

**Westwood**

SECOND YEAR (2018-2019) EAGLE POINT COUNT  
SURVEY REPORT

## Ruso Wind Project

Ward and McLean Counties, North Dakota

June 14, 2019



Prepared For:

Ruso Wind Partners, LLC  
3535 Colonnade Parkway  
Birmingham, Alabama 35243

Second Year (2018-2019) Eagle Point Count Survey Report

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## 1.0 INTRODUCTION

Ruso Wind Partners, LLC (Ruso) proposes to construct and operate the Ruso Wind Energy Project (Project) in Ward and McLean counties, North Dakota. The Project Area is located in north central North Dakota, directly adjacent to the Town of Benedict and 1.4 miles to the west of the Town of Ruso; directly north of 28<sup>th</sup> Street NW/U.S. Highway 53 and 3.9 miles east of U.S. Highway 83 (Exhibit 1).

The Project would result in the construction and operation of a wind energy generation facility that would produce up to 250 megawatts (MW) of renewable energy. The Project would consist of wind turbine generators, supporting towers, foundations, crane pads, gravel access roads, meteorological tower(s), an operation and maintenance (O&M) facility, underground and overhead electric collection and communication systems, and a new substation to interconnect the Project with the transmission infrastructure.

Construction of the Project will require a Certificate of Site Compatibility (Site Permit), Consolidated Certificate of Corridor Compatibility (Corridor Certificate), and Route Permit from the North Dakota Public Service Commission (NDPSC). To help meet the Project proponent's biological resource requirements under conditions of the Site Permit and Corridor Certificate pursuant to North Dakota Administrative Code (NDCC 49-22-05.1, 49-22.1-03). Ruso Wind contracted Westwood Professional Services (Westwood) to conduct eagle point count surveys at the Project Area.

Westwood conducted eagle point count surveys from May 2018 to April 2019 to collect quantitative data on eagle presence that would allow for the estimation of eagle exposure rates that form the basis of a risk assessment model in accordance with the *Eagle Conservation Plan Guidance* (USFWS 2013). This work compliments the initial year of eagle point counts conducted during April 2017- March 2018.

## 2.0 PROJECT AREA

The Project Area consists of approximately 44,468 acres (69.5 mi<sup>2</sup>) of the Prairie Pothole Region. Elevations range from 1,925 feet to 2,205 feet above mean sea level and the topography is relatively uniform. Numerous depressional wetlands and hummocky, rolling hills are present. Portions of two named waterways are located within the Project Area: McMann Lake and Robinson Coulee. Audubon Lake and the Souris River are located approximately 9.7 miles to the south and 8.7 miles to the northeast of the Project Area, respectively (Exhibit 1).

Surface ownership in the Project Area is nearly all private (92 percent [39,766 acres]). Seven percent of the Project Area is in State ownership including 1,277 acres (3 percent) managed by the North Dakota Department of Trust Lands (NDDTL) under the direction of the Board of University of School Lands; and 1,913 acres (4 percent) of North Dakota Game and Fish

Department (NDGFD) land. One percent (395 acres) of lands are county Waterfowl Production Areas (WPAs) jointly managed by Ward and McLean counties and the U.S. Fish and Wildlife Service (USFWS). No other federal lands are located within the Project Area.

A total of seven land cover types are recognized and mapped within the Project Area. These include cultivated crops, hay/pasture, herbaceous grassland, wetland, open water, disturbed/developed, and forest (Homer et al. 2015) (Exhibit 2) (Table 1).

Table 1: Land Cover Types within the Project Area

Land Cover Type	Area (Acres)	Percent of Total
Cultivated Crops	15,491	34.8
Hay/Pasture	10,486	23.6
Herbaceous Grassland	8,109	18.2
Wetland	4,888	11.0
Open Water	3,249	7.3
Disturbed/Developed	1,832	4.1
Forest	412	1.0
TOTAL	44,468	100.0

### 3.0 METHODS

Westwood conducted monthly eagle point count survey events ( $n = 12$ ) from May 14, 2018 to April 23, 2019 at each of 18 fixed radius point count stations established during the 2017 eagle point count survey (Exhibit 3). For most months one-hour surveys were conducted at each station, totaling 18 hours per survey event and 216 hours for the 12-month study. Due to inaccessibility issues (roads are not maintained during the winter) some points were not surveyed in January, February, or March 2019 (Table 2). In these situations the nearest point count station was surveyed for two hours to maintain 18 observation hours per survey event.

Surveys occurred in all weather conditions except when visibility was poor (i.e., fog or more than light precipitation). Point count stations were visited in a different order for each survey event so that each point count station was visited at different times of the day. Surveys were conducted during daylight hours (i.e., one-half hour before sunrise to sunset).

The time of an observation and duration (minutes observed) an eagle was within the point count station was recorded. The horizontal distance between an eagle and the observer was estimated and recorded, as was the altitude of each eagle relative to the ground level. Flight altitudes were recorded in meters above ground level (AGL). Observers also documented flight paths of all eagles observed, the developmental stage (i.e., juvenile or adult), and the land cover type the individual was flying over. Incidental observations of bald eagles those (observations

not occurring within the 60-minute sampling period, outside the 800-meter (m) boundary of the observer’s survey point, or an eagle not in flight) were also recorded during throughout the course of eagle point count surveys.

Table 2. Point-count stations that were inaccessible during 2018 – 2019 eagle point count survey efforts and their replacement point count stations.

Month	Inaccessible point count station	Replacement point count station
January	13	8
February	1, 3, 4, 9, 13	5, 12, 2, 16, 8
March	1, 3, 4, 6, 8, 9, 13	7, 2, 16, 11, 12, 15, 14

#### 4.0 RESULTS

Five observations of adult bald eagles were recorded during 216 hours of observation (0.02 eagles per hour) from May 2018 through April 2019. Bald eagle observations were recorded from point count locations 1, 3, 4, 11, and 15. With the exception of point count location 11, which is in the central portion of the Project Area, bald eagles observations were generally located in the northern portion of the Project Area. Eagles were observed for a total of 12 minutes during the surveys; 11 minutes at 0- 200 m flight height and 1 minute at >200 m flight height. (Table 3). Based on survey data, the mean use of the Project Area is <0.001 eagle hours per observation hour.

Table 3: Summary of Eagle Point Count Surveys Conducted from May 2018 to April 2019.

Eagle Survey Period	Number of Observation Minutes (Hours)	Number of Eagles Observed	Point ID	Total Time Observed within 800m Radius (Min)	Time Observed >200 m Elevation (Min)	Time Observed 0-200 m Elevation (Min)
Year 2						
5/14/18 - 5/15/18	1,080 (18)	--	--	--	--	--
6/18/18 - 6/19/18	1,080 (18)	--	--	--	--	--
7/19/18 - 7/21/18	1,080 (18)	--	--	--	--	--

Eagle Survey Period	Number of Observation Minutes (Hours)	Number of Eagles Observed	Point ID	Total Time Observed within 800m Radius (Min)	Time Observed >200 m Elevation (Min)	Time Observed 0-200 m Elevation (Min)
Year 2						
8/20/18 - 8/22/18	1,080 (18)	--	--	--	--	--
9/10/18 - 9/12/18	1,080 (18)	--	--	--	--	--
10/20/18 - 10/22/18	1,080 (18)	1	11	1	0	1
11/17/18 - 11/19/18	1,080 (18)	1	4	2	0	2
		1	3	7	0	7
		1	15	1	0	1
12/20/18 - 12/22/18	1,080 (18)	--	--	--	--	--
1/25/19 - 1/27/19	1,080 (18)	1	1	1	1	0
2/14/19 - 2/15/19	1,080 (18)	--	--	--	--	--
3/8/19 - 3/10/19	1,080 (18)	--	--	--	--	--
4/22/19 - 4/23/19	1,080 (18)	--	--	--	--	--
<b>TOTAL</b>	<b>12,960 Mins 216 Hours</b>	<b>5</b>	<b>--</b>	<b>12</b>	<b>1</b>	<b>11</b>

Incidental observations of bald eagles were recorded on September 12, 2018 (two eagles) and November 19, 2018 (three eagles). Both incidental observations of eagles in September were of individuals in flight within the Project Area while the observer was driving between point count stations. The three individuals observed in November were flushed from a deer carcass while the observer was driving between point count stations. Incidental sightings provide qualitative data about the presence of eagles Project Area, but do not meet the criteria set in the methods established for eagle point counts in the ECPG Appendix C (USFWS 2013) and are therefore excluded from the tally of eagle hours.

## 5.0 DISCUSSION

Results of April 2017-April 2019 eagle point count surveys within the Project Area indicate that bald eagle use of the Project Area is infrequent and of low intensity. During the first year of eagle use surveys (April 2017 to March 2018), two bald eagle observations were recorded within point count stations for a total of 19 minutes, all within 0-200 m AGL. Mean use was <0.001 eagles per observation hour. During the second year of surveys (May 2018 to April 2019) five bald eagle observations were recorded for a total of 12 minutes; 11 minutes at 0- 200 m AGL and 1 minute at >200 m AGL. Mean use during the second year was <0.001 eagle hours per observation hour.

In general, bald eagles have been rarely documented as mortalities at wind energy facilities. Sharp et al. reported that bald eagles exhibit a high rate of avoidance of operational wind turbines (Sharp et al. 2010). Of 85 eagle mortalities reported at wind farms between 1997 and 2012, only six mortalities were of bald eagles (Pagel et al. 2013).

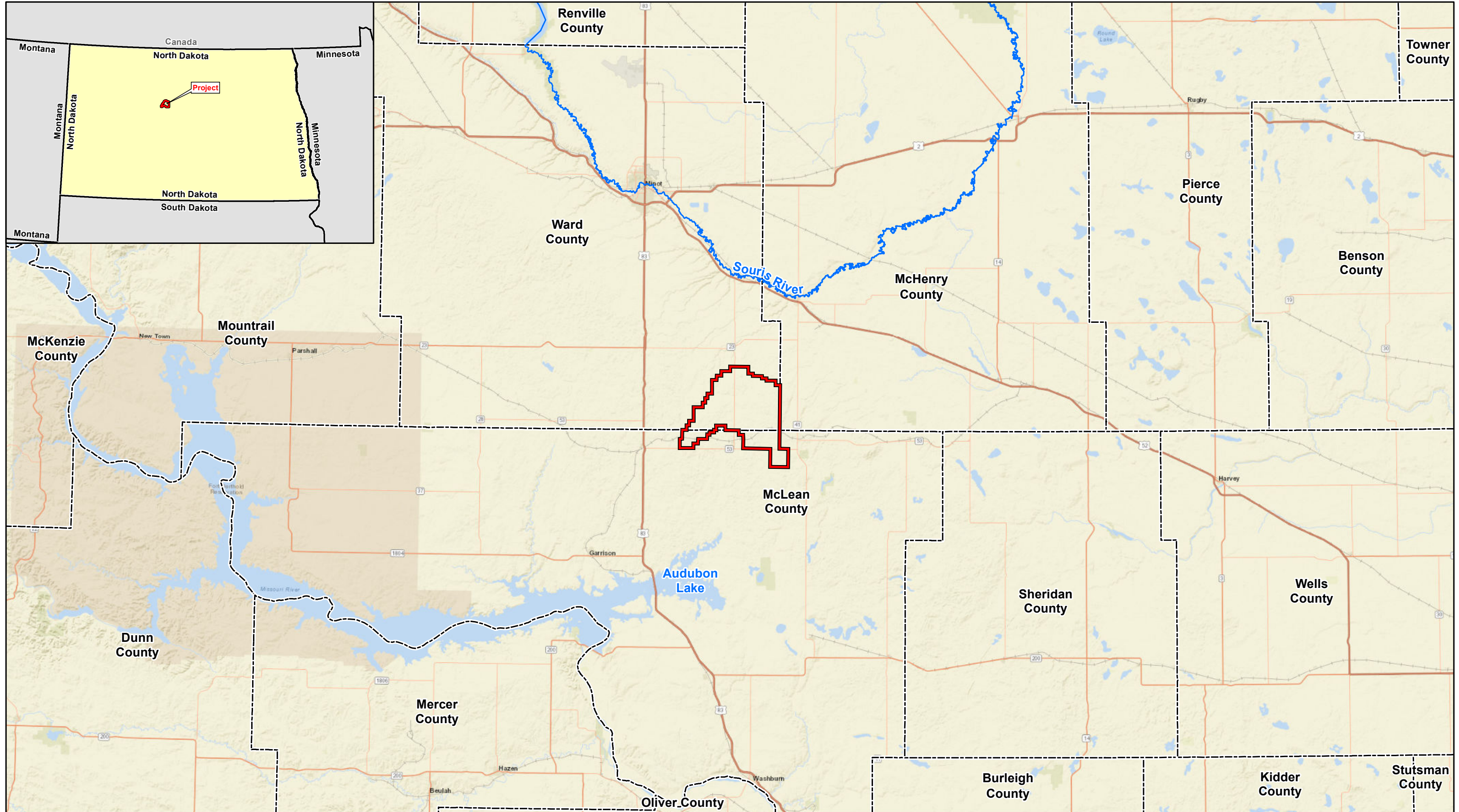
Results of bald eagle use surveys at the Ruso Wind Project during 2017-2019 suggest that risks to bald eagles resulting from the construction and operation of the Project will be low because of infrequent occurrence of eagles and flight at rotor height.

## 6.0 REFERENCES CITED

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- Sharp, L., C. Herrmann, R. Friedel, K. Kosciuch and R. MacIntosh. 2010. Comparison of Pre- and Post-construction Bald Eagle Use at the Pillar Mountain Wind Project, Kodiak, Alaska, Spring 2007 and 2010. Presentation for the National Wind Coordinating Collaborative, Wind Wildlife Research Meeting VIII, October 19-20, 2010, Lakewood, Colorado. Available on line at:<http://www.nationalwind.org/assets/researchmeetings/ResearchMeetingVIIISharp.pdf>.
- U.S. Fish and Wildlife Service (USFWS). 2013. Eagle Conservation Plan Guidance, Module 1 – Land-Based Wind Energy, Version 2. 71 pp. <https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf>.

# **Exhibit 1**

## **Project Area Vicinity Map**



Data Source(s): Westwood (2019); ESRI WMS World Streets Basemap (Accessed 2019); U.S. Census Bureau (2017).

### Legend

- Project Area Boundary
- Souris River
- County Boundary



## Ruso Wind Project

McLean & Ward Counties, North Dakota

Project Area Vicinity Map

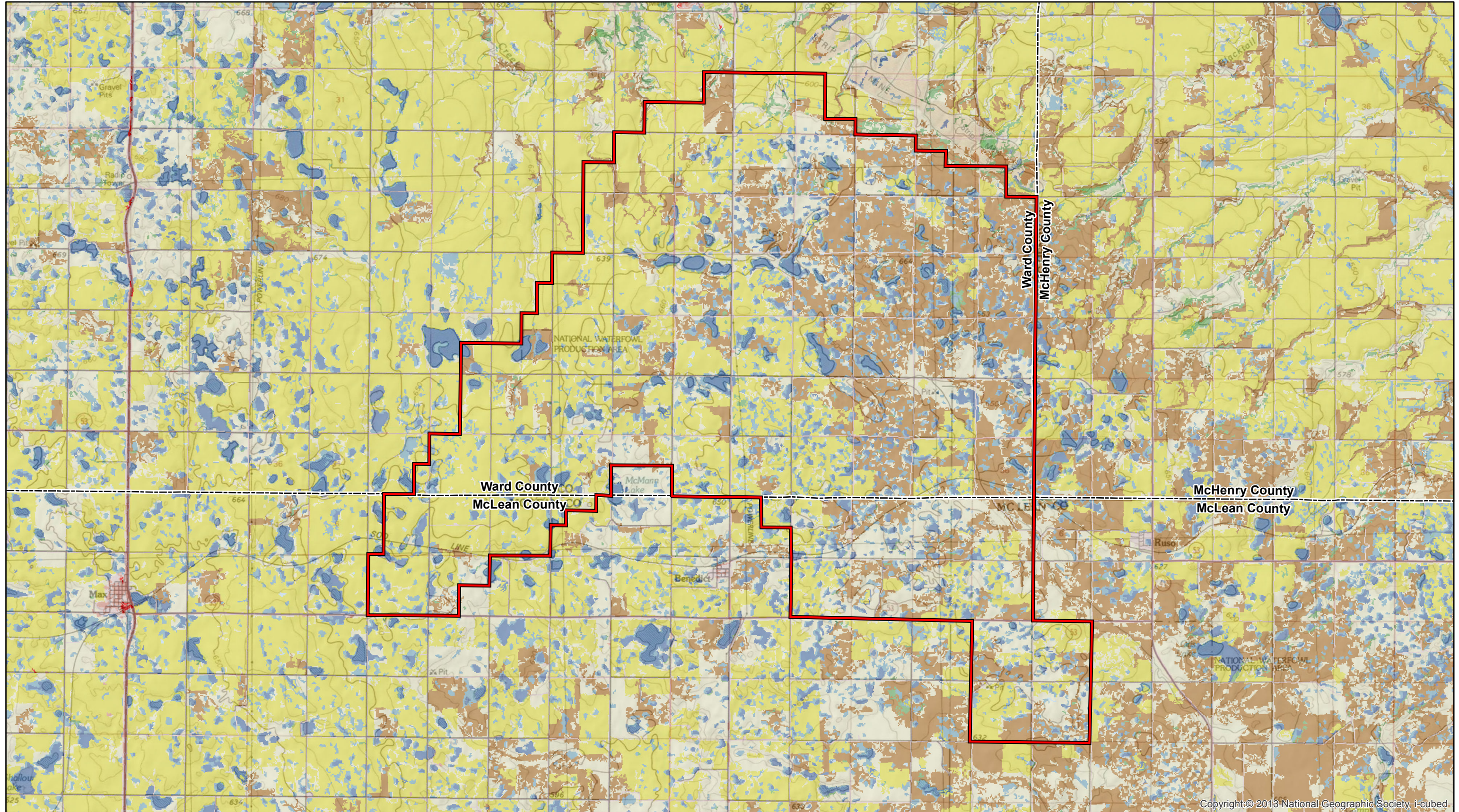
**Westwood**

Toll Free (888) 937-5150 westwoodsps.com  
Westwood Professional Services, Inc.

Map Document: \\westwoodsps.local\GIS\Global Projects\0010625\_01\GIS\Eagle Report Exhibits\RW\_EagleReport\_Ext\_ProjectAreaVicinityMap\_190426.mxd 4/26/2019 12:27:35 PM

# **Exhibit 2**

## **Land Cover Types**



Data Source(s): Westwood (2019); U.S. Census Bureau (2017); U.S. Geological Survey (2011).

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**Legend**

- |                          |                             |                              |
|--------------------------|-----------------------------|------------------------------|
| Study Area Boundary      | Developed, Medium Intensity | Grassland/Herbaceous         |
| County Boundary          | Developed, High Intensity   | Pasture/Hay                  |
| Open Water               | Barren Land                 | Cultivated Crops             |
| Developed, Open Space    | Deciduous Forest            | Woody Wetlands               |
| Developed, Low Intensity | Evergreen Forest            | Emergent Herbaceous Wetlands |



**Ruso Wind Project**

McLean & Ward Counties, North Dakota

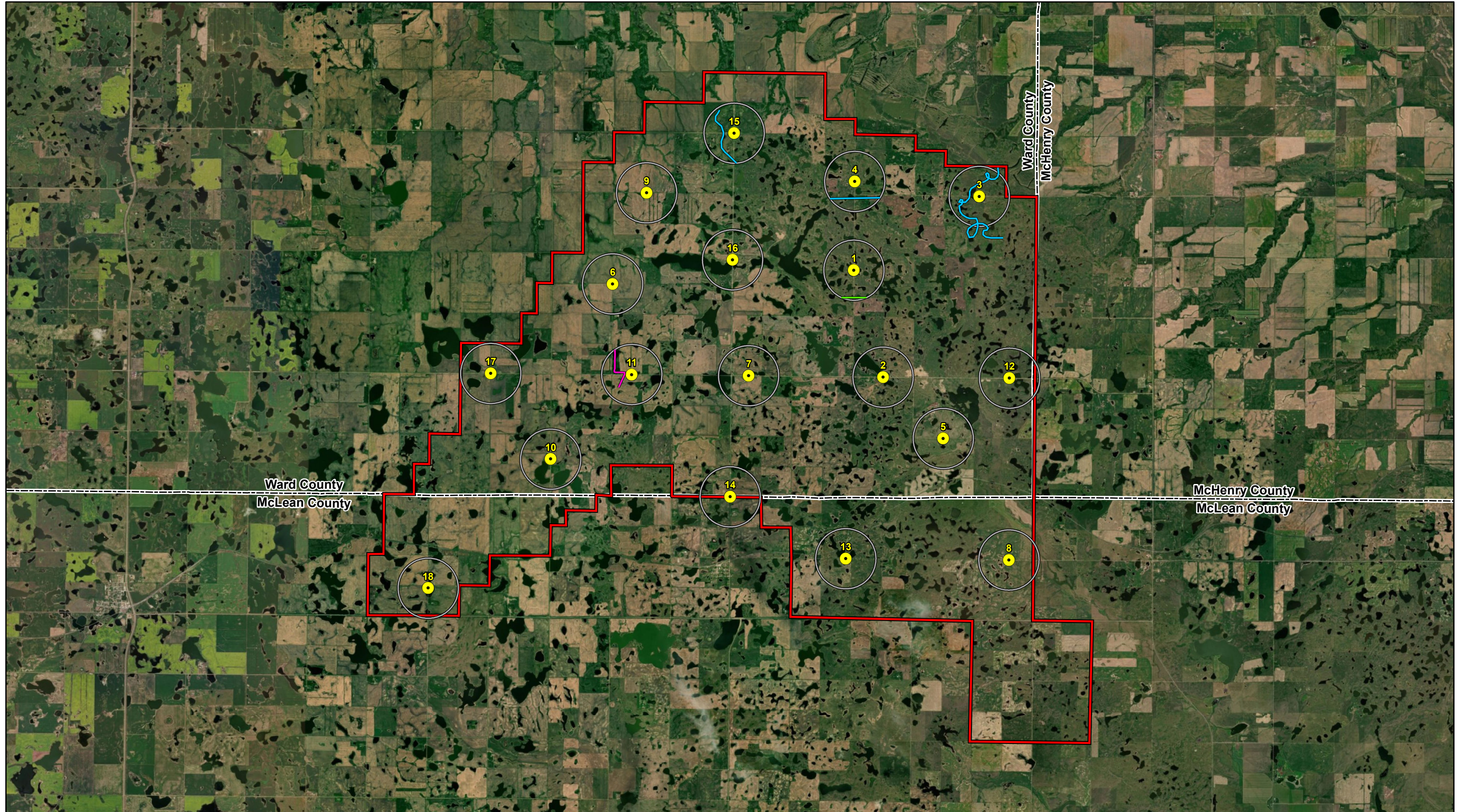
**Land Cover Types**

**Westwood**

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# **Exhibit 3**

**Eagle Point County Survey Locations**



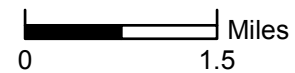
Data Source(s): Westwood (2019); U.S. Geological Survey (2011); ESRI WMS National Geographic Basemap (Accessed 2019); U.S. Fish and Wildlife Service (2013); Ducks Unlimited (2013).

### Legend

- Study Area Boundary
- County Boundary
- General Avian & Eagle Survey Point
- Eagle Survey Point Buffer - 800 Meters

### Eagle Flight Path Date & Total Eagle Minutes

- January, 26, 2019 - 15 sec
- November 17 & 18, 2018 - 9 min
- October 21, 2018 - 1 min



## Ruso Wind Project

McLean & Ward Counties, North Dakota

Eagle Point Count  
Survey Locations