association to protect
AMHERST ISLAND

AMHERST ISLAND WIND PROJECT SPECIES-AT-RISK REPORT – ANNOTATED REPORT

INTRODUCTION

Association to Protect Amherst Island (APAI) consultants have examined Stantec's Species at Risk Report and APAI is of the opinion that this report falls far short of properly assessing the natural environment and Species-at-Risk (SAR) in accordance with established procedures stated in the Endangered Species Act (ESA). Much of the research is incomplete, improperly timed and inadequately executed. Following are a few illustrative examples. Subsequent to these examples you will find an annotated report detailing the many issues and inadequacies of this SAR Report

Erroneous Assumptions:

Area to be Searched / Protected:

According to the MNR publication, SAR Policy 4.1 "Habitat protection for endangered, threatened and extirpated species under the Endangered Species Act, 2007" published on July 22, 2008:

> "Under the ESA 2007, "habitat" is defined as either an area on which a species depends directly or indirectly to carry on its life processes (based on the general definition in clause 2(1)(b) of the act) or the area prescribed for the species in a habitat regulation (clause 2(1)(a)). "

However, a review of the SAR Report in conjunction with the Stantec Natural Heritage Assessment / Environmental Impact Study (NHR/EIS) seems to indicate that l**and surveyed for SAR presence and habitat was restricted to "land parcels where components of the wind project are proposed" (optioned properties) and within those land parcels to areas "in and within 120 meters of the Project Location**".

> Note: The Project Location is defined in the NHR/EIS as: "a Project Location boundary is considered to be the outer limit where site preparation and construction activities will occur and where infrastructure will be located (e.g. temporary structures, lay down areas, storage facilities, generation equipment, access roads, etc.)."

The optioned properties noted above appear to make up approximately 1/3 to ½ of Amherst Island's land mass. **How and when was the remainder of the island surveyed for SAR and SAR habitat as required by the ESA?**

Lack of Clarity Regarding Search Parameters

Confusion as to exactly what areas were surveyed is exacerbated due to a lack of clear definitions. It is presently impossible to discern if statements in the SAR Report refer to the entire island, a specific property on the island or an area within 120 meters of a project component. Definitions must be provided for the following terms as they apply to the SAR Report: Project Location, Project Study Area, Project Area, and Zone of Investigation. Additionally, it must be specified how the various terms relate to SAR "habitat" as defined in the ESA.

Lack of Consultation with Local Naturalist Club

Stantec undertook no meaningful consultation with Kingston Field Naturalists (KFN), a local naturalist club that has over 60 years of data on the species found on Amherst Island. This resulted in no appropriately timed or located searches for the following SAR recently documented on Amherst Island by KFN:

Red Knot
Chimney Swift
Golden Eagle
Peregrine Falcon.

The lack of consultation with KFN resulted in Stantec's undertaking inappropriately timed and erroneously located searches for the following SAR:

Blanding's Turtle
Little Brown Bat
Northern Long-eared Bat
Henslow's Sparrow
Least Bittern

Duration of Proposed Activities:

The SAR Report suggest that a 6-month construction timeline can be expected however, the HATCH "*Construction and Operations Use of Loyalist Township Roads and Right of Way Space on Amherst Island*" Report, presented by Algonquin Power to Loyalist Township provides an **18-month timeline. Additionally, construction activity is slated for approximately 75% of the island's roads.**

Inappropriately Timed Ecological Land Classification (ELC) Searches

Optimum use of the ELC searches would dictate that the ELC searches be undertaken as a planning tool which would inform the decision-making process as to where additional searches for SAR would occur. ELC classification will identify suitable habitat for the various SAR and therefore provide critical information as to where the SAR would be most likely found on Amherst Island. The following is from page 29 of the Ecological Land Classification for Southern Ontario Training Manual:

> "Application at the small scale requires field work. At this scale of resolution, it is necessary to collect the detailed site, soil, and vegetation data that are used to describe, classify, and map polygons…. **This detailed application level provides the information needed for site-level environmental impact assessments, evaluations, forest management, detailed life science inventories, restoration, land stewardship, and development proposals, to name a few.** Furthermore, important management, disturbance, and wildlife information can be collected for other land-use purposes."

The ELC evaluation dates listed in Table 4B, Appendix B of the NHA/EIS report mirror those listed in Table 3.1 Appendix B of the SAR Report. According to *Table 3.1, Appendix B Record of Amherst Island Field Surveys*, of the SAR Report, ELC evaluations were undertaken on the following dates:

- July 26- 29 / 2011
- August 2-5 / 2011
- August 17-19 / 2011
- November 11, 2011
- March 27-28 / 2012
- May 18, 2012
- August 15, 2012.

Many of the Site Surveys occurred prior to July 26, 2011, the first documented date of ELC studies. Of the 209 Site Investigations listed in Table 4B of the NHA/EIS – 134 occurred prior to July 26**. If over 60% of the Site Investigations occurred prior to the ELC surveys, how were the areas to search for SAR identified?** Lacking ELC data, or consultation with local naturalists, what selection criteria was utilized to identify the location for field studies? Below is a list of the field studies that occurred prior to ELC studies.

- Waterfowl Stopover and Staging Area (Terrestrial)
- Waterfowl Stopover and Staging Area (Aquatic)
- Waterfowl Nesting Area
- Amphibian Breeding Woodland
- Amphibian Breeding Wetland
- Marsh Breeding Bird Habitat
- Woodland Sensitive Area Bird Breeding Habitat
- Shrub/Early Successional Bird Breeding Habitat
- Shorebird Migratory Stopover Area

Lack of information – Species Specific

Blanding's Turtle

A review of the field notes included in the NHA/EIS appear to indicate that searches for Blanding's Turtle and Blanding's Turtle habitat occurred in conjunction with ELC surveys and were restricted to "optioned" land and for the most part within 120 meters of project location within that "optioned" land. As noted above, "optioned" land makes up 1/3 to ½ of Amherst Island's available habitat.

The ELC survey dates are noted above. Assuming that searches for Blanding's Turtle occurred in conjunction with ELC surveys, no searches for Blanding's Turtles were undertaken in the month of June, when the females are more likely to be traveling.

One can only assume that no observations of Blanding's Turtles were made by Stantec employees due to the severely restricted search parameters. Case in point, during May/ June 2013 5 Blanding's Turtles have been identified by KFN membership. These were located throughout the island.

1) Front Road
2) Second Concession
3) Emerald Forty
4) South Shore Road (near Long point marsh)

Little Brown Bat and Northern Long-eared Bat

While hibernation sites are easiest to find during swarming periods in late August/early September, no ELC evaluations were undertaken in early September and the latest dates for August were August 17 to 19, 2011. This indicates inadequate resources provided at an inappropriate time.

Why were no searches undertaken for migratory bats as migration is a life process protected under the ESA? Bat migration data must be gathered and analyzed prior to the Amherst Island Project being allowed to continue in the SAR process.

Note: APAI has arranged for acoustical bat monitoring to be undertaken on Amherst Island. The data gathered will be provided to the MNR upon receipt.

The information provided above is a serves to illustrate the need for additional, properly planned and executed field research. Details pertaining to these and other concerns are provided below.

AMHERST ISLAND WIND PROJECT SPECIES AT RISK REPORT

1.0 Introduction

No comment

1.1 SUBMISSION AND CONTACT INFORMATION

No Comment

1.2 PROJECT OVERVIEW

Comment:

- A review of the project components clearly indicates that the proposed wind turbine installation will blanket Amherst Island.

1.3 PROJECT LOCATION

The Project is proposed within the County of Lennox and Addington in eastern Ontario. The Project Area includes Amherst Island, an approximately 3 - 15 kilometre wide corridor stretching between the Island, and the mainland where the submarine cable is proposed. The mainland portion of the Project Area stretches from the mainland shoreline, north of the Invista Transformer Station and is generally bounded by i) County Road 4 to the West; ii) the Canadian National Railway line to the North; and iii) approximately 500 m East of Jim Snow Drive to the East. The location of the Amherst Island Wind Project is shown in Figure 1.0 (Appendix A).

Comment:

- Please note definition of "Project Area"

1.4 PROJECT COMPONENTS

No comment

1.5 ACTIVITY SUMMARY

No comment

1.6 DURATION OF PROPOSED ACTIVITIES

Targeted start date for construction: Fall 2013
Targeted start date for operation: February 25, 2014 (Commercial Operation Date)
Targeted repowering/decommissioning date: Approximately 20 years after COD

Comment:

- The HATCH "*Construction and Operations Use of Loyalist Township Roads and Right of Way Space on Amherst Island*" Report presented by Algonquin Power to Loyalist Township provides an 18 month timeline, not a 6 month timeline as suggested above. Additionally, construction activity is slated for approximately 75% of the island's roads. Below is from page 17 of the HATCH report.

  "This memo lays out road use impact from construction activities planned on Amherst Island for a duration of approximately 18 months starting in October 2013 (pending receipt of the Renewable Energy Approval), as well as subsequent operations. Island roads impacted will be Front Road, Lower 40 Foot Road, Stella 40 Foot Road, Concession Roads 2 and 3, South Shore Road, Marshall 40 Foot Road, Art McGinns Road, a short section of Emerald 40 Foot Road. In addition, the Island's MTO ferry and road from the ferry terminal to Front Road (Stella 40ft) may be used for a relatively short period at the beginning of construction to transport materials for the construction of a new and permanent Island dock."

- From page 18 of the same Report:

  "In particular, the transportation of equipment and materials (second bullet above) dominates the roads use impact. Approximately 400 oversized, heavy-haul trucks are required to transport the turbine components from the island dock to the individual turbine sites over a span of about 6 months. After the turbine components are delivered, the heavy-haul trucks will return to the mainland. In addition to the turbine components, construction vehicles, equipment, and materials will be transported on flatbed trailers or bulk material carriers (e.g., dump trucks) along the proposed transport routes. Approximately 11,000 truck loads are anticipated for transportation of equipment and materials over a span of a minimum of 18 months, with 90% of this truck quantity being for aggregate; methods to reduce this will be implemented should they be viable from a design perspective."

- 18 months of construction activity to build the turbine installation and 18 months to decommission represents a substantial amount of activity that is certain to disturb, displace SAR.

1.7 ASSOCIATED ENVIRONMENTAL REPORTING

No comment

1.8 REPORT OVERVIEW

The information in this report is supplemental to the 'Draft Amherst Island Wind Energy Project Natural Heritage Assessment and Environmental Impact Study' required under O. Reg. 359/09. This report should be read in conjunction with the Amherst Island Wind Energy Project NHA/EIS.

The ESA 2007 was created to protect Species at Risk and their habitats in Ontario. Endangered, Threatened and Extirpated species listed on the Species at Risk in Ontario (SARO) list automatically receive legal protection from harm or harassment under the ESA 2007.

In addition to species protection, the ESA 2007 prohibits damage or destruction of habitat for Endangered or Threatened species. This section of the ESA 2007 is subject to transition provisions, meaning that habitat protection does not yet apply to all species. Currently, a given species' habitat may either: not be protected, have general habitat protection or have regulated habitat protection. Whether or not a given habitat is protected and what type of protection it is provided depends mainly on when the species associated with it was added to the SARO list, and on its designated status.

Comment:

- According to the MNR publication, SAR Policy 4.1 "*Habitat protection for endangered, threatened and extirpated species under the Endangered Species Act, 2007*" published on July 22, 2008:

  > "Under the ESA 2007, "habitat" is defined as either an area on which a species depends directly or indirectly to carry on its life processes (based on the general definition in clause 2(1)(b) of the act) or the area prescribed for the species in a habitat regulation (clause 2(1)(a)). "

2.0 Species at Risk Records Review

2.1.1 Background Information

Additional consultation and requests for known Species at Risk occurrences in the Amherst Island Wind Energy Project Study Area were made to:

- *Kingston Field Naturalists (KFN). Meeting and site walk with Kurt Hennige and Erwin Batalla on May 20, 2011, to visit KFN property and discuss on-island bird communities. Request for bird nesting data sent to Kurt Hennige on June 2, 2011. Bird nesting data received June 24, 2011. Report titled 'Considerations for Amherst Island Natural Heritage Assessment (Draft) dated October 15, 2012*

- *Association to Protect Amherst Island. Report titled 'Response to Algonquin Power Co. Report: Construction and Operations Use of Loyalist Township Roads and Right of Way Space on Amherst Island" received December 4, 2012.*

Any information received as a result of these consultations was incorporated into this assessment.

Comment:

- Site walk of May 20, 2011 was restricted to KFN property
- Nesting data forwarded by Kurt Hennige on 24 June 2011 was related to Short-eared Owl information exclusively.
- The first meeting addressed SAR which was attended by KFN members and Stantec / Algonquin employees occurred in June of 2013, after the Stantec SAR report had been submitted to MNR.
- The Association to Protect Amherst Island's Road Report referenced above, mentions SAR in passing.
- As virtually no information was requested from the KFN and no information was requested from APAI there was no information to incorporate into the Stantec SAR Report.

2.1.2 Results

Fourteen (14) provincially Threatened or Endangered species were identified by background sources and through consultation with MNR, as historically occurring within the general vicinity of the Project Study Area:

- *One plant (Butternut);*
- *Two reptiles (Blanding's Turtle and Eastern Musk Turtle);*
- *Two mammals (Little Brown Bat and Northern Long-eared Bat);*
- *Six birds (Least Bittern, Eastern Whip-poor-will, Barn Swallow, Henslow's, Sparrow, Bobolink, and Eastern Meadowlark);*
- *Two fish (American Eel and Spotted Gar); and*
- *One mussel (Eastern Pondmussel).*

Comment:

- The following SAR not listed above are documented to use the habitat found on Amherst Island:
  - Chimney Swift – noted in the Atlas of Breeding Birds of Ontario as "probably breeding" on AI
  - Red Knot – MNR SAR posting specifically mentions Amherst Island
    http://www.mnr.gov.on.ca/en/Business/Species/2ColumnSubPage/MNR_SAR_RD_KNT_EN.htmldocumented by KFN to use the habitat on AI
- Consultation with local Naturalist Clubs such as the Kingston Field Naturalists (KFN) who have over 60 years of available documentation of the species on Amherst Island would have directed Stantec to search for additional species at risk.

- KFN records indicate the following species are documented to have used the habitat on Amherst Island (AI). Appropriately timed investigations should be undertaken for the presence of the three below noted SAR. (Chimney Swift, Red Knot, Golden Eagle)

    - Red Knot – Recent sightings documented by KFN membership
    - A cursory review of KNF Blue Bill (2009 / 2013 / 2012) provides the following information with regards to sightings of SAR that could potentially be found on AI that have not already been documented in the NH report.

        - Golden Eagle
          (KFNBB March 2009 / 3 Golden Eagle 16 Jan 2009)
          (KNFBB – June 2009 / needs further investigation – location not specified)
          (KNFBB – March 2013 / needs further investigation – location not specified)
          (KFNBB Dec 2012 / 1 Golden Eagle 19 Nov 2012 / additional sighting listed in table)
          (KNFBB – March 2012 / needs further investigation – location not specified)
        - Chimney Swift - noted in the Atlas of Breeding Birds of Ontario as "probably breeding" on AI
          (KNFBB – June 2009 / needs further investigation – location not specified)
          (KNFBB – Dec 2009 / needs further investigation – location not specified)(KNFBB – March 2013 / needs further investigation – location not specified)
          (KNFBB – Dec 2012 / needs further investigation – location not specified)
          (KNFBB – June 2012 / needs further investigation – location not specified)
          (KNFBB – March 2012 / needs further investigation – location not specified)
        - Red Knot - documented by KFN to use the habitat on AI

3.0 Species at Risk Surveys

3.1 METHODS

To assess the presence of the species identified through records review as historically occurring within the area and to identify the presence of any additional Species at Risk that occur within the Project Study Area, a site investigation field program was conducted.

Comment:

- Please provide definition of Project Study Area. Project Area is defined in section 1.3 – are the two terms interchangeable?

- Please specify how Project Study Area relates to SAR "habitat" as defined in the ESA.

Consultation regarding the field methods and protocols used to assess Species at Risk in the Project area has occurred with MNR on an ongoing basis, with Kate Pitt (Species at Risk Biologist) and Eric Prevost (Renewable Energy Planning Ecologist) providing comments on the Species at Risk field program completed in 2011.

Land access was available for all land parcels where components of the wind project are proposed. The Project Study Area was traversed on foot and physically inventoried. The field surveys detailed current conditions within the Project Study Area.

Comment:

- Please provide definition of Project Study Area. Reading above it would seem that the Project Study Area is restricted to "land parcels where components of the wind project are proposed" and not SAR "habitat" as defined by the ESA.

- While land access was available for all land parcels where components of the wind project are proposed this constitutes a limited portion of the island. *Table 5.0 Primary Siting Considerations*, indicates the optioned properties on Amherst Island. These optioned properties appear to make up approximately 1/3 of the land mass. How / when was the remainder of the island surveyed?

- According to the NHA/EIS, only land parcels where components of the wind project are proposed were traversed on foot, and the NHA/EIS does not provide documentation indicating that these parcels were traversed on foot in their entirety. Please provide documentation indicating when the "Project Study Area" in its entirety was traversed on foot.

Detailed habitat assessments and mapping, according to the Ecological Land Classification (ELC) system, were completed for the Project to determine whether the critical habitat components required to support each of the species occurred.

Comment:

- Please provide a map indicating where the "detailed habitat assessments" occurred within the Project Area as defined in section 1.3 of this Report.

- According to *Table 3.1, Appendix B Record of Amherst Island Field Surveys*, of the SAR Report, ELC evaluations were undertaken on the following dates:

    - July 26- 29 / 2011
    - August 2-5 / 2011
    - August 17-19 / 2011
    - November 11, 2011
    - March 27-28 / 2012
    - May 18, 2012
    - August 15, 2012.

According to section 3.1 Methods of the NHA/EIS Report,

> The site investigations undertaken detailed the current conditions in and within 120 m of the Project Location, and were based on the information about the Project Location and siting that was current at the time of the respective survey. Survey dates, times, duration, field personnel and weather conditions are presented in **Table 4B, Appendix B**

The ELC evaluation dates listed in Table 4B, Appendix B of the NHA/EIS report mirror those listed in Table 3.1 Appendix B of the SAR Report, with the addition of Eastern Whip-poor-will, Least Bittern and Henslow's Sparrow surveys to the SAR Report table.

- A search of 120 meters in and within the "project location" as described in the NHA/EIS does not meet the requirements of ESA legislation which addresses habitat for all life processes of SAR. Additional surveys must be undertaken in order to comply with ESA legislations

- Many of the Site Surveys occurred prior to July 26, 2011, the first documented date of ELC studies. Of the 209 Site Investigations listed in Table 4B of the NHA/EIS – 134 occurred prior to July 26. If over 60% of the Site Investigations occurred prior to the ELC surveys, how were the areas to search for SAR identified? Lacking ELC data, what selection criteria was utilized to identify the location for field studies? Below is a list of the field studies that occurred prior to ELC studies.

  Algonquin must complete ESA studies for the below noted as the selection criteria utilized to identify the location for field studies was clearly driven by the location of the various project components and not an analysis of potential SAR habitat.

  - Waterfowl Stopover and Staging Area (Terrestrial)
  - Waterfowl Stopover and Staging Area (Aquatic)
  - Waterfowl Nesting Area
  - Amphibian Breeding Woodland
  - Amphibian Breeding Wetland
  - Marsh Breeding Bird Habitat
  - Woodland Sensitive Area Bird Breeding Habitat
  - Shrub/Early Successional Bird Breeding Habitat
  - Shorebird Migratory Stopover Area

3.1.1 Terrestrial Habitat Assessments

A botanical inventory and ELC of vegetation communities in the Project Study Area were conducted in 2011 and 2012. Dates, times, duration, field personnel and weather for each field survey are provided in Table 3.1 (Appendix B).

Comment: See comment above – Section 3.1

3.1.1.1 Terrestrial Species Surveys

The field survey program to assess Species at Risk in the Project Study Area included:

- *Vascular plant surveys (2011 and 2012);*
- *Blanding's Turtle and Eastern Musk Turtle habitat assessments (2011);*
- *Little Brown Bat and Northern Long-eared Bat habitat assessments (2011);*
- *Eastern Whip-poor-will ground singing surveys (May-June 2011);*
- *Breeding bird point count and area search surveys (May-July 2011);*

- *Henslow's Sparrow detailed habitat assessment and nocturnal playback surveys (May- June 2011); and*
- *Least Bittern habitat assessment and playback surveys (May-July 2011).*

Comment:

- See comment above – Section 3.1
- Please indicate in which sections of the field notes "Blanding's Turtle, Little Brown Bat, Northern Long-eared Bat, Henslow's Sparrow and Least Bittern habitat assessments " are located as this information is not readily identifiable in the field notes.
- Please provide a definition of Project Study Area and specify how it relates to SAR "habitat" as defined in the ESA.

Additional surveys for wildlife (not specifically targeting identified Species at Risk occurrences) were also completed within the Project Study Area. These included:

- *Spring and fall waterfowl stopover and staging surveys (March-May and October- December 2011);*
- *Winter raptor driving and walking transect surveys (December 2010-March 2011);*
- *Spring migratory shorebird surveys (May 2011);*
- *Spring migratory landbird survey (April-May 2011);*
- *Fall migratory landbird survey (September-October 2011);*
- *Fall migratory butterfly surveys (September 2011);*
- *Fall migratory swallow surveys (July-September 2011);*
- *Spring waterfowl nesting surveys (May-July 2011);*
- *Summer woodland raptor nesting surveys (May-July 2011);*
- *Amphibian surveys (April-June 2011); and*
- *Breeding bird point count and area search surveys – including open country breeding birds, marsh breeding birds, shrub/early successional breeding birds, and area-sensitive woodland breeding birds, including targeted surveys for Louisiana Waterthrush, Shorteared Owl, and Wilson's Phalarope (May-July 2011).*

Comment: The Loyalist Township Municipal Consultation Form (NH section prepared by CRCA) states:

Site Investigations

1. The reliance on limited historical data and 2 years of monitoring results does not provide confidence in the findings.

2. Although monitoring was conducted over a period of 2 years, some features were studied for a very limited period of time and potentially missed optimal observation periods.

3. Alternative Site Investigation Methods – There appears to be no reference to efforts to obtain landowner permission to access interior portions of properties that are not visible from the road side or beyond lands under an agreement. Some bias may exist based on where data was collected/observed from.

Spring Migratory Shorebird Surveys (May 2011)

SAR to be potentially identified during Spring Migratory Shorebird Surveys: Red Knot – species has been recorded on AI in recent KFN records.

- Please clarify why no Fall surveys were recorded.

- A review of Table 3.1 of the SAR Report indicates that Spring surveys began on May 3, 2011, ending on May 26, 2011, with a total of 6 surveys.

  A review of the observation forms indicates that total of 13 hours and 40 minutes were devoted to all surveys – however even that small amount of time is not in fact accurate. On May 3, 20011 (Observation Form page 1340 of report) the survey was rained out and no bird sightings were recorded, however those 4 hours and 10 minutes are included in the total observation time. Therefore the true time for all surveys with some expectation of success was 9.5 hours.

  Additionally, one of the most important shorebird species regularly sighted on Amherst Island in late May and early June is the Red Knot (endangered). This species is more likely to be sighted in evening surveys on rainy days.

  The only evening Spring Migratory Shorebird Surveys recorded on Table 3.1 was from 4:15 to 7:47 pm on 3 May 2011, which was rained out. Therefore, effectively, no surveys were undertaken in the evenings.

  Additional, properly timed surveys must be undertaken.

Spring and Fall Migratory Landbird Survey

SAR to be potentially identified in Migratory Landbird Survey: Yellow-breasted Chat, Cerulean Warbler, Acadian Flycatcher (all noted in recent existing KFN records)

The Stantec NH/EIS report provides the following information:

> The candidate woodlots were surveyed weekly for 8 weeks in the spring and 7 weeks in the fall of 2011. The surveys were carried out between April 27-May 26 and September 1-October 21, 2011. Visits began approximately at sunrise and extended no more than 4 hours after sunrise. Severe weather events were avoided, which include high winds and/or heavy precipitation, to minimize any survey bias associated with variability in weather conditions.

Section 10 "How much Habitat to Protect" of the Ontario Ministry of Natural Resources *Significant Wildlife Habitat Technical Guide* has the following information on page 121, Table 10-5. Primary locations of seasonal concentrations of wildlife, under Key Requirements for Landbird Migratory Stopover Area: "Great Lakes shorelines and adjacent lands within 5 km (especially Lake Erie & Lake Ontario) are very important." SWH Ecoregion 6E Criterion Schedule further elaborates to state that

"Woodlots need to be >10 ha[f] in size and within 5 km [iv, v, vi, vii, viii, ix, x, xi, xii, xiii, xiv, xv] of Lake Ontario."

There are 8 woodlots in the Study Area which meet the above criteria. Unfortunately there is no information available as to which woodlots were included in the search, making it impossible to ascertain if all woodlots meeting the above criteria were visited. Please provide details as to which woodlots were searched and the dates and times of the searches.

Breeding Bird Point Count and Area Surveys (May – July 2011)

SAR to be potentially identified in Breeding Bird Habitat: All

Open Country Breeding Bird Habitat / Grassland Breeding Bird Habitat

SAR to be potentially identified in Open County / Grassland Breeding Bird Habitat: Bobolink, Eastern Meadowlark, Henslow's Sparrow, Whip-poor-Will (Bobolink, Eastern Meadowlark, Whip-poor-Will are noted in recent existing KFN records

> Per *Section 5.3.3.8 Open Country Breeding Bird Habitat and Short-eared Owl Habitat*, of the NH/EIS Report, Amherst Island contains abundant grassland habitat, predominantly hay and pasture. For the purpose of the NHA, the Study Area on the island has been divided into 9 large grassland blocks, each of which has been evaluated as significant habitat for open country breeding birds.

A review of the field notes does not indicate that the 9 large grassland blocks evaluated as significant habitat of open country breeding birds were searched in their entirety. The areas not searched must be evaluated.

Marsh Breeding Bird Habitat

SAR to be potentially identified in Marsh Breeding Bird Habitat: Least Bittern (noted in recent existing KFN records)

Section 3.2.2 Species Results Overview of the SAR Report states that Least Bittern were observed "outside of Project Area". Sightings are recorded in Stantec Field Notes of 20 Jun 2011 and 6 July 2011.

- According to Section 1.3 of this Report the Project Area is defined as "The Project Area includes Amherst Island, an approximately 3 - 15 kilometre wide corridor stretching between the Island, and the mainland where the submarine cable is proposed". Please clarify how the Least Bittern was observed "outside of Project Area" and how the "Project Area" relates to SAR habitat as defined in the ESA.
- Additionally, here are numerous areas on Amherst Island that could potentially support Least Bittern that have not been investigated. Properly timed field studies encompassing properly identified locations on Amherst Island should be undertaken prior to any further movement on the Amherst Island SAR file.

Vascular Plants (Butternut)

No Comment

Blanding's Turtle and Eastern Musk Turtle

In conjunction with the ELC and vegetation surveys (as described above), detailed habitat assessments for Blanding's Turtle and Eastern Musk Turtle habitat were conducted in appropriate habitats. Dates, times, duration, field personnel and weather for each field survey and a summary of survey protocols and methods are presented in Tables 3.1 and 3.4 (Appendix B), respectively.

At each open water habitat, a habitat assessment was completed for Blanding's Turtle and Eastern Musk Turtle overwintering habitat. Surveyors recorded microhabitat features in suitable wetland habitats such as estimated water depth, vegetation types, size of wetland, and substrate.

Comment:

- See section 3.2.4.2 – Blanding's Turtle and Eastern Musk Turtle Assessment of the Amherst Island Project Study Area for additional comments.

- Please indicate in which sections of the field notes "detailed habitat assessments for Blanding's Turtle and Eastern Musk Turtle habitat were conducted" as this information is not readily identifiable in the field notes.

- Please provide a map indicating which areas of Amherst Island were surveyed via ELC and vegetation surveys. The NHA/EIS provides the following information in Table 3.1 *Characteristics Used to Identify Candidate Seasonal Concentration Areas*
    - Vegetation community classifications were utilized to assess features within 120 m of the Project Location that would support turtle wintering areas. Specialized site investigations were conducted to identify potential turtle wintering areas.
    - As lands within the Study Area consisted primarily of cultivated agricultural cropland, the search for turtle nesting habitat focused on watercourses and any marshy wetlands within 120 m of the Project Location

      Note: According to the NHA/EIS, a Project Location boundary is considered to be the outer limit where site preparation and construction activities will occur and where infrastructure will be located (e.g. temporary structures, lay down areas, storage facilities, generation equipment, access roads, etc.).

- Please provide information as to how the "appropriate habitats" were selected and where these are located.

- Please specify if "appropriate habitats" were selected for each of the SAR life processes as the habitat differs from one life process to another.

- The above paragraph states that "at each open water habitat, a habitat assessment was completed for Blanding's Turtle and Eastern Musk Turtle overwintering habitat". Please indicate in which sections of the field notes this information can be found as it is not readily identifiable in the field notes.
- The above paragraph states that ".Surveyors recorded microhabitat features in suitable wetland habitats". Please indicate in which sections of the field notes this information can be found as it is not readily identifiable in the field notes. Additionally, please specify if the suitable wetland habitats are overwintering specific?

- Table 3.4 provides the following information as a summary of survey protocols and methods, "Habitat assessments were conducted based on data collected through the ELC and OWES surveys. Turtle overwintering substrate and habitat assessments were conducted during spring and summer in 2011. See **Section 3.1** for a description of survey methods and **Table 3.1** for site investigation dates, field personnel, and weather condition information." As no description of survey methods or protocols is provided in section 3.1.1.1.1 or Table 3.4, please provide this description.

- According to the Ostrander Point Environmental Review Tribunal, the following information was not contested by any of the 4 expert witnesses testifying on Blanding's Turtles:

    - [242] Blanding's turtle is a semi-aquatic turtle.

    - [243] Blanding's turtle uses a variety of wetland types depending on availability, including emergent mashes, bogs, forested swamps, and temporary pools. Habitat use is generally driven by needs such as food, summer refuges from dry periods, and in winter protection from freezing temperatures. In some areas a single large wetland could accommodate all of those needs, but in most places Blanding's turtle uses several wetlands over the year, requiring overland trips.

    - [244] In early summer, nesting females seek an appropriate site for egg laying with an exposure to direct sunlight. Such sites include beaches, grasslands, rocky outcrops, agricultural fields, road and railway embankments, lawns, forest cuts, dredge piles, and borrow pits. Blanding's turtles have been found to move extensively overland to nesting sites – movements up to 6km have been reported.

- Looking at the information provided by the expert witnesses at the Ostrander Point Environmental Review Tribunal Report, the habitat used by the Blanding's Turtle during its life stages (nesting, the activity period, and overwintering) include: marshes, swamps, temporary pools, beaches, grasslands, rocky outcrops, agricultural fields, road and railway embankments, lawns, forest cuts, dredge piles and borrow pits.

- A review of the NHA/EIS indicates that all Turtle Wintering Surveyes Occured in TO1, which is in the vicinity of the Long Point Marsh. Additionally the NHA/EIS states " As lands within the Study Area consisted primarily of cultivated agricultural cropland, the search for turtle nesting habitat focused on watercourses and any marshy wetlands within 120 m of the Project Location"

- This raises the following questions:
    1. As the ESA protects the Blanding's Turtle during all of its life stages (nesting, activity period and overwintering) please indicate how the "activity period" of the Blanding's Turtle was appropriately considered
    2. A review of the NHA/EIS appears to indicate that all searches for Blanding's Turtle Wintering and Nesting habitat were restricted to an area within 120 meters of project components. This clearly does not meet the requirements of the ESA.

Little Brown Bat and Northern Long-eared Bat

In conjunction with the ELC and vegetation surveys (as described above), detailed habitat assessments for Little Brown Bat and Northern Long-eared Bat habitat were conducted in appropriate habitats. Dates, times, duration, field personnel and weather for each field survey and a summary of survey protocols and methods are presented in Tables 3.1 and 3.4 (Appendix B), respectively.

In each deciduous and mixed woodland, a bat maternity colony habitat assessment was completed for Little Brown Bat and Northern Long-eared Bat. Surveyors recorded microhabitat features observed such number of snags and the species, decay class, description of cavities, and height and type of cavities in each snag. Depending on the species, maternity roosting colonies for bats can include tree foliage, tree cavities and crevices under loose bark, or buildings.

A search for bat hibernacula features was also conducted in the Renewable Energy Atlas bat hibernacula mapping (LIO 2012) as well as in conjunction with the ELC and vegetation surveys (as described above). Bats require specific environmental conditions for hibernating. These conditions are provided by features such as caves or abandoned mines (MNR 2000). Karst topography and areas of exposed bedrock can be indicators of potentially suitable hibernacula habitat for bats.

Comment:

- Why were no searched undertaken for migratory bats, as migration is a life process protected under the ESA?

- Amherst Island lies between Wolfe Island and Ostrander Point. The Wolfe Island post construction Bat monitoring report indicate high Bat mortality rates and the Gilead Radar monitoring (for Ostrander Point Wind Facility) also indicates high levels of bat movement. As Amherst Island is sandwiched between the two, it is clear that Bat migration studies must be undertaken on Amherst Island to ensure the appropriate protection of Ontario's threatened Bat population.

- Please indicate in which sections of the field notes "detailed habitat assessments for Little Brown Bat and Northern Long-eared Bat habitat" is documented as this information is not readily identifiable.

- Please indicate in which section of the field notes assessments for bat maternity colony habitat is documented for "each deciduous and mixed woodland" as this information is not readily identifiable.

- While hibernation sites are easiest to find during swarming periods in late August/early September, no ELC evaluations were undertaken in early September and the latest date for August would be August 17 to 19, 2011. This seems like inadequate resources provide at an inappropriate time.

- Please provide information as to how the "appropriate habitats" were selected and where these are located.

- Table 3.4 provides the following information as a summary of survey protocols and methods, "Habitat assessments were conducted on project location and associated investigation zones during ELC surveys (where access permitted). Bat maternity colony and hibernacula habitat assessments were conducted during spring and summer in 2011. See **Section 3.1** for a description of survey methods and **Table 3.1** for site investigation dates, field personnel, and weather condition information"

Breeding Birds

Breeding bird surveys (point count surveys and area searches) were conducted in the Project Area to assess use by:

- *Least Bittern*
- *Bobolink*
- *Barn Swallow*
- *Eastern Meadowlark*
- *Henslow's Sparrow*
- *Eastern Whip-poor-will*
- *Any additional Endangered or Threatened breeding bird species not identified through the records review.*

Comment:

- Please confirm that Project Area corresponds to the description in section 1.3.

- While 6 avian species were identified the following species are also documented to have used the habitat on AI. Appropriately timed investigations should be undertaken for the presence of the two below noted SAR. (Chimney Swift, Red Knot, Golden Eagle)

Three rounds of surveys for breeding birds were conducted at all habitats (woodland, marsh, and grassland), with 14-15 person days per round. The first was conducted from May 30 to June 11, 2011, the second round was conducted from June 15 to June 25, 2011, and the third round was conducted in grassland habitat from June 30 to July 12, 2011. Dates, times, duration, field personnel and weather for each field survey and a summary of survey protocols and methods are presented in Tables 3.1 and 3.4 (Appendix B), respectively. Surveys included point counts and were augmented by area searches through the Project Study Area. Surveys began at, or within, half an hour of sunrise and were completed by 10:00 a.m. Weather conditions (i.e., precipitation and visibility) were within the parameters required by monitoring programs such as Environment Canada's Breeding Bird Survey or the Ontario Forest Bird

Monitoring Program, and are provided in Table 3.1 (Appendix B).

Comment:

- A review of Table 3.1 indicates a total of 200.5 hours devoted to Breeding Bird Surveys and Point Counts. Using an 8 hour "person day" this equals 25 "person days" which would equate to 8 person days per round and not 14 -15 as stated above. In other words, the actual time spent in the field which is documented as Breeding Bird Surveys and Point Counts is 40% lower than stated above. (14 {days} X 8 {hours} = 112 {hours} X 3 {rounds of surveys} = 336 person hours).

- A review of Table 3.1 indicates that of the 44 Surveys undertaken, 29 were completed post 10:00 am. Additionally, the majority of the surveys were completed from roadside and many of the breeding birds can be located away from the roads, closer to the areas where the turbines as proposed to be located.

A total of 63 point count locations were surveyed, and were distributed throughout the Project Study Area to characterize the relative abundance of species breeding within the Project Study Area. A total of 40 point counts were conducted in grasslands, 6 in marsh, and 17 in woodland habitats. The locations of all point counts conducted are shown on Figures 2.0-2.8, Appendix A.

Ten minute point counts were conducted at each station. Bird observations were recorded at four distance regimes, within a 50 m radius, 50 to 100 m, outside the 100 m radius, or flyovers. For each point count, a record was made of the start time and a hand held GPS unit was used to georeference its location. A brief description of the habitat was made for each point count. To standardize the data, densities per 10 ha were calculated for each point count.

Comment:

- Please clarify as to the distance covered by "outside the 100m radius". Were all observations within sight / sound of the researcher recorded, or was there an established limit (example: sightings to be recorded within 200m radius).

Area searches were conducted to identify as many breeding bird species as possible that were utilizing the Project Study Area. All areas on or adjacent to lands optioned with the project were traversed on foot during each visit. All species observed were recorded along with which habitat type(s) the species was observed in as well as the level of breeding evidence detected. Surveys were conducted in compliance with the MNR's guidance document: Birds and Bird Habitats: Guidelines for Wind Power Projects (MNR, 2011).

Comment:

- Please provide a definition of Project Study Area and specify how it relates to SAR "habitat" as defined in the ESA.

- According to Section 3.1 Methods of the NHA/EIS:
  "The site investigations undertaken detailed the current conditions in and within 120 m of the Project Location….. Land access was available for all land parcels where Project components are proposed, and areas within 120 m of the Project Location were traversed on foot during site investigation where land access was available."

- The above paragraph states that all areas of land optioned were traversed on foot at each visit. The NHA/EIS states that areas within 120 meter of the Project Location were traversed on foot. Which is correct? Additional studies must be undertaken in order to ensure that ESA requirements for the protection of SAR are maintained.

- The above paragraph states that all areas on lands adjacent to optioned properties were traversed on foot during each visit. Where is this documented? APAI have enquired with many non-optioned landowners and 80% state that they were never approached for access to their land. Two non-participating landowners state they were approached and refused access.

- While the MNR Guidance document *Birds and Bird Habitats: Guidelines for Wind Power Projects* (MNR, 2011) provides interesting information, it is not designed for the SAR process.

3.1.1.1.1 Eastern Whip-poor-will

Field studies to assess Eastern Whip-poor-will habitat involved conducting singing ground surveys in 2011 to determine Eastern Whip-poor-will presence/absence within the Project Study Area and their approximate distribution.

Comment:

- Please provide definition of Project Study Area and specify how it relates to SAR "habitat" as defined in the ESA.

- Please clarify how conducting singing ground surveys can be considered "assessing Eastern whip-poor-will habitat"?

Three rounds of singing-ground surveys for crepuscular species were conducted between May 18 and June 27, 2011. Dates, times, duration, field personnel and weather for each field survey and a summary of survey protocols and methods are presented in Tables 3.1 and 3.4 (Appendix B), respectively. Surveys were comprised of six minute point counts at ten monitoring stations. Monitoring stations were located throughout the Project Study Area in proximity to suitable woodland features (Figures 2.0-2.8, Appendix A).

Comment:

- Table 3.4 provides the following information as a summary of survey protocols and methods, "Surveys for suitable habitat for Eastern Whip-poor-will were conducted on the project location and associated investigation zones during ELC surveys in 2011 and 2012. Nighttime point counts were conducted during the spring and summer of 2011. See **Section 3.1** for a description of survey methods and **Table 3.1** for site investigation dates, field personnel, and weather condition information." As no description of survey methods or protocols is provided in section 3.1.1.1.1 or Table 3.4, please provide this description.

- 6 minute point counts at 10 monitoring stations equals 60 minutes per survey of actual survey time. Travel time to the survey stations can be very conservatively estimated at 5 minutes between stations which would equal 45 minutes for a total of **1 hr 45 minutes in order to complete a survey as described above.** As the field notes for the Eastern Whip-poor Will surveys were not provided it is impossible to ascertain which stops were reviewed on specific dates. However, looking at the total hours spent it is difficult to imagine how 3 full surveys (separated by at least a week) were undertaken.

- Please provide the field notes for review as the information in the table does not adequately provide a "picture" of how the survey requirements were met.

- A review of the Figures in Appendix A indicates that numerous woodlands were not surveyed, please provide the rationale for survey selection.

Survey Date (mm/yr/day) & time	Field Personnel	Duration (Person Hours)	Air (C)	Cloud %	Precipitation	Wind	Moon
5/17/ 2011, 21:00-22:18	J.Heslop, B. Stamp	1hr18min	8	100	None/rain	2/NE	Full
5/18/ 2011, 22:51-22:57	.Heslop, B. Stamp	56min / actually 6 min	16	100	Mist/rain	1/E	Full
5/30/ 2011, 21:30-21:54	P. Read	24min	15	10	None/thunder storms	0	3/4
5/31/ 2011, 22:12-22	P. Read	29min	16	10	None/none	2/W	3/4
6/3/2011, 21:20-23:21:41	P. Read	2hr1min	12	40	None/none	1/SW	New
6/13/ 2011, 21:47-21:53	J.Heslop	6min	13	100	Mist/heavy rain	1/SE	3/4
6/16/2011, 21:25-22:47	A. Wormington	22min	20	75	Trace/none	0	Full
6/26/ 2011, 21:26-21:40	A. Wormington	14min	18	20	Trace/none	0	1/3
6/27/ 2011, 22:03-22:09	A. Wormington	6min	18	50	None/none	0	1/10

Eastern Whip-poorwill's territorial displays include a loud, repeating call that can be heard upwards of 1 km away. As such, each station was intended to survey suitable habitats within a 1 km radius. Birds were recorded as either within 100 m or farther than 100 m from the observer. Surveys began approximately 30 minutes after sunset to ensure the peak activity period for calling was captured. Attempts were made to schedule round 1 and 3 of surveys around full moons. Surveys commenced approximately half an hour after sunset and were conducted as close to the full moon as possible and within appropriate weather conditions (i.e. not in high winds or persistent rain).

Comment:

- While the above states that "attempts were made to schedule round 1 and 3 surveys around full moons", in fact, both of the "partial" surveys scheduled during a full moon for what appears to

be round 1 occurred with 100% cloudy conditions. The single "partial" survey scheduled during a full moon for what appears to be round 2 was completed in 22 minutes.

- The MNR Kemptville District Whip-poor Will Survey Instructions and Data Sheet indicate that "Surveys must be conducted when the moon is above the horizon and not obscured by clouds." According to the table above, 3 surveys were conducted under 100% cloud cover and 1 under 75% cloud cover. The evenings of 100% and 75% cloud cover coincided with the evening of a full moon. Clearly the requirements of the MNR Survey Instructions were not met.

- The listing for 5/18/ 2011 indicates that the duration of the search was 56 minutes. As the time posted is from 22:51 to 22:57, it would seem that the actual search was for a total of 6 minutes.

Henslow's Sparrow Nocturnal Playback Surveys

In addition to breeding bird surveys (as described above), two rounds of nocturnal playback surveys targeting Henslow's Sparrow were conducted at 20 locations within the Project Study Area between May 30 and June 22, 2011. Dates, times, duration, field personnel and weather for each field survey and a summary of survey protocols and methods are presented in Tables 3.1 and 3.4 (Appendix B), respectively. Survey locations are shown on Figures 2.0-2.8, Appendix A.

Comment:

- Table 3.4 provides the following information as a summary of survey protocols and methods, "Surveys for suitable habitat were conducted in the Study Area by skilled birders. Breeding bird surveys, including area searches and point counts, were conducted in 2011. Supplemental nocturnal playback surveys specific to Henslow's Sparrow were also conducted in 2011. An assessment of microhabitat features required by Henslow's Sparrow was also conducted in 2011. See **Section 3.1** for a description of survey methods and **Table 3.1** for site investigation dates, field personnel, and weather condition information." As no description of survey methods or protocols is provided in section 3.1.1.1.1 or Table 3.4, please provide this description.

- Below is a screen shot of the Henslow's Sparrow Field Surveys. Please clarify why survey times and duration are not available. Please provide field notes. Lacking this information there is no documentation confirming that survey's for Henslow's Sparrow did in fact occur.

Table 3.1: Record of Amherst Island Field Surveys

Survey Date (mm/dd/yyyy) and time	Purpose of Site Investigation	Field Personnel	Duration (Person-Hours)	Weather Conditions*				
				Air (°C)*	Cloud (%)	Precip.	Wind**	Moon Phase
5/31/2011	Henslow's Sparrow Breeding Nocturnal Survey	P.Read	unknown	16	10	0	2 W	4
5/30/2011	Henslow's Sparrow Breeding Nocturnal Survey	P.Read	unknown	17	10	0	0	4
6/3/2011	Henslow's Sparrow Breeding Nocturnal Survey	P.Read	unknown	12	40	0	1 SW	1
6/22/2011	Henslow's Sparrow Breeding Nocturnal Survey	A.Wormington	unknown	18	100	0	1 NE	4
6/14/2011	Henslow's Sparrow Breeding Nocturnal Survey	A.Wormington	unknown	13	0	0	0	2

Least Bittern Playback Surveys

In conjunction with the breeding bird surveys (as described above), three rounds of playback surveys targeting Least Bittern were conducted at the five marsh habitat locations within the Project Study Area between May 30 and July 7, 2011. Dates, times, duration, field personnel and weather for each field survey and a summary of survey protocols and methods are presented in Tables 3.1 and 3.4 (Appendix B), respectively. Survey locations are shown on Figures 2.0-2.8, Appendix A.

Comment:

- Table 3.4 makes no reference to Least Bittern. Please provide survey protocols and methods.

Least Bittern can be highly secretive, and the Least Bittern breeding surveys employed a playback recording to help with detection. A Least Bittern song was broadcast from an MP3 recording, followed by a period of silence to listen for a response. This was repeated several times at each station for a 15-minute period.

Comment:

- The above states that three rounds of playback surveys were conducted at 5 marsh habitat locations and each of the 5 locations was observed for a 15 minute period. This means that each full round of surveys would require 1 hr 15 minutes to complete. As the table below indicates that 18 surveys occurred over 12 days it is impossible to ascertain what locations were covered. Please provide the field notes.

Table 3.1: Record of Amherst Island Field Surveys

Survey Date (mm/dd/yyyy) and time	Purpose of Site Investigation	Field Personnel	Duration (Person-Hours)	Weather Conditions*				
				Air (°C)*	Cloud (%)	Precip.	Wind**	Moon Phase
15/06/11, 05:55-06:10	Least Bittern Callback Survey	A.Wormington	15min	12	10	0	0	n/a
16/06/11, 06:15-06:40	Least Bittern Callback Survey	A.Wormington	25min	20	0	0	0	n/a
15/06/11, 08:25-08:42	Least Bittern Callback Survey	A.Wormington	17min	22	0	0	0	n/a
21/06/11, 05:40-06:05	Least Bittern Callback Survey	A.Wormington	25min	11	10	0	1 NE	n/a
21/06/11, 10:12-10:30	Least Bittern Callback Survey	A.Wormington	18min	22	10	0	1 SW	n/a
27/06/11, 05:47-06:10	Least Bittern Callback Survey	A.Wormington	23min	16	0	0	0	n/a
30/06/11, 05:35-05:55	Least Bittern Callback Survey	A.Wormington	20min	16	10	0	1 NW	n/a
2/07/11, 08:53-09:15	Least Bittern Callback Survey	A.Wormington	22min	20	0	0	1 S	n/a
2/07/11, 06:48-07:12	Least Bittern Callback Survey	A.Wormington	24min	18	0	0	1 SE	n/a
7/07/11, 05:59-06:25	Least Bittern Callback Survey	A.Wormington	26min	15	0	0	1 N	n/a
7/07/11, 10:02-10:21	Least Bittern Callback Survey	A.Wormington	19min	22	10	0	1 N	n/a
11/07/11, 06:07-06:26	Least Bittern Callback Survey	A.Wormington	19min	22	85	0	1	n/a
30/05/11, 6:38-6:55	Least Bittern Callback Survey	P. Read	17min	16	80	0	1 NW	n/a
31/05/11, 7:40-7:55	Least Bittern Callback Survey	P. Read	15min	18	0	0	1 W	n/a
31/05/11, 5:40-5:55	Least Bittern Callback Survey	P. Read	15min	18	10	0	0	n/a
5/06/11, 8:55-8:08	Least Bittern Callback Survey	P. Read	13min	15	100	0	1 N	n/a
5/06/11, 6:20-6:33	Least Bittern Callback Survey	P. Read	13min	12	90	0	1 N	n/a
11/06/11, 5:30-5:46	Least Bittern Callback Survey	P. Read	16min	18	80	0	2-3 E	n/a

3.1.2 Aquatic Habitat and Species Surveys

No Comment

3.2 RESULTS

3.2.1 AMHERST ISLAND PROJECT AREA HABITAT OVERVIEW

Vegetation community mapping for the Project Study Area is provided in Figures 2.1-2.8 (Appendix A). Communities are described in Table 3.5 (Appendix B). A detailed description of each natural feature found in the Project Location and 120 m Zone of Investigation can be found in the Amherst Island Wind Energy Project NHA/EIS (Stantec, 2012a).

Comment:

- Please provide definition of Project Study Area and specify how it relates to SAR "habitat" as defined in the ESA.
- Please provide definition of Project Location and specify how it relates to SAR "habitat" as defined in the ESA.
- Please provide definition of 120m Zone of Investigation and specify how it relates to SAR "habitat" as defined in the ESA.
- A review of MAP 2.0 *Vegetation Communities and Species Survey Stations – Overview* and MAP 5.0 *Primary Siting Constraints*, indicates a clear co-relation. Why were non-participating landowners not approached by Stantec employees for land access in order to complete SAR research?

The Project Location and the associated 120 m Zone of Investigation consisted of a mix of naturalized habitat and active cropland (mainly hay and pasture). Woodland and wetland communities occurred throughout the Zone of Investigation. These communities frequently consisted of deciduous forest and cultural woodland, with fewer occurrences of deciduous swamp. Two large provincially significant coastal marshes occur within the Zone of Investigation: the Nut Island Duck Club Marsh and the Long Point Marsh.

All of the 36 turbines are sited within lands currently managed for agriculture (hay or pasture). Grassland habitat includes cultural meadow, hay, and pasture in the Project Study Area, and differs from the open country breeding bird habitat as defined in the NHA. Open country breeding bird habitat has a minimum size requirement of 30 ha, whereas grassland habitat as described in this report does not have a minimum size requirement.

The total amount of Eastern Meadowlark habitat to be removed permanently for the duration of Project operation (i.e. long term removal areas) is approximately 17 ha. An additional 77 ha of Eastern Meadowlark habitat removal or disturbance is required temporarily during the construction of the Project.

This area includes turbine bases and access road areas for this species. The total amount of Bobolink habitat to be removed permanently is approximately 101 ha. This area includes turbine bases, blade-sweep area, access roads, and a 20 m buffer around access roads due to removal of habitat at edges and vertical structures. An additional 60 ha of Bobolink habitat removal or disturbance is required temporarily during the construction of the Project.

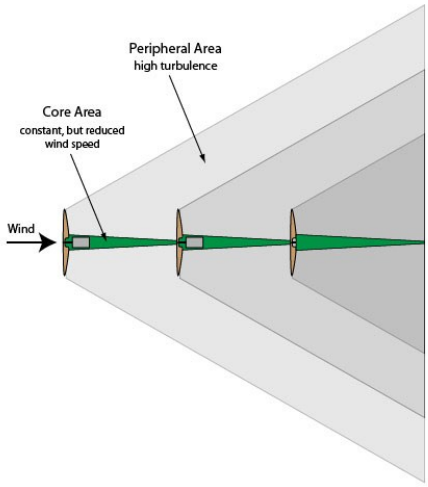
Comment:

- Please specify if the habitat to be removed is habitat that encompasses all of the life cycle activities of the SAR.

- Each of the turbines proposed for Amherst Island measures over 500 feet tall and the speed at the tip of the blade can reach up to 275 kilometers per hour. The turbines have a swept area (the area covered by the blades as they spin) of 10,000 square metres, almost 2.5 acres for each turbine. The 36 proposed turbines will directly remove 90 acres of air space over Amherst.

- As well as the potential for direct impacts, below is a picture of turbine wake generated by Industrial Wind Turbines. Current research indicates that optimum spacing between wind turbines is at least the distance equal to 15 to 20 rotor blades. This is the distance estimated to be required to ensure that the wind turbulence generated by one turbine does not impact the wind available to another turbine.

- The turbines on Amherst Island are within 5 to 9 rotor blades apart. Clearly, the entire island will be impacted by wind turbulence throughout the lifetime of the project.



- The Loyalist Township Municipal Consultation Form (NH section prepared by CRCA) states:

- <u>Displacement Avoidance and Available Habitat</u>

  Displacement and habitat availability can have an indirect effect on bird habitat and behavior. These indirect impacts are a concern identified by the MNR (MNR 2011), and include:
  - Displacement from suitable habitat at any stage in their annual cycle (loss of feeding, breeding, or migratory stopover habitat or active avoidance of structures, human activity, noise, or infrastructure; and
  - Quality of breeding habitat may also be diminished by fragmentation effects, predation, and parasitism.

  Displacement effects have been shown to occur in some species, in response to wind turbine operation. It is possible from the general literature on disturbance in birds to identify some key

species which are likely to be sensitive to disturbance caused both by wind farm construction and operation, such as raptors, divers or looks, ducks and waders. For the latter two groups disturbance effects have been recorded up to 800m from turbines (Gill et.al, 1996).

Although much of the research is United Kingdom based, behavioral changes around turbines should be firmly understood with respect to the potential impacts to Amherst Island. Many studies conducted at Canadian wind energy projects are of short duration (3 years post construction) and may not be indicative of the long term effect. Displacement is poorly studied compared to the other types of impacts associated with wind energy projects (AWEA, 2008)

This general displacement or avoidance of turbines may also result in the fragmentation of habitats beyond the physical fragmentation as a result of roads and other facilities. As Amherst is a small island, it is possible that the displacement effects could be significant enough to result in the complete avoidance of the island. In particular the effects of avoidance can result in a significant loss of available habitat on Amherst Island (well beyond the physical occupation of the towers and related infrastructure).

- Long term effects can only be speculated upon for the following reasons:

1. There are no long term science-based studies addressing the potential impacts of multiple 500 foot turbines tightly packed within a small landmass.
2. There are no long term science-based studies addressing potential impacts of multiple 500 foot turbines placed within an island SWH, providing the SAR with no alternative habitat other than “off-island”.
3. There are no long term science-based studies addressing potential impacts of multiple 500 foot turbines placed within an island IBA sitting in an avian migratory flyway.
4. There are no long term science-based studies addressing potential impacts of multiple 500 foot turbines placed within an island SWH, which has the documented presence of over 32 species at risk and species of concern. Below is a list.

It is the position of the KFN, APAI and Loyalist Township that the long term effect for some SAR could well be complete avoidance of the island. As the MNR Species at Risk Recovery web-page states; “Recovery strategies should be prepared according to the "Precautionary Principle". This principle states that we should not wait for scientific certainty before taking action to protect and recover a species. This principle supports the philosophy that it's better to act now rather than later.” Clearly the application of the precautionary principle would, at a minimum, require additional studies being completed prior to any SAR permits being issued for Amherst Island.

3.2.2 SPECIES RESULTS OVERVIEW

A list of vascular plant species occurring from the Project Study Area is provided in Appendix D. A list of all wildlife species observed during field investigations within the Project Study Area is provided in Appendix E.

Species at Risk (provincially Endangered or Threatened) observed in the Project Study Area during the field program included:

- *Butternut (observed outside of Project Area)*
- *Least Bittern (observed outside of Project Area)*
- *Peregrine Falcon (observed in migration only)*
- *Eastern Whip-poor-will*
- *Barn Swallow*
- *Bobolink*
- *Eastern Meadowlark*

Comment:

- Please define Project Study Area and specify how it relates to SAR "habitat" as defined in the ESA.

- According to NHA/EIS Cerulian Warbler were/ was documented "Observed Migrating". Why is this information not noted above?

3.2.3 BUTTERNUT

No Comment

3.2.4 BLANDING'S TURTLE AND EASTERN MUSK TURTLE

3.2.4.1 Habitat Requirements

The Blanding's Turtle (Emydoidea blandingii) is provincially ranked S3 (vulnerable) and is designated a provincially and federally threatened species. It is afforded general habitat protection under the ESA (2007). Blanding's Turtles frequent lakes, ponds, and marshes, and prefer shallow water with abundant aquatic vegetation and a soft bottom (MacCulloch, 2002). They prefer shallow water that is rich in nutrients, organic soil and dense vegetation. Adults usually occupy open or partially vegetated sites, whereas juveniles occupy areas with thick aquatic vegetation including sphagnum, water lilies and algae. Nesting occurs in dry conifer or mixed hardwood forests, up to 410 m from any body of water, in loose substrates including sand, organic soil, gravel and cobblestone, nesting may also occur along gravel roadways (COSEWIC, 2005).

Comment: According to the Ostrander Point Environmental Review Tribunal, the following information regarding Blanding's Turtle habitat was not contested by any of the 4 expert witnesses testifying on Blanding's Turtles:

- [242] Blanding's turtle is a semi-aquatic turtle.

- [243] Blanding's turtle uses a variety of wetland types depending on availability, including emergent mashes, bogs, forested swamps, and temporary pools. Habitat use is generally driven by needs such as food, summer refuges from dry periods, and in winter protection from freezing temperatures. In some areas a single large wetland could accommodate all of those needs, but in most places Blanding's turtle uses several wetlands over the year, requiring overland trips.

- [244] In early summer, nesting females seek an appropriate site for egg laying with an exposure to direct sunlight. Such sites include beaches, grasslands, rocky outcrops, agricultural fields, road and railway embankments, lawns, forest cuts, dredge piles, and borrow pits. Blanding's turtles have been found to move extensively overland to nesting sites – movements up to 6km have been reported.

3.2.4.2 Assessment of the Amherst Island Project Study Area

Habitat assessments for Blanding's Turtle and Eastern Musk Turtle were undertaken using data collected through ELC and wetland delineations and evaluations. Most wetlands in proximity to the project location consist of green ash swamps and reed canary grass meadow marsh. These wetlands do not provide the standing water required by turtle species for most of their life processes. Open marsh communities that have the potential to support populations of turtles occur in the large coastal marshes. Of these coastal marshes, the Long Point Marsh is located in proximity to the Project Location with portions of the marsh in proximity to Turbine 36 (78 m from the wetland) and an access road off 3rd Concession Rd (77 m from the wetland). Blanding's Turtles nest in upland areas of exposed soil, often some distance from the open water. However, all project components within 1 km of Long Point Marsh are situated in hay, pasture or fallow fields with dense ground cover. Site investigations did not identify any potential turtle nesting sites in proximity to the project location, with the potential exception of existing roadsides. Over the course of all field surveys, no observations of either Blanding's Turtle or Eastern Musk Turtle were made.

Comment:

- A review of Table 3.1 indicates that all 2011 ELC surveys occurred on the following dates, no searches for Blanding's Turtles were undertaken in the month of June, when the females are more likely to be traveling.
  - July 26- 29 / 2011
  - August 2-5 / 2011
  - August 17-19 / 2011
  - November 11, 2011

- Please provide a definition of "project location" and explain how this is related to habitat protected under the ESA.

- The paragraph above states, "Most wetlands in proximity to the project location consist of green ash swamps and reed canary grass meadow marsh. These wetlands do not provide the standing water required by turtle species for most of their life processes."
  - According to the information provided by expert witnesses at the Ostrander Point Environmental Review Tribunal the habitat used by the Blanding's Turtle during its life stages (nesting, the activity period, and overwintering) include: marshes, swamps, temporary pools, beaches, grasslands, rocky outcrops, agricultural fields, road and railway embankments, lawns, forest cuts, dredge piles and borrow pits. However, according to the above paragraph, wetlands which did not provide standing water were not included in the search area Blanding's Turtle.

- The paragraph above states, "Open marsh communities that have the potential to support populations of turtles occur in the large coastal marshes. Of these coastal marshes, the Long Point Marsh is located in proximity to the Project Location with portions of the marsh in proximity to Turbine 36 (78 m from the wetland) and an access road off 3rd Concession Rd (77 m from the wetland)".
    - A review of the NHA/EIS indicates that all Turtle Wintering Surveyes Occured in TO1, which is in the vicinity of the Long Point Marsh, clearly this restricted search does not meet the requirements of the ESA.
    - A review of the NHS/EIS Table 6B *Site investigation Results – Wetland* indicates 34 separate entries. These are: 1, 2a, 2b, 3a, 3b, 3c, 4a, 4b, 4c, 4d, 5, 6a, 6b, 6c, 6d, 6e, 7, 8, 9a, 9b, 10a, 10b, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21 and 22. A review of Figures 2.1 through 2.5 of the NHS/EIS indicates that these wetlands are spread throughout Amherst Island.
    - A review of the NHS/EIS *Table 16B Mitigation by Wetland Feature* (information below) indicates that project component are sited within the vicinity of the documented wetlands, well within the 6km movement radius confirmed by the Blanding's Turtle subject experts of the Ostrander Point Environmental Review Tribunal.

Wetland #	Closest Project Component (Turbine base / access road / substation / collector line)
1	74 meters (collector line) / 94 meters (access road)
2	52 meters (access road)
3	3 meters (substation) / >120 meters (access road)
4	<1 meter (collector line) / 38 meter (access road)
5	3 meter (collector line) / 11 meter (access road)
6	0 meter (access road)
7	0 meter (access road)
8	28 meter (collector line) / >120 (access road)
9	18 meter (collector line) / 99 meter (access road)
10	13 meter (collector line) / 74 meter (access road)
11	115 meter (collector line) / 77 meter (access road)
12	4 meter (collector line) / 7 meter(access road)
13	1 meter (collector line) / 100 meter (access road)
14	40 meter (collector line) / 44 meter (access road)
15	18 meter (collector line) / >120 meter (access road)
16	19 meter (collector line) / 15 meter (access road)
17	3 meter (collector line) / >120 meter (access road)
18	62 meter (collector line) / 58 meter (access road)
19	102 meter (collector line) / 107 meter (access road)
20	24 meter (collector line) / 42 meter (access road)
21	>120 meter (collector line) / 78 meter (access road)
22	>120 meter (collector line) / >120 meter (access road)

- A review of the NHS/EIS *Table 7B Site Investigation Results Woodlands* (information below) indicate 12 woodlands containing a water component. According to the information provided by expert witnesses at the Ostrander Point Environmental Review Tribunal the habitat used by the Blanding's Turtle during its life stages (nesting, the activity period, and overwintering) include temporary pools and forest cuts. Why were searches for Blanding's Turtles not undertaken in these locations?

Woodland Feature	Water Component
1	Surface water was present, infrequent pooling present within east side of community.
2	Presence of surface water <10cm depth
3	Pools of surface water present in some communities.
4	Surface water and pooling occurs in deciduous swamp communities.
14	Vernal pools were not observed within 120m (Comment: This leads one to assume that Vernal pools were observed outside of the 120 meter zone of investigation.)
22	Vernal pools present, particularly in the more mature northern portion of the woodlot
23	One Vernal pool approximately 8m x 2m was observed (18 t 367916 4892621) it did not contain water at time of observation
28	Due to lack of property access, identification of significant wildlife features could not be observed, including presence or absence of vernal pools. (Comment: property access was not requested)
30	Vernal pools absent, presence of surface water was primarily absent.
32	Vernal pools absent, drainage valley extends through the community.
34	Vernal pools absent, presence of surface water was primarily absent.
35	Vernal pools absent, presence of surface water was primarily absent.

- The paragraph above states, "Site investigations did not identify any potential turtle nesting sites in proximity to the project location, with the potential exception of existing roadsides." According to the information provided by expert witnesses at the Ostrander Point Environmental Review Tribunal "[244] In early summer, nesting females seek an appropriate site for egg laying with an exposure to direct sunlight. Such sites include beaches, grasslands, rocky outcrops, agricultural fields, road and railway embankments, lawns, forest cuts, dredge piles, and borrow pits. Blanding's turtles have been found to move extensively overland to nesting sites – movements up to 6km have been reported" Please explain why all beaches, grasslands, rocky outcrops, agricultural fields, road embankments, lawns, forest cuts, dredge piles and borrow pits within 6 km of turbine components were not identified during site investigations.

3.2.4.3 Conclusion

Although no observations of Blanding's Turtle or Eastern Musk Turtle were made, there is potential for these species to occur in the large coastal marsh in the southwestern portion of the island. The closest project components to these open water communities within the wetland are over 75 m away, which is considered a generous buffer to avoid impacts to these wetland communities. There is potential for Blanding's Turtle to stray from the wetlands into upland habitats in search of nesting sites, however, field studies did not identify any potential turtle nesting sites along the project location. Potential impacts and mitigation measures are discussed in Section 9.0. With the implementation of these mitigation measures, no impacts to turtle species are anticipated.

Comment:

- No observations of Blanding's Turtles were made by Stantec employees due to the severely restricted search parameters. Case in point, during May/ June 2013 5 Blanding Turtles have been identified by KFN membership. These were located throughout the island.
  5) front road
  6) second concession
  7) Emerald Forty
  8) South Shore Road (near Long point marsh)

- As evidenced by the siting's noted above and as documented in sections 3.1.1.1, 3.2.4.1 and 3.2.4.2, there is potential for the species to occur throughout the island and not simply "in the large coastal marsh in the southwestern portion of the island".

- As Blanding's Turtles are recognized to travel up to 6 Km in search of suitable habitat, a 75 meter buffer is clearly inadequate.

- Potential nesting sites include beaches, grasslands, rocky outcrops, agricultural fields, road and railway embankments, lawns, forest cuts, dredge piles, and borrow pits, all of which are located within the immediate vicinity of project components.

3.2.5 LITTLE BROWN BAT AND NORTHERN LONG-EARED BAT

No Comment

3.2.5.2 Assessment of the Amherst Island Project Study Area

Detailed habitat assessments were conducted during ELC surveys in order to assess the potential for bat maternity colony and hibernacula habitat. No snags or trees capable of supporting bat maternity roosts were found in numbers greater than 10 per hectare in the Project Study Area, indicating low suitability of habitat for maternity colonies. No known bat hibernacula have been identified within 1 km of the Project Study Area (LIO 2012). The nearest known bat hibernacula are located approximately 26 km to the northeast and 38 km to the northwest of the Project Study Area. No Species at Risk bats were observed during any of the field surveys.

Comment:

- Why were no searches undertaken for migratory bats as migration is a life process protected under the ESA? Bat migration data must be gathered and analyzed prior to the Amherst Island Project being allowed to continue in the SAR process.

3.2.5.3 Conclusion

No habitat or occurrences of Species at Risk bats occurred in the Project Study Area. No impact to Species at Risk bats or their habitat is expected from the Project.

Comment:

- Please define Project Study Area and specify how it relates to SAR "habitat" as defined in the ESA.

- The above does not take into account bat migration as dictated by the ESA.

3.2.6 LEAST BITTERN

3.2.6.1 Habitat Requirements

No Comment

3.2.6.2 Assessment of the Amherst Island Project Study Area

Marshes of suitable size (i.e. >5 ha for Least Bittern) and structure (open water with dense vegetation) were generally absent from the Project Study Area, with the exception of the Provincially-Significant Long Point Coastal Marsh. This marsh is a 315 ha coastal wetland complex composed of three separate wetlands and three different wetland communities (CRCA 2006). It is associated with the Long Point Marsh Provincially-Significant Life Science ANSI. This wetland is within 120 m of a proposed turbine access road but does not overlap with the Project Location. The Long Point Marsh provides the best habitat for marsh breeding birds in the region, generally consisting of a large cattail organic shallow marsh dominated by narrowleaved cattail.

No Least Bittern were recorded in portions of the Long Point Coastal Marsh adjacent to the project location. However, Least Bitterns may have been present deeper into the marsh away from the project location and therefore undetected (Appendix E). One Least Bittern was recorded over 500 m from the Project Area in a small marsh along the south shore of Amherst Island. See Figure 2.7 for this location.

Comment:

- According to Section 1.3 of this Report the Project Area is defined as "The Project Area includes Amherst Island, an approximately 3 - 15 kilometre wide corridor stretching between the Island, and the mainland where the submarine cable is proposed". Please clarify how the Least Bittern was observed "outside of Project Area" and how the "Project Area" relates to SAR habitat as defined in the ESA.

- Please define Project Location and specify how it relates to SAR "habitat" as defined in the ESA.

- Please define Project Study Area and specify how it relates to SAR "habitat" as defined in the ESA.

- Please specify the source for the >5 ha cut off point for marsh size.

- Additionally, here are numerous areas on Amherst Island that could potentially support Least Bittern that have not been investigated. Properly timed field studies encompassing properly identified locations on Amherst Island should be undertaken prior to any further movement on the Amherst Island SAR file.

3.2.6.3 Conclusion

One Least Bittern was observed over 500 m from the Project Study Area. No habitat or occurrences of Least Bittern occurred in the Project Study Area. No impact to Least Bittern or its habitat is expected from the Project.

Comment:

- Please define Project Study Area and specify how it relates to SAR "habitat" as defined in the ESA.

3.2.7 EASTERN WHIP-POOR-WILL

3.2.7.1 Habitat Requirements

Pastures, shrubby meadows, pipeline and hydro rights-of-way adjacent to, or in, extensive forests may provide good nesting habitat (COSEWIC, 2009b). Sandilands (2010) identifies key habitat features: shade, proximity to open areas for foraging and fairly sparse ground cover. Eastern Whip-poor-will is considered an area-sensitive species that requires extensive forest. In Ontario, it is thought to require at least 100 ha, with 500-1,000 ha thought to be necessary to support more than a few pairs (Sandilands, 2010). The Eastern Whip-poor-will generally arrives in Ontario from mid to end of April (Sandilands, 2010). Peak migration is considered to be third week of May. In Loyalist Township, the late migration date for Eastern Whip-poor-will is May 31 and the dates between which it is considered safe to regard the species as breeding are from May 15 to August 1 (Ontario Breeding Bird Atlas, 2005).

Known nest dates in Ontario range from May 21 to July 8, with the majority of nesting occurring from June 9 to 30 (Peck and James, 1983). Most Eastern Whip-poor-wills are thought to leave Ontario between early September and early October (Sandilands, 2010).

3.2.7.2 Assessment of the Amherst Island Project Study Area: Habitat

Day roosting opportunities are provided typically within the denser communities present such as deciduous, coniferous or mixed woodlands. Many small woodlots occur throughout the agricultural fields, with four larger woodland features present of suitable size to support Eastern Whip-poor-Will.

- *Large areas of deciduous swamp is associated with the Nut Island Duck Club Marsh and the unevaluated wetland, which covers approximately 215 ha. This swamp was generally very wet in nature, holding water for portions of the spring. Although large in size, it is unlikely to provide suitable habitat for Eastern Whip-poor-will due to its wet nature.*

- *A large wooded area occurs in the northwestern portion of the Project Study Area, measuring approximately 136 ha in size. It is contains both deciduous and coniferous forest cover. Canopy cover is variable, include areas of dense canopy cover, open canopy areas and several woodland openings. In the eastern portion of this feature, the woodland becomes intermixed with hayfields, creating a patchwork of woodland. This woodland was considered to provide suitable habitat for the Eastern Whip-poor-will.*

- *A very large contiguous swamp located north of South Shore Rd and east of Marshall 40 Foot Rd. This feature is 198 ha and is comprised of a mosaic of vegetation communities. The majority of the feature is not within 120 m of the Project Location. Land use immediately surrounding the woodland feature is primarily actively managed agricultural lands and pasture. This feature is unlikely to provide suitable habitat for Eastern Whip-poor-Will due to its wet nature.*

- *The woodland features found on either side of Marshall 40 Foot Rd on the eastern end of the island (including the "Owl Woods") is 148 ha in total148 ha in total. It is comprised of deciduous, ash dominated woodland, cultural thicket, coniferous plantation and scattered red cedars. The open dry nature of this woodland makes it suitable habitat for the Eastern Whip-poor-will. This feature, although not contiguous due to Marshall 40 Foot Road, is considered suitable habitat on both sides of the road.*

There were 28 additional woodland communities identified in the Project area as part of the NHA process, which were found near Project components. They ranged in size from 0.3 ha to 16 ha, and were mainly composed of deciduous forest and swamp. The mainland portion of the Project Study Area is composed predominately of industrial lands and cultural meadow. Some deciduous and coniferous forest communities occur at the eastern boundary of the Project Study Area.

Comment:

- It would appear that site selection of potentially "suitable" Whip-poor-Will habitat was based exclusively on the following quote from Sandilands (2010) "Eastern Whip-poor-will is considered an area-sensitive species that requires extensive forest. In Ontario, it is thought to require at least 100 ha, with 500-1,000 ha thought to be necessary to support more than a few pairs". Please note that Sandilands states that "it is thought" that 100 ha are required and that Sandilands observation is not supported by the findings of other researchers. On the contrary, according to COSEWIC (2009) "suitable" habitat is quite diverse in composition. As the selection of habitat to be searched was flawed, additional field studies must be undertaken, taking into consideration input from KFN (recent documentation of Whip-poor-Will on AI), as well as the information listed below.

  COSEWIC (2009) Breeding

  Whip-poor-will breeding habitat is not dependent upon species composition, but rather on forest structure (Wilson 1985). The species shuns both wide-open spaces and dense forest (Bushman and Therres 1988). Wilson (2003) found that in the American southeast, roughly 50% of home ranges consisted of open habitats, used primarily for foraging. Wilson and Watts (2008) also reported that regenerating forest edges hosted higher densities of foraging birds. Common habitat choices include rock or sand barrens with scattered trees, savannahs, old burns or other disturbed sites in a state of early to mid-forest succession, or open conifer plantations (Mills 1987, Cink 2002). Accordingly, pine (barrens and plantations), oak (barrens and savannahs), and aspen and birch (early to mid-succession) are common tree species associations. Individuals will often feed in nearby shrubby pastures (Roy and Bombardier 1996) or wetlands with perches, and power-line and roadway corridors are also occupied (Palmer-Ball 1996), presumably for feeding. Areas with decreased light levels where forest canopies are closed are generally not

occupied (James and Neal 1986), perhaps because of reduced foraging success for this visual insectivore (P. Cavanaugh, pers. comm. in Cink 2002). Other necessary habitat elements are thought to involve ground-level vegetation and woodland size. Areas with little ground cover are preferred (Eastman 1991). Although there are no data indicating minimum woodland size, small isolated woodlands are avoided, at least in Maryland (Reese 1996). Accordingly, distance from nearby tracts of woodland may also be important (Cink 2002).

Figure 3.0-3.8 (Appendix A) depicts habitat for Eastern Whip-poor-will within the Amherst Island Wind Energy Project Study Area for various life processes.

Comment:

- During the 2012 spring / summer, Eastern Whip-poor Will were documented in locations on Amherst Island which did not meet the criteria of "forest over 100 ha". The selection of "forest over 100 ha" as "suitable habitat" is not supported by science. Additional studies must be undertaken.

3.2.7.3 Species Occurrences: Ground Survey Station Results

No comment

3.2.7.4 Conclusions

Eastern Whip-poor-will and its habitat occurred near the Project Location. No Project components are located in the (Stantec) identified Eastern Whip-poor-will habitats. Impacts, avoidance and mitigation measures for Eastern Whip-poor-will are discussed in Section 8.0.

Comment:

- Please provide a definition for Project Location and specify how it relates to SAR "habitat" as defined in the ESA.

- Please specify actual distances for following statement "Eastern Whip-poor-will and its habitat occurred near the Project Location."

- There is no discussion of impacts, avoidance and mitigation measures for Eastern Whip-poor Will in section 8.0. Please provide this information.

3.2.8 BARN SWALLOW

3.2.8.1 Habitat Requirements

No Comment

3.2.8.2 Assessment of the Amherst Island Project Study Area

Within the Project Area, suitable nesting sites are likely to include buildings (e.g. barns, sheds etc.), culverts and bridges. Proposed turbine locations are typically set back from suitable nesting structures;

typical setbacks from buildings are a minimum of 200 to 300 m, and typical setbacks from roads (i.e. culverts and bridges) are a minimum of 100 m. As such, no potential nesting structures will be impacted. There will be no removal or alteration to structures that could support Barn Swallow nesting. Given the generalized requirements for foraging habitat for Barn Swallows, foraging habitat is not limited within the Amherst Island Project Location and the majority of Amherst Island would constitute potential foraging habitat.

Comment:

- Please confirm Project Area conforms with definition provided in section 1.3
- Please provide definition for Project Location and specify how it relates to SAR "habitat" as defined in the ESA.

Given the low-flying behaviour of Barn Swallow, they are typically at lower risk of collisions with wind turbines than other swallow species, but fatalities at wind turbines have been recorded. Considering the setbacks to nesting structures, Barn Swallow occurrences in proximity to turbines will likely be minimal during the nesting period; however, occurrences in proximity to turbines in the later summer, after the nesting period, are anticipated.

Comment:

- During migration, flocks of barn swallows have been observed flying at turbine blade height. This is of particular concern on Amherst Island as roosting sites have been identified immediately below areas where turbine locations have been proposed.

Barn Swallow was observed in the Project Location during the breeding season. Occurrences were scattered across the Project Study Area, although most observations were made in grassland habitat (Figures 4.0-4.8). Occurrences were associated with foraging behaviour.

A total of seven Barn Swallows were observed at point counts in the vicinity of the Amherst Island Wind Energy Project Location:

- *One Barn Swallow was observed at breeding bird point count station 10; and*
- *Six Barn Swallows were observed at breeding bird point count station 59.*

Additional Barn Swallow observations occurred during breeding bird area searches. The numbers of Barn Swallows observed were not recorded during these surveys as density could not be calculated from area searches. Barn Swallows were thus observed in habitats:

- *Grassland habitats: 1, 4, 9-13, 15-21, 23-27, 29-33, 35-41, and 43;*
- *Marsh habitats: 1 and 3; and*
- *Woodland habit: 1, 2, 9, 21, 23-24, 36, 42, 45, and 47.*

Comment:

- Please provide definition for Project Location, as according to above only 7 Barn Swallows were sited in this area although a total of 2,378 Barn Swallows were observed according to the NHA/EIS.

- Please provide definition for Project Study Area and specify how it relates to SAR "habitat" as defined in the ESA.

- Section 4.2.3 of the NHA/EIS states that 2,378 Barn Swallow were observed "over the nine driving transect surveys that were conducted between the period of mid-July to mid-September." Additionally, below is a screenshot of the Summary Table of the Staging Swallow Surveys found in Appendix F of the NHA/EIS.

Summary							
Date	Bank Swallow	Barn Swallow	Cliff Swallow	Northern Rough-winged Swallow	Purple Martin	Tree Swallow	Total
7/8/2011	191	392		15	35	799	1432
7/13/2011	215	300	2	5		575	1097
7/23/2011	270	160	1	10	30	550	1021
7/27/2011	280	290		5	10	945	1530
8/3/2011	990	655			50	1245	2940
8/9/2011	600	190		5	20	1600	2415
8/16/2011	136	345		70	15	299	865
8/26/2011		26				14	40
9/2/2011		20				60	80
Total	2682	2378	3	110	160	6087	11420

- Many Swallows on Amherst Island use the interior areas along the Community Pasture and pastures south of Front Road for staging. This Staging area cannot be seen from the road, therefore the Road Surveys undertaken by Stantec are not sufficient. As the swallows use this areas for roosting overnight, suveys should be done within 1 hour of dawn and dusk. 2012 surveys following these parameters documented over 3000 Swallows in these "inland" areas, many of which are near proposed turbines sites.

- In 2012 between July 27 and August 24 Non- Stantec Species at Risk Surveys documented staging swallow flocks sleeping and resting overnight on fence wire, hawthorns and other shrubs in marginal pastures south east of Stella and south of 2nd Concession along the south and west end of the Community pasture. The largest flock containing 600 Tree Swallow, 250 Barn Swallow, 50 Bank Swallow and 40 Rough-winged Swallow was seen on August 6, 2012.

- Over 5 (non-Stantec) walking surveys a total of 3250 Swallows were observed, most of them clearly sleeping there overnight, since most observation were within 1hour of sunset or sunrise. This observation included 1800 Tree Swallow, 624 Barn Swallow, 533 Bank Swallow and 293 Rough-winged Swallow

3.2.8.3 Conclusion

Barn Swallow was observed foraging within the Project Area; however, no breeding habitat was identified in the Project Location. No structures that currently support, or have the potential to support Barn Swallow nesting will be altered or removed for the Project.

Comment:

- Please define confirm that Project Area is consistent with area described in section 1.3.

- Please define Project Location and specify how it relates to SAR "habitat" as defined in the ESA.

- While no breeding habitat was identified in the "Project Location" (area to be confirmed), breeding is simply one of the life processes which is protected under the ESA. The section above states "the majority of Amherst Island would constitute potential foraging habitat". Why is the impact of Wind Turbines on foraging habitat and migration not addressed in this section?

- The MNR publication *Categorizing and Protecting Habitat Under the Endangered Species Act* provides the following information regarding protected "Habitat":

  "Habitat Supports the Life Processes of a Species

  - The parts or components that make up the habitat for a species all function collectively to enable members of that species to carry out the life processes necessary to survive and reproduce. It is essential to protect these areas in ways that ensure the habitat as a whole is able to sustain the species' life processes. For example, reproduction for a species is not only supported by the nest, den, etc., of a species, but also by the other components of habitat that enable it to successfully complete courtship, mating, egg incubation, gestation, birthing and rearing young (for animals), pollination and germination (for plants), and any other stages of the species' reproductive cycle."

Other examples of life processes include:

- "hibernation, which is supported by areas of habitat where a species hibernates or overwinters (e.g., terrestrial dens, wetlands, deep fractures in rocks, and river beds), by providing a place where the species can conserve energy, avoid freezing, etc.;

- migration, which is supported by staging and resting areas, travel routes, etc. (e.g., hedgerows, forest cover). Migration may occur in response to food availability, seasonal changes in weather conditions, or to support different life-stages (such as breeding, birthing or the establishment of territories); and,

- feeding, which is supported by areas of habitat upon which the species depends to obtain adequate nourishment. Feeding areas may vary depending on the time of year and on the stage of development of the individual."

3.2.9 HENSLOW'S SPARROW

3.2.9.1 Habitat Requirements

No Comment

3.2.9.2 Assessment of the Amherst Island Project Study Area

No Comment

3.2.9.3 Conclusion

No Comment

3.2.10 BOBOLINK AND EASTERN MEADOWLARK

Given the overlap between the habitat requirements (i.e. grassland) of Eastern Meadowlark and Bobolink, the two are assessed together.

3.2.10.1 Habitat Requirements

No Comment

3.2.10.2 Assessment of the Amherst Island Project Study Area: Habitat

The Project Location and surrounding area is comprised of a mix of natural, cultural and agricultural areas. Natural and cultural vegetation communities are described in Table 3.5 (Appendix B).

Bobolink and Eastern Meadowlark both occur in open, herbaceous-dominated vegetation communities. Areas within the Amherst Island Project Study Area assessed as suitable Bobolink and Eastern Meadowlark breeding habitat consisted of the following: cultural meadows (CUM1- 1), hayfields, pastures, and fallow vegetation communities. Additional vegetation communities and land uses found within the Project Study Area do not provide suitable habitat for Bobolink or Eastern Meadowlark (i.e. forest communities, shrub communities, thickets, wetlands, plantations or areas used for row crops or rural residences). On Amherst Island, pasture lands where intensive grazing was observed were also considered suitable breeding habitat for Eastern Meadowlark and Bobolink.

Comment:

- Please define Project Study Area and specify how it relates to SAR "habitat" as defined in the ESA.

- Habitat requirements for all life processes of SAR are protected under the ESA. Why is this discussion limited to Breeding Habitat as this is clearly in violation of ESA requirements.

Areas of suitable grassland habitat meeting the requirements (i.e. size, structure) to be considered potential Bobolink and Eastern Meadowlark habitat are shown in Figures 4.0-4.8. Fourteen areas of contiguous grassland habitat were identified that extended to within the Project Location footprint. Grassland habitat features are described in Table 3.8 (Appendix B).

These 14 grassland habitat features provided approximately 3,188 ha of grassland habitat for Bobolink and Eastern Meadowlark. The majority of grassland consisted of agricultural habitat (pasture and hayfields). Additional areas of known and potential grassland breeding habitat occurred in the regional landscape outside of those habitat features mapped within this assessment for the Amherst Island Wind Energy Project.

Comment:

- Please provide the criteria for "suitable grassland habitat", for Bobolink and Eastern Meadowlark.

- Habitat requirements for all life processes of SAR are protected under the ESA. Why is this discussion limited to Breeding Habitat as this is clearly in violation of ESA requirements.

Most of these 14 features contain a portion of the wind project footprint (i.e .turbines, access roads, buildings, and/or underground collector lines). Details on project components found within each grassland feature are provided in Table 3.8 (Appendix B). The spatial location of the Project footprint within each habitat feature is shown on Figures 4.0-4.8 and described in Table 3.8 (Appendix B).

Comment:

- Table 3.8 *Summary of Potential Grassland Habitat within the Amherst Island Wind Energy Project Location* requires clarification, please define Project Location.

- Is the project footprint restricted to land occupied by the various components, or does it extend beyond this area? Please define project footprint and specify how it relates to SAR "habitat" as defined in the ESA.

- Figures 4.0-4.8 indicate where each project component is located on Amherst Island. Please clarify if the project footprint is restricted to the land occupied by the various components.

A total of 17 ha of EasternEastern Meadowlark habitat that extended to within the Project footprint will be removed for the duration of the Project's operation. This is 0.55% of the habitat available for this species in the immediate vicinity of the Amherst Island Wind Energy Project Location and a negligible amount of the grassland habitat available in the greater landscape. An additional 77 ha of Eastern Meadowlark habitat will be removed for the construction of the Project components sited on private lands. A total of 101 ha of Bobolink habitat that extended to within the Project footprint will be removed for the duration of the Project's operation. This is 4.3% of the habitat available for this species in the immediate vicinity of the Amherst Island Wind Energy Project Location and a negligible amount of the Bobolink habitat available in the greater landscape. An additional 60 ha of Bobolink habitat will be removed for the construction of the Project components sited on private lands. These temporary areas to be removed for construction is considered a temporary loss of habitat as construction activities are short term in duration and following construction, all temporary work locations would be restored to pre-impact conditions.

3.2.10.3 Assessment of the Amherst Island Project Study Area: Species Occurrences

The region of Ontario containing the Project Study Area contains moderate to high relative abundances of Bobolink (Cadman et al., 2007). Generally Grey and Bruce Counties, the Peterborough and Kingston areas as well as the region from the Ottawa and St. Lawrence Rivers are associated with areas of relatively low-intensity agriculture and support the highest Bobolink abundances within Ontario (Cadman et al., 2007). Within areas indicated as high bobolink abundance in the Ontario Breeding Bird

Atlas (such as this Project Area), all suitable breeding habitat is considered to provide Bobolink and Eastern Meadowlark habitat.

In grassland habitat in the Amherst Island Project Study Area, the 10 most abundant species were Bobolink (17.99/10ha), Savannah Sparrow (10.67/10ha), Red-winged Blackbird (6.21/10ha), Tree Swallow (3.11/10ha), Song Sparrow (2.79/10ha), European Starling (2.71/10ha), Eastern Kingbird (2.39/10ha), Eastern Meadowlark (2.23/10ha), Yellow Warbler (1.75/10ha) and American Robin (1.19/10ha).

Of the 63 surveyed breeding bird point count locations, Bobolinks were recorded at 41 locations, with Eastern Meadowlark recorded at 17 survey locations. Locations of Bobolink and Eastern Meadowlark occurrences are shown on Figures 4.0-4.8 and indicated in Table 3.9 (Appendix B).

Comment:

- Table 3.9 lists 42 surveyed breeding bird point count locations and not 63 as noted above, which means that Bobolink were recorded **at all but one** of the bird count locations and Eastern Meadowlark were recorded at almost half of the bird count locations.

- Below is a list of the times and dates of the Breeding Bird Surveys and Point Counts as listed in this report. As are no separate listings for Bobolink, it is impossible to deduce from the listing if the MNR Survey Methodology was observed. Specifically:
    1. Complete at least three sets of point count surveys. These should take place between the last week of May and the first week of July with each survey separated by a week or more from previous surveys.
       Comment: Looking at the dates below the surveys do not appear to be separated by a week or more.
       Comment: 5 surveys were completed post "the first week of July"
    2. Undertake ten minutes of observations and listening at each point count.
       Comment: As the ten minute point count encompassed all species of birds at each point count – clearly 10 minutes of observation for Bobolink did not occur.
    3. Surveys should start at dawn and continue until no later than 9 am.
       Comment: Of the 43 surveys listed below only 2 were completed by 9:00 am.

        - 5/30/2011, 6:10-10:00
        - 5/31/2011, 5:15-9:45
        - 6/1/2011, 5:00-10:24
        - 6/2/2011, 5:00-10:40
        - 6/3/2011, 5:00-10:45
        - 6/4/2011, 4:50-10:52
        - 6/5/2011, 5:15-11:10
        - 6/6/2011, 5:00-9:38
        - 6/7/2011, 5:00-9:58
        - 6/8/2011, 5:00-10:17
        - 6/9/2011, 5:00-10:25
        - 6/10/2011, 4:55-10:15

- 6/10/2011, 8:05-11:15
- 6/11/11, 5:00-9:57
- 6/13/11, 5:40-11:30
- 6/14/2011, 5:19-10:30
- 6/15/11, 5:30-12:15
- 6/16/11, 5:18-10:35
- 6/17/2011, 5:20-12:02
- 6/18/2011, 5:43-9:41
- 6/19/2011, 5:36-11:00
- 6/20/2011, 5:58-8:42
- 6/21/2011, 9:03-10:35
- 6/22/2011, 5:25-10:12
- 6/23/2011, 5:40-8:50
- 6/24/2011, 6:15-10:45
- 6/25/2011, 5:20-9:32
- 6/26/2011, 6:10-9:30
- 6/27/2011, 5:42-9:13
- 6/28/2011, 5:55-11:35
- 6/29/2011, 5:50-10:25
- 6/30/2011, 6:10-11:05
- 7/2/2011, 5:55-10:25
- 7/3/2011, 5:59-10:53
- 7/4/2011, 5:50-10:33
- 7/5/2011, 6:46-9:18
- 7/6/2011, 5:36-9:22
- 7/7/2011, 5:50-10:22
- 7/8/2011, 6:25-7:58
- 7/9/2011, 5:40-11:30
- 7/10/2011, 5:30-12:15
- 7/11/2011, 5:18-10:35
- 7/12/2011, 5:19-10:30

Bobolink and Eastern Meadowlark were essentially absent from forest and scrub habitat. This finding is consistent with known habitat preferences for these species. No Eastern Meadowlarks occurred in forest or marsh habitat. Four Bobolinks were recorded at a survey location sited within forest habitat (point counts 26 and 30) and one Bobolink was recorded at a survey location sited within marsh habitat (point count 61); however, these features were located adjacent to cultural meadow or hay habitat.

3.2.10.4 Conclusion

Bobolink and Eastern Meadowlark and their habitat are found within the Project Location. Potential impacts and mitigation measures are discussed in Section 9.0.

Comment:

- Please define Project Location and specify how it relates to SAR "habitat" as defined in the ESA.
- In fact, Bobolink, Eastern Meadowlark and their habitat are found throughout Amherst Island.

3.2.11 Aquatic Species at Risk

3.2.11.1 American Eel

No Comment

3.2.11.2 Spotted Gar

No Comment

3.2.11.3 Eastern Pondmussel

No Comment

3.2.12 ADDITIONAL SPECIES IDENTIFIED THROUGH FIELD INVESTIGATIONS

One additional species (Peregrine Falcon), not identified during the records review, was observed during the course of field surveys. The Peregrine Falcon is currently listed as Special Concern provincially and federally, although at the time of the field surveys, and NHA, was Threatened provincially, and so considered under the ESA. Traditionally, in Ontario, it has been a rare breeder, preferring suitable rock cliffs, particularly those adjacent to water. More recently the species has been released in various urban centres in Ontario where it successfully nests on tall buildings.

One Peregrine Falcon observation was made during the fall stationary migratory raptor surveys: on September 1, 2011, a juvenile male Peregrine Falcon was observed perched in a tree, below blade height, near the shoreline at the southwest corner of Amherst Island. This location is outside the Project Study Area. See Figure 2.3 for this location. The individual observed was considered a migratory bird. Peregrines can migrate long distances along broad routes following clearly defined landforms, such as shorelines (Ontario Peregrine Falcon Recovery Team, 2010).

Peregrine Falcons occasionally stage during migration; however, there do not appear to be any staging areas in Ontario (Ontario Peregrine Falcon Recovery Team, 2010). Regulated habitat for Peregrine Falcon includes natural cliff faces at least 15 m high and active artificial nest sites (O. Reg. 436/09). No evidence of nesting Peregrine Falcons or presence of suitable nesting habitat on cliff faces or tall buildings occurs within the Project Study Area. No features meeting the definition of regulated Peregrine Falcon habitat are contained within the Project Study Area.

3.2.12.1 Conclusion

Though a transitory Peregrine Falcon was observed in the Project Study Area during migration, the Project Study Area did not support regulated habitat for Peregrine Falcons.

Comments:

- KFN records indicate that Peregrine Falcon are regularly sited on Amherst Island during the migratory period.

3.3 SUMMARY

Fourteen (14) provincially Threatened or Endangered species were identified by background sources as historically occurring within the general vicinity of the Project Study Area. A summary of the results of the field investigation program (habitat and species presence) is provided in Table 3.15 (Appendix B).

Comment:

- As noted in section 2.1.2, while 6 avian species were identified the following species are also documented to have used the habitat on AI. Appropriately timed investigations should be undertaken for the presence of the three below noted SAR. (Chimney Swift, Red Knot, Golden Eagle)

Butternut trees were identified in one location, located more than 200 m from the closest project construction activities. No removal of Butternut trees is proposed within any natural features. No effects are anticipated to the Butternut trees.

No highly suitable habitat was identified in or near the Project Location during site investigations to support the Peregrine Falcon or Henslow's Sparrow (details are provided above and in Table 3.15, Appendix B).

Though suitable foraging habitat was identified for Barn Swallow, no nesting structures for Barn Swallow were observed in the Project Location.

Comment:

- Please define Project Location and specify how it relates to SAR "habitat" as defined in the ESA.

- While no breeding habitat was identified in the "Project Location" (area to be confirmed), breeding is simply one of the life processes which is protected under the ESA. The section above states "suitable foraging habitat was identified". Why is the impact of Wind Turbines on foraging habitat and migration not addressed in this section?

Species at Risk and habitat that will likely be affected by the proposed activity include:

- *Blanding's Turtle and Eastern Musk Turtle*
- *Eastern Whip-poor-Will*
- *Bobolink*
- *Eastern Meadowlark.*

Comment:

- As noted above, Barn Swallow foraging habitat will be impacted by the Industrial Wind Trubines and must be addressed.

- As noted in section 2.1.2 Chimney Swift, Red Knot, Golden Eagle are SAR that have been documented to use the habitat on Amherst Island – studies must be undertaken for the SAR.

- As noted in Section 3.1.1.1 – Bat Migratory studies must be undertaken as SAR migration is protected under the ESA.

Additional details on the extent to which the species and/or habitat will be affected and the measures that will be taken to minimize any adverse effects are provided in Sections 7.0, 8.0, and 9.0.

4.0 Consideration of Reasonable Alternatives

In order to minimize or avoid adverse effects on Species at Risk various alternatives for the Project were considered during the planning stages. An assessment of alternatives is provided in Table 4.1 (Appendix B) and described below.

The need for new, renewable electricity generation capacity within the Province of Ontario is documented in the Independent Electricity System Operators (IESO) document entitled: 10-Year Outlook: An Assessment of the Adequacy of Generation and Transmission Facilities to Meet Future Electricity Needs in Ontario, From January 2006 to December 2015 (http://www.theimo.com/imoweb/monthsYears/monthsAhead.asp).

In order for a wind plant to effectively generate electricity, it is critical that the wind turbine generators are located in windy locations. The strong winds that blow across Amherst Island provide excellent potential for wind power generation and make this area particularly suitable for the installation of wind generation facilities.

Comment:

- In fact the winds that blow across Amherst Island are listed in the Wind Atlas as “Fair to Moderate” and the Industrial Wind Turbines selected by Algonquin are marketed as “the ultimate choice for low to moderate wind conditions”.
-
- Indeed since the "10-Year Outlook" referenced above was prepared, the IESO has recognized the need for Surplus Baseload Mitigation. This recognition is evidenced by Premier Wynne's recent announcement of changes to a contract with Samsung, resulting in a reduction in the amount of power to be purchased from Samsung. To use the need for power generated by wind when there is a projected surplus which requires mitigation as a reason to kill, harass, and harm species at risk is untenable.

In developing the proposed project, various layouts were considered and proposed throughout the design process of the Project. Siting constraints such as noise setbacks, access restrictions, production efficiency, proximity to other turbines, significant wetlands and lot lines restrict placement of the turbine locations. These siting constraints as they restrict the Amherst Island Project Location siting are illustrated in Figure 5.0 (Appendix A).

The design proposed within this permit application has been planned in a manner that considers each of these setbacks and siting restrictions. As indicated in Figure 5.0, once these constraints are considered, placement of the turbine locations is restricted to relatively few locations. Species at Risk habitat, also considered in the placement of turbines, is shown in addition to all other siting constraints in Figure 6.0. As evident in Figure 6.0 the placement of turbines in unconstrained areas while avoiding Species at Risk habitat was limited; however, it was the option selected where possible.

Additional constraints (not shown on Figures 5.0 and 6.0) such as landowner consultations further restricted placement of turbines. As a result, the final Project layout, as presented within this report, was considered to be the best option to ensure the commitments of the contract requirements were met and ensure renewable energy is provided to the province while minimizing the impact to Blanding's Turtle, Eastern Musk Turtle, Bobolink, Eastern Meadowlark and Eastern Whip-poor-will.

Comment:

- It is clear from a review of the above section that Amherst Island is simply not a suitable locale for a large industrial wind installation. There is not enough land to appropriately avoid SAR and their habitat as required by the ESA.
- The proponent's comment that "additional constraints . . . such as landowner consultations further restricted placement of turbines" does not resonate with residents of Amherst Island as notwithstanding residents' and the Kingston Field Naturalists' pleas, the proponent proposes to locate four turbines in proximity to Owl Woods where the kill rate given the increased size of the turbines will likely exceed Environment Canada standards. The applicant has applied for permits and set out mitigation measures for only five species out of a total of 34 species at risk that will potentially be impacted on the Island.
- Perhaps the proponent was referring to "leaseholders" as the applicant was not responsive to residents' requests to relocate turbines for any reason including proximity to our only school.
- In summary, no reasonable mitigation measures to protect species at risk are possible given the number and density of the proposed turbines and the size of the Island. Accordingly, MNR is requested to reject the application.

5.0 Project Details

5.1 SUMMARY OF CONSTRUCTION DETAILS

No Comment

6.0 General Mitigation Measures

General mitigation measures for the Project are discussed immediately below, with Species at Risk-specific mitigation measures also provided in subsequent sections. These sections provide recommendations to proactively avoid and minimize harm to Species at Risk. The following mitigation measures should be implemented for the Amherst Island Wind Energy Project to ensure construction, operation and maintenance activities are compliant with the ESA 2007: The following best management practices and other measures intended to minimize or mitigate potential adverse impacts on adjacent significant natural features will be implemented, where required and reasonable, during the construction and operation of the various turbines, access roads and collector lines.

Comments:

- NO construction activities should be allowed during nesting season for any of the SAR which includes April 1 through to October 15.

Additional area-specific mitigation measures pertaining to construction and operation of the proposed turbines, access roads and other Project components are documented in the NHA/EIS (Stantec, 2012a). These general measures recommended for the protection and minimization of impacts to natural features, general wildlife and wildlife habitat will also assist in avoiding or minimizing potential impacts to Species at Risk.

Comment:

- Below is from the *Loyalist Township Municipal Consultation Form, section 3.2 Summary of Anticipated Concerns* which comments on the "general measures recommended for the protection and minimization of impacts to natural features" found in the NHA/EIS. Clearly, the mitigation measures proposed by Stantec are inadequate to protect SAR as legally mandated by the ESA.

> The consultant indicates that "the application of these protective, mitigation and compensation measures are expected to address any negative environmental effects of construction, operation and decommissioning of the Project on the natural heritage features in the Study Area and their associated ecological functions".

Island Uniqueness

> Amherst Island has unique landscape features that contribute to its value. For a small island, availability of habitats is high. The low profile, windswept nature of the Island contributes to its ability to provide winter habitat for owls. Sites of this nature are considered to be rare in Southern Ontario (Environment Canada 2006). Traditional farm practices that occur on the island contribute to the maintenance and provision of high quality grassland habitat; farming practices are and will likely continue to be constrained by access limitations (side load ferry).

Pre-siting

> Proper site selection plays a very important role in limiting the impact of wind farms on nature. In general, current knowledge indicates that there should be precautionary avoidance of locating wind farms in regional or international important bird or bat areas and/or migration routes (Everaert, 2003). At a macro scale, raptor use of a site still appears to be one of the most important factors that can be easily measured and is generally related to risk of collision (Anderson et. al, 2004). Also within one wind farm, the impact can strongly differ between individual turbines clearly showing that 'site selection' can play an important role in limiting the number of collision fatalities (Everaert, 2003). Birds may utilize specific areas more than other areas on the proposed wind plant site. Understanding those activity areas and modifying the project

commensurately can be very valuable. Avoiding high use areas or areas used by species of special concern can be effective in minimizing impacts (Anderson et. al, Dec 1999)

As is the case with birds, wind project siting is crucial to minimizing impacts to bats. Another mitigation measure to minimize potential impacts to bats is to avoid the siting of projects near open water. Open water is particularly important to bats, especially in arid areas as it not only provides drinking water but is a significant source of insect prey (AWEA, 2008).

Avian Mortality

The Ministry of Natural Resources document titled Birds and Bird Habitats: Guidelines for Wind Power Projects (2011) notes that there are three main factors that contribute to avian mortality at wind power projects:

- Density of birds in the area and their behaviours (e.g. flight displays, feeding, etc.)
- Landscape features in the area (especially ridges, steep slopes, valleys and landforms such as peninsulas and shorelines that funnel bird movement); and
- Poor weather conditions.

Density

With respect to the density of birds on Amherst Island, particularly raptors and species at risk (bobolink and swallows), it is high relative to other sites in Ontario and potentially significantly higher than Wolfe Island. Based on recent analysis of limited data by Strickland and Johnson (2006), high raptor use (above 2 birds per 30-minute survey) is correlated with high raptor fatality rates; areas with this high level of raptor use should be studied more intensively to better identify the level of risk to raptors, or the site should be avoided (AWEA, 2008).

Wolfe Island has demonstrated mortality rates that have neared the thresholds set by Environment Canada. It is therefore possible, based on density numbers alone, that Amherst Island will experience mortality rates that will exceed the current thresholds. Based on the information to-date, siting of wind plants appears to be the most significant factor related to bird mortality (Erickson et al, 2001). It appears from the available data that siting wind plants in areas with low bird and raptor use is currently the best way to minimize collision mortality.

It is also probable that for mortality rates to fall within threshold values, either avian density will have to decline or avoidance behaviors will be exhibited, resulting in greater concentrations of raptors within the remaining available habitats. Should avoidance behaviors be exhibited it is unknown if Amherst Island will be able to support an increased density in the reduced area or if bird numbers will decrease according to habitat and food availability.

Poor Weather

Poor weather conditions are known to occur. Amherst Island is located within Lake Ontario near the mainland shore, and snow squalls, heavy fog, and storm events can be experienced. The influence of these effects on migrating species that travel over Lake Ontario is unknown. Birds flying over Lake Ontario see Amherst Island as potentially the first land fall area. Wolfe Island is located closer to the mouth of the St. Lawrence River and therefore the expanse of open water is much less between the north and south shores of the Lake.

Turbine Design

While turbine design is cited to mitigate potential impacts to nesting and breeding species, the increased height can influence migration. Taller turbines reach higher above the ground, have much larger rotor swept areas and thus further overlap the normal flight heights of nocturnal migrating songbirds and bats (Morrison 2006; Barclay et al. 2007; Johnson et al. 2002; Manville 2009). In addition, the length of the blade changes the rotor swept area, thus potentially changing the opportunity for collisions (Howell 1997).

Cumulative Impacts

Because the cumulative impacts of all mortality factors on birds continue to increase as the human population climbs and resource demands grow, efforts by every industry are important to reverse avian mortality trends and to minimize bird deaths. However, as wind energy facilities become substantially more numerous, fatalities and thus the potential for biologically significant impacts to local populations increases (NAS 2007; Erickson et al. 2002; Manville 2009). The cumulative impacts of multiple wind energy projects within known significant wildlife areas (such as the eastern end of Lake Ontario) should be discussed.

Overall, three (3) Species at Risk and/or their habitats were identified in or within 120 m of the Project Location and have the potential to be affected by either the construction and/or operation of the proposed Project. Potential effects and avoidance and mitigation measures are discussed in the subsequent sections for Eastern Whip-poor-will, Bobolink, and Eastern Meadowlark. Two additional species, Blanding's Turtle and Eastern Musk Turtle, may occur in proximity to the project location, but beyond the 120 m. Mitigation measure for these species has been included in the subsequent sections as well.

Comment:

- Please specify how the 120 meters noted above relates to SAR "habitat" as defined in the ESA.

- Although the paragraph above states "Potential effects and avoidance and mitigation measures are discussed in the subsequent sections for Eastern Whip-poor-will", there is no discussion of Whip-poor-Will in the section below.

7.0 Blanding's Turtle and Eastern Musk Turtle: Potential Effects and Mitigation Measures

Although no observations of these turtle Species at Risk were made on Amherst Island, potential habitat for Blanding's Turtle and Eastern Musk Turtle exists in the Long Point Marsh, which is shown on Figure 1.0.

Comment:

- As noted in sections 3.1.1.1, 3.2.4.1, 3.2.4.2 and 3.2.4.3, suitable habitat for the Blanding's Turtle is located throughout Amherst Island. Furthermore, KFN has recent documentation of Blanding's Turtles found at widespread locations on Amherst Island. Additional field studies must be undertaken.

7.1 POTENTIAL EFFECTS

7.1.1 Construction

Turtles are likely to be at an increased risk of accidental injury or mortality during construction. The active period for turtle is typically from May 1 to October 14. Should vegetation removal or construction activities be required during this period, there is the potential for Species at Risk Turtles to enter the Project Location during daily movements, which may result in potential impacts to the species during construction. Turtles using access roads as basking sites or for movement are also likely to be at an increased risk. Loss of adult Species at Risk turtles, due to accidental mortality, could have a significant negative impact on the local populations. Proposed mitigation measures are discussed below to mitigate any potential effects during construction. Sensory disturbance to Species at Risk turtles may occur during all phases of the Project as a result of increased on-site human activities (e.g. site preparation, turbine assembly, maintenance activities). However, sensory disturbances would be most intense during the construction period.

Comment:

Construction activity should be prohibited during the turtle active period from May 1 to October 14.

7.1.1.1 Overwintering and Nursery Habitat

No habitat would be removed for the Project. At the Long Point Marsh, the construction of T36 and the access road to T11 (see Figure 1.0) of the Amherst Island Wind Energy Project will be constructed within the range of areas identified as potential habitat.

Given the setbacks of greater than 75 m, impacts to this habitat are unlikely. However, there may be limited potential for impacts during construction and could include: sedimentation, the release of gasoline, oil and other deleterious substances which may drain into the feature, direct mortality to turtles as a result of construction traffic, directly from habitat destruction and degradation and indirectly from reductions in amphibian breeding populations.

With standard construction practices such as use of silt fencing along the perimeter of work areas, storage of equipment, stockpiled soils and other materials within work areas and the fuelling of equipment outside of wetlands, impacts to turtle overwintering and nursery habitat from construction of the access road are expected to be negligible in scale.

Comment:

- The paragraph above states that no habitat removal will occur in the vicinity of Long Point Marsh, please provide information pertaining to Blanding's Turtle habitat removal throughout the remainder of Amherst Island.

- A review of the Ostrander Point Environmental Review Tribunal Report (sections below) indicates that habitat removal is not the major source of anthropogenic mortality for Blanding's Turtles.

  [251] There was consensus among the experts that the major source of anthropogenic mortality to Blanding's turtle is road impacts: animals struck and killed on roadways while travelling among wetlands; when females travel overland to reach nesting sites; and when females nest in the shoulders of roads. Other threats caused by roads include increased poaching and predation

  [281] Ms. Gunson testified that road effects on turtles are both direct, due to being hit by vehicles, and indirect through habitat loss and fragmentation, changes to vegetation, and changes to hydrology.

7.1.2 Operation

Due to the long distances Species at Risk turtles will travel overland, they are considered particularly susceptible to being struck and killed crossing roadways (COSEWIC, 2005). Although no observations of Species at Risk turtles were made, existing roadways on Amherst Island are expected to pose a potential risk to turtles through traffic mortality and the spread of road salt, dust and oil.

The primary risk to Species at Risk turtles during operation of the facility is related to the installation of the gravel access roads. Potential direct impacts as a result of the installation of access roads include risk of mortality from vehicle collisions or nesting failure.

Access roads are located on private lands and use of these roads will be restricted to use by the wind facility staff for occasional maintenance activities. As a result, the frequency of traffic on new access roads is expected to be very low and traffic speed on access roads is expected to be low. Infrequent use by traffic and slow speeds are expected to reduce the increased risk of mortality to negligible levels. This, combined with the training of staff, signage and the commitment to reporting all observations of Species at Risk turtles (see mitigation measures below), will minimize the potential mortality to turtles. Indirect impacts to Species at Risk turtles, including avoidance impacts, are not anticipated during the operations phase of the Project.

Comment:

- Item 259 of the Ostrander Point Environmental Review Tribunal Report provides the information below. Please specify why nest predation and poaching are not addressed for the Amherst Island Project.

  [259] The (Ostrander Point) Stantec Report recognizes that, the following are "potential indirect disturbance effects to Blanding's turtles from the turbines or an increase in human activity":

- Increased risk of mortality on new access roads, which may experience an increase in traffic over current conditions
- Increased predation of nests due to predators (i.e., coyotes and foxes) using access roads to traverse through the habitat
- Increased poaching for the pet trade due to increased access and awareness of the local Blanding's turtle population

7.1.3 Decommissioning

Comment:

- As decommissioning is in effect the reversal of the construction process, all of the issues and concerns about the construction process are pertinent to the decommissioning process.

7.2 RECOMMENDED MITIGATION MEASURES

The following mitigation measures are recommended for Species at Risk turtles.

- *Avoidance of all overwintering habitat.*

Comment:
Overwintering habitat remains to be properly identified.

- *Mitigation measures for vegetation removal, spills, dust and waste to be implemented as outlined in Section 6.0 of this report.*
- *Where possible, vegetation clearing, road construction and site preparation for project components located in proximity to the Long Point Marsh should occur between October 15 and April 30, to avoid the most critical life cycle period for Species at Risk turtles.*

Comment:
All construction activity must be restricted throughout the island from April 30 to October 15 – with no potential for exceptions.

- If *construction activities between May 1 and October 14 are unavoidable, every attempt must be made to avoid harassment or injury to Species at Risk turtles to avoid contravention of the Ontario's Endangered Species Act (2007). Immediately prior to vegetation clearing or road construction and/or improvements within 200 m of Species at Risk turtle habitat, a qualified biologist should carefully search all work areas to identify the presence of Species at Risk turtles.*

Comment:
All construction activity must be restricted throughout the island from April 30 to October 15 – with no potential for exceptions.

- *Where Species at Risk turtles are observed, all construction or maintenance activity should be halted until the Species at Risk turtles vacates the construction area of its own accord, or if this is not feasible, until a trained professional relocates to the individual to a safe distance within similar habitat that is more than 30 m from activities.*

Comment:

Please provide details as to qualifications of "trained professional" and provide justification for selection of 30m distance.

- *All persons entering the site should be provided training about Species at Risk turtles and proper steps to take upon encountering a Species at Risk turtles.*
- *Maintenance vehicle traffic on access roads will primarily be restricted to daytime hours. Vehicle speeds will be restricted to 30 km/h or less.*
- *Speed limit signage will be erected to communicate 30km/hr limit.*

Comment: Per the Ostrander Point Environmental Registry Report, section 277 "[277] Dr. Beaudry … testified that he was aware of only one study on the effectiveness of signs. It showed that signs were only marginally effective at slowing down drivers when accompanied by a lower speed limit and fashing lights, but the lower speed did not translate into fewer wildlife collisions.

- *All observations of Species at Risk turtles on the site should be recorded and submitted to MNR, with any observed fatalities reported to MNR immediately.*

Comment: Reporting of observed Species at Risk is not a mitigation measure.

Comment:

- The mitigation measures do nothing to reduce increased nest predation or poaching.

7.3 CONCLUSION

Installing the various Project components is anticipated to have limited effect on the Species at Risk turtle habitat as no removal of habitat is proposed. Species at Risk turtles are considered to be at very low risk from mortality as a result of the installation of access roads given the infrequent use roads will receive (private roads used infrequently for occasional maintenance) combined with the mitigation measures in place as outlined above. Though the effects of the Project are anticipated to be minimal to Species at Risk turtles, there is some potential for disturbance of natural features and habitats during construction of the Project.

Comment:

- As mentioned above, habitat removal is not the major source of anthropogenic mortality to Blanding's turtles which include road kill, nest predation and poaching.

- Of the three, road kill is inadequately addressed above and nest predation and poaching are not addressed at all.

- A review of the field notes included in the NHA/EIS indicates that searches for SAR turtles occurred either at the wrong time of the year or in a very limited area. Additional studies must be undertaken in order to ensure that the effects of the Project are indeed minimal.

8.0 Bobolink and Eastern Meadowlark: Potential Effects and Mitigation Measures

Bobolink and Eastern Meadowlark habitat and occurrences are shown on Figures 4.0-4.8. A summary of habitat removal by grassland habitat feature is provided in Table 3.8 (Appendix B).

8.1 POTENTIAL EFFECTS

8.1.1 Construction

Fourteen areas of contiguous grassland habitat were identified that extended to within the Project Location footprint. Grassland habitat features are described in Table 3.8 (Appendix B). These 14 grassland habitat features provide approximately 3,188 ha of grassland habitat for Bobolink and Eastern Meadowlark. The majority of grassland consisted of agricultural habitat (pasture and hayfields).

Eastern Meadowlark habitat to be removed permanently for the duration of Project operation (i.e. long term removal areas) is approximately 17 ha. This area includes turbine bases and access roads for this species. The total amount of Bobolink habitat to be removed permanently is approximately 101 ha. This area includes turbine bases, blade-sweep area, access roads, and a 20 m buffer around access roads for habitat removal. This is less than 1% of the EasternEastern Meadowlark habitat available and less than 5% of the Bobolink habitat available in the immediate vicinity of the Amherst Island Wind Energy Project Location and a negligible amount of the grassland habitat available in the greater landscape, especially given the rotational and quickly established nature of this habitat.

An additional 60 ha and 77 ha, respectively, of known and potential habitat for Bobolink and Eastern Meadowlark may be temporarily affected during construction (constructible area) but would be rehabilitated to its pre-construction condition (agriculture) within one year of the completion of construction activities. Table 3.8 (Appendix B) provides the estimated amount of affected habitat per patch (all suitable habitat has been considered Bobolink and Eastern Meadowlark habitat due to species abundance in this area as mapped in Cadman et al., 2007).

Potential Bobolink and Eastern Meadowlark habitat proposed for removal for turbine and access road construction consists primarily of managed agricultural fields (mainly hay and pasture) that are subject to regular agricultural practices such as haying and crop rotation. Current land use and farming practices would be expected to continue by the landowner. The existing farming practice of hay field cutting before the end of the breeding cycle likely reduces breeding success for Bobolink and Eastern Meadowlark within the Project Study Area.

Bobolink, Eastern Meadowlark, and their nests could be at risk of accidental injury or mortality during construction. All clearing of vegetation within grassland habitat will occur between August 15 and May 1 to avoid damage to active nests. Disturbance from construction activity, such as increased traffic, noise, or dust, may result in avoidance of habitats by birds. These effects are greatest if disturbance occurs during critical life stages such as courtship or nesting (NWCC, 2002).

Comment:

- Please see comments in section 3.2.1 which address loss of habitat.

8.1.2 Operation

Two general types of potential impacts to birds have been identified from wind projects; direct impacts (i.e., mortality from collisions) and indirect impacts (i.e., avoidance or disturbance effects).

Direct Impacts

Grassland species that conduct aerial mating displays may be at higher risk to collisions with turbines. Bobolink is included in this category; however, the results of Stantec studies conducted at several locations in southern Ontario indicate the aerial displays of Bobolink typically occur well below the height of blade sweep (Stantec, 2005; Stantec, 2006; Stantec, 2007). Eastern Meadowlark does not conduct aerial displays and typically flies well below blade sweep height.

Comment:

- During migration Bobolink and Eastern Meadowlark have the potential of flying at turbine blade height.

In general, resident breeding birds tend to have lower collision rates than non-residents, at least partly because they become familiar with the turbines and avoid them (Kingsley and Whittam, 2007). Post-construction studies conducted at Wolfe Island Wind Plant, located near Kingston, Ontario, have recorded very low mortality rates of Bobolink relative to the local population sizes and no Eastern Meadowlark mortality over the three year program (Stantec, 2010a; Stantec, 2010b).

Comment:

- The entire quote from (Kingsley and Whittam, 2007) is listed below. Please note the concern with poor weather conditions such as fog, a weather phenomenon frequently experienced on Amherst Island.

> In general, it has been found that birds breeding in the area of wind turbines have lower collision rates than non-residents. In part, this is probably because local birds become familiar with the turbines and know how to avoid them, whereas individuals passing through the area would not have that familiarity, and due to poor weather conditions such as fog, may be unable to detect the turbines before a collision occurs. Most available literature regarding the effects of wind energy on birds deals with numbers of birds killed and reasons for their collisions. However, the greatest impacts that wind energy facilities may have on breeding birds include habitat loss, destruction of active nests, obstruction of regular flight paths, disturbance caused by turbines or human activities around breeding sites, and obstruction of important feeding areas (particularly important for offshore or coastal areas).

Environment Canada indicates that the levels of mortality of Bobolink currently observed on Wolfe Island is unlikely to have a significant population effect on Bobolink and that the loss of grassland habitat due to crop rotation would have a far greater impact on the local Bobolink population than mortality caused by collisions with wind turbines (Environment Canada Letter, July, 2012).

Comment:

- While the Environment Canada letter does not express concerns about ongoing Bobolink Mortality, the June 12, 2012 letter from the Ontario Ministry of Natural Resources has the following to say:

As identified in our previous correspondence, MNR continues to have concerns with the on-going mortality of Bobolink on site. MNR recommends that you review the "Endangered Species Act (ESA) Submission Standards for Activity Review and 17(2)(c) Overall Benefit Permits" and complete the associated and required form prior to the submission of any additional Post Construction Monitoring Reports.

- Additionally, KFN documentation indicates a much larger population of Bobolink on Amherst Island as compared to Wolfe Island. Amherst Island soil conditions are such that haying occurs two weeks later and there is as a rule only one haying per year.

Indirect Impacts

Overall, indirect effects have the potential to be greater threats to grassland breeding species than direct mortality. Removal, fragmentation, and disturbance of habitat as a result of wind energy projects were identified as larger threats to breeding grassland birds than direct mortality (Kingsley and Whittam, 2007). The extent of indirect effects varies depending on a number of factors including the sensitivity of the species, type and amount of current disturbance and amount and extent of habitat to be removed. At the proposed Project Location for the Wind Project, Bobolink and Eastern Meadowlark are currently subject to regular and ongoing disturbance from active farming practices including haying and farm maintenance activities. Haying activities have been identified as the primary threat to Bobolink and Eastern Meadowlark (COSSARO, 2010; COSEWIC, 2011b). Disturbance effects may occur from the ongoing maintenance activities required for operation of the facility, although such activities are localized within the vicinity of the turbine and are infrequent (i.e. twice per year). As well, Bobolink and Eastern Meadowlark occurring within the Project Location are likely accustomed to occasional on-site human activities and currently experience significant disturbance effects (i.e. nest abandonment and predation) and lower reproductive productivity from current cutting practices.
The removal of Bobolink habitat for access roads and turbine footprints has the potential to fragment agricultural habitat and make it less attractive to the area-sensitive Bobolink. However, the establishment of a 6 m (4-6 m wide during construction) wide gravel road through (or along the edge of) a field may not significantly impact populations. For example, Bobolinks are more averse to nesting near woodland edges than adjacent to open fields. In many of these existing fields, existing farm lanes are already present or will be upgraded and used as the access road for the proposed turbines, thereby reducing the potential fragmentation of these fields. Location of the Project within each grassland habitat is shown on Figures 4.0-4.8 and discussed in Table 3.8 (Appendix B).

Fragmentation could also result in increased rates of nest parasitism and predation (Bollinger and Gavin, 1992). As indicated above, Bobolink and Eastern Meadowlark nesting within the proposed Project Location are likely currently subjected to increased rates of predation and lower nesting success rates due to current agricultural practices. Studies specific to the wind industry indicate that avian productivity of breeding birds does not appear to be negatively affected at many wind facilities (Kingsley and Whittam, 2007). In Minnesota, the density of breeding grassland birds including Bobolink, Red-winged Blackbird, and Savannah Sparrow was reduced by 50% within 80 m of turbines; grassland habitat located more than 180 m from turbines supported mean densities that were four times higher than habitat closer to turbines (Leddy et al., 1999). Similarly, Wolfe Island has been identified as an important site for breeding grassland species of conservation priority by Ontario PIF (2008) and supports the highest concentrations of Bobolink in southern Ontario (Environment Canada, September 21, 2007). Post-

construction monitoring at the Wolfe Island Wind Plant has shown no observed avoidance or disturbance effects to Bobolink to date (Stantec, 2010c).

Comment:

- The above information does not address all of the life processes of the Bobolink and Meadowlark – this information must be provided in order to meet with ESA requirements.

8.1.3 Decommissioning

Impacts from the decommissioning activities are expected to be similar to that of construction: noise, dust, risk from heavy equipment, and crews being present.

8.2 MITIGATION MEASURES

The following mitigation measures are recommended for the Project:

- *Mitigation measures for vegetation removal, spills, dust and waste to be implemented as outlined in Section 6.0 of this report.*
- *Vegetation clearing in grassland habitat will occur between August 15 and May 1 (outside of the breeding bird season), to avoid nesting Bobolinks and Eastern Meadowlarks.*
- *Mitigation measures for vegetation removal, spills, dust and waste to be implemented as outlined in Section 6.0 of this report. Post construction mortality monitoring will be conducted twice weekly (3-4 day intervals) mortality monitoring at eleven turbines from May 1 to October 31 for a period of three years. Searcher efficiency and scavenger trials will be conducted each year according to current guidance documents (as detailed in the Environmental Effects Monitoring Plan in the Amherst Island Wind Project Design and Operations Report).*

8.3 CONCLUSION

Installing the various Project components is anticipated to have limited effect on the available grassland habitat within the Project Area (with removal of less than 1% of the habitat identified in the Project Study Area for the duration

CONCLUSION

Association to Protect Amherst Island believes that the shortcomings detailed in the comments above clearly indicates the research undertaken on Amherst Island falls far short of that required by the ESA. For this reason, we believe that additional, properly times and properly executed research must be undertaken prior to any ESA permit being issued.

Additional review of the SAR Report is underway and information / comments will be forwarded when available.