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April 26, 2016

Hand Delivery

Mr. Darrell Nitschke
Executive Director
NORTH DAKOTA PUBLIC
SERVICE COMMISSION
600 E. Boulevard Avenue, Dept. 408
Bismarck, ND 58505-0480

In re: Oliver Wind III, LLC
Case Nos. PU-16-122 and PU-16-123
Our File No. 35-218-029

Dear Mr. Nitschke:

Please find enclosed for filing eleven copies of the interim spring avian survey memo in the captioned cases.

Please let me know if you have any questions. Thank you.

Sincerely,

Wade Mann

Wade C. Mann

WCM/lh
enc.

cc: Sara Cardwell (via email)
Mitchell D. Armstrong (via email)
Brian Schmidt (via email)
Patrick J. Ward (via email)

23 PU-16-123 Filed 04/26/2016 Pages: 6
Interim Spring Avian Survey Memo
Oliver Wind III, LLC
Wade Mann, Crowley Fleck, PLLP

23 PU-16-122 Filed 04/26/2016 Pages: 6
Interim Spring Avian Survey Memo
Oliver Wind III, LLC
Wade Mann, Crowley Fleck, PLLP

TETRA TECH

TO: NextEra Energy Resources, LLC

FROM: Tetra Tech

DATE: 4/22/2016

SUBJECT: Oliver III Wind Energy Center – 2016 Spring Avian Report

Introduction

Tetra Tech, Inc. was contracted by Oliver Wind III, LLC, a wholly-owned, indirect subsidiary of NextEra Energy Resources, LLC (NextEra), to undertake spring point-count surveys for the proposed Oliver III Wind Energy Center (Project) located in Oliver and Morton Counties, North Dakota. The studies were conducted to identify potential avian impacts associated with constructing and operating a wind energy facility. Birds have been identified as a group potentially at risk because of collisions with wind turbines and power lines, and displacement due to the presence of the associated structures. The spring point-count surveys are ongoing and scheduled to continue through early June 2016.

Data Collection

Weekly surveys were performed at the Project from March 14 through April 4, 2016, which included the spring migration season. The protocol for data collection at the Project Area are the same used in the fall 2015 avian survey (Tetra Tech 2015) and designed to be responsive to the level of effort recommended in the National Wind Coordinating Committee's Comprehensive Guide to Studying Wind Energy/Wildlife Interactions (Strickland et al. 2011) and the voluntary U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines (USFWS 2012).

Point-count surveys (fixed 800-meter [m] radius) were conducted at 9 point-count locations distributed throughout the Project Area (Figure 1). An experienced field biologist conducted 20-minute (min) point-count surveys collecting data on all birds detected within the point-count area to evaluate avian use, behavior, and species richness. Tetra Tech distributed the survey locations along publicly accessible roads and chose locations that maximized the 360-degree sight distance for the observer.

The survey protocol used in these studies is designed to collect data on all bird species and to provide results that are comparable with other studies at wind farms, rather than to target specific taxa. The benefit of using this protocol is that it estimates avian use throughout the day and captures activity by a variety of bird species. During the spring migration, songbirds are most active in the morning and can be difficult to detect during the afternoon. In contrast, raptors become active as the sunlight heats the air and creates thermals, which individual raptors use for soaring. Thus, raptors are more readily detected several hours after sunrise. Therefore, this protocol is appropriate for characterizing the entire bird community. It should be noted, however, that this survey protocol can only detect nocturnal migrants should they be local breeders or if they utilize the Project as stopover habitat. Tetra Tech chose 20-min survey periods because they provide adequate time to detect both raptors and non-raptors. However, time periods of 20 minutes may lead to double-counting of songbirds (i.e., counting the same individual more than once) because individuals may appear and disappear from view. For example, if a horned lark is detected perched on a fence then disappears from view and, 6 minutes later, a horned lark is seen flying, these birds are recorded as separate observations because it is not possible to distinguish individuals. Double-counting of birds is not problematic for this type of survey because the objective is to document use in terms of number of birds noted per 20-min survey, not number of distinct individual birds.

Detectability varies among species and potentially not all individuals within the 800-m radius were counted. This variation in detectability could result in an overestimate of mean use for conspicuous species and an underestimate of mean use for reclusive species. Birds not easily identifiable, such as those seen under low light conditions or small birds seen at a distance were identified to the lowest taxonomic level possible. Hence, unidentified birds are included in the results.

Results

A total of 1,167 birds from 27 species were observed during the spring avian point-counts (Table 1). Overall mean bird use within the Project Area was 33.34 birds/20 minute (min) and ranged from 0 to 207 birds/20-min point-count survey. Mean use was highest for songbirds, waterfowl, and gamebirds (23.31, 6.09, and 1.34 birds/20 min, respectively). The species with the highest mean use were the horned lark (9.09 birds/20 min), American crow (5.80 birds/20 min), and Canada goose (5.51 birds/20 min), western meadowlark (2.77 birds/20 min), and European starling (2.09 birds/20 min). All other species had a mean use of less than 1.18 birds/20 min. Overall, horned lark accounted for 27.2 percent of all birds observed during the spring 2016 survey. The western meadowlark was a songbird species with a relatively moderate mean use but high frequency (2.77 birds/20 min, observed in 80.0 percent of all surveys). Additionally, sharp-tailed grouse had a mean use of 0.77 birds/20 min and were observed in 2.3 percent of all surveys.

High raptor use (greater than 2.0 birds/20 min) has been associated with high raptor mortality at wind facilities. Conversely, raptor mortality appears to be low when raptor use is low (less than 1.0 birds/20 min), which was the case at Oliver III (0.17 birds/20 min) during the spring point-count surveys. Only two raptor species, the red-tailed hawk and northern harrier, were observed during the spring point-count surveys. Although records of fatalities for these species exist for wind facilities, fatalities of these species at the Project are expected to be uncommon based on low rates of use. Furthermore, any fatalities at the Project are not expected to have population-level impacts because North Dakota red-tailed hawk and northern harrier populations are large and relatively stable (PIFSC 2013, Sauer et al. 2012).

No federally listed threatened or endangered species were detected during the spring 2016 point-count surveys. Sharp-tailed grouse and northern harriers are identified as Species of Conservation Priority in North Dakota's State Wildlife Action Plan (Wildlife Action Plan). Species covered by the Wildlife Action Plan are categorized into three levels according to their conservation need. Sharp-tailed grouse and northern harriers are considered Level II Species, which are those species having a moderate level of conservation priority or a high level of conservation priority but a substantial level of non-state wildlife grant funding is available to them. Sharp-tailed grouse have experienced population declines linked to landscape level land use changes, primarily due to habitat loss through the conversion of grasslands to cropland. State and federal wildlife agencies have regularly expressed concern about the locations of wind turbines with respect to prairie grouse leks (communal male displaying grounds). Surveys are being conducted in spring 2016 to identify all sharp-tailed grouse leks within the Project Area and 1-mile buffer. The northern harrier is fairly common in North Dakota. The northern harrier was designated as Species of Conservation Priority because up to ten percent of the harriers' population breeds in North Dakota. Grassland and wetland destruction and/or degradation are the primary factors limiting nesting habitat and food resources.

Conclusions

Results of the spring 2016 avian point-count surveys at the Oliver III Wind Energy Center suggest an overall low impact of the Project on the local avian community. The avian community detected within the Project Area during spring avian surveys was characterized by species typical of agricultural lands and remnant grasslands in North Dakota. Within disturbed habitats such as these, the greatest potential impact of wind facilities to avian species is risk of collisions with turbines rather than disturbance or displacement. Songbirds were identified as having potential risk of collision due to species within this group having relatively high mean use. However, the mean-use rate at the Project is primarily driven by observations of flocks of a common residents and migratory species. If avian fatality rates are similar to other wind facilities within the region, we would expect them to fall between 0.38 and 11.83 birds/turbine/year (0.42 – 7.17 birds/MW/year).

Literature Cited

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Strickland, M.D., E.B. Arnett, W.P. Erickson, D.H. Johnson, G.D. Johnson, M.L. Morrison, J.A. Shaffer, and W. Warren-Hicks. 2011. Comprehensive Guide to Studying Wind Energy/Wildlife Interactions. Prepared for the National Wind Coordinating Collaborative, Washington, D.C. http://www.nationalwind.org/assets/publications/Comprehensive_Guide_to_Studying_Wind_Energy_Wildlife_Interactions_2011_Updated.pdf. Accessed July 2015.

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Table 1. Avian species, by species grouping, observed during Spring 2016 point-count surveys at the Oliver III Wind Resource Area.

Species Grouping	Overall Rank[1]	Number of Birds	Number of Observations	Mean Use # birds per 20 min. (90% confidence interval)	Frequency % of surveys detected	Percent Composition Group	Percent Composition Overall
Songbirds							
horned lark		318	33	9.09 (8.85-9.33)	71.4	39.0%	27.2%
American crow		203	8	5.80 (5.66-5.94)	22.9	24.9%	17.4%
western meadowlark		97	37	2.77 (2.58-2.96)	80.0	11.9%	8.3%
European starling		73	4	2.09 (2.09-2.09)	11.4	8.9%	6.3%
American robin		31	5	0.89 (0.84-0.94)	14.3	3.8%	2.7%
red-winged blackbird		30	7	0.86 (0.58-1.14)	17.1	3.7%	2.6%
common grackle		25	4	0.71 (0.71-0.71)	11.4	3.1%	2.1%
black-capped chickadee		14	1	0.40 (0.40-0.40)	2.9	1.7%	1.2%
house sparrow		11	1	0.31 (0.31-0.31)	2.9	1.3%	0.9%
American tree sparrow		8	1	0.23 (0.23-0.23)	2.9	1.0%	0.7%
dark-eyed junco		2	1	0.06 (0.06-0.06)	2.9	0.2%	0.2%
blue jay		2	1	0.06 (0.06-0.06)	2.9	0.2%	0.2%
black-billed magpie		2	1	0.06 (0.06-0.06)	2.9	0.2%	0.2%
Group Total		**816**	**104**	**23.31** (22.77-23.85)	**22.9**		**69.9%**
Waterfowl							
Canada goose		193	10	5.51 (3.05-7.97)	25.7	90.6%	16.5%
mallard		14	5	0.40 (0.17-0.63)	11.4	6.6%	1.2%
tundra swan		6	1	0.17 (0.17-0.17)	2.9	2.8%	0.5%
Group Total		**213**	**16**	**6.09** (3.60-8.58)	**8.6**		**18.3%**
Gamebirds							
sharp-tailed grouse		27	6	0.77 (0.35-1.19)	17.1	57.4%	2.3%
ring-necked pheasant		20	11	0.57 (0.45-0.69)	25.7	42.6%	1.7%
Group Total		**47**	**17**	**1.34** (0.82-1.86)	**11.4**		**4.0%**
Cranes/Rails							
sandhill crane		41	2	1.17 (1.17-1.17)	5.7	100.0%	3.5%
Group Total		**41**	**2**	**1.17** (1.17-1.17)	**0.0**		**3.5%**
Waterbirds							
killdeer		24	16	0.69 (0.64-0.74)	37.1	100.0%	2.1%
Group Total		**24**	**16**	**0.69** (0.64-0.74)	**2.9**		**2.1%**

Table 1. Avian species, by species grouping, observed during Spring 2016 point-count surveys at the Oliver III Wind Resource Area.

Species Grouping	Overall Rank[1]	Number of Birds	Number of Observations	Mean Use # birds per 20 min. (90% confidence interval)	Frequency % of surveys detected	Percent Composition	
						Group	Overall
Pigeons/Doves							
rock pigeon		9	1	0.26 (0.26-0.26)	2.9	52.9%	0.8%
mourning dove		6	2	0.17 (0.17-0.17)	5.7	35.3%	0.5%
Eurasian collared-dove		2	1	0.06 (0.06-0.06)	2.9	11.8%	0.2%
Group Total		**17**	**4**	**0.49** (0.49-0.49)	**0.0**		**1.5%**
Raptors							
red-tailed hawk		3	3	0.09 (0.09-0.09)	8.6	50.0%	0.3%
northern harrier		3	3	0.09 (0.04-0.14)	8.6	50.0%	0.3%
Group Total		**6**	**6**	**0.17** (0.12-0.22)	**2.9**		**0.5%**
Gulls/Terns							
ring-billed gull		2	1	0.06 (0.06-0.06)	2.9	100.0%	0.2%
Group Total		**2**	**1**	**0.06** (0.06-0.06)	**0.0**		**0.2%**
Woodpeckers							
northern flicker		1	1	0.03 (0.03-0.03)	2.9	100.0%	0.1%
Group Total		**1**	**1**	**0.03** (0.03-0.03)	**0.0**		**0.1%**
Grand Total		**1167**	**167**	**33.34** (22.12-44.56)			

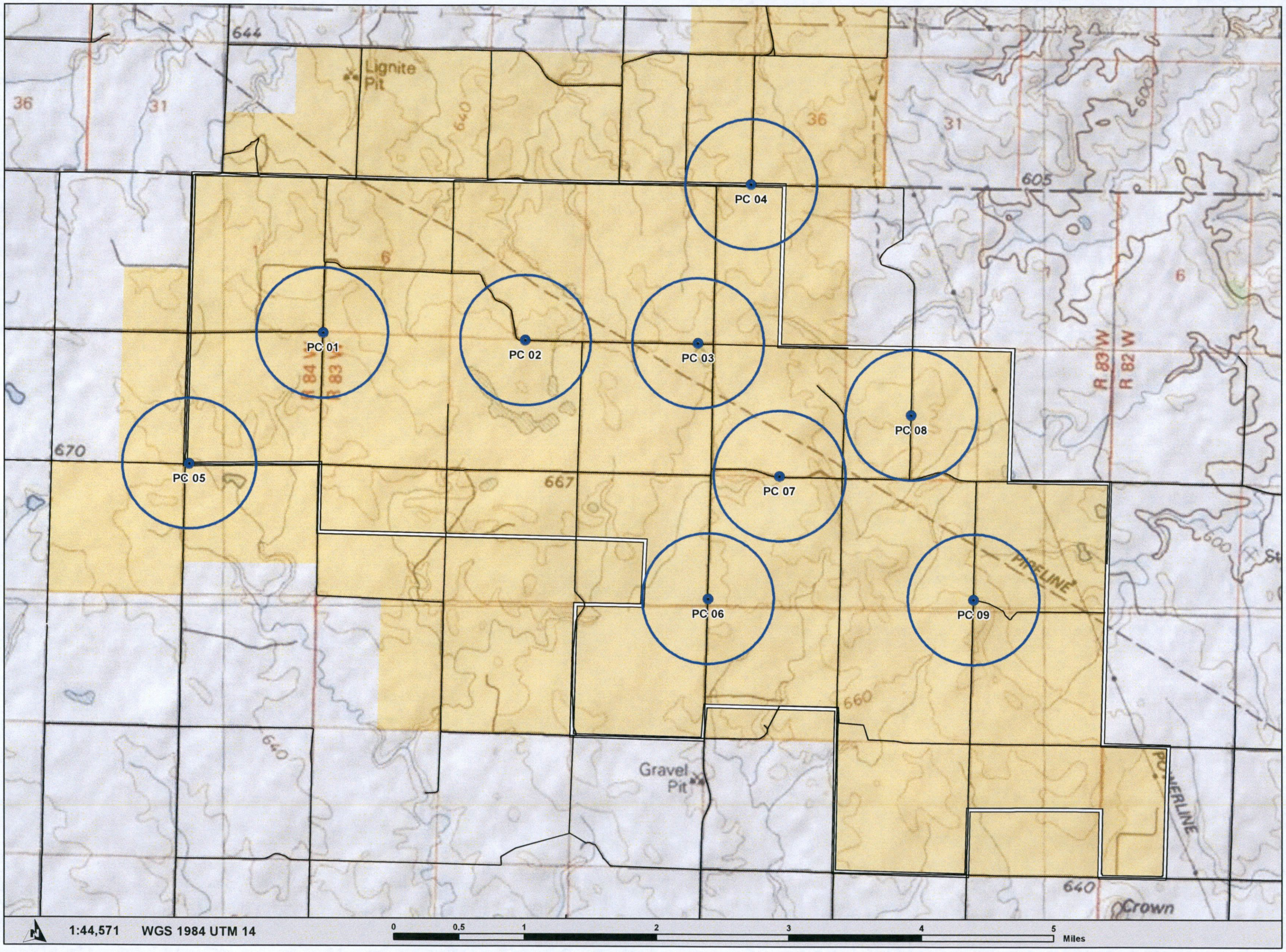
[1] A ranking of 1 indicates highest mean use

Figure 1

Point-count location map (Spring 2016)

Oliver III Wind Energy Center
Oliver and Morton counties, ND
Last Modified: 01-19-2016

- Avian Survey Point
- Avian Survey Point 800-m Radius
- PC# Point count number
- Proposed Project Area (03-07-2016)
- Original Proposed Project Area (05-20-2015)
- Local Road



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