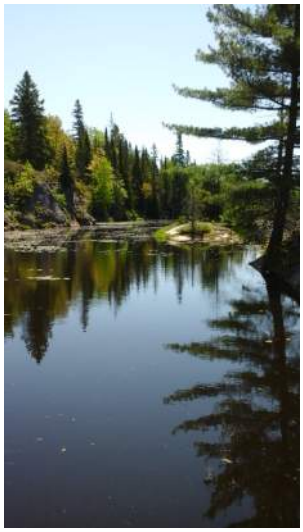
Feature ID	TU-A-M2-23	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	18.00	Weather Notes	
Tablet	AECOM1	Wind Speed (beaufort)	1		
Start Date	6/2/2015 12:00:27 PM	Precipitation	0		
End Date	6/2/2015 12:20:51 PM	Cloud Cover	0.00		

Survey Type	Turtle	Vantage Point #	1
Additional Notes			

Vantage Point Location	Description of local habitat conditions	Additional Notes
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

444

Species	Midland Painted Turtle
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	Additional Notes
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.	

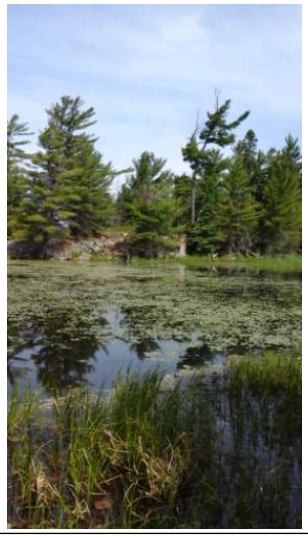
Description of Reptile Evidence

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	
Tablet	AECOM12	Wind Speed (beaufort)	5	Wispy clouds	
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

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

Description of local habitat conditions

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	Additional Notes
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

459

Species	Blanding's Turtle
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

474

Species	Blanding's Turtle
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	Additional Notes
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	

Execution Time 9/9/2015 10:55:58 AM Filter Start Date 4/1/2015 Filter End Date 7/20/2015

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 trres, 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	Additional Notes
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: Forgot to take GPS coordinates during survey, took at second vantage point

Vantage Point Location	Description of local habitat conditions
Latitude:45.84001,Longitude:-80.655539,Altitude:187.8,Speed:0.041155554,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

492

Species	Midland Painted Turtle
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	
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	No 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-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	Additional Notes
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: Alarm calling killdeer pair, turtle spotted at northern edge of complex

Vantage Point Location: 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

Description of local habitat conditions: 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

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

Description of local habitat conditions

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

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

Description of local habitat conditions

Plot centroid was in an unsuitable location of wetland complex (very shallow water, mostly mud and emergent vegetarion - 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	

Execution Time	9/9/2015 10:55:58 AM	Filter Start Date	4/1/2015	Filter End Date	7/20/2015

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 opportunties	

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
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

600

Species	Midland Painted Turtle
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

603

Species	Blanding's Turtle
Estimated UTM or distance and direction from vantage point	150 m northwest
Estimated Length (cm)	15
Total Observed	1
Observed Behaviour	Basking

606

Snake/Turtle Basking - WEC

609

Species	Midland Painted Turtle
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	Additional Notes
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	Note one Blandings turtle may have been a Midland Painted turtle; species not confirmed because distance too far

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

519

Species	Blanding's Turtle
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	Additional Notes
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

525

Species	Blanding's Turtle
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

531

Species	Midland Painted Turtle
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

537

Species	Blanding's Turtle
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	Additional Notes

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	Additional Notes
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	Low confidence in sighting		

Vantage Point Location	Description of local habitat conditions
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	

Execution Time 9/9/2015 10:55:58 AM Filter Start Date 4/1/2015 Filter End Date 7/20/2015

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

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

Description of local habitat conditions

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
Estimated UTM or distance and direction from vantage point	75
Estimated Length (cm)	25
Total Observed	1
Observed Behaviour	Basking on log

558

Species	Midland Painted Turtle
Estimated UTM or distance and direction from vantage point	85
Estimated Length (cm)	15
Total Observed	1
Observed Behaviour	Basking on log

561

Species	Blanding's Turtle
Estimated UTM or distance and direction from vantage point	100
Estimated Length (cm)	30
Total Observed	7
Observed Behaviour	Basking on log

564

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

582

Species	Midland Painted Turtle
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

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

Description of local habitat conditions

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	Photos are of their habitat, camera cannot capture the individual turtles		

Vantage Point Location	Description of local habitat conditions
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

Another team that immediately prior to survey walked 30 meters south of vantage point reported two blandings and a painted turtle

Vantage Point Location

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

Description of local habitat conditions

Beaver pond with lots of logs and floating vegetation (water lily), muddy shores may be potential nesting sites

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 C8

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 INGRISELLI		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

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

Description of local habitat conditions

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	Additional Notes
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	Saw four gray jay

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		69
Feature ID	SN-n-m46-14	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	16.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	4		
Start Date	4/29/2015 2:09:28 PM	Precipitation	0		
End Date	4/29/2015 2:30:20 PM	Cloud Cover	40.00		
Survey Type	Snake	Vantage Point #	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	
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	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 ajacent 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

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

Description of local habitat conditions

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

Vantage Point Location	Description of local habitat conditions	Additional Notes
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.	Garter snake was basking on moss-covered boulders in light shining through conifers. Nice habitat.

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	Additional Notes
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	Wish these forms let us take a picture of the feature

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 primairily 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 if 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

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

Description of local habitat conditions

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

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

Description of local habitat conditions

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	Additional Notes
Latitude:45.885213,Longitude:-80.577503,Altitude:202.4,Speed:0.041155554,Accuracy:1.5,Provider:gps,Time:05/13/2015 12:18:24 EDT		Rocks with deep cracks along 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	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	Additional Notes
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	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-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	Additional Notes
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.	No reptiles

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	Additional Notes
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	Massassauga rattlesnake observed close to survey location. Reported in wildlife 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-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

Appears to be good gestation habitat even though no snakes or evidence were observed.

Vantage Point Location

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

Description of local habitat conditions

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	Massassauga 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

Coordinates taken at end of snakw survey. Snake survey began near where turtle basking survey concluded

Vantage Point Location

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

Description of local habitat conditions

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	Additional Notes
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	Rock not warm enough yet; great 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	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	
Tablet	AECOM3	Wind Speed (beaufort)	4	Was -2 C this morning at Joe's camp	
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:0.0051444443,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

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

Description of local habitat conditions

Shrub rock end barren dominate by juniperus communis. Severalsuitable 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

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 local habitat conditions

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 talks. 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:0.087455556,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	
Tablet	AECOM12	Wind Speed (beaufort)	4	Wispy clouds	
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 then 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 obsrrved.	

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

Walking search survey; conditions may have been too hot for bssking. No snakes observed.

Vantage Point Location

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

Description of local habitat conditions

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

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

Vantage Point Location

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

Description of local habitat conditions

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	Additional Notes
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	Not a good spot for a snake survey

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	
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 woodlandand small wetbogs adjacent. 75% juniper cover quite shaded. Fissured rock, few scattered rocks	No 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	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	No snakes		

Vantage Point Location	Description of local habitat conditions
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	Coordinates taken at location of sighting		

Vantage Point Location	Description of local habitat conditions
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:0.0051444443,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: Northern Red-bellied snake observed while en route to site, approximately 150 m north of vantage point

Vantage Point Location: 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

Description of local habitat conditions: 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	Additional Notes

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	N-M27	Field Crew	JOHANNA PERZ	1188

Feature ID	SN-N-M27-2	Study Area	WEC		
Project Number	60341251	Air Temp. (degC)	20.00	Weather Notes	
Tablet	AECOM13	Wind Speed (beaufort)	2		
Start Date	6/17/2015 12:05:30 PM	Precipitation	0		
End Date	6/17/2015 12:25:40 PM	Cloud Cover	75.00		

Survey Type	Snake	Vantage Point #	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	
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		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

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 local habitat conditions

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

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

Vantage Point Location

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

Description of local habitat conditions

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	

Execution Time	9/9/2015 10:53:07 AM	Filter Start Date	4/1/2015	Filter End Date	7/20/2015

Snake/Turtle Basking - WEC

588

Species	Midland Painted Turtle
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	Additional Notes
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	No snakes observed

Description of Reptile Evidence

Species	
Estimated UTM or distance and direction from vantage point	
Estimated Length (cm)	
Total Observed	
Observed Behaviour	

Appendix C9

2015 Spring Raptor Migration Surveys

Table C9: 2015 Spring Raptor Migration Survey Results - HIWEC Study Area

							Round No.	1								2							
							Survey Date	Boat Launch				Flowerpot Bay				Boat Launch				Flowerpot Bay			
							Survey Station	15-Apr-15				16-Apr-15				21-Apr-15				23-Apr-15			
							Temperature (°C)	6				3				6				-3			
							Wind (Beaufort Scale)[1]	3				2				3				4			
							Relative Cloud Cover (%)	0				75				100				100			
							Precipitation	None				none				light rain				none			
							Start Time	9:00				9:15				8:37				9:28			
							End Time	17:09				14:30				13:55				13:45			
Raptors																							
Code	**Common Name**	**Scientific Name**	**ESA Status[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**		Number Observed	Height (m)	Direction of Flight[6]	Time Observed	Number Observed	Height (m)	Direction of Flight[6]	Time Observed	Number Observed	Height (m)	Direction of Flight[6]	Time Observed	Number Observed	Height (m)	Direction of Flight[6]	Time Observed
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4										1	30	WNW	12:56				
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4																	
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4																	
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4																	
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2										1	25	E	9:00				
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2										1	30	E	9:25				
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2										1	50	SSW	11:37				
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2										1	80	ENE	13:10				
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5										1	30	W	13:07				
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5										1	80	ENE	13:26				
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4										1	18	NE	13:41				
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4																	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4																	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4																	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5						1	10	E	9:15								
MERL	Merlin	*Falco columbarius*	-	-	-	S5						1	10	WSW	12:05								
MERL	Merlin	*Falco columbarius*	-	-	-	S5						1	15	S	14:10								
MERL	Merlin	*Falco columbarius*	-	-	-	S5										1	15	S	9:38				
MERL	Merlin	*Falco columbarius*	-	-	-	S5										1	20	S	13:41				
MERL	Merlin	*Falco columbarius*	-	-	-	S5														1	2	N	11:19
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	

Table C9: 2015 Spring Raptor Migration Survey Results - HIWEC Study Area

							Round No.	1								2							
							Survey Date	Boat Launch				Flowerpot Bay				Boat Launch				Flowerpot Bay			
							Survey Station	15-Apr-15				16-Apr-15				21-Apr-15				23-Apr-15			
							Temperature (°C)	6				3				6				-3			
							Wind (Beaufort Scale)[1]	3				2				3				4			
							Relative Cloud Cover (%)	0				75				100				100			
							Precipitation	None				none				light rain				none			
N/A	*Accipiter* sp.	-	-	-	-	-																	
N/A	*Accipiter* sp.	-	-	-	-	-																	
N/A	*Accipiter* sp.	-	-	-	-	-																	
N/A	*Accipiter* sp.	-	-	-	-	-																	
N/A	*Accipiter* sp.	-	-	-	-	-																	
N/A	*Accipiter* sp.	-	-	-	-	-																	
NOGO	Northern Goshawk	*Accipiter gentilis atricapillus*	-	-	-	S4																	
NOGO	Northern Goshawk	*Accipiter gentilis atricapillus*	-	-	-	S4																	
NOHA	Northern Harrier	*Circus cyaneus*	-	-	-	S4																	
NSWO	Northern Saw-whet Owl	*Aegolius acadicus*	-	-	-	S4		1	3	N	14:55												
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5										1	40	W	12:38				
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5																	
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5																	
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5																	
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5																	
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5																	
PEFA	Peregreine Falcon	*Falco peregrinus*	SC	SC	SC	S3B																	
PEFA	Peregreine Falcon	*Falco peregrinus*	SC	SC	SC	S3B																	
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4						1	15	E	11:20								
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4																	
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4																	
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4																	
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4																	
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5		1	50	W	10:20	2	25	W	11:20								
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5		1	35	E	10:35	1	151	SW	12:24								
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5		1	15	N	12:05												
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5																	
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5																	
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5		1	100	N	9:50	1	50	N	10:30								
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5		1	300	N	10:50	2	150	E	11:10								
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5		3	40	S	10:51	1	25	ESE	11:15								
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5		1	100	N	11:05	2	30	W	14:30								
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5		1	18	N	12:15												
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5		1	80	NE	12:20												
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5		3	80	E	12:25												
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5		1	75	W	13:00												
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5		1	25	S	15:15												
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5		1	45	N	15:20												
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5		1	45	-	15:52					4	-	-	12:00				
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5														1	30	W	10:38
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
Incidential Wildlife																							
Code	**Common Name**	**Scientific Name**	**ESA**	**SARA**	**COSEWIC**	**S-rank**																	
ABDU	American Black Duck	*Anas rubripes*	-	-	-	S4																	
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5						1	15	SW	12:20								
AWPE	American White Pelican	*Pelecanus erythrorhynchos*	THR	-	-	S2B																	
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5										58	-	ENE	11:00				
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5																	
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5																	
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5																	
COLO	Common Loon	*Gavia immer*	-	-	-	S5																	
COME	Common Merganser	*Mergus merganser*	-	-	-	S5		2	10	E	12:00	2	15	E	11:10								
COME	Common Merganser	*Mergus merganser*	-	-	-	S5		1	15	E	15:30	1	15	NW	13:55								
CORA	Common Raven	*Corvus corax*	-	-	-	S5						1	15	N	13:25								
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5		1	38	E	9:52	1	75	E	10:47								
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5		1	25	E	10:00	5	75	E	10:52								
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5		2	15	E	13:45	3	30	E	11:45								
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5						4	30	W	12:00								
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5						1	18	E	13:25								
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5										14	80	E	10:30				
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5										18	110	E	10:45				
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5										12	50	E	11:20				
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5										8	120	NNE	12:25				

Table C9: 2015 Spring Raptor Migration Survey Results - HIWEC Study Area

							Round No.	1								2							
							Survey Date	Boat Launch				Flowerpot Bay				Boat Launch				Flowerpot Bay			
							Survey Station	15-Apr-15				16-Apr-15				21-Apr-15				23-Apr-15			
							Temperature (^{o}C)	6				3				6				-3			
							Wind (Beaufort Scale)[1]	3				2				3				4			
							Relative Cloud Cover (%)	0				75				100				100			
							Precipitation	None				none				light rain				none			
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5										21	100	ENE	13:15				
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5		1	35	S	10:05	1	151	E	10:45								
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5		1	200	S	10:25	1	150	E	11:30								
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5		1	250	N	10:52	2	22	W	13:29								
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5		2	15	E	13:05												
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5		3	10	E	14:15												
NOPI	Northern Pintail	*Anas acuta*	-	-	-	S5		2	10	S	9:50												
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5		7	150	N	11:35	3	30	S	9:30								
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5						1	300	N	11:45								
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5						2	240	N	12:44								
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5																	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	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- Soutth 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 C9: 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)[1]	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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**		Number Observed	Height (m)	Direction of Flight[6]	Time Observed	Number Observed	Height (m)	Direction of Flight[6]	Time Observed	Number Observed	Height (m)	Direction of Flight[6]	Time Observed	Number Observed	Height (m)	Direction of Flight[6]	Time Observed
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4																	
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4						1	50	WNW	13:36								
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4										1	80	WNW	10:15				
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4														1	40	NW	12:17
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	80	NE	8:30												
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	100	SW	8:35												
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	120	N	10:23												
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	100	N	10:55												
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	100	NNE	12:00												
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2						2	150	NNE	10:50								
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2						2	150	NNW	12:12								
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2										1	100	NNW	11:05				
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2														1	200	NNW	10:04
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2														1	150	N	11:07
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2														1	10	SE	14:30
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		1	120	N	9:52												
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		1	120	N	10:10												
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		1	100	NW	11:35												
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5										2	200	NNE	11:04				
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5														3	100	NNE	10:18
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5														2	100	NNW	10:31
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5														1	100	NNE	10:48
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5														2	100	NNW	12:21
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5														1	70	WNW	13:05
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4																	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4						1	80	NNW	13:27								
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4						1	40	N	13:54								
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4																	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	20	W	8:52												
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	80	N	9:50												
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	40	W	10:48												
MERL	Merlin	*Falco columbarius*	-	-	-	S5						1	30	NNE	10:16								
MERL	Merlin	*Falco columbarius*	-	-	-	S5										2	20	NE	11:40				
MERL	Merlin	*Falco columbarius*	-	-	-	S5										2	100	N	13:12				
MERL	Merlin	*Falco columbarius*	-	-	-	S5														2	20	NNW	9:30
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	

Table C9: 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)[1]	2				2				1				1			
							Relative Cloud Cover (%)	10				80				20				0			
							Precipitation	none				none				none				none			
N/A	*Accipiter* sp.	-	-	-	-	-		1	120	N	9:25												
N/A	*Accipiter* sp.	-	-	-	-	-		1	150	N	11:25												
N/A	*Accipiter* sp.	-	-	-	-	-										1	150	N	12:06				
N/A	*Accipiter* sp.	-	-	-	-	-																	
N/A	*Accipiter* sp.	-	-	-	-	-																	
N/A	*Accipiter* sp.	-	-	-	-	-																	
NOGO	Northern Goshawk	*Accipiter gentilis atricapillus*	-	-	-	S4																	
NOGO	Northern Goshawk	*Accipiter gentilis atricapillus*	-	-	-	S4																	
NOHA	Northern Harrier	*Circus cyaneus*	-	-	-	S4						1	40	N	11:41								
NSWO	Northern Saw-whet Owl	*Aegolius acadicus*	-	-	-	S4																	
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5																	
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5		2	70	N	12:55												
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5						1	80	NNE	14:50								
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5										2	200	NNE	11:01				
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5										1	80	ESE	11:33				
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5														1	80	NNW	9:40
PEFA	Peregreine Falcon	*Falco peregrinus*	SC	SC	SC	S3B										1	100	NW	9:30				
PEFA	Peregreine Falcon	*Falco peregrinus*	SC	SC	SC	S3B										1	50	N	12:05				
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4																	
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4						1	120	N	11:16								
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4																	
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4																	
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4																	
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5																	
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5																	
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5																	
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5						2	120	NNE	13:19								
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5																	
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5						12	100	N	12:00								
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5										12	100	N	10:43				
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5														12	100	NE	9:45
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
Incidential Wildlife																							
Code	**Common Name**	**Scientific Name**	**ESA**	**SARA**	**COSEWIC**	**S-rank**																	
ABDU	American Black Duck	*Anas rubripes*	-	-	-	S4																	
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5																	
AWPE	American White Pelican	*Pelecanus erythrorhynchos*	THR	-	-	S2B																	
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5																	
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5										150	120	NW	9:15				
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5										120	100	NNW	9:18				
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5										80	50	NNE	9:28				
COLO	Common Loon	*Gavia immer*	-	-	-	S5		2	100	N	10:31												
COME	Common Merganser	*Mergus merganser*	-	-	-	S5																	
COME	Common Merganser	*Mergus merganser*	-	-	-	S5																	
CORA	Common Raven	*Corvus corax*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	

Table C9: 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 (^{o}C)	7				10				8				12			
							Wind (Beaufort Scale)[1]	2				2				1				1			
							Relative Cloud Cover (%)	10				80				20				0			
							Precipitation	none				none				none				none			
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5																	
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5																	
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5																	
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5																	
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5																	
NOPI	Northern Pintail	*Anas acuta*	-	-	-	S5																	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5																	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5																	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5																	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5		2	100	S	9:55												
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	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- Soutth 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 C9: 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)[1]	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[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**		Number Observed	Height (m)	Direction of Flight[6]	Time Observed	Number Observed	Height (m)	Direction of Flight[6]	Time Observed	Number Observed	Height (m)	Direction of Flight[6]	Time Observed	Number Observed	Height (m)	Direction of Flight[6]	Time Observed
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4																	
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4																	
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4																	
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4																	
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4		1	60	NW	10:45												
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2																	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	80	WNW	9:25												
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	60	N	10:52												
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	110	WNW	14:30												
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2						1	110	NW	9:50								
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2						1	80	E	10:23								
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2						2	100	N	10:44								
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2						1	120	NW	13:11								
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2														1	80	W	8:45
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2										1	80	ENE	10:23				
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2														1	150	NW	12:15
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2														1	100	SW	12:41
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5																	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5										2	70	WNW	9:55				
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5										1	40	N	12:14				
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4																	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4																	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4																	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4						1	30	S	13:51								
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4														1	70	N	12:10
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5																	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	40	NE	10:52												
MERL	Merlin	*Falco columbarius*	-	-	-	S5		2	10	WSW	12:27												
MERL	Merlin	*Falco columbarius*	-	-	-	S5						1	80	N	9:30								
MERL	Merlin	*Falco columbarius*	-	-	-	S5										1	50	NE	12:37				
MERL	Merlin	*Falco columbarius*	-	-	-	S5														1	40	E	10:00

Table C9: 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 (^oC)	8				10				8				14			
							Wind (Beaufort Scale)[1]	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	*Accipiter gentilis atricapillus*	-	-	-	S4		1	60	WNW	12:08												
NOGO	Northern Goshawk	*Accipiter gentilis atricapillus*	-	-	-	S4										2	60	E	11:19				
NOHA	Northern Harrier	*Circus cyaneus*	-	-	-	S4																	
NSWO	Northern Saw-whet Owl	*Aegolius acadicus*	-	-	-	S4																	
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5																	
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5																	
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5																	
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5																	
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5																	
OSPR	Osprey	*Pandion haliaetus*	-	-	-	S5																	
PEFA	Peregreine Falcon	*Falco peregrinus*	SC	SC	SC	S3B																	
PEFA	Peregreine Falcon	*Falco peregrinus*	SC	SC	SC	S3B																	
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4																	
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4																	
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4		1	70	N	12:02												
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4		1	60	W	14:52												
RTHA	Red-tailed Hawk	*Buteo jamaicensis*	-	-	-	S4										1	60	E	10:16				
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5																	
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5																	
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5																	
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5																	
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5						1	100	NNW	10:00								
SSHA	Sharp-shinned Hawk	*Accipiter striatus*	-	-	-	S5						1	50	NW	10:38								
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5																	
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5		5	100	N	9:46												
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5						8	80	N	9:00								
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5										8	50	N	9:08				
TUVU	Turkey Vulture	*Cathartes aura*	-	-	-	S5														5	100	E	9:00
Incidential Wildlife																							
Code	**Common Name**	**Scientific Name**	**ESA**	**SARA**	**COSEWIC**	**S-rank**																	
ABDU	American Black Duck	*Anas rubripes*	-	-	-	S4		3	30	SSW	11:00												
AMCR	American Crow	*Corvus brachyrhynchos*	-	-	-	S5																	
AWPE	American White Pelican	*Pelecanus erythrorhynchos*	THR	-	-	S2B						3	100	SE	13:40								
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5																	
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5																	
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5																	
CAGO	Canada Goose	*Branta canadensis*	-	-	-	S5																	
COLO	Common Loon	*Gavia immer*	-	-	-	S5																	
COME	Common Merganser	*Mergus merganser*	-	-	-	S5																	
COME	Common Merganser	*Mergus merganser*	-	-	-	S5																	
CORA	Common Raven	*Corvus corax*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	

Table C9: 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 (^{o}C)	8				10				8				14			
							Wind (Beaufort Scale)[1]	4				3				4				4			
							Relative Cloud Cover (%)	100				0				80				0			
							Precipitation	none				none				none				none			
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5																	
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5																	
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5																	
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5																	
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5																	
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5																	
NOPI	Northern Pintail	*Anas acuta*	-	-	-	S5																	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5																	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5																	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5																	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5																	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	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
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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.
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- Soutth 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

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Table C9: 2015 Spring Raptor Migration Survey Results - HIWEC Study Area

								Total Number of Individuals Observed	Total of Number of Individuals per Species
							Round No.		
							Survey Date		
							Survey Station		
							Temperature (°C)		
							Wind (Beaufort Scale)[1]		
							Relative Cloud Cover (%)		
							Precipitation		
							Start Time		
							End Time		
Raptors									
Code	**Common Name**	**Scientific Name**	**ESA Status[2]**	**SARA Status[3]**	**COSEWIC Status[4]**	**NHIC S-Rank[5]**			
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4		1	5
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4		1	
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4		1	
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4		1	
AMKE	American Kestrel	*Falco sparverius*	-	-	-	S4		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	29
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		2	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		2	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		2	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BAEA	Bald Eagle	*Haliaeetus leucocephalus*	SC	NAR	NAR	S2		1	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		1	19
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		1	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		1	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		1	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		1	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		2	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		3	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		2	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		1	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		2	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		1	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		2	
BWHA	Broad-winged Hawk	*Buteo platypterus*	-	-	-	S5		1	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4		1	5
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4		1	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4		1	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4		1	
COHA	Cooper's Hawk	*Accipiter cooperii*	NAR	-	-	S4		1	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	22
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		2	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		2	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		2	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		2	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	
MERL	Merlin	*Falco columbarius*	-	-	-	S5		1	

Table C9: 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 (^{o}C)		
							Wind (Beaufort Scale)[1]		
							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	Peregreine Falcon	*Falco peregrinus*	SC	SC	SC	S3B		1	2
PEFA	Peregreine 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	**205**

Incidential Wildlife

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

Table C9: 2015 Spring Raptor Migration Survey Results - HIWEC Study Area

							Round No. Survey Date Survey Station Temperature (^{o}C) Wind (Beaufort Scale)[1] Relative Cloud Cover (%) Precipitation	Total Number of Individuals Observed	Total of Number of Individuals per Species
DCCO	Double-crested Cormorant	*Phalacrocorax auritus*	-	-	-	S5		21	
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5		2	
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5		2	
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5		3	
HEGU	Herring Gull	*Larus argentatus*	-	-	-	S5		2	
MALL	Mallard	*Anas platyrhynchos*	-	-	-	S5		3	
NOPI	Northern Pintail	*Anas acuta*	-	-	-	S5		2	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5		10	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5		1	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5		2	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5		2	
SACR	Sandhill Crane	*Grus canadensis tabida*	-	-	-	S5		3	
								547	

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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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.
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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.

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- Soutth 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	Latitude:,Longitude:,Altitude:,Speed:, Accuracy:,Provider:,Time:	Boat Launch Location at UTM: 528476-5078337	

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 153	Bird observed calling from tree beside hawk watch location		

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	
Tablet	AECOM8	Wind Speed (beaufort)	2	Calm in the morning, winds coming from the south in the afternoon.	
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	Latitude:,Longitude:,Altitude:,Speed:, Accuracy:,Provider:,Time:		Point count location across from Flower Pot Bay at UTM 527199-5077568		

Observations

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
Feature ID	N/A				
Project Number	60341251	Air Temp. (degC)	6.00	Weather Notes	
Tablet	AECOM8	Wind Speed (beaufort)	3	Gusts to Beaufort 4	
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	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	Wind from SW all day, light rain at beginning of day for half hour, then snow briefly; rain stopped around 12:00 pm			

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 coopers 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 observerFlying from various/all directions from observer locationMaximum of 4 observed throug		
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
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
Feature ID	N/A				
Project Number	60341251	Air Temp. (degC)	7.00	Weather Notes	
Tablet	AECOM14	Wind Speed (beaufort)	2	Temp rose to 17 C by end of survey, wind N Beaufort 2 at start, switched to West and Beaufort 4 at 11:30	
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	N/A	Field Crew	SARAH RICHER		27
Feature ID	N/A				
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes	
Tablet	AECOM14	Wind Speed (beaufort)	2	Wind from NE	
Start Date	4/30/2015 9:00:38 AM	Precipitation	0		
End Date	4/30/2015 3:02:59 PM	Cloud Cover	80.00		
Point Count ID	Hawk watch Marker Island	Additional Notes			
Point Count Location	Latitude:,Longitude:,Altitude:,Speed:, Accuracy:,Provider:,Time:		Actual point location is at N 45.84420, W 80.72063		

Observations

Observation Time	10:16:00	Species	Merlin
Number of Observations	1	Behaviour	1
Height (m)	30	Direction of Flight	1
Distance from Observer (m)	50	Direction of Observation	15
Observation Notes 351			

Observation Time	10:50:00	Species	Bald eagle
Number of Observations	2	Behaviour	0
Height (m)	150	Direction of Flight	1
Distance from Observer (m)	1000	Direction of Observation	0
Observation Notes 354	1 adult female, 1 3rd year immature male, soaring together on thermal after rising from ground, then steadily heading north/northeast		

Observation Time	11:16:00	Species	Red-tailed Hawk
Number of Observations	1	Behaviour	0
Height (m)	120	Direction of Flight	0
Distance from Observer (m)	500	Direction of Observation	3
Observation Notes 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 360	Adult male		

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 363	Both 2nd year immatures		

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 381	Turkey vultures at all heights, all distances and directions from observer, throughout survey period		

Migratory Bird

Map Number	N/A	Field Crew	SARAH RICHER		30
Feature ID	MARKER ISLAND				
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes	
Tablet	AECOM9	Wind Speed (beaufort)	1	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	
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 426	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		

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	
Tablet	AECOM9	Wind Speed (beaufort)	1	Wind SW, Beaufort 1, water like a mirror, sunny	
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 462	Adult. Perched on dead tree on island approximately 2 km away to fhe 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.		

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	
Tablet	AECOM18	Wind Speed (beaufort)	4	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	
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	Latitude:,Longitude:,Altitude:,Speed:, Accuracy:,Provider:,Time:	Bluetooth being wonky, actual location is N 45.84420, W 80.72063	

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 474	Adult, being divebombed by a Merlin		

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 480	Divebombing an adult Bald eagle		

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 492	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		

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 495	Along north side of inlet		

Migratory Bird

Map Number	N/A	Field Crew	SARAH RICHER		39
Feature ID	FLOWERPOT				
Project Number	60341251	Air Temp. (degC)	10.00	Weather Notes	
Tablet	AECOM18	Wind Speed (beaufort)	3	Wind from west 8:45-9:15; SW 9:15-12:30, west 12:30-1:00, southwest 1:00-2:45	
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 501	Adult on thermal		

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 507	3rd year immature, flew directly overhead along south shore of inlet		

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 513	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		

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 516	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		

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 519	Adult, flew up from trees south of bay across from Flowerpot, circled high and to the NW		

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

Feature ID	MARKER ISLAND				
Project Number	60341251	Air Temp. (degC)	8.00	Weather Notes	
Tablet	AECOM3	Wind Speed (beaufort)	4	Winds west, Beaufort 4-5; changed to WSW @11am	
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	
Tablet	AECOM3	Wind Speed (beaufort)	4	Winds from W/SW, Gusts to Beaufort 5	
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

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

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

Observations

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			