

# Appendix C-6: Threatened and Endangered Species Field Habitat Assessment (March 4, 2013)

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March 4, 2013

Mr. Rich Davis  
U.S. Fish and Wildlife Service  
4101 E. 80th Street  
Bloomington, Minnesota 55425-1665

*Re: Threatened and Endangered Species Field Habitat Assessment  
Stoneray Wind Project  
Burns & McDonnell Project No. 62823*

Dear Mr. Davis:

On behalf of EDF Renewable Energy (EDF), formerly enXco Development Corporation, this letter reports on a field review for habitats potentially capable of supporting western prairie fringed orchid (*Platanthera praeclara*), Dakota skipper (*Hesperia dacotae*), and poweshiek skipperling (*Oarisma poweshiek*) as an initial evaluation step for the Stoneray Wind Project (Project). This analysis included a desktop-level evaluation followed by field surveys to assess potentially suitable habitat, and was developed following U.S. Fish and Wildlife guidance and correspondence specific to the Project. The western prairie fringed orchid is federally listed as threatened and protected under the Endangered Species Act (7 U.S.C. § 136, 16 U.S.C. § 1531) (ESA). The Dakota skipper and poweshiek skipperling are candidate species, proposed for listing under the ESA. At this time, Project facilities have not been sited; thus, these efforts support development of a Project site layout. Burns & McDonnell, on behalf of EDF, previously submitted the desktop habitat review to the USFWS for review in early July 2012.

The Project is proposed to be a 105-megawatt (MW) wind energy facility located in Pipestone and Murray counties in southwestern Minnesota (Figure 1). The Project will consist of up to 62 wind turbine generators (WTGs), access roads, an underground electrical collector system, and a small electrical switchyard situated within the Project area. The Project area consists of all or portions of the following Sections (Figure 2).

**Table 1. Project Location**

<b>Township (North)</b>	<b>Range (West)</b>	<b>Sections</b>
107	44	7-10, 14-29, 32-36
107	43	30, 31
106	44	3, 4, 9, 10, 12, 13, 24, 25
106	43	6, 7, 17-20, 29, 30

The surveyed Project area is approximately 22,400 acres in rural southwestern Minnesota (Figures 1 and 2) where the region is dominated by agricultural land uses, particularly row crop cultivation, livestock pastures, and hay production. The majority of the Project area is located

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between the communities of Holland and Woodstock, while the remaining portion of the Project area extends southeast of Holland. The Project area has gently rolling topography that is intersected by numerous county roadways that extend both east to west and north to south. State roads (State Highways 30 and 23) also occur within and near the Project area.

## Methods

The initial desktop analysis for suitable habitat for western prairie fringed orchids in southwest Minnesota included wet or moist, uncultivated (at least recently) prairie or sedge meadows (*i.e.*, potentially wetlands with hydric soils and without standing water); rights-of-way (ROW); roadside ditches; or similar low lying areas with minimal maintenance. The USFWS provided information on land and soil types that may support western prairie fringed orchids, including Trosky Till Plain Area 5.

The Dakota skipper and poweshiek skipperling have similar habitat requirements in Minnesota. These include remnant native tallgrass prairies that receive little grazing pressure, prescribed burning, or woody encroachment. Additionally, these areas have numerous prairie wildflowers present for adult foraging, such as coneflower species (*Echinacea* spp.), camas species (*Zygadenus* spp.), or blanketflower (*Gaillardia* spp.) among others. Larval stages of these butterflies rely on the root areas of native warm season grasses for habitat, such as little bluestem (*Schizachyrium scoparium*) and sideoats grama (*Bouteloua curtipendula*). Habitat for these butterfly species in southwest Minnesota is often located on relatively steep hillsides that limit the intensity or duration of grazing by livestock.

To identify potential suitable habitat areas for these three species via a desktop review, a variety of available electronic data was collected and reviewed from various sources, which includes, but is not limited to, the following:

- National Wetland Inventory (NWI) data
- Minnesota Public Wetland Inventory (PWI) data
- Reinvest in Minnesota (RIM) data
- National Hydrology (NHD) data
- National Land Cover Data (NLCD)
- MDNR Natural Heritage Information System (NHIS) review
- MDNR Project-specific information regarding natural resources
- USFWS species-specific information available online
- MDNR Correspondence
- USFWS Correspondence
- National Aerial Imagery Program (NAIP) aerial photography
- USGS 7.5-minute topographic maps

For purposes of this study, potential sensitive habitats and other data layers for the three species include the following:

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- Wetlands
- Streams
- Floodplains
- NLCD information (*i.e.*, open space, grasslands/herbaceous)
- MDNR-NHIS Rare Species information (*i.e.*, invertebrate animal, vascular plant, communities)
- MDNR-NHIS Native Plant Communities (*i.e.*, wet meadow, upland prairie, calcareous fen)
- USFWS data (*i.e.*, Trosky Till Plain Area 5)
- Publicly-owned lands (*i.e.*, federal, state, local government owned)

Information regarding the target species or suitable habitat from the USFWS and Minnesota Department of Natural Resources (MDNR) was incorporated into the analysis. Figures identifying the location of potential sensitive habitats based on the desktop analysis within the Project boundary were generated using ArcGIS © software (Figures 3 through 6).

The field habitat assessment used the desktop analysis data indicating potential sensitive habitats for the three species. Field habitat assessments were conducted during early-to-middle July, the blooming period for western prairie fringed orchids and the flight period for Dakota skippers and poweshiek skipperlings. Inflorescence was used to confirm plant species identification. Each area within the Project boundary that was identified by the desktop habitat assessment as potentially sensitive habitat and on which there was property access was traversed to identify dominant plant species, determine the summer dynamics of the plant communities (*i.e.*, as many species were identified as practicable), and determine current land use. Adjacent public roadways were used for a visual assessment of areas where access was not permitted. These efforts were completed by a Burns & McDonnell biologist (Bryan Gasper) with experience identifying habitat, prairie plant identification, conducting presence/absence surveys, and coordinating agency consultations for these three sensitive species. Habitat guidelines provided by the USFWS for each species were used as comparison criteria when evaluating each area and assessing potential habitat (USFWS 1996, 2011a, 2011b, 2011c, 2011d, 2012) in addition to other available literature and information (see References section). Only habitat surveys were completed; no presence/absence surveys were conducted for western prairie fringed orchids, Dakota skippers, or poweshiek skipperlings within this effort.

## Results

The desktop assessment determined that the Project area is comprised of many land cover types and habitats. It is estimated that approximately 76% of the Project area is comprised of cultivated lands. Cultivated lands are not likely to support western prairie fringed orchids, Dakota skippers, or poweshiek skipperlings due to the disturbance. Watercourses were not considered within the land cover estimates (Table 2); however, the Project area contains approximately 200 intermittent streams totaling 80 linear miles and 29 perennial streams totaling 7.5 linear miles. The most notable watercourses are Rock River, East Branch Rock River, and

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North Branch Chanarambie Creek. Additionally, approximately 47 other streams or drainages of various types (categorized as connectors to lakes and wetlands) totaling 2.15 linear miles are also within the Project area.

Land cover types and usage that may include suitable habitat for the three species are shown in Figures 3 and 5, as well as Table 2. These include an itemized analysis of USFWS species-specific habitat information identifying Trosky Till Plain Area 5, NWI wetlands, PWI wetlands, estimates of additional wetlands from windshield surveys, MDNR data for wet meadows and calcareous fens, as well as NLCD information for grassland/herbaceous vegetation and developed open spaces (*i.e.*, western prairie fringed orchids may be found in ROWs that are not frequently maintained) (Figure 3, Table 2). Figures 4 and 5 are summaries of the areas of potential habitat for the three species, respectively. However, lands that are included and used for row crop cultivation and hay production were not evaluated further (*i.e.*, during the field habitat assessment).

A total of 24 areas identified (approximately 2,290 acres) during the desktop survey were evaluated during the field habitat assessment conducted July 9-11, 2012. Areas were identified based on potential species habitat and if they were accessible or not, which included the following categories:

- western prairie fringed orchid – Project access (WPA)
- western prairie fringed orchid – no Project access (WPNA)
- Dakota skipper/poweshiek skipperling – Project access (SKA)
- Dakota skipper/poweshiek skipperling – no Project access (SKNA)

The areas designated as “no access” (NA) are those properties where site access was not granted at the time of the field habitat assessment. Therefore, those areas were evaluated from public road-side observations only. While the habitats required for the western prairie fringed orchid and butterfly species are considerably different, potential habitats evaluated were within some of the same general areas or parcels evaluated. There were five areas evaluated that had multiple designations as a result of the terrain, land usage, and potential habitat to evaluated resulting in 29 habitat areas evaluated (Appendix A). These included four areas that were designated WPA and SKA and one area designated as WPNA and SKNA (Figure 7).

**Table 2. Land Cover Estimates Within the Project Site**

Land Cover Type	Acreages
<b>NLCD</b>	
Developed , Open Space	1,112
Developed , Low Intensity	25
Developed , Medium Intensity	9
Barren Land	18
Deciduous Forest	40
Grassland/Herbaceous	3,184
Pasture/Hay	1,010
Cultivated Crops	17,062
NLCD Total	22,460
<b>Wetlands</b>	
Palustrine Emergent Wetland (PEM)*	536
Palustrine Forested/Shrub Wetland (PSS)*	5
Palustrine Pond (PUB)*	19
PWI Wetland*	46
RIM Wetland Areas*	74
NLCD Wetland	65
Wetlands Total	745
<b>USFWS Data</b>	
Trosky Till Plain Area 5*	3,668
USFWS Data Total	3,668
<b>MDNR Natural Communities</b>	
Wet Meadow*	297
Calcareous Fen*	5
Upland Prairie*	108
MDNR Natural Communities Total	410

\*These land cover types overlap with the NLCD. NLCD for the Project encompasses the entire Project area.

### ***Western Prairie Fringed Orchid***

The desktop assessment yielded portions of the Project area that may have suitable habitat for supporting the western prairie fringed orchid. These potential areas would include the non-cultivated areas within the USFWS-identified Trosky Till Plain Area 5 (3,668 acres including the cultivated lands), MDNR-identified wet meadow and calcareous fens (302 acres), and potentially other areas within emergent wetlands (approximately 600 acres). Wetland acreages included NWI emergent wetlands totaling 536 acres, PWI wetlands totaling 46 acres, and NLCD wetlands totaling 65. There is overlap between the wetland data layers. Overlap between classifications is unavoidable due to the independent systems used for delineating habitats from a desktop level. NLCD-identified open areas (*i.e.*, ROWs among other land usages) (1,112 acres) within ROWs that are perennially wet and not annually maintained may also have suitable habitat for western prairie fringed orchids. It was determined that NWI, PWI, and NLCD classifications indicating

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wetlands within the Trosky Till Plain Area 5 were most likely to have habitat capable of supporting western prairie fringed orchids. Additionally, identified wetlands ( qualitative windshield surveys) and low-lying grassland areas outside, but near to, the Trosky Till Plain Area 5 may also have habitat capable of supporting this species (Figures 3 and 4).

During the field habitat assessment three WPNA areas and eight WPA areas were evaluated for potentially suitable habitat capable of supporting western prairie fringed orchids (Figure 7). Those areas that were designated as WPNA could only be evaluated from road-side observations. Areas with access were traversed to the best extent practicable. No areas within the Trosky Till Plain Area were determined to have habitat capable of supporting western prairie fringed orchids.

Within the eleven total areas evaluated for this species, WPNA 2 was determined to have habitat potentially capable of supporting western prairie fringed orchids (Figure 8). This area includes wetlands, wet prairies, and relatively unmaintained ROWs (Photo 1). WPNA 2 includes an estimated 65.3 acres. WPNA 2 had the highest observed plant diversity with 45 species observed (Appendix A). Some species noted in WPNA 2 are characteristic of native wet and dry prairie systems such as Culver's root (*Veronicastrum virginicum*) and dotted blazing star (*Liatrix punctata*). The presence of these species does not necessarily indicate or correlate to the presence of western prairie fringed orchid; rather, preservation of this area without cultivation or heavy grazing pressure is indicated by the presence of these plant species combined with the total plant diversity. However, this area is approximately 3.5 miles west of the USFWS-indicated appropriate soil conditions for this species (*i.e.*, Trosky Till Plains).

### ***Dakota Skipper and Poweshiek Skipperling***

The desktop assessment yielded portions of the Project area that may have suitable habitat for supporting the Dakota skipper or poweshiek skipperling. Land that could potentially include suitable habitats for Dakota skippers or poweshiek skipperlings would include (at a minimum) NLCD-identified grassland/herbaceous areas (3,184 acres) that are not cultivated and include warm season grasses and forbs, MDNR upland prairies (108 acres), as well as the several locations identified by the MDNR as prairie. Other potential suitable habitat areas could also exist within the Project area that were not identified as a part of this study, such as rock outcroppings, fallow fields, and Conservation Reserve Program (CRP) lands that have been established with warm season grasses and forbs for many years. Land cover types that may provide suitable habitat for Dakota skippers or poweshiek skipperlings are shown in Figure 5 and 6, as well as Table 2. Classifications used to indicate high probability for these species included MDNR data on rare species for invertebrate animals, community types (*i.e.*, prairies), and upland prairies, in addition to NLCD data for grassland/herbaceous areas. Table 2 provides a breakdown of the various land cover types specific to each analysis and their approximate quantity within the Project area; however, classifications such as "invertebrate animal" are not included due to the uniform size (*i.e.*, circular size) of the buffer around an observation. Inclusion of the acreage for this characteristic is unwarranted. Figure 6 is a summary of the areas

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of potential habitat for Dakota skippers and poweshiek skipperlings determined from the desktop analysis.

Grassland/herbaceous areas may include habitat capable of supporting (relative to other habitat classifications) Dakota skippers and poweshiek skipperlings (*i.e.*, remnant warm season grasslands of various sizes). The NLCD data for the Project area overestimates grassland/herbaceous (3,184 acres) and pasture/hay areas (1,010 acres), while underestimating cultivated croplands (17,062 acres). The variations are likely partially the result of areas used for hay production of alfalfa. These areas are included in the “Pasture/Hay” classification. General agricultural practices usually rotate areas producing alfalfa to row-crops on five- to seven-year intervals to minimize insect and weed issues. Therefore, these areas may alternate classifications depending on the timing of the analysis.

During the field habitat assessment five SKNA areas and thirteen SKA areas were evaluated for potentially suitable habitat capable of supporting Dakota skippers or poweshiek skipperlings (Figure 7). Those areas that were designated at SKNA could only be evaluated from road-side observations. Areas with prevalent little bluestem and sideoats grama and/or narrow-leaved purple coneflower (*Echinacea angustifolia*) or pale purple coneflower (*Echinacea pallida*) were determined to be habitats capable of potentially supporting these species. These areas also included considerable slope, thereby decreasing the amount of livestock grazing pressure relative to flatter areas.

Areas found to contain habitat potentially able to support these species included SKNA 2, SKA 5, SKA 6, and SKA 8 (Figure 8, Photos 2 through 4, Appendix A). Little bluestem and sideoats grama, in addition to other warm season grass species, were observed at each of these locations. Estimated acreages for each of these areas were 127.7, 115.7, 63.5, and 30.6 for SKNA 2, SKA 5, SKA 6, and SKA 8, respectively. Little bluestem was also observed at SKA 7 and sideoats grama was also observed at SKA 10. However, SKA 7 appears to be a recent CRP planting indicating previous recent disturbance and SKA 10 is heavily grazed, minimizing the abundance of plant species and integrity of the individual plants. Narrow-leaved purple coneflower was observed at SKA 5 and SKA 6. Pale purple coneflower was observed at SKA 5, SKA 6, and SKA 8 (Appendix A). Numerous examples of each *Echinacea* species were observed that were stunted, bloomed earlier than normal, or did not produce inflorescence during 2012 (*i.e.*, identified by vegetation only) (Photo 5). Observations of forage plants for Dakota skippers and poweshiek skipperlings were not possible at SKNA 2 due to the lack of access and difficulty identifying these species during an abnormally dry summer from a considerable distance. These plant species in no way indicate the presence of Dakota skippers or poweshiek skipperlings; rather, preservation of these areas without cultivation or heavy grazing pressure is indicated by the presence of these plant species combined with other forbs observed.

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### ***General Land Use***

Land use surrounding the Project area appears to be similar to the areas within the Project boundaries, as well as similar to the proposed usage by the Project. There are numerous wind energy facilities in the surrounding area. Smaller scale wind energy facilities (*i.e.*, one to three wind turbines, typically) in the general area include:

- Boeve Windfarm
- Fey Windfarm
- JJN Wind Farm
- K-Brink Windfarm
- Kas Brothers Windfarm
- Moulton, Chandler Hills Wind Farm Phase II
- Windcurrent Farms LLC Windfarm
- Woodstock Municipal Wind

Larger wind energy facilities, which consist of eight or more wind turbines, also exist near the Project area, including:

- Breezy Bucks (I, II) Salty Dog (I, II) Roadrunner, Wind Dog, Wally's Wind Farm
- Chanarambie Wind Project
- Fenton Wind Power Project
- Lake Benton II Wind Farm
- Minnesota Windshare Wind Project
- Moraine Wind Power Project
- Ridgewind Wind Farm
- Valley View Wind Farm
- Viking Wind Project
- Westridge Wind Farm

Some of the state-managed lands in the region may host sensitive species and habitats. From data collected and reviewed, there appear to be no USFWS-owned lands, Waterfowl Production Areas (WPAs), Audubon Society Important Bird Areas (IBAs), MDNR-Designated Wildlife Lakes, MDNR Migratory Waterfowl Feeding and Resting Areas (MWFRA), State Game Refuges, or State Wild, Scenic, and Recreational Rivers (WSRs) within the Project boundary. MDNR data and other mapping sources reveal two state-managed areas and one state trail within the Project area. The two areas are RIM conservation easements, which include a wetland preserve located in the extreme northwest corner (T107N, R44W, Section 7) of the Project area, and a conservation reserve enhancement riparian area located in the central part of the Project area (T107N, R44W, Section 35). Casey Jones State Trail is identified in the Project area, extending east-west and just west of Woodstock (T106, 44W, Sections 3 and 4). According to MDNR this trail may get extended further eastward and cross another portion of the Project area; however, the exact location is not known at this time.

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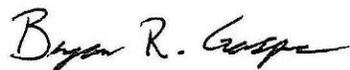
## Conclusions

Although the majority of the approximately 22,400 acres within the Project area is comprised of cultivated lands not suitable for western prairie fringed orchids, Dakota skippers, or poweshiek skipperlings, a field habitat assessment indicates there are some sensitive habitats that could potentially support these species. A total of 65.3 acres were found through the field habitat assessment to contain potential habitat for supporting western prairie fringed orchids. A total of 337.5 acres were found to contain potential habitat for supporting Dakota skippers or poweshiek skipperlings (Figure 8). Relative to the total proposed Project area, these areas comprised 0.3 percent for western prairie fringed orchid habitat and 1.5 percent for Dakota skippers and poweshiek skipperling habitat. No areas within the USFWS-indicated Trosky Till Plain Area were determined to be suitable habitat for western prairie fringed orchids.

These sensitive habitats included one wetland complex on the east boundary of the Project area (WPNA 2) and upland habitat in the west and central portions of the Project area (SKNA 2, SKA 5, SKA 6, and SKA 8) (Figure 8). The 2012 growing season was abnormally dry, leading to difficulties in plant identification and likely some plant species assemblage changes. EDF will consider these sensitive habitats in the development of the Project layout.

We appreciate your review of these findings. If you have questions or need additional information, please contact Bryan Gasper at (816) 349-6770 or [bgasper@burnsmcd.com](mailto:bgasper@burnsmcd.com) or Robert Everard at (816) 363-7251 or [reverard@burnsmcd.com](mailto:reverard@burnsmcd.com).

Sincerely,



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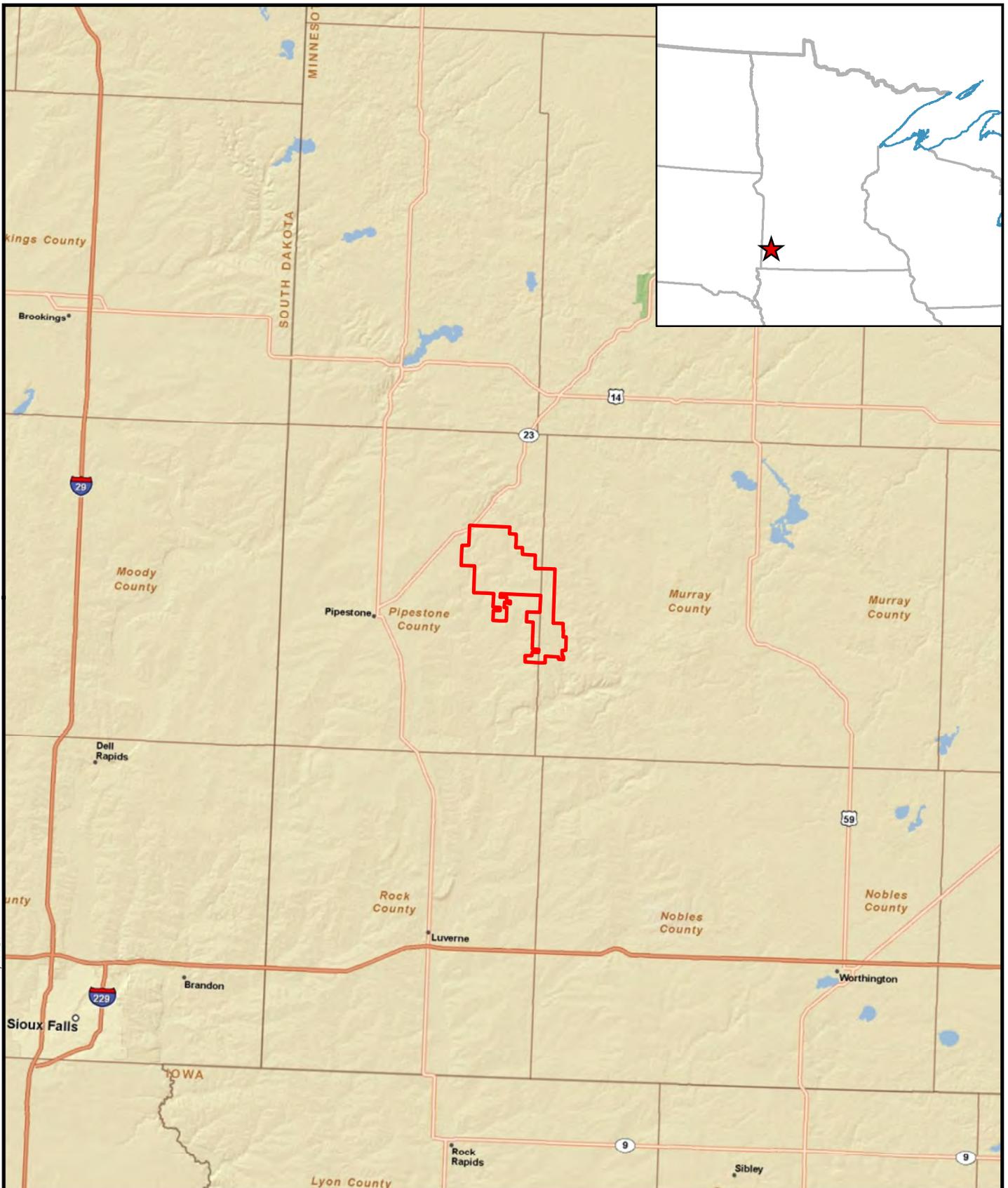
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## **APPENDIX A**

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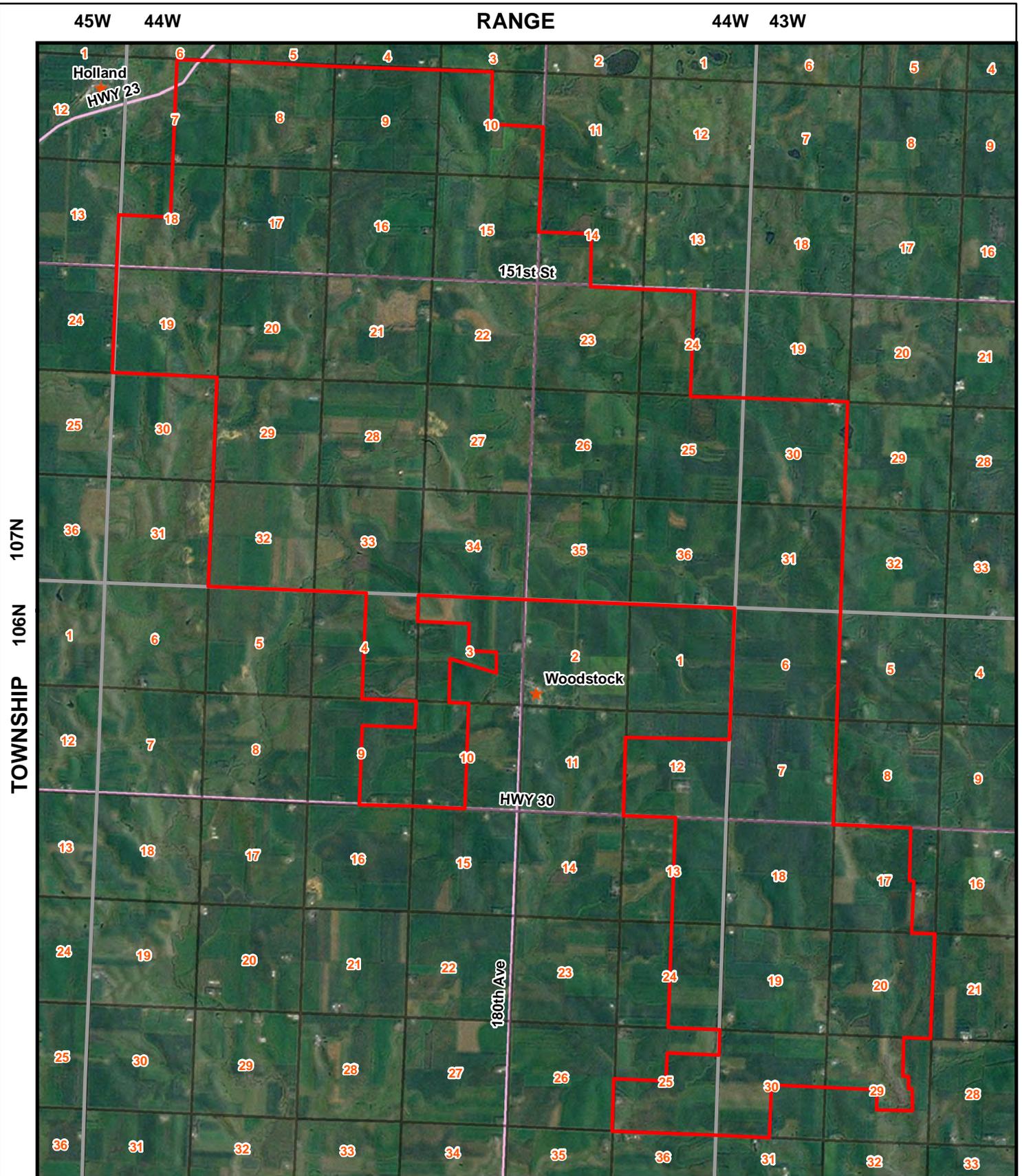
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 Proposed Project Boundary



**Figure 1**  
**General Location Map**  
**Stoneray Wind Project**  
**Murray & Pipestone**  
**Counties, Minnesota**

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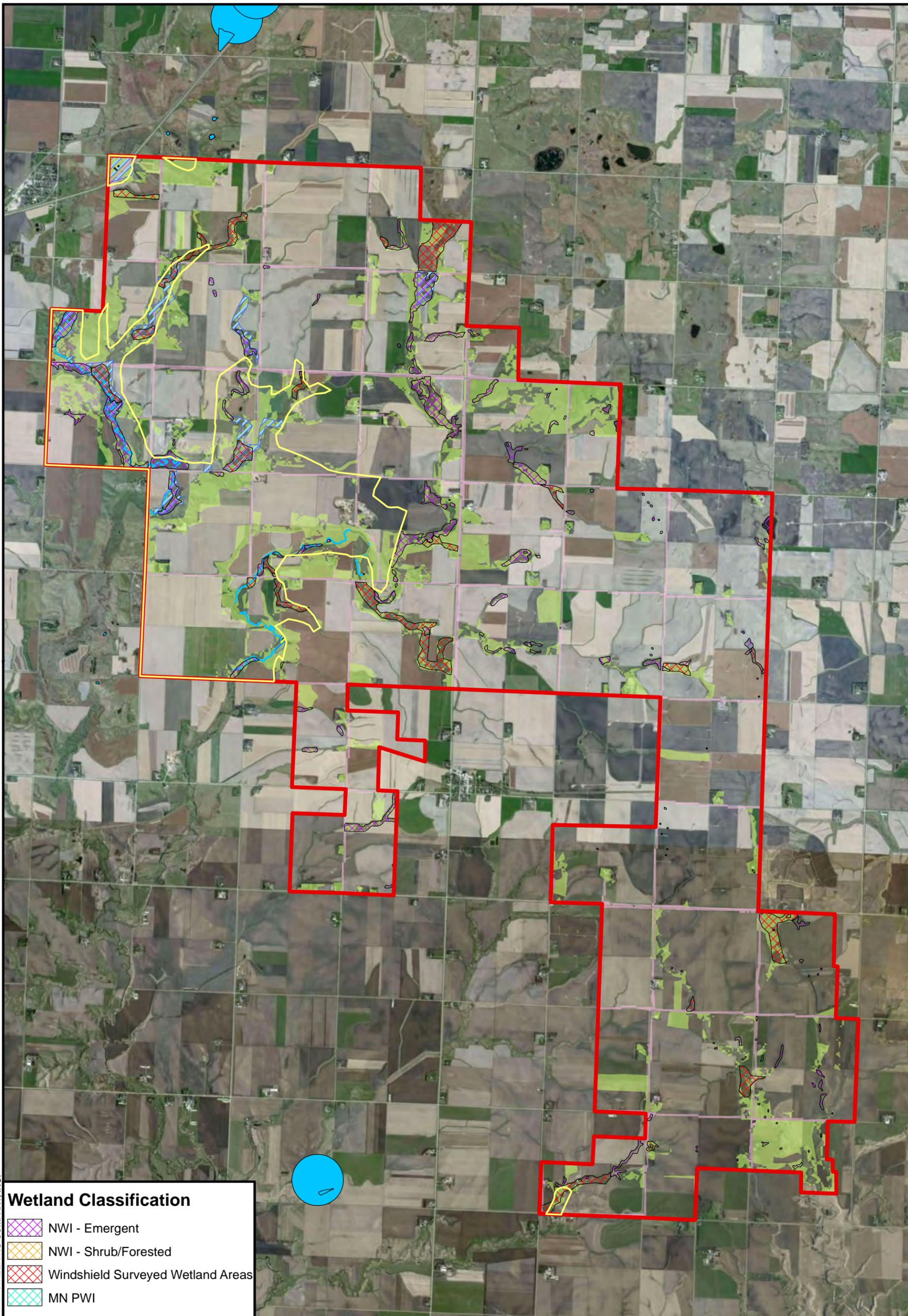
- Proposed Project Boundary
- Township and Range Sections
- Major Roads
- Town

NORTH

0 0.6 1.2 Miles



**Figure 2**  
**Project Boundary & Township, Range, Section**  
**Stoneray Wind Project**  
**Murray & Pipestone Counties, Minnesota**

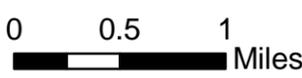


**Wetland Classification**

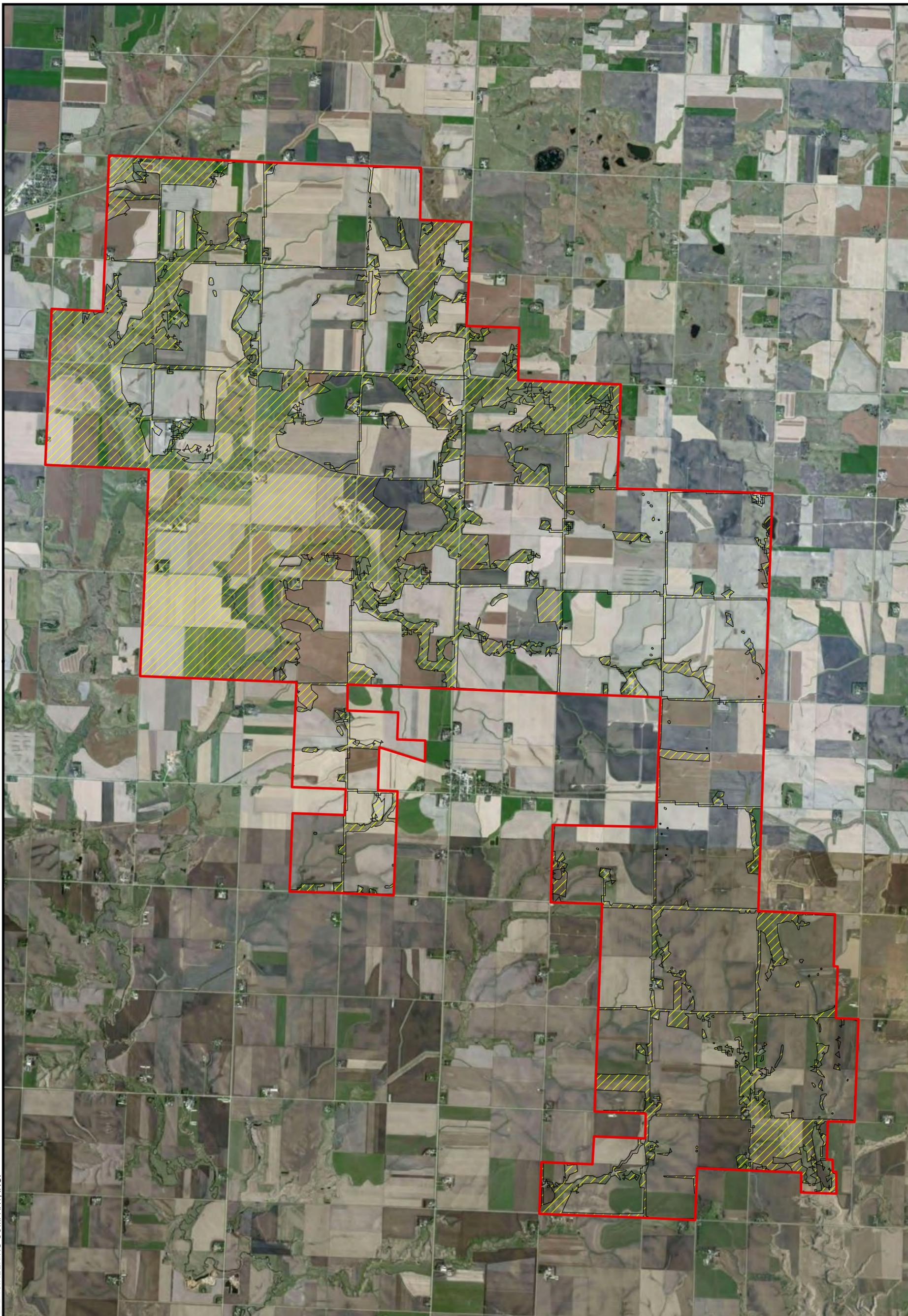
-  NWI - Emergent
-  NWI - Shrub/Forested
-  Windshield Surveyed Wetland Areas
-  MN PWI

**Legend**

-  Proposed Project Boundary
-  Trosky Till Plain Area 5
-  Developed, Open Space
-  Grassland/Herbaceous
-  Wet Meadow
-  Calcareous Fen
-  Vascular Plant
-  Perennial Stream



**Figure 3**  
**Western Prairie Fringed Orchid**  
**Desktop Analysis**  
**Stoneray Wind Project**  
**Murray & Pipestone**  
**Counties, Minnesota**



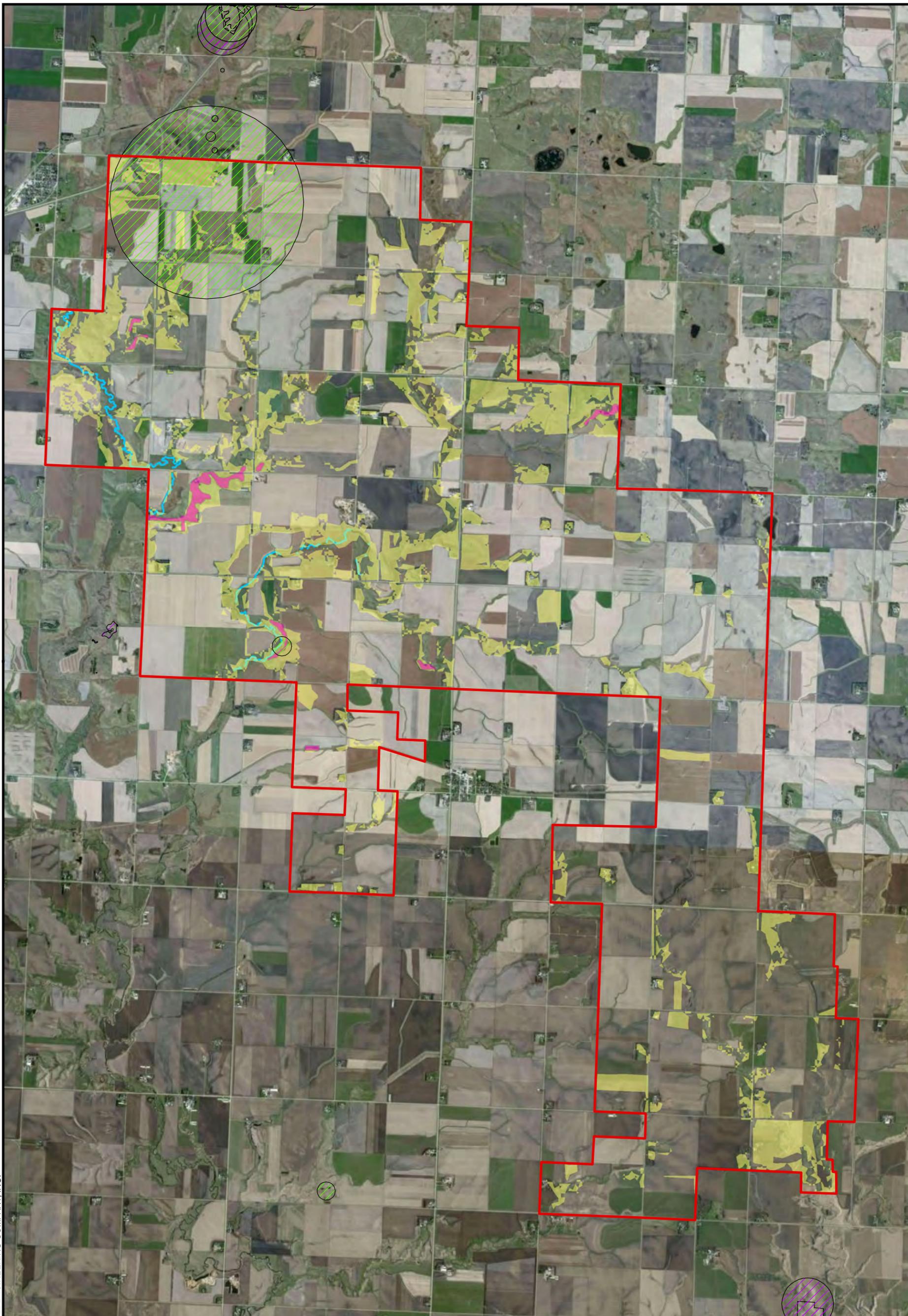
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### Legend

-  Proposed Project Boundary
-  WPFO Survey Area



**Figure 4**  
**Western Prairie Fringed Orchid**  
**Desktop Analysis - Survey Area**  
**Stoneray Wind Project**  
**Murray & Pipestone**  
**Counties, Minnesota**



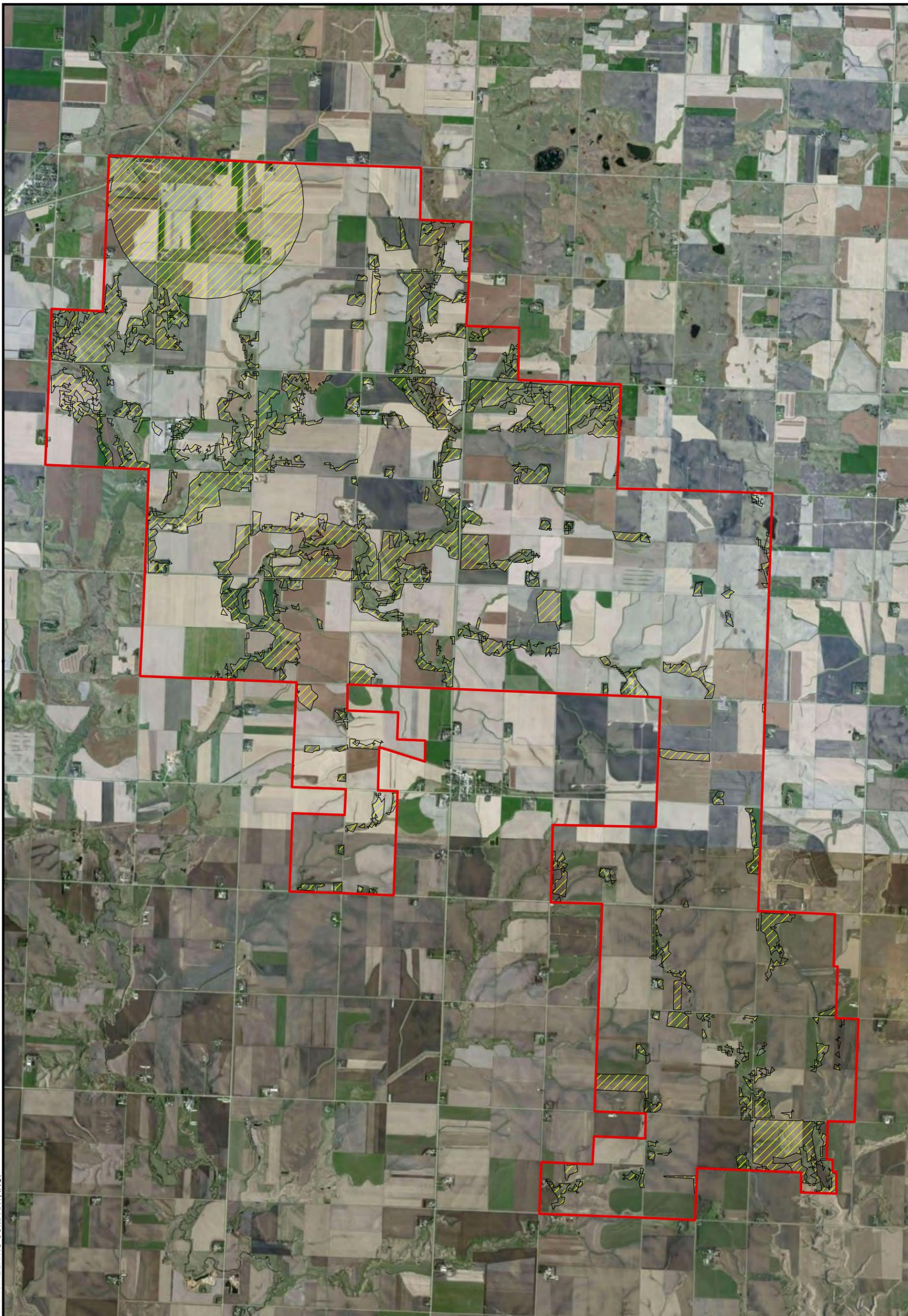
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**Legend**

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|---|---------------------------|---|---------------------------|
|  | Proposed Project Boundary |  | Upland Prairie            |
|  | Invertebrate Species      |  | NLCD Grassland/Herbaceous |
|  | Rare Species Community    |  | Perennial Stream          |



**Figure 5**  
**Dakota Skipper & Poweshiek Skipperling**  
**Desktop Analysis**  
**Stoneray Wind Project**  
**Murray & Pipestone**  
**Counties, Minnesota**



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### Legend

-  Proposed Project Boundary
-  Skipper & Skipperling Survey Area



**Figure 6**  
**Dakota Skipper & Poweshiek Skipperling**  
**Desktop Analysis - Survey Area**  
**Stoneray Wind Project**  
**Murray & Pipestone**  
**Counties, Minnesota**

