



Shorebird Migratory Stopover Area – Gap Analysis

According to O. Reg. 359/09 the Proponent must identify, select for field studies and evaluate the significance of candidate significant wildlife habitat (SWH) found within the Amherst Island Wind Project Location¹ (AIWPL).

The Project Study 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 Study 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 basic components of the proposed Project include up to 36 Siemens wind turbines. The proposed Project will also include a 34.5 kilovolt (kV) underground and/or overhead electrical power line collector system, fibre optic data lines from each turbine and/or wireless technology for the communication of data, a transmission line, truck turnaround areas, a submarine cable, an operations and maintenance building, permanent dock, a substation, a switching station, an un-serviced storage shed, one connection point to the existing electrical system, cable vault areas, meteorological tower(s) (met tower(s)), access road(s) to the met tower site(s), and turbine access roads with culvert installations, as required, at associated watercourse crossings.

Per O. Reg. 359/09, the following publications from the Ministry of Natural Resources (MNR) will inform the methodology used by the Proponent to complete the above.

- Birds and Bird Habitats: Guidelines for Wind Power Projects
- Bats and Bat Habitats: Guidelines for Wind Power Projects
- Natural Heritage Assessment Guide for Renewable Energy Projects

The above publications in turn reference the following publications:

- Significant Wildlife Habitat Technical Guide
- Significant Wildlife Habitat Eco-regional Criteria Schedules
- Ontario Wetland Evaluation System Manuals
- Ecological Land Classification Manuals

¹ Project Location: Includes all land and buildings / structures associated with the Project and any air space in which the will occupy. This includes structures such as turbines, access roads and power lines as well as any temporary work areas (including roads) which are required to be utilized during the construction of the Project.



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The process that must be followed in order for the Proponent to identify, evaluate and mitigate candidate and confirmed SWH is detailed in the publications above and summarized below.

1. Records Review²
 - a. Identify location of candidate and confirmed SWH, AINSI etc.
2. Site Investigations³
 - a. Confirmation / identification of confirmed and candidate SWH (procedures include Ecological Land Classification (ELC) review)^{4, 5}
3. Evaluation of Significance⁶
 - a. Candidate SWH identified as occurring in and within 120 m of the Project Location required an Evaluation of Significance (EIS) to ascertain if the candidate SWH met the requirements for confirmed SWH
4. Environmental Impact Study (EIA)
 - a. Identify and assess potential negative environmental effects on SWH of the site preparation, construction, operation, modification, decommissioning of the Project. The EIS also identifies mitigation measures designed to prevent or minimize potential negative effects on a natural feature.

As habitat inclusion in the EIS is fully dependent upon identification / confirmation during records review and / or site investigations, it is critical that the methodology followed to

1, 2, 6. MNR publication *Natural Heritage Assessment Guide for Renewable Energy Projects (NHAGREP)*
Section 3.1 Overview of the Natural Heritage Assessment

The NHA begins with a records review and site investigation, whereby an applicant must identify and verify any natural features present within 120 metres of the proposed project location....

Where it is determined that a natural feature is significant or provincially significant, applicants may seek an exception from the prohibitions, in order to develop within the natural feature and setback, provided an (Environmental Impact Study) EIS is prepared in accordance with procedures established by MNR

3. Section 5.6.1 Identification of Candidate Significant Wildlife Habitat
Applicants should begin the site investigation process by identifying candidate significant wildlife habitat (i.e. potentially significant) at or within 120 metres of the project location. MNR's established procedures for identifying candidate significant wildlife habitat include conducting an ELC assessment of ecosites and consulting MNR's Significant Wildlife Habitat Technical Guide
4. MNR publication *Ecological Land Classification Primer*
The uses for ELC system include "Assessing biodiversity levels, defining see zones, mapping ecosystem types and setting targets for the identification of natural heritage systems"
5. Amherst Island Wind Energy Project, Natural Heritage Assessment / Environmental Impact Study, Section 1.2 Report Requirements (p. 1.3)



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identify, select and study candidate SWH adhere to the guidelines found in the Significant Wildlife Habitat Technical Guide (SWHTG) and Draft Significant Wildlife Habitat: Ecoregion 6E Criterion.

This gap analysis will demonstrate that the methodology used by Algonquin to identify candidate shorebird migratory stopover areas does not meet the requirements listed in the publications above; resulting in the erroneous identification of a single shorebird migratory stopover area SWH within the Amherst Island Wind Project Location (AIWPL). Additionally, although identified by the Proponent, this SWH was not carried forward to the Environmental Impact Study (EIS).

Should this project be approved based on the Natural Heritage Assessment / Environmental Impact Study (NHA/EIS) dated 12 November 2012 that is reviewed in this gap analysis, no shorebird migratory stopover areas will be included in the EIS. The lack of inclusion in the EIS will result in irreversible negative impacts on shorebird migratory stopover areas. These negative impacts include but are not limited to:

- Habitat loss
- Habitat fragmentation

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Background Information

Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria
Shorebird Migratory Stopover Area Rationale: High quality	Greater Yellowlegs Lesser Yellowlegs Marbled Godwit Hudsonian Godwit Black-bellied Plover American Golden-Plover	BBO1 BBO2 BBS1 BBS2 BBT1 BBT2 SDO1	Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats. Great Lakes coastal shorelines, including groynes and other	Studies confirming: <ul style="list-style-type: none"> • Presence of 3 or more of listed species and > 1000¹ shorebird use days during spring or fall migration period. (shorebird use days are the accumulated number



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Wildlife Habitat	Wildlife Species	CANDIDATE SWH		CONFIRMED SWH
		ELC Ecosite Codes	Habitat Criteria and Information Sources	Defining Criteria
shorebird stopover habitat is extremely rare and typically has a long history of use.	Semipalmated Plover Solitary Sandpiper Spotted Sandpiper Semipalmated Sandpiper Pectoral Sandpiper White-rumped Sandpiper Baird's Sandpiper Least Sandpiper Purple Sandpiper Stilt Sandpiper Short-billed Dowitcher Red-necked Phalarope Whimbrel Ruddy Turnstone Sanderling Dunlin	SDS2 SDT1 MAM1 MAM2 MAM3 MAM4 MAM5	forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October . Sewage treatment ponds and storm water ponds do not qualify as a SWH. <u>Information Sources</u> <ul style="list-style-type: none"> Western hemisphere shorebird reserve network. Canadian Wildlife Service (CWS) Ontario Shorebird Survey. Bird Studies Canada Ontario Nature Local birders and naturalist clubs NHIC Shorebird Migratory Concentration Area 	of shorebirds counted per day over the course of the fall or spring migration period) <ul style="list-style-type: none"> Whimbrel stop briefly (<24hrs) during spring migration, any site with >100^f Whimbrel used for 3 years or more is significant. The area of significant shorebird habitat includes the mapped ELC shoreline ecosites plus a 100m radius area^{cxlviii} Evaluation methods to follow "Bird and Bird Habitats: Guidelines for Wind Power Projects"^{ccxi} SWHDSS^{cxlix} Index #8 provides development effects and mitigation measures.

Methodology – Site Identification of SM1

(NHA/EIS Section 3 – Site Investigation)

Below is from the Algonquin NHA/EIS and explains how seasonal concentration areas have been identified.

3.1.7.1 Seasonal Concentration Areas of Animals

Seasonal concentration areas are areas where wildlife species occur in aggregations at certain times of the year, on an annual basis. Such areas are sometimes highly concentrated with members of a given species, or several species, within relatively small areas. In spring and autumn, migratory wildlife species will concentrate where they can rest and feed. Other wildlife species require habitats where they can survive winter. Seasonal concentration area habitats have been identified by using the habitat criteria found in the SWHTG (MNR 2000) and Draft Significant Wildlife Habitat: Ecoregion 6E Criteria Schedules (MNR 2012). The habitat criteria for each potential seasonal concentration area, and methods employed to identify them in and within 120 m of the



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Project Location, have been summarized in Table 3.1.

Table 3.1: Characteristics Used to Identify Candidate Seasonal Concentration Areas below provides the habitat criteria for each potential seasonal concentration area, and methods employed to identify them in and within 120 m of the Project Location.

Table 3.1: Characteristics Used to Identify Candidate Seasonal Concentration Areas		
Candidate Seasonal Concentration Area	Criteria	Methods
Shorebird Migratory Stopover Area	<ul style="list-style-type: none">• Shorelines of lakes, rivers and wetlands, including beach areas, bars and seasonally flooded, muddy and un-vegetated shoreline habitats.• Great Lakes coastal shorelines, including groynes and other forms of armour rock lakeshores, are extremely important for migratory shorebirds in May to mid-June and early July to October.• Sewage treatment ponds and storm water ponds do not qualify as a significant wildlife habitat.• The following community types: Meadow Marsh (MAM), Beach/Bar (BB), or Sand Dune (SD)	<ul style="list-style-type: none">• The shoreline of Lake Ontario, apart from residential areas, was considered candidate habitat.• The presence of shorebird migratory stopover areas within suitable ELC communities was assessed.

According to Table 3.1, the entire shoreline of Amherst Island, with exception to residential areas was considered candidate SWH.

The NHA/EIS section *3.2.6.1 Seasonal Concentration Areas of Animals* provides the following information regarding the selection of Seasonal Concentration Areas.

Site Investigations involved a thorough assessment of natural areas for seasonal concentration areas for wildlife habitat. Potential habitat for seasonal concentration areas was examined during the Site Investigation phase, and is discussed in Table 3.5. Seasonal concentration areas that did not have any candidate significant wildlife habitat will not be carried forward to the Evaluation of Significance phase.

The *NHA/EIS Table 3.5: Summary of Site Investigation Results for Seasonal Concentration Areas* provides the following information regarding the selection of SM1.



Table 3.5: Summary of Site Investigation Results for Seasonal Concentration Areas				
Candidate Seasonal Concentration Areas	Present within 120 m of Project Location	Present in Project Location	Rationale	Carried Forward to Summary and EOS (Y/N)
Shorebird Migratory Stopover Area	Yes (SM1)	No	The shoreline of Lake Ontario is present within 120 m of the Project Location. Much of the Amherst Island shoreline is naturalized, with the exception of portions of the shoreline through the village or adjacent to residences. The shoreline predominate consists of rocky shelf, with sandy beach habitat along the western end of the island. The Amherst Bar on the east end of the island, which forms part of this candidate habitat feature, is a known shorebird stopover area.. The Project Location is not in the candidate shorebird migratory stopover area, but is located within 120 m.	Yes

Although Table 3.5 above states that shorebird migratory stopover area SM1 is within 120 meters of the Project Location, Table 4.5 below states that SM1 is not present within 120 meters of the Project Location. Table 4.5 further states that this candidate seasonal concentration area will be carried forward to the Environmental Impact Study.

Table 4.5: Summary of Evaluation of Significance Results for Seasonal Concentration Areas			
Candidate Seasonal Concentration Areas	Present in or within 120 m of Project Location	Rationale	Carried Forward to Summary and EIS (Y/N)
Shorebird Migratory Stopover Area	No	SM1: A total of 460 shorebirds were seen over 5 survey dates in May 2011. The largest concentration was 365 Dunlin observed on May 26, 2011, at the Amherst Bar. The IBA report also lists higher concentrations of shorebirds at the Amherst Bar in previous years (IBA Canada undated). This habitat is therefore considered a significant shorebird migratory stopover area.	Yes (SM1)

Inadequate Methodology – Environmental Impact Study (NHA/EIS Section 5 – Environmental Impact Study)

Although table 4.5 above states that SM1, a significant migratory stopover area will be carried forward to the Environmental Impact Study, there is no mention of this SWH in the EIS.



Inadequate Methodology – Environmental Effects Monitoring Plan
(Design and Operations Report Appendix C – D)

Please see the Environmental Effects Monitoring Plan Gap Analysis

Summary

A review of the NHA/EIS indicates the following:

- The Proponent asserts in table 3.5 that this candidate SWH is within 120 meters of the Project Location and in table 4.5 states that this candidate SWH is not within 120 of the Project Location
- The candidate SWH is not carried forward to the EIS although Table 4.5 states that it will be carried forward.
- No mitigation measures proposed due to lack of inclusion in the EIS

Recommendations

- Evaluation of Significance to be completed using the data provided through the application of criteria provided in the Draft Significant Wildlife Habitat: Ecoregion 6E Criterion.
- Environmental Impact Study to be completed as appropriate.
- Appropriate mitigation strategies must be developed.