File No. 160950269



Prepared for: Niagara Region Wind Corporation 277 Lakeshore Road East, Suite 211 Oakville, ON L6J 6J3

Prepared by: Stantec Consulting Ltd. 49 Frederick St., Kitchener, ON N2H 6M7

# Sign-off Sheet

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Prepared by

(signature)

**Janice Ball** 

Terrestrial Ecologist

Reviewed by

(signature)

Shari Muscat, B.A., B.E.S

Project Manager, Environmental Planner



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# 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 8th and June 20th, 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.



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# 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 Migr				
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					
mlsa1	2	SWD3-2 and SWD5-1	Υ	Υ	Υ		
	3	SWD5-1					
mlsa2	n/a	SWD2-2 and FOD7-2	n/a	n/a	Y*		
mlsa3	4	SWD2-3	N	N	Υ**		
mlsa4	5	SWD2-2 and FOD 7-2	N	N	Υ**		

Note: Both criteria must be present for a determination of significance

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.



<sup>\*</sup>Assumed significant due to lack of permissions to access the community to conduct passerine surveys

<sup>\*\*</sup>Assumed significant pending fall passerine surveys

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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, bmc23, bmc25, bmc26, bmc27, bmc28, bmc29, bmc30, bmc31, bmc32, 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



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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 ≥ 25cm DBH;
- Cavity is ≥ 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.

	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



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	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	
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



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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 at			
April 14 2013 14:50-16:15	9	1-2	time of survey)	None / Rain	J. Ball	



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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).



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- 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 photo-document any observed nesting evidence.



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# 3.0 Results

# 3.1 MIGRATORY LANDBIRD STOPOVER AREAS

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				



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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 ≥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 Wind Farm Size (ha) Total # Total # Total # Exit (Accessible cavity Feature ID plots **Notes** cavity survey area in trees / required? required trees brackets) ha Logging occurred in the past as evidenced by BMC1 1.95 10 0 0 No several stumps throughout. BMC6 6.69 (2.84) 10 0 0 No BMC7 2.78 10 0 0 No Very thick understory, young to mid-age BMC8 2.80 (2.38) 3 10 6 No FOD/SWD. Lots of decay class 5 and SWT/SWD; very wet and very thick BMC9 understory. A few 4.40 (1.85) 10 2 4 No decay class 5 and Searched **Entire** 0 BMC10 2.46 (0.23) 0 No Accessible Area 0 BMC11 2.06 (1.93) 10 0 No Searched BMC13 **Entire** 0 0.57 0 No Area BMC14/16 lumped into one survey since they were all BMC14/16 4.28 10 0 0 No directly adjacent to each other but with a different ELC code. Searched **Entire** BMC17 0.35 1 2.86 No Area BMC18 0.13 Searched 0 0 No



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
		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 midaged to mature poplar. Downed woody debris throughout with large amounts of brush piles from adjacent clearcut.
BMC33	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 Wind Farm						
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



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	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



Results July 23, 2014

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.



Results July 23, 2014

## 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: I	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		
	May 2	None	agricultural field.	snakes and up to a		
SH2	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	Northern Brownsnake		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		
	May 2	None	pile of logs/posts	watercourse with a		
SH4	May 21	None	and an old bridge foundation.	focus on potential 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 at the edge of		Searched the hibernacula, dryer			
SH6	May 2	None	agricultural field	areas of the FOD and		
	May	None	and FOD.	the edge of the agricultural field.		



Results July 23, 2014

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	Surveyed from the road as we did not	
	May 2	None	within an	have permission to	
SH7	May 21	None	inaccessible	inaccessible accultural woodland. Obse	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.



Table 3.9: Turt	Table 3.9: Turtle Nesting Habitat Summary				
Feature ID	Habitat Description	Candidate SWH? Y/N			
TH3	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.	N			
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.	N			
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.	N			
TH10	No longer a wetland. Converted to cropland.	N			
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.	N			
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,	N			



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.	N		
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.	N		
TH29	Watercourse with dense canary reed grass and cattails and surrounded by agricultural fields. Comfort Rd. provides artificial turtle nesting habitat along the shoulder.	N		
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.	N		
TH39	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.	N		
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.	N		
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.	N		



Results July 23, 2014

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.	N		
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.	N		
TH46	Dense, grassy, meadow marsh does not provide very good turtle habitat. No exposed soil. Trees, meadow, agricultural field around entire perimeter.	N		
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.	N		
TH69	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.	N		

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.



Feature	Potential Candidate Significant Wildlife Habitat?	Candidate Significant Wildlife Habitat?	Significant Wildlife Habitat?
Migratory L	andbird Stopover Areas		
mlsa3	N/A	Yes	No
mlsa4	N/A	Yes	No
Bat Matern	ity 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)



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 Over	wintering Habitat		
to1	N/A	Yes	No
Snake Hibe	ernacula		
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 Nestii	ng 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			



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.



References July 23, 2014

# 5.0 References

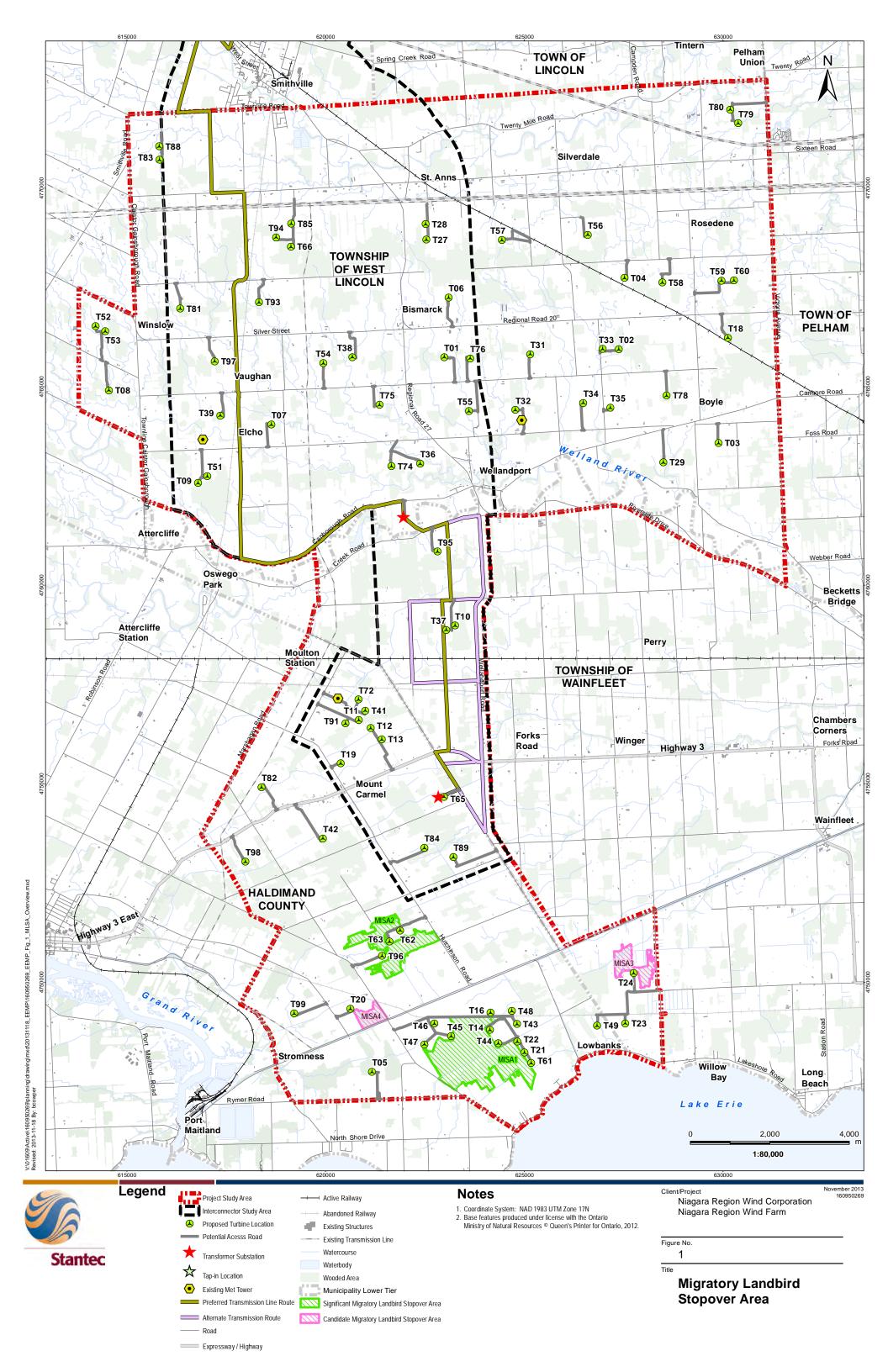
- Ontario Ministry of Natural Resources. 2010. Birds and Bird Habitats: Guidelines for Wind Power Projects. 32pp.
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- Stantec Consulting Ltd. 2013. Niagara Region Wind Farm: Environmental Effects Monitoring Plan for Wildlife and Wildlife Habitat. Prepared 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.

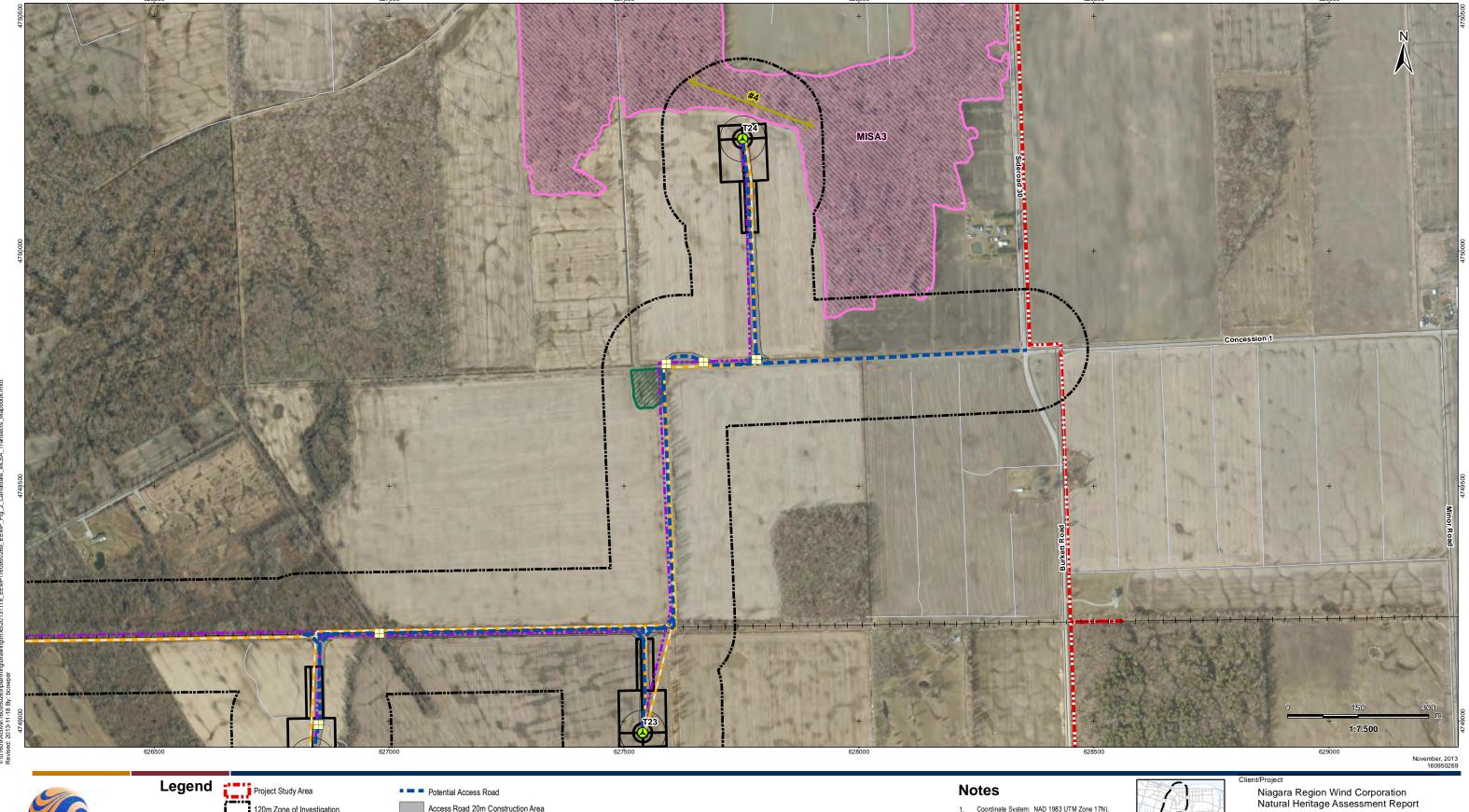


Appendix A Figures July 23, 2014

Appendix A Figures









120m Zone of Investigation Access Road 20m Construction Area Migratory Bird Transect Proposed Turbine Location Turbine Blade Length Migratory Landbird Stopover Area Proposed Culvert Temporary Laydown Area Collector Lines – Underground or Overhead

Fibre Optic Line

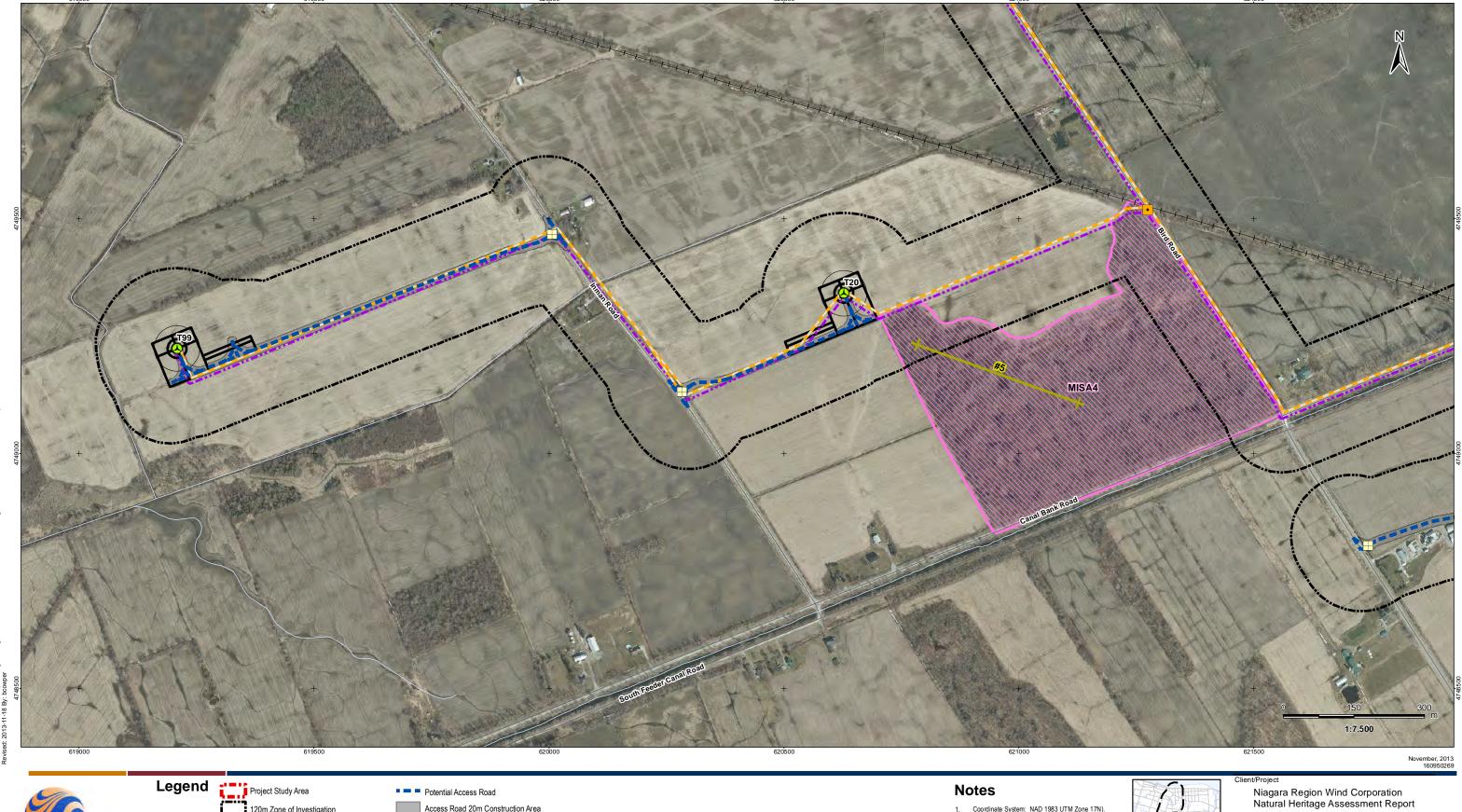
- 1. Coordinate System: NAD 1983 UTM Zone 17N).
- Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2011.
- 3. Orthoimagery © First Base Solutions, 2010.



Figure No.

2.1

Candidate Significant
Migratory Landbird Stopover
Area Transects



Stantec

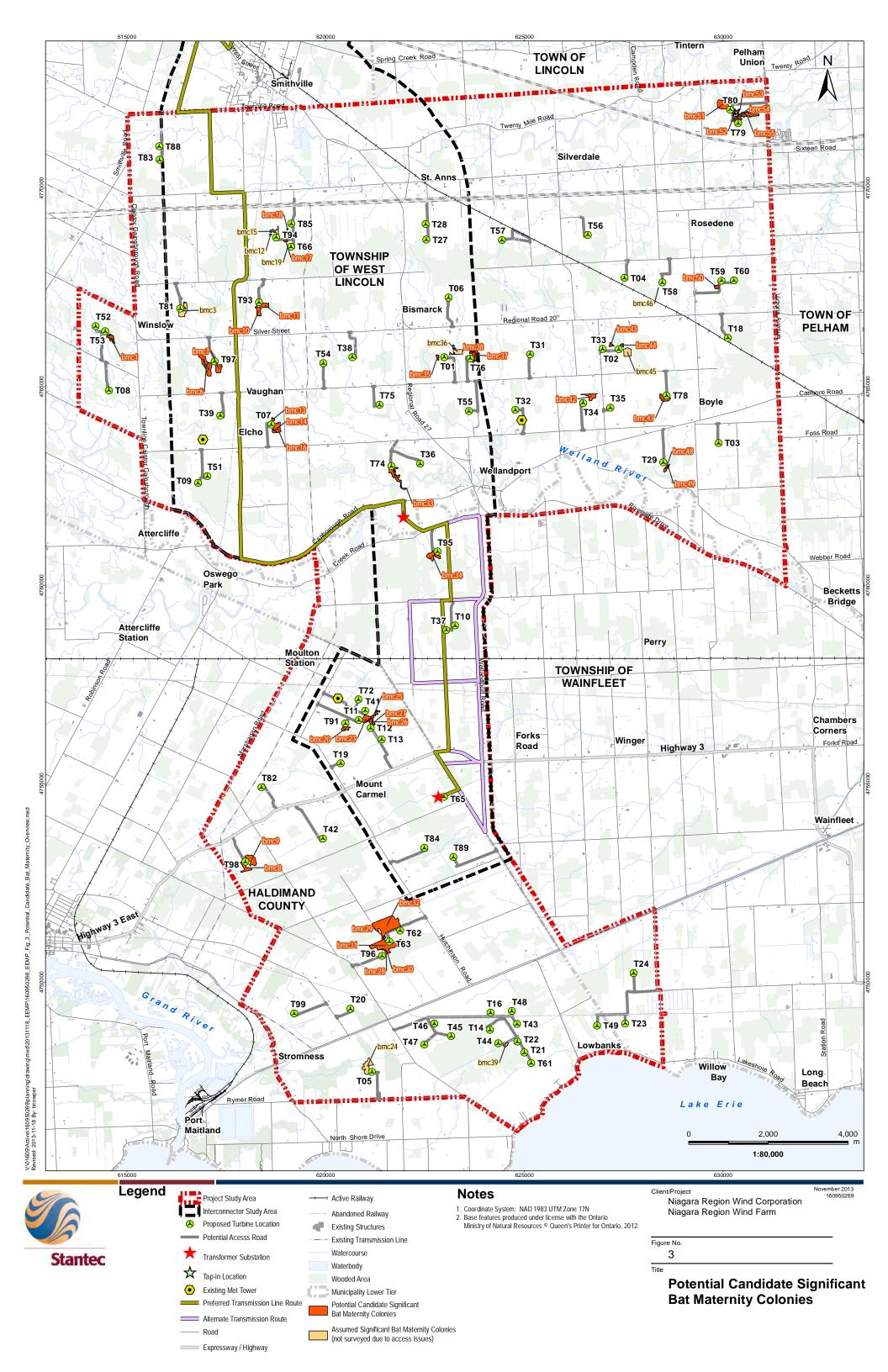
120m Zone of Investigation Access Road 20m Construction Area Migratory Bird Transect Proposed Turbine Location Turbine Blade Length Migratory Landbird Stopover Area Junction Box Proposed Culvert Temporary Laydown Area Collector Lines – Underground or Overhead Fibre Optic Line

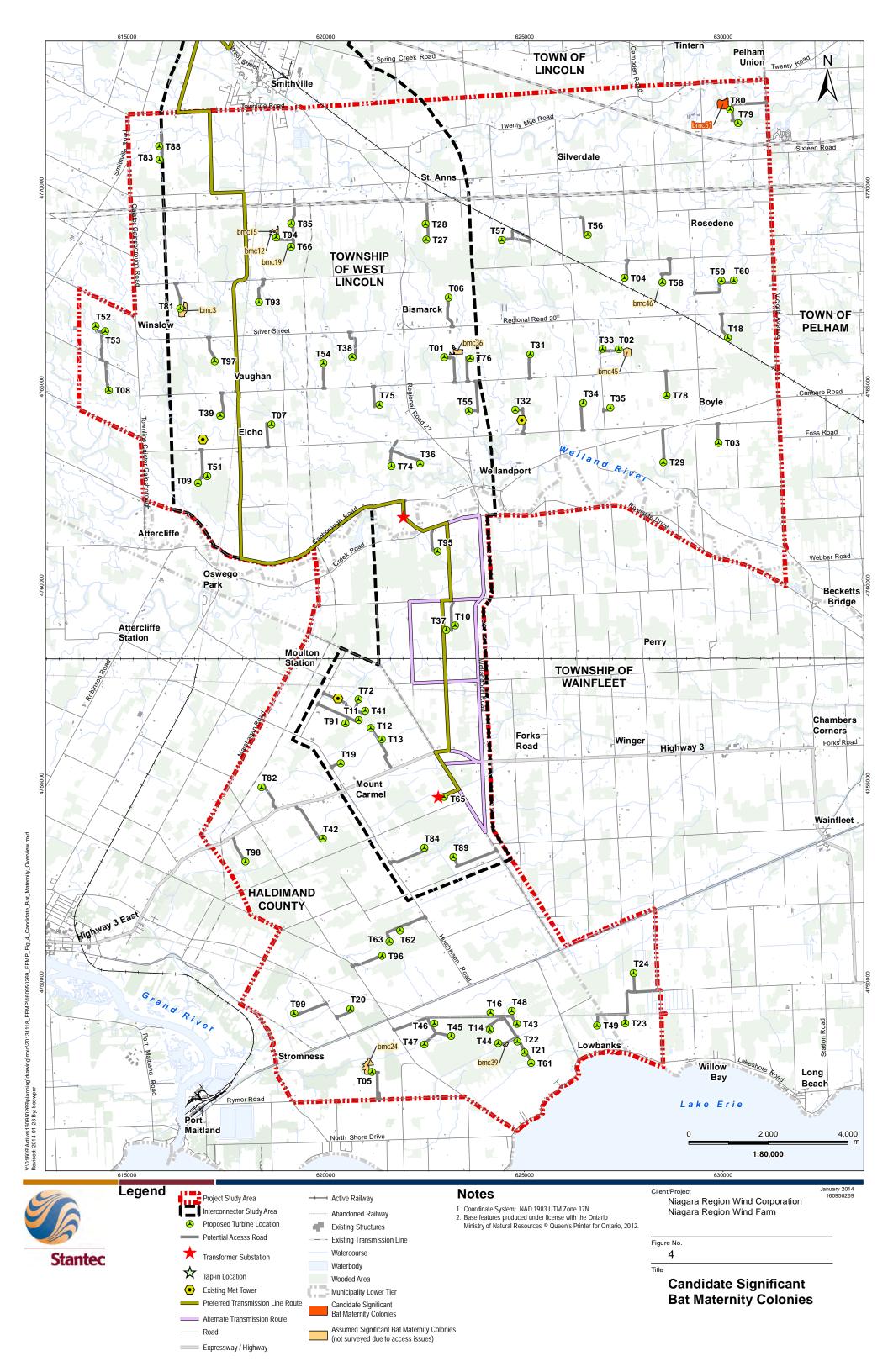
- 1. Coordinate System: NAD 1983 UTM Zone 17N).
- Base features produced under license with the Ontario Ministry of Natural Resources © Queen's Printer for Ontario, 2011.
- 3. Orthoimagery © First Base Solutions, 2010.

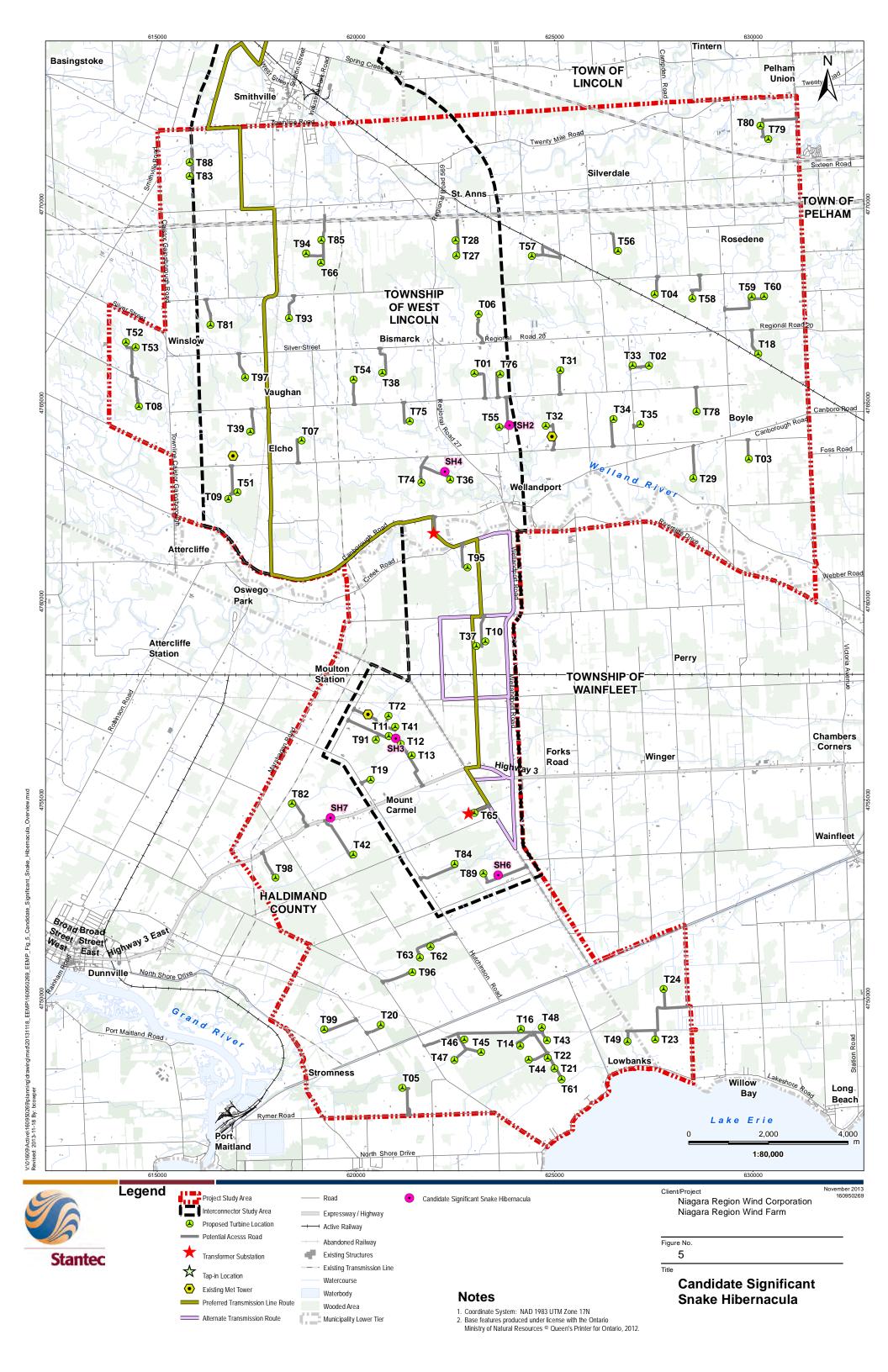


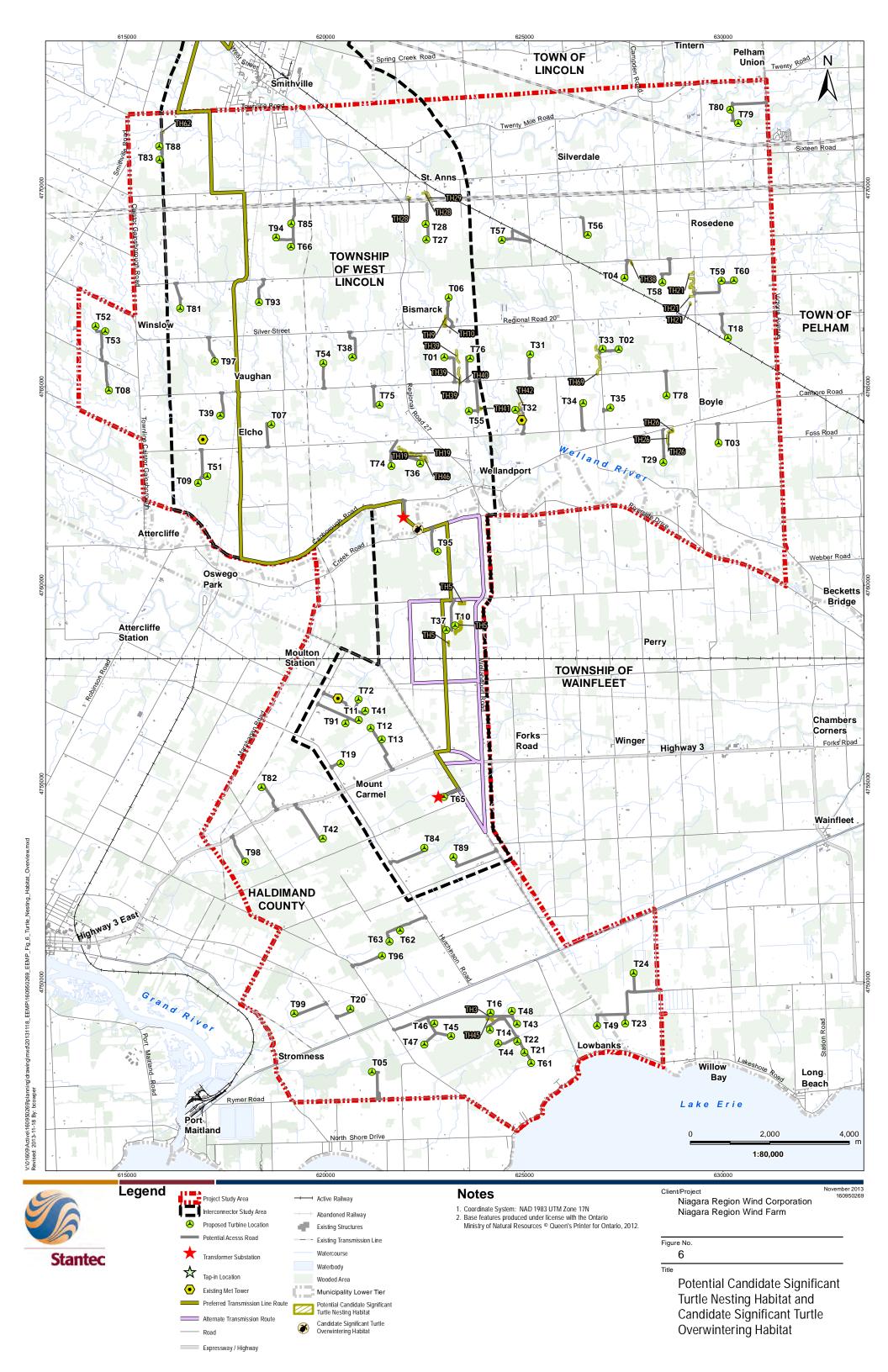
2.2

Candidate Significant
Migratory Landbird Stopover
Area Transects









## PRE-CONSTRUCTION MONITORING REPORT NIAGARA REGION WIND FARM

Appendix B Tables July 23, 2014

Appendix B Tables



Table 1. Migratory Landbird Stopover Area Species List

							Local Status
COMMON NAME	SCIENTIFIC NAME	ONTARIO STATUS	GLOBAL STATUS	COSSARO	COSEWIC	AREA SENSITIVITY (ha)	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

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## PRE-CONSTRUCTION MONITORING REPORT NIAGARA REGION WIND FARM

Appendix C Field Notes July 23, 2014

Appendix C Field Notes





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)

Stantec	Stantec 14x: (319) 000-2490			(1 OT OBE IN 1 OD & 1 ON COMMICIATILES DIVET)			
Project Number:	16095026	9	Project Name:	NRWC			
	April 18, 2	03 4:30 TIME (start)	5:30 TIME (end)		d Personnel		
Weather Conditions:	26°	a	50%	Ø	7-Storms		
	TEMP (°C)	WIND	CLOUD	PPT	PPT (in last 24 hrs)		

Criteria for Cavity Tree Tally Inclusion:  $\ensuremath{\square}$  Cavity tree is  $\geq$  25 cm DBH

NOTE: All criteria must be met in ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied ☑ 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 #: BMC50 Feature Size (ha): No. of Plots to Survey1:	Feature #:
--------------------------------------------------------------	------------

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 01	(0)	0629810/4767494	
Plot 02	1	0629832/4767525	
Plot 03	1 (5)	0629867/4767511	
Plot 04	(0)	06298831 4767509	
Plot 05	1 (0)	062986 / 4767501	
Plot 06	•	0629863 / 4767496	
Plot 07	1	0629832 / 4767481	
Plot 08	1 (2)	0629837 / 4767494	
Plot 09	• 0	0629824 4767511	
Plot 10	1	0629814 4767518	
Plot 11		1	
Plot 12		/	
Plot 13		1	
Plot 14		1	
Plot 15		1	
Plot 16		/	
Plot 17		/	
Plot 18		/	
Plot 19		/	
Plot 20		/	
Plot 21		/	

Page 1 of 2 Signature:	Mataheara
	(Field Personnel)

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(Project Manager)

Plot No.	Total No. of Cavity Trees (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:		Density Calculation: (use formula provided²)	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 =  $\frac{\cot 4 \# cavity trees}{(\# plots \times 0.05 \text{ ha})}$ Plots = 0.05 ha or 12.6m radius. Select plots randomly.

2 3 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

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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Signature:

(Project Manager)



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# Bat Maternity Roost Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Stantec			the same of the sa		
Project Number:	160950269		Project Name: NRWC		
	April 18, 2013	3:00	4:00	Natalie La	rava
	DATE	TIME (start)	TIME (end)	Fiel	d Personnel
Weather Conditions:	26°	2-3	75%	Ø	T-Storms
	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied 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 48/49 Feature Size (ha): 12 ha No. of Plots to Survey1:

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 177)	Comments
Plot 01	1 (6)	0628555 14762807	
Plot 02	1 0	1628586 14762827	
Plot 03	/ Ø	0628573 14762835	
Plot 04	/ 8	0628597 14762839	·
Plot 05	•	0628582 14762860	
Plot 06	(2)	0628574 14762875	
Plot 07	1 0	0628593 14762918	
Plot 08	• ①	0628585 1 4762933	
Plot 09	1	x28605 14762932	
Plot 10	1 (8)	0628596 14762960	
Plot 11		/	
Plot 12		/	
Plot 13		1	
Plot 14		/	
Plot 15		/	
Plot 16		/	
Plot 17		/	
Plot 18		/	
Plot 19		/	`
Plot 20	`	/	
Plot 21		/	

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•	(Field Personnel)

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Signature: (Project Manager)

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

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

1 2 3 4 5 6

1 Healthy, live tree
2 Declining live tree, part of canopy lost

Figure: Decay classification system for cavity trees (Watt and Caceres, 1999)

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

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

5 Older dead tree, 90 percent of bark lost, few branch stubs, broken top

3 Very recently dead, no canopy, bark intact, branches intact4 Recently dead, bark peeling, only large branches intact

Note: this feature (s)
was extended Fods extended
South, so some plots surveyed
occurred in this portion of
the feature

Page 2 of 2 Signature:

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(Project Manager)



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# Bat Maternity Roost Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

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	5	

Project Number:	160950269		Project Name:	NRWC	,
	April 18,203	1:05pm	2:15 pm	Natalie Lea	wa
	DATE	TIME (start)	TIME (end)	Field	l Personnel
Weather Conditions:	32°C	3	0 %	0	T-storms
	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied 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): 3, 3 ha No. of Plots to Survey1: 10

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 177)	Comments
Plot 0.1	/ @	0628581 / 47,64681	7 Portion of feature very wed
Plot 02	•	0628534 14764683	In vernal pooling thing how
Plot 03	•	0628567 14764667	
Plot 04	1 8	0628503 14764673.	
Plot 05		0628476 14764673	
Plot 06	/ 8	0628480 14764717	
Plot 07	1 (6)	0628457 14764726	
Plot 08		0628452 14764731	
Plot 09	/ Ø	0628442 14764736	
Plot 10		0628430 14764760.	
Plot 11		/	. 19
Plot 12		/	
Plot 13		/	
Plot 14		/	Pr.
Plot 15		/	·
Plot 16		/	
Plot 17		/	
Plot 18		/	
Plot 19		1	
Plot 20		/	
Plot 21		/	

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Signature:	ataheara
7-6	(Field Personnel)

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Signature:

(Project Manager)

Plot No.	Total No. of Cavity Trees (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		Density Calculation: (use formula provided <sup>2</sup> )	6 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. Select plots randomly.

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

Stick next on north edge of woodlot 17T. 0628494, 4764726

1 Healthy, five 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

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

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taheara

(Field Personnel)

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Signature:

(Project Manager)



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# Bat Maternity Roost -Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Stantet					
Project Number:	16095026	7	Project Name:	NRWC	
	April 18,2013	11:40	12:35	Natalie	Leara.
	DATE	TIME (start)	TIME (end)	Field	l Personnel
Weather Conditions:	22	3	75%	Ø	T-Storms
	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied 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-42 Feature Size (ha): 2.85 No. of Plots to Survey1: 10

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments			
Plot 01	/ Ø	0626638 1476Hbb	taccuracy 17m. Forest bas large amounts of			
Plot 02	•	0626665 14764680	regeneration in understorey			
Plot 03	1 0	0626697 14764702	-accuracy9m			
Plot 04	• (1)	0626655 14764676.				
Plot 05	1 0	0626764 14764750	V			
Plot 06	1 6	0626768 1 4764787				
Plot 07	1 (0)	0626723 / 4764791				
Plot 08	(1)	0626708 / 4764774				
Plot 09		0626686 14764746				
Plot 10	1	062648 14764736				
Plot 11		1				
Plot 12		/				
Plot 13		/				
Plot 14		/				
Plot 15		/				
Plot 16		/				
Plot 17		/				
Plot 18		/				
Plot 19	A 100 A	/				
Plot 20		/ •				
Plot 21		/				

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(Field December)	_

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Signature:

(Project Manager)

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

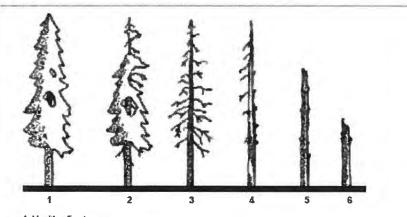
(use formula provided<sup>2</sup>)

<sup>1</sup>No. of Plots: Sites ≤ 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 =  $\frac{total \# cavity trees}{(\# plots \times 0.05 \text{ ha})} = \frac{total \# cavity trees}{(\# plots \times 0.05 \text{ ha})} = \frac{1}{2}$ 

Select plots randomly.

**Cavity Trees:** 



1 Healthy, five tree

2 Declining five tree, part of canopy lost

3 Very recently dead, no canopy, bark intact, branches intact

**Total No. of Cavity Trees** 

- 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

Figure: Decay classification system for cavity trees (Watt and Caceres, 1999)

-CHFR - Woodpecker sp. -RTHA

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

Page 2 of 2
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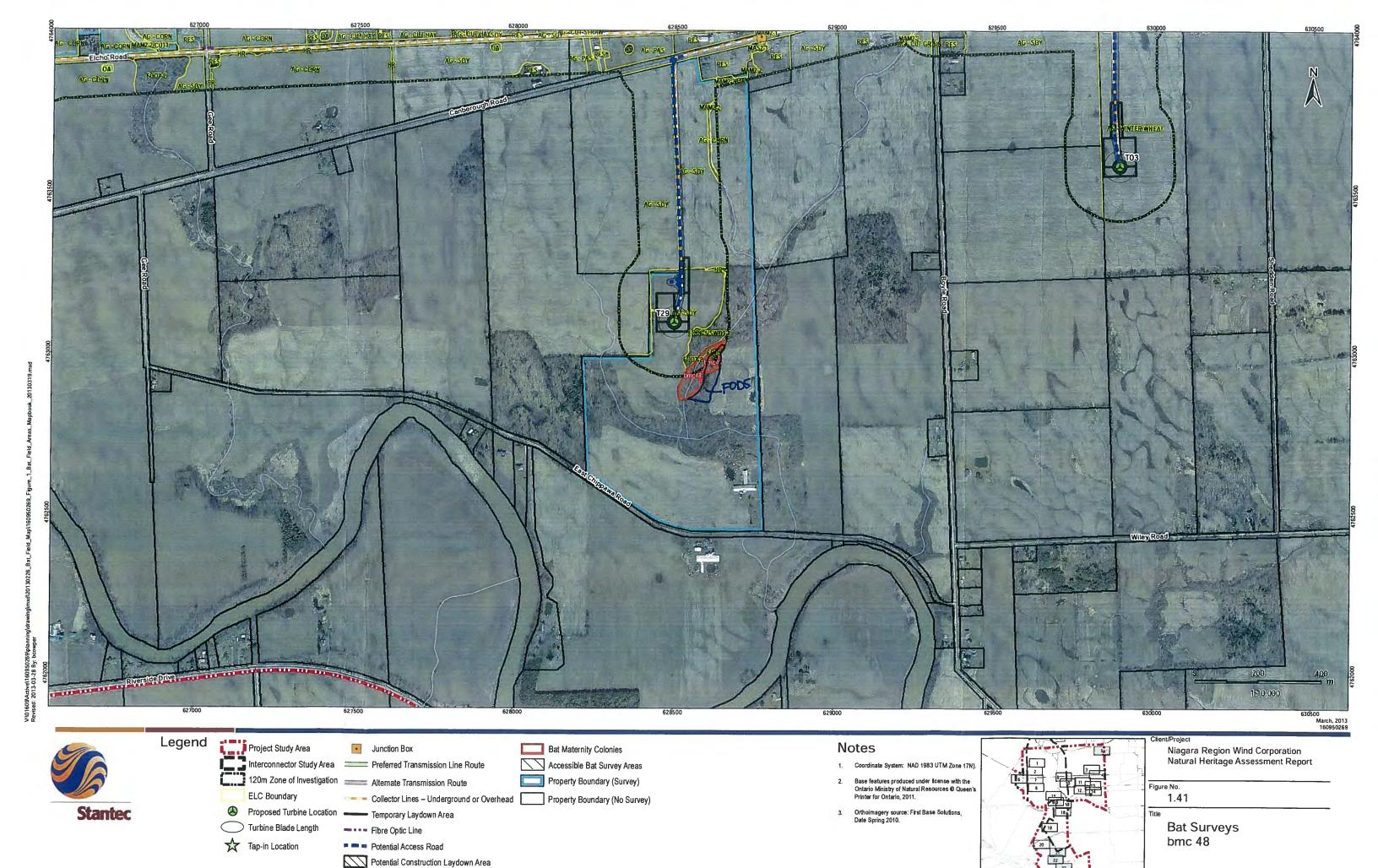
(Field Personnel)

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Signature:

(Project Manager)



Transformer Substation



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# **Bat Maternity Roost -Cavity Tree Density Plots** Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

C	homan d	
1	ransı	TEMP
hadd		A. Short Stee

Project Number:

60950269 Project Name:

NRW C

1:15 pm 2.40 m TIME (start) TIME (end) Field Personnel 50% Weather Conditions: CLOUD WIND 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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied 🗹 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 #:

BMC5

Feature Size (ha): 6.45 No. of Plots to Survey1:

Plot No.	Total No. of Cavity Trees (based on criteria above)	• Plot Center UTM (Zone: 17N)	Comments
Plot 01	1 0	0630000 / 4772154	lots of shagbark lickon - plot
Plot 02	2	0630070 / 4772 180	9
Plot 03		0629973 / 4772225	
Plot 04	•	0629895 / 4772231	
Plot 05	:: (4)	0629854 / 4772214	
Plot 06	1 (8)	0629910 / 4772121	
Plot 07	•	0629915 / 4772112	
Plot 08	: (3)	0629953 14772039	
Plot 09	1 0	0630002/4772069	
Plot 10	•	0630099 / 4772056	·
Plot 11		1	
Plot 12		/	
Plot 13		/	
Plot 14		1	
Plot 15		/	
Plot 16		/	
Plot 17		/	
Plot 18		/	
Plot 19		/	
Plot 20		/	
Plot 21		/	

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(Project Manager) REV: 2013-03-13

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		/	
Plot 23		/	
Plot 24		/	
Plot 25		/	
Plot 26		/	
Plot 27		1	ç
Plot 28		/	
Plot 29		/	
Plot 30		/	
Plot 31			
Plot 32		1	
Plot 33		1	
Plot 34		1	
Plot 35		1	
TOTAL No Cavity Trees		Density Calculation: (use formula provided²)	Z-6 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. 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.

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

Signature: Mataheara
(Field Personnel)

Quality Control:This form is complete \( \mathbb{Q}\) & legible \( \mathbb{Q}\). Signature:

(Project Manager)



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# Bat Maternity Roost Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

<ul><li>Stantec</li></ul>						
Project Number	ber: 160950269		Project Name:	NRWC		
	Apr 23,7013 2:45		4:00	N. Leava & M. Cameron		
	DATE	TIME (start)	TIME (end)	Field	d Personnel	
Weather Conditions:	20"		50%	Ø	Ø	
	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied 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 #: BMC52-55 Feature Size (ha): 64 No. of Plots to Survey1:

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 17T)	Comments
Plot 01	/ Ø	0630291 /4771991	- Accuracy of 8m
Plot 02	/ 8	0630331 / 4771933	- Combined BMC 52-55)
Plot 03	/ Ø	0630350 / 4771947	upland Community
Plot 04	•	0630364 14771860.	worked win swo community:
Plot 05	. 0	0630416 / 4771827	FOD communities NOT as
Plot 06	1 0	0630421 / 4771807	Agamented as depicted on
Plot 07	1 0	0630398 14771805	map(ELC)
Plot 08	• ()	0630508 14771839.	/*
Plot 09	/ 0	0630556 14771853	
Plot 10	/ Ø	0630669 14771861	
Plot 11		/	
Plot 12		/	- 21
Plot 13		/	
Plot 14		/	
Plot 15		/	3
Plot 16		1	
Plot 17		/	
Plot 18		/	
Plot 19		/	
Plot 20		/	
Plot 21		/	

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	(Field Percental)

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Signature:					

(Project Manager)

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

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

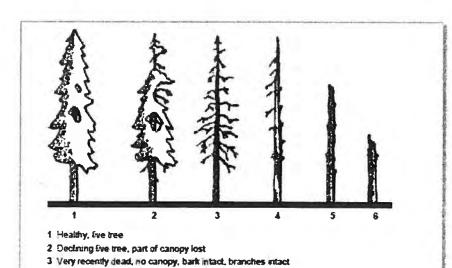


Figure: Decay classification system for cavity trees (Watt and Caceres, 1999)

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

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

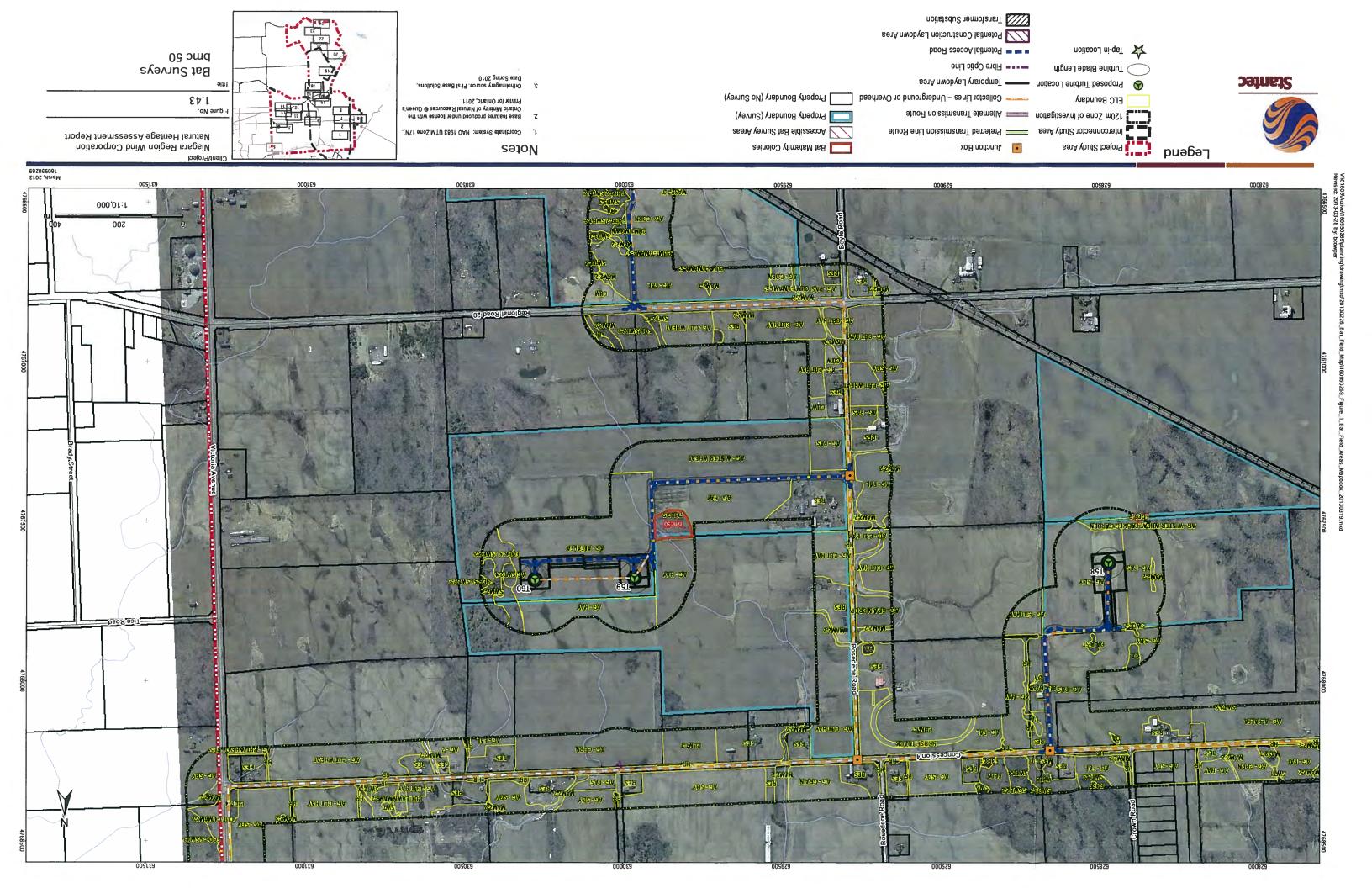
5 Older dead tree, 90 percent of bank lost, few branch stubs, broken top

4 Recently dead, bank peeling, only large branches intact

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(Field Personnel)

(Project Manager)





Stantec

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# Bat Maternity Roost -Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Project Number:	Niagara W.	ind Farm	Project Name:	1609502	69
	Apr 14/2013	10:45am	11:45am	J. Ball	1 - 2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -
	DATE	TIME (start)	TIME (end)	Field F	Personnel
Neather Conditions:	7°C	2	50%	NONE	RAIN
	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied ☑ 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)

reature #.	reature Siz	e (na). 1.95 No. of Plots to Surv	ey . 10	
Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 17T)	Comments	The york of
Plot 01	0	0614663 14766132		1.C. icid
Plot 02	0	0614708 / 4766137		Street la
Plot 03	0	0614741 14766195		17-51 1-1075-0
Plot 04	0	061471514766168		
Plot 05		06146671 4766149		014
Plot 06	0	06146421 4766188		
Plot 07	Ò	06146301 4766242		
Plot 08	0	061463814766331		
Plot 09	0	06146581 4766406		
Plot 10	0	0614686 1 4766465		S. Eliza
Plot 11	0			
Plot 12	Maria Maria	1		
Plot 13				
Plot 14			MANUFACTURE OF THE SECOND STATE OF THE SECOND	
Plot 15		1		
Plot 16		1	The man har year of the second	
Plot 17		W - /	A TOTAL CONTRACTOR OF THE SECOND	in- d
Plot 18		The second for		- Land State
Plot 19		/ war, we	the standard and analysis of the	THE STATE OF THE S
Plot 20		1		
Plot 21		1		

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Signature:

(Project Manager)

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		1	Service Triff agreed Triff agreed to the Committee of the
Plot 23			No. 6 and other services and a service of the services of the
Plot 24			
Plot 25			
Plot 26			4
Plot 27		1.	The street of th
Plot 28			100
Plot 29		i La signati e sa	Veseni
Plot 30	THE REPORT NAMED AND THE PROPERTY OF	SECTION OF THE PROPERTY OF THE	2 0.05
Plot 31	Constitution of the state of th	The second of the second secon	V 200 100
Plot 32		PA 4 10-67 1 1 1 1 1 2 1 1 2 2 1 2 2 2 2 2 2 2 2	Section of the sectio
Plot 33	(Phiatics and	1	a contrary contrary of the second second second
Plot 34			
Plot 35		/	P16; E2
TOTAL N		Density Calculation	

(use formula provided2)

 $^{1}$ 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. Select plots randomly.

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

1 2 3 4 5 6

1 Healthy, live tree

**Cavity Trees:** 

2 Declining live tree, part of canopy lost

- 3 Very recently dead, no canopy, bank intact, branches intact
- 4 Recently dead, bank 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.

several chorus
frogs calling in
each waterbody
within the woodlot
I wood frog heard
I woodcock observed
logging occurred in the
past as evidenced
by several large
stumps throughou

Page 2 of 2
Signature: (Field Personnel)

Quality Control:This form is complete  $\square$  & legible  $\square$ .

Signature:

(Project Manager) REV: 2013-03-13



Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050

# Bat Maternity Roost -Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Stantec	Fax: (519) 836-2493			
	1 (	_		

Project Number:	160950	269	Project Name:	Niagara Wi	nd Farm
	Apr 14/2013	12:00 pm	12:40pm	J. Bal	24.1epa 1
	DATE	TIME (start)	TIME (end)	Field Pe	ersonnel
Weather Conditions:	7°C		80%	NONE	RAIN
	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied ☑ 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 #:	-6	Feature Size (ha):	6.7	No. of Plots to Survey <sup>1</sup> :	10
	70.4.1 NT C	Caratta Thank			

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 01	0	061694314765702	\$CHIAN
Plot 02	0	061695214765648	
Plot 03	. 0	061698514765592	
Plot 04	ð	0617012' 4765569	
Plot 05	0	061700014765551	
Plot 06	0	0616991/4765502	
Plot 07	0	061706014765489	
Plot 08	0	0617041/4765434	
Plot 09	0	06170801 4.765459	
Plot 10	0	06170801 4765525	
Plot 11			
Plot 12		,	
Plot 13			
Plot 14		NUMBER OF THE PROPERTY OF THE	Control of the Contro
Plot 15			Table A Sales
Plot 16			IN SAME SECOND SECOND
Plot 17		1	
Plot 18		Abyte Viscous PV U.S.	An
Plot 19		1 / Tenans	Annua rea heanti Mesamaretta artenanti (1908)
Plot 20		1	
Plot 21		ř I	

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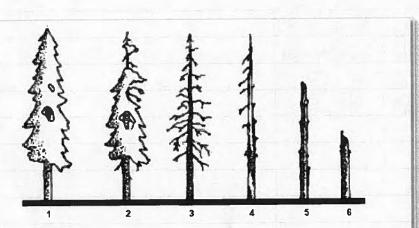
(Project Manager) REV: 2013-03-13

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22	deline especia	1	T 44
Plot 23			
Plot 24		1	Samuel Comme
Plot 25		1	
Plot 26			
Plot 27	1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1	1	Visit (Care Spanish
Plot 28			
Plot 29		al comment and	New York
Plot 30		1 (F 10.117)	IENT
Plot 31	WASHINGA RES	2)	100 12
Plot 32		and the second second	Principle ships
Plot 33	17.000.000	I and a second	Children an granta a sact and as wall
Plot 34		1	10.10[9
Plot 35			7 SO 645
TOTAL N		Density Calculation: (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.



1 Healthy, live tree

- 2 Declining live tree, part of canopy lost
- 3 Very recently dead, no canopy, bank intact, branches intact
- 4 Recently dead, bank 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.

Page 2 of 2 Signature:

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Signature: (Project Manager)



Stantec Consulting Ltd.

# **Bat Maternity Roost -Cavity Tree Density Plots Data Form**

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

owniec consuming	-Lu
1 - 70 Southgate Dri	ve
Guelph, ON	
Canada N1G 4P5	
Tel: (519) 836-6050	
Eav. (510) 836 2403	

				997 (1973)
16095026	59	Project Name:	Niagara	Wind Farm
Apr 14/2013	12:45	1,30	J. Bal	25 las
DATE	TIME (start)	TIME (end)	Field Pe	ersonnel and a l
7°C		80%	NONE	RAIN
TEMP (°C)	WIND	CLOUD	PPT	PPT (in last 24 hrs)
	7°C	7°C   1	Apr 14/2013 12:45 130 DATE TIME (start) TIME (end) 7°C 1 80%	7°C   80% NONE

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

NOTE: All criteria must be met in ☑ Cavity is ≥ 10m 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 #: Feature Size (ha): No. of Plots to Survey1:

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 1771)	Comments
Plot 01	0	061725414765522	be tak!
Plot 02		061725914765472	37 to 27
Plot 03	Ŏ	061726814765443	100 S (Ver)
Plot 04		06172641476538	
Plot 05	O	061729014765377	
Plot 06	0	0617347/4765410	
Plot 07	. 0	06173451 4765466	
Plot 08	C	061735014765502	
Plot 09	0	061737114765538	
Plot 10	0	061733414765539	
Plot 11			
Plot 12			
Plot 13			
Plot 14		#114220 m25452 m294	BATTATTON THE PARTY AND SET IN CHARGE TO LIVE TO LIVE TO CONTRACT OF CONTRACT
Plot 15	7 10x	1	PW STAFFER
Plot 16			
Plot 17		I I	Partie from the Grantina making of the last a
Plot 18		Francisco de la composición dela composición de la composición de la composición de la composición de la composición dela composición dela composición dela composición de la composición dela composición dela composición dela composición dela composición dela composición dela compos	The state of the s
Plot 19		1 millionia	Englishment of the control of the Co
Plot 20	n 5	1	
Plot 21		1	

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Signature:

(Project Manager) REV: 2013-03-13

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22	100000000000000000000000000000000000000	- 1	The state of the s
Plot 23	PRINTER MANUFACTURE	10 Le 1 (200)	569 35k
Plot 24			
Plot 25			
Plot 26		A.B. Sec. 1	A S
Piot 27			Westing Constitutes
Plot 28			
Plot 29	1	all radgements	VEO E
Plot 30	A PRINCIPLE STATE OF	rice some decres una cospesi vivira d l'elsid exceptitiv	1000
Plot 31	Oversion to conversion and o	er vagne i divakasa yacasista isan s	MISCANE TO THE PROPERTY OF THE
Plot 32		Types of Transfer States of Transfer States	The second meaning the second second
Plot 33	chata appo	The special representation of	the new section in the result of the section of the
Plot 34	1		to the art.
Plot 35			20,019

TOTAL No.
Cavity Trees:

**Density Calculation:** (use formula provided<sup>2</sup>)

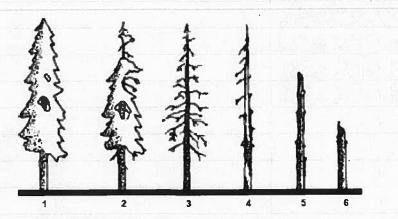
0

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.

Select plots randomly.

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



- 1 Healthy, live tree
- 2 Declaring live tree, part of canopy lost
- 3 Very recently dead, no canopy, bark intact, branches intact
- 4 Recently dead, bank peeling, only large branches intact
- 5 Older dead tree, 90 percent of bank losst, 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.

Ful chorus of chorus frogs in Nernal pool Cextensive W red-osier dogwood 2 wood frogs heard/ EAPH, HETH observed.

EAME observed singing in AG field.

Page 2 of 2
Signature: (Field Personnel)

Quality Control:This form is complete  $\square$  & legible  $\square$ .

Signature:

(Project Manager) REV: 2013-03-13



Stantec Consulting Ltd. 1 - 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050

# **Bat Maternity Roost -Cavity Tree Density Plots Data Form**

Stantec	Fax: (519) 836-2493	(FOR USE IN FOD & FOM COMMUNITIES ON		
Project Number:	160950269	Project Name: Niagara Win		nd Far
	Apr 14/2013 2:00 PM	2:30PM	J. Ball	20060

DATE TIME (start) TIME (end) Field Personnel RAIN 90% NONE Weather Conditions: CLOUD TEMP (°C) WIND 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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied 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 #:   Feature Size (ha):   No. of Plots to Survey¹:					
Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 77)	Comments		
Plot 01	0	0618498 14767085	E 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		
Plot 02		061852514767062	- density		
Plot 03	0	061853114767054	A CONTROL OF THE CONT		
Piot 04	0	06185121478029			
Plot 05	0	061847514767024	and the second from the second second to the second		
Plot 06	0	061845614767053			
Plot 07	D	061842514767057			
Plot 08	0	0618419 14767043			
Plot 09	0	0618441 / 4767027			
Plot 10		06184781 4.767014			
Plot 11					
Plot 12					
Plot 13					
Plot 14		A STATE OF THE STA			
Plot 15			THE AMERICAN STREET AND A SECRET AND A SECRETARIAND A SECRET AND A SEC		
Plot 16			The control of the co		
Plot 17		1	as che presentati i anche restato e reservici di		
Plot 18	1 2	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Has Vin and MAN to the contract of the contrac		
Plot 19		1	regional and the contract of t		
Plot 20					
Plot 21	Te t	,	X=		

Page 1 of 2 Signature: \

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(Project Manager)

Plot No.	Total No. of Cavity Trees (based on criteria above)  Plot Center UTM (Zone:)		Comments		
Plot 22	may 8 plant	1			
Plot 23	a Milliam Wall	West and the second of the sec	Western Company of the Company of th		
Plot 24		= = 1			
Plot 25			- 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1		
Plot 26	Non-Francisco	通過 / · · · · · · · · · · · · · · · · · ·	( ) ( ) ( ) ( ) ( ) ( )		
Plot 27	N - W	1	The second second		
Plot 28		1			
Plot 29		In the state of the state	(Sala)		
Plot 30	Summer of the summer of the first				
Plot 31	Andrew Harry House II	STREET, CONTRACTOR SECTION (			
Plot 32		The standard of the standard o	(AD) 12 SHOW 1		
Plot 33	sa furdado b	7 300E(V) 200	and the Control of the Control		
Plot 34		Check of the control	(0.56)		
Plot 35			La contract to the contract to		
TOTAL No.	. ^	Density Calculation:	Trees/he		

Trees/ha (use formula provided2) **Cavity Trees:** <sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# place \times 0.05 \text{ hg})}$ 

<sup>1</sup>No. of Plots: Sites ≤ 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.

- 1 Healthy, Eve tree
- 2 Declining live tree, part of canopy lost
- 3 Very recently dead, no canopy, bank intact, branches intact
- 4 Recently dead, bank peeling, only large branches intact
- 5 Older dead tree, 90 percent of bank 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.

(# plots × 0.05 ha)

Page 2 of 2 Signature:

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Signature:

(Project Manager)



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:	160950	269	Project Name:	Niagara u	sind Farm
	Apr 14/20	13 2:40 pm	2:50	J. Ball	
	DATE	TIME (start)	TIME (end)	Field P	ersonnel
Weather Conditions:	9		90%	NONE	Rain
	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied 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)

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	comments
Plot 01			no courties found
Plot 02			within the entire
Plot 03			area searched
Plot 04		I	
Plot 05	English of William Contracts of		SUPPLEMENTAL PROPERTY.
Plot 06	10 ax 2	1	
Plot 07		1	
Plot 08		I	
Plot 09		M 1	
Plot 10		1	
Plot 11		1	
Plot 12		1	
Plot 13		1	
Plot 14			MATERIAL CONTROL OF THE SECOND CONTROL OF TH
Plot 15			Hard Installated For the College William
Plot 16		-1	your recording and which is the control of the control of
Plot 17		1	Converse and the converse control of the converse converse converse converse control of the converse c
Plot 18		Towns of the second second	1000) againstain and mark a multi-state of the state of t
Plot 19		I come to	Manual Re Waster, Advantage States a Access 1977
Plot 20		1	
Plot 21		1	

Page of 2 Signature:

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(Project Manager)

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22	Cate Porto	1	0.50 (2.77) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.10) (2.1
Plot 23	ALITANITY OF THE STATE OF THE S		September 1
Plot 24	next that end	A separate form	Electric Control of the Control of t
Plot 25			
Plot 26	P10 164 SHEET	in the second of the second	
Plot 27		1	ingeninano mana and
Plot 28		The state of the s	
Plot 29		selfun tiler tiler tiler	Maria Company and Company
Plot 30	difference to see a see	ner i e esta esta como esta esta esta esta esta esta esta esta	
Plot 31	TACHER INSENDERSESSINE	Bo-Saci o - Paradalu ya 160 A 21 Tau y	
Plot 32		La Service of May 70 miles	(14) (14) (14) (15) (15) (15) (15) (15) (15) (15) (15
Plot 33	Algorithm (1)	CHE MANUALINA	and well as early as all the contractions
Plot 34			F8 (o) 9
Plot 35			Su foist
TOTAL No.		Density Calculation: (use formula provided²)	Trees/ha

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

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

2 3 4

- 1 Healthy, Eve tree
- 2 Declining Eve tree, part of canopy lost
- 3 Very recently dead, no canopy, bark intact, branches intact
- 4 Recently dead, bank 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.

Page 2 of 2 Signature: (Field Personnel)

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Signature:

(Project Manager) REV: 2013-03-13



Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050

# Bat Maternity Roost -Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

3	Canada N1G 4P5	
	Tel: (519) 836-6050	
Stantoc	Fax: (519) 836-2493	

Project Number: 1.60950269			Project Name:	Niagaral	Wind Farm
	April 14/201	34:15pm	5:15 PM	J. Ba	
	DATE	TIME (start)	TIME (end)	Field I	Personnel
Weather Conditions:	9	2	50%	NONE	Rain
	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied 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 #: 33 Feature Size (ha): 4.7 No. of Plots to Survey1:

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 17T)	Comments
Plot 01		0621810 14762955	/ Elerin I
Plot 02	Ò	062169714767936	- delicities
Plot 03	0	062168614762892	1 - 7 × 10 ×
Plot 04	0	062167914762840	
Plot 05	0	062170414762812	The second property of the second
Plot 06	0	062/72614702765	A Section of the sect
Plot 07		062177114762718	
Plot 08	0	0621831/4762658	
Plof 09	· O	062   873 4762631	
Plot 10		062188914762613	
Plot 11			
Plot 12			
Plot 13			
Plot 14	1	M	
Plot 15		1	7
Plot 16		1	
Plot 17		1	- 11-11-11-11-11-11-11-11-11-11-11-11-11
Plot 18			A Company of the Comp
Plot 19	3-		
Plot 20	, 760 k		A STATE OF THE STA
Plot 21	A A		* **

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Signature:

(Project Manager)

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22	WITH STIER	1	
Plot 23	Waiting on 10	1	20 30 NOTE:
Plot 24		) = WY /	
Plot 25	TY-SW.	1	
Plot 26		of I	
Plot 27			SERVINGOUS STREET
Plot 28			
Plot 29	will be a second of the second	I want make a	V.02
Plot 30	State of the state	310 Del 1814	ight.
Plot 31	Walle in New Yellowskii (2	CARROLL AND SERVICE PROPERTY OF STATE	( = m = 3.5)
Plot 32	( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( )	The second of a second of	Last to a second second second second
Plot 33	en ween h	Land the second	The Part of the Pa
Plot 34		1 3 1 AT A A	10 tsig
Plot 35			Physics Company
TOTAL N		Density Calculation	

TOTAL No.
Cavity Trees:

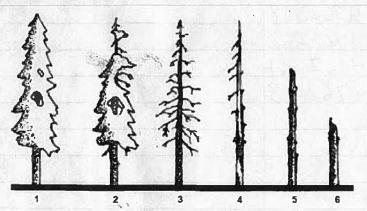
**Density Calculation:** (use formula provided<sup>2</sup>)

Trees/ha

No. of Plots: Sites 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.



1 Healthy, Eve tree

- 2 Declining live tree, part of canopy lost
- 3 Very recently dead, no canopy, bank intact, branches intact
- 4 Recently dead, bank peeling, only large branches intact
- 5 Older dead tree, 90 percent of bank 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.

snake observed
photos taken
171 0621693/4762822
no apparent hibernaeula
nearby
wood frog cailing

Page 2 of 2

(Field Personnel)

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(Project Manager)



## **Bat Maternity Roost -Cavity Tree Density Plots Data Form**

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Stantec Consulting Ltd
1 - 70 Southgate Drive
Guelph, ON
Canada N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

Project Number:	160950269		Project Name: Niagara Wind Far		Wind Farm
	April 18/2013	9:50	10:50	J. Ball	- Villeum
	1 DATE	TIME (start)	TIME (end)	Field Pe	ersonnel
Weather Conditions:	14	2	90%	NONE	NONE
	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied ☑ 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 #: Feature Size (ha): No. of Plots to Survey1:

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 17T)	Comments
Plot 01	0.	0622863 14760704	NOTE:
Plot 02	0	0622818 14760696	75 Phot 36
Plot 03	0	062282314760645	and the second s
Plot 04	0	062282514760605	
Plot 05	0	06227901 4760615	
Plot 06	0	06227641 4760637	
Plot 07		06227541 4760682	aarter snake observed
Plot 08	0	062279414760715	2
Plot 09	0	062272414760766	
Plot 10	0	062270714760814	
Plot 11			
Plot 12			
Plot 13			
Plot 14			and the state of t
Plot 15		1	
Plot 16			The Contract of Manager Andrews State (1997)
Plot 17		4 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1 2 1	
Plot 18			THE STATE OF THE S
Plot 19			New March 1994 a section of the sect
Plot 20			
Plot 21		1	

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	(Field Personnel)

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Signature:

(Project Manager)

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22	1101100-2000	1	
Plot 23		1	
Plot 24		1	
Plot 25		1	
Plot 26		1	
Plot 27		1	10 - 000
Plot 28			
Plot 29		= <b>/</b>	
Plot 30	217 S 254 11 11	Who seems to be the seems to be seen as the seems to b	
Plot 31	E 452/(0658141/) (V	all the second second	
Plot 32			× 141
Plot 33		1	
Plot 34		1	The state of the s
Plot 35		1	10.16151
TOTAL NO		Dansity Colculation	- I April

TOTAL No.
Cavity Trees:

One of the control of the

 $^{1}$ 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. Select plots randomly.

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

1 Healthy, I've tree

2 Declining live tree, part of canopy lost

- 3 Very recently dead, no canopy, bank intact, branches intact
- 4 Recently dead, bank peeling, only large branches intact
- 5 Older dead tree, 90 percent of bank lost, few branch stubs, broken top
- 6 Very old dead tree, advanced decay, no branches, parts of the stem have rosted away

3

Figure 1: Decay classification system for cavity trees (Watt and Caceres, 1999)

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

- Stumps observed indicating forest management - chorus frogs abundant

Page 2\_of 2
Signature:

(Field Personnel)

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Signature:

(Project Manager)



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)

Stantec

Project Number: 1609 50 269			Project Name:	Niagara	Wind Farm
	April 18/2013	11:45	12:30	J.Ba	
	DATE	TIME (start)	TIME (end)	Field Po	ersonnel
leather Conditions:	24	3	1.00	NONE	NONE
	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied ☑ 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 #: 35 Feature Size (ha): 0,678 No. of Plots to Survey1: 10

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 17T)	Comments
Plot 01	0	0622836 14765694	
Plot 02	0	0622829 1476 5721	- United States
Plot 03	0	0622811 14765751	
Plot 04	0	062282914765757	
Plot 05	0	0622806 14765774	William Willia
Plot 06	0	0622814/4765768	
Plot 07	$\cap$	0622831/4765784	
Plot 08	Ŏ	06228361 4765766	
Plot 09	- 0	0622-8451 4765737	
Plot 10	0	062283814765716	
Plot 11		1	
Plot 12			
Plot 13			
Plot 14		A STANDARD CONSTRUCTION	
Plot 15			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Plot 16	2		
Plot 17			
Plot 18	1 × 1 × 1 × 1 × 1	1 1254 135	
Plot 19	y At gre	A I MULE WA	and the contest of th
Plot 20	187126	1	
Plot 21		1	

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	(Field Personnel)

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Signature:

(Project Manager)

REV: 2013-03-13

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		1	
Plot 23		/	
Plot 24		· /	
Plot 25		1	
Plot 26		/	
Plot 27		1	1
Plot 28		- I	
Plot 29		<u>.</u>	
Plot 30	and the Mark of Marks	1	
Plot 31		4	
Plot 32		1	7.7
Plot 33	Wasani X	- · / · · · · · · · · · · · · · · · · ·	
Plot 34		1	
Plot 35		1	= =
TOTAL No.		Density Calculation:	Trees/ha

**Cavity Trees:** (use formula provided<sup>2</sup>)

<sup>2</sup>Total Cavity Tree Density =  $\frac{total \# cavity trees}{(\# r)arguments}$ (# plots × 0.05 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.

- 1 Healthy, I've tree
- 2 Declining I've tree, part of canopy lost
- 3 Very recently dead, no canopy, bank intact, branches intact
- 4 Recently dead, bank peeling, only large branches intact
- 5 Older dead tree, 90 percent of bank 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.

Trees/ha

Page 2 of Z Signature:

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

#### Bat Maternity Roost -Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Stantet	ja j				
Project Number:	1689 5026	9	Project Name:	Niagara U	Und Farm
	April 18/2013	12:40	1:30	J. Ball	25,012
	V DATE	TIME (start)	TIME (end)	Field F	Personnel
Weather Conditions:	2.5	4	80% Gazy	NONE	NONE
	TEMP (°C)	WIND	CLOUD	PPT	PPT (in last 24 hrs)

order for cavity tree to be tallied ☑ 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 #: 37/38 Feature Size (ha): 5, 15 No. of Plots to Survey1:

NOTE: All criteria must be met in ☑ Cavity is ≥ 10m high in tree

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 171)	Comments
Plot 01	0	0623790 / 4765663	1 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7
Plot 02		0623789 14765692	\$ 184
Plot 03	0	0623812'4765720	er_22195
Plot 04	0	062379714765774	
Plot 05	- 2	06237991 4765824	cavitities in the same tree-decay class=?
Plot 06		06237671 4765806	
Plot 07	0	062374914765761	
Plot 08		062375714765716	
Plot 09	0	061375914765690	
Plot 10	Ö	06237741 4765670	
Plot 11		1	
Plot 12		1	
Plot 13		/	
Plot 14		/ The Control of the	New York Control of the Control of t
Plot 15			Life of Artist
Plot 16			The second secon
Plot 17			A A ST
Plot 18			The second of th
Plot 19		a la	Party Action & Co. D.R. Loss House 2008
Plot 20	-13		
Plot 21		1	

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(Project Manager)

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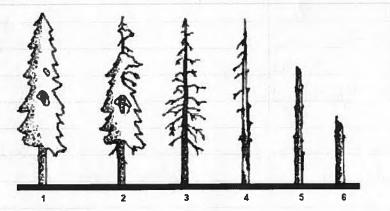
Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22	19: 7: 11: 11	1	
Plot 23	(1/4)	I I	2017
Plot 24		1	
Plot 25		1	
Plot 26		Fig. 1	
Plot 27	-11	1	
Plot 28			
Plot 29		In the second	Sep 5
Plot 30	a - paga pananaan na ny no-		lan (en
Plot 31	TWO THE THE THE THE	White the second second	
Plot 32	7	- 1	1 AB
Plot 33	Auge 17		enance (Surviver and Constitution)
Plot 34	112	1	An Idia - T
Plot 35		1	503

TOTAL No. **Density Calculation:** Trees/ha (use formula provided2) **Cavity Trees:** 

<sup>1</sup>No. of Plots: Sites ≤ 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 =  $\frac{total \# cavity trees}{(\# plots \times 0.05 \text{ keV})}$ 

Select plots randomly.



- 1 Healthy, Eve tree
- 2 Declining live tree, part of canopy lost
- 3 Very recently dead, no canopy, bank intact, branches intact
- 4 Recently dead, bank 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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(Project Manager)

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Page 2 of 2



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Fax: (519) 836-2493

#### Bat Maternity Roost -Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Stantec

Project Number: 1609 50269		Project Name: Niagara Wind Farm			
	April 18/2013	1:45	2:50	J.B	iall
	DATE	TIME (start)	TIME (end)	Field	Personnel
Veather Conditions:	25	4	100%	NONE	NONE
	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied ☑ 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 #: 14/16 Feature Size (ha): 4, 28 No. of Plots to Survey¹:

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 171)	Comments
Plot 01	0	0618818 14763896	E total
Plot 02	0	061883214763983	\$2 kdP
Plot 03		061880914764021	
Plot 04		061882914764065	19 mg
Plot 05	0	061874414764018	
Plot 06	O	061874214763989	
Plot 07	0	0618716 1 4763944	Δ.
Plot 08	0	061872814763907	
Plot 09	0	0618.7571 4763902	
Plot 10	0	06186881 4763894	4. 18 31 34
Plot 11		1	
Plot 12		I	
Plot 13		1	
Plot 14		1	The Distriction of the Control of th
Plot 15	*F		E E
Plot 16		1	The Control of the Co
Plot 17		1	24
Plot 18	9	1	N. Wee
Plot 19		1	
Plot 20		1	
Plot 21		1	

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(Project Manager)

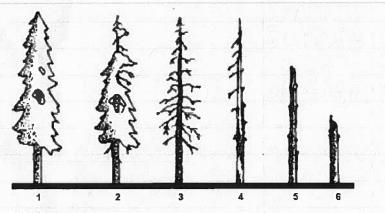
REV: 2013-03-13

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		1	
Plot 23	gen Wilhow Sames II	1	
Plot 24			E SECONDO DE LA COMPANSIONA DE LA COMP
Plot 25		1	
Plot 26	control elerk		e il No
Plot 27			Tennilla o Tennilla o Tennilla
Plot 28			
Plot 29		of an maintain state	182 3 The Control of
Plot 30	Onthe Arthur and the Arthur	त्राचा प्रमुक्ता प्रमुक्ताता सम्बद्धाः प्राप्तान् का वीत रीवा प्रमुक्ता स्थापना सम्बद्धाः प्राप्तान् का	受け、Eff はa5
Plot 31	With Bar (10 the With #28 BBC 75 T	VILLERY COMPARED VESSEL HER SETTING	Meson Lib
Plot 32		A AND AND A CALL	THE PROPERTY OF THE PROPERTY O
Plot 33	and an appropriate	7( <b>/</b> 1) - 6755 - 50E 3 50	Charles of the street of the state of the st
Plot 34		TO FREE WAR IN THE	1916.01
Plot 35			
TOTAL No. Cavity Trees:	/	Density Calculation: (use formula provided²)	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 =  $\frac{total \# cavity trees}{(\# plots \times 0.05 \ ha)}$ 

Select plots randomly.



- 1 Healthy, live tree
- 2 Declining live tree, part of canopy lost
- 3 Very recently dead, no canopy, bank intact, branches intact
- 4 Recently dead, bank peeling, only large branches intact
- 5 Older dead tree, 90 percent of bank 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.

Page Zof Z
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Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493

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

NOTE: All criteria must be met in ☑ Cavity is ≥ 10m high in tree

# Bat Maternity Roost Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Stantec			11 02		30(37)
Project Number:	1609 50269		Project Name:	Niagara	Wind Farm
	April 18/2013	2:05	2:20	J.Ba	1
	DATE	TIME (start)	TIME (end)	Field	Personnel
Weather Conditions:	25	4	100%	NONE	NONE
	TEMP (°C)	WIND	CLOUD	PPT	PPT (in last 24 hrs)

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

enough for two bats

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center U	TM (Zone: 17T)	1000	Comments	- III wilder
Plot 01		0618671	14764140	(UTM	taken f	rom edge
Plot 02			1	20	tolboou	AL UE
Plot 03	PAR III		I. I. S.	NO	Cavit	(62
Plot 04			1		b.served	
Plot 05			1			are to Table
Plot 06			1			
Plot 07	V 1		1	(100)		1
Plot 08			-/			
Plot 09	116 - 6.9 G		1			
Plot 10			1			
Plot 11			1 , 1	N .		n Wall
Plot 12			/ 1			
Plot 13			1			
Plot 14	u u		New Handerstein Actions	The second second	Base awayer and seattle at	marcya Mitrator
Plot 15			/			Extra China
Plot 16			1			
Plot 17			/			中" · 本有 · 安州 · 克
Plot 18			/ water soleton	IDEATE ACCUSE		Highest particle of the second
Plot 19		*	71 gasawawie	Vocasi sil Thre	wid-t navis in more	new@www.iz
Plot 20			1			
Plot 21			/			

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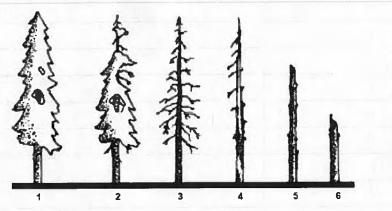
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Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		1	
Plot 23		1	(Int)
Plot 24		1	3000
Plot 25		1	
Plot 26	-	1	line
Plot 27		1	trusti
Plot 28		1	
Plot 29		I THE BU	
Plot 30	10 may 22 harry 12 year 19	NEWSKIE - / The State of	
Plot 31	The second of th	90 (g) 11 (c) 11 (2 LA 02	
Plot 32	- 3 /	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	THE STATE OF THE S
Plot 33	Liling F	1 3	The second of th
Plot 34		$I_{2,0}$ $x = y$	10 als
Plot 35		1	10.7049
TOTAL No		Density Calculation:	Trees/ha

(use formula provided2) Cavity Trees: <sup>1</sup>No. of Plots: Sites ≤ 10 ha: 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots).

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

Plots = 0.05 ha or 12.6m radius. Select plots randomly.



- 1 Healthy, Eve tree
- 2 Declining live tree, part of canopy lost
- 3 Very recently dead, no canopy, bank intact, branches intact
- 4 Recently dead, bank 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.

-surveyed entire area - no cavities observed

Quality Control:This form is complete 🗆 & legible 🗅.

Signature:

(Project Manager)

REV: 2013-03-13



Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493

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

NOTE: All criteria must be met in ☑ Cavity is ≥ 10m high in tree

### Bat Maternity Roost -Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Stantet	2				olednik _ t.
Project Number:	1609 502	69	Project Name:	Niagara L	Vind Farm
	April 18/2013	4:00	4:30	J. Ball	y oscieta
10.0	DATE	TIME (start)	TIME (end)	Field P	ersonnel
Weather Conditions:	25		98% hazy	NONE	NONE
	TEMP (°C)	WIND	CLOUD	PPT	PPT (in last 24 hrs)

order for cavity tree to be tallied \( \overline{\text{Z}} \) Size of cavity is small enough so large mammals (i.e. raccoons) cannot enter, but large

			enough for two bats	
1		Ø	Cavity tree is a Decay Class of 1 - 3	(see decay classification belo
Feature #:	17	Feature Size (ha):	0,35 No. of Plots to Survey1:	entire area

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 777)	Comments	82 10P
Plot 01		0618984 14768569		N. Isla J.
Plot 02		/		m dulfina
Plot 03		n mineri <b>y</b> ika vesancar	V .	- I THE COLUMN
Plot 04		1	\	
Plot 05		1		
Plot 06		1		1,00
Plot 07	2 at 1 5	1		
Plot 08		/ /		
Plot 09		/ 1		1.8
Plot 10		V		7.1
Plot 11		/		
Plot 12		/		
Plot 13		1		
Plot 14			Recognition of the Policy Control of the Control of	
Plot 15	×	1		en trewit
Plot 16		/	THE COUNTY AND THE COUNTY OF SOME	The same of the sa
Plot 17		1		- 24E
Plot 18	I val	1 110001 - 21 - 12		n n gravn e rorran
Plot 19		morning a month of the control of th	wa manana amanana ee jiy	nd - Wester
Plot 20		/		
Plot 21		/ A		

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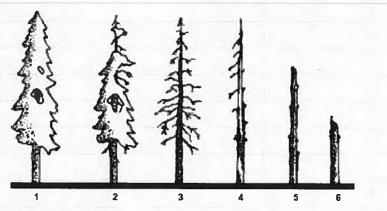
Plot No.	Total No. of Cavity Trees (based on criteria ab ove)	Plot Center UTM (Zone:)	Comments
Plot 22	Company of the latest	1	
Plot 23		1	
Plot 24		1	=0
Plot 25		1	
Plot 26		1	
Plot 27		- 1	- 17
Plot 28		1	
Plot 29		I Wanter to a la	
Plot 30		The strain of the same	200
Plot 31	1 - 1 - 1 - 1 - 1 - 1	The second secon	(1944 H
Plot 32	le l	_ I Will OF	- International Control
Plot 33		J. we make	Carrier Version Control Harmon and I
Plot 34		$I_{1} = I_{1}$	1 1 1 1055-1
Plot 35		1	SW 3-7

TOTAL No.	Density Calculation:
Cavity Trees:	(use formula provided <sup>2</sup> )

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

Trees/ha

<sup>1</sup>No. of Plots: Sites ≤ 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.



1 Healthy, live tree

2 Declining Eve tree, part of canopy lost

- 3 Very recently dead, no canopy, bank irritact, branches intact
- 4 Recently cead, bank peeling, only large branches intact
- 5 Older dead tree, 90 percent of bank losst, 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.

> Page 2 of 2 Signature:

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#### Bat Maternity Roost -Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

3	Canada N1G 4P5	
,	Tel: (519) 836-6050	
Stantoc	Fax: (519) 836-2493	

Project Number:	1609502	169	Project Name:	liagara L	Wind Farm
	April 18/2013	4:30	4:40	J. Sal	
	DATE	TIME (start)	TIME (end)	Field Pe	rsonnel
Weather Conditions:	25	4	90% hazy	NONE	NONE
	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied ☑ 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 #:	Feature Siz	e (ha): 0, 3 No. of Plots to Surv	ey1: entire	Surve	X S AME
Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 177)		Comments	S INT
Plot 01	0	0619 001 14768881	no ca	vities	observed
Plot 02		1	in	entire	feature
Plot 03		a final or profitor			The reliev
Plot 04		1			
Plot 05		7			
Plot 06					
Plot 07		7			
Plot 08		1			
Plot 09		1	1		J <sub>a</sub> sie
Plot 10	. 3/1/2/2	1			
Plot 11		1	Fig. 1920		
Plot 12		1 3		2.49	
Plot 13		1			
Plot 14		/ ************************************	PRESENTED TO THE	ochtosikog soci	VENT LANGE
Plot 15		1			and the state of
Plot 16		/			
Plot 17		- 1			T WHILE IN S
Plot 18	2 (2)	1			
Plot 19		/ Line 10 to	M-7/ (1) (2) (2)	ALTERNATION OF THE PARTY OF THE	T = Walle
Plot 20		1			
Plot 21		1			

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Signature:

(Project Manager)

REV: 2013-03-13

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22	117.3 生态	1	
Plot 23		1	
Plot 24		1	
Plot 25		1	
Plot 26		/ /	
Plot 27	la Name	1	9
Plot 28		1	
Plot 29		I in the	le l'e
Plot 30		Attached -	) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1
Plot 31	SENTONESPEE		Se- 10
Plot 32			T 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
Plot 33	(4 m 10 m	I Johnson Walter	and the state of t
Plot 34		/ / / / / / / / / / / / / / / / / / /	Significant Page 1
Plot 35		1	Plotiti

TOTAL No.
Cavity Trees:

Density Calculation:
(use formula provided²)

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. Select plots randomly.

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

1 Healthy, live tree

- 2 Declining live tree, part of canopy lost
- 3 Very recently dead, no canopy, bank intact, branches intact
- 4 Recently dead, bank 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.

Page 2 of 2
Signature:
(Field Personnel)

-no cavities found

Quality Control:This form is complete \( \mathbb{Q} \) & legible \( \mathbb{Q} \).

Signature:

Stantec

Project Number:

Weather Conditions

Stantec Consulting Ltd. 1-70 Southgate Drive Geleph, Ob Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493

Bat Maternity Colony – Selection of BEST Roost Trees

RORR, J. BALL, B. Miller PPT (in last 24 hrs): Rain Data Form Field Personnel Project Name: NKWC None (00% TIME (end) 9:30 CLOUD: 7:00pm TIME (start) WIND Une 13, 233 E05/200) 20 TEMP (°C):

0-10), - None- Rain (#0, BM, JB □ Tallest cavity tree
□ Exhibits cavity tree
□ Exhibits cavities or crevices, such as cracks, scars, knot holes, or woodpecker cavities
□ Has the largest DBH (cm)
□ Within highest density of cavity trees (e.g. clusters of cavity trees)
□ Large amount of loose, peeling bark
□ Cavity or crevice is high up in tree (>10 m)
□ Preferred species: white pine, maple, aspen, ash, oak
□ Open canopy
□ Early stages of decay (class 1-3) - June 14 - 00-...toE.L - 4.200.9

Criteria for selecting the BEST cavity trees (note: in order of importance; not all criteria must be met):

TICE IVO.	No. of Cavities	DBH (cm)	Cavity height(s)	Tree height	UTM (Zone:	Zone:	Photo Number(s)	Notes
FAGGRAN	1	30	1500	7	N63005	8/47772027	FT CE	Control Extraction
2 FAGGRAN	76	27	15m	20	15 44 C 010	74772065		Combut runing Sandy No
3 PCESASE	7	S	MOI	C, C,	0629926	1 4772082		© 55
4 BRESPAR		35	15m	23	A1129877	14772210		Course South west . Town 2
5 Hicesasa	em	50	1.3 m	121	5985890	1 477223 [[		fund / V · v · C · v · v
6 PREENCH	1	Oh	13m	25	500200	0147257 LV		Racina, Deconcess 1
7 FAGGRAN		のど	10m	8 8 7	1500510	14772053		FAILUR N. DOCTOR CLOSS !
8 CARCORD	1	210	12m	カロ	175848010	1 4772144	#89(IB)	Grand SM. Derbur Clase
9 MCFSIRSA	, i	N.C.	50	23	6 32680W	1 47772286		Wind S Arman Ang
10 ACESASA	n	37	I MI	23	L806590	14772235		former Ny Jernami Class
11						1		).
12						1		
13						/		
14						1		
15						1		
16						/		
17						/		
18						1		
19						1		
20						1		
21						1		
22						1		
23						1		
24						1		
25						1		
26						1		
27						1		
28						1		
29						,		
30						1		

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(Project Manager)

Sk. tch roost trees that have multiple cavities present. Identify the location of the cavities on the tree. 6. Very old dead tree, advanced decay, no branches, parts of the stem have rotted away 5 Older dead tree, 90 percent of bank lost, few branch stubs, broken top 4 Recently dead, bank peeling, only large branches intact 3 Very recently dead, no canopy, bank intact, branches intact 2 Declining live tree, part of canopy lost 1 Healthy, live tree

Figure 1: Decay classification system for cavity trees (Watt and Caceres, 1999)

Signature:

(Field Personnel)

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Signature:

(Project Manager)



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### Bat Maternity Colony -Audio & Visual Monitoring (Exit Surveys) Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Stantec

Weather Conditions:

Project Number:

160950629

Project Name: NRWG

9:00pm ung 14 2013 10:30 pm HORR B. Millor DATE TIME (start) TIME (end) Field Personnel 170 5% None Rain TEMP (°C) WIND CLOUD PPT PPT (in last 24 hrs)

June 24-900ph -10:30pm - H.ORP, J. Ball, Nicti Charleton - 270-0-1-0/, Dana Nove Feature #: BMC 51 Feature Size (ha): No. of Roost Trees: 10

Audio Tally of Tree Probable **UTM** Recorded File No. Start Time **End Time** Bats Notes No. **Species** (Zone: 17) (Y/N)Observed LOW VISIDIL, I June 14 - BM 10:15pm 150pm 5 S185 14 01 063005/1 2027 011 10 pm 1113-17 June 25 = 0 Photost 47 (AO) no 5 8.45 pm 10.15 pm 02 m3-C 062999711772033 June 25-18 Photo 4 95 (1B)
Flying squirvel Marie 8.45pm 10.15pm 03 Em3-C Magra 26 19772082 June 2-le - 573 Photo H 99018 8.45, 10:15pm 04 5172 - C 06251872 14172216 June 24 11C 1:00pm 1020pm Very human order 11/2 24 3629865/4772226 13-C June 14- JB Low visibility 9-00 40-11/2 06 1073-R 0630031/47/2016 June 14 - 40 9.00gan and wishing mr 14 013003[1477205] ------07 En13-B June 24- HO F1010 48 49 8 45 pm 10:15pm 80 20298811 4772144 Em 3-C 111 June 24 - AC 9:00pm 10.50 prh ery here dell'ell noul 09 M:4853/477221A EMZ - C Jun 24-58 9:00ph 1 20 pth Who broked obspring. 10 MA lo 062988714772285 Em3- C 11 1 12 / 13 1 14 1 15 1

west 15

Page of 2

Angher (Field Personnel)

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Signature:

(Project Manager)

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							ı	
27							1	
28							1	
29							1	
30							1	

June 25, 2013 - J. Ball, A.ORR 8:30pm - 11:00pm 250 - Zwind - 801. 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:

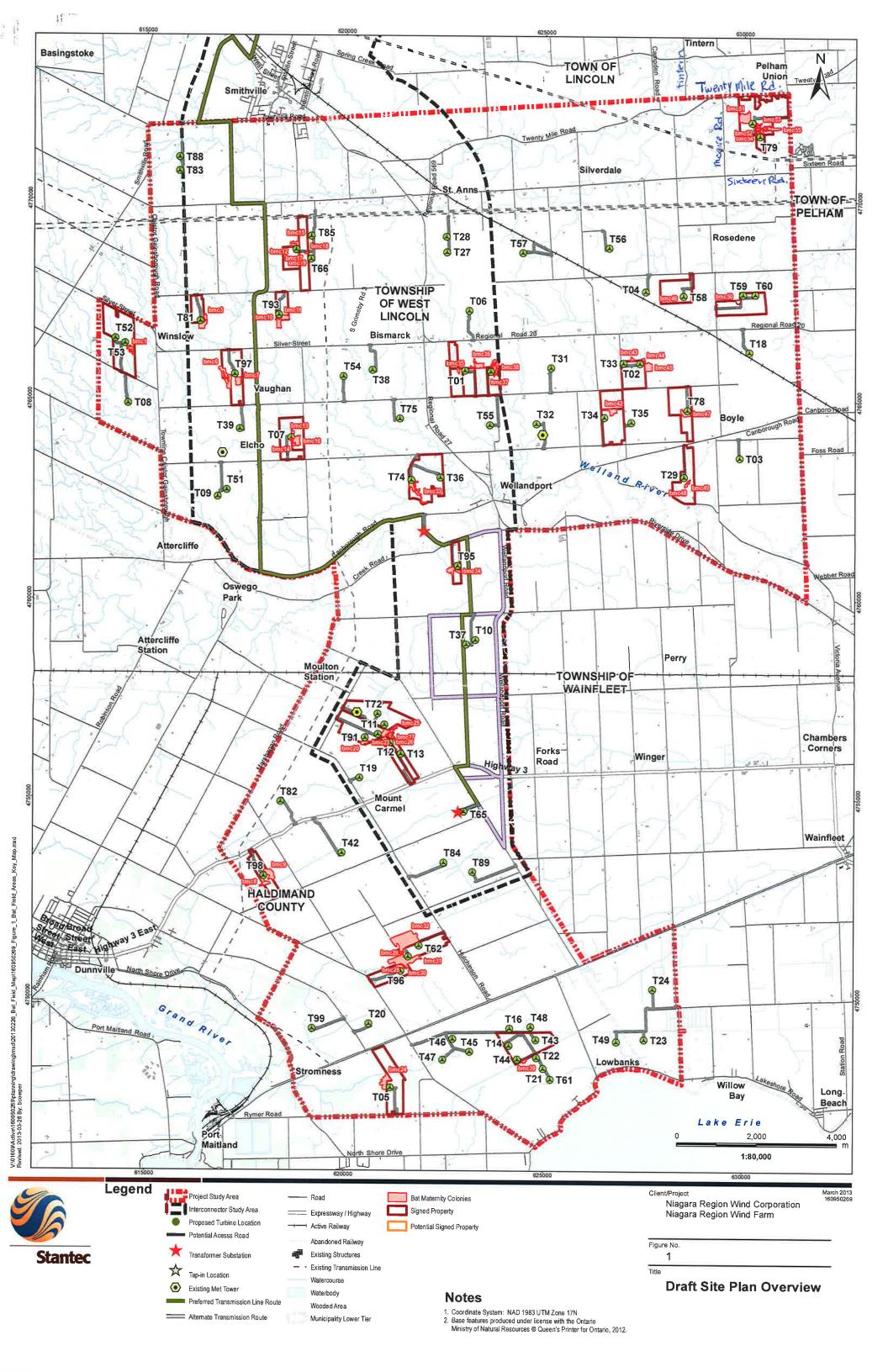
(Field Personnel)

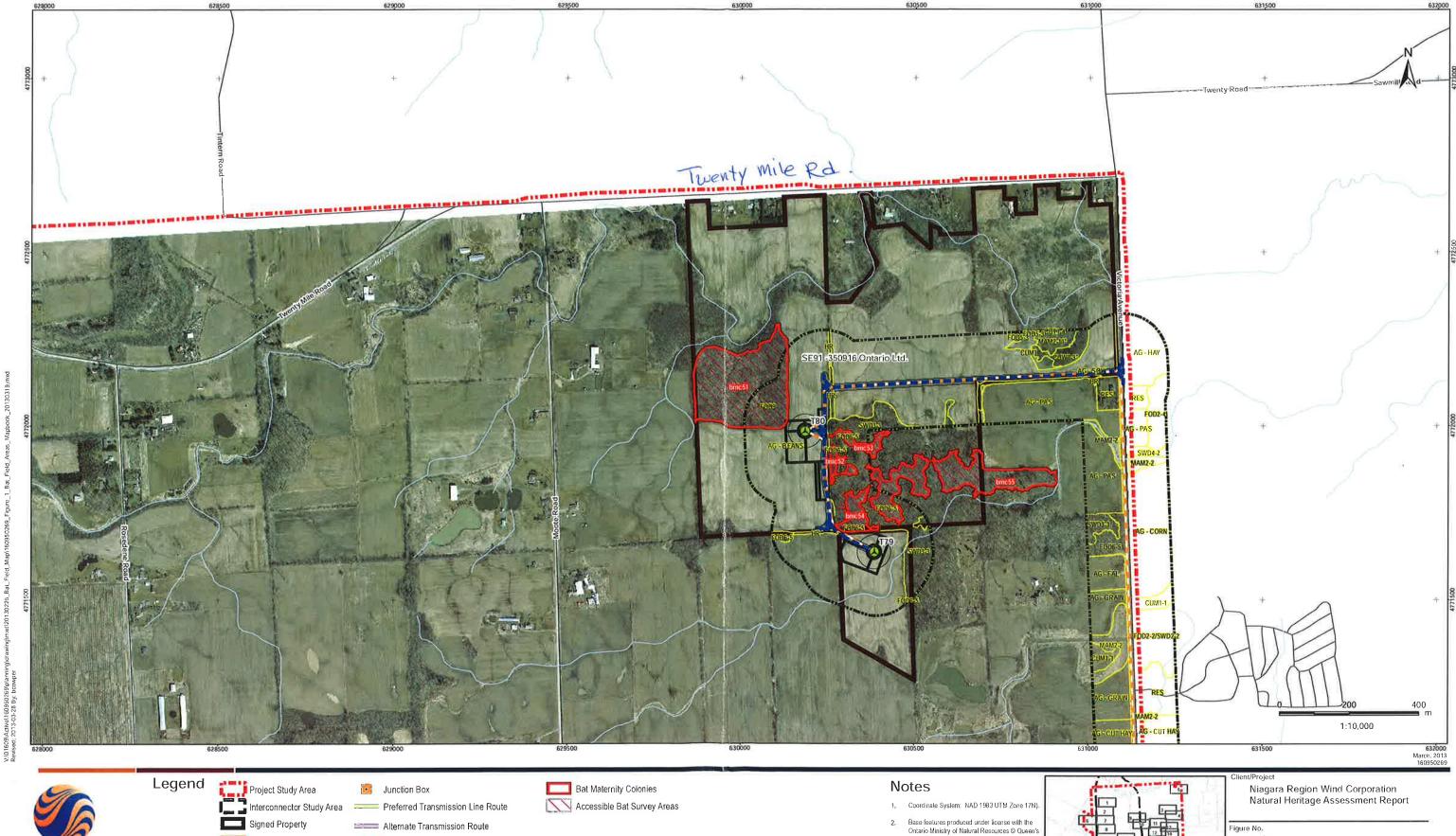
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Signature:

(Project Manager)

REV: 2013-06-07







Potential Signed Property 120m Zone of Investigation —— Temporary Laydown Area

ELC Boundary

Proposed Turbine Location
Potential Access Road Turbine Blade Length Tap-in Location

Collector Lines – Underground or Overhead

Fibre Optic Line

Potential Construction Laydown Area Transformer Substation

- Base features produced under license with the Ontario Ministry of Natural Resources @ Queen's Printer for Ontario, 2011.
- 3. Orthoimagery source: First Base Solutions, Date Spring 2010.



1.44

Bat Surveys bmc 51

NRWC-160950269 Bat Exit Surveys

June 13, 14, 24, 25, 26 2013



Weather Conditions:

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# Bat Maternity Roost Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Project Number:	1609502	69
-----------------	---------	----

Project Name: NRW C

10013020	1	-	-14 × 00 C	
Moril 18, 2012	11:45	12:45.	A.ORK	2
DATE	TIME (start)	TIME (end)	Field	d Personnel
21	2-3	80%	None	None.
 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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied 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 20 Feature Size (ha): 14 No. of Plots to Survey1: 10

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 17)	Comments
Plot 01	0	0620493/4756404	COPS = 92 - VALUED to middle agen SWD.
Plot 02	•	062048814756378	very few povity trees Dragent GPS = 93
Plot 03	0	0620463 14756355	CPS= 94
Plot 04	D	06,20449 14756328	GPS = 95
Plot 05	0	0620440 14756365	6PS = 91
Plot 06	0	0626420 14756386	6PS=97
Plot 07	0	0620381 14756389	6PS = 98
Plot 08	0	0620353 14756359	6PS= 99
Plot 09	D	01020284 14756364	6PS = 100
Plot 10	0	0620257/4766339	6PS= 101
Plot 11		1	
Plot 12		1	
Plot 13		1	
Plot 14		1	
Plot 15		1	
Plot 16		1	
Plot 17		1	
Plot 18		1	
Plot 19		1	
Plot 20	1	1	
Plot 21		1	

Page	1 of 2
	At

(Field Personnel)

Quality Control:This form is complete Q & legible Q. Signature:

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 22		1	
Plot 23		1	
Plot 24		J	
Plot 25		1	
Plot 26		1	
Plot 27		1	
Plot 28		1	
Plot 29		1	
Plot 30		/	
Plot 31			
Plot 32		1	
Plot 33		1	
Plot 34		1	
Plot 35		1	

TOTAL No. Cavity Trees:	Density Calculation (use formula provided <sup>2</sup>	/ I rees/ho
		·

 $^{1}$ 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 =  $\frac{total \# cavity trees}{(\# plots \times 0.05 \ ha)}$ 

Select plots randomly.

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

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

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

Page 2 of 2 Signature:

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Weather Conditions:

Feature #:

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## Bat Maternity Roost Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

None

Dealite					
Project Number:	160950269		Project Name:	NRWC	
	April 18 2013	1:15 pm	2.05	H.ORR	
	DATE	TIME (start)	TIME (end)	Field Personnel	

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

Feature Size (ha):

NOTE: All criteria must be met in ☑ Cavity is ≥ 10m high in tree

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

No. of Plots to Survey¹: /  $\bigcirc$ 

enough for two bats

WIND

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

CLOUD

- all communities lumped to ).

None.

PPT (in last 24 hrs)

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 17)	Comments
Plot 01	0	0620981 14756633	6PS= 102 ) RITHIT Varant - in plat
Plot 02	0	0620998 14756683	
Plot 03	0	0621041 147510647	GPS = 104
Plot 04	0	01021076 475101037	6PS=105
Plot 05	0	0621070 / 4756701	GPS = 10 Co
Plot 06	0	0621121 14756668	GPS = 107
Plot 07	D	0621135 14756595	6PS = 1000
Plot 08		0621197 14756574	695 = 109
Plot 09	0	0621197 14756516	6PS = 110 -
Plot 10	0	0621219 14751,508	6PS = 111
Plot 11		1	
Plot 12		1	
Plot 13		1	mid-one FOD with few
Plot 14		1	cavity frees having deray
Plot 15		1	aloss 5-lo.
Plot 16		1	
Plot 17		1	
Plot 18		1	
Plot 19		/	
Plot 20		1	
Plot 21		1	

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Signature:

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	

**Density Calculation:** 

Cavity Trees: \_\_\_\_ (use formula provided²)

No. of Plots: Sites ≤ 10 ha; 10 plots (minimum); each extra ha: 1 plot (up to max 35 plots).

Plots = 0.05 ha or 12.6m radius.

TOTAL No.

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

Select plots randomly.

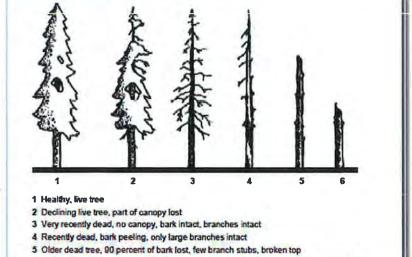


Figure 1: Decay classification system for cavity trees (Watt and Caceres, 1999)

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

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

10×005

Trees/ha

Page 2 of 2
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(Project Manager)

REV: 2013-03-13



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#### **Bat Maternity Roost -Cavity Tree Density Plots Data Form**

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Project Number: 160950269

Project Name: NRWG

4:20pm 3:35pm April 18.2013 A.ORR DATE TIME (start) TIME (end) Field Personnel 25 2-3 0% HOFE TEMP (°C) WIND CLOUD PPT PPT (in last 24 hrs)

Weather Conditions:

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

NOTE: All criteria must be met in ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied ☑ 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 #: bmcX Feature Size (ha):

No. of Plots to Survey¹: /

Accessible area = 2.3 ha

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 01	0	0101790014753021	GPS= 112
Plot 02	0	0617930/4752996	6PS = 113
Plot 03		061796114752967	GPS = 114
Plot 04	0	0617957 14752929	6PS = 115.
Plot 05	1	01017990 14752923	GPS = 116
Plot 06	0 -	0117993 1415 2875	10PS = 117
Plot 07	L.	0618038 14752862	SES=118
Plot 08	D	0618054 14752835	685=119
Plot 09	0	01.18098 14752839	GPS=120
Plot 10	0	0618123/4752874	68= 121-
Plot 11		1	
Plot 12		1	
Plot 13		1	
Plot 14		1	
Plot 15		1	
Plot 16		/	
Piot 17		1	Jen I.
Plot 18		1	Thick understorm, young to
Plot 19		1	midiane FOD/SWP.
Plot 20		1	mid-age FOD/SWD. Lots of domain chas 5 x Lo.
Plot 21		1	

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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		/	
Plot 28		1	
Plot 29		1	
Plot 30		1	
Plot 31			
Plot 32		1	
Plot 33		1	
Plot 34		1	
Plot 35		1	

**Density Calculation:** TOTAL No. Trees/ha **Cavity Trees:** (use formula provided<sup>2</sup>)

 $^{1}$ 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 =  $\frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ 

10 × 0,05

Select plots randomly.

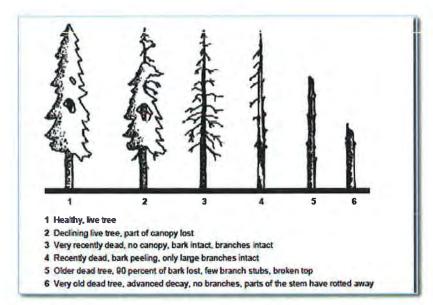


Figure 1: Decay classification system for cavity trees (Watt and Caceres, 1999) NOTE: Decay classifications 4-6 should not be tallied in plots.

Quality Control:This form is complete  $\square$  & legible  $\square$ .

Signature:

(Project Manager)

REV: 2013-03-13

Page 2 of 2 Signature:



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#### Bat Maternity Roost -Cavity Tree Density Plots Data Form

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Stantec	` '				
Project Number:	16095062	9	Project Name:	NRWC	
	April 8, 2013	4:30 pm	5:00 nm	AORR	
	DATE	TIME (start)	TIME (end)	Field I	Personnel
Weather Conditions:	25	2	10%	None	None.
N. A. C.	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied ☑ 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)

Accessible area = 1.8 kg

Feature #:

bric 9

Feature Size (ha): 4 4

No. of Plots to Survey<sup>1</sup>:

HICESSI DIC WILL

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 17)	Comments
Plot 01	0	061813614753016	685=122
Plot 02	0	0618108 14753071	GPS=123
Plot 03	0	0618097 14753092	6PS= 124
Plot 04	0	061807114753089	GPS = 125
Plot 05	1	01018069 14753116	126
Plot 06	0	061806314753138	127
Plot 07	0.	0618051 14753162	138
Plot 08	0	06/8029/4753182	
Plot 09	0.	0618022/4753153	= 130
Plot 10	1	0618001/4753164	= 181
Plot 11		I	
Plot 12		1	
Plot 13		1	
Plot 14		1	Note. Irastick ist E of bone 9.
Plot 15		1	on other paperty is the record
Plot 16		1	
Plot 17		I	Almost Franket Swamp
Plot 18		1	SWD. Venjuet & none thick under
Plot 19		1	Afein decay Class 5-6.
Plot 20		1	Hardto walk through
Plot 21		1	C C

Page \_\_ of \_\_2

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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		/	
Plot 25		· ·	
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:

Cavity Tree

 $^{1}$ 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. Select plots randomly.

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

1 2 3 4 5 6

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

2 10 ×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
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#### **Bat Maternity Roost -Cavity Tree Density Plots Data Form**

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Project Number:	160950629

Project Name: MRIDG

	140100001		7/1000		
	April 23, 2013	11:35 am	12:10 pm	A. OR	R
	DATE	TIME (start)	TIME (end)	Field	l Personnel
Weather Conditions:	11-18°c	1	0%	None	None.
	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied ☑ 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 #:

29

Feature Size (ha):  $\beta$ ,  $\beta$  ha No. of Plots to Survey<sup>1</sup>:

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone:)	Comments
Plot 01	0	0621484 14751127	6PS = 144
Plot 02	0	0621481 14751134	6PS = 145
Plot 03	0	06214105 14751131	685= 146
Plot 04	0	0621455 14751130	6PS=147
Plot 05	0	0621468 14751145	1.PS = 148
Plot 06	0	0 10 2 14 97 / 475 1145	6PS= 149.
Plot 07	0	0621490 14751156	GPS = 150
Plot 08	0	0621475 14751162	GPS=151
Plot 09	0	0621464 14751150	6PS=152
Plot 10	0	0621448 14751144	GPS = 153
Plot 11			
Plot 12		1	
Plot 13	1 = 1	1	
Plot 14		1	PASEW dream clace 4-10
Plot 15			Note BMC 29 - Sm woodlot
Plot 16		1	T DWD in entire area. Lorge
Plot 17		1	amounts of brush oiles from adjacent
Plot 18		1	clear-cut. i. difficult to walk three-
Plot 19		1	Difficult to not operior slots.
Plot 20		1	- Area was searched as well
Plot 21		I	- Poplar woodlot. midage to matur

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	(Field Personnel)	

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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		i	
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	
OTAL No		Density Calculation:	Trees/ha

(use formula provided<sup>2</sup>)

 $^1$ 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. Select plots randomly.

Cavity Trees:

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

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

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
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(Field Personnel)

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#### **Bat Maternity Roost -Cavity Tree Density Plots Data Form**

(FOR USE IN FOD & FOM COMMUNITIES ONLY)

Project Number:

1609502100

Project Name: NRWC

	- 401002101		101/ 00 C		
1	April 23, 2013	11:10	2:50 pm.	AORR	
	DATE	TIME (start)	TIME (end)	Fiel	d Personnel
Weather Conditions:	11-18°c	1-2	07-	Vone	None.
,	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 ☑ Cavity is ≥ 10m high in tree

order for cavity tree to be tallied ☑ 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)

28,30,31,32 Feature Size (ha): 49 10 No of No. of Plots to Survey1:

Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 17)	Comments
Plot 01	•	0621490 14751248	GR= 140
Plot 02	4.4	0621469 / 4751235	6PS = 141
Plot 03	0	0621427 / 4751216	6PS = 142.
Plot 04	0 -	0621394 14751199	6ps = 143
Plot 05	•	0621409 14751148	GPS = 154
Plot 06	A	0621396 14751139	6PS=155
Plot 07	0	0621408 14751130	6PS = 156
Plot 08	0	14751119	6PS = 167
Plot 09	0	0621453 14751087	GPS=158
Plot 10	0	0621440 14751060	6PS = 159
Plot 11	0	0621463 14751045	685= 1100
Plot 12	O	0621433 14751014	6PS = 161
Plot 13	0	0621446 14750980	6PS=163
Plot 14	0	0621483 14750990	GPS = 163
Plot 15	0	0621491 14750948	6PS=164
Plot 16	0	0621578 14750938	6PS = 165
Plot 17	D	0621534 14750897	6PS: 166
Plot 18	0	0621483 14750827	6PS = 167
Plot 19	0	0621516 14750787	GPS=168
Plot 20	0	0421555 / 4750752	6PS=1181
Plot 21	0	0621595 14750765	LOPS= 170

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(Field Personnel)

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Plot No.	Total No. of Cavity Trees (based on criteria above)	Plot Center UTM (Zone: 17)	Comments
Plot 22	0	1621605 /4750797	685=171
Plot 23	()	1621574 /4750816	685 = 17 2.
Plot 24	0	0621563 14750858	6PS=173
Plot 25	Ū	0621602 14750951	GPS = 174
Plot 26	•	0621633 14750957	685 = 175
Plot 27	0	0621659 14750975	6PS = 176
Plot 28		0621683 14750981	6PS = 177
Plot 29	•	0621701 14750985	6PS = 178.
Plot 30	0	0621127 14751002	6PS = 179
Plot 31	As	01021746 /4751008	685= 180
Plot 32	6	0621921 14751054	695=181
Plot 33	• *	0621897 14751075	6PS= 182.
Plot 34		1	
Plot 35		1	

TOTAL No.
Cavity Trees:

**Density Calculation:** (use formula provided<sup>2</sup>)

6.6

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 =  $\frac{total \# cavity trees}{(\# plots \times 0.05 ha)}$ 

33 × 0.05

Select plots randomly

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 stern 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
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Signature:



# Stantéc Consulting Ltd. 1 – 70 Southgate Drive

Gur Ca Tel	Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493			Migratory Bird Survey Observation Form		
Project Number: 166950269  Date: Sept 4, 2013		Project Nar	me: NRWC			
		Field Personnel: A. ORR				
Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT: None	PPT (in last 24 hrs):  Norre	
Start Time:	0		End Time:	8:25		
	1770 /4744	236	End Point UTM:	1021138/47	49103	
Habitat: FOD			Transect:	5		
Feature #: M16)	44					
Species			Tally			
BUJA	111					
AMBO	1					
Dowo	1					
NOFL	1					
REVI						
117						
					*	

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Signature:

(Project Manager)

REV: 2011-05-03 / FORM 014



Stantec Consulting Ltd.

### **Bird Survey**

tantee consuming Eta.	
- 70 Southgate Drive	D. d
iuelph, ON	Migratory
anada N1G 4P5	Observa
el: (519) 836-6050	Onserva
ax: (519) 836-2493	

	Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Observation Form		
Project Number:	Project Number: 160950269		Project Name: NRWC		
Date: Sept 4 2013		Field Personnel:	A. ORR		
Weather Conditions:	TEMP (°C): 20°	WIND: 2-3	CLOUD:	PPT: None	PPT (in last 24 hrs): Non e
	7:20 am		End Time:	7:45 am	
Start Point UTM: 627636 14750363		End Point UTM: 627904/4750264			
	OD		Transect: 4		
Feature #:	15A3		_		
Species			Tally		
6RCA	1				
YRWA	1				
MMRO					
BAWW	)				
LEFL	1				
BCCH	11				
AMCR	11				
				145	
eg. L of L			Quality Control: This form		

(Field Personnel)

(Project Manager)

REV: 2011-05-03 / FORM 014



Stantec

120m Zone of Investigation Proposed Turbine Location Turbine Blade Length

Tap-in Location Junction Box

Potential Construction Laydown Area Proposed Culvert Transformer Substation

Snake Hibernacula 30m Buffer Temporary Laydown Area MBB Point Count Location Collector Lines - Underground or Overhead

Migratory Bird Transect ---- Fibre Optic Line - - Winter Raptor Transect Potential Access Road Woodland Communities Access Road 20m Construction Area

Deer Congregation Areas (MNR) Landbird Migratory Stopover

Cliff and Talus Communities Raptor Wintering Areas

Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat Woodland Vole Habitat

Terrestrial Crayfish Habitat

Turtle Nesting Habitat/Snapping Turtle Habitat Turtle Habitat 30m Buffer

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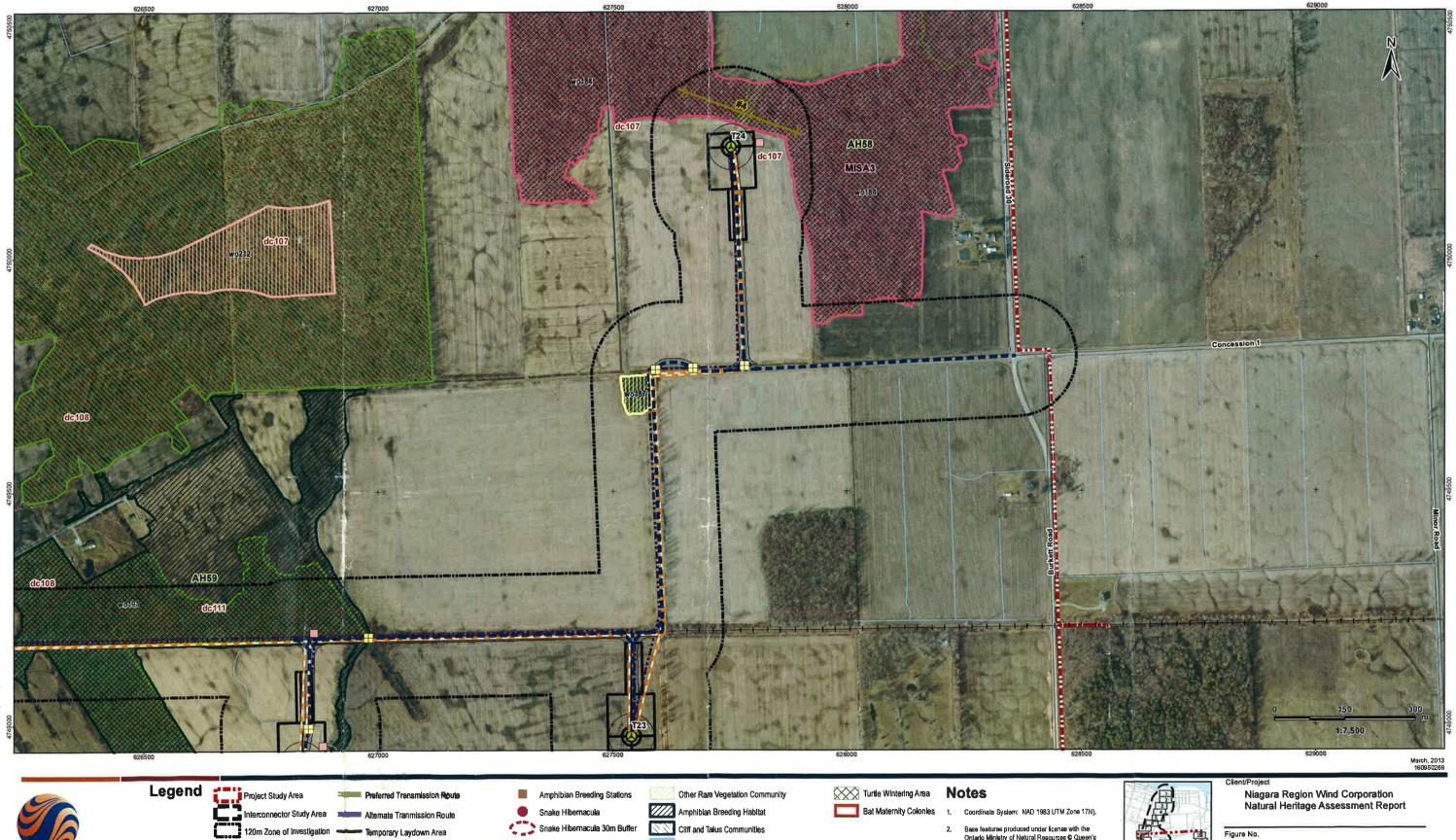
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Figure No.

6.54

Candidate Significant Wildlife Habitat Figure 6.54





Proposed Turbine Location Turbine Blade Length Tap-in Location

Junction Box Proposed Culvert Collector Lines - Underground or Overhead

Fibre Optic Line

Potential Access Road

Transformer Substation

Access Road 20m Construction Area

Potential Construction Laydown Area

MBB Point Count Location

Migratory Bird Transect - - - Winter Raptor Transect

Woodland Communities

Deer Congregation Areas (MNR) Landbird Migratory Stopover

Raptor Wintering Areas Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat

Woodland Vole Habitat Terrestrial Crayfish Habitat

Turtle Nesting Habitat/Snapping Turtle Habitat Turtle Habitat 30m Buffer

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6.58

**Candidate Significant** Wildlife Habitat Figure 6.58

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### Migratory Bird Survey

Stantec	100100001		Observation Form			
Project Number:			Project Name: NRWC  Field Personnel: A. ORR			
Date						
Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT: None	PPT (in last 24 hrs):	
Start Time: 8:55 am Start Point UTM: 1,20770 14749 236		End Time: 9.30 am  End Point UTM: 621138 / 4749103				
Habitat:			Transect:	5		
Feature #:	115A4		_			
Species			Tally	'		
AMBO	71					
Kinglet SP	17.1					
RBWO	11				4	
MBNO	1					
AMCR					11	
ROCH	+++++	+				
NOT 1-	1					
HETH	1111					
W HOUR	11					
Horbler- Sp.	1					
WTSP	1111					
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Kons	Crash	Silen .
	(Field Pe	ersonnel)

Signature:

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

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Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050

### Migratory Bird Survey Observation Form

Stanton	Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Observation Form			
Stantec Project Number			Project Name: NRWC			
Date	- 100-130 00		Field Personnel:			
Date	oct. 8,20	013	-		PPT (in last 24 hrs):	
Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT: Movie	Po 17	
Start Time: 7:50 am			End Time:	End Time: 8:20 am		
Start Point UTM: 627636/4750363		End Point UTM: 627904 /4750264				
Habitat:	FOD		Transect:			
Feature #: γ	115A3					
Species			Tally			
AMRO	1115 +	11 111 11	+			
WISP	+++-1	1				
BIBW	11					
MOFL	1					
MBNU	11					
BWBL	-1111 -	HT 4H				
GRCH	1					
Bech	1111					
SOSP	1					
BRCR	1					
HOWR	1					
DOMO	1					
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		gurrel				
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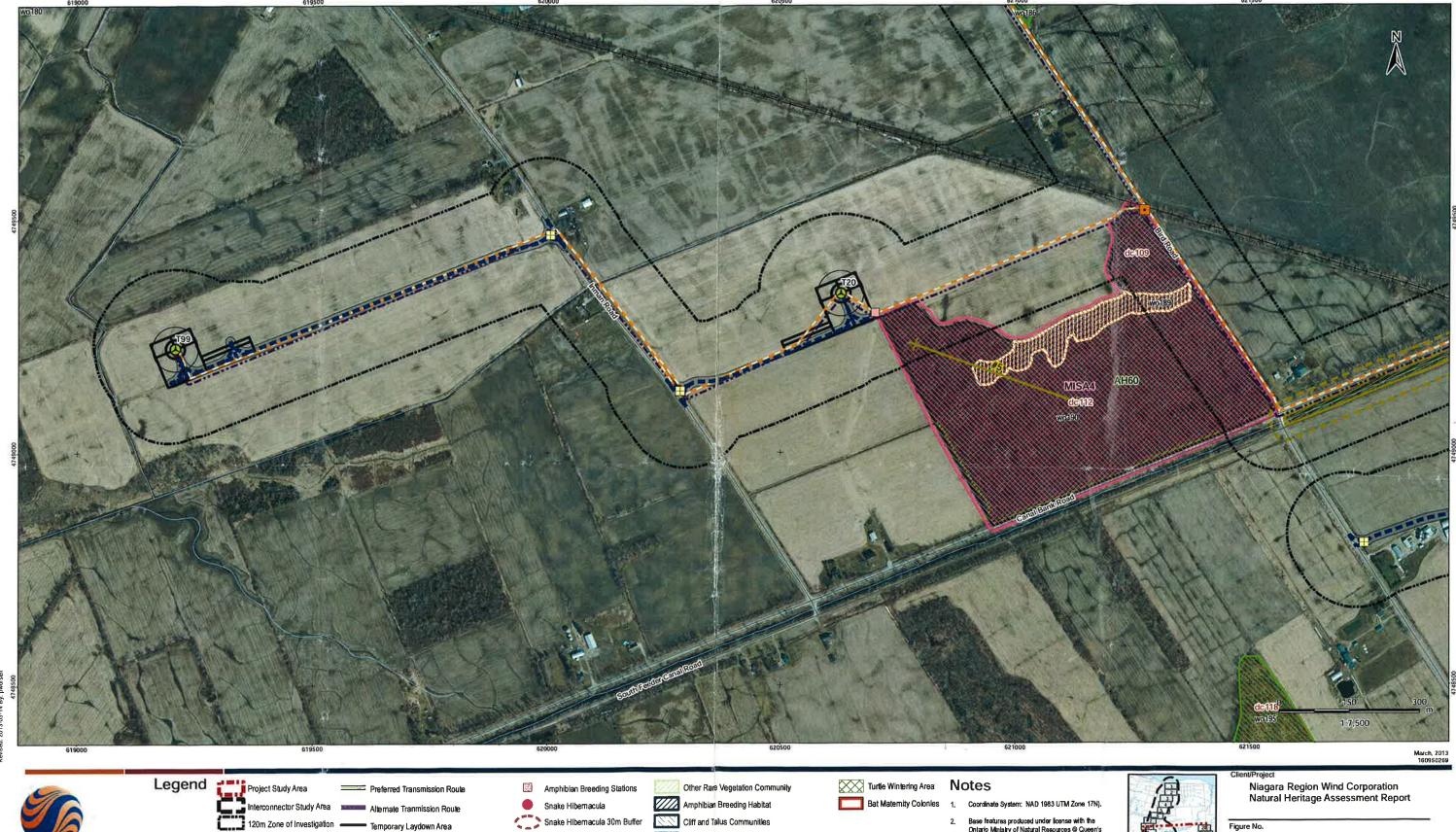
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	d Personnel)

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Signature:

(Project Manager)





Proposed Turbine Location Turbine Blade Length Tap-in Location Junction Box Proposed Culvert

Collector Lines - Underground or Overhead

Fibre Optic Line

Potential Access Road

Transformer Substation

Potential Construction Laydown Area

MBB Point Count Location Migratory Bird Transect Winter Raptor Transect Access Road 20m Construction Area

Woodland Communities Deer Congregation Areas (MNR) Landbird Migratory Stopover

Raptor Wintering Areas

Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat Woodland Vole Habitat

Terrestrial Crayfish Habitat Turtle Nesting Habitat/Snapping Turtle Habitat

Turtle Hallat 30m Buffer

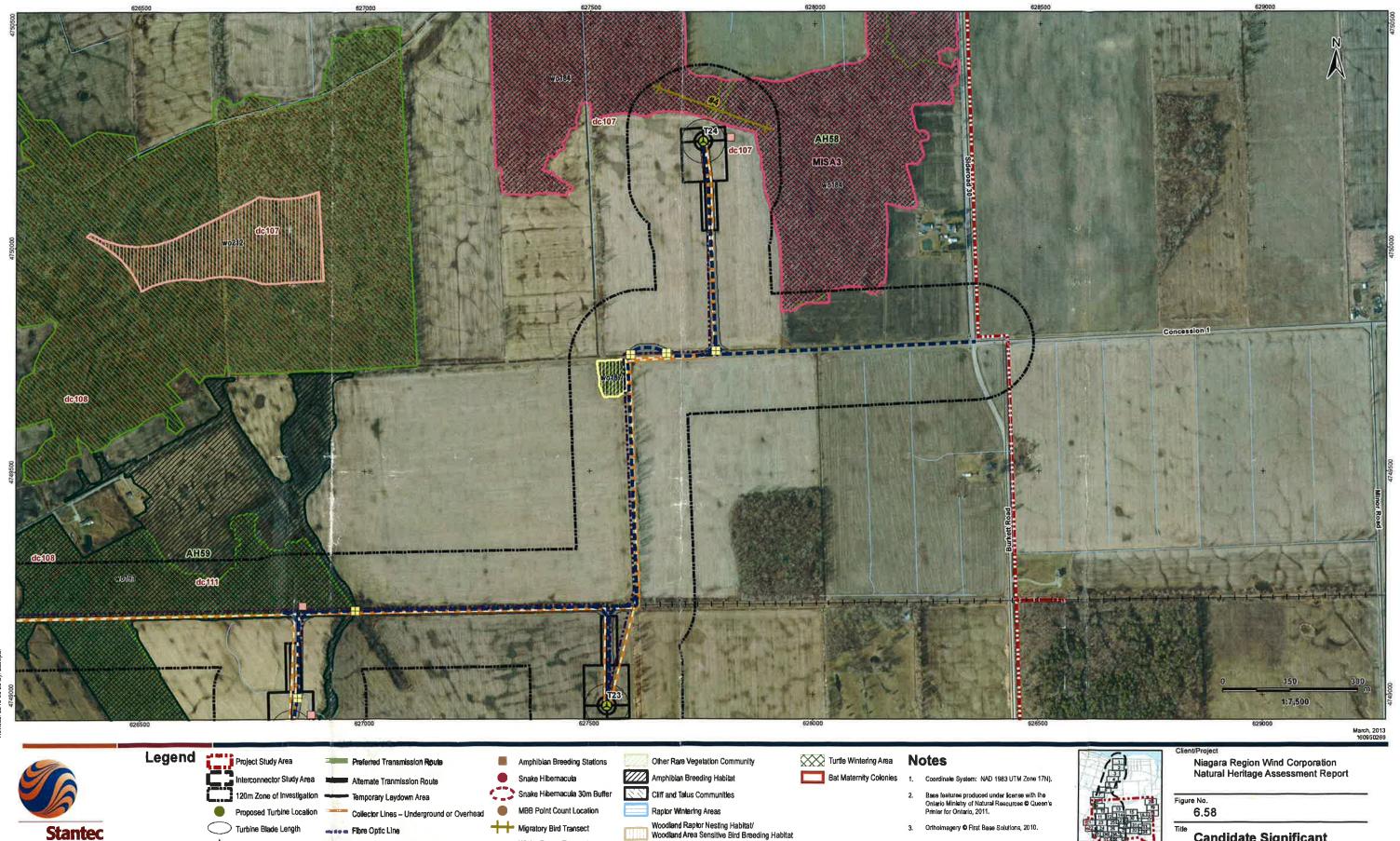
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Figure No.

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Woodland Vole Habitat

Turtle Habitat 30m Buffer

Terrestrial Crayfish Habitat

Turtle Nesting Habitat/Snapping Turtle Habitat

- - - Winter Raptor Transect

Woodland Communities

Deer Congregation Areas (MNR)

Landbird Migratory Stopover

**Candidate Significant** 

Wildlife Habitat

Figure 6.58

**Stantec** 

Tap-in Location

Junction Box

Proposed Culvert

Potential Access Road

Transformer Substation

Access Road 20m Construction Area

Potential Construction Laydown Area



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### Migratory Bird Survey Observation Form

	Canada N1G 4P5
	Tel: (519) 836-6050
Ctantos	Fax: (519) 836-2493

Stantec						
Project Number:	160950269 Sept. 9, 2013		Project Name:			
Date:			Field Personnel:			
ather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT: Mone	PPT (in last 24 hrs)	
Start Time:	- 25 pm		End Time:	:07) am		
	1	49236			19103.	
0	01)	7.1000	Transect: 5	21120 1-17	1,110, 3.	
Feature #:						
cies	.0.7_7		Tally			
Inter	111				24	
WPE	1					
BLJA	11					
IMBO	and the second					
OTH	11.1					
86R					- III	
OWO	i					
nalet - SP	1					
BCA	1					
And All to						
	Type	•				
		tion howest	occurring in FOD			
	2. 20.00	110-71, 1211-71	101 111			
		549				
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Signature:	Indrea Cl	Per .	Signature:			
	(Field Person	nnel)		(Project	Manager)	



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### Migratory Bird Survey Observation Form

Fax: (519) 836-2493		
11009502109	Project Name: NRWC	
	Field Personnel: A. OR R	
		Fax: (519) 836-2493  Project Name:

100950a109		42.00			
Date: Sept. 9, 2013		Field Personnel:	A.ORR		
Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT: None	PPT (in last 24 hrs):
Start Time: 8 Start Point UTM: 62 Habitat: F0	17636 /4750	1363	End Time: 6		5021.04
Feature #: M	ISA 3				
Species			Taily		
AMCR	11				
AM60	1				
GACA	1				
AMBD	11				
	V > 1	tolevil a	Interest -		
	Incid	entals Dlacksgo	IMPLYITUE Fracks		741
				,	

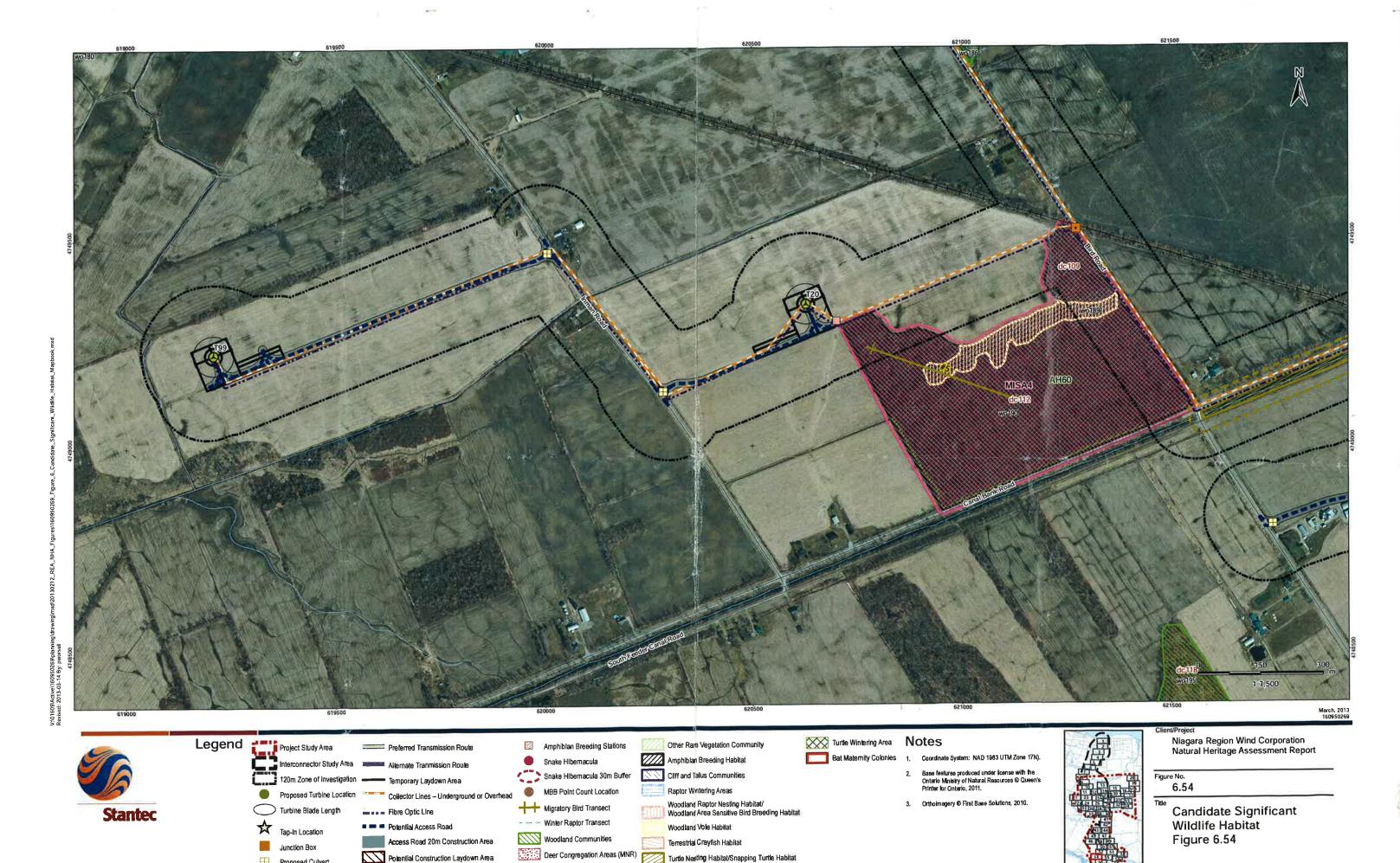
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(Field Personnel)

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Signature:

(Project Manager)

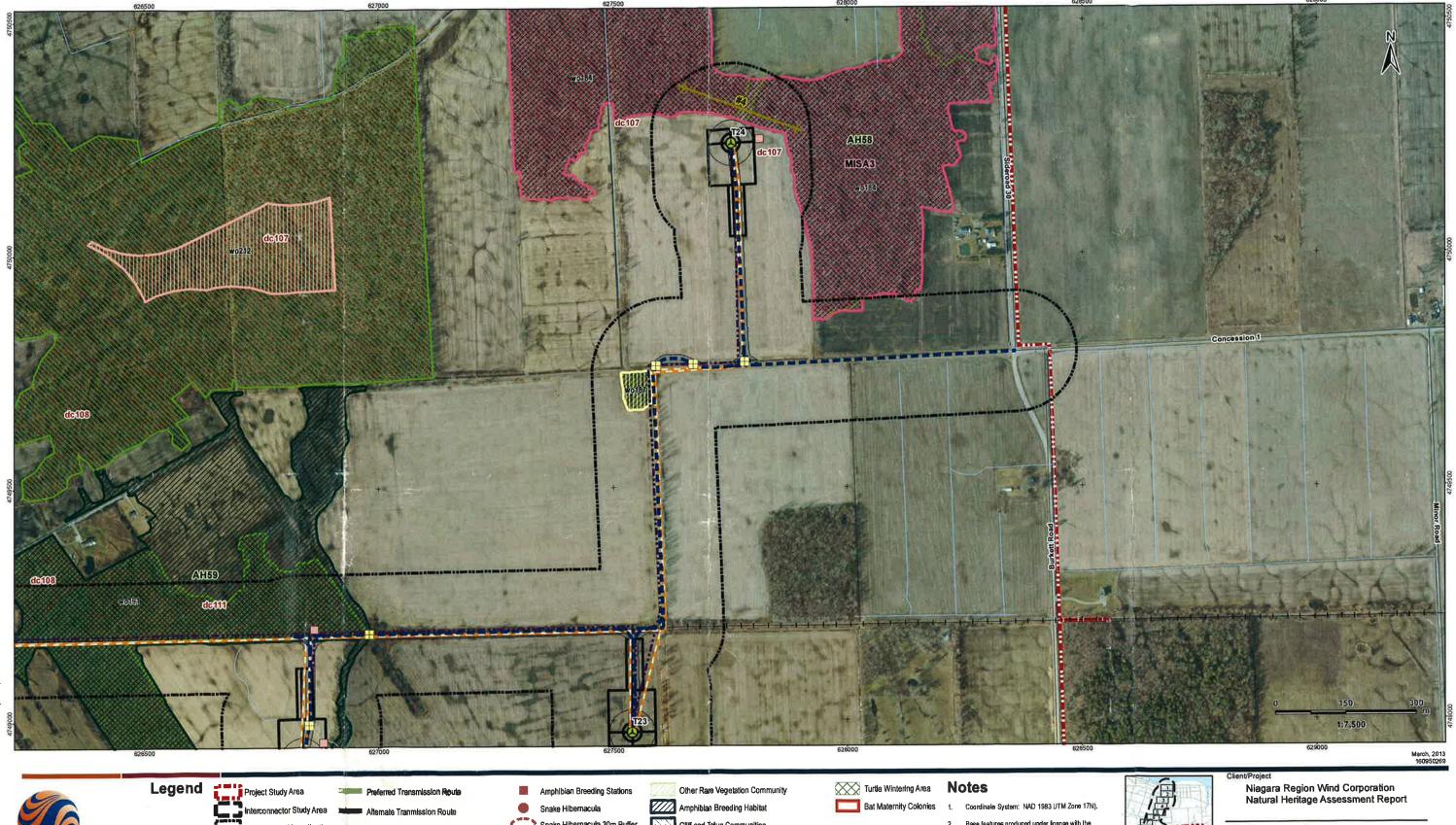


Turtle Havitat 30m Buffer

Landbird Migratory Stopover

Proposed Culvert

Transformer Substation



Turbine Blade Length

120m Zone of Investigation Proposed Turbine Location



Snake Hibemacula 30m Buffer



Cliff and Talus Communities Raptor Wintering Areas Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat Woodland Vole Habitat Terrestrial Crayfish Habitat Turtle Nesting Habitat/Snapping Turtle Habitat

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3. Orthoimagery ● First Base Solutions, 2010.

Figure No. 6.58

> **Candidate Significant** Wildlife Habitat

Figure 6.58

★ Tap-in Location Junction Box Proposed Culvert

Temporary Laydown Area Collector Lines - Underground or Overhead Fibre Optic Line

Access Road 20m Construction Area Potential Construction Laydown Area Transformer Substation

Deer Congregation Areas (MNR) Landbird Migratory Stopover

Turtle Hathitatt 30m Buffer



Stantec Consulting Ltd.

### Migratory Bird Survey

1 – 70 Southgate Drive	
Guelph, ON	
Canada N1G 4P5	
Tel: (519) 836-6050	
Fax: (519) 836-2493	
(= /	

Stantec	Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Observation Form			
Project Number	1609502109		Project Name: NRWC			
Date: Oct 11, 2013			Field Personnel: A. ORR			
Weather Conditions:	TEMP (°C):	WIND: 0 - 1	CLOUD: / O ハ	PPT: None	PPT (in last 24 hrs):	
Start Point UTM: Habitat:	7:48am 20770 /4749 DD MISA.4		End Time:	8:10 nm	19103	
Species	1		Tally			
DOWO	1					
BCCH	111					
Ampo	111					
AMCR	7111					
BLJA	1111					
	- 11					
GCKI	1					
NOTL	1		100			
WTSP						
SOSP						
					1.127	
				-		
		to the land				
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Olginator	Mnalles (Field Perso	nnel)		(Project REV	Manager) ': 2011-05-03 / FORM 0	



Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050

## Migratory Bird Survey Observation Form

Stantec	Fax: (519) 836-2493			
Project Number	140950269	Project Name:	NRWG	
		Field Personnel	1 000	

<b>Stantec</b> Fi	Fax: (519) 836-2493					
Project Number:	- IDD TOOD OF		Project Name:			
Date:			Field Personnel:	A.ORR		
_	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):	
Weather Conditions:	80	0-1	10%	None	None	
Start Time:	41 am		End Time:	9 10 ans		
Start Point UTM: 627636 4750363		End Point UTM:	27904 475	0264		
Habitat: Fo			Transect: Ц	f		
-	1SA3.				⊕r.	
Species			Tally		7	
AMRO	1111	Ĭ.				
BCCH	1111					
BUJ	-A 1					
HAWO	11					
WITSP	HH H	11-11				
BCKI	1111					
MODO	. 11					
Warbler-Sp.	1111					
The section of		+				
RWBL	as the second second	4.	HT +30			
GCKI	11					
BLBW	11					
DONO						
WBNV	1					
WIN						

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Signature: Oudrea Our (Field Personnel)	Signature: (Project Manager)  REV: 2011-05-03 / FORM 014



120m Zone of Investigation Proposed Turbine Location Turbine Blade Length Tap-In Location Junction Box Proposed Culvert

Temporary Laydown Area

Access Road 20m Construction Area

Potential Construction Laydown Area

---- Fibre Optic Line

Transformer Substation

Snake Hibernacula 30m Buffer MBB Point Count Location Collector Lines - Underground or Overhead Potential Access Road

Migratory Blrd Transect - - Winter Raptor Transect Woodland Communities Deer Congregation Areas (MNR)

Landbird Migratory Stopover

Cliff and Talus Communities Raptor Wintering Areas Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat Woodland Vole Habitat Terrestrial Crayfish Habitat

Turtle Habitat 30m Buffer

Turtle Nesting Habitat/Snapping Turtle Habitat

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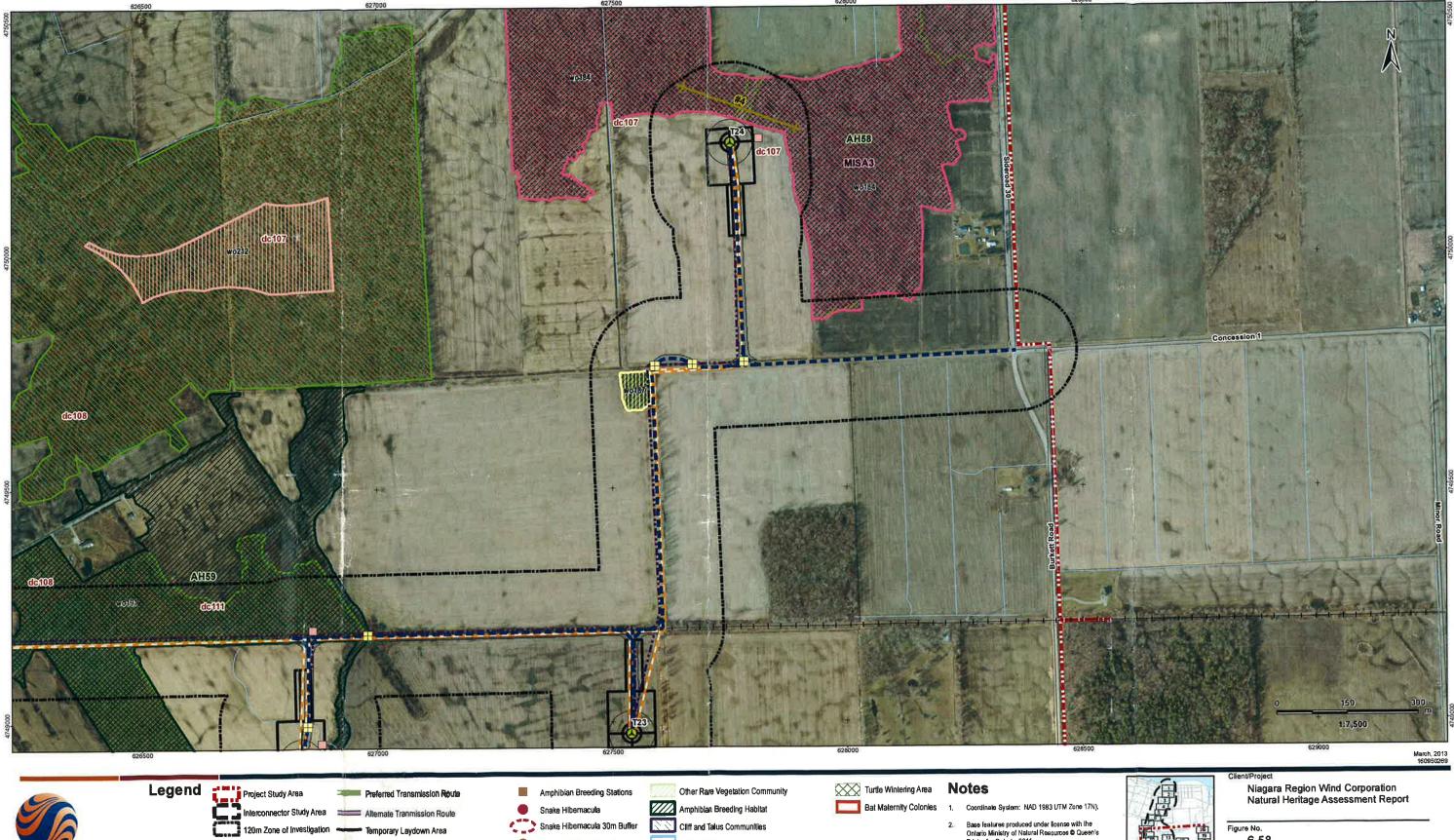
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Figure No.

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Turbine Blade Length Tap-in Location

Proposed Turbine Location Fibre Optic Line

Junction Box

Polential Access Road Access Road 20m Construction Area Potential Construction Laydown Area Proposed Culvert Transformer Substation

MBB Point Count Location Collector Lines - Underground or Overhead

Migratory Bird Transect - - - Winter Raptor Transect

Woodland Communities Deer Congregation Areas (MNR) Landbird Migratory Stopover

Raptor Wintering Areas Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat

Woodland Vole Habitat Terrestriai Crayfish Habitat Turtle Nesting Habitat/Snapping Turtle Habitat Turtle Halbitant 30m Buffer

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## Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada AP5

### Migratory Bird Survey Observation Form

Stantec	Fax: (519) 836-6050 Fax: (519) 836-2493	1			
Project Number:	160950269		Project Name:	NRWC	
Date:		13, 2013	Field Personnel:	A ORR	
Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT: Hone	PPT (in last 24 hrs):
	8:35 am 20770 / 4749 2	36	End Point UTM: (0	:05 21138/474	19103
	OISA 4		Transect: 5		
Species			Tally		
NOFL					
REGR	1				
BLJA	11				
BRCR	Ì				
Warpler-SD					
AMRO	1				
CEVM	+++				
					1.
a re					
	1, 1				
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Signature: Angliea (Field Personnel)

Signature:

(Project Manager)



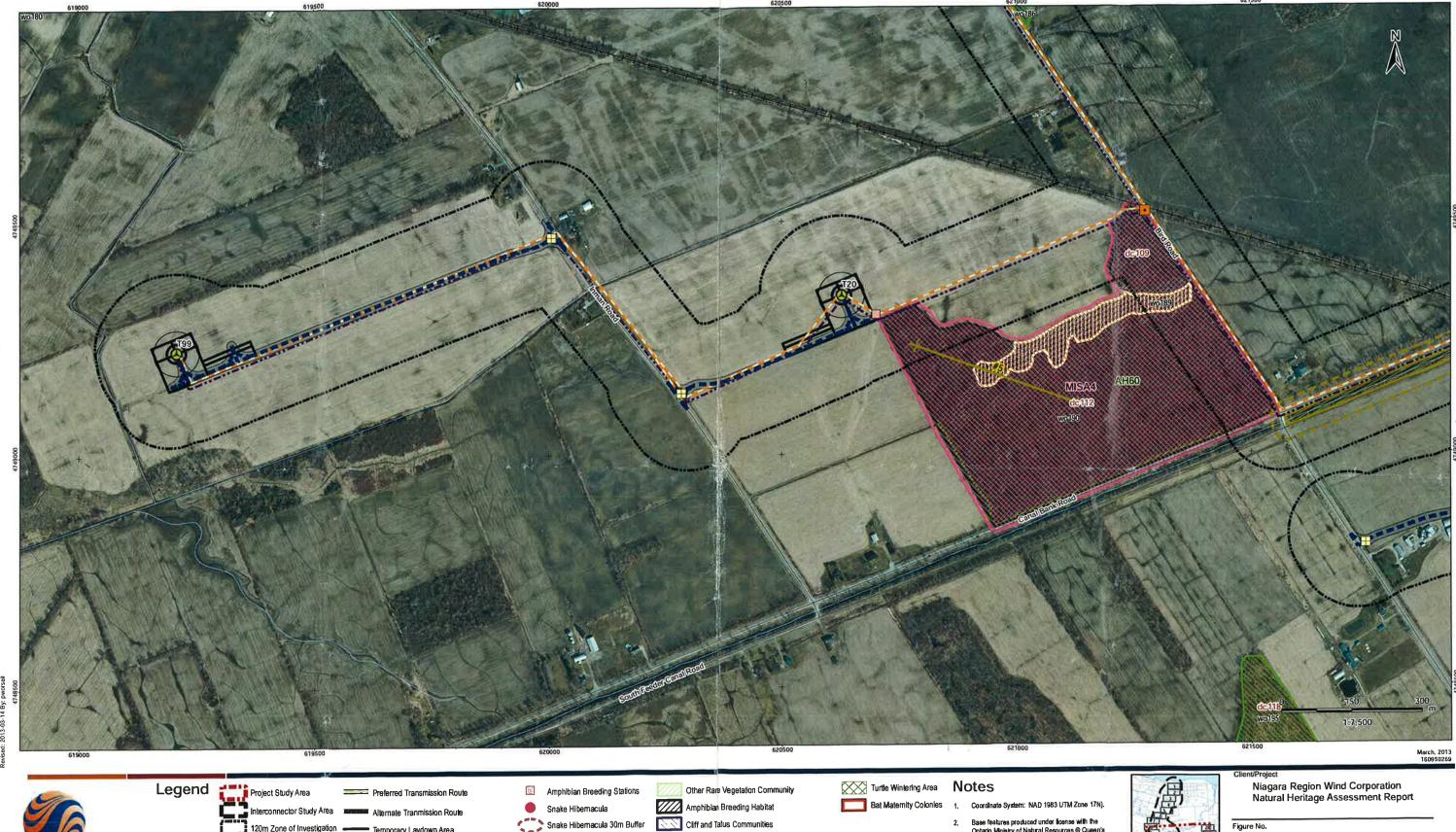
Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON

### Migratory Bird Survey

Stantec	Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		0	orm		
Project Number	1609502109		Project Name: NRWC			
Date		3	Field Personnel			
Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT: None	PPT (in last 24 hrs)	
			End Time: 8.05			
Start Point UTM: <u>6271636/4750363</u> Habitat: FOD		End Point UTM: log	17904/4750 1	1264		
Feature #: n	MISA 3					
Species			Tally			
BCCH						
AM60	1					
AMCA	1					
GRCA	11					
NOFL						
MODO						
YRWA	111					
HMRO	Ш					
				9+1		
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Malin	M.
Anortea	Len
/F	ield Personne

(Project Manager)







120m Zone of Investigation Proposed Turbine Location Turbine Blade Length Tap-in Location

Junction Box Proposed Culvert Collector Lines - Underground or Overhead

Fibre Optic Line Potential Access Road Access Road 20m Construction Area

Potential Construction Laydown Area

Transformer Substation

- - Winter Raptor Transect Woodland Communities Deer Congregation Areas (MNR) Landbird Migratory Stopover

MBB Point Count Location

Migratory Bird Transect

Raptor Wintering Areas Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habital Woodland Vole Habitat

Terrestrial Crayfish Habitat Turtle Nesting Habitat/Snapping Turtle Habitat Turtle Halltat 30m Buffer

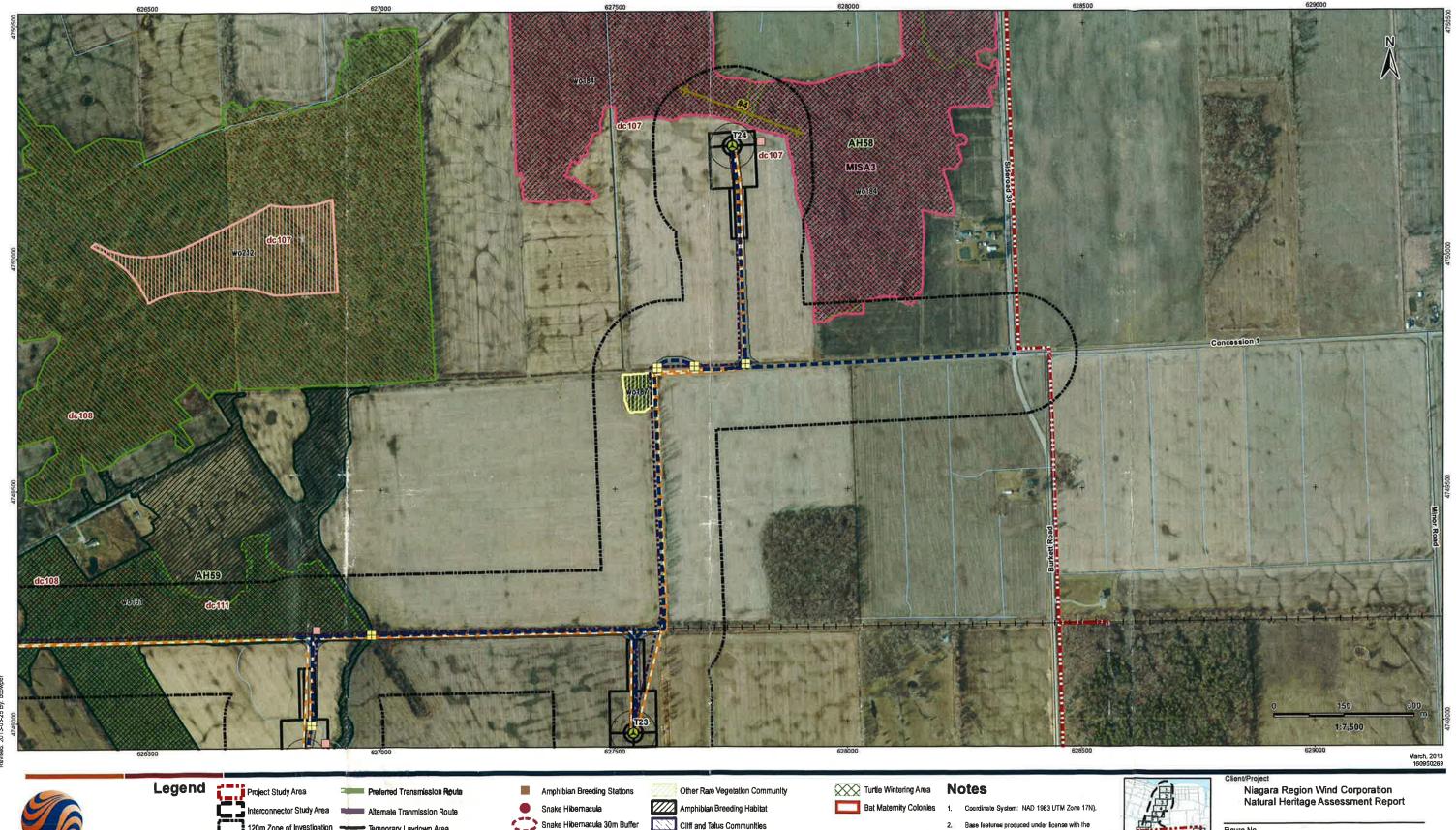
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Figure No.

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120m Zone of Investigation

Proposed Turbine Location Turbine Blade Length



Junction Box Proposed Culvert

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

MBB Point Count Location

Migratory Bird Transect - - - Winter Raptor Transect Woodland Communities

Deer Congregation Areas (MNR) Landbird Migratory Stopover

Cliff and Talus Communities

Raptor Wintering Areas Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat

Woodland Vole Habitat Terrestrial Crayfish Habitat Turtle Nesting Habitat/Snapping Turtle Habitat

Turtle Habitalt 30m Buffer

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Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON

### **Migratory Bird Survey**

Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Observation Form			
1609502109	9	Project Name:			
The second second		Field Personnel: A.ORR			
TEMP (°C):	WIND:	CLOUD:	PPT: None	PPT (in last 24 hrs):	
		End Time: &	:20 am		
	19236	End Point UTM:	21138/47	49103	
		_	-		
5A 4					
Species		Tally			
111-111					
1					
1					
411					
1					
111				111	
11	110			-11	
		10-1-1	-		
	TEMP (°C):  TEMP (°C):  TEMP (°C):  THE HITTH	TEMP (°C): WIND:  10950269  TEMP (°C): WIND:  1770/4749236  HHT HH	Ot: (519) 836-8050 c: (519) 836-2493    109502109	Cot   Field Personnel:   NRWC	

(Field Personnel)

Signature:

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



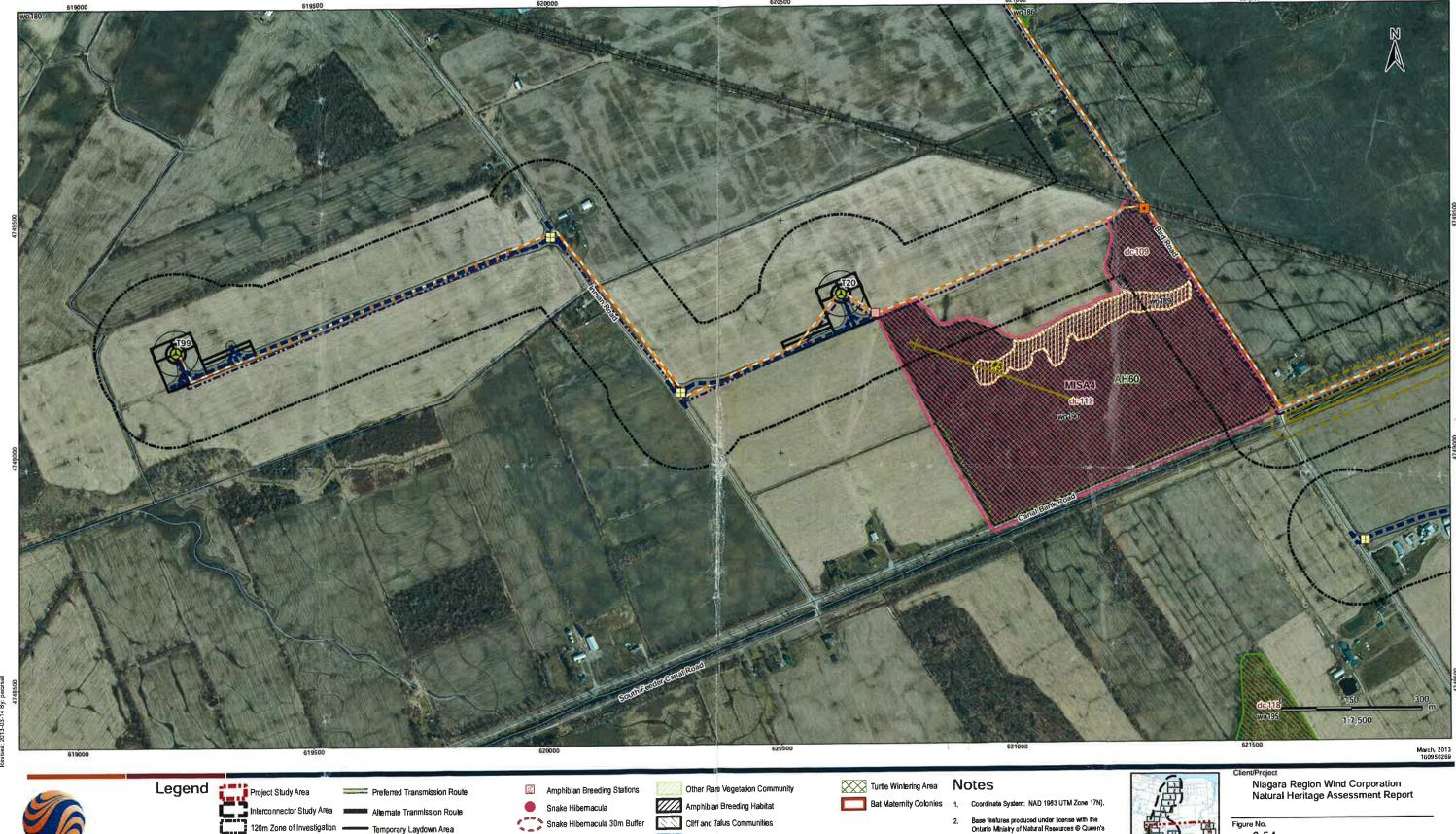
Stantec	1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Migratory Bird Survey Observation Form			
Project Number	160950269		Project Name:	NRWC		
Date			Field Personnel:	A.ORR		
Weather Conditions:		WIND:	cloud:	PPT: None	PPT (in last 24 hrs):	
Start Time: 9:00 am  Start Point UTM: 627636/4750363  Habitat: FOD  Feature #: WISA 3		; E	End Time: 9: 20 am  End Point UTM: 627 904 / 4750264  Transect: 4			
Species			Tally			
NOFL	1					
AMBO	1111					
BLJA	1					
DOWO						
SOSP	1111					
WTSP	111					
BWBL	41+ 44+	+				
modo						
KILL	V	*1				
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Signature: Andrea (Field Personnel)

Signature:

(Project Manager)



Proposed Turbine Location

Turbine Blade Length Tap-In Location

Junction Box Proposed Culvert

Collector Lines - Underground or Overhead Fibre Optic Line

■ ■ Potential Access Road Access Road 20m Construction Area Potential Construction Laydown Area

Transformer Substation

MBB Point Count Location

Migratory Bird Transect - - Winter Raptor Transect Woodland Communities

Deer Congregation Areas (MNR)

Landbird Migratory Stopover

Raptor Wintering Areas Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat Woodland Vole Habitat Terrestrial Crayfish Habitat Turtle Nesting Habitat/Snapping Turtle Habitat

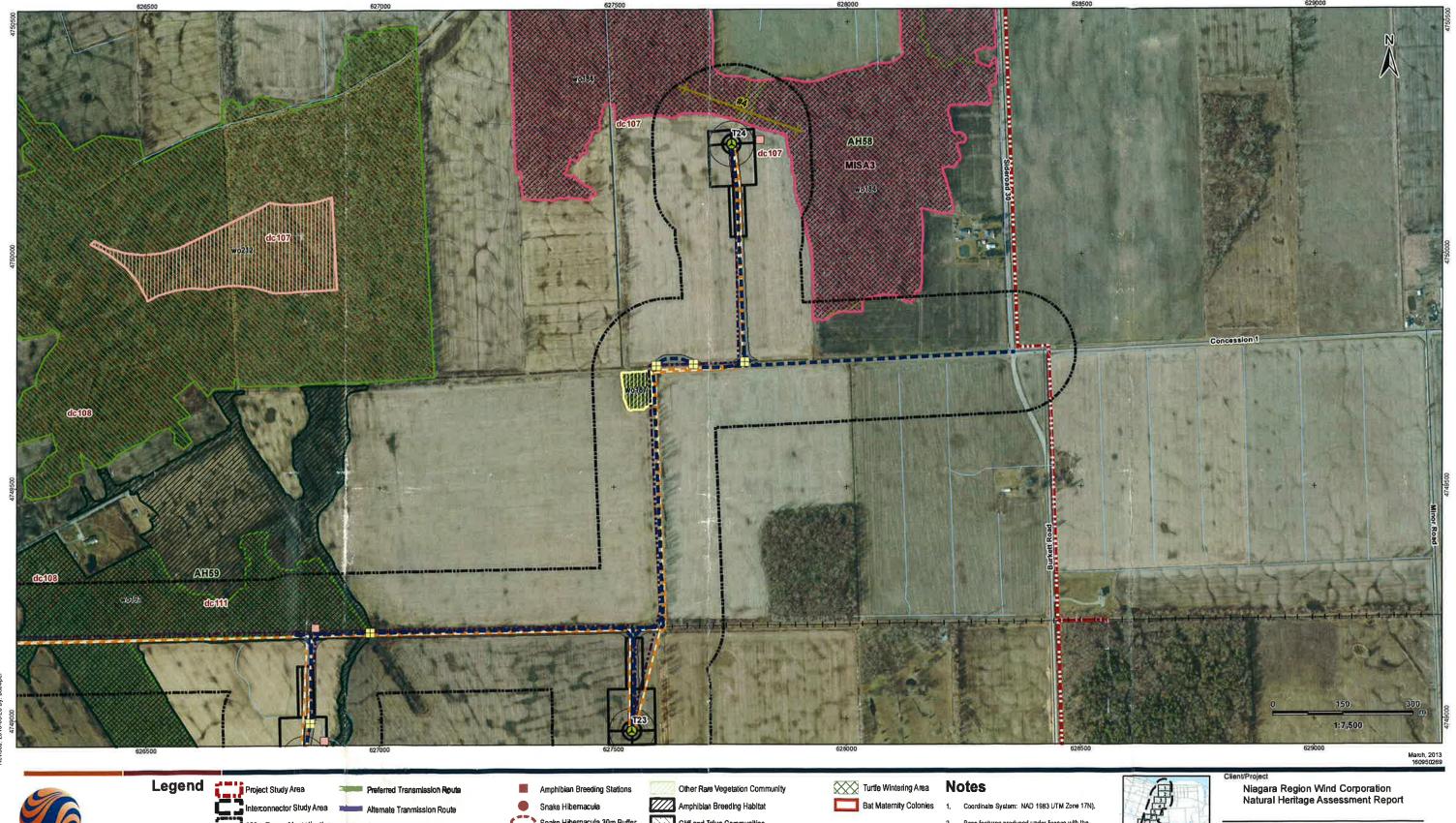
Turtle Hallat 30m Buffer

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Proposed Turbine Location Turbine Blade Length Tap-in Location

Junction Box Proposed Culvert

120m Zone of Investigation — 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

Snake Hibernacula 30m Buffer MBB Point Count Location

Migratory Bird Transect - - Winter Raptor Transect

Woodland Communities Deer Congregation Areas (MNR) Landbird Migratory Stopover

Cliff and Talus Communities

Raptor Wintering Areas Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat

Woodland Vole Habitat Terrestrial Crayfish Habitat

Turtle Nesting Habitat/Snapping Turtle Habitat Turtle Habitat 30m Buffer

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Stantec	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	10950269		NRWC	
Date:		013	Field Personnel	A. ORR	
Weather Conditions:	TEMP (°C); \3°	WIND:	CLOUD:	PPT: None	PPT (in last 24 hrs):  ∧/⊘}1 €
Start Point UTM:	8:45 am 20770 / 4749 SD 11519 4	1236		9:07am ,21138/474	19103
Species			Tally		,
NOFL	1				
AMRO	1				
BCCH	1111				
	-				
				11	
L					_

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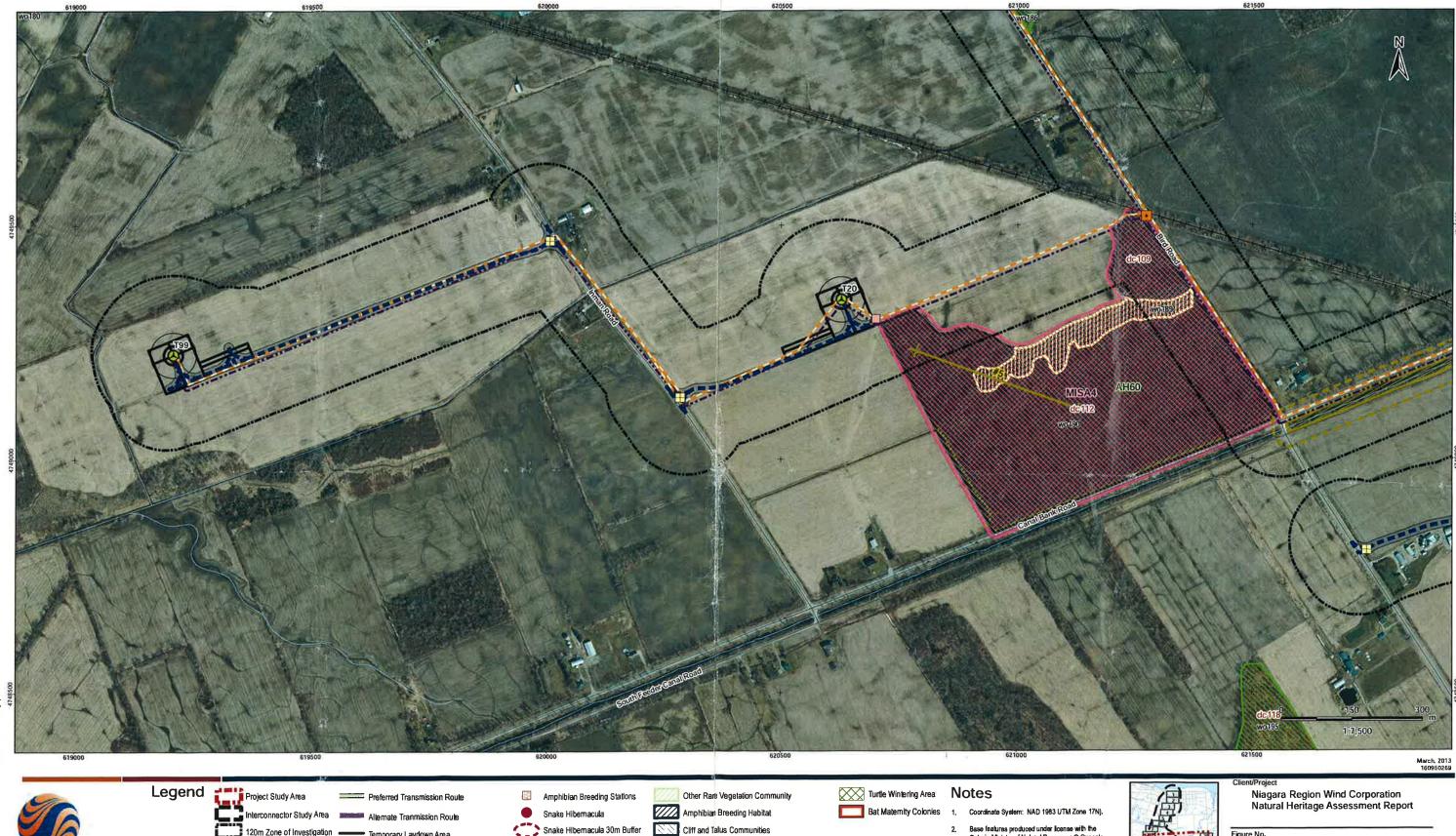
(Project Manager) REV: 2011-05-03 / FORM (



Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON

### **Migratory Bird Survey**

Stantec	Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493		Observation Form		
Project Number:	11,0950269		Project Name:	NBWC	
Date	11/1/10001001	>13	Field Personnel:		
Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT: None	PPT (in last 24 hrs):
	7:45 am		End Time:	8:10 27904/475	
<del></del>	15A 3		_	1	
Species			Tally		
GACH	1				
MODO	411+ 1				
AMCR	10				
NOPL	l l				
EWPE					
BITH	111				
AMAO	11				
110(110					
			•		
-					
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Signature.	(Field Person	onnel)		(Project REV	Manager) : 2011-05-03 / FORM 01



120m Zone of Investigation Turbine Blade Length Tap-in Location

Proposed Turbine Location === Fibre Optic Line Potential Access Road Junction Box Potential Construction Laydown Area Proposed Culvert Transformer Substation

Snake Hibernacula 30m Buffer Temporary Laydown Area Collector Lines - Underground or Overhead

Access Road 20m Construction Area

 MBB Point Count Location Migratory Bird Transect - - Winter Raptor Transect

Woodland Communities Deer Congregation Areas (MNR)

Landbird Migratory Stopover

Raptor Wintering Areas

Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat Woodland Vole Habitat Terrestrial Crayfish Habitat

Turtle Nesting Habitat/Snapping Turtle Habitat Turtle Habitat 30m Buffer

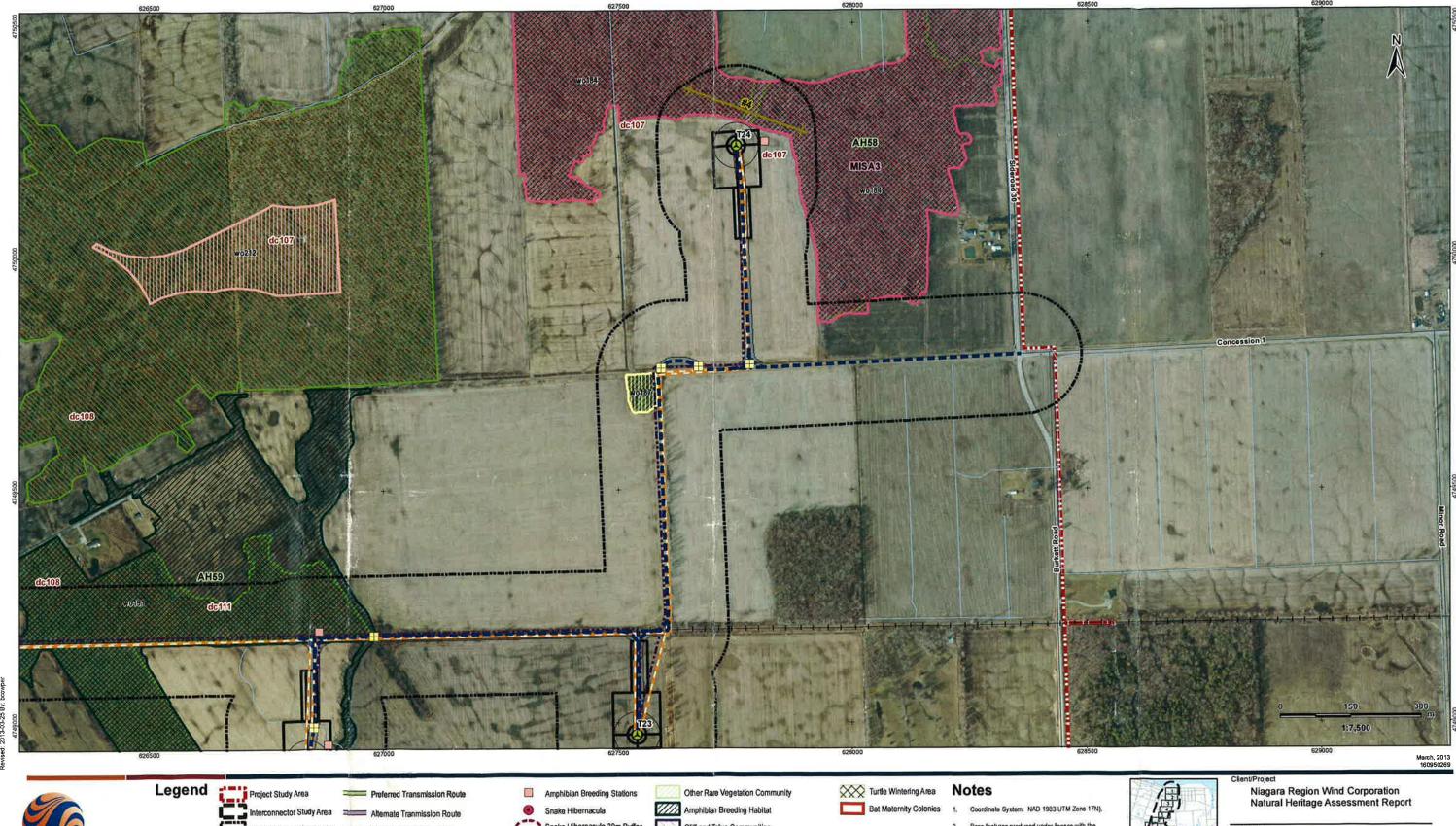
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Proposed Culvert

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

Snake Hibernacula 30m Buffer MBB Point Count Location Migratory Bird Transect

- - - Winter Raptor Transect Woodland Communities Deer Congregation Areas (MNR) Landbird Migratory Stopover

Cliff and Talus Communities

Raptor Wintering Areas Woodland Raptor Nesting Habitat/ Woodland Area Sensitive Bird Breeding Habitat

Woodland Vole Habitat Terrestrial Crayfish Habitat Turtle Nesting Habitat/Snapping Turtle Habitat

Turtle Habitat 30m Buffer

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### Migratory Bird Survey Observation Form

13	Canada N1G 4P5	
	Tel: (519) 836-6050	
Stantec	Fax: (519) 836-2493	

Stantec	Fax: (519) 836-2493		Winds			
Project Number:	1609502	-69	Project Name:	NRWC		
Date:	Sep 24/2013 Field Personnel: 5, Ball					
Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	PPT: NONE	PPT (in last 24 hrs):	
	8:30 am 527498/47	50338	End Time:	8:45am		
Habitat:	Design College of the last of		Transect:	4		
	1LSA3					
Species		ELLEDWY ELLE	Tally			
SOSP						
AM60	•					
AMCR						
NOFL			The state of the s			
BCCH	:					
GRCA						
Dowo						
unknown	•	sounded li	ke the ch	attering o	f a SOSP	
CAGO		heard lat	er on awing	1 the surve	<i>Z</i>	
AMRO						
Odom						
BLJA	•					
unknown	so · lct	ripping in	canopy.			
		71-3				
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Signature:

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(Project Manager)



Stantec Consulting Ltd. 1 – 70 Southgate Drive

Stantec	Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493			bservation F		
Project Number	16095026	9	Project Name	NRWC		
Date	Sep 24/		Field Personnel			
Weather Conditions:	TEMP (°C):	WIND:	CLOUD:	NONE	PPT (in last 24 hrs): NONE	
Start Time: 9:30 am Start Point UTM: 0620750/4749216		End Time: 9:50 am End Point UTM: 0621033/4748993				
	=0D	111210	Transect:	5		
	MLSA 4					
Species			Tally			
RCKI	•					
GCKI	6					
BLJA	• • •					
SOSP						
CEDW	•					
NOFL						
13010						
PART OF CHARLE			• • • • • • • • • • • • • • • • • • • •			
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Signature:

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



Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON Canada N1G 4P5 Tel: (519) 836-6050

### Migratory Bird Survey Observation Form

	Tel: (519) 836-6050		O.	DSCIVATION	71111
Stantec	Fax: (519) 836-2493				()
Project Number:	16095026	9	Project Name:	NRWC	
	Sep 30/2		Field Personnel:	J.Ball	E  E
	TEMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
Weather Conditions:	17	2	100	NONE	unknown
Start Time:	8:28am		End Time:	9:05am	
Start Point UTM:	0627645/	1475 0356		627905/4	750267
Habitat:			Transect:	4	
Feature #:		1 1 2 9 7 N2 1 8 H E 8 1 2 7			
Species			Tally		
AMCR	• *		2/		
AMRE				Name and the state of the state	
CAGO	•				
BCCH.					
unknown:	50 . (	inknown (c	hips in	canopy.	
				, )	
	in	icidental	observati	ons	
		WOFR + S			acent
Someone Control of		MAM			
		EG squir	-rel		
		- July			
					V STATE OF S
			real services		
24 32 1					

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(Field Personnel)

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Signature:

(Project Manager)



Stantec Consulting Ltd. 1 – 70 Southgate Drive Guelph, ON

## Migratory Bird Survey Observation Form

10	Canada N1G 4P5 Tel: (519) 836-6050	
Stantec	Fax: (519) 836-2493	

Julitec					
Project Number: 160	950269	#	Project Name:	NRWC	
	p 30/		Field Personnel:		
	EMP (°C):	WIND:	CLOUD:	PPT:	PPT (in last 24 hrs):
Weather Conditions:	17	2	100	NONE	unknown
Start Time: 7 : 3	22 000		End Time:	7:52 am	
Start Point UTM: 079	3767/4-	749230	End Point UTM: 06		
Habitat:	th deaca	charb lavor	Transect:		
Feature #: MLS	SA 4	Shrub layer -moist pockets -logging & skidd	er trails throughout		
Species			Tally		1
BLJA					
AMRO					
AMCR					
Swallow Sp	12	flyover			
unknown Sp.	: 2	- unknown!	chips in	Canopy	
5/3/4					
					•
				<u></u>	
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16.78				34 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 - 3 -	
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Signature:	501	2	Signature:		
Am	(Field Pers	sonnel)		(Project Ma	anager)

SH	LOCATION	Weather Conditions:	Project Number 1609 502  Date / Time: 2:50 PM - 3:	Stantec Stante
N/A	TIME	Temp:	609 50269 50PM-3:10	Stante 70-1 S Guelph N1G 4 Tel: (5 Fax: (6
None	SPECIES	Wind:	69 69	Stantec Consulting L'c 70-1 Southgate Drive Guelph, Ontario, Cana: N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493
brush piles of varying sizes at the edge of FOD are the hibernacula. Located just of accessible property. Searched accessible property. Searched accessible property thoroughly including the edge of the wetland. Lifted toose bark and other debris, Na utils and other debris, Na utils	HABITAT DESCRIPTION	d: Cloud: PPT:  (sunny at None  time of survey)	Apr 14/2013 Field Personnel: J. Ball	Reptile Survey Observation Form hibernacul a Survey
	OTHER NOTES	PPT in last 24 hrs:	1 Farm	m SHI

Signature: (Fielt Personnel)

Page of

Signature:

(Project Manager)



Stantec Consulting L'o.

								. 1			
					17T 062224847	LOCATION	X DO	Weather Conditions:	Date / Time: April	Project Number 160	Stamtec
					N/A	TIME	Zo	Temp:	14/20	60950269	70-1 Sout Guelph, C N1G 4P5 Tel: (519) Fax: (519
					None	SPECIES	T AT	Wind:	013 8:	169	70-1 Southgate Drive Guelph, Ontario, Canada N1G 4P5 Tel: (519) 836-6050 Fax: (519) 836-2493
	K	Full sun during entire	Photos taken	-68	to t	HABITAT DESCRIPTION	TEMPT TO CROSS THE	2 Cloud: PPT:	14/2013 3:55-4:15pm Field Personnel: J, Ball	Project Name: Niagara U	Reptile Survey Observation Form  (+15ernacula Survey)
						OTHER NOTES	E BRIDGE	PPT in last 24 hrs:		agara Wind Farm	orm SH4

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Signature:

(Project Manager)

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

**Observation Form** Reptile Survey

NRW C-Snoke Hibermacela Project Name:

3000

ORR Field Personnel:

None PPT: Cloud:

0

5-20

Wind:

Temp:

Weather Conditions:

2013

5

Date / Time: How!

Project Number 160950369

PPT in last 24 hrs: Nono

11:00 - 5 pm

LOCATION	TIME	SPECIES	HABITAT DESCRIPTION	OTHER NOTES
SHS	01:11-02:11	K/N	Tile of down woods deeps in more of they spre/chter	SPPE/CHFR
SHC	01 1-05.21	S = 4		SPPE
SH7-13mer?	2730-2750	N	tricks	Surveyer i tinin road as unsurrat access, Could not go out 30m. Vall upe down edge of mad/cupl-a
545	3.55-4.15	1 EA. Garler	n own,	SPDE & CHER 'Siberice 110"
SHZ	4.30-40 NIA.	NIA.	Lorge piest stones and concrete in middle TONU, 8 CHFR of the field   #19711 JTM= DO33872/47104440 Snat habitat for "hipernacula"!	ruvu ir CHFR snat habitat for "hipermacula"

Quality Control: This form is complete ( ) & Legible ( ). Signature:

(Field Personnel) of

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Signature:

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(Project Manager)

LOCATION	TIME	SPECIES	HABITAT DIESCRIPTION	OTHER NOTES
Quality Control: This form is complete () & legible () Signature:	plete () & legit		Signature:	
Pageof	(Field Personnel)	1	(Project Manager)	REV: May 07 EODM 005

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

# **Observation Form** Reptile Survey

Basking Turtles

Project Name: NRWC - Basking Turtles.

A. ORR Field Personnel:

None PPT: 30% Cloud: CX

Wind:

Temp:

15

Weather Conditions:

2013

S

April

Date / Time:

Project Number 160950269

PPT in last 24 hrs.

None

LOCATION	TIME	SPECIES	HABITAT DESCRIPTION	OTHER NOTES
177	3:35	N/B	Welland River - along Rd. See photos.	GBHE, CAGO

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uality Control	Signature:

(Field Personnel)

Jo

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Signature:

(Project Manager)

**OTHER NOTES** HABITAT DESCRIPTION SPECIES Quality Control: This form is complete ( ) & legible ( ). Signature: TIME LOCATION

(Project Manager) Signature: (Field Personnel) of

Page\_

Stantec Consulting Ltd.
70-1 Southgate Drive
Guelph, Ontario, Canada
N1G 4P5
Tel: (519) 836-6050
Fax: (519) 836-2493

# **Observation Form** Reptile Survey

Project Name: NRBC

Field Personnel:

2013

Mar

Date / Time: \_\_

Weather Conditions:

Project Number 160950269

HORR

PPT in last 24 hrs:

T. Storn

Showe

PPT: 7.78 Cloud: 100 3 Wind: 230260 Temp:

- bm Oan 5000

LOCATION	TIME	SPECIES	HABITAT DESCRIPTION	OTHER NOTES
ZH X	10:20-	Andrews	Pile of sheks/ ogs in forest educ (sos)	Inches to St. 2-1-1. CMGO,
SHZ	1:05-		Pill of morsil anorgania in the form	Incidentals. 3080. TUVU, RWEL, SOSP, KILL,
SHS	11.30 -	)	Pile of Strict / 2001 : 12 mil	SUNTUL TEM SING - SUNTUL TEM SING - TEMP TEMP TEMP TEMP TEMP TEMP TEMP TEMP
SHY	12:10-		Most soos someth MANN feath	EARS
Basking Turtles/ Wellowa River	1.00	-	28 malh   h58880	Invidence 7 and was
SH3	1.35 -	)	The of stack/ ogs in Fob	
SH7	2 00 - 2 300	1	Down legs, see 5560s, all mirroration	Some grammer and a some a mass.

(Field Personnel)

Jo

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Signature:

(Project Manager)

	LOCATION	TIME	SPECIES	HABITAT DESCRIPTION	OTHER NOTES
	SHE	3:00 -		Pirod Sano as summing as as as all a tos	√لا ( دونی اشعبسوس
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1					
1					
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	Signature:
(Project Manager)	



Turtle Overwintering and Snake Hibernarila Surveys May 2/2013 160950269 Niagara Wind Farm J. Ball

Stantec

SH6 10:45-11:00am Temper=18°C Wind=1 Cloud=0 Precip=0 Searched 30m on either side of SH6 along the Ag 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 = 1900 wind = 2 17T 0620881/4756520 Small brown snake 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 0622333/476136) 12:50-13:05 17 7 0622 333/476 1361 No turtles observed Searched 120m of either side of proposed Transmission Line with focus on logs for basking Checked by:

Checked by:

Checked by:

Checked by: 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 hibernacula, No hibernacula, No access.

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 (north side up to the electric fence) since the snake hibernacula identified may have originally included the bridge foundation. No Snakes observed.

SH 1 15:30-15:50

Searched accessible area and edge of Agfield. No Snakes observed. Photo taken.

TURTLES Reptile Survey
Observation Form

Nigagara Project Name:

Field Personnel: 11:00-11:15

Ba

.Tdd

Cloud:

Wind:

Temp:

Weather Conditions:

Date / Time: April 18/2013 .

Project Number [609 50269]

PPT in last 24 hrs: NONE

NON (SUNNY eluring

	B101111 - 111	1110-11111		P. Walley		
OTHER NOTES						
HABITAT DESCRIPTION	Some logs for basking in Water. As field all the way	thicket to edge of river on	and bank for basking	turtles-hone found		
SPECIES	N/A					
TIME	11:00-					
LOCATION	120m search of 11:00-N/A either side of 11:15 N/A	line 0622459/	4761388			

1771

Quality Control This form is complete ( & legible ( ).
Signature:

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Signature:

(Project Manager)

REV: May 07 FORM 005



# Site Visit Record

TH62

Project Number 1609 50 269			Project Name:	Niagara	Wind Farm
Date / Time: June 10	3/2013	3	_ Field Personne	: J. Ball	
Weather Conditions:	Temp:	Wind:	Cloud:	PPT: light ra	PPT in last 24 hrs:

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

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Signature: Signature:	Signature:		
(Field Personnel)	31	(Project Manager)	- 2
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Site Visit Record
TH 28/TH29

Project Number 1609 5	1			Jiagara W	ind Farm
Date / Time: June	0/2013		Field Personnel: _	J. Ball	
Weather Conditions:	Temp:	Wind:	Cloud:	PPT: None	PPT in last 24 hrs:

Time:	Description of Activities and Observations
0:55	TH 283 There observed for potential turtle nesting
	habitat. A drainnage feature & 3m wide runs through
771	TH28 which is surrounded by canary reed grass
	and cattails. The partion of TH28 that is located
	at the side of St. Amis 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 of to 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 soils are not ideal
	The edges of ditches are also sureptible to
	flash flooding which would not be suitable habits
	for nesting.) THE is also dominated by canary
	reed grass and has a drainage teature running
	through it.

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Signature: Signature: Signature	Signature:		
(Field Personnel)		(Project Manager)	
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## **Site Visit Record**

TH38

Project Nu	mber 1609 50269	Project Name: Miagara Wind Tarm
Date / Tim	e: June 10/2013	Field Personnel: 5 Ball
Weather	Conditions: Temp: Wind:	Cloud: PPT: PPT in last 24 hrs: N/A
Time:	Description of Activities and Observation	ons
11:38	Assessed TH38 for DO	tential turtle nestino
	habitat. Watercourse (d	
	wide and surrounded	by canary med arass
	Agriculture Surrounds	frature on all sides (excludi
		sheat to the E. & S and crop to th
	Concession 4 provides	
	at the shoulders of the	2 road however draft Swith
	criterian excludes this	habitat from qualifying as
	SWH.	r 7 3

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Page of Field Personnel)		(Project Manager) REV: May, 07	Form 028



- STATE LOW-				
Project Number 160950269		Project Name: _	Jraggra W	ind Farm
Date / Time: <u>June 10/2013</u>	)	Field Personnel:	J. Ball	<u> </u>
Weather Conditions: Temp:	Wind:	Cloud:	PPT: NONE	PPT in last 24 hrs:

Time:	Description of Activities and Observations	
11:55	Assessed TH21 for potential turtle nesting habitat	
	Waterrouse is meandering through how fields.	
	Waterrourse is with wide & surrounded by den	150
	canary reed grass. There is a small pile of	
	gravel beside the watercourse at the midpoint	
	of the feature, which would likely	
	provide good nesting habitat albeit artificial.	
	'Artificial habitat includes a small strip of exposed	
	gravel shoulder on either side of Rosdene Rd.	
	The draft criterion for SWH excludes roadside	
	gravel from significance. There is a	
	steps clay bank that is exposed along the	
	watercourse however the steenness and clau	
	material would not provide suitable nesting	
	habitat.	
141		

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Signature:	Signature:		
(Field Personnel)		(Project Manager)	
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# **Site Visit Record**

TH69

Project Number 1609	50269		Project Name: Niggara Wind Farm			
Date / Time: <u>Sune 10/2013</u>			Field Personnel: J. Ball			
Weather Conditions:	Temp:	Wind:	Cloud:	PPT: NONE	PPT in last 24 hrs:	

Time:	Description of Activities and Observations
12:30	Assessed TH69 for entential turtle nesting habitat
	Waterrourse is ~ 2 m wide and surrounded by
	dense Canary reed grass throughout its length.
	Watercourse is bordered by agricultural frelds
	(Hay or Wheat) and is also bordered in part
	by Gee Rd. All exposed soils in the area represent
W- 1	wet clay depressions within paricultural fields
	that would not provide suitable habitat 3 steep.
	exposed clay banks that would not provide
	suitable habitat. The shoulders of Gee Rd.
	usuld provide adouate nesting habitat however.
	the Draft Swith criterion does not consider
	roadside resting habitat to be significant
18	
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	Signature:		
(Field Personnel)		(Project Manager)	
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# **Site Visit Record**

TH39/TH40

Statilet					
Project Number 1609 50269			Project Name: Niagara Wind Farm		
Date / Time: June	10/2013	<u> </u>	_ Field Personnel:	J. Ball	
Weather Conditions:	Temp:	Wind:	Cloud: 100%	PPT: lightram	PPT in last 24 hrs:

Time:	Description of Activities and Observations
13:10	Assessed TH39 & TH40 for potential turtle
	nesting habitat Watercourse is ~ 3m wide and
	surrounded with dense rangery reed grass Both
	features are surrounded by Agricultural crops
	on the west and east sides. The portion of
	TH39 that enters woodland 103 is too shaded
	for tutle resting Gravel shoulders may provide
(C) //	adequate pesting habitat however draft SWH
II on a	Critérion does not consider roadsides to be Swit
11	

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Signature:	Signature:		
(Field Personnel)		(Project Manager)	
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Ju						
	mber 1609			$\int_{\Lambda}$		nd Farm
Date / Tim	e: June 1	0/2018		Field Personnel: J. Ball  Cloud: PPT: PPT in last  RAIN N/A		
Weather	Conditions:	Temp:	Wind:			
Time:	Description	of Activities	and Observa	tions		
13:30	Assess	ed TH4	1 for	potential tu	rtle nest	ina habitat
	Frature		Canary	1	meadou	
	Cisplate	1 -	-	ounded by	· Agricul	tural field
	and dir	11	1.	1	Ha founda	tion
			Danure	pile A ara	1 / 1	lane
	and a	s nestin	1 . 1		11	et criterio
	Cac Su	H does	1			abitat as
	0: :5	1 = -1	not c	OI BIDEL TO	OCH SIDE THE	ABITAT AS
	Signific	ant.		· · · · · · · · · · · · · · · · · · ·		
	100				11.4. 11.5	
					-	
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Signature: School & Kall	Signature:		
(Field Personnel)		(Project Manager)	
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# **Site Visit Record**

TH9/TH10

Project Number 1609	50269		Project Name: _	Viagara Wi	ind Farm
Date / Time: June 10/2013		Field Personnel:	Field Personnel: J. Ball		
Weather Conditions:	Temp:	Wind:	Cloud:	PPT: light ran	PPT in last 24 hrs:

Time:	Description of Activities and Observations
14:18	Assessed TH9 and THIO for potential turtle
	resting habitat, THIO is no longer a wetland
	and is now a ploused field for cross. TH9 is
	comprised of 2 separate ponds surrounded by
	dense canary reed grass and agricultural fields
	The parking area provides scritable nesting habitat
	however the Draft Sut criterion does not include
	driversaus as SWH 3 piles of exposed clay as
	located by the furthest pond in TH9 however clay does
	not provide suitable nesting material.
11,100	
ette si	
1311 E	

Quality Control: This form is complete () & legible ().			
Signature: Xourice Sall	Signature:		
(Field Personnel)		(Project Manager)	
Page of		REV: May, 07	Form 028



	Tel: (519) 836-6050
	Fax: (519) 836-2493
Stante.	

Project Number			Project Name:	NWRC	
Date / Time:		Field Personnel: _	Melissa	Cameron	
Weather Conditions:	Temp: 22°C	Wind: 2-3	Cloud:	PPT: Ø	PPT in last 24 hrs:

Time:	Description of Activities and Observations
2:20	TH-45 Photos Patron 168-174
	- poud surrounded by red made ask willow think to
	- piled gravel to many west of pour and gravel substrate
	at horthwest between gravel piles and gravel railway ROW
	- piled gravel to them west of poud and gravel substrate at horthwest between gravel piles and gravel railway ROW - west and of pand is dense cottail hoursh and showb swamp
,	TH-3 Photo 165-167
	- Wetland in red haple, ash cottonwood thicket with some
	open water (shallow) and cathail mara.
	- surrounded by gravel boads to west and north, and
	agicaltural field to south
	the exposed wineral soil or gravel lesides access had
	- he exposed wineral soil or gravel lesides access head - heary (saturated) clay soil along dital at east and
	* Adjacent landomer in ted that Black is as a former
	* Adjacent landonner hoted that Blanding's are observed in this area: - typically in woods during turkey hunting sques
	11017
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Signature: Melse Communication	Signature:		
(Field Personnel)		(Project Manager)	
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Project Number			Project Name:	NWRC.	
Date / Time: June 11 2013		Field Personnel: Muissa Camera			
Weather Conditions:	Temp:	Wind:	Cloud:	PPT:	PPT in last 24 hrs:

Time:	Description of Activities and Observations
3:20pm	TH-5 south Photos 159-164
	- surrounded by con field to west and north, forest to
	east and south
	- exposed day silt believed has been where tractor created
	rectangular duc-ont beside wetland
	- sides of ditch on west side of wetland, adjacent to
	sey bear field, are exposed clay - steep slope (>1:1)
***************************************	
	TH-5 horty Photos 155-158
	- West side is say han field
	- east side is conf field
	- morte is forest transitioning to Loadside meadows
	- sech is desse decidances forest
	- ho expected soil
	- ag field and forest on all sides
	- ag field and forest on all sides
1	

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(Field Personnel)		(Project Manager)	
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#### **Site Visit Record**

Judii 1868	······································		
Project Number	Project Name:	NWRC	
Date / Time: June 12, 2013	Field Personnel:	Maliaca	Calvala

 Weather Conditions:
 Temp:
 Wind:
 Cloud:
 PPT:
 PPT in last 24 hrs:

 2A°C
 1
 20°/<sub>6</sub>
 9
 5
 5

Time:	Description of Activities and Observations
4.20	TH-19 assarts Photos 145-154
	- grassy meadow with meadeing strong in center
	- agridultural fields to horted and so to Contivated and
	pasture)
	- Bobolink in meadow to horty of dream in partire
***************************************	- heard from ITT 0622029
	4763287
	- silty clay piles around dagant at SH-4
	- two ban swallow overland 17T 0622332
	- BOBO observed a return week 0622147 4763239
	4763292
	TH-46
giác.	dence grass - marsy wetland does not provide very good
4,000	no exposed soil - trees meadow/ hay and egine there & fields
***************************************	around entire primeter.

Quality Control: This form is complete () & legible ().			
Signature: Melin Caure	Signature:		
(Field Personnel)		(Project Manager)	
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#### **Site Visit Record**

Project Name: NWRC

	N1G 4P5
	Tel: (519) 836-6050
	, ,
Stantec	Fax: (519) 836-2493

Project Number\_\_\_\_\_

Date / Time: June 11, 2013		Field Personnel: _	Mecsoa	Caheha		
Weather Conditions: Temp: Wind:			Wind:	Cloud: 75 %	PPT:	PPT in last 24 hrs:
Time:	Description	of Activities a	ınd Observatio	nc		
5:40pm	THZE		whos 16	······································		
	Į.		- L	13 173	. 0 -	
	(ala	C. I.		e grassy	Transex Sum	manded by
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		c. sallaure	EC.	verhead (A	-)	
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Signature: Melan Canana	Signature:		
(Field Personnel)		(Project Manager)	
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-	-	
643	****/>/	۴
- JLG	ntec	١.

Project Number	Project Name: NWRC
Date / Time: June 11 2013	Field Personnel: McLissa Camena
Weather Conditions: Temp: Wind: 22°C O	Cloud: PPT: PPT in last 24 hrs: 75 mm
Time: Description of Activities and Observation	ions
6:00pm TH42 Photos	
- wetland is durse gives - meadow and white pine	La table to the
- con to east west and	d contra
- no exposed soil large	d south
- soil is dense, leavy d	a
	7
·	

Quality Control: This form is complete () & legible ().		
Signature: Melina Caran	Signature:	
(Field Personnel)	(Project Manager)	
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