#### PRE-CONSTRUCTION MONITORING REPORT NIAGARA REGION WIND FARM

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# Sign-off Sheet

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Table 1: Migratory Landbird Stopover Area Species List

# 1.0 Introduction

The Niagara Region Wind Farm Natural Heritage Assessment and Environmental Impact Study (NHA/EIS) received confirmation from the Ministry of Natural Resources (MNR) April 3, 2013 that the report had been completed in accordance with Section 28(2) and 38(2) (b) of the Ministry of the Environment (MOE) Renewable Energy Approvals (Ontario Regulation 359/09 (O. Reg. 359/09)). The Niagara Region Wind Farm Corporation is proposing to develop, operate and construct the 230 megawatt (MW) Niagara Region Wind Farm within the Townships of West Lincoln and Wainfleet and the Town of Lincoln within the Niagara Region and within Haldimand County in Southern Ontario. The Project includes 77 wind turbine generators, each with a rate capacity of approximately 3 MW, for a maximum installed nameplate capacity of 230 MW. Details regarding the natural heritage assessment are provided in the Niagara Region Wind Farm Natural Heritage Assessment and Environmental Impact Study (Stantec, March 2013). Addendums to the NHA/EIS have also been submitted to the MNR (Stantec, April 8<sup>th</sup> and June 20<sup>th</sup>, 2013).

As a condition of confirmation for the Niagara Region Wind Farm, under O. Reg. 359/09, additional pre-construction monitoring surveys were required. Certain natural environment monitoring requirements were established in the supporting REA documentation, namely the NHA/EIS (Stantec, March 2013) and the Environmental Effects Monitoring Plan (EEMP) (Stantec, June 2013). These additional surveys include fall migratory landbird stopover area surveys, bat maternity colony surveys, turtle overwintering area surveys, snake hibernacula surveys and turtle nesting habitat assessments. Surveys were completed to confirm the significance of these features, which were assumed to be significant as part of the NHA/EIS, pending the completion of these surveys.

The purpose of this report is to describe the survey methodologies and summarize results of the pre-construction surveys conducted in 2013, in accordance with the NHA/EIS and EEMP. This report will inform future monitoring requirements and the results will form the basis for comparing post-construction monitoring results of this project.



# 2.0 Methods

### 2.1 MIGRATORY LANDBIRD STOPOVER AREAS

There were four migratory landbird stopover areas identified in Section 6.6.1 of the NHA/EIS as occurring within 120 m of the Project Location (Figure 1, Appendix A). In order to determine significance, a candidate migratory landbird stopover area must meet the criteria for significance during transect-based spring and fall migratory surveys, however prior to completion of the NHA/EIS, spring surveys were conducted in two of the features. In accordance with Table 5.3 in Appendix B of the NHA/EIS (Table 2.1 below), spring migratory landbird surveys determined that mlsa1 met the criteria for significance, as per the Draft Significant Wildlife Habitat Ecoregion Criterion Schedule (MNR, 2012). Mlsa2 was treated as significant, since evaluation of significance surveys were not possible due to access permission constraints. Insufficient numbers of individuals and a lack of species variety recorded during spring surveys did not qualify mlsa3 and mlsa4 as significant, however, these features were considered to be significant wildlife habitat for migratory landbird stopover areas, pending the results of the fall surveys.

Table 2.1: Spring Migratory Landbird Survey Results							
			Landbird Mig				
Feature No.	Transect #	ELC Community Type(s)	> 200 birds/day*	> 35 species with min 10 species recorded on 5 survey dates*	Significant (Yes/No)		
1		SWD5-1, SWD4-5/SWD2-1					
mlsa 1	2	SWD3-2 and SWD5-1	Y	Y	Y		
	3	SWD5-1					
mlsa2	n/a	SWD2-2 and FOD7-2	n/a	n/a	Y*		
mlsa3	4	SWD2-3	N	N	Y**		
mlsa4 5 SWD2-2 and FOD 7-2 N N Y*							
Note: Both criteria must be present for a determination of significance *Assumed significant due to lack of permissions to access the community to conduct passerine surveys **Assumed significant pending fall passerine surveys							

During fall surveys, one (1) transect route for migrating landbirds was conducted within each of the two (2) candidate significant migratory bird stopover areas (mlsa3 and mlsa4), and this was consistent with the transect locations used for the spring surveys. The transect routes were recorded with a GPS to ensure the surveys are replicable. (Figure 2, Appendix A).

Surveys began one half hour after sunrise and continued for approximately two hours. The number of individuals of each species observed during the surveys was recorded. Nine (9) surveys were conducted at regular intervals from September 4th to October 17th, 21013.



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Survey dates, times, weather conditions and survey personnel for these studies are provided in Table 2.2 below.

Table 2.2: Field Investigation Record for Fall Migratory Landbird Surveys at the Niagara Region Wind Farm						
			WEATHE	R		
DATE/TIME	Temp. °C	Wind (Beaufort Scale)	Cloud %	PPT / PPT last 24 hours	SURVEYOR(S)	
Sept. 4, 2013 8:10 – 9:45 am	18-20	1-3	0	None / None	A. Orr	
Sept. 9, 2013 7:25 – 9:10 am	10-12	0	50	None / None	A. Orr	
Sept. 13, 2013 7:35 – 9:05 am	11-12	1-3	30-60	None / Precipitation in last 24 hours	A. Orr	
Sept. 19, 2013 7:45 – 9:07 am	11-13	1-3	30-40	None / None	A. Orr	
Sept. 24, 2013 8:30-9:50am	8	0	0	None / None	J. Ball	
Sept. 30, 2013 7:32-9:05am	17	2	100	None / Unknown	J. Ball	
Oct. 8, 2013 7:50 – 9:30 am	4-6	0	0-10	None / Precipitation in last 24 hours	A. Orr	
Oct. 11, 2013 7:48 – 9:10 am	7-8	0-1	10	None / None	A. Orr	
Oct. 17, 2013 8:00 – 9:20 am	10	0	50-70	None / Rain in last 24 hours	A. Orr	

# 2.2 BAT MATERNITY COLONIES

There were 48 potential candidate bat maternity colonies identified in Section 6.6.3 of the NHA/EIS as occurring within 120 m of the wind turbines (Figure 3, Appendix A). All potential candidate bat maternity colonies were considered to be significant in the NHA/EIS, pending bat maternity colony habitat pre-construction surveys (for which access was permitted) to confirm whether these features met the criteria to be considered as candidate significant wildlife habitat for bat maternity colonies, with subsequent surveys to confirm if the candidate features met the criteria as significant, as per the *Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule* (MNR 2012) and the "*Guidelines for Wind Power Projects Potential Impacts to Bats and Bat Habitats*". These features included; bmc1, bmc6, bmc7, bmc8, bmc9, bmc10, bmc11, bmc13, bmc14, bmc16, bmc17, bmc18, bmc20, bmc33, bmc34, bmc35, bmc37, bmc38, bmc42, bmc47, bmc48, bmc49, bmc50, bmc51, bmc52, bmc53, bmc54 and bmc55. No surveys were undertaken in bmc3, bmc12, bmc15, bmc19, bmc24, bmc36, bmc39, bmc43, bmc44, bmc45 and bmc46 due to access permission constraints. Those features for which permission to access was unavailable



were considered to be significant wildlife habitat for bat maternity colonies. Potential candidate significant bat maternity colonies and bat maternity colonies that have been assumed significant due to access restraints are shown on **Figure 3**, **Appendix A**.

Candidate significant bat maternity colony habitat was determined by conducting tree cavity density surveys in each potential candidate feature. This was done by using randomly selected plots, with a 12.6 m radius, as described in Bats and Bat Habitats (MNR 2011b), throughout the applicable habitat. A minimum of 10 plots were established in each forest site <10ha. For sites >10ha, an extra plot was added for each additional ha in size, to a maximum of 35 plots. Sites that were <0.5ha were surveyed in their entirety. Trees with a decay class of 1-3 and a dbh (diameter at breast height) of >25cm were surveyed to identify any cavities 10m or higher from the ground. Trees with suitable cavities to support bat maternity colonies (small, narrow openings etc.) were tallied. Suitable cavities were assessed based on the following criteria (NOTE: not all criteria had to be met in order for cavity tree to be tallied):

- Cavity tree is  $\geq$  25cm DBH;
- Cavity is  $\geq$  10m high in tree;
- Size of cavity is small enough so large mammals (i.e. raccoons) cannot enter;
- Cavity tree is a decay class of 1 3 (see decay classification on data form).

Surveys were conducted during leaf off so cavities could be observed clearly. In some cases such as with bmc 14 and bmc16, the features were combined for the purposes of the survey since they were directly adjacent to each other within the same woodlot.

If the cavity tree density was ≥10 trees per hectare, then the feature was identified as candidate significant wildlife habitat for bat maternity colony roosts and evaluation of significance bat exit surveys were undertaken. Evaluation methods followed the "Guidelines for Wind Power Projects Potential Impacts to Bats and Bat Habitats".

To determine significance, bat exit surveys were conducted in candidate significant features as follows; 10 candidate trees were selected within woodlots ≤10ha and up to 30 trees for woodlots ≥10ha (an additional tree was added for every hectare above 10 up to a maximum of 30 trees). The tree cavity in each candidate tree was then monitored by one surveyor from sunset (30 minutes before dusk to 60 minutes after dusk) for 1.5 hours to observe whether bats were entering or exiting the cavity. A bat detector was also set up in the area of the candidate tree to record all bats present in the area and bats sighted flying around in the area were tallied by the surveyor.

Survey dates, times, weather conditions and survey personnel for the Bat Maternity Colony Cavity Tree Density Surveys are provided in **Table 2.3** below.

Table 2.3:	Field Investigation Record for Bat Maternity Colony Cavity Tree Density Surveys at the Niagara Region Wind Farm				
Date/Time	Temp. °C	Wind (Beaufort Scale)	Cloud %	PPT / PPT last 24 hours	Surveyors



Table 2.3:	Table 2.3:Field Investigation Record for Bat Maternity Colony Cavity TreeDensity Surveys at the Niagara Region Wind Farm					
Date/Time	Temp. °C	Wind (Beaufort Scale)	Cloud %	PPT / PPT last 24 hours	Surveyors	
April 14 2013 10:45 – 17:15	7-9	1-2	50-90	None / Rain	J. Ball	
April 18, 2013 9:50-16:40	14-25	2-4	80-100	None / n/a	J. Ball	
April 18 2013 8:00 – 17:00	22	3	75	None / Thunderstorms	N. Leava	
April 18 2013 11:10-17:00	11-25	1-4	0-80	None / n/a	A. Orr	
April 23 2013 8:00 – 17:00	16	1	50	None / Rain	N. Leava M. Cameron	

#### 2.3 TURTLE OVERWINTERING HABITAT

According to Section 6.6.4 of the NHA/EIS, a single candidate significant wildlife habitat feature for turtle overwintering habitat was identified within the Project Location where an overhead transmission line is proposed to cross the Welland River (Figure 6, Appendix A). This feature was considered to be significant in the NHA/EIS, pending turtle overwintering surveys to confirm whether this feature met the criteria to be considered as significant wildlife habitat.

Habitat use surveys were conducted in the spring to determine whether the reach of the river where the transmission line was proposed, met the criteria to be considered as significant wildlife habitat for overwintering turtles, as per the *Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule* (MNR 2012). The surveyors searched potential basking sites (eg. logs in the water and sunny banks) along the Welland River for turtles, within 120 m on either side of the proposed transmission line. Surveys were conducted on warm, sunny days during the spring; once early in the season (April 15); once in mid-season (May 2), and once later in the season (May 21). Southern Ontario experienced a cooler than normal spring and therefore surveys were postponed until mid-April when daily temperatures became appropriate for basking turtles.

Survey dates, times, weather conditions and survey personnel for these studies are provided in **Table 2.4** below.

Table 2.4:	Field Investigation Record for Turtle Overwintering Habitat Surveys at the Niagara Region Wind Farm				
Date/Time	Temp. °C	Wind (Beaufort Scale)	Cloud %	PPT / PPT last 24 hours	Surveyors



Table 2.4:	Field Investigation Record for Turtle Overwintering Habitat Surveys at the Niagara Region Wind Farm				
April 18 2013 11:00-11:15	25	2	80 (sunny at time of survey)	None / None	J. Ball
May 2 2013 12:50-13:05	21	2	0	None / Unknown	J. Ball
May 21 2013 13:00-13:20	23-26	2-3	60-80	None / Thunderstorms	A. Orr

#### 2.4 SNAKE HIBERNACULUM

According to Section 6.6.5 of the NHA/EIS, there were five candidate significant snake hibernaculum features identified within 120 m of the Project Location (Figure 5, Appendix A). These features were considered to be significant in the NHA/EIS, pending snake hibernaculum surveys to confirm whether these features met the criteria to be considered as significant wildlife habitat.

Habitat use surveys were conducted in the spring of 2013 to determine whether candidate significant snake hibernaculum features (sh2, sh3, sh4, sh6 and sh7) met the criteria to be considered as significant wildlife habitat for snake hibernaculum, as per the *Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule* (MNR 2012). Hibernacula emergence/exit surveys were conducted on warm, sunny days during the spring; once early in the season (April 14/15); once in mid-season (May 2), and once later in the season (May 21). Southern Ontario experienced a cooler than normal spring and therefore surveys were postponed until mid-April when daily temperatures became appropriate for snake emergence.

For each survey, the surveyor observed for 20 minutes, recording all snake species and number of individuals observed entering or exiting the candidate hibernacula. The search pattern at each hibernaculum included surveying all potential basking and sheltering habitat within the location (i.e., an area including a 30 m radius around the hibernaculum).

Survey dates, times, weather conditions and survey personnel for these studies are provided in **Table 2.5** below.

Table 2.5:	Field Investigation Record for Snake Hibernaculum Surveys at the Niagara Region Wind Farm				
Date/Time	Temp. °C	Wind (Beaufort Scale)	Cloud %	PPT / PPT last 24 hours	Surveyors
			40-60		
			(sunny		
April 14 2012			time of		
April 14 2013			lime of		
14:50-16:15	9	1-2	survey)	None / Rain	J. Ball



Table 2.5:	Field Investigation Record for Snake Hibernaculum Surveys at the Niagara Region Wind Farm					
April 15 2013 11:20-16:50	15-20	0	0	None / None	A. Orr	
May 2 2013 10:45-15:50	18-23	1-2	0	None / Unknown	J. Ball	
May 21 2013 10:20-14:20	23-26	2-3	60-80	None / Thunderstorms	A. Orr	

### 2.5 TURTLE NESTING HABITAT

According to Section 6.6.6 of the NHA/EIS, there were 18 potential candidate significant turtle nesting habitat features identified within 120 m of the Project Location (Figure 6, Appendix A). These features were considered to be significant in the NHA/EIS, pending turtle nesting habitat surveys to confirm whether these features met the criteria to be considered as candidate significant wildlife habitat.

Potential candidate significant turtle nesting habitats (th3, th5, th9, th10, th19, th21, th26, th28, th29, th38, th39, th40, th41, th42, th45, th46, th62, and th69) were assessed to determine whether the features met the criteria to be considered as significant wildlife habitat for turtle nesting, as per the *Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule* (MNR 2012). This includes exposed, natural sand and gravel deposits. (Figure 6, Appendix A).

Survey dates, times, weather conditions and survey personnel for the turtle nesting habitat assessment is provided in **Table 2.6** below.

Table 2.6:	Field Investigation Record for Turtle Nesting Habitat Surveys at the Niagara Region Wind Farm					
Date/Time	Temp. °C	Wind (Beaufort Scale)	Cloud %	PPT / PPT last 24 hours	Surveyors	
June 10 2013 10:20-14:18	15-20	1	100	Rain / Unknown	J. Ball	
June 11 2013 14:20-18:00	22-24	0-3	20-100	None / Rain	M. Cameron	

If candidate habitat was determined to be present, then evaluation of significance surveys would be completed as follows.

• Habitat use surveys will be conducted on three separate dates during the 2013 spring breeding season (June to July) to record direct observations of turtle nesting and/or nesting evidence (e.g. hatched eggs and/or nests that have been dug up by predators).



- Walking surveys will occur to systematically inspect all areas of exposed mineral (sand or gravel) substrates, spending a minimum of 15 minutes for every 100m<sup>2</sup> of candidate nesting substrate.
- Surveyors will map and photo-document areas of exposed substrates, and photodocument any observed nesting evidence.



#### 3.0 Results

Table 3.1

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#### **MIGRATORY LANDBIRD STOPOVER AREAS** 3.1

In order for the candidate significant migratory landbird stopover features to qualify as significant, they need to meet the criteria of 200 birds/day with 35 different species in either the spring or fall, as per the Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule (MNR 2012).

A complete list of all bird species observed is provided in Table 1, Appendix B. In total, 34 species of birds were observed during the fall migratory landbird surveys. All species observed are ranked G5 (Very common globally), or G4 (Common globally). Two bird species observed are considered federal species at risk by COSEWIC. The Eastern Wood-Pewee, which is listed as Special Concern was observed in MLSA 4 (Transect 5) on September 9, 2013. Only one individual was heard. One individual was also heard in MLSA 3 (Transect 4) on September 19, 2013. The Wood Thrush, which is listed as Threatened was observed in MLSA 4 (Transect 5) on September 9. Three individuals were seen at this time.

Tables 3.1 – 3.2 below summarize species richness and average abundance for the fall season. Average abundance was determined by dividing total abundance by number of dates (9) surveyed during the fall season. In Table 3.1, Transect 4, occurring in mlsa3, showed a daily species richness range from four to 13 species, with a total species richness of 27 for the fall season. Daily abundance ranged from three to 6 to 94 individuals, with an average abundance of 32 for the fall season.

Table 3.1:Transect 4 (mlsa3) Fall Migratory Landbird Survey Results for the Niagara Region Wind Farm						
Date	Species Richness	Abundance				
Sept. 4, 2013	7	9				
Sept. 9, 2013	4	6				
Sept. 13, 2013	8	16				
Sept. 19, 2013	7	17				
Sept. 24, 2013	11	25				
Sept. 30, 2013	4	6				
Oct. 8, 2013	13	81				
Oct. 11, 2013	12	94				
Oct. 17, 2013	9	31				
Total species richness and abundance for season	27	285				
Abundance average for season	N/A	32				



In **Table 3.2**, Transect 5, occurring in mlsa4, showed a daily species richness range from three to ten species, with a total species richness of 22 for the fall season. Daily abundance ranged from four to 35 individuals, with an average abundance of 15 for the fall season.

Table 3.2:Transect 5 (mlsa4) Fall Migratory Landbird Survey Results for the Niagara Region Wind Farm						
Date	Species Richness	Abundance				
Sept. 4, 2013	5	7				
Sept. 9, 2013	9	16				
Sept. 13, 2013	6	11				
Sept. 19, 2013	3	6				
Sept. 24, 2013	6	9				
Sept. 30, 2013	3	4				
Oct. 8, 2013	10	35				
Oct. 11, 2013	9	20				
Oct. 17, 2013	9	25				
Total species richness and abundance for season	22	133				
Abundance average for season	N/A	15				

Overall, Transect 4, located in mlsa3, exhibited the highest species richness. A total of 27 species occurred within Transect 4 during the fall season compared to 22 species occurring within Transect 5 (located in mlsa 4). Transect 4 also exhibited the highest average abundance. An average of 32 individuals occurred within Transect 4 during the fall season compared to an average of 15 individuals observed within Transect 5.

As both transects did not meet the criteria of 200 birds/day with 35 different species (MNR 2012) in either the spring or fall, it is concluded that MLSA 3 and MLSA 4 are not significant landbird migratory stopover areas as per the *Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule* (MNR 2012).

## 3.2 BAT MATERNITY COLONIES

In order for the potential candidate significant bat maternity colony features to qualify as significant, bat maternity colony tree density surveys need to be conducted to determine whether they meet the criteria of  $\geq 10$  trees per hectare. The candidate significant wildlife habitat for bat maternity colony features then require the presence of bats exiting tree cavities during bat exit surveys in order to confirm significance. Evaluation methods followed the "Guidelines for Wind Power Projects Potential Impacts to Bats and Bat Habitats" as per the *Draft Significant Wildlife Habitat Ecoregion7E Criterion Schedule* (MNR 2012).



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#### Bat Maternity Colony Tree Density Surveys

Bat maternity colony tree density surveys were undertaken to identify candidate significant wildlife habitat. Results are summarized in **Table 3.7** below.

Table 3.3: Bat Maternity Colony Tree Density Survey Results for the Niagara Region WindFarm						
Feature ID	Size (ha) (Accessible area in brackets)	Total # plots required	Total # cavity trees	Total # cavity trees / ha	Exit survey required?	Notes
BMC1	1.95	10	0	0	No	Logging occurred in the past as evidenced by several stumps throughout.
BMC6	6.69 (2.84)	10	0	0	No	
BMC7	2.78	10	0	0	No	
BMC8	2.80 (2.38)	10	3	6	No	Very thick understory, young to mid-age FOD/SWD. Lots of decay class 5 and 6.
ВМС9	4.40 (1.85)	10	2	4	No	SWT/SWD; very wet and very thick understory. A few decay class 5 and 6.
BMC10	2.46 (0.23)	Searched Entire Accessible Area	0	0	No	
BMC11	2.06 (1.93)	10	0	0	No	
BMC13	0.57	Searched Entire Area	0	0	No	
BMC14/16	4.28	10	0	0	No	BMC14/16 lumped into one survey since they were all directly adjacent to each other but with a different ELC code.
BMC17	0.35	Searched Entire Area	1	2.86	No	
BMC18	0.13	Searched	0	0	No	



Table 3.3: Bat Maternity Colony Tree Density Survey Results for the Niagara Region WindFarm						
Feature ID	Size (ha) (Accessible area in brackets)	Total # plots required	Total # cavity trees	Total # cavity trees / ha	Exit survey required?	Notes
		Entire Area				
BMC20	1.44 (1.12)	10	1	2	No	
BMC23/25 /26/27	6.02 (4.72)	10	1	2	No	BMC23/25/26/27 lumped into one survey since they were all directly adjacent to each other but with a different ELC code. Mid-age FOD with few cavity trees having decay class of 5 and 6
BMC28/30 /31/32	33.04 (5.05)	33	11	6.6	No	BMC28/30/31/32 lumped into one survey since they were all directly adjacent to each other but with a different ELC code.
BMC29	0.21	Searched Entire Area	0	0	No	Small woodlot, consisting of mid- aged to mature poplar. Downed woody debris throughout with large amounts of brush piles from adjacent clear- cut.
вмс33	4.74 (4.71)	10	1	2	No	
BMC34	3.60 (1.59)	10	0	0	No	Stumps present, indicating forest management.
BMC35	0.68	10	0	0	No	Some overlap of plots may have occurred.
BMC37/38	5.15 (2.38)	10	1	2	No	BMC37/38 lumped into one survey



Table 3.3: Bat Maternity Colony Tree Density Survey Results for the Niagara Region WindFarm						
Feature ID	Size (ha) (Accessible area in brackets)	Total # plots required	Total # cavity trees	Total # cavity trees / ha	Exit survey required?	Notes
						since they were directly adjacent to each other but with a different ELC code. 2 cavities were found in the same tree with a decay class of 2.
BMC42	2.85	10	4	8	No	Combination of lowland and upland deciduous forest; young in age, with few trees >15m in height and decay class of 1-3.
BMC47	2.35	10	3	6	No	Trees with DBH >25cm scattered throughout forest community; open areas throughout canopy cover
BMC48/49	1.20	10	4	4	No	BMC48/49 lumped into one survey since they were directly adjacent to each other but with a different ELC code. Small isolated forest community; limited clusters of trees with DBH >25cm.
BMC50	1.00 (0.93)	10	2	4	No	Small isolated forest community; young-mature in age, with limited amount of trees >25cm DBH; canopy height ~15m.
BMC51	6.46 (6.43)	10	13	26	Yes	Large portion of



Table 3.3: Bat Maternity Colony Tree Density Survey Results for the Niagara Region Wind           Farm						
Feature ID	Size (ha) (Accessible area in brackets)	Total # plots required	Total # cavity trees	Total # cavity trees / ha	Exit survey required?	Notes
						trees in FOD community with a DBH >25cm; large amounts of maples and shagbark hickory; canopy height >20m throughout.
BMC52/53 /54/55	6.39 (5.07)	10	3	6	No	BMC52/53/54/55 communities combined together: narrow areas of upland deciduous forest surrounded by deciduous swamp. Limited areas of upland deciduous forest in feature.

Based on the plot surveys, a total of one (1) feature was considered as candidate significant wildlife habitat (BMC51). BMC-51 (Figure 4, Appendix A) had a total of 13 cavity trees (26 cavity trees / ha) identified during field investigations, meeting the "Guidelines for Wind Power Projects Potential Impacts to Bats and Bat Habitats" requirement of ≥10 trees per hectare. Bat exit surveys were therefore required to confirm the significance of this feature.

#### **Bat Exit Surveys**

Ten (10) candidate BMC cavity trees were selected within BMC51. The tree cavity in each candidate tree was monitored by one surveyor from sunset (30 minutes before dusk to 60 minutes after dusk) for 1.5 hours to observe whether bats were entering or exiting the cavity. A bat detector was also set up in the area of the candidate tree to record all bats present in the area. Additionally, bats sighted flying around in the area were tallied by the surveyor.

Dates, time, weather conditions and surveyors are provided in **Table 3.4**. Characteristics of each candidate tree cavity are included in **Table 3.5**. Bat observations for each candidate tree cavity are included in **Table 3.6**.

Table 3.4: Field Investigation Record for Bat Exit Surveys for the Niagara Region Wind Farm							
Date/Time	Temp. °C	Wind (Beaufort Scale)	Cloud %	PPT / PPT last 24 hours	Surveyors		
June 14, 2013 21:00-22:15	17	0-1	5	None / Rain	J. Ball, A.Orr, B. Miller		
June 24 2013 20:45 – 22:15	27	0-1	0	None / None	J. Ball, A.Orr, N. Charlton		
June 25 2013 20:45 – 22:15	25	3	80	None / None	J. Ball, A.Orr		
June 26 2013 21:00 – 22:15	25	1	10	None / Rain	J. Ball, A.Orr		

Table 3.5: Bat Exit Survey Candidate Tree Cavity Characteristics						
Tree ID	Species ID	# of cavities	DBH (cm)	Cavity Height (m)	Tree Height (m)	Decay Class
1	America n Beech	1	30	15	22	1
2	America n Beech	2	27	15	20	1
3	Sugar Maple	2	25	10	22	2
4	Sugar Maple	1	25	15	23	2
5	Sugar Maple	1	25	12	21	2
6	Sugar Maple	1	40	13	23	1
7	America n Beech	1	26	10	23	1
8	Bitternut Hickory	1	26	12	24	1
9	Sugar Maple	1	25	16	22	2
10	Sugar Maple	3	37	17	23	3



Table 3.6: Bat Exit Survey Results for the Niagara Region         Wind Farm					
Tree ID	Bats observed exiting / entering cavity?	Total # of bats visually observed during survey			
1	No	5			
2	No	0			
3	No	0			
4	No	2			
5	No	0			
6	No	0			
7	No	0			
8	No	2			
9	No	0			
10	No	6			

No bats were observed exiting tree cavities of candidate trees selected for the bat exit surveys, however bats were observed flying in the area during the surveys. Bat detectors indicate that the species using the habitat provided by the woodlot include Little Brown Myotis (*Myotis lucifugus*) and Big Brown Bat (*Eptesicus fuscus*). Despite the presence of these bats, BMC51 has not been considered as significant wildlife habitat for breeding bats due to the absence of bats observed exiting tree cavities of candidate trees, as per the "Guidelines for Wind Power Projects Potential Impacts to Bats and Bat Habitats".

#### 3.3 TURTLE OVERWINTERING HABITAT

The Draft *Significant Wildlife Habitat Ecoregion 7E Criterion Schedule* (MNR 2012), defines significant wildlife habitat for overwintering turtles to be overwintering habitat used by a minimum of five Midland Painted Turtles or one or more Northern Map Turtle or Snapping Turtle.

Results of the turtle overwintering habitat surveys that were undertaken to identify significant wildlife habitat are summarized in **Table 3.7** below.

Table 3.7: Results of Turtle Overwintering Surveys				
Survey Dates Turtle Observations				
April 18 2013	None			
May 2 2013	None			
May 21 2013	None			

No turtles were observed during turtle overwintering surveys which can conclude that the area where the transmission line crosses the Welland River should not be considered to be significant wildlife habitat for overwintering turtles at this location.



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#### 3.4 SNAKE HIBERNACULUM

In order for a candidate significant snake hibernaculum feature to qualify as significant, it needs to be used by a minimum of five individuals of a snake species or individuals of two or more snake species, as per the *Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule* (MNR 2012).

Results of the snake hibernacula surveys that were undertaken to identify significant wildlife habitat are summarized in **Table 3.8** below.

Table 3.8: Results of Snake Hibernacula Surveys						
Feature ID	Survey Dates	Snake Species Observations	Feature Description	Survey Details		
	April 15	None	Piles of rocks/concrete in	Searched rocks/concrete for		
SH2	May 2	None	agricultural field.	snakes and up to a		
	May 21	None		30m perimeter around the hibernacula, including adjacent agricultural field, driveway and meadow marsh.		
April 15		None	Several brush/log piles in FOD.	Searched potential hibernacula, upland		
SH3	May 2	Northern Brownsnake observed within 100m of hibernacula.		forest areas and the edge of agricultural field.		
	May 21	None				
	April 14	None	Potential hibernacula is a	Searched areas north and south of the watercourse with a		
	May 2	None	pile of logs/posts			
SH4	May 21	None	and an old bridge foundation.	hibernacula. Searched from the edge of the stream, up the slope and along the edge of the agricultural field/pasture.		
	April	None	Pile of sand 3m tall	Searched the hibernacula, drver		
SH6	May 2	None	agricultural field	areas of the FOD and		
	May	None	and FOD.	the edge of the agricultural field.		



Table 3.8: Results of Snake Hibernacula Surveys						
Feature ID	Survey Dates	Snake Species Observations	Feature Description	Survey Details		
	21					
	April 15	None	Downed logs and an old brick silo within an inaccessible cultural woodland.	Surveyed from the road as we did not have permission to		
	May 2	None				
SH7	May 21	None		access the property. Observed roadside and the edge of the cultural woodland for snakes.		

One (1) Northern Brownsnake was observed within 100 m of SH3 however this observation does not qualify as significant according to the *Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule (*MNR 2012), which requires a snake hibernacula to be used by a minimum of five individuals of a snake species or individuals of two or more snake species. All five (5) potential snake hibernacula are not considered significant wildlife habitat.

#### 3.5 TURTLE NESTING HABITAT

In order for a potential candidate significant turtle nesting habitat feature to be further assessed for significance, it needs to provide exposed, natural sand and gravel deposits, as per the *Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule* (MNR 2012). Results of the turtle nesting habitat surveys are found in **Table 3.9**.

The majority of sites were disturbed and consisted of drainage ditches with dense canary reed grass, and surrounded by agricultural fields. Nesting habitats were all artificial, consisting of gravel roadway shoulders and agricultural field edges and therefore did not qualify as significant wildlife habitat.

Gravel piles adjacent to TH45 likely provide adequate turtle nesting habitat however, they would not be considered significant as they are artificial. A small gravel pile adjacent to the watercourse in TH21 may also provide turtle nesting habitat however, the gravel pile is artificial and the area is disturbed with agricultural practices.



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Table 3.9: Turt	le Nesting Habitat Summary	
Feature ID	Habitat Description	Candidate SWH? Y/N
ТНЗ	Wetland in red maple, ash and cottonwood thicket with some shallow open water and cattail marsh. Surrounded by gravel roads to the west and north (which provide artificial turtle nesting habitat) and agricultural fields to the south. No exposed mineral soil or gravel besides access road. Heavy, saturated soil along ditch at east end.	Ν
TH5	Southern Portion: Surrounded by agricultural field to the west and north, forest to the east and south. Exposed clay/silt behind hog barn where tractor created rectangular dug-out beside wetland. Side of ditch on west side of wetland, adjacent to bean field are exposed clay and steep sloped. Smaller Southern Portion: Agriculture and forest on all sides. Northern Portion: Agriculture to the west and east. Forest to the north transitioning to roadside meadow. South is dense deciduous forest. No exposed soil.	Ν
TH9	Comprised of 2 separate ponds surrounded by dense canary reed grass and agricultural fields. The parking area provides artificial turtle nesting habitat. 3 piles of exposed clay are located by the furthest pond in TH9 however, clay does not provide suitable turtle nesting material.	Ν
TH10	No longer a wetland. Converted to cropland.	Ν
TH19	Grassy meadow with meandering stream in center. Agricultural fields to the north and south. Silty clay piles around dugout at SH4 do not provide suitable nesting substrate.	Ν
TH21	Watercourse (~4m wide) with dense canary reed grass; meanders through agricultural fields. There is a small pile of gravel beside the watercourse at the midpoint of the feature that would likely provide suitable turtle nesting habitat however it is artificial. The shoulders of Rosdene Rd. also provide potential artificial turtle nesting habitat. Exposed clay soils along the bank of the watercourse would not provide suitable nesting habitat due to improper soil texture.	Ν



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Table 3.9: Turtle Nesting Habitat Summary			
Feature ID	Habitat Description	Candidate SWH? Y/N	
	steep slope and tendency for soils to become saturated.		
TH26	Linear wetland to the south is a grassy channel surrounded by corn fields. Central and northern wetlands have meadow to the north and east, corn fields to the south and west. Shoulders of Canborough Rd. may provide artificial nesting habitat.	Ν	
TH28	Watercourse (~3m wide) with dense canary reed grass and cattails and surrounded by agricultural fields. Comfort Rd. provides artificial turtle nesting habitat along the shoulders. The portion of the watercourse along Comfort Rd. has some exposed clay soils along the bank however soil texture, steep slope and tendency for soils to become saturated does not make it suitable nesting habitat.	Ν	
TH29	Watercourse with dense canary reed grass and cattails and surrounded by agricultural fields. Comfort Rd. provides artificial turtle nesting habitat along the shoulder.	Ν	
TH38	Watercourse (~1m wide) with dense canary reed grass and cattails and surrounded by agricultural fields. Concession 4 provides artificial turtle nesting habitat along the shoulder.	Ν	
тнз9	Watercourse (~3m wide) dominated by dense canary reed grass and surrounded by agricultural fields. Gravel shoulders of Vaughan Rd. likely provide artificial turtle nesting habitat. The portion of TH39 that enters the woodland 103 is too shaded for turtle nesting.	Ν	
TH40	Watercourse (~3m wide) dominated by dense canary reed grass and surrounded by agricultural fields. Gravel shoulders of Vaughan Rd. E. likely provide artificial turtle nesting habitat.	Ν	
TH41	Meadow marsh dominated by dense canary reed grass and surrounded by agricultural fields and directly adjacent to an old foundation and manure pile. A gravel/sandy lane provides artificial turtle nesting habitat.	Ν	



Table 3.9: Turtle Nesting Habitat Summary			
Feature ID	Habitat Description	Candidate SWH? Y/N	
TH42	Wetland is a dense, grassy marsh. Meadow and pine plantation to the north, corn to the east, west and south. No exposed soil beyond cultivated field. Soil is dense, heavy clay and not suitable for nesting.	Ζ	
TH45	Pond surrounded by red maple, ash and willow thicket. Piled gravel to the west of pond and gravel substrate between the gravel piles and gravel railway right of way provide artificial nesting habitat. West end of pond is dense cattail marsh and shrub swamp.	Ν	
TH46	Dense, grassy, meadow marsh does not provide very good turtle habitat. No exposed soil. Trees, meadow, agricultural field around entire perimeter.	Ν	
TH62	Watercourse (~0.5m wide) dominated by canary reed grass and surrounded by agricultural fields to the north, south and east. Woods Road to the west provides artificial turtle nesting habitat along the shoulders.	Ν	
ТН69	Watercourse (~2m wide) dominated by dense canary reed grass and surrounded by agricultural fields. Exposed soil in the area represents wet, clay depressions within agricultural fields that would not provide suitable turtle nesting habitat. The shoulders of Gee Rd. would provide artificial nesting habitat.	Ν	

No natural, sandy and/or gravelly areas were observed within the eighteen (18) areas that were identified as potential candidate turtle nesting sites. None of these areas are considered to be Candidate significant wildlife habitat for turtle nesting.

#### 3.6 **SUMMARY**

Apart from the bat maternity colony features for which permission to access the properties was not available (bmc3, bmc12, bmc15, bmc19, bmc24, bmc36, bmc39, bmc43, bmc44, bmc45 and bmc46), none of the potential or candidate features assessed qualified as significant wildlife habitat. Table 3.10 below summarizes the results of the evaluation of significance surveys.



Table 3.10: Pre-Construction Evaluation of Significance Summary					
Feature	Potential Candidate Significant Wildlife Habitat?	Candidate Significant Wildlife Habitat?	Significant Wildlife Habitat?		
Migratory La	Migratory Landbird Stopover Areas				
mlsa3	N/A	Yes	No		
mlsa4	N/A	Yes	No		
Bat Materni	Bat Maternity Colonies				
bmc1	Yes	N/A	No		
bmc3	N/A	N/A	Yes (assumed)		
bmc6	Yes	N/A	No		
bmc8	Yes	N/A	No		
bmc9	Yes	N/A	No		
bmc10	Yes	N/A	No		
bmc11	Yes	N/A	No		
bmc12	N/A	N/A	Yes (assumed)		
bmc15	N/A	N/A	Yes (assumed)		
bmc19	N/A	N/A	Yes (assumed)		
bmc20	Yes	N/A	No		
bmc23	Yes	N/A	No		
bmc24	N/A	N/A	Yes (assumed)		
bmc25	Yes	N/A	No		
bmc26	Yes	N/A	No		
bmc27	Yes	N/A	No		
bmc28	Yes	N/A	No		
bmc29	Yes	N/A	No		
bmc30	Yes	N/A	No		
bmc31	Yes	N/A	No		
bmc33	Yes	N/A	No		
bmc34	Yes	N/A	No		
bmc35	Yes	N/A	No		
bmc36	N/A	N/A	Yes (assumed)		
bmc37	Yes	N/A	No		
bmc38	Yes	N/A	No		
bmc39	N/A	N/A	Yes (assumed)		
bmc42	Yes	N/A	No		
bmc43	N/A	N/A	Yes (assumed)		
bmc44	N/A	N/A	Yes (assumed)		



Table 3.10: Pre-Construction Evaluation of Significance Summary			
Feature	Potential Candidate Significant Wildlife Habitat?	Candidate Significant Wildlife Habitat?	Significant Wildlife Habitat?
bmc45	N/A	N/A	Yes (assumed)
bmc46	N/A	N/A	Yes (assumed)
bmc47	Yes	N/A	No
bmc48	Yes	N/A	No
bmc49	Yes	N/A	No
bmc50	Yes	N/A	No
bmc51	Yes	Yes	No
bmc52	Yes	N/A	No
bmc53	Yes	N/A	No
bmc54	Yes	N/A	No
bmc55	Yes	N/A	No
Turtle Overv	vintering Habitat		
to1	N/A	Yes	No
Snake Hiber	rnacula		
sh2	N/A	Yes	No
sh3	N/A	Yes	No
sh4	N/A	Yes	No
sh6	N/A	Yes	No
sh7	N/A	Yes	No
Turtle Nestin	g Habitat		
th3	Yes	N/A	No
th5	Yes	N/A	No
th9	Yes	N/A	No
th10	Yes	N/A	No
th19	Yes	N/A	No
th21	Yes	N/A	No
th26	Yes	N/A	No
th28	Yes	N/A	No
th29	Yes	N/A	No
th38	Yes	N/A	No
th39	Yes	N/A	No
th40	Yes	N/A	No
th41	Yes	N/A	No
th42	Yes	N/A	No
th45	Yes	N/A	No



Table 3.10: Pre-Construction Evaluation of Significance Summary				
Feature	Potential Candidate Significant Wildlife Habitat?	Candidate Significant Wildlife Habitat?	Significant Wildlife Habitat?	
th46	Yes	N/A	No	
th62	Yes	N/A	No	
th69	Yes	N/A	No	

#### PRE-CONSTRUCTION MONITORING REPORT NIAGARA REGION WIND FARM Conclusion

July 23, 2014

# 4.0 Conclusion

This report completes requirements for the pre-construction fall migratory landbird stopover area surveys, bat maternity colony surveys, turtle overwintering habitat surveys, snake hibernacula surveys and turtle nesting habitat assessments under the REA approval as required. Post-construction surveys will follow once the project is constructed to assess potential impacts as outlined in the EIS and EEMP.

Based on these survey results, post-construction surveys as identified in the EEMP and the NHA/EIS will not be undertaken in mlsa 3 and mlsa 4 as these features were not considered to be significant. Additionally, bat maternity colonies and turtle nesting features were not identified as being significant during pre-construction surveys and will not require post-construction surveys, however, all turbines within 120 m of bat maternity colonies that could not be surveyed due to site constraints will be included in the post-construction mortality monitoring for birds and bats. These turbines include: T01, T02, T05, T44, T58, T66, T81, and T96.

Post-construction surveys will still include bird and bat mortality monitoring, spring and fall migratory landbird surveys at mlsa1 and winter raptor and Short-eared Owl surveys for a period of 3 years, and hydrological and amphibian monitoring for a one-year period.

MNR, along with the applicable agencies, will be asked to collectively review the results of the post-construction monitoring to determine if an ecologically significant disturbance/avoidance effect is occurring, and whether such an effect is attributable to the wind turbines and not external factors. These discussions will determine if and when the contingency plan will be implemented and if any additional measures are warranted. The best available science and information will be considered when determining appropriate mitigation.



# PRE-CONSTRUCTION MONITORING REPORT NIAGARA REGION WIND FARM

References July 23, 2014

# 5.0 References

- Ontario Ministry of Natural Resources. 2010. Birds and Bird Habitats: Guidelines for Wind Power Projects. 32pp.
- Ontario Ministry of Natural Resources. 2012. Draft Significant Wildlife Habitat Ecoregion 7E Criterion Schedule.
- Stantec Consulting Ltd. 2013. Niagara Region Wind Farm: Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitat. Prepared for Niagara Region Wind Corporation.
- Stantec Consulting Ltd. 2013. Niagara Region Wind Farm: Natural Heritage Assessment and Environmental Impact Study. Prepared for Niagara Region Wind Corporation.

# PRE-CONSTRUCTION MONITORING REPORT NIAGARA REGION WIND FARM

Appendix A Figures July 23, 2014

Appendix A Figures





Expressway / Highway



**Stantec** 

3. Orthoimagery © First Base Solutions, 2010.

Fibre Optic Line

Proposed Culvert

Temporary Laydown Area

Collector Lines – Underground or Overhead





Title Candidate Significant Migratory Landbird Stopover Area Transects





#### Notes

- 1. Coordinate System: NAD 1983 UTM Zone 17N).
- Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2011.
- 3. Orthoimagery © First Base Solutions, 2010.



Client/Project

2.2

Title Candidate Significant Migratory Landbird Stopover Area Transects

Niagara Region Wind Corporation Natural Heritage Assessment Report



- Preferred Transmission Line Route Potential Candidate Significant Bat Maternity Colonies
- Alternate Transmission Route
- Road
- Expressway / Highway
- Assumed Significant Bat Maternity Colonies (not surveyed due to access issues)



Assumed Significant Bat Maternity Colonies (not surveyed due to access issues)

Alternate Transmission Route

Road Expressway / Highway




Candidate Significant Turtle Overwintering Habitat (X)

Road Expressway / Highway **Candidate Significant Turtle Overwintering Habitat** 

# PRE-CONSTRUCTION MONITORING REPORT NIAGARA REGION WIND FARM

Appendix B Tables July 23, 2014

Appendix B Tables



COMMON NAME	SCIENTIFIC NAME	ONTARIO STATUS	GLOBAL STATUS	COSSARO	COSEWIC	AREA SENSITIVITY (ha)	Local Status PIF Priority Species (BCR 13)
AMPHIBIANS							
Spring Peeper	Pseudacris crucifer	S5	G5				
Wood Frog	Lithobates sylvatica	S5	G5				
BIRDS							
Canada Goose	Branta canadensis	S5	G5				
Killdeer	Charadrius vociferus	S5B, S5N	G5				
Mourning Dove	Zenaida macroura	S5	G5				
Red-bellied Woodpecker	Melanerpes carolinus	S4	G5				
Downy Woodpecker	Picoides pubescens	S5	G5				
Hairy Woodpecker	Picoides villosus	S5	G5			10	
Northern Flicker	Colaptes auratus	S4B	G5				Х
Eastern Wood-Pewee	Contopus virens	S4B	G5		SC-NS		Х
Least Flycatcher	Empidonax minimus	S4B	G5				
Red-eyed Vireo	Vireo olivaceus	S5B	G5				
Blue Jay	Cyanocitta cristata	S5	G5				
American Crow	Corvus brachyrhynchos	S5B	G5				
Black-capped Chickadee	Poecile atricapillus	S5	G5				
White-breasted Nuthatch	Sitta carolinensis	S5	G5			10	
Brown Creeper	Certhia americana	S5B	G5			30	
House Wren	Troglodytes aedon	S5B	G5				
Golden-crowned Kinglet	Regulus satrapa	S5B	G5			0	
Ruby-crowned Kinglet	Regulus calendula	S4B	G5				
Hermit Thrush	Catharus guttatus	S5B	G5			20-30	
Wood Thrush	Hylocichla mustelina	S4B	G5		THR-NS		Х
American Robin	Turdus migratorius	S5B	G5				
Gray Catbird	Dumetella carolinensis	S4B	G5				
Cedar Waxwing	Bombycilla cedrorum	S5B	G5				
Black-and-white Warbler	Mniotilta varia	S5B	G5			100	
American Redstart	Setophaga ruticilla	S5B	G5			20-30	
Blackburnian Warbler	Setophaga fusca	S5B	G5			30-50	
Black-throated Blue Warbler	Setophaga caerulescens	S5B	G5			30-50	
Yellow-rumped Warbler	Setophaga coronata	S5B	G5				
Warbler species							
Song Sparrow	Melospiza melodia	S5B	G5				
White-throated Sparrow	Zonotrichia albicollis	S5B	G5			20	
Rose-breasted Grosbeak	Pheucticus Iudovicianus	S4B	G5				Х
Red-winged Blackbird	Agelaius phoeniceus	S5	G5				
American Goldfinch	Carduelis tristis	S5B	G5				
MAMMALS							
Grey Squirrel	Sciurus carolinensis	S5	G5				
Red Squirrel	Tamiasciurus hudsonicus	S5	G5				
Raccoon	Procyon lotor	S5	G5				
White-tailed Deer	Odocoileus virginianus	S5	G5				

## SUMMARY

Total Amphibians: 2 Total Birds: 34 Total Mammals: 4

## SIGNIFICANT SPECIES

Global: 0 National: 2 Provincial: 0

## **Explanation of Status and Acronymns**

COSSARO: Committee on the Status of Species at Risk in Ontario

COSEWIC: Committee on the Status of Endangered Wildlife in Canada

**REGION: Rare in a Site Region** 

- S1: Critically Imperiled—Critically imperiled in the province (often 5 or fewer occurrences)
- S2: Imperiled—Imperiled in the province, very few populations (often 20 or fewer),
- S3: Vulnerable—Vulnerable in the province, relatively few populations (often 80 or fewer)
- S4: Apparently Secure—Uncommon but not rare
- S5: Secure-Common, widespread, and abundant in the province

SX: Presumed extirpated

SH: Possibly Extirpated (Historical)

SNR: Unranked

SU: Unrankable—Currently unrankable due to lack of information

SNA: Not applicable—A conservation status rank is not applicable because the species is not a suitable target for conservation activities.

S#S#: Range Rank—A numeric range rank (e.g., S2S3) is used to indicate any range of uncertainty about the status of the species

S#B- Breeding status rank

S#N- Non Breeding status rank

?: Indicates uncertainty in the assigned rank

G1: Extremely rare globally; usually fewer than 5 occurrences in the overall range

G1G2: Extremely rare to very rare globally

G2: Very rare globally; usually between 5-10 occurrences in the overall range

G2G3: Very rare to uncommon globally

G3: Rare to uncommon globally; usually between 20-100 occurrences

G3G4: Rare to common globally

G4: Common globally; usually more than 100 occurrences in the overall range

G4G5: Common to very common globally

G5: Very common globally; demonstrably secure

GU: Status uncertain, often because of low search effort or cryptic nature of the species; more data needed.

GNR: Unranked—Global rank not yet assessed.

T: Denotes that the rank applies to a subspecies or variety

Q: Denotes that the taxonomic status of the species, subspecies, or variety is questionable.

END: Endangered

THR: Threatened

SC: Special Concern

2, 3 or NS after a COSEWIC ranking indicates the species is either on Schedule 2, Schedule 3 or No Schedule of the Species At Risk Act (SARA)

NAR: Not At Risk IND: Indeterminant, insufficient information to assign status DD: Data Deficient Area: Minimum patch size for area-sensitive species (ha)

## LATEST STATUS UPDATE

Birds: August 2013 S and G ranks and explanations: December 2011

#### NOTE

All rankings for birds refer to breeding birds unless the ranking is followed by N

## REFERENCES

#### **COSSARO Status**

Endangered Species Act, 2007 (Bill 184). Species at Risk in Ontario List.

#### **COSEWIC Status**

COSEWIC. 2007. Canadian Species at Risk. Committee on the Status of Endangered Wildlife in Canada. \

#### Local Status

Ontario Partners in Flight. 2006. Ontario Landbird Conservation Plan: Lower Great Lakes/St. Lawrence Plain (North American Bird Conservation Region 13), Priorities, Objectives and Recommended Actions. Environment Canada and Ontario Ministry of Natural Resources. Draft, February 2006.

#### Area-sensitive information

Austen, M.J.W., M.D. Cadman, and R.D. James. 1994. Ontario birds at risk: status and conservation needs. Toronto and Port Rowan, ON: Federation of Ontario Naturalists and Long Point Bird Observatory. 165 pp.

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Robbins, C.S. 1979. Effect of forest fragmentation on bird populations. Pp. 198-212 in DeGraaf, R.M., and K.E. Evans, eds. Management of northcentral and northeastern forests for nongame birds. United States Department of Agriculture, Forest Service General Technical Report NC-51. 268 pp.

Sandilands. A. 2005. Birds of Ontario. Habitat Requirements, Limiting Factors and Status. UBC Press.

# PRE-CONSTRUCTION MONITORING REPORT NIAGARA REGION WIND FARM

Appendix C Field Notes July 23, 2014

Appendix C Field Notes



Stantec	Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Bat Maternity Roost - Cavity Tree Density Plots Data Form (FOR USE IN FOD & FOM COMMUNITIES ONLY)			
Project Number	160950269		Project Name:	NRWC		
	April 18,20	3 4:30 TIME (start)	5:30	Natalie	Leava	
Weather Conditions:	26°		50 /.		7-Storms PPT (in last 24 bro)	

Criteria for Cavity Tree Tally Inclusion: ☑ Cavity tree is ≥ 25 cm DBH

NOTE: All criteria must be met in  $\square$  Cavity is  $\ge 10$ m high in tree order for cavity tree to be tallied  $\square$  Size of cavity is small enough so large mammals (i.e. raccoons) cannot enter, but large enough for two bats

Z Cavity tree is a Decay Class of 1 - 3 (see decay classification below)

Feature #:	BMC-50 Feature Siz	e (ha): No. of Plots to Surv	ey <sup>1</sup> : ()
Plot No.	<b>Total No. of Cavity Trees</b> (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 01	1 (1)	0629810/4767494	
Plot 02	1 (1)	0629832/4767525	
Plot 03	1 (6)	062986714767511	
Plot 04	1 (0)	0629883 4767509	
Plot 05	1 (0)	062986(1476750)	
Plot 06	•	062986314767496	
Plot 07	1	062983214767481	
Plot 08	1	0629837 4767494	
Plot 09	•	0629827 4767511	
Plot 10	1 (P)	0629814 4767518	
Plot 11		1	
Plot 12		1	
Plot 13		1	
Plot 14		/	
Plot 15		1	
Plot 16		/	
Plot 17		1	
Plot 18		/	
Plot 19		/	
Plot 20		/	
Plot 21		/	

Page 1 of 2 Signature: (Field Personnel)

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Plot No.	<b>Total No. of Cavity Trees</b> (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		1	
Plot 23		1	
Plot 24		/	
Plot 25		/	
Plot 26		/	
Plot 27		/	•
Plot 28		1	
Plot 29		/	
Plot 30		1	
Plot 31			· ·
Plot 32		1	
Plot 33		1	
Plot 34		/	
Plot 35		/	
TOTAL No Cavity Trees	). : 2	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	Trees/ha

<sup>1</sup>No. of Plots: Sites  $\leq 10$  ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). Plots = 0.05 ha or 12.6m radius.

<sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ 

Select plots randomly.



Figure : Decay classification system for cavity trees (Watt and Caceres, 1999) NOTE: Decay classifications 4-6 should not be tallied in plots.

Page Zof Z Signature: (Field Personnel)

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Stan	rtec	<b>Stantec Consultin</b> 1 – 70 Southgate I Guelph, ON Canada N1G 4P5 Tel: (519) 836-605 Fax: (519) 836-249	n <b>g Ltd.</b> Drive 60 93		(FC	Bat Cavity	Maternity R y Tree Dens Data Form	Roost - ity Plots N MUNITIES ONLY)
Project	t Number:	1609502	69		Proj	ect Name:	NRWC	
		April 18,2	013 3:00		4:00	>	Natalie Le	aua
		DATE	TIME (	(start)	TIME (	end)	Field	d Personnel
Weather Con	ditions:	26°	2	-3	75%	0	Ø	T-Storms
		TEMP (°C)	NIW	ND	CLOU	JD	PPT	PPT (in last 24 hrs)
Criteria fo	or Cavity NOTE: order	All criteria must be n for cavity tree to be to for <b>Feature Siz</b>	ion: ⊻ Cavity tre inct in ⊻ Cavity is cullied ⊻ Size of c. enough f ☑ Cavity tre e (ha): 1, 2 ho	ee is $\geq 25$ ( $\geq 10m$ hig avity is sm or two bats ee is a Dec No. of	cm DBH h in tree all enough so s cay Class of 1 <b>Plots to Surv</b>	large ma - 3 (see ( <b>/ey</b> <sup>1</sup> :)	mmals (i.e. raccoon decay classification	s) cannot enter, but large below)
Plot No.	Total N (based	No. of Cavity Trees	Plot Center	UTM (Zon	e: <u>117</u> )		Comm	ents
Plot 01	/	Ø	(7628555	1471	62807		5	24
Plot 02	/	Ø	0628586	1471	pa 827			
Plot 03		ø	0628573	147	62835			·
Plot 04		<u> </u>	0628597	147	62839		*****	
Plot 05	0	(1)	0628582	147	62860			
Plot 06	0.0	2	0628574	147	62875			
Plot 07		Ø	0628593	147	62918			1
Plot 08	•		0628585	14	162933			
Plot 09			1628605	147	62932			
Plot 10	/ 1	Ø	0628596	147	62960			
Plot 11				/				
Plot 12		-		/				
Plot 13				/	*****			
Plot 14				/			9484 m Hanne Hannen Lander and Lander	
Plot 15				/				
Plot 16				/				
Plot 17				/				
Plot 18				/	à			
Plot 19				/				<b>*</b> 12
Plot 20		•		<u> </u>				
Plot 21				1				

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Plot No.	<b>Total No. of Cavity Trees</b> (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		/	
Plot 23		/	
Plot 24		/	
Plot 25	•	/	
Plot 26		/	
Plot 27		/	
Plot 28		/	
Plot 29		/	
Plot 30		/	
Plot 31			
Plot 32		/	
Plot 33		/	-
Plot 34		/	
Plot 35		/	
TOTAL N Cavity Tree	o. s: 4	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	8 Trees/ha

<sup>1</sup>No. of Plots: Sites  $\leq$  10 ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). Plots = 0.05 ha or 12.6m radius. Select plots randomly. <sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ 



Figure : Decay classification system for cavity trees (Watt and Caceres, 1999) NOTE: Decay classifications 4-6 should not be tallied in plots. Note: this feature (s) was extended FODS extended South, so some plots surveyed Occured in this portion of the feature

Page 2 of 2 Signature: Field Personnel)

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Stantec	Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Bat Maternity Roost - Cavity Tree Density Plots Data Form (FOR USE IN FOD & FOM COMMUNITIES ONLY)				
Project Number	160950269		Project Name:	NRWC			
	April 18,20B	1: 05pm	2:15 pm	Natalie Lear	æ		
Westher Conditions	, DATE	TIME (start) て	TIME (end)	Field P			
weather conditions:	TEMP (°C)	WIND	CLOUD	PPT	PPT (in last 24 hrs)		

Criteria for Cavity Tree Tally Inclusion: ☑ Cavity tree is ≥ 25 cm DBH

NOTE: All criteria must be met in  $\square$  Cavity is  $\ge 10$ m high in tree

order for cavity tree to be tallied I Size of cavity is small enough so large mammals (i.e. raccoons) cannot enter, but large enough for two bats

Cavity tree is a Decay Class of 1 - 3 (see decay classification below)

Feature #: BMC-47 Feature Size (ha): 2, 3 ha No. of Plots to Survey1: 10

Plot No.	<b>Total No. of Cavity Trees</b> (based on criteria above)	Plot Center UT	M (Zone: <u>177</u> )	Comments
Plot 01		0628581	1 47.64681	2 Portion of feature very wet
Plot 02	•	0628534	14764683	Ju Venal pooling thisy hout
Plot 03	•	0628567	14764667	
Plot 04		6628503	14764673.	
Plot 05	•	0628476	14764673	
Plot 06	I Ø	Obd.8480	14764717	
Plot 07	1 (0)	0628457	14764726	
Plot 08	1 0	0628452	14764731	
Plot 09	1	0628442	14764736	
Plot 10		0628430	14764760.	
Plot 11			/	. 1
Plot 12			/	
Plot 13			/	
Plot 14			/	
Plot 15	5		1	
Plot 16			1	
Plot 17			1	
Plot 18			/	
Plot 19			1	
Plot 20			1	
Plot 21			/	

Page 1 of 2 Signature: 7 atah PAN (Field Personnel)

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Plot No.	<b>Total No. of Cavity Trees</b> (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		1	
Plot 23		/	
Plot 24		/	
Plot 25		/	
Plot 26		/	
Plot 27		/	
Plot 28		/	
Plot 29		/	
Plot 30		· /	
Plot 31			
Plot 32		/	
Plot 33		- /	
Plot 34		/ _	
Plot 35		/	
TOTAL No Cavity Trees	o. s: <b>२</b>	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	6 Trees/ha

<sup>1</sup>No. of Plots: Sites  $\leq 10$  ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). Plots = 0.05 ha or 12.6m radius.

<sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ 

Select plots randomly.



Sticknest on north edge of woodlot 17T. 0628494, 4764726

Figure : Decay classification system for cavity trees (Watt and Caceres, 1999) NOTE: Decay classifications 4-6 should not be tallied in plots.

Page 2 of 2 Signature: NO 0 00 (Field Personnel)

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Stantec Consultin         1 - 70 Southgate D         Guelph, ON         Canada N1G 4P5         Tel: (519) 836-6050         Fax: (519) 836-6050         Fax: (519) 836-249         Project Number:         ////////////////////////////////////			19 Ltd. Drive 0 0 33 269 269 269 (1 : 4( TIME (s 3 WINI ion: ☑ Cavity tree	) tart) D ∋ is ≥ 25	(Fi Proj - - TIME ( 75 CLOI cm DBH	Bat Mat Cavity Tro Da DR USE IN FOD ect Name:	ternity F ee Dens ata Forn & FOM COM NRW C Natalie Fiel PPT	Roost - ity Plots MUNITIES ONLY) d Personnel T-Storms PPT (in last 24 hrs)
Feature #:	NOTE: order BMC-	All criteria must be n for cavity tree to be to <b>Feature Size</b>	et in ⊠ Cavity is ≥ illied ⊠ Size of ca enough fo ⊠ Cavity tree e (ha): <u>2,85</u>	10m hig vity is sm r two bat e is a De No. of	in tree hall enough so is cay Class of 1 f Plots to Surv	large mammals - 3 (see decay   rey <sup>1</sup> :	s (i.e. raccoor classification	ns) cannot enter, but large below)
Plot No.	(based	l on criteria above)	Plot Center U	TM (Zon	ie:)		Comm	ients
Plot 01		Ø	0626638	/ 47	kHbd .	Forest pa	s large a	mounts of
Plot 02			0626665	/47	64680	regenera	nonth	unaevstorcy
Plot 03		Ø	0626697	147	64702	-accuracy	9M	•
Plot 04	<b>•</b>	(1)	0626655	147	64676.			
Plot 05	4	B	0626164	47	64750			
Plot 06	1	(P)	0626768	4-	764707			
Plot 07		Q	0620-63	4	76479			
Plot 08			0626108	14	164114			STINDER (R. S.S. Samuelander)
Plot 09			0626686	4-	-64746			
Plot 10	/	(P)	062 648	147	64736			
				/				
		1		/				
Plot 13	-			/				
Plot 14			Hernora Honora Honora Maria	/				
				/				
Plot 16				/		-		
Plot 17				/			3	
Plot 18	5			/		4		
Plot 19				/				
Plot 20				-/	•	n n		
Plot 21		-		1				

Page 1 of 2 Signature: Matania A.O. (Field Personnel)

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(Project Manager) REV: 2013-03-13

Plot No.	<b>Total No. of Cavity Trees</b> (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		/	-
Plot 23		/	
Plot 24		/	
Plot 25		/	
Plot 26		/	
Plot 27		/	52 C
Plot 28		/	
Plot 29		/	
Plot 30		/	
Plot 31			
Plot 32		/	
Plot 33		/	
Plot 34		1	
Plot 35		/	
TOTAL No Cavity Trees	ж. ж. Ц	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	8 Trees/ha

<sup>1</sup>No. of Plots: Sites  $\leq 10$  ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). Plots = 0.05 ha or 12.6m radius. Select plots randomly. <sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# plats \times 0.05 ha)}$ 



Inc -CHFR - Woodpeckersp. - RTHA

-SPPE

Figure : Decay classification system for cavity trees (Watt and Caceres, 1999) NOTE: Decay classifications 4-6 should not be tallied in plots.

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Project Study Area Interconnector Study Legend Junction Box Notes Bat Maternity Colonies Interconnector Study Area Preferred Transmission Line Route Accessible Bat Survey Areas Coordinate System: NAD 1983 UTM Zone 17N). 1. 120m Zone of Investigation Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2011. Property Boundary (Survey) 2. Alternate Transmission Route ELC Boundary Collector Lines – Underground or Overhead Property Boundary (No Survey) Proposed Turbine Location —— Temporary Laydown Area **Stantec** Orthoimagery source: First Base Solutions, Date Spring 2010. 3. Turbine Blade Length ---- Fibre Optic Line ★ Tap-in Location Potential Access Road Potential Construction Laydown Area

Transformer Substation



	Stante         1 - 70         Guelph         Canada         Tel: (5°         Fax: (5)         Project Number:		Stantec Consultir 1 – 70 Southgate I Guelph, ON Canada N1G 4P5 Tel: (519) 836-605 Fax: (519) 836-249	<b>ng Ltd.</b> Drive 0 93	(FC	Bat Cavity	Maternity F Tree Dens Data Forn FOD & FOM COM	Roost - ity Plots n MUNITIES ONLY)
			6095	0269	Proje	ect Name: -	NRW C	
			23 Apr 1 DATE	3 1:15 pm TIME (start)	2.40 TIME (e	m end)	NL/MC Fie	Id Personnel
beauti	Weather Cond	ditions:	<u>ь°с</u> темр (°с)		50 CLOU	°/,   ID	O 	PPT (in last 24 hrs)
Suppos	Criteria for Cavity Tree Tally Inclu NOTE: All criteria must be order for cavity tree to be		<b>Tree Tally Inclus</b> All criteria must be n for cavity tree to be to	ion: ☑ Cavity tree is ≥ 25 tet in ☑ Cavity is ≥ 10m hig illied ☑ Size of cavity is sm enough for two bat ☑ Cavity tree is a Dec	cm DBH h in tree hall enough so s cay Class of 1	large man - 3 (see de	antiful fo nmals (i.e. raccool ecay classification	vest ns) cannot enter, but large below)
	Feature #:	BM	[5] Feature Size	e (ha): 6.45 No. of	Plots to Surve	ey <sup>1</sup> : 10		
	Plot No.	Total N (based	lo. of Cavity Trees on criteria above)	• Plot Center UTM (Zon	e: <u>17N</u> )	· · · · · · · · · · · · · · · · · · ·	Comm	nents
	Plot 01	1	Ø	0-30000 147	72154	lots of	shegbark	Lickon - plot
	Plot 02	* •	2	0630070 / 47	72 180		0	)
E.	Plot 03			0629973 / 4-	72225			
	Plot 04	•	$\bigcirc$	0629895 / 4-	172231			
	Plot 05	• •	(4)	0629854 147	72214			
	Plot 06	1	Ø	0629910 147	72121			
	Plot 07	•	$\bigcirc$	6629915 147	72112			_
	Plot 08	• •	3	0629953 147	72039			
	Plot 09	1	Ø	0630002 147	72069			
	Plot 10	•	$\bigcirc$	0630099 14-	772056			
	Plot 11			/				
	Plot 12			/				
	Plot 13			/				
	Plot 14			/				
	Plot 15	-		/		•		
	Plot 16			/				
	Plot 17			/				
	Plot 18			/				
	Plot 19			/				
	Plot 20			/				
	Plot 21			/				

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Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		/	
Plot 23		1	
Plot 24		/	
Plot 25		/	
Plot 26		/	
Plot 27		/	6
Plot 28		/	
Plot 29		/	
Plot 30		/	
Plot 31			
Plot 32		/	
Plot 33	-	/	17
Plot 34		/	
Plot 35		1	×
TOTAL No Cavity Trees	. 13	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	2-6 Trees/ha

<sup>1</sup>No. of Plots: Sites  $\leq 10$  ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). Plots = 0.05 ha or 12.6m radius. Select plots randomly. <sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ 



Figure : Decay classification system for cavity trees (Watt and Caceres, 1999) NOTE: Decay classifications 4-6 should not be tallied in plots.

Page 2 of 2 Signature: Mai

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Stant		Stantec Consultin 1 – 70 Southgate I Guelph, ON Canada N1G 4P5 Tel: (519) 836-605 Fax: (519) 836-245	n <b>g Ltd.</b> Drive 0 93		(F	Bat M Cavity T FOR USE IN FO	aternity Ro ree Densi Data Form	Dost - ty Plots UNITIES ONLY)
Project	Number:	160950	0269		Pro	oject Name:	NEWC	,
		Ap1 23.2	013 2:45	start)	4.00 TIME	) (and)	N. Leava	EM. Cameron
		20		starty		·/	13	
Neather Cond	litions:	TEMP (°C)	WIN	D	CLO		PPT	PPT (in last 24 hrs)
Feature #:	NOTE: order BMC5	All criteria must be n for cavity tree to be to <b>55 Feature Siz</b>	e (ha): Mathematical of Cavity is a cavity is a size of ca enough fo ⊠ Cavity trees (ha): (b, 4)	≥ 10m hi avity is sr or two ba e is a De No. o	gh in tree nall enough so ts ecay Class of f Plots to Sur	o large mamm 1 - 3 (see deca vey <sup>1</sup> :)	als (i.e. raccoons ay classification b	) cannot enter, but larg elow)
Plot No.	Total N (based	lo. of Cavity Trees on criteria above)	· Plot Center I	JTM (Zo	ne: <u>177</u> )		Comme	nts
Plot 01	/	Ø	0630291	147	171991	- Accurace	1 of 8m	~
Plot 02	1	Ø	0630331	14	771933	- Comb	ined BMC	62-55)
Plot 03		Ø	0630350	14=	171947	volano	Commu	nity
Plot 04	•		0630364	14=	171860.	Worker	d win si	ND community
Plot 05	•	$\bigcirc$	0630416	147	71827	FOD C	ommunit	es NOT as
Plot 06	/	Ø	0630421	14	171807	Aagme	inted as o	upictedon
Plot 07	1	Ø	0630398	14-	171805	maple	30	• · · · · · · · · · · · · · · · · · · ·
Plot 08	•	· ()	0630508	14-	171839.	f		
Plot 09		Ø	0630556	14-	171853			·
Plot 10		Ø	0630669	14-	771861			
Plot 11		• 					· · · · · · · · · · · · · · · · · · ·	
Plot 12								
Plot 13								
Plot 15							******	3
Plot 16		******			<u></u>			
Plot 17		1						
Plot 17 Plot 18				1				
Plot 17 Plot 18 Plot 19				/				
Plot 17 Plot 18 Plot 19 Plot 20				/ /				

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Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		/	
Plot 23		/	
Plot 24		/	
Plot 25		1	
Plot 26		1	
Plot 27		/	
Plot 28		1	
Plot 29		/	
Plot 30		/	
Plot 31			
Plot 32		/	
Plot 33		1	
Plot 34		/	
Plot 35		1	5
TOTAL No. Cavity Trees	3	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	Trees/ha

<sup>1</sup>No. of Plots: Sites  $\leq 10$  ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). Plots = 0.05 ha or 12.6m radius. Select plots randomly.





NOTE: Decay classifications 4-6 should not be tallied in plots.

Signature:





Stan	Stantec Cons           1 – 70 Southg:           Guelph, ON           Canada N1G           Tel: (519) 836           Fax: (519) 836	ulting Ltd. ate Drive 4P5 -6050 -2493	(F	Bat I Cavity	Maternity Roo Tree Density Data Form	st - Plots TIES ONLY)
Project	Number: Miagar	a Wind Far	m < Pro	oject Name: 	1609502f	59
	Apr 14/	2013 10:45a	m 11:4	Sam	J. Ball	harinda y
	DATE	TIME (start)	TIME	(end)	Field Per	sonnel
Neather Con	ditions: 7°	$\frac{2}{2}$	5	0%	NONE	RAIN
Criteria fo	or Cavity Tree Tally In NOTE: All criteria must order for cavity tree to	clusion: ☑ Cavity tree is ≥ 2 be met in ☑ Cavity is ≥ 10m be tallied ☑ Size of cavity is enough for two b ☑ Cavity tree is a [	25 cm DBH high in tree small enough s bats Decay Class of	o large mam 1 - 3 (see de	mals (i.e. raccoons) ca cay classification belo	annot enter, but lar w)
DI AN	Total No. of Cavity Tr	rees		T	)	SE REFE
Plot No.	(based on criteria abo	ve) Plot Center UTM (Z	(one: <u>[ / ]</u> )	-	Comments	
Plot 01	0	0614663 4	766132		i de la	910(.34
Plot 02	0	0614708 1 4	+766137	7	1	<b>设,清朝</b>
Plot 03	0	061474112	1766195	>	p d	at in 1977. Na at 1978
Plot 04	0	061471514	+766168			
Plot 05	0	06146671	4766149		and a state	
Plot 06	0	06146421	766188	\$		and second contention of
Plot 07	0	06146301	476624	2		
Plot 08	0	061463814	+766331	1		
Plot 09	0	06146581	476640	1		4.4
Plot 10	0	061468610	1766465		-18 C.S.	
Plot 11	01	1		4		
Plot 12	There is a	1	唐 唐	發	18 a.K.	Last -
Plot 13		1				
Plot 14	and the second second	1	Contraction of the second	No MERMICENTI SURA	and design and the set of	NEEDELEN GERRENTEN STATE
Plot 15	1 - Darsh	1		-	1547 G	hares e Educi i di e supressante e dise
Plot 16	S. Marcher 1	1		CAN SHITTS	na man dan yanata on sa Sina ang sanata	e no venje V s elanoj
Plot 17		1	م اليون محمد التحديد والألفان	e di Ware Hara Ana Sha	n na tea santa ina ak	and the second
Plot 18		1	and a second film	n Hallen		
Plot 19		1	-Shida, 1. V	n Barrah san ta	WATER PROPERTY - P	1987 - 1988 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 - 1997 -
Plot 20		1				1
				-		

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(Project Manager) REV: 2013-03-13

	(based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22	the top Proven	1	
Plot 23		1	
Plot 24		I I I I I I I I I I I I I I I I I I I	and the second se
Plot 25		1	
Plot 26	Register in the		
Plot 27		1 ·	law of the Bare
Plot 28		<i>I</i>	
Plot 29			
Plot 30	n man bert for the end of the count of	na na seguera de la contrata de la participación de la contrata de la contrata de la contrata de la contrata de	
Plot 31	Constant Second Bench S. (S. M.	al ad the ratio search defend the para & A	
Plot 32		I	184 - Ale Ultraner
Plot 33	Australia (	1 and the stand	tenan and an alternational supply and and
Plot 34		1	
Plot 35		1	Plot 07
avity Trees.			P0/10/14
cavity Trees o. of Plots: Sints = $0.05$ ha collect plots rand	tes ≤ 10 ha: 10 plots (minimum); or 12.6m radius. domly.	each extra ha: 1 plot (up to max 35 plots). 2-	Total Cavity Tree Density = $\frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ Several chorus
avity Trees b. of Plots: Sints = 0.05 ha d ect plots rand	ites ≤ 10 ha: 10 plots (minimum); or 12.6m radius. Jomly.	each extra ha: 1 plot (up to max 35 plots). 2-	Total Cavity Tree Density = total # cavity trees (# plots × 0.05 ha) Several chorus Frogs calling in each waterbody within the woodle within the woodle woodcock obser logging occurred in past as evidenced by several larg stumps through
avity Trees b. of Plots: Si ts = 0.05 ha ( ect plots rand 1 1 Healthy, 2 Declining 3 Very reo 4 Recently 5 Older de 6 Very old Jure 1: Decay NOTE	ites ≤ 10 ha: 10 plots (minimum); or 12.6m radius. domly.	each extra ha: 1 plot (up to max 35 plots). 2 2 2 2 2 2 2 2	Total Cavity Tree Density = total # cavity trees (# plots × 0.05 ha) Several chorus Frogs calling in each waterbody within the wood of wood frog heard wood cock obser logging occurred in past as evidenced by several large

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Stam	Stantec Consultin           1 – 70 Southgate II           Guelph, ON           Canada N1G 4P5           Tel: (519) 836-605           Fax: (519) 836-248	n <b>g Ltd.</b> Drive 0 93	Bat Cavit	Maternity Roo y Tree Density Data Form N FOD & FOM COMMUN	ost - y Plots NITIES ONLY)
Project	Number: 1609 5	0269	Project Name	Niagara W	ind Farm
	Apr 14/20	13 12:00 pm TIME (start)	12:40pm TIME (end)	J. Bal	ersonnel
Weather Conc	litions: 7°C	WIND	80°6	NONE	PPT (in last 24 hrs)
Criteria fo Feature #:	r Cavity Tree Tally Inclus NOTE: All criteria must be n order for cavity tree to be to Feature Siz	ion: ☑ Cavity tree is ≥ 25 cr net in ☑ Cavity is ≥ 10m high ullied ☑ Size of cavity is sma enough for two bats ☑ Cavity tree is a Deca e (ha):	n DBH in tree Il enough so large ma ny Class of 1 - 3 (see <b>Plots to Survey<sup>1</sup>:</b> (	ammals (i.e. raccoons) decay classification bel	cannot enter, but larg
- Plot No.	Total No. of Cavity Trees	Plot Center UTM (Zone:	1775	Comment	s (5.364).
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Plot 03	. 0	0616985147	65592		101
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Plot 05	0	0617000-147.	65551		
Plot 06	Ò	0616991 1474	65502		
Plot 07	Õ	0617000147	65489		• • •
Plot 08	0	06170411476	65434		
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Stam	Stantec Consultin           1 – 70 Southgate I           Guelph, ON           Canada N1G 4P5           Tel: (519) 836-605           Fax: (519) 836-245	ng Ltd. Drive 50 93	Ba Cavi (For Use	t Maternity Ro ty Tree Density Data Form	ost - v Plots wittles onLy
Project	Number: 160950	269	Project Nam	ne: Niagara	Wind Farr
	Apr 14/20	13 12:45	1:30	J. Ba	(
	DATE	TIME (start)	TIME (end)	Field P	ersonnel
Veather Con	ditions: 7°C	WIND	80°E	NONE	RAIN PPT (in last 24 brs
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Plot 06	0	0617347147	165410		
Plot 07	. 0	0617345' 4	765466		
Plot 08	D	0617350147	65502	<u> </u>	
Plot 09	0	0617371147	65538	<u> </u>	1.1
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Plot No.	(based on criteria above)	Plot Center UTM (Zone:)	Comments
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Plot 35		1	
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TOTAL No avity Trees	0. s:	Density Calculation (use formula provided ; each extra ha: 1 plot (up to max 35 plots).	<sup>n:</sup> <sup>1</sup> <sup>2</sup> Total Cavity Tree Density = $\frac{total \# cavity trees}{(\# plots × 0.05 ha)}$ Full chorus of chorus frogs in Nernal pool Cextensiv W red-osier dogwi 2 wood frogs hea EAPH, HETH observe
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Star	tec	Stantec Consultin 1 – 70 Southgate I Guelph, ON Canada N1G 4P5 Tel: (519) 836-605 Fax: (519) 836-249	ng Ltd. Drive 0 93	(FC	Bat I Cavity	Maternity Tree Der Data Fo	Roo nsity rm	st - Plots TIES ONLY)
Project	Number:	per: 160950269		Project Name: Niagara Wind Farm				
		Apr 14/2	013 2:00 PM	2:30	PM	J.B.	all	2.5 (A.S.)
		DATE	TIME (start)	TIME (e	end)		Field Per	sonnel
Weather Con	ditions:		10/10/D	90	10	NONE	-	KAIN PPT (in last 24 hrs)
Criteria fo Feature #:	or Cavity NOTE: order	Tree Tally Inclus All criteria must be n for cavity tree to be to Feature Siz	ion: ☑ Cavity tree is ≥ 25 c net in ☑ Cavity is ≥ 10m high allied ☑ Size of cavity is sma enough for two bats ☑ Cavity tree is a Dec e (ha): 2   No. of	m DBH n in tree all enough so ay Class of 1 Plots to Surve	large mam - 3 (see de ey¹: / (	imals (i.e. racc ecay classificat	oons) ca ion belov	essere Innot enter, but large W)
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Plot 06	314	0	0618456 147	67053				
Plot 07	1	0	0618425147	67057				1.15
Plot 08		0	0618419147	67043				
Plot 09		0	0618441 / 47	67027	15		54	102
Plot 10		0	06184781 47	767014	4			700
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Plot 34		1	10.66
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			chinping from mans inclusion arge stick nest pair of RTHA obser (possibly using it
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1 1 Healthy In 2 Dectrung II 3 Very recent 4 Recently d 5 Older dead 6 Very old de re 1: Decay of <i>NOTE</i> :	2 3 re tree ve tree, part of canopy lost my dead, no canopy, bark intact, bra ead, bark peeling, only large branch i tree, 90 percent of bark lost, few br aad tree, advanced decay, no branch classification system for cavity <i>Decay classifications 4-6 show</i>	A 5 6 noches intact es intact es intact anch stubs, broken top res, parts of the stem have rotted away trees (Watt and Caceres, 1999) Id not be tallied in plots.	chinping from mans inclusion large stick nest pair of RTHA obser (possibly using it male was calling

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Stante	Stantec Consultion 1 – 70 Southgate I Guelph, ON Canada N1G 4P5 Tel: (519) 836-605 Fax: (519) 836-249	n <b>g Ltd.</b> Drive 0 93	Bat Maternity Roost - Cavity Tree Density Plots Data Form (FOR USE IN FOD & FOM COMMUNITIES ONLY)				
Project N	lumber: 160950	160950269		Project Name: Niagara wind Farm			
	Apr 14/20	13 2:40 pm	2:50		J. Ball		
	DATE	TIME (start)			Field Personnel		
leather Condi	tions:	A MINIE	90	510	NONE	Rain	
eature #:	NOTE: All criteria must be n order for cavity tree to be t	e (ha): 2 Cavity is ≥ 10m high allied I Size of cavity is sma enough for two bats I Cavity tree is a Deca	in tree Il enough so by Class of 1 Plots to Surve	large mam - 3 (see de ey <sup>1</sup> : രറ <sup>_1</sup>	mals (i.e. raccoons) cay classification be	cannot enter, but large low) (only 0,22	
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Plot 11		1	1		Att Pres		
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Plot No.	(based on criteria above)	Plot Center UTM (Zone:)	Commen	ts
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		Density Calculation:	$\bigcirc$	Trees/ba
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Stant	Stantec Cons 1 – 70 Southga Guelph, ON Canada N1G Tel: (519) 836 Fax: (519) 836	ulting Ltd. ate Drive 4P5 6050 -2493	Ba Cavi (FOR USE	Bat Maternity Roost - Cavity Tree Density Plots Data Form (FOR USE IN FOD & FOM COMMUNITIES ONLY)		
Project Number: 1.609		50269	Project Nam	pject Name: Niagara Wind Fa		
	April 14	April 14/2013 4:15pm		J. Ball		
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StantecStantec Consultin 1 – 70 Southgate D Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-249StantecProject Number: 1/(-3915.32)		ng Ltd. Drive 0	(FC	Bat Maternity Roost - Cavity Tree Density Plots Data Form			
				Project Name: A 1			
		1601302			<u> </u>	Julagara	Wind Far
		April 18/2	013 9:50 TIME (start)		50	J.Ball	
		DATE TIME (start)					ALANIE
Veather Con	eather Conditions:		WIND	CLOU		PPT	PPT (in last 24 hrs
eature #:	NOTE: order	All criteria must be n for cavity tree to be to Feature Siz	e (ha): Cavity is ≥ 10m hig allied Size of cavity is sn enough for two bat Cavity tree is a De No. of No. of	gh in tree hall enough so s cay Class of 1 f Plots to Surv	large ma - 3 (see o ey <sup>1</sup> :	mmals (i.e. raccoons) decay classification be	cannot enter, but larg elow)
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Plot 34		1	
Plot 35		1	
TOTAL No Cavity Trees	0. S:	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	Trees/ha

<sup>1</sup>No. of Plots: Sites  $\leq$  10 ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). Plots = 0.05 ha or 12.6m radius. Select plots randomly.

<sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# where \times 0.07 \text{ h})^2}$ (# plots × 0.05 ha)

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Figure 1: Decay classification system for cavity trees (Watt and Caceres, 1999) NOTE: Decay classifications 4-6 should not be tallied in plots.

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Star	tec	Stantec Consultin 1 – 70 Southgate I Guelph, ON Canada N1G 4P5 Tel: (519) 836-605 Fax: (519) 836-249	ng Ltd. Drive 0 93	(FC	Bat Cavity	Maternity Roo Tree Density Data Form	Dist - Plots
Project	Project Number: 160950		0269 Pro		Project Name: Niagara [1] ind F		
		April 18/2	2013 [1:45	12:3	()	J.Ba	
Weather Con	ditions:	Z4 TEMP (°C)					PPT (in last 24 hrs)
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TAL No.		Density Calculation:	
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avity Trees: of Plots: Sit s = 0.05 ha o to plots rando to	es $\leq$ 10 ha; 10 plots (minimum); r 12.6m radius. omly.	(use formula provided <sup>2</sup> ) each extra ha: 1 plot (up to max 35 plots). <sup>2</sup> Tc	- chorus frogs calli in chorus in adjacent wetlance - also I wood frog and I leo plard froe
avity Trees: of Plots: Sitt s = 0.05 ha o set plots rando avity Trees: 1 1 1 Healthy. 2 Dechn ng 3 Very rece 4 Recently 5 Older dec 6 Very old III: Decay NOTE	es $\leq$ 10 ha; 10 plots (minimum); r 12.6m radius. omly.	(use formula provided <sup>2</sup> ) each extra ha: 1 plot (up to max 35 plots). 2 <sub>Tc</sub>	otal Cavity Tree Density = total # cavity trees (# plots × 0.05 ha) - chorus frogs calli in chorus in adjacent wetland - also I wood fro and I leo plard frog - some overlap i plots may have occurred - large sticknest in wood of - appears

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Project Number: 1689 5		269	- Proj	ect Name:	Niagara W	Ind Farm	
Weather Con	ditions:	2013 12:40 TIME (start) 4	1:30 TIME (6	end) S/C (hazy)	J. Ball Field Pe NONE	rsonnel NONE	
Criteria fo	PENN (0) or Cavity Tree Tally Inclus NOTE: All criteria must be order for cavity tree to be 27/2 & Feature Siz	sion: ☑ Cavity tree is ≥ 25 of met in ☑ Cavity is ≥ 10m hig sullied ☑ Size of cavity is sm enough for two bats ☑ Cavity tree is a Dec ce (ha): 5 ↓ 5 No. of	cm DBH h in tree all enough so s cay Class of 1 Plots to Surv	large mamr - 3 (see dec ev <sup>1</sup> : ) /	nals (i.e. raccoons) c	annot enter, but larg	
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Plot 35		1	50 (pH)
TOTAL N Cavity Tree	0. s:	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	Trees/ha

<sup>1</sup>No. of Plots: Sites  $\leq 10$  ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). Plots = 0.05 ha or 12.6m radius. Select plots randomly.

<sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# plots \times 0.05 \text{ km})}$ 

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(# plots × 0.05 ha)

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2 3 4 5 4 1 Healthy, Eve tree 2 Declining live tree, part of canopy lost

- 3 Very recently dead, no canopy, bark intact, branches intact
- 4 Recently cead, bark peeling, only large branches intact
- 5 Older dead tree, 90 percent of bark lost, few branch stubs, broken top
- 6 Very old dead tree, advanced decay, no branches, parts of the stem have rotted away
- Figure 1: Decay classification system for cavity trees (Watt and Caceres, 1999) NOTE: Decay classifications 4-6 should not be tallied in plots.

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Stan	Stantec Consulti           1 – 70 Southgate           Guelph, ON           Canada N1G 4P5           Tel: (519) 836-605           Fax: (519) 836-24	<b>ng Ltd.</b> Drive 50 93	E Ca (FOR U	Bat Maternity R vity Tree Dens Data Form SE IN FOD & FOM COMM	oost - ity Plots N MUNITIES ONLY)	
Project	t Number: 160950	2.69	Project Name: Nicoara Wind Fr			
	April 18/2	013 1:45	2:50	J	Ball	
	DATE	TIME (start)	TIME (end)	Field	d Personnel	
Neather Con	nditions: 25	4	100%	NONE	NONE	
Criteria f	or Cavity Tree Tally Inclus NOTE: All criteria must be order for cavity tree to be	sion: ☑ Cavity tree is ≥ 25 c met in ☑ Cavity is ≥ 10m high allied ☑ Size of cavity is sma enough for two bats ☑ Cavity tree is a Dec	m DBH n in tree all enough so large ay Class of 1 - 3 ( Plots to Surrey <sup>1</sup> )	e mammals (i.e. raccoon see decay classification	s) cannot enter, but ları below)	
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Plot 05	0	0618744147	64018			
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Plot 08	0	06187281476	3907	1 4		
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Se la	Stantec Consultin 1 – 70 Southgate I Guelph, ON Canada N1G 4P5 Tel: (519) 836-605	n <b>g Ltd.</b> Drive		Bat M Cavity	Maternity Ro Tree Density Data Form	ost - y Plots	
Stant	EC Fax: (519) 836-249	33	(F		(FOR USE IN FOD & FOM COMMUNITIES ONLY)		
Project	Number: 1609 502	269	Proje	ect Name: -	Niagara 1	Nind Farm	
	April 18/2	013 2:05	2:20	S	J.Bal		
	DATE	TIME (start)	TIME (e	end)	Field F	Personnel	
Weather Cond	litions: $25$	4	10	0%	NONE	NONE	
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	(based on criteria above)	Plot Center UTM (Zone:)	Comments
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Plot 32	Land the first		Chr. 12. Although the state
Plot 33	entropy	n I - saw te al car	in all the same list.
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Stantec Consulting1 - 70 Southgate DrGuelph, ONCanada N1G 4P5Tel: (519) 836-6050Fax: (519) 836-2493		Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Bat Maternity Roost - Cavity Tree Density Plots Data Form (FOR USE IN FOD & FOM COMMUNITIES ONLY)		
Project I	Number: 1609.50	N7(9 Pi	Project Name: Nice (1) > 1			
				NTAGA a C	onta Tarr	
	Hpril 18/21	0/3 4:00 4:3	30	J. Ball		
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; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ; ;	order for cavity tree to be to	allied I I I Cavity is ≥ 10m high in tree allied I Size of cavity is small enough enough for two bats I Cavity tree is a Decay Class of e (ha): 0,35 No. of Plots to Su	so large mam f 1 - 3 (see de irvey <sup>1</sup> : <u>Cr</u>	ecay classification be	cannot enter, but large low) २	
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Plot No.	Total No. of Cavity Trees(based on criteria ab ove)	Plot Center UTM (Zone:)	Comments
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Plot 32			
Plot 33	date some t	I. Passie i i i	The second secon
Plot 34		1	10 mil
Plot 35		I	E0 = 1
TOTAL No Cavity Trees	)	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	N/A Trees/ha

<sup>1</sup>No. of Plots: Sites  $\leq 10$  ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). <sup>2</sup>Total Cavity Tree Density  $= \frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ Plots = 0.05 ha or 12.6m radius. Select plots randomly.



6 Very old dead tree, advanced decay, no branches, parts of the stem have rotted away

Figure 1: Decay classification system for cavity trees (Watt and Caceres, 1999) NOTE: Decay classifications 4-6 should not be tallied in plots.

Page 2 of 2 Signature: Field Personnel

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Star	Stantec Consulti           1 – 70 Southgate           Guelph, ON           Canada N1G 4P5           Tel: (519) 836-605           Fax: (519) 836-24	ng Ltd. Drive 50 93	(F	Bat I Cavity	Maternity R Tree Dens Data Form	coost - ity Plots NUNITIES ONLY)
Project	Number: 16095	50269		ject Name:	Niagara	Wind Farm
Weather Con	April 18/2 DATE	0/3 4:30 TIME (start)	H:L TIME	end)	J.B. Fiel NONE	d Personnel E NONE
Weather Com	TEMP (°C)	WIND	CLO		PPT	PPT (in last 24 hrs)
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lot 30		sitia natari cara		
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e: in order of importance; not all criteria must be met): ot holes, or woodpecker cavities avity trees)		None-Rain (HO, BM, JB.)			Notes	auto fariva East. Termurhos 1	WHITHER SOUTH DEPENDENCE	MA FORM LAST. Denis CASS &		acimien w. Derew eloca V	Mind N. Derrie class 1	white SW. Derch class !	uting S. Derew Hoss 2	nine N. Deraw clase 3																					Quality Control:This form is complete □ & legible □. Signature:	(Project Manager)
BEST cavity trees (not s, such as cracks, scars, kn wity trees (e.g. clusters of c ling bark	ne, maple, aspen, ash, oak	s 1-3) 0 - 0 - 10%.	1.00		Photo Number(s)	TEV CLE R	9	8	J. J.		14	#89(IR)		- <del></del>														Ĵ							ly ca	eld Personnej)
Criteria for selecting the Tallest cavity tree Exhibits cavity tree Exhibits cavity tree Has the largest DBH (cm) Within highest density of ca Cavity or creations of loose, pee	Dreferred species: white pir	- 1006 14 - 21	10E.L - 4200.9		TM (Zone: )	258/4772021	×1	7.X07111 07	1 477223 (0	31 147770910	51 1 1132653	PUIZTUU 1X	S 14772265	87 14772235	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	-	1	1	1	1	Signature:	(Fig
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Stantec Consultin 1 – 70 Southgate Di Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2495	nber: 100 9502	June 12, 221: DATE	ns 20 TEMP (°C):		Species	66RAN	GERAN	はんまつ	SH<. L	SACA	GGRAN	RCORD	RSAS A	ESPS A																						
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	Stanted	<b>Stantec Con</b> 1 – 70 Southg Guelph, ON Canada N10 Tel: (519) 836 Fax: (519) 83	<b>sulting Ltd.</b> gate Drive 3-6050 6-2493		Bat Maternity Colony - Audio & Visual Monitoring (Exit Surveys) Data Form (FOR USE IN FOD & FOM COMMUNITIES ONLY)								
F	Project Nun	nber: 160950	1629		Project Name: NRWC								
		June 14	2013	ිට∂ TIME (start)	pm 1C	IME (end)	HORR B.MI	lar J. Bal					
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리네 - 의 Feature	00pn - #: Bm	0:30pm - 14.0 <u>C 51</u> Feature	RP <sub>1</sub> 丁, Boll e Size (ha): 	, Nictuch	No. of Roos	27°-0-1 st Trees: /2	- 0%, Done,	None					
Tree No.	Audio Recorded (Y/N)	File No.	Start Time	End Time	Tally of Bats Observed	Probable Species	UTM (Zone: 17)	Notes					
01	Y	June 14 - BM 11113-19	1.50 pm	10:15pm	5		06300581417 2027	atter 10 pm					
) <b>02</b> )	Y	June 25 - 40 Em3- C	8.45 pm	10:15 pm			062999714772055	Photon 47 (AO					
03	1	Lune 25-JB	8:45pm	10.15pm	/		0629926 19772082	Photo # 95 (1) Flying squirvel					
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05	Y	June 24 NC	9:00ph	10:20 pm	_		562986514772226	Very hamid offer					
06	Y	June 14-JB BM3-B	9:00 #	10 IEpm			063003114772016	Low Visibility					
07	Ý	Some 14 - AD	9.00pm	a lapon.	~		063003114772053	Lin Visibility Nitor IOPH -					
08	Y	June 20-110 Em 3-6	8 45 pm	10:15pm/	2	)	06298811 4772144	HINAR - 18 CL					
09	Y	Emg=C	1.copm	D Chan	/		062486314772265	Weighten et and and					
10	Y	Em3- C			6		062988714772285	ANT HOUSE A SUMMER					
11		2					1						
12							/	Æ					
13							/						
14													
10			-				/						

June 25

Page of 2 Signature: OmoherCe (Field Personnel)

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Tree No.	Audio Recorded (Y/N)	File No.	Start Time	End Time	Tally of Bats Observed	Probable Species	UTM (Zone:)	Notes
16							1	
17	_						1	
18							1	
19							1	
20							1	
21							1	
22							1	
23							1	
24							1	
25							1	
26							1	
27							1	
28							1	
29							1	
30							1	

June 25, 2013 - J. Ball, A.ORR 8:30pm - 11:00pm 250 - Zwind - 80%. cloud, None, None.

June 26, 2013 - J.Ball, A.ORR 9.30 - 11:00pm

250 Juind, 10% cloud, None, Rain

Page 2 of 2 signature: Another King (Field Personnel)

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(Project Manager) REV: 2013-06-07







Accessible Bat Survey Areas

- 1. Coordinate System: NAD 1983 UTM Zone 17N)
- Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2011. 2.
- 3. Orthoimagery source: First Base Solutions, Date Spring 2010.



Niagara Region Wind Corporation Natural Heritage Assessment Report

Figure No.

1.44 itlo

> Bat Surveys bmc 51

NRW Bat E: Ju

3

## NRWC - 160950269 Bat Exit Surveys

June 13, 14, 24, 25, 24 2013

Stan	tec	Stantec Consulti 1 – 70 Southgate Guelph, ON Canada N1G 4P5 Tel: (519) 836-605 Fax: (519) 836-24	ng Ltd. Drive 50 93	(FC	Bat Maternity Roost - Cavity Tree Density Plots Data Form (FOR USE IN FOD & FOM COMMUNITIES ONLY)							
Project	t Number	160950	269	Proj	ect Name:	NRWC						
		HDril 18.2	012 11:45	12:44	5.	AORR						
		DATE	TIME (start		end)	Field	Personnel					
Neather Con	ditions:			<u> </u>		None	Den Nohe,					
Criteria io	NOTE: order	All criteria must be t for cavity tree to be t	e (ha):	2 25 cm DBH im high in tree is small enough so to bats a Decay Class of 1 No. of Plots to Surv	large mam - 3 (see de <b>ey<sup>1</sup>: /</b> 2	nmals (i.e. raccoons ecay classification b Acce	s) cannot enter, but large below) ssible area = 1.1					
Plot No.	Total N (basea	<b>No. of Cavity Trees</b> on criteria above)	Plot Center UTM	[ (Zone: <u>17</u> )		Comme	nts					
Plot 01	0		06204931	4756404	GPS=	92 - young to m	inthe aged SWD.					
Plot 02	•		06204881	4756378	e leur	pavity trees T	WASAIN GPS = 93					
Plot 03	0		0620463 1	4756355	CPS= 0	14						
Plot 04	D		0620449 1	4756328	6P5 =	95						
Plot 05	0		0620440 1	4756365	6PS =	96						
Plot 06	0		0626420 /	4756386	1.PS =	97						
Plot 07	0		0630381 1	47510389	6PS =	98						
Plot 08	0		0620353 1	4756359	Leps =	99						
Plot 09	D		0620284 1	4756364	GPS =	100						
Plot 10	0		010202571	4756339	6PS=	101						
Plot 11			1	Sec.								
Plot 12			1									
Plot 13												
Plot 14			1									
Plot 15			1									
Plot 16			/									
Plot 17			/									
Plot 18			/									
Plot 19			/									
Plot 20	1		1									
Plot 21			1									

Page <u>f</u> of <u>2</u> **Signature**:

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Plot No.	<b>Total No. of Cavity Trees</b> (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		1	
Plot 23		1	
Plot 24		1	
Plot 25		1	
Plot 26		1	
Plot 27		1	
Plot 28		1	
Plot 29		1	
Plot 30		1	
Plot 31			
Plot 32		1	
Plot 33		1	
Plot 34		1	
Plot 35		1	
TOTAL No Cavity Trees	». 3: 1_	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	2 Trees/ha

<sup>1</sup>No. of Plots: Sites  $\le 10$  ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). Plots = 0.05 ha or 12.6m radius.

<sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ 

1 10 × 0.05

Select plots randomly.





Page 2 of 2 Signature:

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(Field Personnel)

Stam	tec	Stantec Consulti 1 – 70 Southgate Guelph, ON Canada N1G 4P5 Tel: (519) 836-605 Fax: (519) 836-249	n <b>g Ltd.</b> Drive 50 93		(Fe	Bat Maternity Roost - Cavity Tree Density Plots Data Form (FOR USE IN FOD & FOM COMMUNITIES ONLY)							
Project	Number	1609 50 8	269		Proj	ect Name:	NRWC						
		April 18 20	013 ):15	pm tart)		)5 end)	HORR	Personnel					
		22	2-11			·/	Maria	Along					
weather Con	aitions:	TEMP (°C)		)	CLO	<u>ר א</u>	PPT	PPT (in last 24 hrs)					
Criteria fo Feature #:	NOTE: order	Tree Tally Inclus All criteria must be n for cavity tree to be to Feature Siz	allon: ☑ Cavity tree met in ☑ Cavity is ≥ allied ☑ Size of cav enough for ☑ Cavity tree e (ha): ()	e is ≥ 25 c 10m high vity is sma two bats is a Dec <b>No. of</b>	m DBH n in tree all enough so ay Class of 1 <b>Plots to Surv</b>	alarge man - 3 (see d r <b>ey¹: / ⊘</b>	nmals (i.e. raccoons) ecay classification be Access i but cil ( comm	cannot enter, but large slow) e area = 4. Le ha conities lumped to 1					
Plot No.	Total N (based	lo. of Cavity Trees	Plot Center U	TM (Zone	:17)		Commen	ts					
Plot 01	0		0620981	1479	56633	6P5=	= 102 . A RT7/1	97 Vocant - in plat					
Plot 02	0		0620998	1475	56683	6833	103 Large st	ick nest 30m in Te					
Plot 03	0		0621041	1475	10647	685 =	104						
Plot 04	0		010210710	1475	101037	605 =	105						
Plot 05	0		0621070	1475	56701	6P5 =	106						
Plot 06	0		0621121	1475	56668	GPS =	107						
Plot 07	0		0621135	1475	6595	GPS =	10%						
Plot 08			0621197	1475	6574	695 =	109						
Plot 09	0		0621197	1475	6516	GPS =	10						
Plot 10	0		0621219	1475	10508	GPS =							
Plot 11				/									
Plot 12				/									
Plot 13				/		Mid-a	ge FOD with	ntew					
Plot 14				/		Cavity	frees having	dercy					
Plot 15				/		class	5-6.						
Plot 16	-			/									
Plot 17	1			1									
Plot 18				1									
Plot 19				1									
Plot 20				1									
Plot 21				/									

Page 1 of 2 Signature: Onder (Field Personnel)

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Plot No.	<b>Total No. of Cavity Trees</b> (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		1	
Plot 23		1	
Plot 24		1	
Plot 25		1	
Plot 26		1	
Plot 27		1	
Plot 28		/	
Plot 29		1	
Plot 30		1	
Plot 31			
Plot 32		/	
Plot 33		1	
Plot 34		1	
Plot 35		1	
TOTAL No Cavity Trees	. <u>1</u>	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	2 Trees/ha

<sup>1</sup>No. of Plots: Sites  $\leq 10$  ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). Plots = 0.05 ha or 12.6m radius

<sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ 

10×0.05

Select plots randomly.



Figure 1: Decay classification system for cavity trees (Watt and Caceres, 1999) NOTE: Decay classifications 4-6 should not be tallied in plots.

Page <u>2</u> of <u>2</u> Signature: <u>Include</u> (Field Persor

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(Field Personnel)

Stan	Stantec Consulting Ltd.         1 - 70 Southgate Drive         Guelph, ON         Canada N1G 4P5         Tel: (519) 836-6050         Fax: (519) 836-2493         Project Number:			(F0	Bat M Cavity T	aternity R Free Densi Data Form	oost - ity Plots MUNITIES ONLY)
Project	t Number:	160950	269	Proj	ject Name:	NRWC	
		April 18, 2	OB 3:35pm	4:20	pm.	AORR	Domannel
	1141	25	2-2			hiere a	1 Personner
veatner Con	altions:	TEMP (°C)	WIND	CLOU		PPT	PPT (in last 24 hrs)
eature #:	NOTE: J order f	All criteria must be t for cavity tree to be t <b>Feature Siz</b>	met in ☑ Cavity tree is ≥ 25 0 met in ☑ Cavity is ≥ 10m hig allied ☑ Size of cavity is sm enough for two bats ☑ Cavity tree is a Dec ce (ha): 2 8 Mo. of	h in tree all enough so cay Class of 1 Plots to Surv	) large mamm - 3 (see deca <b>/ey<sup>1</sup>: /</b>	als (i.e. raccoons ay classification b Acce	s) cannot enter, but large below) essible area: = $2$ .
Plot No.	Total No.	o. of Cavity Trees on criteria above)	Plot Center UTM (Zond	e:)		Comme	ents
Plot 01	0		01017900147	53021	GPS=	112	
Plot 02	0		06179301475	529910	GPS =	113	
Plot 03	10		01017961147	52967	6P5 = 1	14	
Plot 04	0		0617957 1475	12929	6P5 = 1	5,	
Plot 05	1		01017990 1475	2923	GPS = 11	6	
Plot 06	Õ		01017993 1415	52875	10PS = 1	[7]	
Plot 07	<u>t</u> .		0618038 1475	2862	5.PS=1	18	
Plot 08	0		01018054 1475	52835	685=1	(9	
Plot 09	0		01018098 1475	2839	GPS=1	20	
Plot 10	O,		0618123 1475	52874	GPS=1	a1	
Plot 11			1				
Plot 12			/				
Plot 13			/				
Plot 14			1				
Plot 15	1		/				
Plot 16			/				
Plot 17			/		Jenj.		
Plot 18			/		Thick 1	industry	, yreing to
Plot 19			1		mid-age	FOD/SW	
Plot 20			/		Lots of d	eray chess	586.
Plot 21			1			0	

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Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		1	
Plot 23		1	
Plot 24		1	
Plot 25		1	
Plot 26		1	
Plot 27		1	
Plot 28		1	
Plot 29		1	
Plot 30		1	
Plot 31			
Plot 32		1	
Plot 33		1	
Plot 34		1	
Plot 35		1	
TOTAL No Cavity Trees	. 3	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	Trees/ha

<sup>1</sup>No. of Plots: Sites  $\leq 10$  ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). Plots = 0.05 ha or 12.6m radius. Select plots randomly.

<sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ 

3

10 × 0.05





Page <u>2</u> of <u>2</u> Signature: <u><u>Mudical</u> (Field Personnel)</u>

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Stan	tec	<b>Stantec Consulti</b> 1 – 70 Southgate Guelph, ON Canada N1G 4P5 Tel: (519) 836-605 Fax: (519) 836-24	ng Ltd. Drive 50 93	(Fi	Bat Maternity Roost - Cavity Tree Density Plots Data Form (FOR USE IN FOD & FOM COMMUNITIES ONLY)						
Project	t Number:	160950	629	Proj	ect Name:	NRWC					
	[	April 18, 20	13 4:30 pm	1 5:0	20 nm	AORR					
	1	DATE	TIME (start)	TIME (	end) /	nd) / Field Personnel					
Weather Con	ditions:					None	None, PPT (in last 24 hrs)				
Criteria fo Feature #:	bric Gavity	Tree Tally inclus All criteria must be n for cavity tree to be to Feature Siz	Sion: ☑ Cavity tree is ≥ 25 <i>met in</i> ☑ Cavity is ≥ 10m hig <i>allied</i> ☑ Size of cavity is sr enough for two ba ☑ Cavity tree is a De (ha): ↓ ↓ ↓ No. o	cm DBH gh in tree nall enough so ts scay Class of 1 <b>f Plots to Surv</b>	o large man - 3 (see d <b>/ey<sup>1</sup>:/</b> O	nmals (i.e. raccoons) ecay classification be A ccess	) cannot enter, but large elow) si ble ar <i>ea</i> = 1.81				
Plot No.	Total No. (based	<b>o. of Cavity Trees</b> on criteria above)	Plot Center UTM (Zoi	ne: <u>17</u> )		Commen	its				
Plot 01	0		0618136147	153016	GPS :	122					
Plot 02	0		01018108 147	53071	GPS:	-123					
Plot 03	0		0618097 147	531792	GPS	= 124					
Plot 04	0		01018071147	53089	GPS	= 125					
Plot 05	1		0618069 147	53116		126					
Plot 06	0		0618063147.	53138		127					
Plot 07	0.		0618051 147	53162		18-8					
Plot 08	0		0618029147	53182		= 129					
Plot 09	0.		0618022147	53153		= 130					
Plot 10	1		0618001/47	53164		= 131					
Plot 11			/								
Plot 12			1	-							
Plot 13			1								
Plot 14			1		Note.	Iva Strik wat	Enforce.				
Plot 15			/		on othe	Y DORAGUE NO	arress.				
Plot 16			1								
Plot 17			1		Almos	t thoirkot s	wamp /				
Plot 18			1		SWD.	Venuet & 1	ent thick under				
Plot 19			/		Aleri	) decay Cla	5-6.				
Plot 20			1		Hardto	walk throws	xh.				
Plot 21			1				,				

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Plot No.	<b>Total No. of Cavity Trees</b> (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		1	
Plot 23		/	
Plot 24	-	1	
Plot 25		1	
Plot 26		1	
Plot 27		/	
Plot 28		1	
Plot 29		1	
Plot 30		1	
Plot 31			
Plot 32		1	
Plot 33		1	
Plot 34		1	
Plot 35		1	
TOTAL No Cavity Trees	2	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	4 Trees/ha

 $^{1}$ No, of Plots: Sites  $\leq 10$  ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots), Plots = 0.05 ha or 12.6m radius.

<sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ 

2 10 × 0.05

Select plots randomly.





Page <u>2</u> of <u>2</u> Signature: <u>Madea</u> (Field Personnel)

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Stan	tec	Stantec Consultin 1 – 70 Southgate I Guelph, ON Canada N1G 4P5 Tel: (519) 836-605 Fax: (519) 836-249	n <b>g Ltd.</b> Drive 60 93		(FC	Bat Maternity Roost - Cavity Tree Density Plots Data Form (FOR USE IN FOD & FOM COMMUNITIES ONLY)						
Project	t Number	1609506	29		Proj	ect Name:	NRWC					
		April 23, 20 DATE	013 11:36 TIME (st	2 <i>41</i> 71 art)	/ 2 : / . TIME (	Opm end)	A. O.R. Field	Personnel				
weather Con	ditions:	TEMP (°C)	WIND	)	CLOU	<u>ן רי</u>	PPT (in last 24 hrs)					
Criteria fo Feature #:	or Cavity NOTE: order	<b>/ Tree Tally Inclus</b> All criteria must be n for cavity tree to be to <b>Feature Siz</b>	Ion: ☑ Cavity tree net in ☑ Cavity is ≥ allied ☑ Size of cav enough for ☑ Cavity tree e (ha):, ⊋, ho	is ≥ 25 c 10m high ity is sma two bats is a Dec <b>No. of</b> I	m DBH a in tree all enough so ay Class of 1 Plots to Surv	) large mam - 3 (see de <b>rey<sup>1</sup>:/                                  </b>	imals (i.e. raccoons ecay classification b	i) cannot enter, but large below)				
Plot No.	Total N (based	<b>No. of Cavity Trees</b> I on criteria above)	Plot Center UI	TM (Zone	:)		Comme	nts				
Plot 01	0		0621484	1475	1127	6PS -	144					
Plot 02	0		0621481	1475	1134	6P5 =	146					
Plot 03	0		010214105	1475	1131	685=	146					
Plot 04	0		0621455	1475	1130	6P5=1	47					
Plot 05	0		0621468	1475	1145	1.PS = 1	48					
Plot 06	0.		01021497	1475	51145	UPS=	149.					
Plot 07	0		0621490	1475	1156	685 =	150					
Plot 08	0		0621475	1475	1162	GPS=1	51					
Plot 09	0		0621464	1479	51150	6PS=	152					
Plot 10	0		0621448	1475	1144	GPS =	153					
Plot 11				1								
Plot 12				/								
Plot 13				/								
Plot 14				/	Ć	PAFew	decay Classe 4	- 10				
Plot 15				1	(	Note R	mc 29 - Sm.	model				
Plot 16				1		E DWI	D in entrie or	eq. Lorae				
Plot 17				1		ด้างก่อนท	its of brush,	oiles from adjacent				
Plot 18				1		clear - ci	ut difficul	to walk thru				
Plot 19				1		Difficult	to not opicioo	blots.				
Plot 20				1		- Aren in	or searched	as well				
Plot 21				1		- Prolo	( Smallet	wid one to want				

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Plot No.	<b>Total No. of Cavity Trees</b> (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		1	
Plot 23		1	
Plot 24		/	
Plot 25		7	
Plot 26		/	
Plot 27		/	
Plot 28		1	
Plot 29		1	
Plot 30		1	
Plot 31			
Plot 32		1	
Plot 33		/	
Plot 34		1	
Plot 35		1	
TOTAL No. Cavity Trees:	()	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	Trees/ha

<sup>1</sup>No. of Plots: Sites  $\leq 10$  ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). Plots = 0.05 ha or 12.6m radius. Select plots randomly.

<sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ 

1 2 3 4 5 1 Healthy, live tree 2 Declining live tree, part of canopy lost 3 Very recently dead, no canopy, bark intact, branches intact 4 Recently dead, bark peeling, only large branches intact 5 Older dead tree, 90 percent of bark lost, few branch stubs, broken top 6 Very old dead tree, advanced decay, no branches, parts of the stem have rotted away



Page 2 of 2 Signature: Church Can (1 (Field Personnel) en

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StantecStantec Consultir 1 – 70 Southgate I Guelph, ON Canada N1G 4P5 Tel: (519) 836-605 Fax: (519) 836-248 Fax: (519) 836-248Project Number: $/(a) 9 5 0$		ng Ltd.       Bat Maternity Roost -         Drive       Cavity Tree Density Plots         Data Form       Data Form         93       (FOR USE IN FOD & FOM COMMUNITIES ONLY)         Project Name:       N.R.L.)				
	April 23, 20	013 11:10	2:50	)pm.	AORR	
	DATE	TIME (start)	TIME (e	end)	Field I	Personnel
Weather Cond	ditions: <u>// - / 8 ° د</u> TEMP (°C)	1-2 WIND		/	Vone	PPT (in last 24 hrs)
Criteria fo	NOTE: All criteria must be n order for cavity tree to be to <b>8,30,31,32</b> Feature Siz	blon: ☑ Cavity tree is ≥ 25 het in ☑ Cavity is ≥ 10m h allied ☑ Size of cavity is s enough for two ba ☑ Cavity tree is a D ⓐ Cavity tree is a D ⓑ	i cm DBH gh in tree mall enough so its ecay Class of 1 of <b>Plots to Surv</b>	large mam - 3 (see de <b>ey<sup>1</sup>:3_3</b>	mals (i.e. raccoons) cay classification be Fuli arc	cannot enter, but large $a \approx 33 ha$ .
Plot No.	(based on criteria above)	Plot Center UTM (Zo	ne: <u>17</u> )		Commen	ts
Plot 01	•	0621490 14-	151248	6R= 1	10	
Plot 02		06214169 14	151235	6PS=1	41	
Plot 03	0	01021427 14-	151216	6P5 =	142.	
Plot 04	0 -	0621394 14-	151199	685 = 1	43	
Plot 05	•	0621409 147	51148	GPS = 1	54	
Plot 06		0621396 147	51139	GPS =	155	
Plot 07	0	0621408 147	51130	GPS =	156	
Plot 08	0	1621415 147	51119	6PS = 1	67	
Plot 09	0	0621453 147	51087	GPS=	58	
Plot 10	0	0621440 147	510100	GPS =	159	
Plot 11	0	1621463 47	51045	(285=		
Plot 12	D	D1021433 1474	51014	6P5 = 11	0	
Plot 13	0	010214410 147	50980	(SPS = 11	13	
Plot 14	0	0621483 147	509.90	GPS = 1	63	
Plot 15	0	0621491 147	50948	6PS =	64	
Plot 16	$\hat{\mathcal{O}}$	DL21578 /47	50 938	LOPS =	1105	
Plot 17	D	1621534 14-	50097	605 :	1610	
Plot 18	$\mathcal{D}$	DID 21402 147	51827	6P< =	167	
Plot 19	12	ALAZIGUA 147	50787	695 -	168	
Plot 20		1121555 14-	160761	(PS -	100	
Plot 21		11071695 / 4-	50765	1 PK - 1	101	

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Plot No.	<b>Total No. of Cavity Trees</b> (based on criteria above)	Plot Center UTM (Zone: <u>17</u> )	Comments
Plot 22	0	1621605 14750797	685 = 171
Plot 23	(7	1621574 14750816	685=172.
Plot 24	0	0621563 14750858	6PS = 173
Plot 25	0	0621602 14750951	GPS = 174
Plot 26	<b>0</b>	0621633 14750957	685 = 175
Plot 27	0	0621659 14750975	6PS = 176
Plot 28	<b>1</b>	0621683 14750981	6PS = 177
Plot 29	<b>a</b> .	01021701 14750985	675 = 178.
Plot 30	0	0621127 14751002	6PS = 179
Plot 31	A:	01021746 14751008	685= 180
Plot 32	6	0621821 14751054	695 = 181
Plot 33	•	0621897 14751075	685= 182
Plot 34		1	
Plot 35		1	
TOTAL No Cavity Trees	D. 9:	<b>Density Calculation:</b> (use formula provided <sup>2</sup> )	6. 6 Trees/ha

<sup>1</sup>No. of Plots: Sites  $\leq 10$  ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots). Plots = 0.05 ha or 12.6m radius. Select plots randomly.

<sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ 

11 33 × 0.05

Figure 1: Decay classification system for cavity trees (Watt and Caceres, 1999) NOTE: Decay classifications 4-6 should not be tallied in plots.

Page 2 of 2 Signature: (Field Personnel)

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Stantec Stante	ec Consulting Ltd. Southgate Drive h, ON da N1G 4P5 519) 836-6050 519) 836-2493	M	igratory Bird S Observation F	orm
Project Number: 1(00	59502109	Project Na	ime: NRWC	
Date: Se	pt 4, 2013	Field Persor	nnel: A. ORR	
Weather Conditions:	TEMP (°C): WIN	D: CLOUD:	PPT: None	PPT (in last 24 hrs): Mのわそ
Start Time: 8:10 Start Point UTM: 6207 Habitat: FOD	10/4749236	End Time: End Point UTM: Transect:	8:25 1021138/474 5	19103
I Calline #. MIGHL	1	Tall		
BLTA	111	1 an	y	
AMBO				
DOWO	1			
NOFI				
REVI				
				5
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(Field Personnel)

(Project Manager) REV: 2011-05-03 / FORM 014

Stantec	antec Consulting Ltd. - 70 Southgate Drive lelph, ON nada N1G 4P5 l: (519) 836-6050 x: (519) 836-2493		Migra Ob	atory Bird S servation F	Survey orm
Project Number: //	60950269		Project Name:	NRWC	
Date: 5	ept 4. 2013		Field Personnel:	A. ORR	
Weather Conditions:	темр (°С): W 20° 2	/IND: 2 3	CLOUD:	PPT: None	PPT (in last 24 hrs); Non e
Start Time: <u>9</u> . Start Point UTM: <u>627</u> Habitat: <u>FOL</u> Feature #: MLS	20 am 1636 / 475036. ) A 2	3	End Time: End Point UTM:6 Transect:	1:45 am 17904/47	50264
Species			Tally		
GRCA			U.		
VRUDA	1				
AMRO					
BAWW					
LEFL	1				
BCCH	1)				
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REV: 2011-05-03 / FORM 014



Raptor Wintering Areas

Woodland Vole Habitat

Turtle Havitat 30m Buffer

Terrestrial Crayfish Habitat

Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat

Turtle Nesting Habitat/Snapping Turtle Habitat

120m Zone of Investigation

Proposed Turbine Location

Turbine Blade Length

Tap-in Location

Junction Box

Proposed Culvert

Stantec

Temporary Laydown Area

---- Fibre Optic Line

Potential Access Road

Transformer Substation

Collector Lines – Underground or Overhead

Access Road 20m Construction Area

Potential Construction Laydown Area

MBB Point Count Location

Higratory Bird Transect

- -- Winter Raptor Transect

Woodland Communities

Deer Congregation Areas (MNR)

Landbird Migratory Stopover

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- 3. Orthoimagery @ First Base Solutions, 2010.



Figure No. 6.54

Title Candidate Significant Wildlife Habitat Figure 6.54



Stanter Stanter Stanter	<b>Consulting Ltd.</b> Southgate Drive ON N1G 4P5 9) 836-6050 19) 836-2493	Migratory Bird Survey Observation Form	
Project Number: ///	09502109	Project Name: NRWC	
Date: 6	+ 8 2012	Field Personnel: A. ORR	
		PPT PPT (in last 24	4 hrs)
leather Conditions:	(0 0	07. None Rein	
Start Time: 8.55	am	End Time: <u>9.30 am</u>	
Start Point UTM: 10207	70 14749236	End Point UTM: 621138 / 4749103	
Habitat:	1	Transect: 5	
Feature #: <u>  ) (5A 4</u>			
pecies		Tally	
AMBO	-111-		
Kinalet. Sp	(1)		
RBWO	<u> </u>		
NBNU	1		
MACR			
BCCH			
NOTL			
HETH			
WE HOWR	11		
Worbler- Sp.			_
WTSP	<u>+++</u>		
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eld	Personnel)
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REV: 2011-05-03 / FORM
Stanter	Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Migratory Bird Survey Observation Form			
Project Number:	lingenol	9	Project Name:	NRWC		
, Date:	160950 ac	12	Field Personnel	A.ORR		
					PPT (in last 24 hrs);	
Neather Conditions:	TEMP (°C):		107.	None	Pain	
Start Time:	7:50 am		End Time:	8:20 am		
Start Point UTM:	07/03/0/475	N31.3	End Point UTM:	27904 /47	150264	
Habitat:	TAD		Transect:	4		
Feature #: W	115A3					
Species			Tally			
AMRO	+++++ +	H- +++ ++	+			
WISP	++++-1	l				
BTBW	11					
NOFL	1					
WBNU	11					
BWBL	-++++	Ht HH	7			
GRCA	1					
BCCH	1111					
SOSP	1					
BRCR	A					
HOWR	1					
DOMO	1					
CAGO	35-	flyaver he	ading S.			
	Incia	entals.				
	Reds	gurvel				
	WITDE	tracks				
				й. 		

Signature:	Andreas	Or.
	(Fiel	d Personnel)

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Signature:







Niagara Region Wind Corporation Natural Heritage Assessment Report

Figure No. 6.54



Legend Project Study Area Turtle Wintering Area Notes Preferred Transmission Route Amphibian Breeding Stations Other Rare Vegetation Community Bat Maternity Colonies 1, Coordinale System: NAD 1983 UTM Zone 17N). Amphiblan Breeding Habitat Snake Hibernacula Interconnector Study Area Alternate Tranmission Route Snake Hibernacula 30m Buffer Cliff and Talus Communities 120m Zone of Investigation Temporary Laydown Area MBB Point Count Location Raptor Wintering Areas Proposed Turbine Location Collector Lines - Underground or Overhead Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat Higratory Bird Transect 3. Orthoimagery © First Base Solutions, 2010. Turbine Blade Length Stantec ----- Fibre Optic Line - -- Winter Raptor Transect Tap-in Location Potential Access Road Woodland Vole Habitat Woodland Communities Access Road 20m Construction Area Junction Box Terrestrial Crayfish Habitat Deer Congregation Areas (MNR) Potential Construction Laydown Area Proposed Culvert 11 Turtle Nesting Habitat/Snapping Turtle Habitat Transformer Substation Landbird Migratory Slopover Tur**tle Habitat** 30m Buffer 1.....





Niagara Region Wind Corporation Natural Heritage Assessment Report

Figure No. 6.58

Stantec Star	ntec Consulting Ltd. 70 Southgate Drive Ilph, ON ada N1G 4P5 (519) 836-6050 : (519) 836-2493	Migra Ob	Migratory Bird Survey Observation Form			
Project Number:	09502109	Project Name:	IRWC			
Date:	ent 9 2013	Field Personnel:	A. ORR			
			PPT (in last 24 hrs);			
Neather Conditions:		507.	None Mone			
Start Time: 7	6 ana	End Time: 🦿	DP and			
Start Point UTM: / 2	120 PUTUD ACTO	End Point UTM:	1138 14749103			
Habitat: In	0 170 1911 asu	Transect: 5	xuso purnese.			
Feature #: misu	a Ll					
Species		Tally				
Anice	111		161			
FUPE	1					
BI TH	11					
Ameo	111					
MOTH	11					
BRGR						
DAMO	1					
Kinglet co						
CBCD	- 1					
01701	1					
	TUDE					
	A Salation In	must accuring in FOD				
	2 Strangen M	and acting a lot				
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Signature:	(Field Personnel)	Signature:	(Project Manager)			

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Stantec Stan	tec Consulting Ltd. 0 Southgate Drive ph, ON ada N1G 4P5 (519) 836-6050 (519) 836-2493	nsulting Ltd. hgate Drive <b>V</b> G 4P5 36-6050 336-2493			ligratory Bird Survey Observation Form		
Project Number:	00/5021.9		Project Name:	NRWC			
Date:	at 9 2013		Field Personnel:				
Weather Conditions:	TEMP (°C): V		CLOUD: 501.	PPT: None	PPT (in last 24 hrs): NONE		
Start Time: <u>8:5</u> Start Point UTM: <u>6270</u> Habitat: <u>FoD</u> Feature #: M151	0 am 036 / 4750363 A 3		End Time: End Point UTM:(/ Transect:	1:10 am 27904/475 4	02104		
Snecies			Tally				
AMCR	11						
AMGO	1						
6810	N						
AWAD	Incidentals	: black squimely	UTDE tracks,				
Pg. L of Q. Signature:	Indres De		Quality Control: This Signature:	form is complete	k legible 🖵. Manager)		





Stantec Stantec	tec Consulting Ltd. 0 Southgate Drive oh, ON ida N1G 4P5 519) 836-6050 (519) 836-2493	Migratory Bird Survey Observation Form
Project Number: //	09502109	Project Name: NRWC
Date:	Int II 2013	Field Personnel: A. ORR
		DPT / DPT / DPT / in last 24 hrs):
Veather Conditions:	7° 0	D-1 10% None None.
Start Time: 7: L	18am	End Time: 8:10 om
Start Point UTM: 1020	770/4749236	End Point UTM: 621138/4749103
Habitat: 50	10 11 1000	Transect: 5
Feature #:	7.4	
Species		Tally
DOWO		
BCCH	/ []	1 6
AMBO	++++	
AMCR		
BLITA	11.11	
GCKI		
NOTL	1	
WISP		
SASP	(*)	
9001		
	1	
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Signature:	dierlen	Signature:
	(Field Personnel)	(Project Manager)

eld	Person	nel)
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Stantec Stand 1 - 70 Guelp Cana Tel: ( Fax:	tec Consulting Ltc D Southgate Drive oh, ON da N1G 4P5 519) 836-6050 (519) 836-2493	1.	Migratory Bird Survey Observation Form			
Project Number:	09502109	}	Project Name:	NRWG		
Date:	ct 11 201	13	Field Personnel:	AORR		
	TEMD (90):			PPT:	PPT (in last 24 hrs):	
Veather Conditions:	80	0-1	10%	None	Non-c	
Start Time: 9		C	End Time:	9.10 am		
Start Point UTM: 10271	21. JUTED:	21.3	End Point UTM: 102	7904/475	0264	
Habitat: Fai)	150 191502	202	 Transect: Ц			
Feature #: 101/5	n 2					
	40		 Tally		¥2	
Species	Ťata s X	1				
Pagu		1	a n t			
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KW H						
MAWO		H	<u></u>			
WISP	+++++					
PCKI	1111					
modo	11					
Warbler-sp.		*				
RINRI	dana da	41- 481 44+ •	HTT +30			
GCKI	2 M					
BLBW	11					
NONO						
WRNN	1					
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619000		619500		620000	620300		
Stantec	Legend	<ul> <li>Project Study Area</li> <li>Interconnector Study Area</li> <li>120m Zone of Investigation</li> <li>Proposed Turbine Location</li> <li>Turbine Blade Length</li> <li>Tap-In Location</li> <li>Junction Box</li> <li>Proposed Culvert</li> </ul>	Preferred Transmission Route     Alternate Transmission Route     Temporary Laydown Area     Collector Lines – Underground or Overhead     Fibre Optic Line     Potential Access Road     Access Road 20m Construction Area     Potential Construction Laydown Area     Transformer Substation	<ul> <li>Armphiblan Breeding Stations</li> <li>Snake Hibernacula</li> <li>Snake Hibernacula 30m Buffer</li> <li>MBB Point Count Location</li> <li>Migratory Bird Transect</li> <li>Winter Raptor Transect</li> <li>Woodland Communities</li> <li>Deer Congregation Areas (MNR)</li> <li>Landbird Migratory Stopover</li> </ul>	Other Rare Vegetation Community Amphibian Breeding Habitat Cliff and Talus Communities Raptor Whitering Areas Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat Woodland Vole Habitat Terrestrial Crayfish Habitat Turtle Nesting Habitat/Snapping Turtle Habitat	Turtle Wintering Area	Notes . Coordinate System: NAD 1983 UTM Zone Base feetures produced under Icense with Ontario Ministry of Natural Resources © Qu Printer for Ontario, 2011. 3. Ortholmagery © First Base Solutions, 2010.

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en/Project Niagara Region Wind Corporation Natural Heritage Assessment Report

Figure No. 6.54



Stantec Stantec		Migratory Bird Survey Observation Form			
Project Number:	160950269		Project Name	NRWC	
Date:	Sept. 13 2	2013	Field Personnel:	AORB	
	TEMP (90)			DDT.	PPT (in last 24 hrs);
Weather Conditions:	12°	3	30%	None	Bain,
Start Time:	.35 am		End Time:	7:05	
Start Point UTM: 620	770 / 4749 236		End Point UTM:	21138/474	7103
Habitat: FOD	1		Transect: 5	7	
Feature #: mis	A Y		-		
Species			Tally		
NOFL	1				
REGR	1				
BLJA	11				
BRCR	1				
Walpher-Sp	(1)3×				
AMRO					
CEDW	++++-				
		-		······	
					3.
ić a					
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_(A/0)	(Field Personnel)			(Project Ma	anager)

Stantec	Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Migratory Bird Survey Observation Form		
Project Number:	160950269		Project Name	NRWC	
Date	Sat 17 2012	)	Field Personnel	1 DRP	
	vept. 15, aus.	2		<u></u>	
Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
			007.	None	nein
Start Time:	7:35 am		End Time:	8.05	
Start Point UTM:	271036/47503	103	End Point UTM:	7904/4750	12104
Habitat:	FOD		Transect:	+	1
Feature #: n	NISH 3				
Species					1.
BCCH	444-				
AMGO	1				
AMCB	1	4			
GBCA	11				
NOFL					
MADA	1				
VBIDA					
HMBD	11				
5					

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Signature:



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Stantec	tec Consulting Ltd. 70 Southgate Drive lph, ON ada N1G 4P5 (519) 836-6050 (519) 836-2493	Migra Obs	ntory Bird Su servation Fo	irvey rm	
Project Number:	60950269	Project Name:	NRWC		
Date	Oct. 17. 2013	Field Personnel:	Field Personnel: A.OR-R		
Weather Conditions:	TEMP (°C): WIND:	CLOUD: 50%	ppt: None	PPT (in last 24 hrs): $F_{121}$ $K_{21}$ ,	
Start Time: 7 Start Point UTM: 620 Habitat: FOT Feature #: 7015	20 am 1770 / 4749 236 1	End Time: 8: End Point UTM: 67 Transect: 5	20 am XII 38 / 474	9103	
	r[ 1	 Tally			
Am 60					
GCKI	444-444	10			
AMCB					
NOFL					
BCKI	444				
RCCH					
DOWO	1				
AMRO	11				
WITSP					
	3				
	3				
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Pg ot Signature:	(Field Personnel)	Signature:	(Project M	anager)	

StantecStantec Consulting Ltd.1 - 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493			Migratory Bird Survey Observation Form			
Project Number:	950269		Project Name:	NEWC		
Date:	T 17	2013	Field Personnel: A ORR			
	· · · · · ·	2013				
Weather Conditions:	MP (°C):		70%	None	Rain	
Start Time: 9:00	am		End Time:	9:20 am		
Start Point UTM: 62763	6/4750	343	End Point UTM:	27 904 / 47	50264	
Habitat: FOD			Transect: L	7		
Feature #: MISA	3		<u></u>			
Species			Tally			
NOFL	1					
AMBO	1111		× . 7			
BLJA	1					
DOWO						
SOSP	1114					
WITSP	MA					
BWBL	AHT H	++ ++++-				
MODO	Ň					
KILL	1	697				
1.5.5						
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en	Jen
(Field	Personnel)





Legend Project Study Area Turtle Wintering Area Notes Other Rare Vegetation Community Amphibian Breeding Stations Preferred Transmission Route Amphiblan Breeding Habitat Bat Maternity Colonies 1. Coordinate System: NAD 1983 UTM Zone 17N), Interconnector Study Area Alternate Tranmission Route Snake Hibernacula Snake Hibernacula 30m Buffer **N** Cliff and Talus Communities Base features produced under licence with the Onlario Ministry of Natural Resources © Queen's Printer for Onlario, 2011. 120m Zone of Investigation - Temporary Laydown Area MBB Point Count Location Raptor Wintering Areas Proposed Turbine Location Collector Lines - Underground or Overhead Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat 3. Orthoimagery © First Base Solutions, 2010. Higratory Bird Transect O Turbine Blade Length Stantec ----- Fibre Optic Line - -- Winter Raptor Transect Tap-in Location Potential Access Road Woodland Vole Habitat Access Road 20m Construction Area Woodland Communities Junction Box Terrestrial Crayfish Habitat Deer Congregation Areas (MNR) Potential Construction Laydown Area Proposed Culvert Turtle Nesting Habitat/Snapping Turtle Habitat Transformer Substation Landbird Migratory Stopover Turtle Habitat 30m Buffer





# Client/Project

Niagara Region Wind Corporation Natural Heritage Assessment Report

Figure No. 6.58

Stantec Stantec	<b>c Consulting Ltd.</b> Southgate Drive a, ON a NIG 4P5 19) 836-6050 519) 836-2493	Migr Ot	atory Bird Su pservation Fo	ırvey rm
Project Number:	0950269	Project Name:	NBWC	
Date: Se	pt. 19, 2013	Field Personnel:	A. ORR	
Weather Conditions:	TEMP (℃): WIND:	CLOUD: 301.	PPT: None	PPT (in last 24 hrs):
Start Time: <u>8:4</u> Start Point UTM: <u>6207</u> Habitat: FoD Feature #: MISA	5 am 170 / 4749236 4	End Time: End Point UTM: Transect:5	1:07 <i>am</i> 21138/4749	7103
Species		 Tally		
NOFL	1			
AmBO				
BCCH				
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(Field Personnel)

(Project Manager) REV: 2011-05-03 / FORM ( Ŧ.

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Stanter Stanter	tec Consulting Ltd. D Southgate Drive oh, ON da N1G 4P5 519) 836-6050 (519) 836-2493	ŝ	Mig C	gratory Bird S Observation F	orm
Project Number:	1951269		Project Nam	"NRWC	
L4 Date: (	0-100 a (e 1		Field Personne	H: A. ORR	
	ept. 1 , acro				PPT (in last 24 hrs);
Veather Conditions:	TEMP (°C):	3	407.	None	None
Start Time: 7:44			End Time:	8:1D	
Start Point UTM: 1.071	21. 1020212		End Point UTM:	27904 /4750	22104
Habitat:	136 19750 365		Transect:	4	
Footure #:	2		-		
reature #. <u>MISA</u>	3		Tally		
Species			Tany		
GACH	/				
MODO	444				
AMCR	111				
NOFL	1				
EWPE	1				
BLJA	111				
AMBO	11				
	1				an Inder
	Incidentals	black	Squivlel, WT	25 tracks, BE	ICC TRACES.
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Signature:	(Field Parannal)			(Project	Manager)



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- 3. Orthoimagery @ First Base Solutions, 2010.





Figure No. 6.54



Stantec	Stantec Consulting Lt 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493	d.	Mig O	ratory Bird S bservation F	orm
Project Number	1609502	69	Project Name	NRWC	
Date	Sep 24/2	013	Field Personnel	J. Ball	
Veather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT: NONE	PPT (in last 24 hrs) NONE
Start Time:	8:30 am_		End Time:	8:45am	)
Start Point UTM:	627498/47	50338	End Point UTM:	627750/0	04750319
Habitat:	-oD		Transect:	4	Ne streiße
Feature #:	1LSA3				
pecies			Tally		
SOSP					
AMGO	•				
AMCR					
NOFL	•				
BCCH	:				
GRCA	•				
Dowo	•				
unknow	•	sounded li	ke the ch	attering o	f a sosp
CAGO		heard lat	er on during	g the surve	ey
AMRO	••				
MODO					
BLJA	•				
UNKNOWN	so · · · ct	ripping in	CANOPY.		
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		40.200 E			
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7	(Field Pers	onnel)		(Project	Manager)

oject Manager)		
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Stantec	ntec Consulting Ltd. 70 Southgate Drive Jph, ON ada N1G 4P5 (519) 836-6050 : (519) 836-2493		Mig C	ratory Bird S bservation F	urvey orm
Project Number:	60950269		Project Name	NRWC	
Date:	Sep 24/2	2013	Field Personne	J.Ball	
leather Conditions:	TEMP (°C):		CLOUD:	PPT: None	PPT (in last 24 hrs): NONE
Start Time: $9:3$ Start Point UTM: <u>062</u> Habitat: <u>F0</u>	30 am 0750/47 D	49216	End Time: End Point UTM: Transect:	1:50 am 1621033/4 5	748993
			- Tally		
RCKI	•				
GCKI	ó	*			
BLJA					
SOSP	•			<u>, 1997</u>	
CEDW	•				
<sup>2</sup> g. ⊥ of ⊥ Signature:	Ball (Field Person	inel)	Quality Control: Thi Signature:	s form is complete 🗖 8	k legible . Manager)

Stantec	Stantec Consulting Ltd 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Mig O	ratory Bird Sobservation Fo	urvey orm				
Project Number	16095026	1	Project Name: NRWC						
Date	Sep 30/2	013	Field Personnel	J.Ball					
Veather Conditions:	TEMP (°C):	WIND: 2		PPT: NONE	PPT (in last 24 hrs)				
Start Time: Start Point UTM: Habitat:	8:28am )627645/ OD	4750356	End Time: C	9:05am 627905/4 4	750267				
Feature #:	ILSA 3								
AMCR	+ # •		4						
AMRE	•								
CAGO	•								
BCCH	0								
		cidental NOFR + S MAM EG Squi	observati SPPE callin rrel	ons og in adje					
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Stantec	Stantec Consulting Ltd 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493	1.	atory Bird Su servation Fo	urvey orm					
Project Number:	1609 50269		Project Name: NRWC						
Date:	Sep 30/	2013	Field Personnel:	J. Ball					
Veather Conditions:	TEMP (°C):	WIND:		PPT: None	PPT (in last 24 hrs)				
Start Time:	7=32 am		End Time:	1:52 am	<b>`</b>				
Start Point UTM:	620767/47	49230	End Point UTM: 06	21133/47	4099				
Habitat: <u>FC</u> Feature #: N	D with dense	Shrub layer moist pockets	Transect: 5						
Species			Tally						
BLJA	•								
AMRO	9			145					
AMCR	0								
Swallow 5		flyover							
unknown	50 : 2	unknown	'chips' in	Canopy					

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rpersonnel)					N/A	TIME		Temp:	PM-3	19 J. J.	Stante 70-1 S Guelpt N1G 4 Tel: (5 Fax: (5
gible (Sig					None observed	SPECIES		Win	IC PM, A	019	c Consulting L's outhgate Drive 1, Ontario, Cana's P5 19) 836-6050 19) 836-2493
nature: (Project Manager)	and other debris, No utils	up to the edge of the	the roughly including the	off accessible property.	brush piles of varying sizes	HABITAT DESCRIPTION	(sunny at survey)	d: Cloud: 60% NONE	pr 14/2013 Field Personnel: 7, Ball	Brint Name: Nin Anna (Alia	Reptile Surve Observation Fo
REV: May 07 FORM 005						OTHER NOTES		PPT in last 24 hrs:		A Form	survey SHI

						SH4	-	T to				
Quality Controls This form is for Signature:						Ch2224847	LOCATION	S \$ 00	Weather Conditions:	Date / Time: April	Project Number 160	Stantec
nplete & lep Personnel)						N/A	TIME	No	Temp:	14/2	19502	Stante 70-1 S Guelpt N1G 4 Tel: (5 Fax: (5
gible (Y.						None	SPECIES	T AT	P Wit	013 3:	269	c Consulting L'o. outhgate Drive 1, Ontario, Canad. P5 19) 836-6050 19) 836-2493
nature: (Project <sup>1</sup> . lan (; et)		the area to check under	Photos taken	edge of the AG field	of waterbody from the shore	(posts). Searched South side	HABITAT DESCRIPTION	TEMPT TO CROSS THE	2 Cloud: PPT: 2 40% NONE	55-4:15pm Field Personnel: J, Ball	Project Name: Niagara W	Reptile Surve Observation Fc Hibernacula
REV: May 07 FORM 005							OTHER NOTES	BRIDGE	PPT in last 24 hrs:		ind Form	survey SH4

Survey tion Form	- Shake Hiberpacula survey	X	$\mathcal{C}$ PPT in last 24 hrs: $\mathcal{N} \circ \mathcal{N} \rightarrow \mathcal{C}$	7.)	OTHER NOTES	TOD/ SPPE/CHFR.	icia, SPPE	Surveys i train load as unsurration access, could not go ant Sam. Valk up a down edge of condition-a	SPPE & CHER Great habitat by "hitemiceula"	E TUVU & CHFR 440 Great habitat for "hipernacula"	
Reptile Observat	Project Name: NRWC	Field Personnel: $\overline{POR}$	C / Non		HABITAT DESCRIPTION	Pile of down woody debus in ease of a grade of the UTM = 0626997/475651	k of Sand, Im high on Edge of FOD/High	M-fallentrees? or could be old silo of thicks.	He of down woody deshis in SWT & open lown	arge pile of starres and concrete in mild " the field " HOLTH UTH- DE3872/HOLTH	
ec Consulting Ltd. Southgate Drive bh, Ontario, Canada 4P5 519) 836-6050 519) 836-2493	69	013	5-20 Wind:		SPECIES	ELIN 0	214	U D D	IEA.Garter P	DIA.	
Stant Stant 70-1 ( Guelp N1G / Tel: ( Fax: (	9502	15,21	Temp:	Y	TIME	h:11-08:11	11-10:21	3:30-2:51	3:5-1.15	4,30-4 S	
Stantec	Project Number $/60$	Date / Time: April	Weather Conditions:	11:00-50	LOCATION	SH3	SHG	SH7-TOWER?	SHS	SHZ	

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REV: May 07 FORM 005

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						LOCATION TIME SPEC
						Ë
						HABITAT DESCRIPTION
						OTHER NOTES

e Survey ition Form	- Basking Turtles.	PPT in last 24 hrs: None	OTHER NOTES	GBHE, CAGO	
Reptile Observa Basking Turtles	Project Name: <u>NRUC</u> Field Personnel: <u>Ĥ. DR</u>	: Cloud: PPT: $\mathcal{X}$ SO $\dot{\lambda}$ Nor	HABITAT DESCRIPTION	Welland River - along Rd. See photos Oballo19/47/01135.	
Consulting Ltd. uthgate Drive Ontario, Canada 5 9) 836-6050 9) 836-2493	9 013	Wino	SPECIES	N H	
Stantec 70-1 So Guelph, N1G 4P Tel: (51 Fax: (51	95026 15,2	Temp: / _	TIME	3:35	
Stantec	Project Number //60'	Weather Conditions:	LOCATION	TTT	

REV: May 07 FORM 005

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LOCATION	TIME	SPECIES	HABITAT DESCRIPTION	OTHER NOTES

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vey Form			PPT in last 24 hrs: T. Storni		OTHER NOTES	to and there is a mount	Incidentals. BOBO, TUN RWBL, SOSP, KILL,	Sunaryai Fram side of Yood o no access years I Ina : RWEL WAVE SOSP	ENCANTOS BOBO, R.W.	Invidences TOVO, RUEL		Source from a mart prince
Reptile Sur Observation I	NRWC.	HORR	PPT: None		lion	(an) of	Seid.	0				NOL
	Project Name:	Field Personnel:	Cloud: 60 - 80%		HABITAT DESCRIP	neks/logs in forest ed	. Bo was reference in or	res/hogs in cown Swot	selection MANN / CUM	28 MORTH/ F	ces/1005 in For	y is it shirts, all housed
		Ĩ	à. N W			Pile of 54	いちょうれん	Pile of sta	File of 1005	SEEAD	aile of sh	shal wood
: Consulting Ltd. utthgate Drive Ontario, Canada 5 9) 836-2493	~	M	Nin S - 2 Co	Ŵ	SPECIES	f i namen and a second s			-		)	
Stantec Stantec Guelph N1G 4F Tel: (51 Fax: (5	502109	1 201	Temp:	46	TIME	-01:01 04:01	-90:11	11:30 -	12:10-	- 00-1	- 52.1	- 00 K
Stantec	Project Number /609	Date / Time: Mail 2	Weather Conditions:	Start 10 ann	LOCATION	CH 7	SHZ	SHS	HH	Basking Turries/ Weilond River	SH3	SH7

REV: May 07 FORM 005

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REV: May 07	
<b>FORM 005</b>	

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3	(Field Perconnel)	
Signature:	Chrokes Sh	Signature:
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						SH6 3.00	LOCATION
_						901	MESI
			8				PECIES
						Pitros same adjacent to agrinud & For	HABITAT DESCRIPTION
						Incidentalia :	OTHER NOTES

Turtle Overwintering and Snake Hibernacila Surveys May 2/2013 160950269 Niagara Wind Farm J. Ball Stantec SH6 10:45-11:00am Temper=18°C Wind=1 Cloud=0 Precip=C Searched 30m on either side of SH6 along the Aq field Did not enter crops as I did not wish to trample them. Searched 30m into the upland deciduous forest. Did not focus on the wet lowland forest areas. No snakes abserved SH3 11:35-11.55 Cloud = O Precip = O Temp = 19°C . Wind= 2 17T 0620881/4756520 small brownsnake observed within 100m of SH3. Observed on tractor trail within Ag field Searched the upland forest within 30m of potential hibernacula as well as the edge of the Ag field. There are several brush piles I focused on brush piles on the South side of the woodlot as piles of the north side were in wet, low-lying areas Snake observed SH7 12:25-12:35 Temp 21°C Wind=2 Cloud=0 Precip=0 No direct access. Searched entire shoulder of road along the length of the CUP3. Looked into the edge of CUP3 for snakes. No snakes observed Turtle Survey (Transmission Line Across River) (weather 12:50-13:05 177 0627.333/4761361 same as) 12:50-13:05 177 0622333/4761361 No turtles observed Searched 120m of either side of proposed Transmission Line with focus on logs for basking Cand J riverbank Checked by: Designed by: RECYCLED Paper F8C\* C101537 ed on FSC\*-certified and 100 percent recycled postconsumer waste
Snake Hibernacula Surveys May 2/2013 160950269 Niagara Wind Farm J. Ball Weather: Temp 23°C Wind=2 Cloud=0 Precip=0 SH5 13:40-13:45 searched lawn, swamp thicket and meadow marsh (within Concentrated on areas closest to hibernacula, No snakes found. #Need to confirm whether we have SH2 13:55-14:15 Searched area surrounding old foundation including Agfield, manure pile (although I did not climb it), meadow marsh and road. No snakes observed - Photos taken SH4 14:30-14:50 Searched sloped area up to the Ag field. Searched both side of bridge Chorth side up to the electric fence) since the snake hibernacula identified may have originally included the bridge foundation. No Snakes observed,

SH1 15:30-15:50

Searched accessible area and edge of Ag field. No snakes observed. Photo taken.

ect Number 160150269 Project Name Nianaco Wind Farn s' Time: April 18/2015 11:00-11:15 Field Personnei. J. Ball ther conditions: Temp: 25 Wind: 280% PPT in tast 241 ther conditions: Temp: 25 Wind: 280% PPT in tast 241 Canny during ther conditions: Temp: 760 B0% Prince PPT in tast 241 Canny during Cannor Time: PPT in tast 241 Cannor and the count of the count	Stantec	Guelph, N1G 4P Tel: (519 Fax: (51	Ontario, Canada 5 9) 836-6050 9) 836-2493	Diservation Form	loc-thou
VTIME: April 18/2013 11:00-11:15 Field Personnei. J. Ball ther conditions: Temp: 25 Wind: 2 Course Per: NoNE NONE LOCATION TIME SPECIES HABITAT DESCRIPTION OTHER NOT Proceeding 11:00- N/A Some Loas For basking in Under Advised to State of Fixed to State of Fixer of The Usual Under Field all the Usual Under Use The Field all the Usual Under The Field all the Usu	ect Number 60°	5026	5	Project Name: Niagara Wind	d Farm
ther Conditions: Temp: Wind: 2 Cloud: FPT: In last 241 LOCATION TIME SPECIES HABITAT DESCRIPTION OTHER NOT Dm sourch of 11:00- N/A Some Loas For basking in ther side of 11:15 N/A Some Loas For basking in ther side of river on 10:1459/ North side to edge of river on 10:1388 north side to edge of river on 161388 north side to edge of river on 16138 north side to edge of riv	e / Time: April	18/20	3.11	1:00-11:15 Field Personnel: 5, Ball	
LOCATION TIME SPECIES IN HABITAT DESCRIPTION LOCATION TIME SPECIES HABITAT DESCRIPTION OTHER NOT The scale of 11:15 N/A Some loas for basking in ther side of 11:15 N/A Some loas for basking in ther side of river on The scale of river on The scal	ther Conditions:	Temp:	N N	Ind: Cloud: PPT: NONE	PPT in last 24 hrs: NONE
LOCATION TIME SPECIES HABITAT DESCRIPTION Time Species Histor Species for basking in ther side of the log in the usual there side of the log in the usual the field all the field all the field				(surry during survey	
The sciele of 11:00- N/A some loss for basking in the scale of 11:15 N/A water AB field all the way time time 12459/ 761388 north side of river on north side of river on and bank for basking turtles-hone found	LOCATION	TIME	SPECIES	HABITAT DESCRIPTION	OTHER NOTES
	Dm segration ther side of transmission 122459/ 761388	- 90:11	YN .	some loss for backing in water. As field all the usu to river bank on north side thicket to edge of river on north side. Checked logs and bank for backing furtles-hone found	

Stantec	Stantec Cor 70 Southgat Guelph, Ont N1G 4P5 Tel: (519) 8 Fax: (519) 8	nsulting Ltd. te Drive tario, Canada 36-6050 936-2493	Site Visit Record
	950269		Project Name: Niagara Wind Farm
Date / Time: June	10/2013	3	Field Personnel: J. Ball
Weather Condition	<b>s:</b>   Temp:   5	Wind:	Cloud: PPT: PPT in last 24 hrs: 100% light rain N/A

Time:	Description of Activities and Observations
10:20	-Assessed meadow marsh for potential turtle
	nesting habitat within feature TH62
	- feature is a narrow ( 50cm. wide) drainage ditch
	dominated by canary reed meadow marsh.
	Aricultural lands surround feature to the N.S. SE.
	Woods Road to the west provides potential artificial
	resting habitat ushich doesn't meet the priteria
	for significance according to the draft SWH
	criteria for region 7E. No: Significant turtle nesti
	habitat is present within FH62

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Signature: Same & Bar O ()
(Field Personnel)
Page 1 of 1

(Project Manager)	
<b>REV: May, 07</b>	Form 028

Stantec	Stantec Consulting Ltd. 70 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493			Visit Record	/TH29
Project Number 1609 50269			Project Name: <u> </u>	Jiagara W	ind Farm
Date / Time: June 10/2013			Field Personnel:	J. Ball	
Weather Conditions:	Temp:	Wind:	Cloud:	PPT: None	PPT in last 24 hrs: N/A

Time:	Description of Activities and Observations
0:55	TH 283 There observed for optential turtle nesting
	habitat. A drainnag feature i 3m wide runs through
11	TH28 which is surrounded by canary reed prass
	and cattails. The portion of TH28 that is located
	at the side of St. Annis Rd. has artificial testle
	nesting habitat along the shoulder of the road
	however, this is not SwH according to the
	Draft SWH criterion for 7E region.
	TH28 and TH29 also have artificial
	nesting habitat at the shoulder of Comfort Rd. Both
	TH28 and TH29 are surrounded on all sides
	(excluding the roadsides) by agricultural fields
	which and do not provide nesting habitat
	The drainage ditch that runs parallel to Comfort Rd.
	has exposed mineral edges however there are too
	steep for turtle nesting and clay sails are not ideal.
	The edges of ditches are also succeptible to
	tlash flooding which would not be suitable habita
	for nesting, ) THE is also dominated by canary
	reed arass and has a drainage teature running
	Through it.

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(Project Manager)	
REV: May, 07	Form 028

Stantec	Stantec Consulting Ltd. 70 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Site	Visit Record	ĥ
Project Number 1609 502.69			Project Name: 📐	liagara W	ind Farm
Date/Time: June 10/2013		Field Personnel:	J.Ball		
Weather Condition	ns: Temp:	Wind:	Cloud:	PPT: NONE	PPT in last 24 hrs:

Time:	Description of Activities and Observations
11:38	Assessed TH38 for potential turtle nesting
	habitat. Watercourse (draining feature) is with
	wide and surrounded by canary need arass.
	Aaricuture surrounds feature on all sides excluding
	roadside). As includes wheat to the E.S.S and crop to the
	Concession 4 provides artificial nesting habitat
	at the shoulders of the road however draft Swith
	criterion excludes this habitat from qualifying as
	SWH,
1.1.3	

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Signature: San é Ball	Signature:
(Field Personnel)	
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(Project Manager) REV: May, 07

Form 028

Stantec	Stantec Consulting Ltd. 70 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493	Site Visit Record
Project Number6	0950269	Project Name: Nitaagra Wind Farm
Date / Time: <u>June</u>	10/2013	Field Personnel: J. Ball
Weather Condition	ns: Temp: 9 Wind:	Cloud: PPT: PPT in last 24 hrs: 100% NONE N/A

Time:	Description of Activities and Observations
11:55	Assessed TH21 for potential turtle nesting habitat
	Watercourse is meandering through hav fields.
	Waterrourse is in 4m wide & surrounded by den
	canary reed grass There is a small pile of
	gravel beside the watercourse at the midpoint
	of the feature which would likely
<u> </u>	provide agod nesting habitat, albeit artificial.
	Artificial habitat includes a small strip of exposed
	gravel shoulder on either side of Rosdene Rd.
	The draft criterion for Swith excludes roadside
	gravel from significance. There is a
	steps clay bank that is exposed along the
	watercourse however the steeness and claw
	material would not provide suitable nesting
	habitat.
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Signature: Jerre Chall
(Field Personnel)
Page _/ of

(Project Manager)	
<b>REV: May, 07</b>	Form 028

Stantec Consulting Ltd. 70 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493			Site	<b>Visit Record</b> TH69	
Project Number 1609,502.69			Project Name: 📐	liagora Win	d Farm
Date / Time: <u>Sune 10/2013</u>			Field Personnel:	J. Ball	
Weather Conditions:	Temp: 20	Wind:	Cloud: / \(\C)\(\C)	PPT: None	PPT in last 24 hrs:

Time:	Description of Activities and Observations
12:30	Assessed TH69 for potential turtle nesting habitat
	Watercourse is ~ 2 m wide and surrounded by
	dense canary reed grass throughout its length.
	Watercourse is bordered by adricultural fields
	(Haw or Wheat) and is also bordered in part
	by Gee Rd. All exposed soils in the area represent
	wet clau depressions within agricultural fields
	that would not provide suitable habitat \$ steep.
	exposed claw banks that would not provide
	suitable habitat. The shoulders of Gee Rd.
	would provide adaptate nesting habitat however,
	the Draft sult criterion does not consider
	readside resting habitat to be significant
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Stantec	Stantec Consulting Ltd. 70 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493	Site Visit Record TH39/TH40		
Project Number 160	950269	Project Name: Niagara Wind Farm		
Date / Time: June	10/2013	Field Personnel: J, Ball		
Weather Conditions	Temp: Wind:	Cloud: PPT: PPT in last 24 hrs: 100% lightram N/A		

Time:	Description of Activities and Observations
13:10	Assessed TH39 \$ TH40 for potential turtle
	nesting habitat, lilatercourse is ~ 3m wide and
	surrounded with dense ranary reed grass. Both
	features are surrounded by Agricultural crops
	on the west and east sides. The partion of
	TH39 that enters woodland 103 is too shaded
	for turtle nesting. Gravel shoulders may provide
	adequate pesting habitat however draft SWH
Contract of	Critérion does not ransider roadsides to be Swith
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Signature: Jame Del	Signature:		
(Field Personnel)		(Project Manager)	
Page of		REV: May, 07	Form 028

Stantec Consulting Ltd. 70 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493			Site Visit Record			
Project Number 60950269			Project Name: Niagara Wind Farm			
Date / Time: June 10/2018			Field Personnel: _	J, Ball		
Weather Conditions:	Temp:	Wind:	Cloud: /OO	PPT: RAIN	PPT in last 24 hrs: N/A	

Time:	Description of Activities and Observations
13:30	Assessed TH41 for potential turtle nesting habitat
	Frature is a canary reed arass meadow marsh
	(isolated), It is surrounded by Agricultural fields
- X	and directly adjacent to an old foundation
	and a large manure nile. A arnuel sandy lane
	provides nesting habitat however the draft criterior
	for SWH does not consider roadside habitat as
	Significant

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(Project Manager)	
REV: May, 07	Form 028

Stantec Consulting Ltd. 70 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493			Site Visit Record TH9 /THIO		
Project Number 1609 502.69			Project Name: Miagara Wind Farm		
Date / Time: June 10/2013			Field Personnel: J. Ball		
Weather Conditions	s: Temp: 20	Wind:	Cloud:	PPT: lightram	PPT in last 24 hrs:

Time:	Description of Activities and Observations
44:18	Assessed TH9 and TH10 for potential turtle
	resting habitat. THIS is no longer a wetland
	and is now a played field for crops. TH9 is
	comprised of 2'separate ponds surrounded by
	dense canary reed grass and agricultural fields
4	The parking area provides suitable nesting habitat
	however the Draft Swith criterion does not include
	drivenaus as SWH 3 piles of exposed clay are
	located By the furthest pond in TH9 however, clay does
	not provide suitable nesting material.
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	(Field Personnel)	
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<b>REV: May, 07</b>	Form 028

Stantec	Stantec Consulting Ltd. 70 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493	Site Visit Record	
Project Number		Project Name: <u>NWRC</u>	
Date / Time:	11,2013	Field Personnel: Melissa Cameron	
Weather Conditions:	Temp:         Wind:           22°C         2-2	Cloud: PPT: $p$ PPT in last 24 hrs: $r$ $r$ $r$ $r$ $r$ $r$ $r$	
Time: Description	of Activities and Observa	ations	]
2:20 TH-4	+5 PL+	os ##Aam 168-174	1
-poud s	urrounded by re	d maple, ach willow thicket	
- piled	shavel to man wes	+ of pourd and arrayal substrate	]
at h	or thwest between	gravel piles and gravel vailway ROV	b
- west e	nd of pand is	dense cathil marsh and shub swany	Þ
	8		1
TH-3	Photo 16	5-167	4
- Wetland	in red maple,	esh, cottonwood thicket with some	
open h	mter (shallow) and	a catail mass.	4
- Skitter	-ded by grovel	boads to west and north, and	
موت ر	they field to s	io_t_	
- ho e	xposed wineral	soil or gravel besides access hoad	
- heavy	(saturated) clay s	soil along ditch at east and	
/	(AI)	J	
* Adjac	ent landonner hot	red that Blanding's are abserved	
i ł	tis eres typ	ically in woods during tuskey hunting se	a.Sa.
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(Field Personnel)	-
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Stantec	Stantec Consulting Ltd. 70 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493	Site Visit Record	
Project Number	·····	Project Name: <u>NWRC</u>	
Date / Time:	u 11, 2013	Field Personnel: McLissa Camena	
Weather Condition	ons: Temp: Wind: 22°C 2	Cloud: PPT: PPT in last 24 hrs: 90% Shun	
Time: Descri	iption of Activities and Observ	vations	
3:20pm Tt	t-5 south Ph	otos 159-164	
- sun	counded by com fiel	ld to west and north, forest to	
	east and sound		
- ex j	ates a lar duara t	begins have been created	
- sid	- sides of ditch of west side of wetland		
S	sey bear field, are exposed clay -steep slope (>1:1)		
	TH-5 hort, Photos 155-158		
- ea	st side is cond	Fold	
- no	the is forest times	itizing to Logdide meadows	
	. this dense desid	mans forest	
h	expressed soil		
TH-	5 sector (small se	ture action)	
- @@	- as field and forest on all sides		
	0		

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(Field Personnel)
Page _2_ of _5

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Stant Project Num Date / Time: Weather Co	Stantec Consulting Ltd. 70 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: $(519) 836-6050$ Fax: $(519) 836-2493$ ber June 12 2013 onditions: Temp: Wind: 2A $^{\circ}$ C	Site Visit Record          Project Name:       NWRC         Field Personnel:       Meticsa         Cloud:       PPT:         20%       Ø	
Time	Description of Activities and Ob	4	
Time:	Description of Activities and Observ	ations	
A.LO	1H-19 as Andre	Thotos 145 - 154	
	gracy meadow with me	endenne stream in center	
	- agridultural tields to	horts and so the Caltivated and	
	Pasture )		
	- Dobala in headow	to horth of dream in pasture	
	- heard them	4712207	
	4763287		
	-the last piles abound	decart al SH-T	
	- BOBD - brured a when	100 11 0622332	
	DODO DESCRETA de return	4763292	
	TH-46		
	dence grass - marsy w turtle habitat	etland does not provide very good	
- 1	around entire perimeter	, meadow/hay and aging. there & fields	
L			

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Project NumberProject Name:NURC Date / Time:III _ 2013Field Personnel:Nelses a Cancera Weather Conditions: Temp:III Old Cloud: PPT:PPT:PPT:PPT: in last 24 hrs: Z3 ° cIII 75 % J 5 mm Time: Description of Activities and Observations 5:40pm TH 2.b Photos (43 - 145 - Linear method to sont is grassy channel summended by and Relds to sont is grassy channel summended by and load mactures weethord have meadows to harts and eact i can Relds to soli is weether and eact i can Relds to soli is weether 	Stantec	Stantec Consulting Ltd. 70 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493	Site Visit Record
Date / Time:       June 11, 2013       Field Personnel:       Metassa Connersa         Weather Conditions:       Temp:       Wind:       Cloud:       PPT:       PPT in last 24 hrs:         Z3°C       1       75 %       Ø       7 5 mm         Time:       Description of Activities and Observations       75 %       Ø       7 5 mm         S:40pm       TH 2.6       Photos       143 - 145       9         - Unease wethood to contend to contend to spaces, cleanel surrounded to monitors       1000000000000000000000000000000000000	Project Number_		Project Name: <u>NWRC</u>
Weather Conditions:       Temp: 23°C       Wind: 1       Cloud: 75%       PPT: PPT: 5%       PPT: PPT in last 24 hrs: 75 mm         Time:       Description of Activities and Observations       5       75%       Ø       75mm         5:40pn       TH 2b       Photos       (43 - 145)       145       145       145         - linear workland to so the sone gavesy channel surrounded by com fields       one fields       one fields       one fields       one fields         - could and norther       weather       fields to so fle a weather       one fields       one fields         - barr       and east       fields to so fle a weather       one fields       one fields         - barr       and lows       flipse       or so fle add       one fields       one fields         - barr       and lows       flipse       or so fle add       one fields       one fields         -       and cost       and cost       one fields       one fields       one fields         -       and cost       flipse       one fields       one fields       one fields         -       and cost       flipse       flipse       one fields       one fields         -       -       -       -       -       -       -	Date / Time:	June 11, 2013	Field Personnel: McGssa Camehan
Time: Description of Activities and Observations 5:40pm TH 26 Photos 143 - 145 - (incore worthand to south is graces, channel currended by - control and horthers we then have meadow to north and east, con Relds to so the a weet - ban a vallows flying overhead (4)	Weather Conc	litions: Temp: Wind: 23°C I	Cloud: PPT: PPT in last 24 hrs: 75 % Ø 75 mm
5:40pm TH26 Photos 143 - 145 - linear wetherd to south is gracsy channel surrounded by con fields - cutal and horthur wetherd have meadow to horth and east con fields to so the 4 west - ban shallows flying overhead (4)	Time: Des	cription of Activities and Obs	ervations
- linear wetland to contr is gracey channel surrounded by where fields - control and northur wethand have meadow to north and east con fields to so the 4 west - bar a settowe flying overhead (4)	5:40	TH2L PLL	142 - 145
Contract method to south is grace, channel summeded by com fields - central and norther- wethout love weadow to north and east, com fields to south a west - han sizellows fing overhead (4)		the day	
- centel and worther weltland have weadow to north and east , cons fields to sou the sweet - base southours Flying overhead (4)		con fields	is grassy channel surrounded by
and eact , ion fields to south & west - bar southours flying overhead (4)	dame.	cantal and monther-	- wetland have incadant to harty
- ban availours Flying overhead (4)		and east, con fie	Ids to somply a wrest
		ban anallows FLi	e prechad (4)
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Quality Control: This form is complete () & legible ().	
Signature: Mehan Canun	Signature:
(Field Personnel)	-
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(Project Manager	r)
REV: May, 07	Form 028

Stantec Consulting Ltd. 70 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493	Site Visit Record
Project Number	Project Name: <u>NWRC</u>
Date / Time: June 11 2013	Field Personnel: McCssa Camena
Weather Conditions:Temp: 22°CWind: O	Cloud: PPT: PPT in last 24 hrs: 80% Ø 75mm
Time: Description of Activities and Observ	ations
6:00ph TH42 Photos	- 142
- wetland is durise an	LIST MARGE
- meadow and whiste pin	plantation to marty
- com to east west a	-d south
- ma exposed soil be	and cultivated field
- soil is dense, leavy	clar.
· /	/

Quality Control:	This form is complete () & legible ().	
Signature:	Melina, Carne	Signature:
•	(Field Personnel)	
Page 5	of <u>5</u>	

(Project Manager) REV: May, 07 F

Form 028