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April 27, 2017

Michael Rutledge

Palmer's Creek Wind Farm, LLC
501 West Highway 212
Granite Falls, MN 56241

Aerial Eagle/Raptor Nest Survey Report

Palmer's Creek Wind Farm
Chippewa County, Minnesota
Wenck File No. B2759-0005-11

Introduction

Palmer's Creek Wind Farm, LLC contracted Wenck Associates, Inc. to complete an aerial bald eagle (*Haliaeetus leucocephalus*) nest survey on state and private lands surrounding the proposed Palmer's Creek Wind Farm project area (**Figure 1**). The survey was recommended to potentially identify active/inactive nests within a ten-mile buffer of the project area (USFWS 2016). In 2007, the bald eagle (State Special Concern Species) was delisted from its federally threatened status in the lower 48 states, but it is still federally protected under the Bald and Golden Eagle Protection Act ("BGEPA"). It was also delisted in Minnesota in 2013.

Methods

The objective of the aerial eagle nest surveys is to locate and record nests that may be in the proximity of the project area, to identify concentration and density of eagle nests, and to identify nests that may be vulnerable to disturbance and/or displacement effects by the proposed project. The intent of the nest survey is to gather information on species nesting in the area, including nest locations, nesting season (timing), and nest success.

The survey was conducted within a ten-mile buffer from the project area (defined as the analysis area). Eagle Aviation Inc. was contracted to fly an aerial survey of the project area on April 20, 2017. A Cessna Skyhawk with two observers were used during the survey, Ray Jilek (Eagle Aviation, Pilot) and Justin Askim (Wenck, Natural Resources Services Leader) (**Photo 1**). Complete coverage of the project area was obtained by systematically flying over the landscape and visually scanning all areas for potential roosting, nesting and foraging eagles. Aerial surveys were conducted using a fixed-wing aircraft, flying over relatively even terrain at approximately 250 – 500 feet above ground level and at speeds of 85 to 125 miles per hour.



Photo 1: Note low flight ceiling height and minor precipitation prior to the aerial survey.

A total of approximately 415 miles were flown in the analysis area to investigate woody draws, riparian areas, farm yards and other appropriate habitats for eagle nests and eagle activity (**Figure 2**).

Existing data on bald eagle nest locations was received from the Minnesota Department of Natural Resources (MNDNR) on July 5, 2016. Based on historical records, one nest is located in Section 11, T116N R40W (MNDNR 2016), is nest was not observed during the aerial surveys. However, two eagles were observed perched in the areas. During the 2016 field surveys, another eagle nest (**Figure 3**, Nest 3) was located in the Minnesota River Valley, approximately one mile southeast of the nearest WTG (WTG 12) and 0.3 miles outside of the project area. This nest was not recorded in the MNDNR Natural Heritage Information System (NHIS) database. Both nests are located outside of the project area. These nests were further examined during the aerial survey, as summarized in **Table 1** below.

Results and Conclusion

Three active nests, three inactive nests and ten individuals (three on nest and seven in flight or perched) were observed during the April 20, 2017 aerial survey (**Figure 2**, **Figure 3** and **Table 1**). With the exception of Nest 3, all nests are approximately five miles or greater from the project area.

Table 1: Eagle Nests Within Palmer's Creek Wind Farm Analysis Area

Nest Number	Status	Distance from Project Area	Latitude	Longitude
1	Active	4.9 miles	44.90855599	-95.70717782
2	Inactive	8.5 miles	44.73293894	-95.42223611
3	Active	0.3 miles	44.83149047	-95.56799484
4	Active	7.0 miles	44.72996346	-95.48105437
5	Inactive	10.0 miles	44.67489358	-95.53845803
6	Inactive	9.0 miles	44.68952578	-95.53443812

Eagle nest density within the analysis area is approximately one active nest per 102,000 acres.

Please contact Justin Askim at 701-751-6125, jaskim@wenck.com if you have comments or require additional information.

Sincerely,

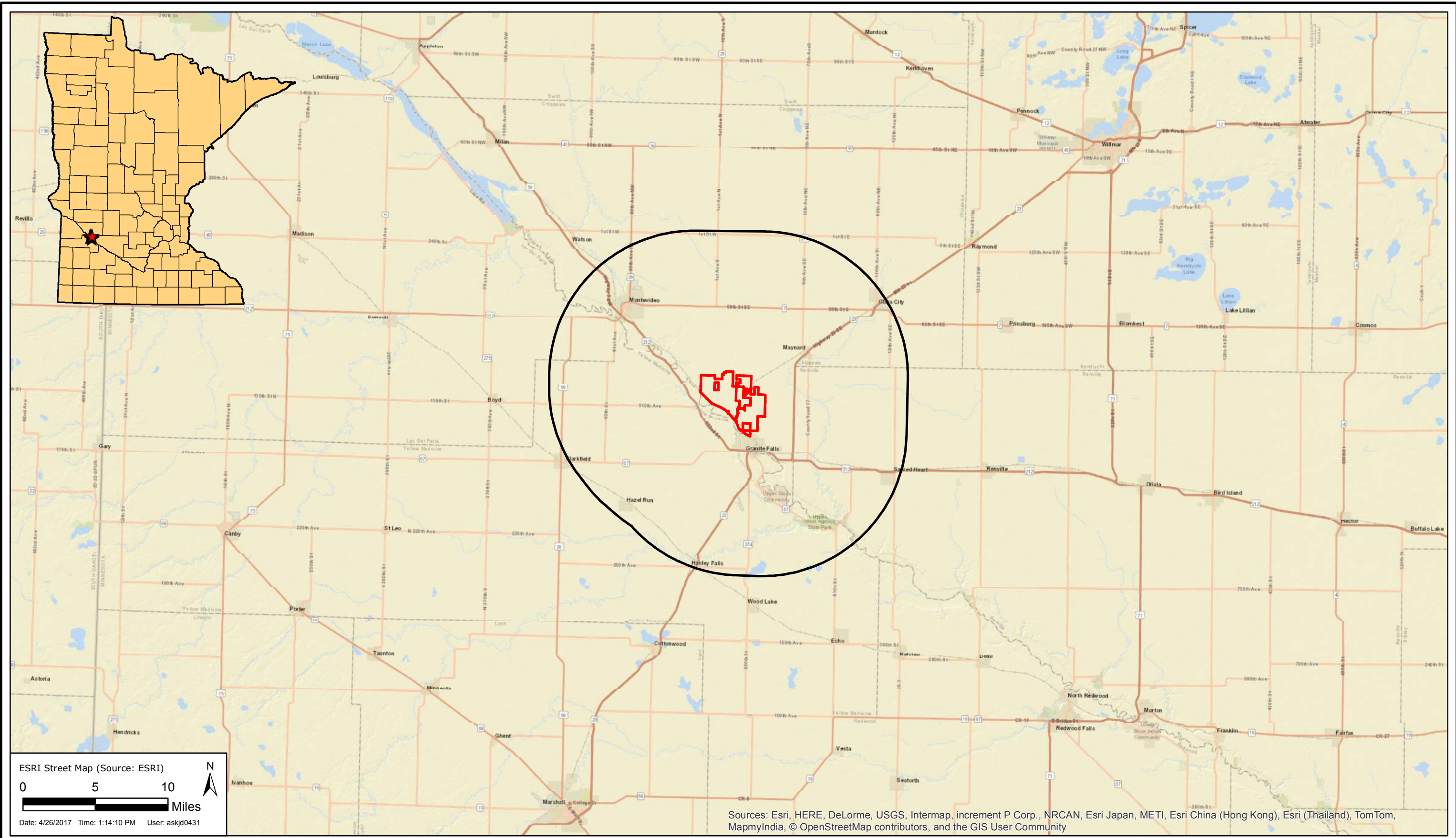
WENCK ASSOCIATES, INC.



Justin Askim
Principal/Natural Resources Services Leader

References

- MNDNR. 2016. Natural Heritage Information System Correspondence #ERDB 20160322-0002, July 5, 2016.
- USFWS 2016. Palmer's Creek Wind Farm Eagle Use Surveys. Email from Margaret Rheude. August 22, 2016.

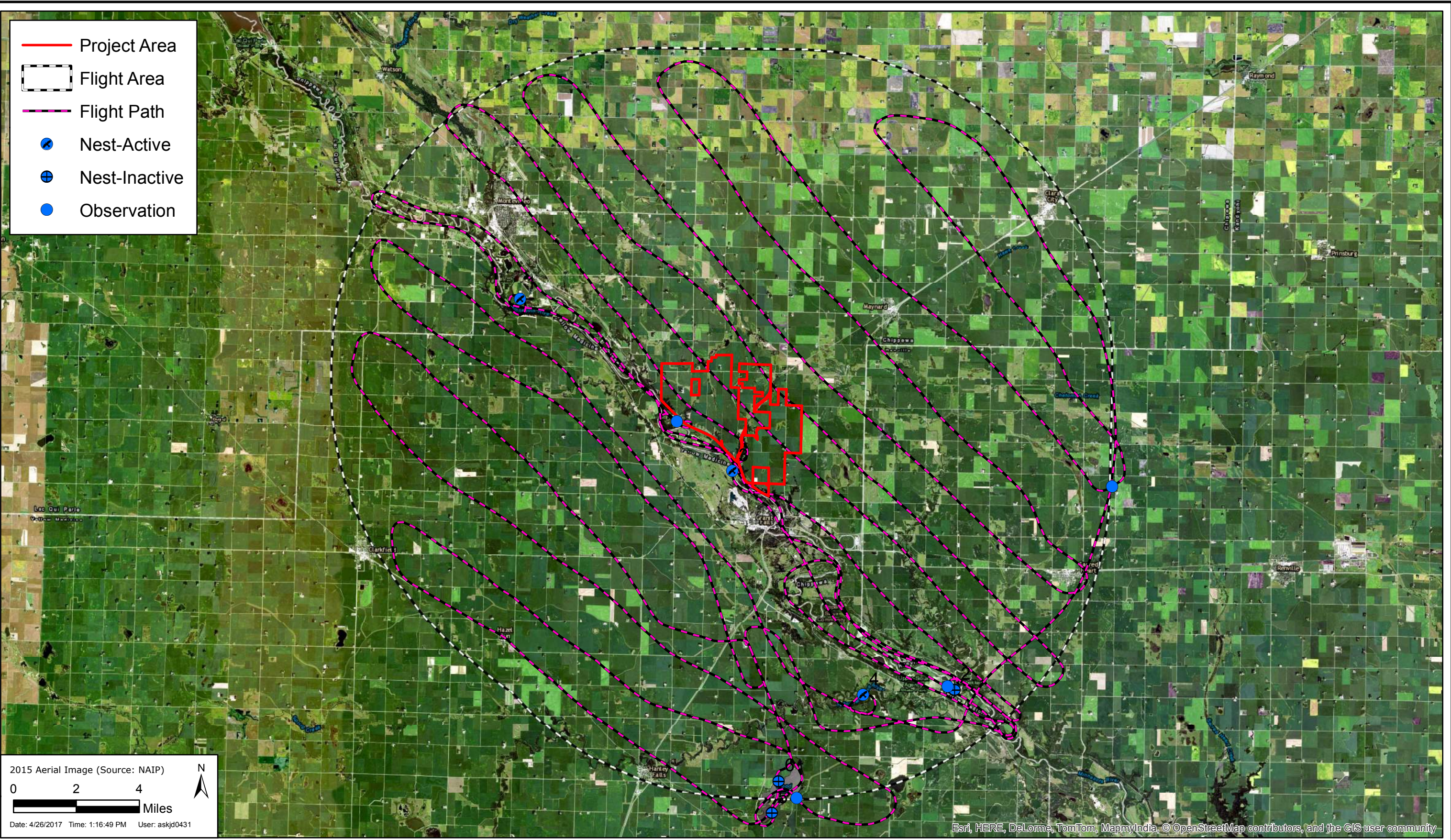


PALMER'S CREEK WIND FARM, LLC
 Project Location and Analysis Area



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 Figure 1

Path: J:\GIS\275905 Palmers Creek Wind Farm\11 Aerial Eagle Surveys\mxd\F2-Flight Path and Results.mxd

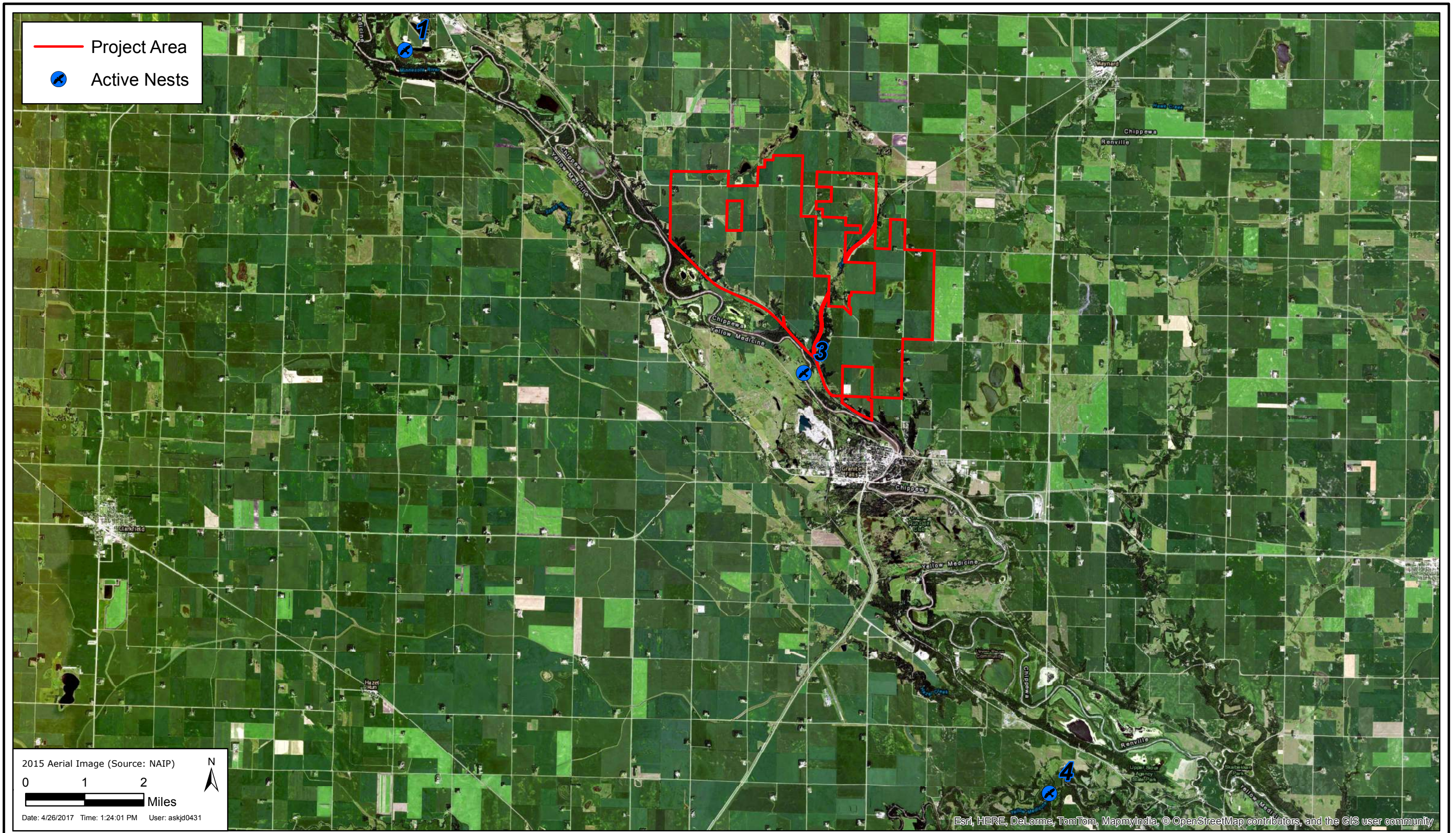


PALMER'S CREEK WIND FARM, LLC
Flight Path and Results



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Figure 2

Path: J:\GIS\2759\05 Palmers Creek Wind Farm\11 Aerial Eagle Surveys\mxd\F3-Active Nest Locations.mxd



PALMER'S CREEK WIND FARM, LLC

Active Nest Locations



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Figure 3