

Ernestown Wind Park

Waterfowl Nesting Area Habitat-use Surveys Report

Prepared by: *M.K. Ince and Associates Ltd.*

Prepared for: *Ernestown Windpark LP*

July 12, 2013



M.K. INCE AND ASSOCIATES LTD.

Renewable Energy & Environmental Consulting

Table of Contents

1	INTRODUCTION	1
2	METHODOLOGY	3
3	RESULTS	3
4	CONCLUSION	6
5	REFERENCES	6
6	QUALIFICATIONS AND LIMITATIONS	7

List of Figures

FIGURE 1-1: MAP INDICATING LOCATION OF CANDIDATE WATERFOWL NESTING AREA AT ERNESTOWN WIND PARK	2
--	---

List of Tables

TABLE 1-1: DESCRIPTION OF CANDIDATE RAPTOR WINTERING AREAS	1
TABLE 3-1: SUMMARY OF SITE VISITS.....	3
TABLE 3-2: OBSERVATIONS DURING PRE-CONSTRUCTION HABITAT-USE SURVEYS OF WNA01 AND WNA02	4

List of Appendices

- Appendix A: Protocol and Correspondence
- Appendix B: Field Notes

1 INTRODUCTION

Site investigations of the Ernestown Wind Park project location determined the presence of two candidate waterfowl nesting areas (WNA01 and WNA02; see **Figure 1-1**). The candidate habitat is identified as upland areas adjacent to wetlands, extends a distance of 120 m away from a wetland, or an area that includes a cluster of 3 or more wetlands (>0.5 ha) where waterfowl nesting is known to occur. In a candidate habitat, upland areas should be at least 120 m wide. **Table 1-1** below presents additional information on the candidate habitats identified during the site investigation.

Table 1-1: Description of Candidate Raptor Wintering Areas

Feature ID	Project Components within 120 m	Attributes and Composition		Function	Associated Natural Features
		Size	ELC Community		
WNA01	Access Road (0m) Collector (0m) Hardstand (6m) Bladeswept area (0m)	87ha	Wetland Communities: <u>WE02</u> (SAS1, MAMM1-3 and SWDM2-2; ELC IDs: 12, 22 and 23, respectively), <u>WE04</u> (MASM1-1, OAO and SWDM2-1; ELC IDs: 32, 33 and 36, respectively), <u>WE05-2</u> (MAMM1-3; ELC IDs: 38, 44,50), <u>WE09</u> (MAMM1-3; ELC ID: 55) and <u>WE10</u> (SWD01-2, MAS01-4 and MASO1-1; ELC IDs: 28, 29 and 30, respectively). Upland Communities: <u>WO04</u> (FODM7-6, FODM6-1; ELC IDs: 35, 37), <u>WO06</u> (FODM9-4; ELC IDs: 41, 47, 57; FODM2-3; ELC ID: 39 and WOCM1-1; ELC IDs: 46, 54, 56), FODM7-2 (ELC ID:18), THDM2-4 (ELC ID: 34) MEMM3 (ELC IDs: 21, 25, 42, 43, 45, 48, 49, 51-53).	Potential nesting habitat for waterfowl, including Wood Ducks and Hooded Mergansers. Meadow and woodland communities present within 120 m of a wetland.	Wetlands (WE02, WE04, WE05-2, WE09, WE10) Woodland (WO04, WO06)
WNA02	Access Road (0m) Collector (0m)	33ha	Wetland Communities: <u>WE05-6</u> (MASM1-1; ELC ID: 65). Upland Communities: <u>WO05-4</u> (WOCM1-1; ELC ID: 62, 73; FOCM1-2; ELC ID: 63; FOCM2-1; ELC ID: 64, 72; FODM7-1; ELC ID: 68), MEMM3 (ELC ID: 67).		Wetlands (WE05-6) Woodland (WO05-4)

The *Natural Heritage Evaluation of Significance Report* (MKI, 2012) did not report on the outcomes of the evaluation of significance for WNA01 and WNA02, due to seasonality constraints and surveys unable to be conducted prior to the submission of the Natural Heritage Assessment. Consequently, WNA01 and WNA02 were treated as significant and subject to additional habitat-use surveys to determine significance. This process of treating a habitat as significant and committing to undertake studies prior to construction is outlined in Appendix D of the Natural Heritage Assessment Guide (MNR, 2011).

This report presents the results from the pre-construction habitat-use surveys for WNA01 and WNA02.

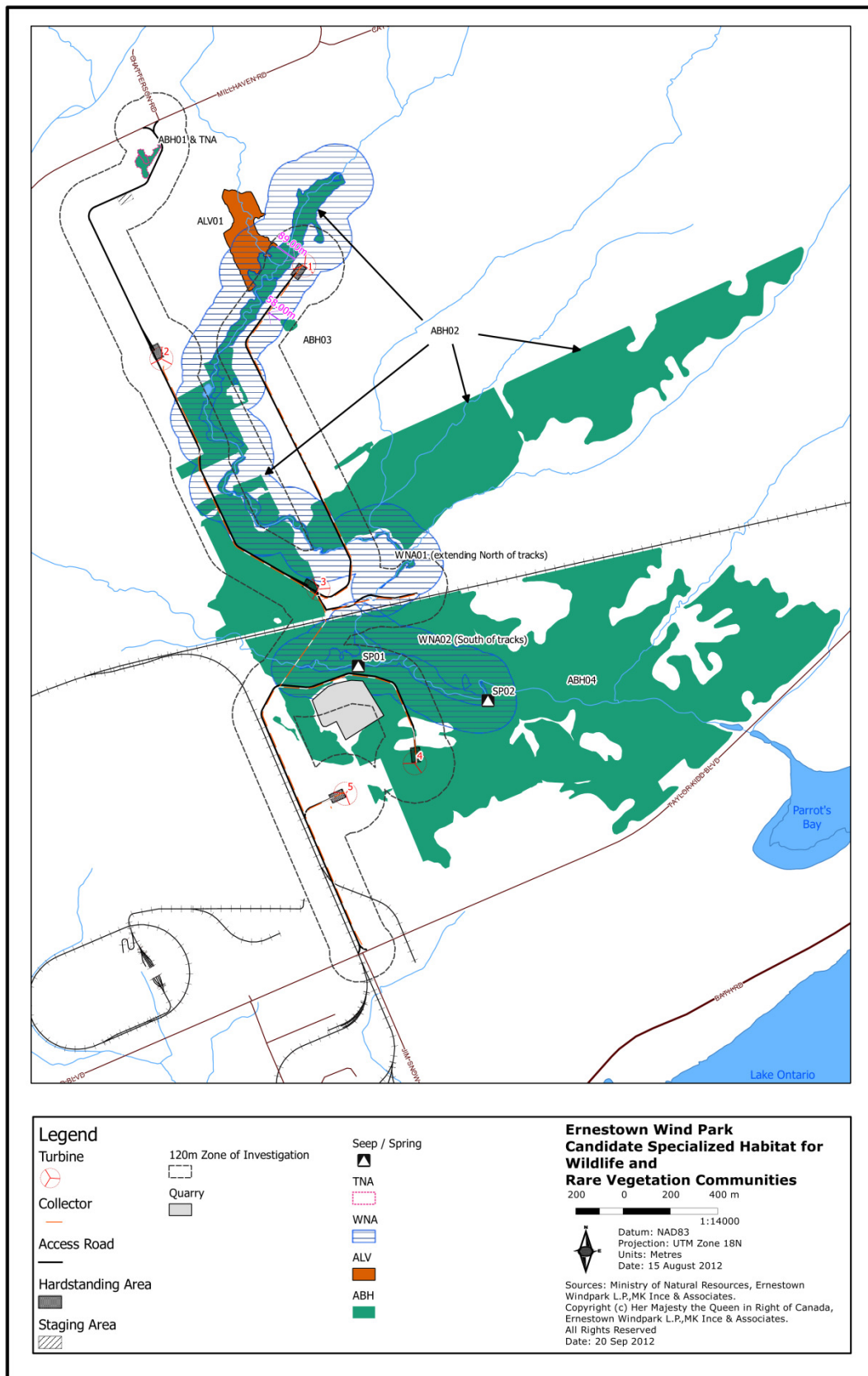


Figure 1-1: Map indicating location of candidate Waterfowl Nesting Area at Ernestown Wind Park

2 METHODOLOGY

Detailed methodology for pre-construction surveys to evaluate the significance of WNA01 and WNA02 was provided within the *Natural Heritage Environmental Impact Study Report* (MKI, 2012). In April 2013, prior to the commencement of surveys, the Ministry of Natural Resources (MNR) was contacted with a copy of the methodology copied from the *Natural Heritage Environmental Impact Study Report* (MKI, 2012) to again confirm the protocol. **Appendix A** contains the protocol.

In general, identified candidate habitats were observed for the presence of breeding waterfowl. Candidate habitats were evaluated according to the methodology modified from the *Bird and Bird Habitats: Guidelines for Wind Power Projects* (OMNR, 2011a). Given the difficulties of locating nests of breeding individuals, a combination of two approaches was employed. Area surveys and behavioral studies were conducted at two different times to obtain a measure of breeding waterfowl within a candidate habitat. Initial area studies were completed in early spring (late April/ early May) to observe for waterfowl within the area. During this time, identification of pairs of individuals and behavior was used to confirm sightings of breeding within the habitat. Sites were revisited later in the season (late May/early June) to further area searches and observe for females with young. Field staff also noted nesting birds, where found incidentally.

3 RESULTS

A summary of the pre-construction habitat-use surveys for WNA01 and WNA02 at the Ernestown Wind Park Project is provided in **Table 3-1** below. Details on the dates, time, weather conditions during each site visit, as well as the names of each of the investigators are provided.

Table 3-1: Summary of Site Visits

Date	Habitat Surveyed	Start/ End Time	Weather Conditions	Site Investigators
2013-04-23	WNA01	09:15-11:30	Temp: 9°C Cloud Cover: 0/10 Wind (Beaufort): 2-3 Precipitation: none	Rhiannon Leshyk & Erin Jaggard
2013-04-30	WNA02	09:28-10:45	Temp: 11°C Cloud Cover: 10/10 Wind (Beaufort): 1-2 Precipitation: none	Rhiannon Leshyk & Francesca Commisso
2013-05-22	WNA01	12:45-14:10	Temp: 20°C Cloud Cover: 9/10 Wind (Beaufort): 0-1 Precipitation: none	Rhiannon Leshyk & Erin Jaggard

Date	Habitat Surveyed	Start/ End Time	Weather Conditions	Site Investigators
2013-05-23	WNA02	07:50-08:50	Temp: 20°C Cloud Cover: 10/10 Wind (Beaufort): 0-1 Precipitation: intermittent drizzle	Erin Jaggard

All waterfowl nesting area observations made during the three site visits are shown in **Table 3-2** below. Please see **Appendix B** for a copy of all field forms.

Table 3-2: Observations during Pre-Construction Habitat-Use Surveys of WNA01 and WNA02

Date	Habitat Surveyed	Observations	Notes
2013-04-23	WNA01	-10 mallards observed in habitat -4 pairs seen	-2 male mallards flushed from wet area swimming -2 mallards, male and female flushed, foraging -2 mallards, male and female, flushed, swimming -2 mallards, male and female, flushed, swimming -2 mallards male and female, flushed
2013-04-30	WNA02	-4 mallards observed in habitat; 1 pair seen	-1 male mallard flushed from wetland -1 male mallard observed swimming in wetland -These two mallards were seen swimming together at later point -2 mallards, male and female, flushed from wetland
2013-05-22	WNA01	-1 male mallard observed in habitat	-1 male mallard, flushed, flew south
2013-05-23	WNA02	-6 mallards observed	-1 mallard observed flying 150 m E>W>N -2 mallards flushed, flew SE -3 mallards flushed during LMSA surveys

To evaluate the candidate habitats, the *Draft Ecoregion 6E Criterion Schedule* (OMNR, 2012) was used. This document states that waterfowl nesting areas are considered significant if the presence of three or more nesting pairs of the focal species, excluding the Mallard, are noted or if 10 or more nesting pairs, including the Mallard, are found. Focal species include: American Black Duck, Northern Pintail, Northern Shoveler, Gadwall, Blue-winged Teal, Green-winged Teal, Wood Duck, Hooded Merganser, and Mallard.

There were insufficient waterfowl observations made during the site visits to meet significance for either WNA01 or WNA02.

4 CONCLUSION

There were four site visits made to Ernestown Wind Park for the evaluation of two candidate habitats treated as significant in the *Natural Heritage Evaluation of Significance Report* (MKI, 2012). Pre-construction habitat-use surveys were conducted in April and May 2013. Several pairs of mallards were observed during the surveys, however, an insufficient number was met to prove significant waterfowl nesting area habitat. Consequently, the potential negative environmental effects and mitigation measures as well as the environmental effects monitoring plan for WNA01 and WNA02, presented in the *Natural Heritage Environmental Impact Study Report* (MKI, 2012), are not applicable to Ernestown Wind Park Project as the habitats have not been determined to be significant.

5 REFERENCES

- M.K. Ince and Associates. 2012. *Natural Heritage Evaluation of Significance Report*. 133p.
- M.K. Ince and Associates. 2012. *Natural Heritage Environmental Impact Study Report*. 78p.
- Ministry of Natural Resources. 2012. *Significant Wildlife Habitat Ecoregion 6E Criterion Schedule*. 42p.
- Ministry of Natural Resources. 2011. *Natural Heritage Assessment Guide for Renewable Energy Projects*. 99p.
- Ontario Ministry of Natural Resources. 2011. *Bird and Bird Habitats: Guidelines for Wind Power Projects*. Queen's Printer for Ontario. 32 p.

6 QUALIFICATIONS AND LIMITATIONS

M. K. Ince & Associates Ltd. (MKI) has prepared this report in accordance with its proposal and information provided by its Client. The information and analysis contained herein is for the sole benefit of the Client and save for regulatory review purposes may not be relied upon by any other person.

MKI's assessment was made in accordance with guidelines, regulations and procedures believed to be current at this time. Changes in guidelines, regulations and enforcement policies can occur at any time and such changes could affect the conclusions and recommendations of this report.

The reports, maps and related documents may rely on information provided to MKI by the Client. This information may include but is not limited to manufacturer and construction specifications and other related information. Maps are created using a Geographic Information System (GIS) that compiles records, information, and data from various sources which may contain errors. While we have referred to and made use of reports, maps and geospatial data and specifications prepared by others, we assume no liability for the accuracy of the information contained within.

Maps and documents made available by MKI are not legal surveys and are not intended to be used as such. No original surveying is included as part of these maps. If any contradictions exist between this document and relevant municipal, provincial or federal laws, regulations, codes, or policies, the text of the laws, regulations, codes or policies will be the legal authority.

APPENDIX A – PROTOCOL AND CORRESPONDENCE

- Survey protocol, extracted from Natural Heritage Environmental Impact Study Report, September 28, 2012 (one page)
- Email correspondence, April 11, 2013 (one page)

- Behaviour recorded as : foraging, mobbing, migration, flying , perching, perched on ground, swimming
- Number of passes
- Height category (0=0-9m; 1=10-19m; 2=20-29m; 3=30-39m, etc.)
- Flight direction
- Direction and distance from observer

Species of particular interest (focal species) include: all migratory songbirds - for a complete list see <http://www.ec.gc.ca/nature/default.asp?lang=En&n=496E2702-1>. All migratory raptors – for a complete list see Ontario Ministry of Natural Resources: Fish and Wildlife Conservation Act, 1997. Schedule 7: Specially Protected Birds (Raptors).

The *Draft Ecoregion 6E Criterion Schedule* (OMNR, 2012) will be used to evaluate candidate habitat for significance. This document states that a habitat is considered significant if the woodlot is used by >200 birds/day of >35 species. At least 10 bird species recorded have to be recorded on at least 5 different survey dates. This abundance and diversity of migrant bird species is considered above average and significant.

WATERFOWL NESTING AREA (WNA01 & WNA02)

Field staff will visit identified candidate waterfowl nesting habitat to observe for the presence of breeding waterfowl and will evaluate habitat according to methodology modified from the *Bird and Bird Habitats: Guidelines for Wind Power Projects* (OMNR, 2011a). Locating nests of breeding individuals is a difficult task often requiring long extensive nest-searching surveys. A combination of two approaches, area surveys and behavioral studies, at two different times will be undertaken to obtain a measure of breeding within candidate habitat. Initial area studies will be conducted in early spring (late April/early May) to observe for waterfowl within the habitat. Identification of pairs of individuals and behavior such as male aggression to conspecifics, like rushes, pursuit flights or attacks, will be considered a confirmed sighting of breeding (i.e. territoriality) within the area. Late April/early May is around the time that egg laying begins and is likely a good time to observe male territorial behavior. Later in the season (late May/early June) sites will be revisited and further area searches will be performed to observe for females with young. Females will lead young to water after hatch and field staff will observe for the presence of females and young within wetland areas. It is hoped by utilizing these two approaches at two different stages of nesting, a fairly representative idea of nesting will be collected for a given habitat feature. Observers will also note any nesting birds should they be found incidentally. At each visit field staff will record: date, start time, end time, weather, species observed, number of pairs and behavior in field notes.

Species of particular interest (focal species) include: American Black Duck, Northern Pintail, Northern Shoveler, Gadwall, Blue-winged Teal, Green-winged Teal, Wood Duck, Hooded Merganser, and Mallard.

The *Draft Ecoregion 6E Criterion Schedule* (OMNR, 2012) will be used to evaluate candidate habitat for significance. This document states that a habitat is considered significant if the presence of three or more nesting pairs of the focal species, excluding the Mallard, are noted or if ten or more nesting pairs including the Mallard are found. Any active nesting site of American Black Duck is considered significant. If the habitat is deemed significant then the habitat boundary will need to be determined and could include up to 120 m of adjacent upland habitat, depending on the species (i.e. cavity nesters like the Wood Duck).

Ernestown ABH and WNA surveys

Erin Jaggard <erin.jaggard@mkince.ca>
To: "Prevost, Eric (MNR)" <eric.prevost@ontario.ca>
Cc: Thomas Bernacki <tom.bernacki@mkince.ca>

Thu, Apr 11, 2013 at 12:32 PM

Dear Eric

By month end, we will be conducted our first surveys for three candidate ABH habitats and two candidate WNA habitats at Ernestown.

Could you kindly review the proposed locations for the ABH survey stations that are presented in the attached map? There will be one survey station at both ABH01 and ABH03 which will sufficiently cover the candidate habitat. There are four stations proposed for ABH04. Two stations (one facing west, the other east) will be located at the edge of the quarry within a reasonable distance to the wetland (ABH04). If suitable and safe conditions exist, the surveyors will situate themselves as close to the wetland as possible. The third survey station is located in the far west with the fourth survey location along Taylor-Kidd Blvd. As you know, property access is quite limited for this southern habitat. Should you wish to discuss other locations, please give a call to discuss.

As for the candidate WNA habitats, area surveys and behavioral studies will be conducted throughout the candidate habitats, within accessible lands as stated in the attached protocol.

Please be sure to let me know if you suggest any changes to either the ABH or WNA protocols that were contained in the EIS.

Be in touch,
Erin

--

Erin Jaggard, MSc**Environmental Project Coordinator**

M.K. Ince and Associates Ltd.

11 Cross Street, Dundas, Ontario L9H 2R3

Phone: 905.628.0077

Fax: 905.628.1329

Email: erin.jaggard@mkince.ca

Web: www.mkince.ca

2 attachments

**ABH Survey Locations _2013-04-11.jpg**

1244K

**Ernestown EIS 2012-09-28 Pre-Construction Protocols.pdf**

227K

APPENDIX B – FIELD NOTES

- Field notes, April 23, 2013 through May 22, 2013 (3 pages)

Ernestown
2013-04-23

CC: 0/10 S. TIME: 9:15
Wind: 2-3 E. TIME: 11:30
Temp: 9°C
Dred:

WNAOI surveys
EAME observed on walk in N of
habitat, slightly W of stream.

2 ♂♂ MALE FLUSHED FROM WET AREA
SWIMMING

2 MALE ♀ + ♂ FLUSHED, FRAGMENTS

2 MALE ♀ + ♂ FLUSHED, SWIMMING

2 MALE ♀ + ♂ FLUSHED, SWIMMING

2 MALE ♀ + ♂ FLUSHED

Date: 2013-04-30 Surveyors: RL & FC
 Start time: 09:28 End time: 10:45
 Duration: 75 Min CC: 10/10
 Station #: WFNØ2 Wind = 1-2
 Rain = Ø
 Rain last night
 Temp = 11°C

{ MALL ♂ → flushed from wetland
 { MALL ♂ → swimming in wetland
 ↳ observed swimming together at later point

2 MALL ♀ & ♂ → Flushed from wetland

ERNESTOWN

2013-05-22

Habitat: WFN01

Start: 13:10 / 12:45

End: 14:10

CC(10m): 9/10

Wind: 0-1

Rain: None

Temp: 20°C

- EJ (N) met
RL (S) at hydro.

Flushed 1 Mall ♂ → Flew South

2013-05-23

Habitat: WFN02

Start: 07:50

End: 08:50

CC: 10/10

Wind: 0-1

Rain: Intermittent drizzle

Temp: 20°C

- 1 Mall observed flying 150m E → W → N
- flushed 2 Mall, Flew SE

+ 3 Mall flushed during LMSA.