



September 11, 2020

Chris Green  
Panther Grove Wind, LLC  
17300 N. Dallas Parkway, Ste. 2020  
Dallas Texas 75248

Reference: **Preliminary Avian/Eagle Use Survey Results  
Panther Grove Wind Energy Project  
Woodford County, Illinois**

Dear Mr. Green,

Stantec Consulting Services Inc. (Stantec), on behalf of Panther Grove Wind LLC, conducted preconstruction small bird, large bird, and eagle use surveys during 2019-2021 at the proposed Panther Grove Wind Energy Project (project) in Woodford County, Illinois. The methods for these surveys follow those outlined in the United States Fish and Wildlife Service (USFWS) Eagle Conservation Plan Guidance (USFWS 2013) and the USFWS Land-Based Wind Energy Guidelines (USFWS 2012). Surveys are being conducted from June 2019 to May 2021. This letter presents the results of the first year of surveys (June 2019 – May 2020 for small birds, and June 2019 – August 2020 for large birds and eagles). Supporting figures and tables are provided after the text.

### **EAGLE USE SURVEYS**

Fifteen survey events (1 survey event = 60 minutes/point/month) were completed between June 2019 and August 2020, at 29 points within the study area (Figure 1), resulting in a total of 435 survey hours (29 points visited 15 times each). Surveys are ongoing (once monthly for 24 months); the results presented below include data through the first 15 survey events.

Only bald eagles (*Haliaeetus leucocephalus*) have been observed, no golden eagle (*Aquila chrysaetos*) observations have been recorded. During the 435 hours of survey, a total of 10 bald eagle flight minutes were recorded (Table 1). Eagle flight minutes include only flying minutes observed during the 60-minute point count within an 800-meter (m) radius by 200-m height survey plot, and do not include perched birds or birds outside the 800-m by 200-m survey plot. The majority of these minutes were recorded in January (5 minutes) and April (2 minutes), with three additional minutes recorded in December, March, and August, each recording one eagle minute. Eagle flight minutes were not recorded in any other months (Table 1).

No state- or federal-listed threatened or endangered species, have been observed during eagle use surveys.

### **LARGE BIRD SURVEYS**

Large bird surveys were conducted at the same 29 points used for the eagle use surveys (Figure 1) and were conducted concurrent with the eagle surveys. Fifteen survey events (1 survey event = 60 minutes/point/month) were completed between June 2019 and August 2020. Surveys consisted of 60-

**Reference:** Preliminary Avian/Eagle Use Survey Results  
Panther Grove Wind Energy Project  
Woodford County, Illinois

minute point count surveys within an 800-m radius plot at each point and focused on birds American crow (*Corvus brachyrhynchos*) size or larger. Surveys are ongoing (once monthly for 24 months); a total of 435 survey hours were recorded during the first year (i.e., as of August 2020).

A total of 607 observations of 14 identified species have been recorded to-date. The five most frequently observed species include:

- 260 (42.8%) Canada Goose (*Branta canadensis*)
- 103 (17.0%) Turkey Vulture (*Cathartes aura*)
- 83 (13.7%) American Crow
- 59 (9.7%) Red-tailed Hawk (*Buteo jamaicensis*)
- 32 (5.3%) Mallard (*Anas platyrhynchos*)

The 5 most frequently observed species account for 88.5% of all observations to-date, and the most frequently observed species (Canada goose) accounted for 42.8% of all observations as of August 2020. The only federal or state-listed species observed during large bird surveys was the state-endangered northern harrier (*Circus hudsonius*; 20 observations). Additionally, 1 northern harrier was observed incidentally (i.e., outside 800-m large bird survey plot) during surveys. Northern harriers are generally considered at a lower risk of fatality from wind farms, as their hunting habits include flying low to the ground and using sight and sound to detect prey. Even at sites with relatively high northern harrier use, fatalities have been absent or low (Erickson et al. 2002).

## SMALL BIRD SURVEYS

Small bird surveys were conducted at the same 29 points used for the eagle use and large bird surveys (Figure 1) but occurred at a separate time. Twelve survey events (1 survey event = 5 minutes/point/month) were completed between June 2019 and May 2020. Surveys consisted of 5-minute point count surveys within a 100-m radius plot at each point and focused on birds smaller than an American crow. Surveys were completed in May 2020 with a total of 348 point-count surveys conducted (29 points visited 12 times each).

A total of 3,210 observations of 41 identified species were recorded. The 10 most frequently observed species include:

- 961 (29.9%) Lapland Longspur (*Calcarius lapponicus*)
- 574 (17.9%) Red-winged Blackbird (*Agelaius phoeniceus*)
- 260 (8.1%) Common Grackle (*Quiscalus quiscula*)
- 252 (7.9%) European Starling (*Sturnus vulgaris*)
- 203 (6.3%) American Robin (*Turdus migratorius*)
- 190 (5.9%) Tree Swallow (*Tachycineta bicolor*)
- 146 (4.5%) Killdeer (*Charadrius vociferus*)
- 136 (4.2%) Barn Swallow (*Hirundo rustica*)
- 97 (3.0%) Mourning Dove (*Zenaidura macroura*)
- 87 (2.7%) Horned Lark (*Eremophila alpestris*)

The 10 most frequently observed species account for 90.5% of all observations during the small bird survey, and the most frequently observed species (Lapland longspur) accounted for 29.9% of all observations during the small bird survey. The only federal or state-listed species observed during small

**Reference: Preliminary Avian/Eagle Use Survey Results  
Panther Grove Wind Energy Project  
Woodford County, Illinois**

bird surveys was the state-endangered upland sandpiper (*Bartramia longicauda*; 1 observation). Other state-listed large birds observed incidentally during the small bird surveys include the northern harrier (1 observation). Additionally, one upland sandpiper was observed incidentally (i.e., between points, outside the 100-m small bird survey plot) during small bird surveys.

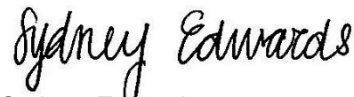
If you have any questions, or require any additional information, please feel free to contact us at (319) 334-3755.

Sincerely,

**STANTEC CONSULTING SERVICES INC.**



Molly Stephenson  
Wildlife Biologist  
Phone: (319) 327-0881  
molly.stephenson@stantec.com

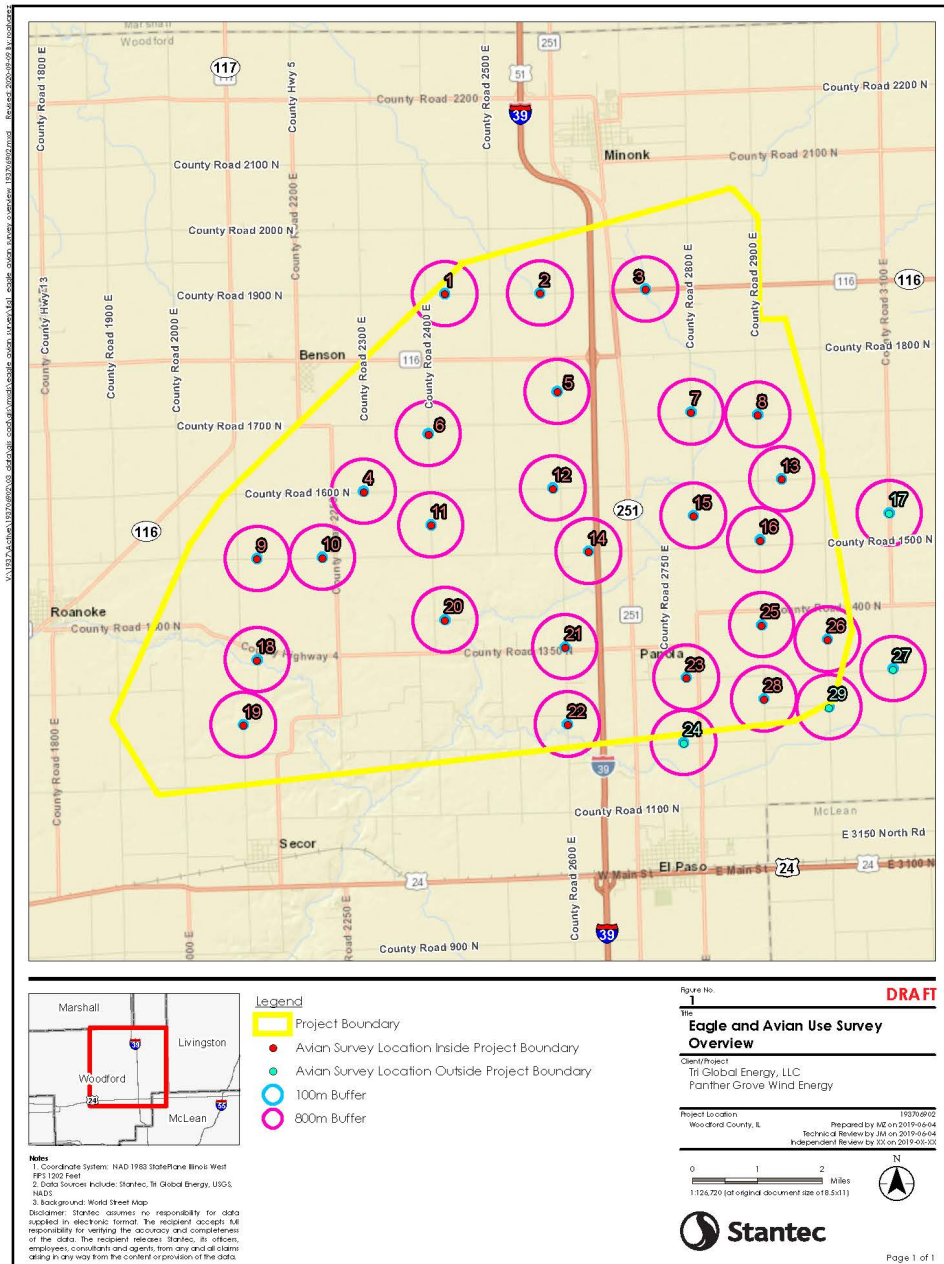


Sydney Edwards  
Biologist  
Phone: (319) 334-3755  
sydney.edwards@stantec.com

## REFERENCES

- Erickson, W.P., G.D. Johnson, D.P. Young, M.D. Strickland, R.E. Good, M. Bourassa, K. Bay and K.J. Sterna. 2002. Synthesis and comparison of baseline avian and bat use, raptor nesting and mortality information from proposed and existing wind developments. Final report prepared for Bonneville Power Administration, Portland OR. WEST, Inc., Cheyenne, WY. 124 pp.
- U.S. Fish and Wildlife Service (USFWS). 2012. Land-Based Wind Energy Guidelines. March 23, 2012.
- USFWS. 2013. Eagle Conservation Plan Guidance, Module 1 – Land-based Wind Energy Version 2. Division of Migratory Bird Management. April 2013.

**Reference: Preliminary Avian/Eagle Use Survey Results  
 Panther Grove Wind Energy Project  
 Woodford County, Illinois**



**Reference: Preliminary Avian/Eagle Use Survey Results  
Panther Grove Wind Energy Project  
Woodford County, Illinois**

**Table 1.** Total number of bald eagle flight minutes observed within the 800-meter by 200-meter survey plot, and number of eagle observations (in parenthesis) at each of the survey locations by month at the Panther Grove Wind Energy Project in Woodford County, Illinois from June 2019 to August 2020.

Survey Point	2019							2020							Grand Total	
	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July		August
1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
7	0	0	0	0	0	0	0	0	0	0	2 (1)	0	0	0	0	2 (1)
8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
9	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
10	0	0	0	0	0	0	0	0	0		0	0	0	0	0	0 (0)
11	0	0	0	0	0	0	1 (1)	0	0	0	0	0	0	0	0	1 (1)
12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
13	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
16	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
18	0	0	0	0	0	0	0	4 (1)	0	0	0	0	0	0	0	4 (1)
19	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
22	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1 (1)	1 (1)
23	0	0	0	0	0	0	0	1 (1)	0	0	0	0	0	0	0	1 (1)
24	0	0	0	0	0	0	0	0	0	1 (1)	0	0	0	0	0	1 (1)
25	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)

Reference: Preliminary Avian/Eagle Use Survey Results  
 Panther Grove Wind Energy Project  
 Woodford County, Illinois

	2019							2020								
Survey Point	June	July	Aug	Sept	Oct	Nov	Dec	Jan	Feb	March	April	May	June	July	August	Grand Total
26	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
27	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0 (0)
<b>Survey Effort (hours)</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>29</b>	<b>435 hours</b>
<b>Grand Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1 (1)</b>	<b>5 (2)</b>	<b>0</b>	<b>1 (1)</b>	<b>2 (1)</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1 (1)</b>	<b>10 (6)</b>