

Appendix H

2021 Raptor Nest Survey Report

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2021 Raptor Nest Survey

Rose Creek Wind Project Mower County, Minnesota



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INTRODUCTION

Rose Creek Wind, LLC, a subsidiary of ConEdison Development (CED), is seeking to decommission and replace the existing 17.4 Megawatt (MW) 11-turbine Rose Wind Project in Mower County, Minnesota with a 17.4 megawatt (MW) 6 turbine wind energy generation facility called the Rose Creek Wind Repower Project (Project). At CED's request, Western EcoSystems Technology (WEST) conducted hybrid aerial and ground-based surveys to locate bald eagle (*Haliaeetus leucocephalus*) and other raptor nests within two miles of the Project boundary. The aerial survey was conducted in accordance with the guidance provided in the U.S. Fish and Wildlife Service (USFWS) *Eagle Conservation Plan Guidance* (ECPG; USFWS 2013), the *Interim Golden Eagle Technical Guidance* (Pagel et al. 2010), and the *Updated Eagle Nest Survey Protocol* (USFWS 2020a, USFWS 2020b). The ground-based survey was conducted following methods adapted from the ECPG and the *Updated Eagle Nest Survey Protocol*.

SURVEY AREA

The survey area for all raptor stick-nests included the Project area and a two-mile buffer around the Project area (Figure 1). The Project lies within the Western Corn Belt Plains Level III Ecoregion, and the Eastern Iowa and Minnesota Drift Plains Level IV Ecoregion (US Environmental Protection Agency 2012), which are characterized by undulating to level topography. Historically, tallgrass prairies and oak savannahs were the primary land covers in the region, although the majority of the area has since been converted to row-crop agriculture (White 2020). Waterbodies within the survey area include Little Cedar River and Wapsipinicon River (Figure 1).

METHODS

Raptor Nest Surveys

Raptor nest surveys were conducted in March 2021, before leaf-out and during the period when raptors¹ would be actively tending to a nest or incubating eggs. All potential raptor nests within the survey area were documented; however, the primary focus of the surveys was to identify bald eagle nests. Surveys were conducted by experienced WEST biologists trained in raptor ecology. Biologists focused on locating eyries (large stick nest structures) in suitable bald eagle nesting substrate (e.g., trees, transmission lines) within the survey area.

Attempts were made to identify the species of raptor associated with each active nest. Unidentified raptor nests (defined as any stick nest not having an occupant at the time of the survey) may be abandoned historic nesting sites, or may represent alternative nest sites. Any nests, including unidentified or abandoned raptor nests, or active nests occupied by a different

¹ Raptors for the surveys were defined as kites, accipiters, buteos, eagles, falcons, and owls.

raptor species, appearing consistent in size and structure with bald eagle nests were documented as potential future bald eagles nesting sites.

Biologists collected standard raptor nest survey information, such as survey date, weather, observer name, the location (Global Positioning System [GPS] and/or aerial imagery), and photographs of each potential nest observed, when possible. Surveyors also recorded the following information for each potential nest site:

- Species (if occupied)
- Nest substrate (e.g., deciduous tree, coniferous tree, human structure)
- Nest condition²
 - Good – excellently maintained with a very well defined bowl and no sagging; nest would be possible to use immediately or was currently in use.
 - Fair – fairly well-defined bowl, minor sagging, and may require some repair or addition prior to use.
 - Poor – sloughing or sagging heavily, and would require effort to restore for successful nesting.
- Nest status (occupied active, occupied inactive, inactive)

To determine the nest status, the biologist evaluated the behavior of any adult raptors on or near the nest, and looked for the presence of eggs, young, whitewash, or fresh building materials (Pagel et al. 2010). Nest status was categorized using definitions originally proposed by Postupalsky (1974) and largely followed the ECPG (USFWS 2013). Nests were classified as occupied if any of the following were observed at the nest structure:

- an adult in an incubating position,
- eggs,
- nestlings or fledglings,
- presence of an adult (sometimes sub-adults),
- a newly constructed or refurbished stick nest in the area where territorial behavior of a raptor had been observed earlier in the breeding season, or
- a recently repaired nest with fresh sticks (clean breaks) or fresh boughs on top, and/or droppings and/or molted feathers on its rim or underneath.

Occupied nests were classified as occupied and active if an adult was present on the nest in an incubating position, one or more eggs were present, or nestlings were observed. Occupied nests were classified as occupied and inactive if no eggs or nestlings were present. Nests not meeting the criteria for occupied status during the initial ground-based or aerial surveys were classified as inactive.

² Nest condition was categorized as good, fair, or poor. Although the determination of nest condition can be subjective and may vary between observers, it gives a general sense of when a nest or nest site was last used.

Ground-based Survey

Prior to survey, WEST biologists reviewed aerial imagery and available nest data to identify potentially suitable raptor habitat and known, previously occupied raptor nests within and near the survey area. Nest data sources included USFWS historical bald eagle nest locations (M. Rheude, USFWS, pers. comm., February 23, 2021) and WEST's proprietary nest database.

The ground-based survey was conducted on March 5, 2021. During the field survey, a biologist drove all accessible public roads within the survey area. The biologist scanned for potential raptor nesting habitat (e.g., forested areas, large single trees, power poles) while driving at a speed of approximately 25 mile per hour. When nesting habitat was identified, the biologist stopped their vehicle to scan the habitat with binoculars.

Locations of all nests were recorded using a GPS-enabled tablet running Locus Map Pro software. A survey track of the driving route was recorded to document survey coverage; areas where survey coverage was incomplete due to limited habitat visibility from public roads (e.g., dense forests, along rivers) were integrated into the flight plan for the aerial survey to ensure complete spatial coverage.

Aerial Survey

Pre-flight planning included the creation of field maps and mobile Geographic Information System files, and review of relevant background information including ground-based survey results, topographic maps, and aerial photographs. A flight plan was developed to confirm status of nests recorded during the ground-based survey and to target areas where the ground-based surveyor had limited visibility.

The aerial survey was conducted from a helicopter on March 12, 2021. During the survey, a biologist actively scanned for nests while the helicopter flew at speeds of approximately 50 miles per hour. The helicopter was positioned to allow thorough visual inspection of habitat, and, in particular, to provide a view of the tops of the tallest dominant trees where bald eagles generally prefer to nest (Buehler 2020). Efforts were made to minimize disturbance to breeding raptors; the greatest possible distance at which a species could be identified was maintained, with distances varying depending on nest location and wind conditions. A survey track was also recorded during aerial surveys to ensure complete survey coverage.

Follow-up Ground Survey of Eagle Nests

On April 15, 2021, WEST conducted a follow-up ground-based survey to confirm the occupancy and activity status of one potential bald eagle nest (nest 1759) identified as occupied inactive during the previous surveys (i.e., bald eagles were present near the nest, but no eggs, chicks, or incubating behavior were observed). The follow-up survey was conducted at least 30 days after the initial observation, following ECPG recommendations. This survey was conducted by an experienced biologist from public roads. Nests that were confirmed as occupied and active during the ground-based and/or aerial surveys did not receive a follow-up survey.

RESULTS

Six raptor nests representing three identifiable species were detected during the raptor nest surveys on March 5 and 12, 2021 (Figure 1, Table 1). No raptor nests were documented within the Project area. Three occupied and active bald eagle nests were documented within the survey area, including one bald eagle nest (nest 1759) identified as occupied and inactive during both the initial ground-based and aerial surveys. A follow-up survey conducted on April 15, 2021 confirmed this nest was occupied and active.

Additional raptor nests documented during the surveys included one occupied and active great horned owl (*Bubo virginianus*) nest that was consistent in size and structure with a bald eagle nest, one occupied and active red-tailed hawk (*Buteo jamaicensis*) nest, and one occupied and inactive red-tailed hawk nest.

Additional details are provided below for bald eagle nests and nests consistent in size and structure with an eagle nest documented during the raptor nest surveys. The nest descriptions are labeled according to a WEST-assigned unique nest identification number (nest ID).

Nest 18117 – This nest was located 0.6 mile south of the Project boundary along the Little Cedar River. The nest was in good condition and an adult bald eagle was present at the nest during both the initial ground-based survey and the aerial survey. The adult bald eagle was in incubating position during the aerial survey; therefore, this nest is considered an occupied and active bald eagle nest in 2021 (Figure 1, Appendix A1).

Nest 18119 – This nest was located 0.7 mile west of the Project boundary along the Little Cedar River. Two adult bald eagles were present on the nest during the initial ground-based survey, and one adult bald eagle and one egg were present in the nest during the aerial survey. An adult bald eagle was in incubating position during both surveys; therefore, this nest is considered an occupied and active bald eagle nest in 2021. This bald eagle nest had been previously documented by the USFWS in 2016 (Pleasant Valley Wind nest, M. Rheude, pers. comm., February 23, 2021; Figure 1, Appendix A2).

Nest 1759 – This nest was located 1.2 miles southeast of the Project boundary along a tributary to the Wapsipinicon River. The nest was in good condition and was consistent in size and structure with a bald eagle nest. Two adult bald eagles were perched near the nest during both the initial ground-based survey and the aerial survey, although no incubating behavior or eggs were observed. The nest was determined to be an occupied and inactive bald eagle nest following the aerial survey. During the ground-based follow-up survey on April 15, 2021 one adult bald eagle was observed incubating on the nest; therefore, this nest is considered an occupied and active bald eagle nest in 2021 (Figure 1, Appendix A3). The presence of nestlings could not be confirmed due to poor visibility.

Nest 18118 – This nest was located 0.2 mile north of the Project boundary. The nest was in good condition and consistent in size and structure with a bald eagle nest. During the initial ground-

based survey, an incubating raptor (unidentified species) was observed in the nest and an adult red-tailed hawk was observed flying to the nest. During the aerial survey, one great horned owl nestling was observed in the nest. Therefore, this nest is considered an occupied and active great horned owl nest in 2021 (Figure 1, Appendix A4).

Table 1. Results of the 2021 raptor nest survey for the Rose Creek Wind Project.

Nest ID	Species ¹	Status	Nest Substrate	Condition	Dist. to Project (mi)	Latitude	Longitude
18117	BAEA	occupied active	deciduous tree	good	0.6	43.49168	-92.74420
18119 ³	BAEA	occupied active	deciduous tree	good	0.7	43.55240	-92.76322
1759	BAEA	occupied active	deciduous tree	good	1.2	43.48430	-92.64229
18118	GHOW ²	occupied active	deciduous tree	good	0.2	43.56053	-92.72653
18116	RTHA	occupied inactive	deciduous tree	good	0.8	43.56922	-92.68412
1024	RTHA	occupied active	deciduous tree	good	1.2	43.48730	-92.76460

¹ BAEA = bald eagle; GHOW = great horned owl; RTHA = red-tailed hawk.

² Though not occupied by bald eagles in 2021, the great horned owl nest was consistent in size and structure with eagle nests.

³ Historic U.S. Fish and Wildlife Service bald eagle nest (Pleasant Valley Wind; M. Rheude, pers. comm., February 23, 2021).

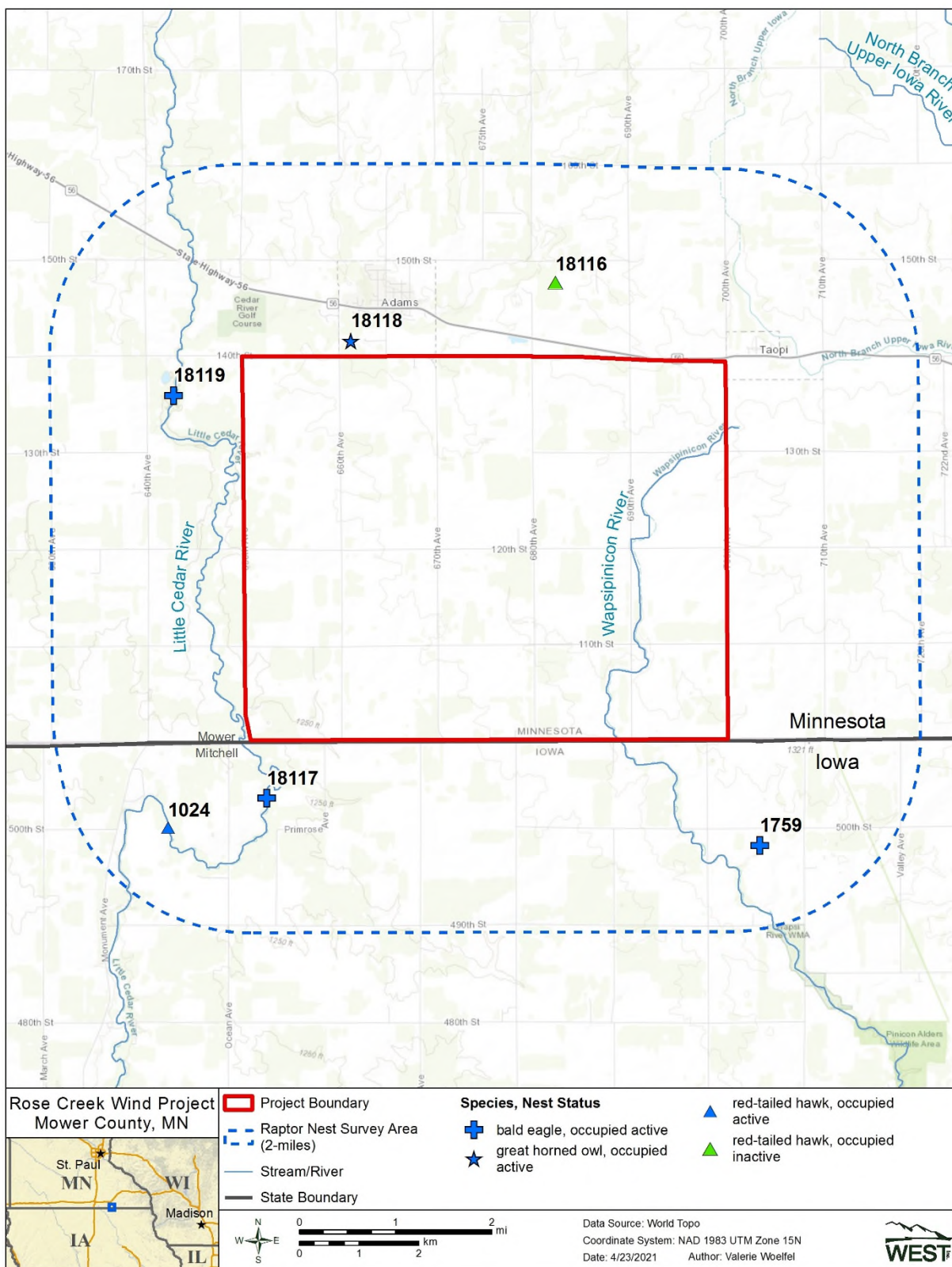


Figure 1. Raptor nests documented near the Rose Creek Wind Project.

LITERATURE CITED

- Buehler, D. A. 2020. Bald Eagle (*Haliaeetus leucocephalus*), Version 1.0. A. F. Poole and F. B. Gill, eds. *In: Birds of the World*. Cornell Lab of Ornithology, Ithaca, New York. Information online: <http://birdsoftheworld.org/bow/species/baleag/cur/>
- Pagel, J. E., D. M. Whittington, and G. T. Allen. 2010. Interim Golden Eagle Technical Guidance: Inventory and Monitoring Protocols; and Other Recommendations in Support of Golden Eagle Management and Permit Issuance. US Fish and Wildlife Service (USFWS), Division of Migratory Bird Management. February 2010. Available online: <https://tethys.pnnl.gov/sites/default/files/publications/Pagel-2010.pdf>
- Postupalsky, S. 1974. Raptor Reproductive Success: Some Problems with Methods, Criteria, and Terminology. Pp. 21-31. *In: F. N. Hamerstrom, Jr., B. E. Harrell, and R. R. Olendorff, eds. Management of Raptors: Proceedings of the Conference on Raptor Conservation Techniques*, Fort Collins, Colorado, March 22-24, 1973. Raptor Research Foundation, Vermillion, South Dakota.
- U.S. Environmental Protection Agency (USEPA). 2012. Ecoregion Download Files by State - Region 5: Minnesota. Ecoregions of the United States, Ecosystems Research, USEPA. Last updated April 26, 2012. Accessed March 2021. Information online: <https://www.epa.gov/eco-research/ecoregion-download-files-state-region-5#pane-21>
- U.S. Fish and Wildlife Service (USFWS). 2013. Eagle Conservation Plan Guidance: Module 1 - Land-Based Wind Energy, Version 2. US Department of the Interior, Fish and Wildlife Service, Division of Migratory Bird Management. April 2013. 103 pp. + frontmatter. Available online: <https://www.fws.gov/migratorybirds/pdf/management/eagleconservationplanguidance.pdf>
- U.S. Fish and Wildlife Service (USFWS). 2020a. Eagle Surveys. Memorandum to Regional Directors, Regions 1-12. From J. Ford, Assistant Director for Migratory Birds. Ecological Services, USFWS, Washington, D.C. April 21, 2020. Available online: <https://www.fws.gov/migratorybirds/pdf/management/EagleNestSurveyGuidanceMemo.pdf>
- U.S. Fish and Wildlife Service (USFWS). 2020b. Updated Eagle Nest Survey Protocol. 4 pp. *Attachment to: US Fish and Wildlife Service (USFWS). 2020. Eagle Surveys. Memorandum to Regional Directors, Regions 1-12. From J. Ford, Assistant Director for Migratory Birds. USFWS, Washington, D.C. April 21, 2020. Available online: <https://www.fws.gov/migratorybirds/pdf/management/EagleNestSurveyGuidanceUpdated.pdf>*
- White, D. 2020. Ecological Regions of Minnesota: Level III and IV Maps and Descriptions. 22 pp. + appendices. Accessed March 2021. Information online: <https://www.epa.gov/eco-research/eco-region-download-files-state-region-5>

**Appendix A. 2021 Raptor Nest Survey Photographs - Bald Eagle Nests and Nests
Consistent in Size and Structure with an Eagle Nest**



Appendix A1. Occupied and active bald eagle nest 18117.



Appendix A2. Occupied and active bald eagle nest 18119.



Appendix A3. Occupied and active bald eagle nest 1759.



Appendix A4. Occupied and active great horned owl nest 18118; this nest was consistent in size and structure with a bald eagle nest.