

Appendix D – Agency Correspondence

US Fish & Wildlife Service

IPaC Trust Resource Report



Project Description

NAME

Deuel/Grant Counties

PROJECT CODE

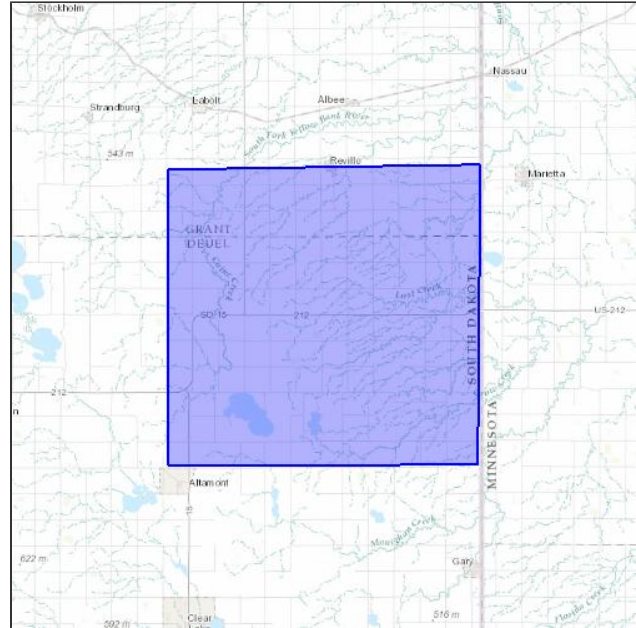
LP5RW-YE66V-BUPFX-TVUDM-QAQ714

LOCATION

Deuel and Grant counties, South Dakota

DESCRIPTION

No description provided



U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

South Dakota Ecological Services Field Office

420 South Garfield Avenue, Suite 400

Pierre, SD 57501-5408

(605) 224-8693

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the [Endangered Species Program](#) and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under [Section 7](#) of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an Official Species List from the regulatory documents section.

Birds

Red Knot *Calidris canutus rufa*

Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DM>

Fishes

Topeka Shiner *Notropis topeka (=tristis)*

Endangered

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E07R>

Insects

Dakota Skipper *Hesperia dacotae*

Threatened

CRITICAL HABITAT

There is **proposed** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=I011>

Poweshiek Skipperling *Oarisma poweshiek*

Endangered

CRITICAL HABITAT

There is **proposed** critical habitat designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=I0W1>

Mammals

Northern Long-eared Bat *Myotis septentrionalis*

Threatened

CRITICAL HABITAT

No critical habitat has been designated for this species.

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=A0JE>

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the [Migratory Bird Treaty Act](#) and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service ([1](#)). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

American Bittern *Botaurus lentiginosus*

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0F3>

Bird of conservation concern

Bald Eagle *Haliaeetus leucocephalus*

Season: Wintering

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008>

Bird of conservation concern

Black Tern *Chlidonias niger*

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B09F>

Bird of conservation concern

Black-billed Cuckoo *Coccyzus erythrophthalmus*

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0H1>

Bird of conservation concern

Dickcissel *Spiza americana*

Season: Breeding

Bird of conservation concern

Golden Eagle *Aquila chrysaetos*

Season: Wintering

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DV>

Bird of conservation concern

Grasshopper Sparrow *Ammodramus savannarum*

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0G0>

Bird of conservation concern

Hudsonian Godwit *Limosa haemastica*

Season: Migrating

Bird of conservation concern

Least Bittern *Ixobrychus exilis*

Season: Breeding

Bird of conservation concern

Loggerhead Shrike *Lanius ludovicianus*

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FY>

Bird of conservation concern

Marbled Godwit *Limosa fedoa*

Season: Breeding

Bird of conservation concern

Pied-billed Grebe *Podilymbus podiceps*

Season: Breeding

Bird of conservation concern

Red-headed Woodpecker *Melanerpes erythrocephalus***Bird of conservation concern**

Season: Breeding

Short-eared Owl *Asio flammeus***Bird of conservation concern**

Season: Wintering

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD>**Swainson's Hawk** *Buteo swainsoni***Bird of conservation concern**

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B070>**Upland Sandpiper** *Bartramia longicauda***Bird of conservation concern**

Season: Breeding

<https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HC>

Refuges

Any activity proposed on [National Wildlife Refuge](#) lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate [U.S. Army Corps of Engineers District](#).

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.



MEETING NOTES

SUBJECT: Deuel County Project Review	
PROJECT: Invenergy - Deuel Wind Energy Project	MEETING LOCATION: Conference Call
MEETING DATE: March 31, 2016	NOTES BY: A. Giampoli (Invenergy) and K. Chodachek (WEST, Inc.)

ATTENDEES

Andrea Giampoli, Invenergy
Michael Svedeman, Invenergy
Daniel Litchfield, Invenergy

Kristen Chodachek, WEST
Natoma Hansen, USFWS

TOPICS DISCUSSED

On March 31, 2016, Invenergy met with Natoma Hansen of the U.S. Fish and Wildlife Service (USFWS) to discuss the Deuel County Wind Energy Project (Project) in Deuel County, South Dakota and potential grassland and wetland easements within the Project. Primary points of discussion included:

- Guidelines
 - Project following:
 - Land-based wind energy guidelines (WEG)
 - Eagle conservation plan guidance (ECPG)
 - Northern Long-eared bat guidance per the Indiana Bat Guidelines
- Project Overview
 - Two project Areas – North Deuel and South Deuel
 - North Deuel : ~38,000 acres
 - South Deuel: ~ 55,000 acres
 - ~250 MW combined
 - Environmental studies initiated April 2016
- Tier 1-2 Preliminary Site Evaluation
 - Objective: Assess potential presence of species of concern, including species of habitat fragmentation concern, likely to be onsite
 - Based on WEG and State 1 of ECPG
 - Landscape and project level screening of public databases
 - Reconnaissance level site visit
 - Roadside habitat evaluation
- Tier 3 Surveys Initiated/Proposed
 - Large Bird Use Survey
 - 30% coverage: 23 points (North Deuel) and 33 points (South Deuel)
 - Record large bird use in circular fixed-point 800m plot
 - Survey Period: April 2016 – March 2017
 - 60 minute monthly survey at each point

- Record flight paths for eagles and federal and/or state species of concern
- Small Bird Use Survey
 - 30% coverage: 23 points (North Deuel) and 33 points (South Deuel) – same points
 - Survey Period: April 2016 – November 2016 and March 2017
 - 8-minute monthly survey at each point
 - Surveys conducted from dawn to 1100 hours
- Aerial Raptor Nest Survey
 - Objective to document raptor nests in the vicinity of the Project
 - Aerial based surveys
 - Eagle nests documented within 10-mile buffer of the Project boundary
 - Non-eagle raptor nests documented within 2-mile buffer of the Project boundary
 - Surveys conducted late March to early April 2016
- Passive Bat Acoustic Survey
 - Objective: evaluate bat activity in the Project area
 - Survey Period: April 1 – October 31, 2016
 - Using two AnaBat ultrasonic detectors in South Deuel (one raised; one ground) and one AnaBat detector in North Deuel (ground only)
- Easements
 - Discussed potential grassland and wetland easements that may occur in the Project area

Invenergy



Introduction to Deuel Wind Energy Project Deuel County, SD



Presented to:

**United States Fish and
Wildlife Service
Wetlands Management
District
Madison, SD**



March 31, 2016



Participants

- Andrea Giampoli, Environmental and Wildlife Permitting Manager, Invenergy
- Michael Svedeman, Business Development Manager, Invenergy
- Kristen Chodachek, Wildlife Surveys Project Manager, West
- Natoma Hansen, Madison District WMD



Agenda

- Guidelines
- Project Overview
- Site Characterization
- Field Surveys
 - Large Bird Use Survey
 - Small Bird Use Survey
 - Aerial Raptor Nest Survey
 - Passive Bat Acoustic Survey
 - Wetlands Survey
- Easements



Guidelines

- Land-Based Wind Energy Guidelines (WEG)
 - Tiers 1-2 – Site Characterization
 - Tier 3 – Pre-Construction Surveys
- Eagle Conservation Plan Guidance (ECPG)
- Northern Long-Eared Bat Guidance per the Indiana Bat Guidelines



Project Overview



- Deuel County, SD
- Two Project Areas – North Deuel and South Deuel
- North Deuel: Approx. 38,000 Acres
- South Deuel: Approx. 55,000 Acres
- Generating Capacity up to 300 MW
- Environmental Studies Initiated April 2016



Preliminary Site Evaluation

Tiers 1-2

Objective: Assess potential presence of species of concern, including species of habitat fragmentation concern, likely to be on site

- Based on WEG and Stage 1 of ECPG
- Landscape and project-level screening of publicly available databases
- Reconnaissance level site visit
- Detailed habitat mapping



Field Surveys

Tier 3

- Large Bird Use Survey
- Small Bird Use Survey
- Aerial Raptor Nest Survey
- Passive Bat Acoustic Survey



Large Bird Use Survey

Objective: Evaluate species composition, and spatial and temporal large bird use in the Project area, including eagles and other raptors

- Circular fixed-point 800m plots
- 30% coverage: 23 points (North Deuel); 33 points (South Deuel)
- Survey Period: April 2016 – March 2017
- 60-minute monthly survey at each point (will alternate between even and odd points every two weeks)
- Document flight paths for eagles and federal and/or state species of concern
- Total of 672 hours for the combined survey effort



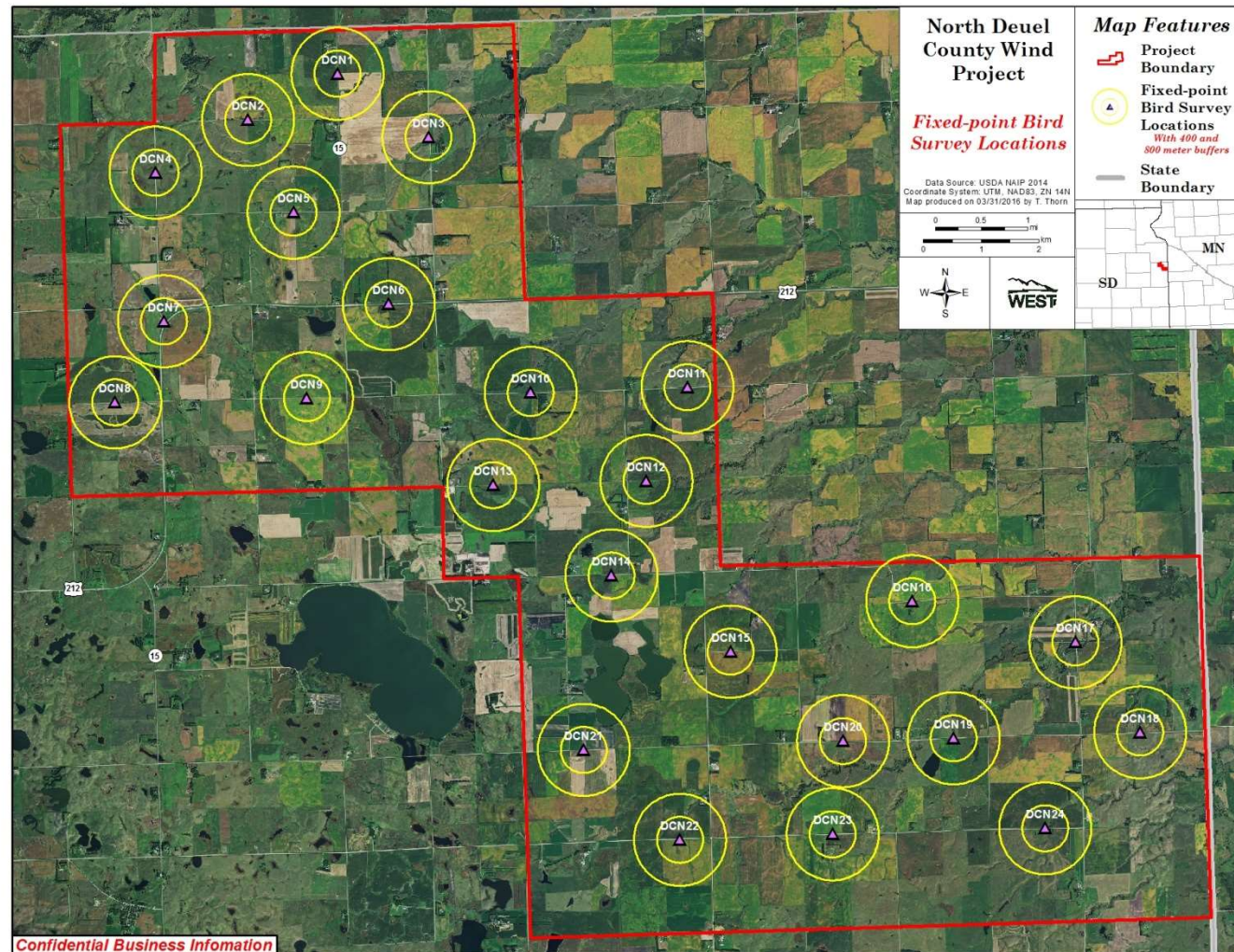
Small Bird Use Survey

Objective: Evaluate species composition and use of small birds in the Project area

- Record use by small birds from 100-m buffer radius plots
- Using same points as large bird use survey (North Deuel – 23 points; South Deuel – 33 points)
- Survey period: April 1 – November 30, 2016 and March 2017
- 8-minute survey at each point; each point surveyed once per month (alternate between even and odd points every two weeks)
- Surveys only conducted from dawn to 11:00 a.m.

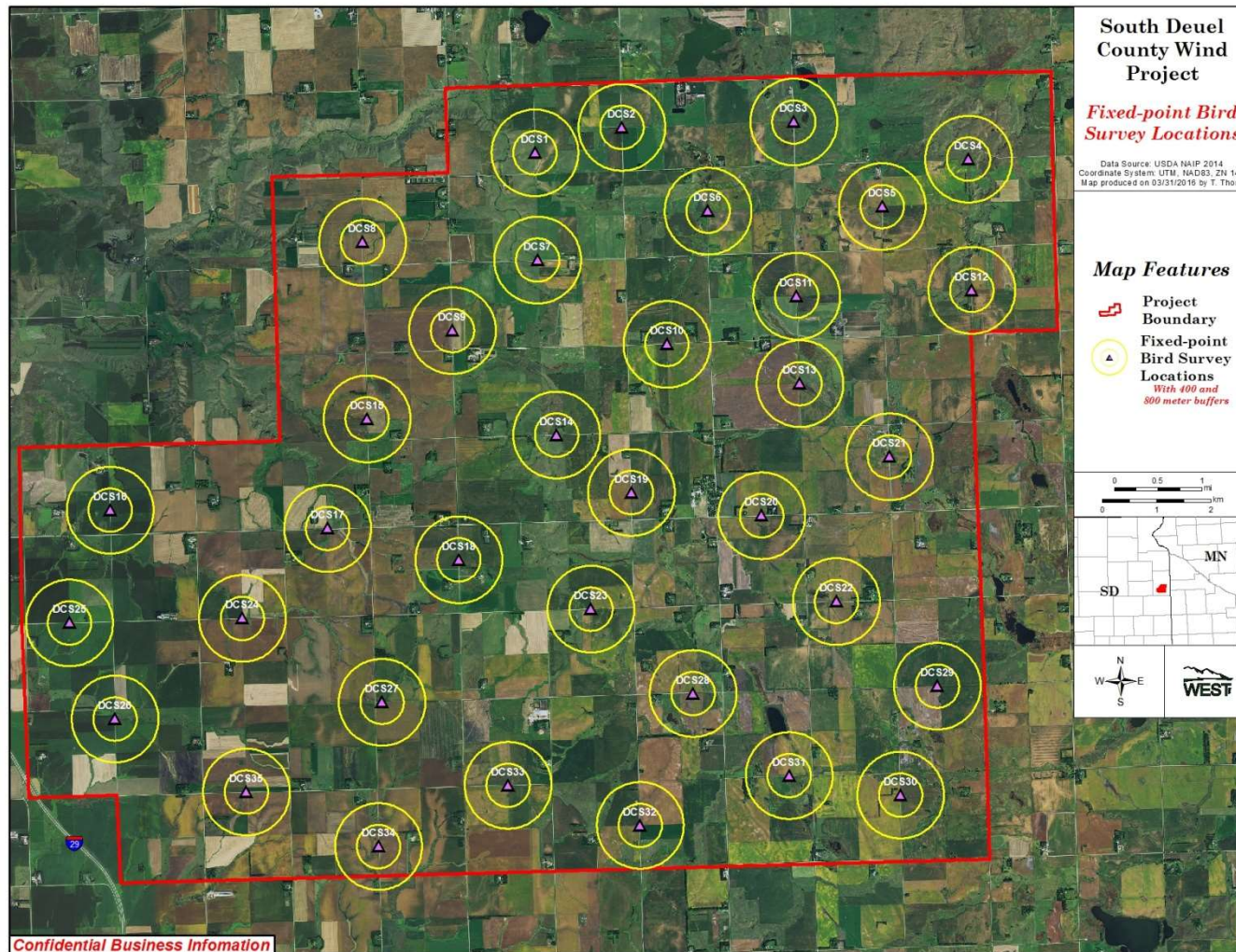


Large/Small Bird Use Survey Point Count Locations – North Deuel





Large/Small Bird Use Survey Point Count Locations – South Deuel





Aerial Raptor Nest Survey

Objective: Document raptor nests in the vicinity of the Project

- Review existing data on known raptor nest locations
- Aerial-based surveys
- All raptor nests documented in the Project area and 2-mile buffer
- Eagle nests surveyed out to 10 miles from Project boundary
- Surveys being conducted late March to early April



Passive Bat Acoustic Survey

Objective: Evaluate bat activity in the Project area

- Survey Period: April 1 – October 31, 2016
- Detectors will activate 30 minutes prior to sunset and turn off 30 minutes after sunrise
- Two AnaBat ultrasonic detectors will be placed at one met tower in each project area - one raised unit at RSH and one 5 m from the ground



Wetlands Survey

- Database analysis – USFWS National Wetlands Inventory; aerial imagery; and other available databases
- Site visit and wetlands mapping
- Follow up delineations, if needed



Easements

- Easement for Waterfowl Management Rights – Wetlands Easement
- Easement for Waterfowl Habitat Protection Areas – Grassland Easement
- Any updated maps or publicly available information?
- Avoidance strategy
- What is the process if impacts expected?
 - Temporary v. permanent impacts?



➤ Questions/Comments?

**ENVIRONMENTAL & STATISTICAL CONSULTANTS**

4007 State Street, Suite 109, Bismarck, ND 58503
Phone: 701-250-1756 • www.west-inc.com • Fax: 701-250-1761

June 20, 2016

U.S. Fish & Wildlife Service
South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408
(605) 224-8693

Subject: Proposed Wind Energy Project,
Deuel County, South Dakota
Sensitive Species/Sensitive Habitat Review Request

To Whom It May Concern:

One of our clients is evaluating the feasibility of developing a wind energy project in Deuel County, South Dakota (see attached map). The wind energy facility is in the early stage of development so specific attributes (i.e. project size, turbine types, etc.) and construction dates are yet unknown.

Please review the proposed project areas and surrounding areas and provide us with any information about listed, proposed, and candidate species (including plants) or sensitive environmental areas that may be in or near the Project area. If your review indicates that threatened and endangered species may inhabit the areas near the Project, please provide detailed location and life history information for each species. This information will be treated as confidential and will be used for project purposes only. Please also treat the enclosed information as confidential and not for distribution.

Thank you for your assistance. If you have any questions or require additional information, please feel free to call me at 701-250-1756.

Sincerely,

Kristen Chodachek
Project Manager

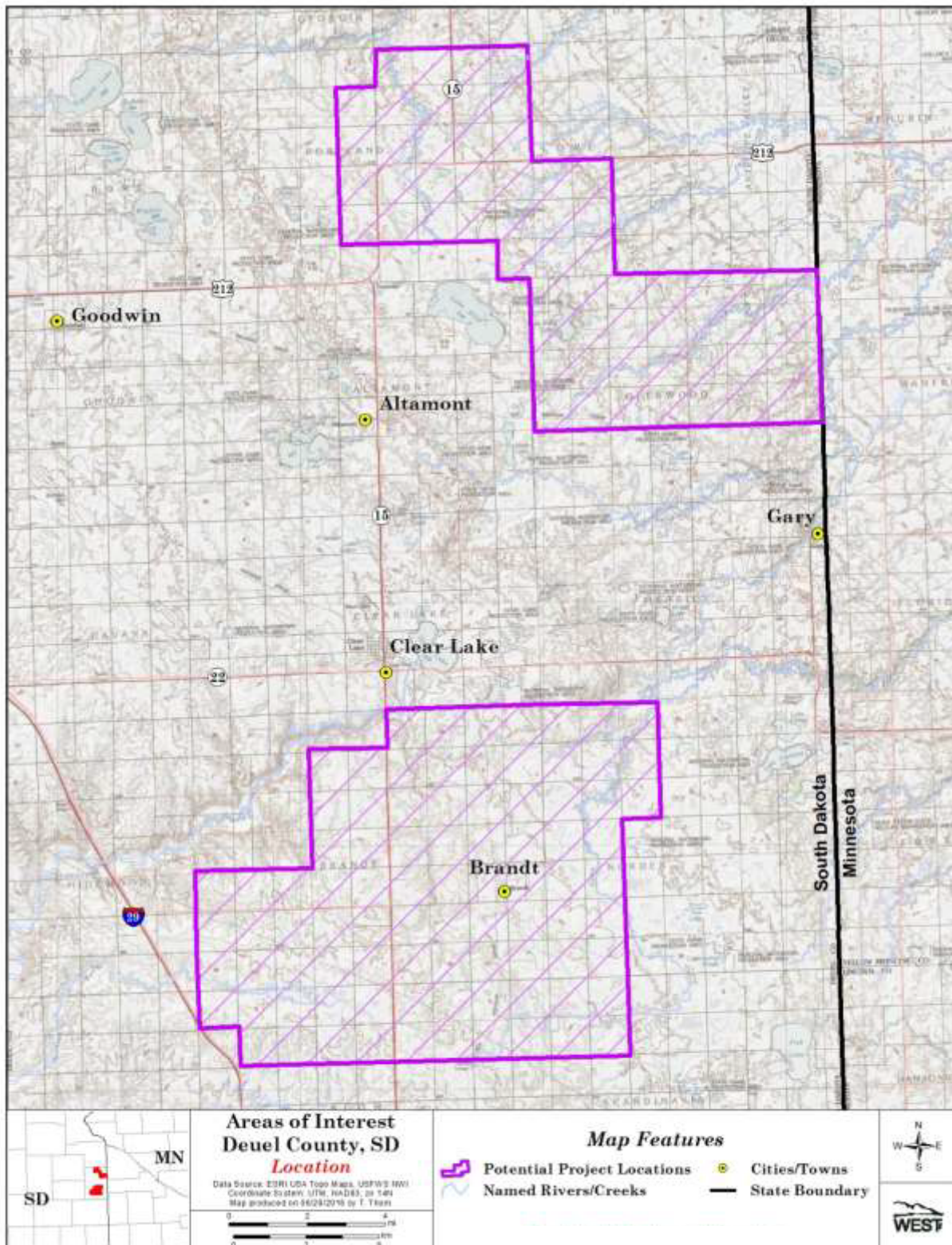


Figure 1. Areas of Interest, Deuel County, South Dakota.

**ENVIRONMENTAL & STATISTICAL CONSULTANTS**

4007 State Street, Suite 109, Bismarck, ND 58503
Phone: 701-250-1756 • www.west-inc.com • Fax: 701-250-1761

June 20, 2016

John Lott
South Dakota Game, Fish, & Parks
Aquatic section Chief
523 East Capitol Avenue
Pierre, South Dakota 57501

Subject: Proposed Wind Energy Project,
Deuel County, South Dakota
Sensitive Species/Sensitive Habitat Review Request

To Mr. Lott:

One of our clients is evaluating the feasibility of developing a wind energy project in Deuel County, South Dakota (see attached map). The wind energy facility is in the early stage of development so specific attributes (i.e. project size, turbine types, etc.) and construction dates are yet unknown.

Please review the proposed project areas and surrounding areas and provide us with any information about listed, proposed, and candidate species (including plants) or sensitive environmental areas that may be in or near the Project area. If your review indicates that threatened and endangered species may inhabit the areas near the Project, please provide detailed location and life history information for each species. This information will be treated as confidential and will be used for project purposes only. Please also treat the enclosed information as confidential and not for distribution.

Thank you for your assistance. If you have any questions or require additional information, please feel free to call me at 701-250-1756.

Sincerely,

Kristen Chodachek
Project Manager

ENVIRONMENTAL & STATISTICAL CONSULTANTS

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Phone: 701-250-1756 • www.west-inc.com • Fax: 701-250-1761

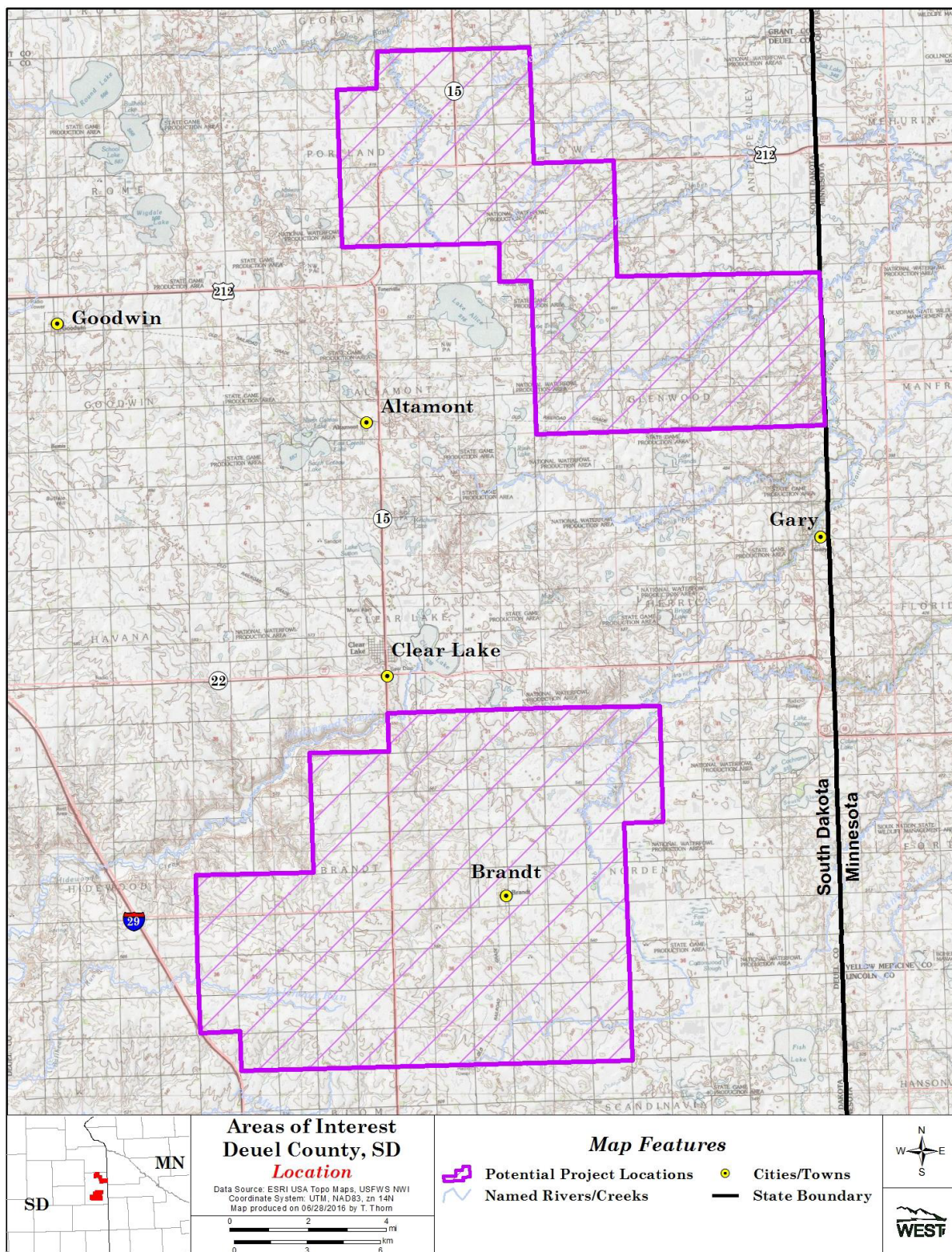


Figure 1. Areas of Interest, Deuel County, South Dakota.

**ENVIRONMENTAL & STATISTICAL CONSULTANTS**

4007 State Street, Suite 109, Bismarck, ND 58503
Phone: 701-250-1756 • www.west-inc.com • Fax: 701-250-1761

June 20, 2016

Tom Kirschenmann
South Dakota Game, Fish, & Parks
Wildlife Division Deputy Officer
523 East Capitol Avenue
Pierre, South Dakota 57501

Subject: Proposed Wind Energy Project,
Deuel County, South Dakota
Sensitive Species/Sensitive Habitat Review Request

To Mr. Kirschenmann:

One of our clients is evaluating the feasibility of developing a wind-energy project in Deuel County, South Dakota (see attached map). The wind-energy facility is in the early stage of development so specific attributes (i.e. project size, turbine types, etc.) and construction dates are yet unknown.

Please review the proposed project areas and surrounding areas and provide us with any information about listed, proposed, and candidate species (including plants) or sensitive environmental areas that may be in or near the Project area. If your review indicates that threatened and endangered species may inhabit the areas near the Project, please provide detailed location and life history information for each species. This information will be treated as confidential and will be used for project purposes only. Please also treat the enclosed information as confidential and not for distribution.

Thank you for your assistance. If you have any questions or require additional information, please feel free to call me at 701-250-1756.

Sincerely,

Kristen Chodachek
Project Manager

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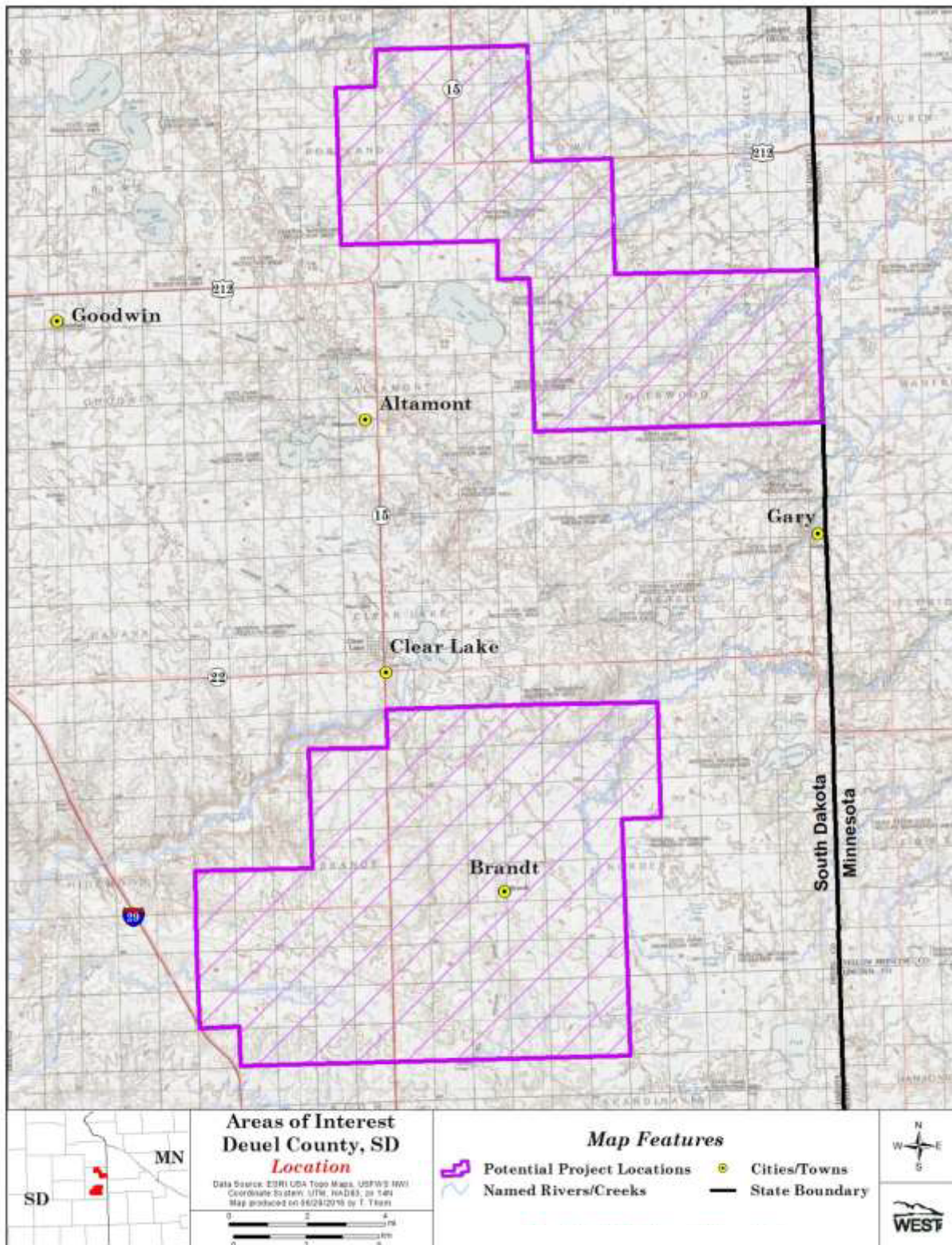


Figure 1. Areas of Interest, Deuel County, South Dakota.



United States Department of the Interior

FISH AND WILDLIFE SERVICE

Ecological Services
420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501-5408



August 16, 2016

Ms. Kristen Chodachek
WEST – Environmental and Statistical Consultants
4007 State Street, Suite 109
Bismarck, North Dakota 58503

Re: Proposed Wind Energy Project, Deuel
County, South Dakota

Dear Ms. Chodachek:

This letter is in response to your June 20, 2016, letter requesting species and habitat information relative to the development of a wind energy facility in Deuel County, South Dakota. Your attached map indicates two potential areas that are currently being evaluated: one with a southern border located approximately 6 miles northwest of the town of Clear Lake, and the other with a northern border located 1 mile south of Clear Lake.

Per our August 12, 2016, conference call regarding this project, it is our understanding that while only one of the proposed sites may be chosen for development of the current project, the other may be developed at a later date, and efforts to obtain landowner leases are still ongoing.

Additionally, surveys of habitat types, bats, and birds were initiated earlier this year in areas where permission to access was obtained, and will continue into 2017, following our agency's existing guidance (*Land Based Wind Energy Guidelines*, *Eagle Conservation Plan Guidelines*, and *2015 Range-wide Indiana Bat Summer Survey Guidelines* (for northern long-eared bat)).

You have also initiated coordination with Natoma Hansen at our Madison Wetland Management District regarding U.S. Fish and Wildlife Service (Service) land interests in the two project areas, and we encourage continued contact with that office, as well as ours, as project activities progress.

Herein we provide additional information relevant to the development of wind energy in South Dakota.

FEDERALLY LISTED SPECIES

Your June 20, 2016, letter specifically requests federally listed species information. In accordance with section 7(c) of the Endangered Species Act (ESA), as amended, 16 U.S.C. 1531

et seq., we have determined that the following federally listed species may occur in the project area (this list is considered valid for 90 days):

<u>Species</u>	<u>Status</u>	<u>Expected Occurrence</u>
Dakota Skipper (<i>Hesperia dacotae</i>)	Threatened	Resident in native prairie, northeastern SD
Northern Long-eared Bat (<i>Myotis septentrionalis</i>)	Threatened	Summer resident, seasonal migrant, known winter resident in Black Hills
Poweshiek Skipperling (<i>Oarisma poweshiek</i>)	Endangered	Possible resident in native prairie, northeastern SD
Rufa Red Knot (<i>Calidris canutus rufa</i>)	Threatened	Rare seasonal migrant
Topeka Shiner (<i>Notropis topeka</i>)	Endangered	Resident

Dakota Skipper

The Dakota skipper is a small prairie butterfly listed as a threatened species under the Endangered Species Act (see: <http://www.gpo.gov/fdsys/pkg/FR-2014-10-24/pdf/2014-25190.pdf>). Dakota skippers are obligate residents of high quality prairie ranging from wet-mesic tallgrass prairie to dry-mesic mixed grass prairie. In northeastern South Dakota, Dakota skippers inhabit dry-mesic hill prairies with abundant purple coneflower (*Echinacea angustifolia*), but also use mesic to wet-mesic tallgrass prairie habitats characterized by wood lily (*Lilium philadelphicum*) and mountain death camas (smooth camas; *Zigadenus elegans*). Their dispersal ability is very limited due in part to their short adult life span and single annual flight. Extirpation from a site may be permanent unless it occurs within about 0.6 miles of an inhabited site that generates a sufficient number of emigrants. Avoidance of impacts to native prairie habitat is recommended to reduce the risk of adverse effects to this species. Critical habitat has been designated for this species in South Dakota (<http://www.fws.gov/Midwest/endangered/insects/dask/index.html>) and per our August 12, 2016, conference call, you are aware of the locations of critical habitat sites for this species within the vicinity of the proposed project areas. While the two project sites do not currently encompass designated critical habitat, you have indicated you are aware of historic locations of this species within current project boundaries. We recommend evaluation of existing grasslands within the proposed project boundaries for the presence of Dakota skippers, and subsequent avoidance of any potentially occupied habitat.

Northern Long-eared Bat

The northern long-eared bat is a medium-sized brown bat listed as threatened under the Endangered Species Act. Northern long-eared bats are known to be present in South Dakota during the summer months, primarily roosting singly or in colonies underneath bark, in cavities or in crevices of both live and dead trees. Some hibernacula have been documented in

caves/mines in the Black Hills, and the species has been documented in other forested areas in the state during the summer months as well as along the Missouri River during migration. White nose syndrome - a fungus affecting hibernating bats - is considered a significant threat to this species, but individuals may be harmed by other activities such as modifications to hibernacula, timber harvest, human disturbance, and collisions with wind turbines. Currently, feathering turbine blades and increasing cut-in speeds beyond manufacturer rates are recommended measures to reduce the risk of bat mortality at wind generation facilities. A 4(d) rule has been published that exempts take of Northern long-eared bats in certain circumstances (see: <https://www.fws.gov/Midwest/Endangered/mammals/nleb/index.html>). Per our aforementioned call, you have initiated both acoustic and mist-net surveys to determine the presence of northern long-eared bats in the proposed project areas, adhering to our *2015 Range-wide Indiana Bat Summer Survey Guidelines*; we look forward to reviewing the results of those surveys.

Poweshiek Skipperling

The Poweshiek skipperling is a small prairie butterfly listed as endangered under the Endangered Species Act (see: <http://www.gpo.gov/fdsys/pkg/FR-2014-10-24/pdf/2014-25190.pdf>). The habitat of Poweshiek skipperlings includes prairie fens, grassy lake and stream margins, moist meadows, and wet-mesic to dry tallgrass prairie. Preferred nectar plants for adult Poweshieks include smooth ox-eye (*Heliopsis helianthoides*) and purple coneflower (*Echinacea angustifolia*), but they also use stiff tickseed (*Coreopsis palmate*), black-eyed susan (*Rudbeckia hirta*), and palespike lobelia (*Lobelia spicata*). Larval food plants are assumed to include spike-rush, sedges, prairie dropseed (*Sporobolus heterolepis*) and little bluestem (*Schizachyrium scoparium*). Poweshiek skipperlings have one flight per year from about the middle of June through the end of July (depending upon weather). They have a low dispersal capability, and may not cross areas that are not structurally similar to native prairies. Extirpation from fragmented and isolated prairie remnants may be permanent unless it occurs within about 0.6 miles of an inhabited site that generates a sufficient number of emigrants. They are vulnerable to extreme weather conditions, dormant season fire, and other disturbances (e.g., intense cattle grazing). Avoidance of impacts to native prairie habitat is recommended to reduce the risk of adverse effects to this species. As with the Dakota skipper above, critical habitat has been designated for this species in South Dakota (<http://www.fws.gov/midwest/endangered/insects/dask/finalch.html>) and the current proposed project areas do not encompass Poweshiek skipperling critical habitat. However, since historic locations of the species exist within project boundaries, we recommend evaluation of existing grasslands for the current presence of Poweshiek skipperlings, and subsequent avoidance of any potential habitat.

Rufa Red Knot

The rufa red knot is a robin-sized shorebird listed as threatened under the Endangered Species Act (<http://www.gpo.gov/fdsys/pkg/FR-2014-12-11/pdf/2014-28338.pdf>). The red knot migrates annually between its breeding grounds in the Canadian Arctic and several wintering regions, including the Southeast United States, the Northeast Gulf of Mexico, northern Brazil, and Tierra del Fuego at the southern tip of South America. Although it is primarily a coastal species, small numbers of rufa red knots are reported annually across the interior United States (i.e., greater than 25 miles from the Gulf or Atlantic Coasts) during spring and fall migration. These reported sightings are concentrated along the Great Lakes, but multiple reports have been made from

nearly every interior State, including South Dakota. The red knot likely uses South Dakota habitats similar to those of the least tern and piping plover. The species does not breed in this state.

Topeka Shiner

The Topeka shiner is a small prairie stream minnow occupying eastern South Dakota waterways. The species prefers pool habitats, in cool, clear waters, typically spawning over gravel substrates in the spring and summer; however they have been known to occupy suboptimal (somewhat degraded) habitats that reflect the current state of prairie streams in the agriculturally-dominated landscape comprising their range. In Deuel County, Hidewood Creek, Peg Munky Run, North Deer Creek, and Sixmile Creek are known occupied streams; any tributaries of these should also be considered potentially occupied. Any activities that may impact these waterways have the potential to affect the Topeka shiner; we recommend complete avoidance of these streams and their protective riparian habitat.

We did not discuss the existence of a federal nexus for this project during our August 12, 2016, conference call. If a federal agency ultimately funds, permits or authorizes this project, and that agency determines that the project "may adversely affect" listed species in South Dakota, it should request formal consultation from this office. If a "may affect - not likely to adversely affect" determination is made for this project, it should be submitted to this office for concurrence. If a "no effect" determination is made, further consultation may not be necessary; however, a copy of the determination should be sent to this office.

If no federal agency is involved with the proposed project and adverse impacts to federally listed species may occur, ESA compliance may be achieved by private entities via coordination with this office and development of a Habitat Conservation Plan (HCP). Our website provides more information on HCPs at: <http://www.fws.gov/endangered/what-we-do/hcp-overview.html>.

EAGLES

Golden eagles (*Aquila chrysaetos*) are year-round residents in western South Dakota, but may be found throughout the state. Bald eagles (*Haliaeetus leucocephalus*) occur throughout South Dakota in all seasons, and new nests are appearing each year. While ESA protection for the bald eagle has been removed, both species continue to be protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA). These laws protect eagles from a variety of harmful actions and impacts. Our agency has developed guidance for the public regarding means to avoid take of the eagle under these laws. The *National Bald Eagle Management Guidelines* are available online:

<http://www.fws.gov/northeast/ecologicalservices/eaglenationalguide.html>. We recommend reviewing these guidelines as they advise of circumstances where these laws may apply and assist in avoiding potential violations on future projects. Additionally, permit regulations have been published for eagles (Federal Register, Volume 74, No. 175, Friday, September 11, 2009). As you know, the Service developed *Eagle Conservation Plan Guidance* (ECP), and it is our understanding that you are utilizing this guidance relative to preconstruction surveys. The ECP provides interpretive information in applying the regulatory permit standards as specified by the BGEPA and other federal laws, and facilitates the process of obtaining an eagle take permit.

Should the developer wish to pursue an eagle take permit for this wind facility, we can assist with this process and provide additional guidance (specific to this Region (6) of the Service) regarding the development of ECPs.

WETLANDS

According to National Wetlands Inventory maps (available online at <http://wetlands.fws.gov/>), wetlands exist within the proposed project area. If a project may impact wetlands or other important fish and wildlife habitats, the Service, in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and other environmental laws and rules, recommends complete avoidance of these areas, if possible; then minimization of any adverse impacts; and finally, replacement of any lost acres; in that order. Alternatives should be examined and the least damaging practical alternative selected. If wetland impacts are unavoidable, a mitigation plan addressing the number and types of wetland acres to be impacted and the methods of replacement should be prepared and submitted to the resource agencies for review.

AVIAN ISSUES

Birds of Conservation Concern and other Grassland Birds

The Migratory Birds Division of the Service has published *Birds of Conservation Concern 2008*, which may be found online at:

<https://www.fws.gov/migratorybirds/pdf/grants/BirdsofConservationConcern2008.pdf>. This document is intended to identify species in need of coordinated and proactive conservation efforts among State, Federal, and private entities with the goals of precluding future evaluation of these species for ESA protections and promoting/conserving long-term avian diversity. Primary threats impacting grassland species that occur in South Dakota are habitat loss and fragmentation. The areas proposed for construction of this wind development have the potential to harbor areas of intact grassland with associated wetlands - valuable habitats for prairie birds. In accordance with Executive Order 13186 regarding migratory bird protection, we recommend avoidance, minimization, and finally compensation to reduce the impacts to avian species protected by the MBTA. Compliance with this law may be partially addressed in a Bird and Bat Conservation Strategy (BBCS) (identified within our *Land-Based Wind Energy Guidance*). However, a separate mitigation plan that specifically addresses direct and indirect take of birds during and after construction is also recommended, particularly if impacts occur within intact native grasslands. Some species of grassland nesting birds are known to exhibit avoidance behavior relative to wind turbines on the prairie landscape, out to a distance of 300 m or more (Shaffer and Buhl 2015), which equates to an area approximately 70 acres in size around each turbine. If prairie habitat impacts are unavoidable, we recommend implementing offsetting measures for this impact, such as prairie restoration, establishment of easements, or purchase of fee title lands. We can provide further guidance in this regard if the project progresses.

Meteorological Towers

Meteorological towers constructed in association with wind turbines are often similar in design to typical communication towers: tall, lighted, lattice structured, and guyed. Of primary concern are the collision mortality risks posed to migratory birds as towers are currently estimated to kill 6.8 million birds per year in the United States and Canada (Longcore et al. 2012). We have

enclosed Service guidance on this issue, our 2013 *U.S. Fish and Wildlife Service (USFWS) Revised Voluntary Guidelines for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning*. Among the primary concerns addressed within our guidelines are the establishment of new towers on the landscape, the heights of these towers, their lighting scheme, and means of structural support. Collocation of communications tower facilities on an existing structure is strongly recommended to avoid any additional impacts to migratory birds. If a new tower is necessary, placement of the new tower near other existing structures is recommended to concentrate the risk posed by the towers to relatively small areas. Minimization of tower height (below 200 feet to preclude the need for Federal Aviation Administration lighting requirements), use of only strobe or flashing lights (no steady-burning lights), and avoidance of guy wires (a great deal of avian mortality is a result of collisions with supporting guy wires) are important components intended to minimize potential impacts to migratory birds.

Power Lines

The construction of additional overhead power lines associated with wind farms creates the threat of avian electrocution, particularly for raptors. Thousands of these birds, including endangered species, are killed annually as they attempt to utilize overhead power lines as nesting, hunting, resting, feeding, and sunning sites. The Service recommends the installation of underground, rather than overhead, power lines whenever possible/appropriate to minimize environmental disturbances. For all new overhead lines or modernization of old overhead lines, we recommend incorporating measures to prevent avian electrocutions. The publication entitled *Suggested Practices for Avian Protection on Power Lines - The State of the Art in 2006* has many good suggestions including pole extensions, modified positioning of live phase conductors and ground wires, placement of perch guards and elevated perches, elimination of cross arms, use of wood (not metal) braces, and installation of various insulating covers. You may obtain this publication by contacting the Edison Electric Institute via their website at: <http://www.eei.org/resourcesandmedia/products/Pages/products.aspx>, or by calling 202-508-5000.

Please note that utilizing just one of the "Suggested Practices . . ." methods may not entirely remove the threat of electrocution to raptors. In fact, improper use of some methods may increase electrocution mortality. Perch guards, for example, may be only partially effective as some birds may still attempt to perch on structures with misplaced or small-sized guards and suffer electrocution as they approach too close to conducting materials. Among the most dangerous structures to raptors are poles that are located at a crossing of two or more lines, exposed above-ground transformers, or dead end poles. Numerous hot and neutral lines at these sites, combined with inadequate spacing between conductors, increase the threat of raptor electrocutions. Perch guards placed on other poles has, in some cases, served to actually shift birds to these more dangerous sites, increasing the number of mortalities. Thus, it may be necessary to utilize other methods or combine methods to achieve the best results. The same principles may be applied to substation structures.

Please also note that the spacing recommendation within the "Suggested Practices . . ." publication of at least 60 inches between conductors or features that cause grounding may not be protective of larger raptors such as eagles. This measure was based on the fact that the skin-to-

skin contact distance on these birds (i.e., talon to beak, wrist to wrist, etc.) is less than 60 inches. However, an adult eagle's wingspan (distance between feather tips) may vary from 66 to 96 inches depending on the species (golden or bald) and gender of the bird, and unfortunately, wet feathers in contact with conductors and/or grounding connections can result in a lethal electrical surge. Thus, the focus of the above precautionary measures should be to a) provide more than 96 inches of spacing between conductors or grounding features, b) insulate exposed conducting features so that contact will not cause raptor electrocution, and/or c) prevent raptors from perching on the poles in the first place.

Additional information regarding simple, effective ways to prevent raptor electrocutions on power lines is available in video form. *Raptors at Risk* may be obtained by contacting EDM International, Inc. at 4001 Automation Way, Fort Collins, Colorado 80525-3479, Telephone No. (970) 204-4001, or by visiting their website at: <http://www.edmlink.com/raptorvideo.htm>.

In addition to electrocution, overhead power lines also present the threat of avian line strike mortality. Particularly in situations where these lines are adjacent to wetlands or where waters exist on opposite sides of the lines, we recommend marking them in order to make them more visible to birds. For more information on bird strikes, please see *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* which, again, may be obtained by contacting the Edison Electric Institute via their website at <http://www.eei.org/resourcesandmedia/products/Pages/products.aspx>, or by calling 202-508-5000.

Bird and Bat Conservation Strategy

Our *Land Based Wind Energy Guidelines* recommend development of a Bird and Bat Conservation Strategy. As with ECPs, we have developed Region 6 guidance to further assist companies in following our established national guidance on BBCSs – see enclosed Region 6 *Outline for a Bird and Bat Conservation Strategy: Wind Energy Projects*. As stated in the introduction of that document: a BBCS "...is a life-of-a-project framework for identifying and implementing actions to conserve birds and bats during wind energy project planning, construction, operation, maintenance, and decommissioning. It is the responsibility of wind energy project developers and operators to effectively assess project-related impacts to birds, bats and their habitats, and to work to avoid and minimize those impacts." A BBCS explains the actions taken by developers as they progress through the tiers of our *Land-Based Wind Energy Guidelines*, describing the analyses, studies, and reasoning implemented with the purpose of mitigating for potential avian and bat impacts. It also addresses post-construction monitoring and habitat impacts. We recommend you develop a BBCS as this project progresses.

Migratory Bird Treaty Act

The Migratory Bird Treaty Act prohibits the taking, killing, possession, and transportation, (among other actions) of migratory birds, their eggs, parts, and nests, except when specifically permitted by regulations. While the MBTA has no provision for allowing unauthorized take, the Service realizes that some birds may be killed as a result of wind farm operations, even if all known reasonable and effective measures to protect birds are used. The Service's Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement, as well as by fostering relationships with individuals, companies, and industries

that have taken effective steps to avoid take of migratory birds and by encouraging others to implement measures to avoid take of migratory birds. It is not possible to absolve individuals, companies, or agencies from liability even if they implement bird mortality avoidance or other similar protective measures. However, the Office of Law Enforcement focuses its resources on investigating and prosecuting individuals and companies that take migratory birds without identifying and implementing all reasonable, prudent and effective measures to avoid that take. Companies are encouraged to work closely with Service biologists to identify available protective measures when developing project plans and/or avian protection plans, and to implement those measures prior to/during construction, operation, or similar activities.

SUMMARY

Below we reiterate the items discussed above that are pertinent to the proposed project, any associated recommended guidance or related information and suggested actions.

- Wind farm guidance:
 - *Land-Based Wind Energy Guidelines*
 - *Bird and Bat Conservation Strategy*
 - *USFWS Region 6 Outline for a Bird and Bat Conservation Strategy: Wind Energy Projects*
- Service land interests:
 - Madison WMD
- Federally listed (ESA) species:
 - Dakota skipper
 - Northern long-eared bat
 - Poweshiek skipperling
 - Rufa red knot
 - Topeka shiner
- Eagles:
 - MBTA and BGEPA
 - *National Bald Eagle Management Guidelines*
 - *Eagle Conservation Plan Guidance*
- Wetlands
 - Avoid, minimize, compensate
- Migratory birds:
 - MBTA
 - *Birds of Conservation Concern 2008*
 - Mitigative/offsetting measures for avian habitat avoidance/loss
 - Meteorological Towers:
 - *2013 USFWS Revised Voluntary Guidelines for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and*

Decommissioning

- Overhead Power Lines:
 - *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*
 - *Raptors at Risk* video
 - *Reducing Avian Collisions with Power Lines: The State of the Art in 2012*

If changes are made in the project plans or operating criteria, or if additional information becomes available, the Service must be informed so that the above determinations can be reconsidered.

We appreciate the opportunity to provide comments on this project. If you have any questions on these comments, please contact Natalie Gates of this office at (605) 224-8693, Extension 227.

Sincerely,



Scott Larson
Field Supervisor
South Dakota Field Office

Enclosures

cc: Silka Kempema; South Dakota Department of Game, Fish and Parks, Pierre, SD

LITERATURE CITED

Longcore T, Rich C, Mineau P, MacDonald B, Bert DG, et al. (2012) An Estimate of Avian Mortality at Communication Towers in the United States and Canada. PLoS ONE 7(4): e34025. doi:10.1371/journal.pone.0034025.

Shaffer, J. A. and D. A. Buhl. 2015. Effects of wind-energy facilities on breeding grassland bird distributions. Conservation Biology, 30(1):59-71.

U.S. Fish and Wildlife Service, Region 6, Mountain-Prairie Region

Outline for a Bird and Bat Conservation Strategy: Wind Energy Projects

A Bird and Bat Conservation Strategy (BBCS) is a life-of-a-project framework for identifying and implementing actions to conserve birds and bats during wind energy project planning, construction, operation, maintenance, and decommissioning. It is the responsibility of wind energy project developers and operators to effectively assess project-related impacts to birds, bats and their habitats, and to work to avoid and minimize those impacts.

A wind project BBCS should be updated regularly as new information, including monitoring of project impacts and technical advancements, becomes available. A BBCS is a strategy for assessing impacts, avoiding/minimizing impacts, guiding current actions, and planning future impact assessments and actions to conserve birds and bats. It provides reference to project history and previous impact assessments and actions. A BBCS contains the studies, analyses, and reasoning leading to project-specific decisions and implementation of actions. The 2012 U.S. Fish and Wildlife Service (USFWS) Land-Based Wind Energy Guidelines (WEG) provides comprehensive guidance on the process for addressing bird and bat conservation at all stages of wind energy development.

Decisions made through the BBCS framework include determining if there is a need to develop other bird and bat conservation plans such as an Eagle Conservation Plan (2013 USFWS Eagle Conservation Plan Guidance) or Habitat Conservation Plan (Endangered Species Act, section 10(a)(1)(B)). Specific surveys needed to support those plans may be most effectively conducted in tandem with surveys to develop the BBCS.

Wind energy projects currently in operation which have not been planned, developed, or operated following a BBCS framework, will, at a minimum, need to supplement assessments of impacts to birds and bats with Post-Construction Assessments and Adaptive Management Studies, working closely with the USFWS.

The following outline is provided by USFWS Region 6 as a guide for developing and organizing a BBCS.

Outline

I. Statement of Purpose

Identify how the BBCS functions as a strategy to address bird and bat conservation during all project phases.

II. Regulatory Framework

A. Fish and Wildlife Laws, Regulations, and Policies

Include the language provided and do not reference USFWS law enforcement or prosecutorial discretion in the BBCS.

1. Migratory Bird Treaty Act (MBTA)

The MBTA is the cornerstone of migratory bird conservation and protection in the United States. The MBTA implements four treaties that provide for international protection of migratory birds. It is a strict liability statute, meaning that proof of intent, knowledge, or negligence is not an element of an MBTA violation. The statute's language is clear that actions resulting in a "taking" or possession (permanent or temporary) of a protected species, in the absence of a USFWS permit or regulatory authorization, are a violation. The MBTA states, "Unless and except as permitted by regulations ... it shall be unlawful at any time, by any means or in any manner, to pursue, hunt, take, capture, kill ... possess, offer for sale, sell ... purchase ... ship, export, import ... transport or cause to be transported... any migratory bird, any part, nest, or eggs of any such bird ..." 16 U.S.C. 703. The word "take" is defined by regulation as "to pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect" 50 CFR 10.12. The USFWS maintains a list of all species protected by the MBTA at 50 CFR 10.13. This list includes over one thousand species of migratory birds, including eagles and other raptors, waterfowl, shorebirds, seabirds, wading birds, and passerines.

2. Bald and Golden Eagle Protection Act (Eagle Act)

Under authority of the Eagle Act, 16 U.S.C. 668–668d, bald eagles and golden eagles are afforded additional legal protection. The Eagle Act prohibits the take, sale, purchase, barter, offer of sale, purchase, or barter, transport, export or import, at any time or in any manner of any bald or golden eagle, alive or dead, or any part, nest, or egg thereof, 16 U.S.C. 668. The Eagle Act also defines take to include "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest, or disturb," 16 U.S.C. 668c, and includes criminal and civil penalties for violating the statute. See 16 U.S.C. 668. The term "disturb" is defined as agitating or bothering an eagle to a degree that causes, or is likely to cause, injury to an eagle, or either a decrease in productivity or nest abandonment by substantially interfering with normal breeding, feeding, or sheltering behavior, 50 CFR 22.3.

3. Endangered Species Act (ESA)

The ESA directs the USFWS to identify and protect endangered and threatened species and their critical habitat, and to provide a means to conserve their ecosystems. Among its other provisions, the ESA requires the USFWS to assess civil and criminal penalties for violations of the Act or its regulations. Section 9 of the ESA prohibits take of federally-listed species. Take is defined as "harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct" 16 U.S.C. 1532. The term "harm" includes significant habitat alteration which kills or injures fish or wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering, 50 CFR 17.3. Projects involving Federal lands, funding or authorizations will require consultation between the Federal agency and the USFWS, pursuant to section 7 of the ESA. Projects without a

Federal nexus should work directly with USFWS to avoid adversely impacting listed species and their critical habitats.

B. Other Federal, State, County, Local and Tribal Laws, Regulations, and Policies

III. Project Description

Provide descriptions and maps of all project elements (e.g., roads, power lines, met towers) during all phases of pre-construction, construction, operation, maintenance, and decommissioning. Describe and provide maps of the project impact area (inside and outside project area boundary) where the project may potentially impact birds, bats and their habitats..

IV. Project History of Bird and Bat Presence, and Risk Assessments

A. Preliminary Site Evaluation (WEG Tier 1)

1. Site Description

Describe proposed wind energy site(s) within the broader geographic landscape of bird and bat distribution, use, and habitats.

2. Decision to Abandon Site(s) or Select Site(s) for Additional Assessments in WEG Tier 2

Describe evaluations of sites by answering questions in WEG Tier 1, Chapter 2: (1) Are species or habitats of concern present? (2) Does the landscape contain areas precluded by law or areas that are designated as sensitive? (3) Are there critical areas of wildlife congregation? (4) Is there potential to fragment large intact habitats for species that are sensitive to habitat fragmentation? Based on the answers to these questions, describe the decision to abandon sites or identify project modifications to effectively avoid and minimize potential adverse impacts.

B. Site-specific Characterization and Decisions (WEG Tier 2)

Continue landscape-scale assessments and include site reconnaissance evaluations.

1. Site Description

Provide additional site information obtained through more detailed Tier 2 assessment.

2. Evaluation and Decisions

(a) Abandon Site or Advance to Field Surveys to Support a BBBS

Describe evaluations of sites by answering the four questions from WEG Tier 1, plus questions from WEG Tier 2, Chapter 3: (5) Are plant communities or vegetation habitats of conservation concern present? (6) What species of birds and bats are likely to use the proposed site? (7) Is there potential for significant adverse impacts to those species? If there is a high probability of significant adverse impacts that cannot be avoided or minimized, the site should be abandoned.

(b) Determine Need for Other Bird or Bat Conservation Plans

Describe determination of need, and reference field surveys, for an Eagle Conservation Plan) or Habitat Conservation Plan.

C. Field Studies to Document Wildlife and Habitat, and Predict Project Impacts (WEG Tier 3)

Describe the goals, methods, results, analyses and conclusions of field studies, and include maps to assess the presence of, and project risks to, birds and bats and their habitats. Describe potential project impacts by answering the seven questions from WEG Tier 1 and Tier 2, plus questions

from WEG Tier 3, Chapter 4: (8) What are the distributions, abundance, behaviors and site-use of birds and bats, and what project elements expose these species to risk? (9) What are the potential risks to individuals and local populations of birds and bats and their habitats? (10) How can impacts to birds and bats be avoided and minimized? (11) What studies should be initiated and continued post-construction to evaluate predictions of impacts to birds and bats? Describe the level of scientific rigor of studies, and coordination and sharing of data with USFWS field offices.

1. Bird and Bat Status Assessments

Describe how assessment studies were of sufficient duration and intensity to ensure adequate data were collected to accurately characterize bird and bat use of the area.

(a) Bird and Bat Species Presence

(i) Species Presence by Season

(ii) Species of Concern (WEG, p. 63)

(iii) Species of Habitat Fragmentation Concern (WEG, p. 63)

(b) Bird and Bat Habitats

Describe, quantify, and map.

(c) Bird and Bat Use Patterns

Describe, quantify and map survey data (e.g., from point counts, acoustic surveys, and migration surveys).

(d) Baseline (Pre-construction) Habitat Management

Describe the management of habitat at the proposed site prior to construction.

2. Bird and Bat Risk Assessment and Decisions Based on Assessments

Describe assessment methods and assumptions.

(a) Project Risk Assessment

(i) Direct Impacts:

Describe direct project impacts on birds and bats (e.g., wind turbine collisions, powerline electrocutions and collisions, vehicle collisions, barotrauma, disturbance, displacement, behavioral changes, and habitat loss, degradation and fragmentation).

(ii) Indirect Impacts

Describe indirect project impacts on birds and bats (e.g., loss of population vigor, attraction to modified habitats, and increased exposure to predation).

(iii) Cumulative Impacts

(b) Risk Assessment Decisions

(i) Decision Criteria to either Abandon Site or Advance Project

(ii) Decision of Need for Other Bird and Bat Conservation Plans

Describe decision to develop other plans such as an Eagle Conservation Plan, Habitat Conservation Plan, Candidate Conservation Plan with Assurances, or a plan to address state-managed species.

- V. Conservation Measures to Avoid and Minimize Adverse Impacts (during project construction, operation, maintenance, and decommissioning)
Describe conservation measures and when and how each measure will be applied. Some measures will apply to all project phases, but other measures will only apply to specific phases of the project (e.g., construction versus operation). See WEG Chapter 7 for examples. While the following topics in the outline should all be included, the organization of this section may be modified (e.g., conservation measures may be organized by project phase, project elements, or category of conservation action).

A. Measures to Avoid/Minimize Direct Impacts

1. Fatalities
2. Disturbance/Displacement/Behavioral Changes
 - (a) Nest/Roost/Hibernacula Management
Describe how impacts to nests and nesting attempts will be avoided or minimized during all phases of the project. For example, constructing outside the breeding season or using nest buffers may be appropriate during construction, but measures to discourage or prevent birds from nesting in a sub-station may be needed during operation.
 - (b) Management of Other Habitat-use Areas (e.g., Foraging Areas)
3. Habitat Loss/Degradation/Fragmentation

B. Measures to Avoid/Minimize Indirect Impacts

For example, address measures to avoid loss of population vigor and increased exposure to predation.

C. Measures to Offset and/or Compensate for Habitat-Related Impacts

D. Measures to Avoid and Minimize Other Identified Project-Specific Risks

VI. Post-construction Studies to Estimate Impacts (WEG Tier 4)

Provide assessments of ongoing project risks to birds and bats and the effectiveness of conservation measures. Describe study methods and the level of survey effort (i.e., how many of each survey type was conducted, over what time period and seasons, and location and geographic coverage).

A. Carcass Surveys

B. Nest/Roost/Hibernacula Surveys

C. Habitat Surveys

D. Other Surveys

A need for surveys, such as point counts, acoustic surveys, mist net surveys, may be identified through measuring project impacts.

VII. Other Post-construction Studies and Adaptive Management (WEG Tier 5)

Describe adaptive management studies which may (1) be planned during development of the BBCS via measuring impacts during post-construction and the discovery that conservation measures are not adequate to avoid and minimize impacts, or may (2) address unplanned or unforeseen impacts. Describe the actions taken during the following steps.

- A. Evaluate need for action (1) based on assessing effectiveness of conservation measures through post-construction monitoring of impacts, or (2) as determined by unforeseen impacts or circumstances.
- B. Identify potential technical/operational option(s) to avoid and minimize impacts (e.g., via scientific literature or industry innovation).
- C. Present technical/operational option(s) to agency/authority for review to determine if it merits field testing or application. If, after review, field testing or application is not merited, go to step B. If field testing or application is merited, go to step D.
- D. Field test or apply technical/operational option(s), with agency/authority concurrence of methods, in settings which will not increase adverse impacts to birds and bats nor will result in impacts exceeding those allowable in permits or other project-related plans.
- E. Evaluate and report effectiveness of technical/operational option(s) with review by agency/authority. If ineffective, go to step B. If effective go to step F.
- F. Apply effective avoidance and minimization measures.
- G. Monitor effectiveness (update post-construction monitoring in BBCS, if necessary, with agency/authority review).
- H. Update BBCS Section on Conservation Measures, return to step A to evaluate need for further action.

VIII. Project Permits Addressing Birds and Bats

Identify need for permits. For example, migratory bird permits would be required for active nest relocation, temporary possession, depredation, salvage/disposal, and scientific collection.

- A. Bird and Bat Permits
Identify permits needed for project construction, operation, and/or maintenance.
- B. Agency and Process for Permit Issuance
Identify the responsive agency and processes to apply for and comply with permits.

IX. Reporting Formats and Schedule

Describe formats and schedule for reporting data and study results to responsive agencies.

- A. Preconstruction Survey Data
- B. Operation/Post-construction Monitoring
- C. Adaptive Management
- D. Permits

X. Personnel Training

Describe process and curriculum for providing personnel and contractors with education about wildlife laws; processes to follow upon finding injured birds, bats or carcasses; and actions they can take to avoid impacts to birds and bats.

XI. Contacts/Key Resources

A. List of Contacts and Key Resources

B. Coordination Processes

Who/when/where a company should initiate contact and under what circumstances.

XII. References and Literature Cited

XIII. Appendices

A. Baseline Survey Reports

B. Post Construction Reports

1. Carcass Monitoring
2. Nest/Roost/Hibernacula Surveys
3. Habitat Surveys
4. Other Surveys: For example, point counts, acoustic surveys, mist net surveys

C. Adaptive Management Studies

D. Other Plans Guiding Bird and Bat Conservation (e.g., ECP)

E. Permits Related to Birds and Bats

2013 U.S. Fish and Wildlife Service (USFWS) Revised Voluntary Guidelines for Communication Tower Design, Siting, Construction, Operation, Retrofitting, and Decommissioning –

Suggestions Based on Previous USFWS Recommendations to FCC Regarding WT Docket No. 03-187, FCC 06-164, Notice of Proposed Rulemaking, "Effects of Communication Towers on Migratory Birds" (2007), Docket No. 08-61, FCC's Antenna Structure Registration Program (2011), Service 2012 Wind Energy Guidelines, and Service 2013 Eagle Conservation Plan Guidance

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[Comm Tower 2013 Revised Guidance-to FCC-AMM.docx]

1. Collocation of the communications equipment on an existing communication tower or other structure (e.g., billboard, water and transmission tower, distribution pole, or building mount) is strongly recommended. Depending on tower load factors and communication needs, from 6 to 10 providers should collocate on an existing tower or structure provided that frequencies do not overlap/"bleed" or where frequency length or broadcast distance requires higher towers. New towers should be designed structurally and electronically to accommodate the applicant's antenna, and antennas of at least 2 additional users – ideally 6 to 10 additional users, if possible – unless the design would require the addition of lights and/or guy wires to an otherwise unlit and/or unguyed tower. This recommendation is intended to reduce the number of towers needed in the future.

2. If collocation is not feasible and a new tower or towers are to be constructed, it is strongly recommended that the new tower(s) should be not more than 199 feet above ground level (AGL), and that construction techniques should not require guy wires. Such towers should be unlighted if Federal Aviation Administration (FAA) regulations and lighting standards (FAA 2007, Patterson 2012, FAA 2013 lighting circular anticipated update) permit. Additionally, the Federal Communications Commission (FCC) through recent rulemaking now requires that new towers $\geq$ 450 ft AGL contain no red-steady lights. FCC also recommends that new towers 350-450 ft AGL also contain no red-steady lights, and they will eventually recommend that new towers $<$ 350 ft AGL convert non-flashing lights to flash with existing flashing lights. LED lights are being suggested as replacements for all new construction and for retrofits, with the intent of future synchronizing the flashes. Given these dynamics, the Service recommends using lattice tower or monopole structures for all towers $<$ 200 ft AGL and for taller towers where feasible. The Service considers the less than 200 ft AGL option the "gold standard" and suggests that this

is the environmentally preferred industry standard for tower placement, construction and operation – i.e., towers that are unlit, unguyed, monopole or lattice, and less than 200 ft AGL.

3. If constructing multiple towers, the cumulative impacts of all the towers to migratory birds – especially to Birds of Conservation Concern (FWS 2008) and threatened and endangered species, as well as the impacts of each individual tower, should be considered during the development of a project.

4. The topography of the proposed tower site and surrounding habitat should be clearly noted, especially in regard to surrounding hills, mountains, mountain passes, ridge lines, rivers, lakes, wetlands, and other habitat types used by raptors, Birds of Conservation Concern, and state and federally listed species, and other birds of concern. Active raptor nests, especially those of Bald and Golden Eagles, should be noted, including known or suspected distances from proposed tower sites to nest locations. Nest site locations for Golden Eagles may vary between years, and unoccupied, inactive nests and nest sites may be re-occupied over multiple years. The Service's 2013 Eagle Conservation Plan Guidance, Module 1, Land-based Wind Energy, Version 2, available on our website, is a useful document (USFWS 2013).

5. If at all possible, new towers should be sited within existing "antenna farms" (i.e., clusters of towers), in degraded areas (e.g., strip mines or other heavily industrialized areas), in commercial agricultural lands, in Superfund sites, or other areas where bird habitat is poor or marginal. Towers should not be sited in or near wetlands, other known bird concentration areas (e.g., state of federal refuges, staging areas, rookeries, and Important Bird Areas), in known migratory, daily movement flyways, areas of breeding concentration, in habitat of threatened or endangered species, or key habitats for Birds of Conservation Concern (FWS 2008). Disturbance can result in effects to bird populations which may cumulatively affect their survival. The Service has recommended some disturbance-free buffers, e.g., 0.5 mi around raptor nests during the nesting season, and 1-mi disturbance free buffers for Ferruginous Hawks and Bald Eagles during nesting season in Wyoming (FWS WY Ecological Services Field Office, referenced in Manville 2007:23). The effects of towers on "prairie grouse," "sage grouse," and grassland and shrub-steppe bird species should also be considered since tall structures have been shown to result in abandonment of nest site areas and leks, especially for "prairie grouse" (Manville 2004). The issue of buffers is currently under review, especially for Bald and Golden Eagles. Additionally, towers should not be sited in areas with a high incidence of fog, mist, and low cloud ceilings.

6. If taller (> 199 ft AGL) towers requiring lights for aviation safety must be constructed, the minimum amount of pilot warning and obstruction avoidance lighting required by the FAA should be used. Unless otherwise required by the FAA, only white strobe or red strobe lights (red preferable since it is generally less displeasing to the human eye at night), or red flashing incandescent lights should be used at night, and these should be the minimum number, minimum intensity (< 2,000 candela), and minimum number of flashes per minute (i.e., longest duration between flashes/"dark phase") allowable by the FAA. The use of solid (non-flashing) warning lights at night should be avoided (Patterson 2012, Gehring et al. 2009) – see recommendation #2 above. Current research indicates that solid red lights attract night-migrating birds at a much higher rate than flashing lights (Gehring et al. 2009, Manville 2007, 2009). Recent research

indicates that use of white strobe, red strobe, or red flashing lights alone provides significant reductions in bird fatalities (Patterson 2012, Gehring et al. 2009).

7. Tower designs using guy wires for support, which are proposed to be located in known raptor or waterbird concentrations areas, daily movement routes, major diurnal migratory bird movement routes, staging areas, or stopover sites, should have daytime visual markers or bird deterrent devices installed on the wires to prevent collisions by these diurnally moving species. The efficacy of bird deterrents on guy wires to alert night migrating species has yet to be scientifically validated. For guidance on markers, see Avian Power Line Interaction Committee (APLIC). 2006. *Suggested Practices for Avian Protection on Power Lines -- State of the Art in 2006*. Edison Electric Institute, APLIC, and the California Energy Commission. Washington, DC, and Sacramento, CA. 207 pp, and APLIC. 2012. *Reducing Avian Collisions with Power Lines -- the State of the Art in 2012*. Edison Electric Institute and APLIC. Washington, DC. 159 pp. Also see www.aplic.org, www.energy.ca.gov, or call 202-508-5000.

8. Towers and appendant facilities should be designed, sited, and constructed so as to avoid or minimize habitat loss within and adjacent to the tower "footprint." However, a larger tower footprint is preferable to the use of guy wires in construction. Several shorter, un-guyed towers are preferable to one, tall guyed, lighted tower. Road access and fencing should be minimized to reduce or prevent habitat fragmentation, disturbance, and the creation of barriers, and to reduce above ground obstacles to birds in flight.

9. If, prior to tower design, siting and construction, if it has been determined that a significant number of breeding, feeding and roosting birds, especially of Birds of Conservation Concern (FWS 2008), state or federally-listed bird species, and eagles are known to habitually use the proposed tower construction area, relocation to an alternate site is highly recommended. If this is not an option, seasonal restrictions on construction are advised in order to avoid disturbance, site and nest abandonment, especially during breeding, rearing and other periods of high bird activity.

10. Security lighting for on-ground facilities, equipment and infrastructure should be motion- or heat-sensitive, down-shielded, and of a minimum intensity to reduce nighttime bird attraction and eliminate constant nighttime illumination, but still allow safe nighttime access to the site (USFWS 2012, Manville 2011).

11. Representatives from the USFWS or researchers from the Research Subcommittee of the Communication Tower Working Group should be allowed access to the site to evaluate bird use; conduct dead-bird searches; place above ground net catchments below the towers (Manville 2002); and to perform studies using radar, Global Position System, infrared, thermal imagery, and acoustical monitoring, as necessary. This will allow for assessment and verification of bird movements, site use, avoidance, and mortality. The goal is to acquire information on the impacts of various tower types, sizes, configurations and lighting protocols.

12. Towers no longer in use, not re-licensed by the FCC for use, or determined to be obsolete should be removed from the site within 12 months of cessation of use, preferably sooner.

13. In order to obtain information on the usefulness of these guidelines in preventing bird strikes and better understanding impacts from habitat fragmentation, please advise USFWS personnel of the final location and specifications of the proposed tower, and which measures recommended in these guidelines were implemented. If any of these recommended measures cannot be implemented, please explain why they are not feasible. This will further advise USFWS in identifying any recurring problems with the implementation of the guidelines, which may necessitate future modifications.

Reference Sources:

Federal Aviation Administration. 2007. Obstruction marking and lighting. Advisory Circular AC 70/7460-1K. U.S. Department of Transportation.

Gehring, J., P. Kerlinger, and A.M. Manville, II. 2009. Communication towers, lights and birds: successful methods of reducing the frequency of avian collisions. *Ecological Applications* 19(2): 505-514. Ecological Society of America.

Gehring, J., P. Kerlinger, and A.M. Manville, II. 2011. The role of tower height and guy wires on avian collisions with communication towers. *Journal of Wildlife Management* 75(4): 848-855. The Wildlife Society.

Manville, A.M., II. 2002. Protocol for monitoring the impact of cellular telecommunication towers on migratory birds within the Coconino, Prescott, and Kaibab National Forests, Arizona. Protocol requested by U.S. Forest Service. 9 pp.

Manville, A.M., II. 2004. Prairie grouse leks and wind turbines: U.S. Fish and Wildlife Service justification for a 5-mile buffer from leks; additional grassland songbird recommendations. Division of Migratory Bird Management, USFWS, Arlington, VA, peer-reviewed briefing paper. 17 pp.

Manville, A.M., II. 2007. Comments of the U.S. Fish and Wildlife Service Submitted Electronically to the FCC on 47 CFR Parts 1 and 17, WT Docket No. 03-187, FCC 06-164, Notice of Proposed Rulemaking, "Effects of Communication Towers on Migratory Birds." February 2, 2007. 32 pp.

Manville, A.M., II. 2009. Towers, turbines, power lines, and buildings – steps being taken by the U.S. Fish and Wildlife Service to avoid or minimize take of migratory birds at these structures. Pages 262-272 *In* T.D. Rich, C. Arizmendi, D. Demarest, and C. Thompson (eds.). *Tundra to Tropics: Connecting Habitats and People*. Proceedings 4th International Partners in Flight Conference, McAllen, TX.

Manville, A.M., II. 2011. Comments of the U.S. Fish and Wildlife Service's Division of Migratory Bird Management Filed Electronically on WT Docket No. 08-61 and WT Docket No. 03-187, Regarding the Environmental Effects of the Federal Communication's Antenna Structure Registration Program. January 14, 2011. 12 pp.

Patterson, J.T., Jr. 2012. Evaluation of new obstruction lighting techniques to reduce avian fatalities. DOT/FAA/TC-TN12/9, Federal Aviation Administration, U.S. Department of Transportation. 28 pp, plus appendices.

U.S. Fish and Wildlife Service. 2000. Service Guidance on the Siting, Construction, Operation, and Decommissioning of Communication Towers. September 14, 2000. <http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/comtow.html>.

U.S. Fish and Wildlife Service. 2008. Birds of Conservation Concern 2008. United States Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management, Arlington, VA. 85 pp. <http://www.fws.gov/migratorybirds/>>

U.S. Fish and Wildlife Service. 2012. U.S. Fish and Wildlife Service Land-Based Wind Energy Guidelines. March, 82 pp.

U.S. Fish and Wildlife Service. 2013. Eagle Conservation Plan Guidance, Module 1, Land-based Wind Energy, Version 2. Division of Migratory Bird Management. April, 103 pp.

Communication Record

Attendees:

- Daniel Litchfield - Invenergy
- Michael Svedeman - Invenergy
- Andrea Giampoli - Invenergy
- Erin Lieberman - Invenergy
- Silka Kempema - SD Department of Game, Fish, and Parks (SDGFP)
- Natalie Gates - US Fish and Wildlife Service (USFWS)

Date: 08/12/2016

Summary of Conversation:

The objective of this meeting was for Invenergy to introduce SDGFP and USFWS to the Deuel wind project and to discuss the wildlife survey methods for the project.

S. Kempema recommended conducting wetlands assessments in the spring over the summer when conditions are drier. S. Kempema said that although the SE area of South Dakota is dry right now, and the wetlands are shallow, surveyors could still look at topography and vegetation. She mentioned that the area recently had storms, so the temporary wetlands are full. S. Kempema recommended minimizing impacts to waterways due to the potential presence of the topeka shiner in South Dakota and brought up the potential to use culverts; additional assessment could be done to assess topeka shiner presence.

S. Kempema mentioned that osprey may migrate through the Project area, though they are not known to nest in the Project area. There are known osprey nests in Roberts County, two counties to the north. S. Kempema and N. Gates asked about the 8-minute small bird use surveys, and said that 8 minutes is sufficient with additional surveys (i.e. 20 minutes) for all birds.

N. Gates recommended avoiding impacts to intact grasslands, and mentioned that the Shaffer/Buhl paper. She said the paper has an indirect disturbance buffer that could be used if considering offsetting impacts.

S. Kempema said that there are three known leks (sharptails and prairie chickens) in Deuel County, and she would ask regional staff if they are located in the Project area. She said that she would follow up with this information and whether lek surveys are recommended. She said that there is a statewide effort to map leks. If leks are located in the Project area, SDGFP typically recommends a one mile setback, though she said this is a recommendation and could be discussed on a project basis about whether it is appropriate.

N. Gates said that the mist net locations adequately targeted suitable habitat.

Follow-up Actions:

- SDGFP/USFWS to send known lek locations and whether lek surveys recommended
- USFWS to send the Shaffer/Buhl paper

Invenergy Staff: Erin Lieberman, Andrea Giampoli, and Michael Svedeman

USFWS: Natalie Gates

SD Game and Parks: Silka Kempema, Leslie Murphy (Environmental Review Coordinator)

Date: 5/25/17

Re: Deuel Wind Project

- Introductions: Explanation that we are no longer working with WEST and transitioned to Burns and MacDonnell. Explanation of approach as following WEG and ECPG, mist-netting followed Indiana bat summery survey guidelines, Army Corps Engineers Manual and agency consultation
- Project location: Two separate project areas (north will be developed before south). Up to 90k acres leased between two projects. A lot of land owner interest. Expect COD 2019. At this point we don't have PPA.
- Summary of enviro surveys
 - SCS:
 - ND SCS: question about difference between herbaceous and hay pasture. They would like us to avoid grasslands and focus on crop lands (Andrea says we are looking to avoid and setback).
 - Question about federal nexus: answered that at this time, no.
 - Wetlands: Natalie mentions we have big wetlands. We will avoid, but she wants to avoid putting turbines between wetlands.
 - SD SCS: more cultivated cropland and less water.
 - Roosting/Foraging Bat Habitat: Biologist does assessment of land cover and where do we have larger tracts of wooded and connected forested areas
 - Federal, state, and protected lands: We will avoid easement resources
 - Raptor Nest Survey:
 - 9 active BE nests more than 4 miles from project boundaries
 - Ask about setbacks from rookery: Andrea says we are doing 2nd year and won't start thinking about that until layout
 - Breeding Bird: (they want report, and complete species list)
 - No state or federal listing but a few of birds of conservation concern
 - Pelicans stand out to FWS. Pelicans seem to be attracted to power lines.
 - Large Bird Survey:
 - ND: project grew at start of 2017, so we added plots. Hitting 30%
 - Survey 60 min/month. 700 hours between two project areas.
 - ND: 327 hours; no T/E species.
 - Waterfowl: SDGFP, the public concerned about waterfowl. And some information about waterfowl avoided wetlands adjacent to turbines (same for grasslands). Natalie says she appreciates what we are doing to setback.
 - SD: 432 hours; 35 plots; no T/E species; 10 bald eagle observations and 1 golden eagle observation. Bald eagles are populations that are increasing--lots of nests. With Golden Eagle, usually see in the West SD, so surprised to see it.
 - Natalie wants to know how big heron colony is.
- Discuss that what we are presenting is study area and not project area. We got more land for flexibility, so we can incorporate pre-construction surveys. They are supportive.
 - Small bird Survey
 - Bat Mist Netting:
 - July-Aug 2016. Followed summer survey presence/absence guidelines; USFWS approved work plan
 - 2154 acres of suitable habitat
 - 30 bats captured: 14 eastern red bats; 11 big brown; 5 hoary. No T/E species captured.
 - Bat Acoustic:

- April-Nov. 2016
- Silka asks if we are planning to run another year. Asks because they did 2-year study across the state in areas where they think there might be bats, and in two different areas they saw totally different activity. They would like to see another year--she would like to see fall surveys at same locations.
 - Illinois office interested in bat migration, so we are working with them on sensor gnomes between point where we captured and tagged to see what direction they flew (in late July)
- Next Steps: large bird use, raptor nest, wetland delineations, additional species (look for where native grasslands, and grasslands with species features, and then concentrate where might have impact--June/July is survey window). Natalie says for PUC application just focus on avoiding habitat, and we can say we are in coordinating with agency on timing of surveys. Look at Region 3 of FWS for Dakota skipper habitat features--they have updated survey guidelines. Andrew Horton at Region 3 has database of skipperling of locations, even beyond Region 3. If he says no, go back to Natalie. Ask if he has records in Deuel in SD
- Known leks of greater prairie chicken--but unlikely to be an issue for us. But if lek found they recommend 1 mile setback from turbines.
- They would like to do site visit: maybe June/July

Giampoli, Andrea

From: Gates, Natalie <natalie_gates@fws.gov>
Sent: Friday, June 30, 2017 7:12 AM
To: Giampoli, Andrea
Subject: Re: Deuel County Site Visit

Sure, and thank you for your time as well. I was less worried about wind than incoming storms(!), but they never really materialized in my area.

Happy 4th!

-Natalie

*Natalie Gates, U.S. Fish and Wildlife Service
Ecological Services South Dakota Field Office
420 South Garfield Avenue, Suite 400
Pierre, South Dakota 57501
Phone: 605-224-8693, Ext. 227; Fax: 605-224-9974
<http://www.fws.gov/southdakotafieldoffice/>*

On Wed, Jun 28, 2017 at 1:44 PM, Giampoli, Andrea <AGiampoli@invenergylc.com> wrote:

Hi Natalie and Silka,

Natalie – I just want to thank you again for coming out to the site yesterday. I hope you made it home safely in all that wind. We appreciate you taking the time to visit us.

Silka – I hope you're feeling better and catching up after last week.

I hope you both have a happy holiday week next week!

Kindly,

Andrea

Andrea Giampoli | Environmental and Wildlife Permitting Manager

Invenergy LLC | One South Wacker Drive, Suite 1800, Chicago, IL 60606

agiampoli@invenergylc.com | 312-582-1779

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
 South Dakota Ecological Services Field Office
 420 South Garfield Avenue, Suite 400
 Pierre, SD 57501-5408
 Phone: (605) 224-8693 Fax: (605) 224-9974
<http://www.fws.gov/southdakotafieldoffice/>



In Reply Refer To:
 Consultation Code: 06E14000-2018-SLI-0073
 Event Code: 06E14000-2018-E-00215
 Project Name: Confidential

December 11, 2017

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 et seq.).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 et seq.), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the

human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2) (c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Migratory Bird Treaty Act (16 U.S.C. 703-712, as amended), as well as the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may benefit from the development of an Eagle Conservation Plan (ECP), see guidance at this website (http://www.fws.gov/windenergy/eagle_guidance.html). An ECP can assist developers in achieving compliance with regulatory requirements, help avoid "take" of eagles at project sites, and provide biological support for eagle permit applications. Additionally, we recommend wind energy developments adhere to our Land-based Wind Energy Guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

We have recently updated our guidelines for minimizing impacts to migratory birds at projects that have communication towers (including meteorological, cellular, digital television, radio, and emergency broadcast towers). These guidelines can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>
<http://www.towerkill.com>

According to National Wetlands Inventory maps, (available online at <http://wetlands.fws.gov/>) wetlands exist adjacent to the proposed construction corridor. If a project may impact wetlands or other important fish and wildlife habitats, the U.S. Fish and Wildlife Service (Service), in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and other environmental laws and rules, recommends complete avoidance of these areas, if possible. If this is not possible, attempts should be made to minimize adverse impacts. Finally if adverse impacts are unavoidable, measures should be undertaken to replace the impacted areas. Alternatives should be examined and the least damaging practical alternative selected. If wetland impacts are unavoidable, a mitigation plan addressing the number and types of wetland acres to be impacted, and the methods of replacement should be prepared and submitted to the resource agencies for review.

Please check with your local wetland management district to determine whether Service interest

lands exist at the proposed project site, the exact locations of these properties, and any additional restrictions that may apply regarding these sites. The Offices are listed below. If you are not sure which office to contact, we can help you make that decision.

U.S. Fish and Wildlife Service, Huron Wetland Management District, Federal Building, Room 309, 200 4th Street SW, Huron, SD 57350; telephone (605) 352-5894. Counties in the Huron WMD: Beadle, Buffalo, Hand, Hughes, Hyde, Jerauld, Sanborn, Sully.

U.S. Fish and Wildlife Service, Lake Andes Wetland Management District, 38672 291st Street, Lake Andes, South Dakota; telephone (605) 487-7603. Counties in the Lake Andes WMD: Aurora, Bon Homme, Brule, Charles Mix, Clay, Davison, Douglas, Hanson, Hutchinson, Lincoln, Turner, Union, Yankton.

U.S. Fish and Wildlife Service, Madison Wetland Management District, P.O. Box 48, Madison, South Dakota, 57042, telephone (605) 256-2974. Counties in the Madison WMD: Brookings, Deuel, Hamlin, Kingsbury, Lake, McCook, Miner, Minnehaha, Moody.

U.S. Fish and Wildlife Service, Sand Lake Wetland Management District, 39650 Sand Lake Drive, Columbia, South Dakota, 57433; telephone (605) 885-6320. Counties in the Sand Lake WMD: Brown, Campbell, Edmunds, Faulk, McPherson, Potter, Spink, Walworth.

U.S. Fish and Wildlife Service, Waubay Wetland Management District, 44401 134A Street, Waubay, South Dakota, 57273; telephone (605) 947-4521. Counties in the Waubay WMD: Clark, Codington, Day, Grant, Marshall, Roberts.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

You are welcome to visit our website (listed above) or to contact our office at the address or phone number above for more information.

Thank you.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

South Dakota Ecological Services Field Office

420 South Garfield Avenue, Suite 400

Pierre, SD 57501-5408

(605) 224-8693

Project Summary

Consultation Code: 06E14000-2018-SLI-0073

Event Code: 06E14000-2018-E-00215

Project Name: Confidential

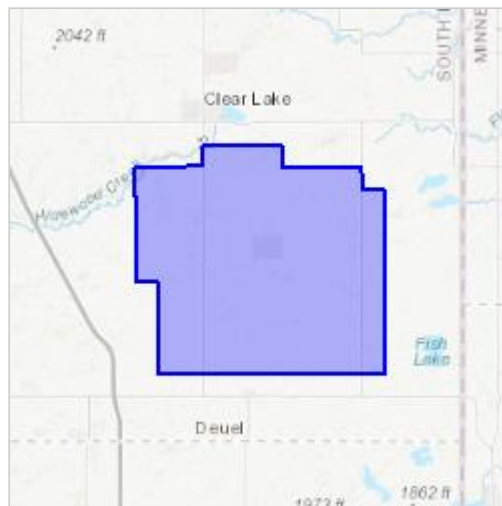
Project Type: POWER GENERATION

Project Description: Confidential

Project Location:

Approximate location of the project can be viewed in Google Maps:

<https://www.google.com/maps/place/44.658962007839776N96.63158827749642W>



Counties: Deuel, SD

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list. Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species. See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Fishes

NAME	STATUS
Topeka Shiner <i>Notropis topeka</i> (=tristis) Population: Wherever found, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4122	Endangered

Insects

NAME	STATUS
Dakota Skipper <i>Hesperia dacotae</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1028	Threatened
Poweshiek Skipperling <i>Oarisma poweshiek</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9161	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
Madison Wetland Management District Madison Wetland Management District P.O. Box 48 Madison, SD 57042-0048 (605) 256-2974 https://www.fws.gov/refuges/profiles/index.cfm?id=64560	210

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any activity that results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service³. There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured. Any person or organization who plans or conducts activities that may result in the take of migratory birds is responsible for complying with the appropriate regulations and implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or are known to have particular vulnerabilities in your project location. To learn more about the levels of concern for birds on your list, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your specific project area. To see maps of where birders and the general public have sighted birds in and around your project area, visit E-bird tools such as the [E-bird data mapping tool](#) (search for the scientific name of a bird on your list to see specific locations where that bird has been reported to occur within your project area over a certain time-frame) and the [E-bird Explore Data Tool](#) (perform a query to see a list of all birds sighted in your county or region and within a certain time-frame). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list can be found [below](#).

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC), but is of concern in this area either because of the Eagle Act, or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Mar 20 to Sep 15
Black Tern <i>Chlidonias niger</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Bobolink <i>Dolichonyx oryzivorus</i>	Breeds

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	May 20 to Jul 31
Franklin's Gull <i>Leucophaeus pipixcan</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Lesser Yellowlegs <i>Tringa flavipes</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9679	Breeds elsewhere
Marbled Godwit <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds May 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Semipalmated Sandpiper <i>Calidris pusilla</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds elsewhere
Smith's Longspur <i>Calcarius pictus</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Additional information can be found using the following links:	
■ Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php ■ Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php ■ Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeas	

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Due to your project's size, the list below may be incomplete, or the acreages reported may be inaccurate. For a full list, please contact the local U.S. Fish and Wildlife office or visit <https://www.fws.gov/wetlands/data/mapper.HTML>

FRESHWATER EMERGENT WETLAND

- [PEMC](#)
- [PEMAd](#)
- [PEMA](#)
- [PEMCd](#)
- [PEM/ABFd](#)
- [PEMF](#)
- [PEM/ABF](#)
- [PEM/FOAd](#)
- [PEMCx](#)

FRESHWATER FORESTED/SHRUB WETLAND

- [PSSA](#)
- [PEOCd](#)
- [PEOC](#)
- [PEOA](#)
- [PSSC](#)
- [PSSCd](#)

FRESHWATER POND

- [PABFx](#)
- [PABFh](#)
- [PABF](#)
- [PAB/EMFd](#)

LAKE

- [L2ABG](#)

RIVERINE

- [R4USE](#)

COMMUNICATION RECORD

Project: Deuel Harvest Wind: North and South

Agency: U.S. Fish & Wildlife Service (USFWS) and South Dakota Game, Fish & Parks (SDGFP)

Agency Attendees (all attendees participated by phone/in person):

Natalie Gates – USFWS

Silka Kempema – SDGFP

Leslie Murphy – SDGFP

Date: February 13, 2018

Time: 1:00 PM Central

Invenergy Employees/Consultants:

Michael Svedeman – Invenergy

Andrea Giampoli – Invenergy (call)

John Aquino – Invenergy (call)

Bryan Gasper – Burns & McDonnell (call)

Summary of Conversation (Topics Discussed, Decisions/Agreements, Issues/Concerns):

Invenergy - Project overview and development status.

- County-level permitting written approval was granted February 12, 2018.
- Review of evolution of Study Area sizes and boundaries (2016-2017 and 2017-2018) and the Project Area boundaries (2018). Project Area boundaries as shown are what is planned to be included in South Dakota PUC permitting applications.

SDGFP - How many turbines are currently sited in grasslands?

Invenergy - Will follow up with numbers. Site layouts are tentative so exact number is not firm. Additional focus for siting to avoid grasslands can be discussed.

- Coordination with USFWS Wetlands District for updated USFWS Easement information done this week. Includes wetland and grassland easements. Project infrastructure shown during the meeting that may appear to be on USFWS Wetland Easements will be further refined with the USFWS Wetlands District as the easement is only for the wetlands but the GIS data included the entire parcel.
- Invenergy is currently working on micro-siting through engineering to attempt to avoid grassland impacts and place turbines on disturbed lands.

USFWS/SDGFP - Grasslands – evidence of untilled, but grazed heavily – still a lot of value; there are grassland birds that like areas that are grazed.

- Grazed or not is still grassland, and they still recommend avoiding.
- Avoid contiguous blocks of grasslands.

Invenergy - NW turbines in North would be first to be removed from the Project, if that is needed, due to the distance from the interconnect. More grasslands in this area as well. USFWS was appreciative of the fact that we had still had some flexibility in our layout.

- No federal nexus for either Project.

USFWS - Indirect impacts to grasslands, grassland birds, and waterfowl as a result of wind development are a concern. Suggested distances of recommended setbacks based on empirical studies:

- Grassland birds: avoidance (300m) of grasslands.
- Wetland bird: avoidance (1/2 mi) of wetlands.
- Those are the distances at which species avoided wind development; indirect impact; the authors have recommended setbacks.
- These are standard concerns and setbacks provided to wind developers in South Dakota; “we could use them as setbacks”.

Invenergy - Are there identified “species of concern” or those that should be considered?

USFWS - Grasshopper sparrows a primary focus. Chestnut-collared longspur and chipping sparrow are others to a lesser degree.

Invenergy - What could we do to further assess?

USFWS – Review project impacts relative to avian species composition; 2012 SD Breeding Bird Atlas and survey routes/results in the area.

- Site to avoid federal species of conservation concern and state species of conservation need.

Invenergy – Will look at the avian surveys for locations of sensitive species and if there are federal SSC and SGCN.

- We’re helping to reduce indirect impacts by setbacks; they may recommend offsets.

*AG said that we’ll figure out a way to share how we’ve minimized impacts.

Burns & McDonnell – Review protected butterfly desktop/windshield habitat assessment methods and results.

USFWS – Dakota skippers and/or poweshiek skipperlings can use very small patches of remnant prairies. Boots on the ground habitat assessments identifying grass and forbs to species once parcel access is available would be valuable.

- Additional evaluations likely needed. Informally discussed a tiered approach to these efforts:
 - 1) GIS analyses of layout relative to untilled areas. To include proposed setback of 1 km from untilled areas.
 - 2) Include turbine, access road, collector line, layout/lay down pad locations.
 - 3) Boots on the ground/pedestrian habitat assessment of identified areas. Completed in May-June timeframe. Habitat assessment can be conducted by an experienced biologist/botanist. USFWS did not have any issues with Bryan Gasper’s qualifications and experience for these efforts.

- 4) If needed, presence/absence surveys June/July, must be a USFWS-permitted surveyor. Burns & McDonnell has USFWS list of qualified surveyors from 2016 (there are only 6 people permitted to survey for both species). Burns & McDonnell has hired Dennis Skadsen previously who is permitted for both. Contracting of a permitted biologist is an identified bottleneck due the small numbers of them.
- 5) Efforts for evaluation and the Project may be tailored or adjusted based the results of 1-4, above.

*Send USFWS/SDGFP work plan for the butterfly surveys.

Invenergy – Wetland Review: Lake Alice area being generally avoided.

USFWS – Where are the riparian areas relative to bat habitat?

Invenergy – A 1000-foot setback from “suitable bat habitat” is used with that determination made following the Ibat Guidance.

Burns & McDonnell – Bat Acoustic Results Review. More bat activity in North, but that was expected and consistent between 2016 and 2017. Bat activity in South was higher in 2017, but still relatively low overall.

- In this region: HF bats = little brown, eastern red, NLEB, LF = hoary, silver-haired, big brown.

USFWS/SDGFP – What are the potential causes of the variations in bat activity between years.

Burns & McDonnell – Causes are likely annual variations weather, life history strategies of various bat species.

USFWS/SDGFP – Agreed with likely causes.

Burns & McDonnell – Large-bird Survey Results Review. Overall, fewer eagles thus far compared to previous year’s studies.

USFWS/SDGFP – Will a raptor nest survey be conducted in 2018? Is a known eagle nest “just north of Lake Alice”.

Invenergy - Raptor nest survey in 2018 – AG said we’d contemplate.

USFWS/SDGFP – Will Invenergy run the eagle risk model for the Project?

Invenergy - AG said that we’re still collecting data and will assess whether to run the model after we have 2 years of data; we also have to determine whether we’ll develop a BBCS or ECP; also mentioned that the model is conservative for bald eagles.

USFWS/SDGFP – Requested completed reports sent prior to/separate from the SD PUC application process (they will be appendices in the applications).

Follow Up:

We can follow up with final numbers of how many turbines sited in grasslands.

AG said that we'll figure out a way to share how we've minimized impacts to grasslands, potentially in the application.

Determine whether we need additional grassland surveys (siting in grasslands).

Determine level of effort needed to determine potential impacts to protected butterflies. Send USFWS/SDGFP work plan for the butterfly surveys.

Conduct raptor nest survey in 2018.

Conduct assessment of where sensitive bird species (e.g. grassland sparrow) observed in the project area to incorporate into siting to avoid indirect impacts to grassland species.



United States Department of the Interior

FISH AND WILDLIFE SERVICE
 South Dakota Ecological Services Field Office
 420 South Garfield Avenue, Suite 400
 Pierre, SD 57501-5408
 Phone: (605) 224-8693 Fax: (605) 224-9974
<http://www.fws.gov/southdakotafieldoffice/>



In Reply Refer To:
 Consultation Code: 06E14000-2019-SLI-0008
 Event Code: 06E14000-2019-E-00017
 Project Name: Deuel Harvest South

October 04, 2018

Subject: List of threatened and endangered species that may occur in your proposed project location, and/or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<http://www.fws.gov/endangered/esa-library/pdf/TOC-GLOS.PDF>

Please be aware that bald and golden eagles are protected under the Migratory Bird Treaty Act (16 U.S.C. 703-712, as amended), as well as the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may benefit from the development of an Eagle Conservation Plan (ECP), see guidance at this website (http://www.fws.gov/windenergy/eagle_guidance.html). An ECP can assist developers in achieving compliance with regulatory requirements, help avoid "take" of eagles at project sites, and provide biological support for eagle permit applications. Additionally, we recommend wind energy developments adhere to our Land-based Wind Energy Guidelines (<http://www.fws.gov/windenergy/>) for minimizing impacts to migratory birds and bats.

We have recently updated our guidelines for minimizing impacts to migratory birds at projects that have communication towers (including meteorological, cellular, digital television, radio, and emergency broadcast towers). These guidelines can be found at:

<http://www.fws.gov/migratorybirds/CurrentBirdIssues/Hazards/towers/towers.htm>
<http://www.towerkill.com>

According to National Wetlands Inventory maps, (available online at <http://wetlands.fws.gov/>) wetlands exist adjacent to the proposed construction corridor. If a project may impact wetlands or other important fish and wildlife habitats, the U.S. Fish and Wildlife Service (Service), in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and other environmental laws and rules, recommends complete avoidance of these areas, if possible. If this is not possible, attempts should be made to minimize adverse impacts. Finally if adverse impacts are unavoidable, measures should be undertaken to replace the impacted areas. Alternatives should be examined and the least damaging practical alternative selected. If wetland impacts are unavoidable, a mitigation plan addressing the number and types of wetland acres to be impacted, and the methods of replacement should be prepared and submitted to the resource agencies for review.

Please check with your local wetland management district to determine whether Service interest lands exist at the proposed project site, the exact locations of these properties, and any additional restrictions that may apply regarding these sites. The Offices are listed below. If you are not sure which office to contact, we can help you make that decision.

U.S. Fish and Wildlife Service, Huron Wetland Management District, Federal Building, Room 309, 200 4th Street SW, Huron, SD 57350; telephone (605) 352-5894. Counties in the Huron WMD: Beadle, Buffalo, Hand, Hughes, Hyde, Jerauld, Sanborn, Sully.

U.S. Fish and Wildlife Service, Lake Andes Wetland Management District, 38672 291st Street, Lake Andes, South Dakota; telephone (605) 487-7603. Counties in the Lake Andes WMD: Aurora, Bon Homme, Brule, Charles Mix, Clay, Davison, Douglas, Hanson, Hutchinson, Lincoln, Turner, Union, Yankton.

U.S. Fish and Wildlife Service, Madison Wetland Management District, P.O. Box 48, Madison, South Dakota, 57042, telephone (605) 256-2974. Counties in the Madison WMD: Brookings, Deuel, Hamlin, Kingsbury, Lake, McCook, Miner, Minnehaha, Moody.

U.S. Fish and Wildlife Service, Sand Lake Wetland Management District, 39650 Sand Lake Drive, Columbia, South Dakota, 57433; telephone (605) 885-6320. Counties in the Sand Lake WMD: Brown, Campbell, Edmunds, Faulk, McPherson, Potter, Spink, Walworth.

U.S. Fish and Wildlife Service, Waubay Wetland Management District, 44401 134A Street, Waubay, South Dakota, 57273; telephone (605) 947-4521. Counties in the Waubay WMD: Clark, Codington, Day, Grant, Marshall, Roberts.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Tracking Number in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

You are welcome to visit our website (listed above) or to contact our office at the address or phone number above for more information.

Thank you.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

South Dakota Ecological Services Field Office
420 South Garfield Avenue, Suite 400
Pierre, SD 57501-5408
(605) 224-8693

Project Summary

Consultation Code: 06E14000-2019-SLI-0008

Event Code: 06E14000-2019-E-00017

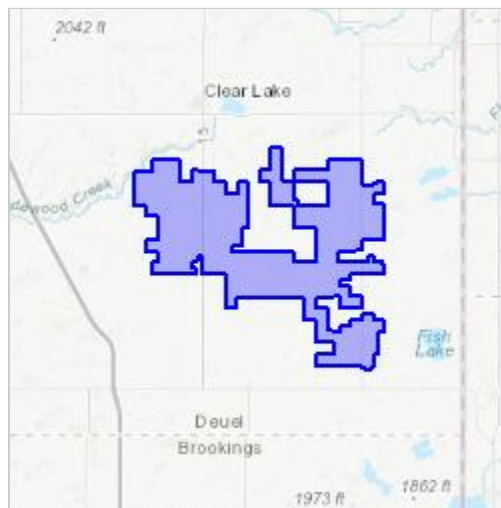
Project Name: Deuel Harvest South

Project Type: ** OTHER **

Project Description: Deuel Harvest Energy LLC is proposing to build a windfarm in Deuel County, South Dakota.

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/place/44.65431530903663N96.6426732522541W>



Counties: Deuel, SD

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Red Knot <i>Calidris canutus rufa</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Fishes

NAME	STATUS
Topeka Shiner <i>Notropis topeka</i> (=tristis) Population: Wherever found, except where listed as an experimental population There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4122	Endangered

Insects

NAME	STATUS
Dakota Skipper <i>Hesperia dacotae</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1028	Threatened
Poweshiek Skipperling <i>Oarisma poweshiek</i> There is final critical habitat for this species. Your location is outside the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/9161	Endangered

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
Madison Wetland Management District Madison Wetland Management District P.O. Box 48 Madison, SD 57042-0048 (605) 256-2974 https://www.fws.gov/refuges/profiles/index.cfm?id=64560	148

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern](#) (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birds and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Dec 1 to Aug 31
Black Tern <i>Chlidonias niger</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20

NAME	BREEDING SEASON
Black-billed Cuckoo <i>Coccyzus erythrophthalmus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9399	Breeds May 15 to Oct 10
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Franklin's Gull <i>Leucophaeus pipixcan</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ “Proper Interpretation and Use of Your Migratory Bird Report” before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

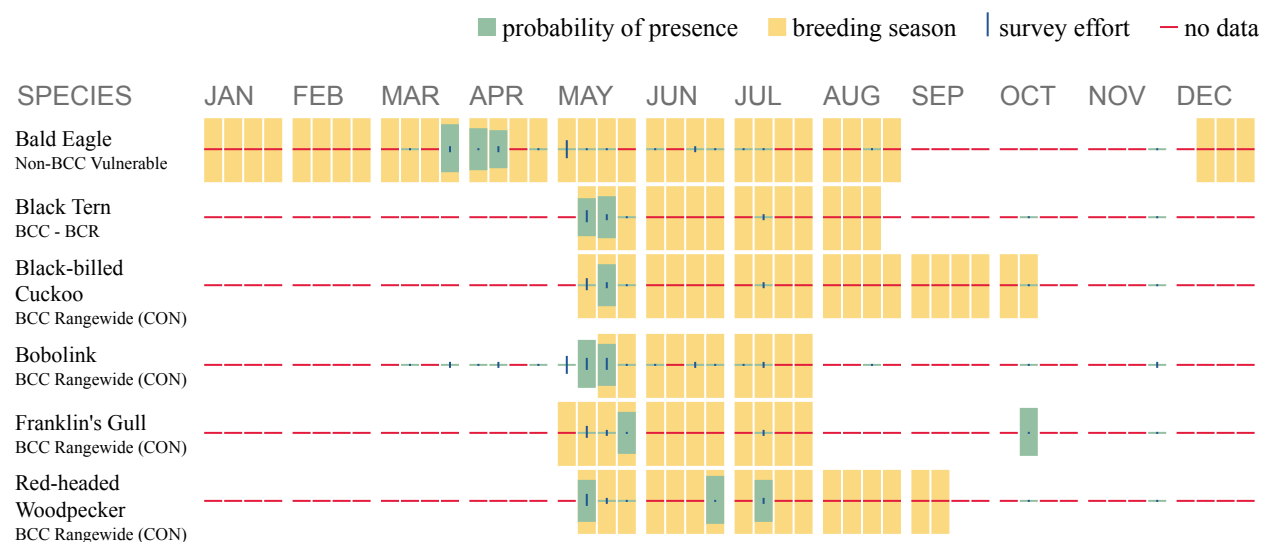
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern <http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php>
- Measures for avoiding and minimizing impacts to birds <http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php>
- Nationwide conservation measures for birds <http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) and/or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [E-bird Explore Data Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: [The Cornell Lab of Ornithology All About Birds Bird Guide](#), or (if you are unsuccessful in locating the bird of interest there), the [Cornell Lab of Ornithology Neotropical Birds guide](#). If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird

model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location?”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the “no data” indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ “Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds” at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

THERE ARE NO WETLANDS WITHIN YOUR PROJECT AREA.

U.S. Fish and Wildlife Service (USFWS), South Dakota Game, Fish and Parks (SDGFP), Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell), and Invenergy

Introductions and Development Progress/Updates, Survey Methods and Timeline – Deuel Harvest South Wind Project

Attendees:

Natalie Gates, USFWS Fish and Wildlife Biologist
 Hilary Morey, SDGFP Wildlife Biologist
 Jamie Wilson, Invenergy
 Michelle Phillips, Invenergy
 Monica Monterrosa, Invenergy
 Robert Young, Invenergy
 Dan Litchfield, Invenergy
 Bryan Gasper, Burns & McDonnell
 Christa Wisniewski, Burns & McDonnell

Location: Virtual/Microsoft Teams Meeting

Date / Time: May 12, 2022 / 2:15 PM CDT

Summary:

The objective of the meeting was to introduce the Invenergy team and reintroduce the Deuel Harvest South Wind Project (Project), located in Deuel County, South Dakota, to the U.S. Fish and Wildlife Service (USFWS) and South Dakota Game, Fish and Parks (SDGFP). Previous meetings to discuss the Project were held February 13, 2018 and May 25, 2017. The updates presented in the meeting included a change in survey boundary, wildlife surveys completed or planned for 2022 and methods for those surveys.

J. Wilson started with a round of introductions and provided an introductory description of the Project. The introduction also included a brief review of the previous agency consultation history related to the Project.

R. Young presented the Project background, proposed development and permitting schedule, and proposed construction and commercial operation dates (COD). This included a brief discussion on the evolution of the Project boundary through refinement of the areas to be included/excluded.

Tier 1 & 2 Site Characterization

J. Wilson reviewed a summary of the Site Characterization Study (SCS) methods and updated 2022 Tier 1 results. J. Wilson reviewed the analyses of the SCS effort detailing the refinement of the Project boundary in response to desktop resource evaluations including avoidance of state and federal managed lands. A general review of state and federal protected species and designated critical habitats included in currently available data from SDGFP and the USFWS within Deuel County was included.

USFWS/SDGFP had no further questions or comments on Tier 1 & 2 Site Characterization slides.

Avian Use Surveys

J. Wilson and B. Gasper summarized Year 3 of the surveys for large bird usage for the Project. The field efforts began in July 2021 and will be completed in June 2022. A review of the survey points and methods for the survey relative to the current Project boundary were included in this summary.

H. Moray noted that American white pelicans, a South Dakota Species of Greatest Conservation Need, were noted in the data presented for the Avian Use Survey summary and that other projects have had pelican take in South Dakota. The location of these takes or names of those projects was not given. She noted that the largest known nesting group of American white pelicans, according to SDGFP information, is near Waubay Lake. Waubay Lake is approximately 45 miles northwest of the Project.

Raptor Nest Surveys

J Wilson reviewed a summary of the 2019 Raptor Nest Survey data.

J. Wilson stated the 2022 Raptor Nest Surveys for the Project were ongoing and data from those surveys was not available at the time of the meeting. The 2022 Raptor Nest Surveys would include aerial and ground-based surveys following the *USFWS Eagle Conservation Plan Guidance Module 1 – Land-based Wind Energy Version 2* as well as *USFWS Region 6, Recommended Protocol for Conducting Pre-construction Eagle Nest Surveys at Wind Energy Projects*.

Passive Bat Acoustic Surveys

B. Gasper stated that the Passive Bat Acoustic Surveys were underway for the Project for 2022. These surveys will span April 1 to October 31, 2022. Two bat acoustic detectors are in place at the Project; one on a MET tower with a microphone at approximately the rotor-swept height and one microphone at approximately six feet, and the other placed at a ground-based location near a woodland and water source with one microphone approximately six feet off the ground. Data is recorded daily from 30 minutes before sunset to 30 minutes after sunrise.

Bat Mist-Netting Surveys

J. Wilson and B. Gasper stated that Bat Mist-Netting Surveys were planned for the summer of 2022 for the Project. Surveys will follow USFWS guidance including: *USFWS Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines, March 2022* as well as *Addendum 2 – An Update to the Indiana Bat Summer Survey Level of Effort Trigger and to Include Minimum Recommended Effort for Northern Long-Eared Bats, March 2022*.

B. Gasper stated that surveys would be compliant with biological survey standards to minimize the COVID-19 exposure to bats and humans. B. Gasper also stated that the consultation with SDGFP for appropriate state handling permit had begun and the permit would be obtained from the SDGFP for bat mist netting by Buns & McDonnell lead bat biologist/USFWS-permitting biologist, Josiah Maine, prior to the surveys.

B. Gasper asked if any known northern long-eared bat hibernacula were currently known in Deuel County. N. Gates and H. Moray indicated that they were not aware of any based on the internal agency data currently available for their review.

Protected Butterfly Habitat Assessment

B. Gasper summarized the previous efforts associated with Protected Butterfly Habitat Assessments for the Project. Habitat assessment efforts were completed to identify potentially suitable habitat capable of supporting Dakota skippers or Poweshiek skipperlings. Efforts planned for 2022 include a verification of the status and location of the remnant native prairie habitats previously observed during the 2018 butterfly habitat assessment for the Project using National Land Cover Data (NLCD) and in-field reviews. Presence/absence surveys for the species have not been conducted and are not planned for the Project.

H. Morey stated the SDGFP can provide occurrence data within a 5-mile buffer for species, which will include its first observed date and last observed date. She suggested the Project conduct a new online review of the SDGFP Natural Heritage Database for occurrence data of protected species. H. Morey stated the SDGFP Natural Heritage Database is currently being updated; however, H. Morey stated she was not clear when it would be publicly available. Invenergy to coordinate with H. Morey on status of Natural Heritage Database updates in Q3 2022.

H. Morey stated a developer could also request precise locations of species occurrence through the Natural Heritage Program. This request would include the need for a data usage agreement and a relatively small cost. J. Wilson indicated Invenergy will coordinate a request for precise species occurrence locations once Natural Heritage Database update is complete.

General Comments

N. Gates suggested the Project should consult with the USFWS Wetland Management District(s) for coordination on grassland and wetland easement data. J. Wilson stated Invenergy will coordinate with USFWS on the easement data request.

H. Morey noted that prairie grouse lek surveys are not likely needed for this Project. Any incidental observations should be noted. She also stated the sharp-tailed sage grouse Environmental Prioritization Layer (SDGFP desktop resource) does not include the area where the Project is located. B. Gasper stated that no prairie grouse have been observed during various survey efforts within the Project boundary.

H. Morey indicated that Game Production Areas (GPAs), Waterfowl Production Areas (WPAs), and Walk-in Hunting Areas (WIHA) should be considered during Project siting with an effort to avoid these areas if possible. SDGFP would appreciate notification if development is to be considered within proximity to WIHAs. The SDGFP would need to know by May prior to the upcoming hunting season. The SDGFP would mark them as closed. The WIHA data layer is not included in the SDGFP Natural Heritage Database but is publicly available online via the South Dakota Hunting Atlas. Invenergy will evaluate whether WIHAs are present within Project boundary and will coordinate with SDGFP prior to construction if areas exist.

Invenergy will update the agencies when the Avian Use Surveys, Raptor Nest Surveys, Passive Bat Acoustic Surveys, Bat Mist-Netting Surveys, and Protected Butterfly Habitat Assessment are complete.

A request for any additional questions was made by J. Wilson. No additional questions or topics were raised and the meeting ended.

Summary of Follow-Up Actions:

- USFWS provided Invenergy a MS Word document with links to updated guidance, protocols, recommendations, and references (Received 5/12/2022; Appendix A).
 - Appendix A was provided by N. Gates and includes recommendations for Philip Wind and Deuel Harvest South Wind (Deuel) as discussed on 5/12/2022
- Invenergy and Burns & McDonnell will coordinate with SDGFP on updates to the Natural Heritage Database in Q3 2022 and will request precise species occurrence locations for protected butterflies once the Database is updated.
- Invenergy will consult with the USFWS Wetland Management Districts for coordination on grassland and wetland easement data.
- Invenergy to evaluate whether WIHAs are present within Project boundary and will coordinate with SDGFP prior to construction if areas exist.

Deuel Harvest South

United States Fish & Wildlife Service
South Dakota Game, Fish, & Parks

May 12, 2022



Invenergy



Meeting Agenda

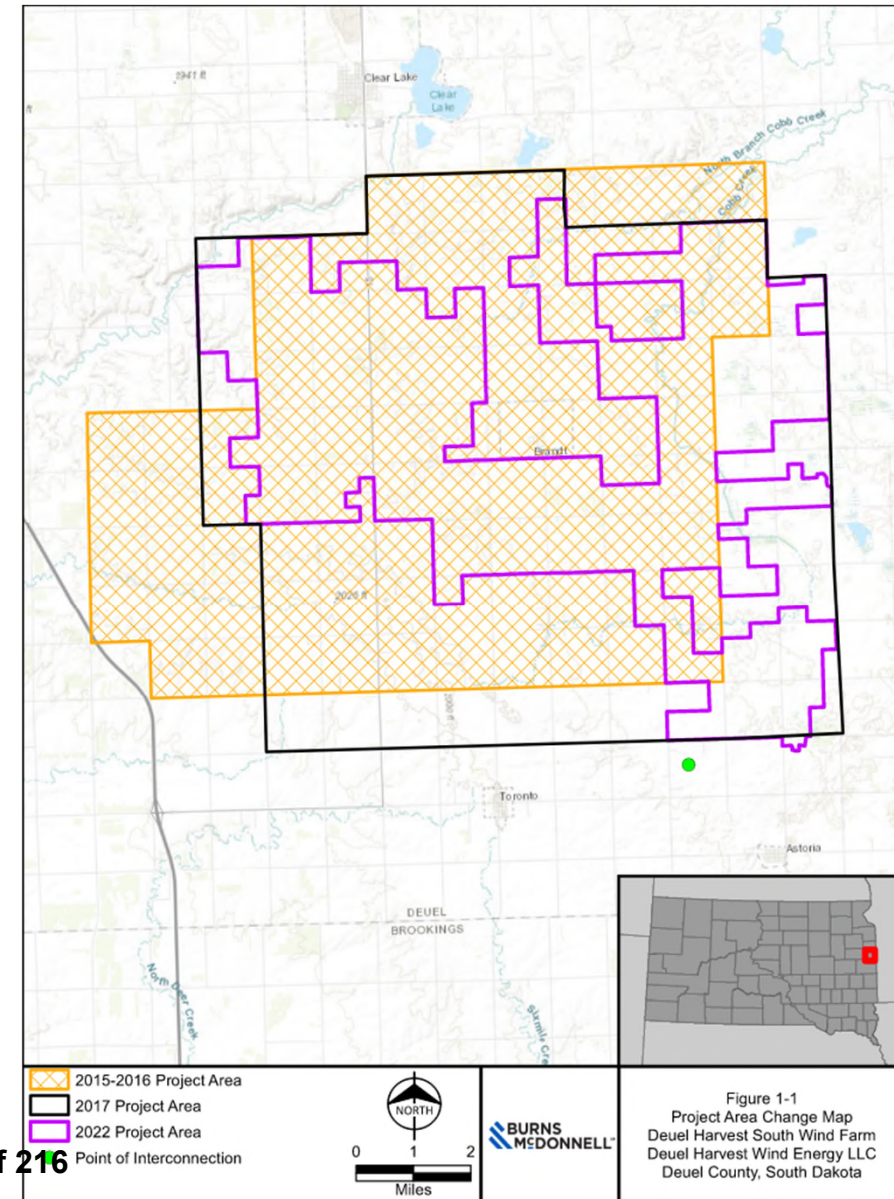
- Project Introduction & Development Timeline
- Previous Agency Coordination
- Previous Survey Efforts (2016-2019)
- Proposed Survey Efforts
- Next Steps and Feedback

Deuel Harvest South

Deuel County, South Dakota

Overview of Deuel Harvest South Wind Energy Project and Development Timeline ^{A1}

- Project is located in Deuel County
- Capacity up to 250 MW
- Project Area ~ 30,870 acres
- POI: Astoria 345 kV Substation
- Anticipate a Q2 2023 PUC application submittal
- Targeting Q4 2025 COD



Agency Coordination History

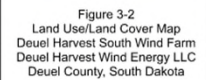
Topics Discussed	Meeting Location	Attendees	Date
- Project Overview - Summary of previous environmental surveys - Identify future surveys that need to be completed by the Project	Conference Call	Natalie Gates – USFWS Silka Kempema – SDGFP Leslie Murphy – SDGFP Erin Lieberman - Invenergy Michael Svedeman – Invenergy Andrea Giampoli – Invenergy	May 25, 2017
- Project Overview - Potential impacts to grasslands - Identify sensitive avian species during surveys - Dakota skipper habitat assessments - Potentially suitable bat habitat in Project - Potentially new raptor nest surveys	Conference Call	Natalie Gates – USFWS Silka Kempema – SDGFP Leslie Murphy – SDGFP Michael Svedeman – Invenergy Andrea Giampoli – Invenergy John Aquino – Invenergy Bryan Gasper – Burns & McDonnell	February 13, 2018

Survey Timeline

Study	Timeline
Tier 1 & 2 Site Characterization Study	2016 – 2018, May 2022
Tier 3 Avian Use Survey - YR 1	April 2016 – March 2017
Tier 3 Avian Use Survey – YR 2	May 2017 – April 2018
Tier 3 Avian Use Survey - YR 3	July 2021 – June 2022
Tier 3 Raptor Nest Survey	March – April 2016, 2017, 2019, 2022
Tier 3 Bat Acoustic Survey	April – November 2016 & 2017, 2022
Tier 3 Bat Mist Netting	July – August 2016 (WEST), 2022
Tier 3 Butterfly Habitat Assessment	August – September 2017, 2018, 2022

Tier 1 & 2 Site Characterization

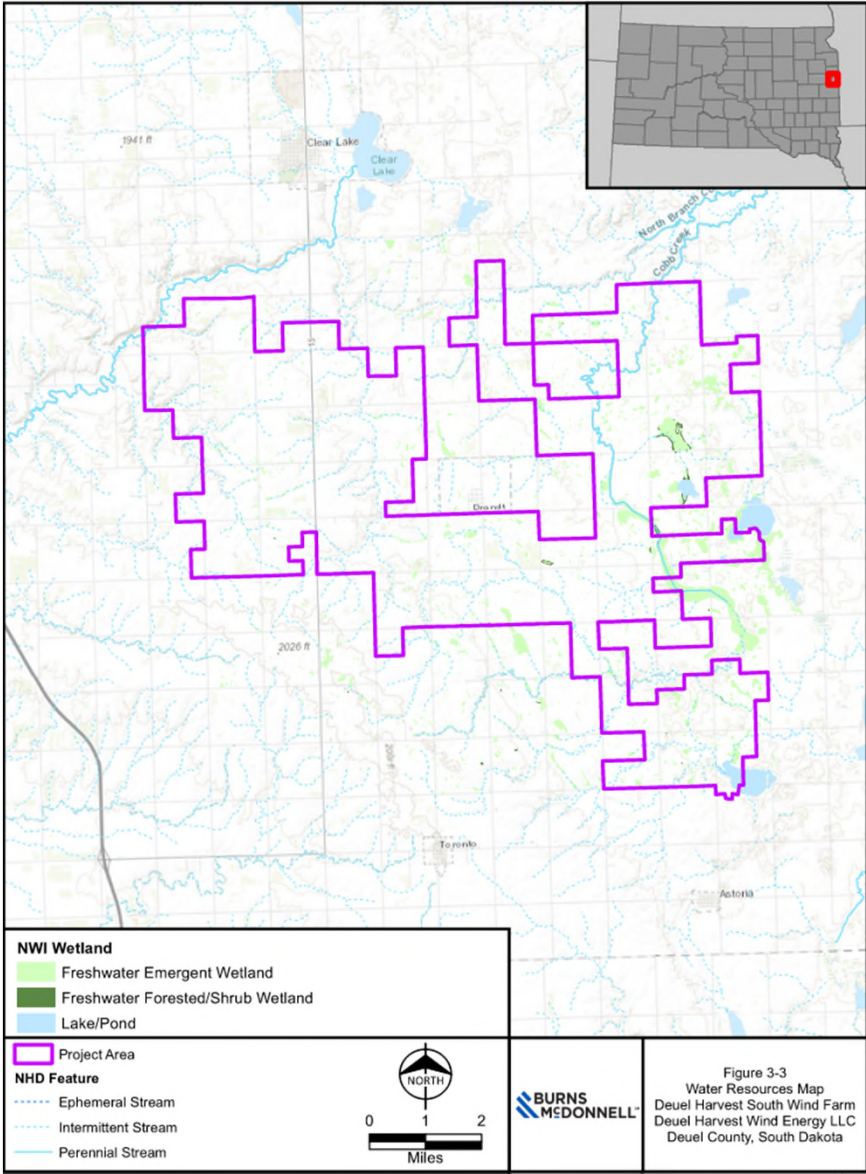
Source: 2011 NLCD Data



Site Characterization: Wetlands and Waterbodies

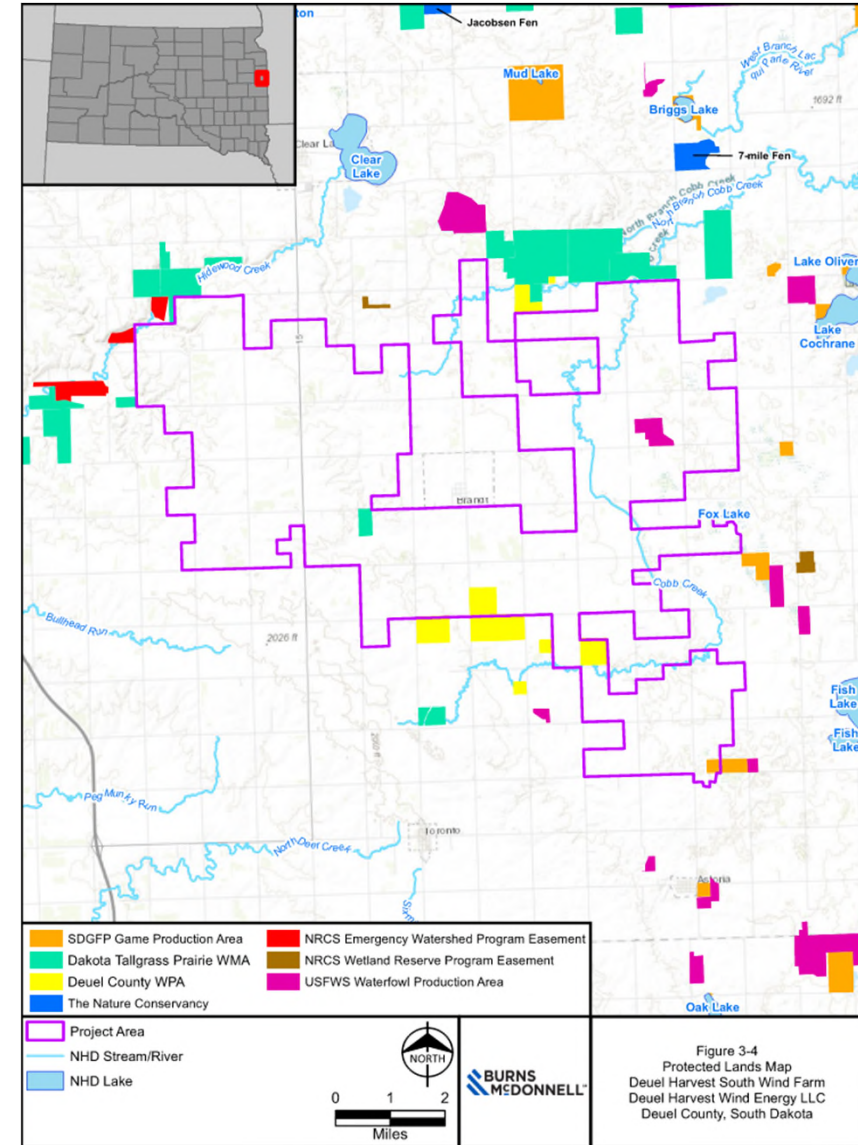
Wetland Type	Project Area: Acres	Project Area: (%)
Freshwater Emergent Wetland	1,361	4
Freshwater Pond	165	1
Freshwater Forested/Shrub Wetland	50	<1
Lake	28	<1
Riverine	2	<1
Total	1,606	100

Source: USFWS NWI Data and USGS National Hydrography Dataset



Site Characterization: Managed Lands

- Federal
 - Dakota Tallgrass Prairie Wildlife Management Area – 80 acres
 - USFWS Waterfowl Production Area (WPA) – 147 acres
- State
 - SDGFP Game Production Area – 120 acres
- Local
 - Deuel County WPA – 340 acres

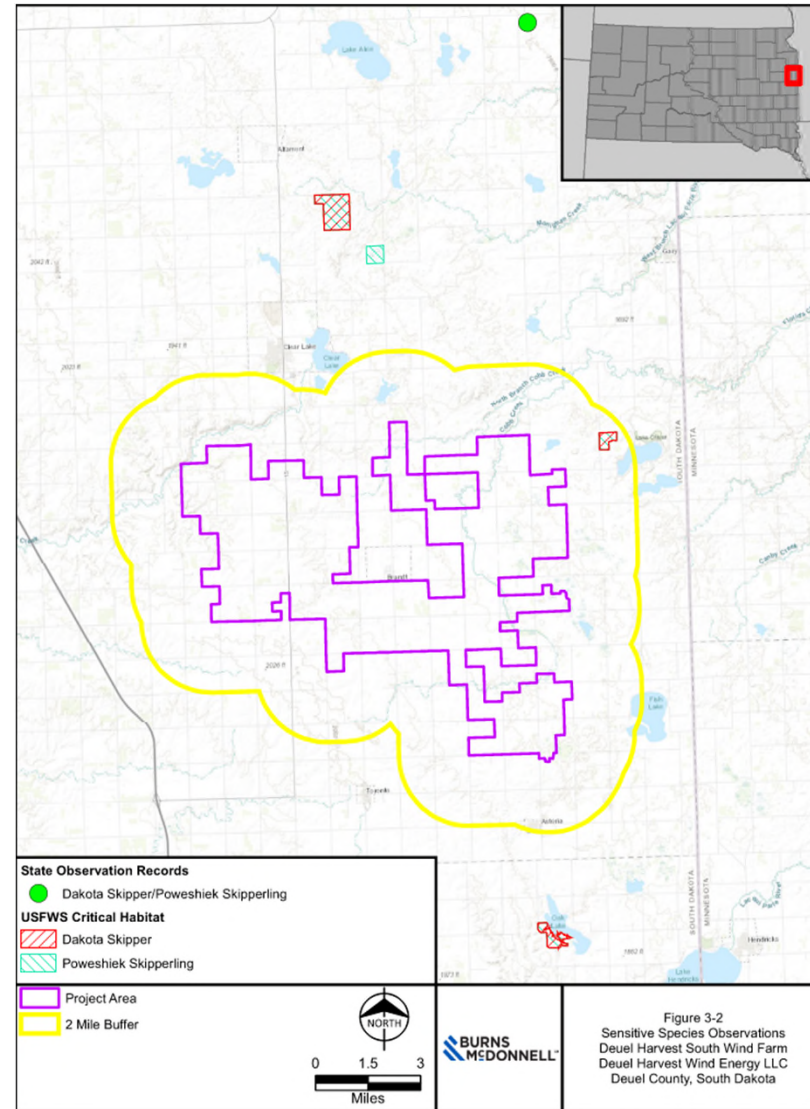


Site Characterization: Protected Species

Common Name	Federal and State Status	Potential for Occurrence
Northern long-eared bat*	FT*	Moderate
Dakota skipper	FT	Moderate
Poweshiek skipperling	FE	Moderate
Rufa red-knot	FT	Low
Topeka shiner	FE	Low
Whooping crane	SE	Low
Osprey	ST	Low
Banded killifish	SE	Low
Northern redbelly dace	ST	Low
Northern river otter	ST	Unlikely

*Proposed listing status change to FE 2022

Site Characterization: Protected Species



Avian Use Surveys

Avian Use Survey Objectives and Methods

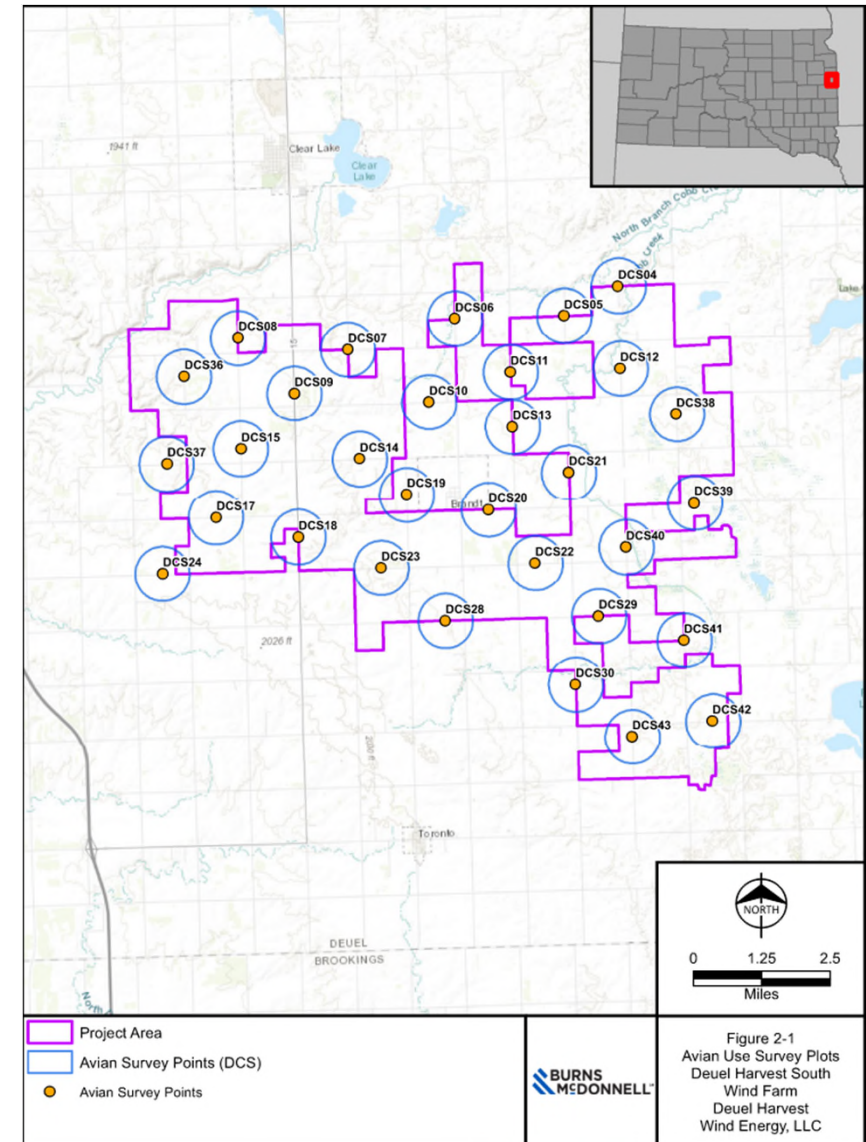
A1

Objectives

- Develop a complete list of all large bird species observed in the Project Area
- Identify temporal and spatial use by large birds in the Project Area
- Document use of the Project Area by threatened, endangered, and other bird species of concern, including incidental observations
- Document eagle observations and minutes (in flight) and map eagle flight paths

Methods

- 31-point count locations providing 31% coverage
- Each point surveyed once per month, conducted during daylight hours
- 60-minute monthly surveys recording large birds within an 800-m horizontal radius of each survey point



Raptor Nest Survey

Raptor Nest Survey Objectives and Methods (2022)

Objectives

- Identify locations and occupancy status of potential raptor nest structures within the Project Area and surrounding 2 miles for all raptors and eagles

Methods

- Followed guidelines
 - *USFWS Eagle Conservation Plan Guidance Module 1 – Land-based Wind Energy Version 2*
 - *USFWS Region 6, Recommended Protocol for Conducting Pre-construction Eagle Nest Surveys at Wind Energy Projects*
- Transects at approximately 1-mile (1.6 km) intervals within the 2-mile buffer
- Stick nests were identified based upon the condition, substrate, and status of the nest
- Nest locations were estimated by using a sub-meter accurate GPS unit and recorded on a tablet computer

Passive Bat Acoustic Survey

Bat Acoustic Survey Objectives & Methods

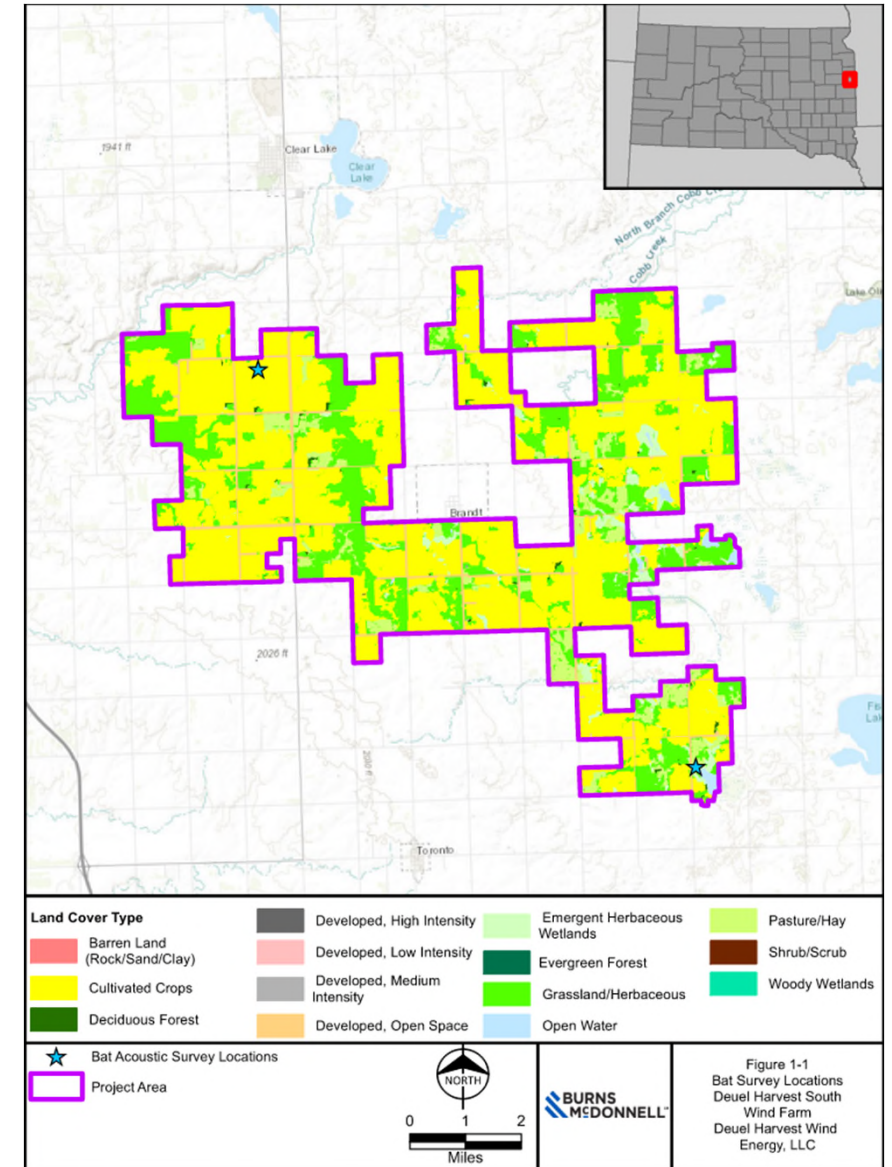
A1

Objectives

- Identify the level and seasonality of bat activity (bat passes per detector night) and genus (based on frequency groups) in the Project Area

Methods

- Daily data collection from 30 minutes prior to sunset to 30 minutes after sunrise
- April 1 – October 31, 2022
- Two Wildlife Acoustics SM3BAT recording devices
 - MET tower in open crop field with a few small woodlots nearby
 - Ground-based location near woodlots and perennial water source



Bat Mist-Netting Survey

Bat Mist Netting Objectives & Methods

A1

Objectives

- Conduct presence/absence surveys for threatened and endangered bat species

Methods

- Surveys planned summer of 2022
- Will follow USFWS guidelines
 - *USFWS Range-wide Indiana Bat and Northern Long-Eared Bat Survey Guidelines, March 2022*
 - *Addendum 2 – An Update to the Indiana Bat Summer Survey Level of Effort Trigger and to Include Minimum Recommended Effort for Northern Long-Eared Bats, March 2022*
- Study plan was previously approved by USFWS July 15, 2016
- Survey will be compliant with biological survey standards to minimize COVID exposure to bats and humans

Butterfly Habitat Assessment

Butterfly Habitat Assessment Objectives & Methods

A1

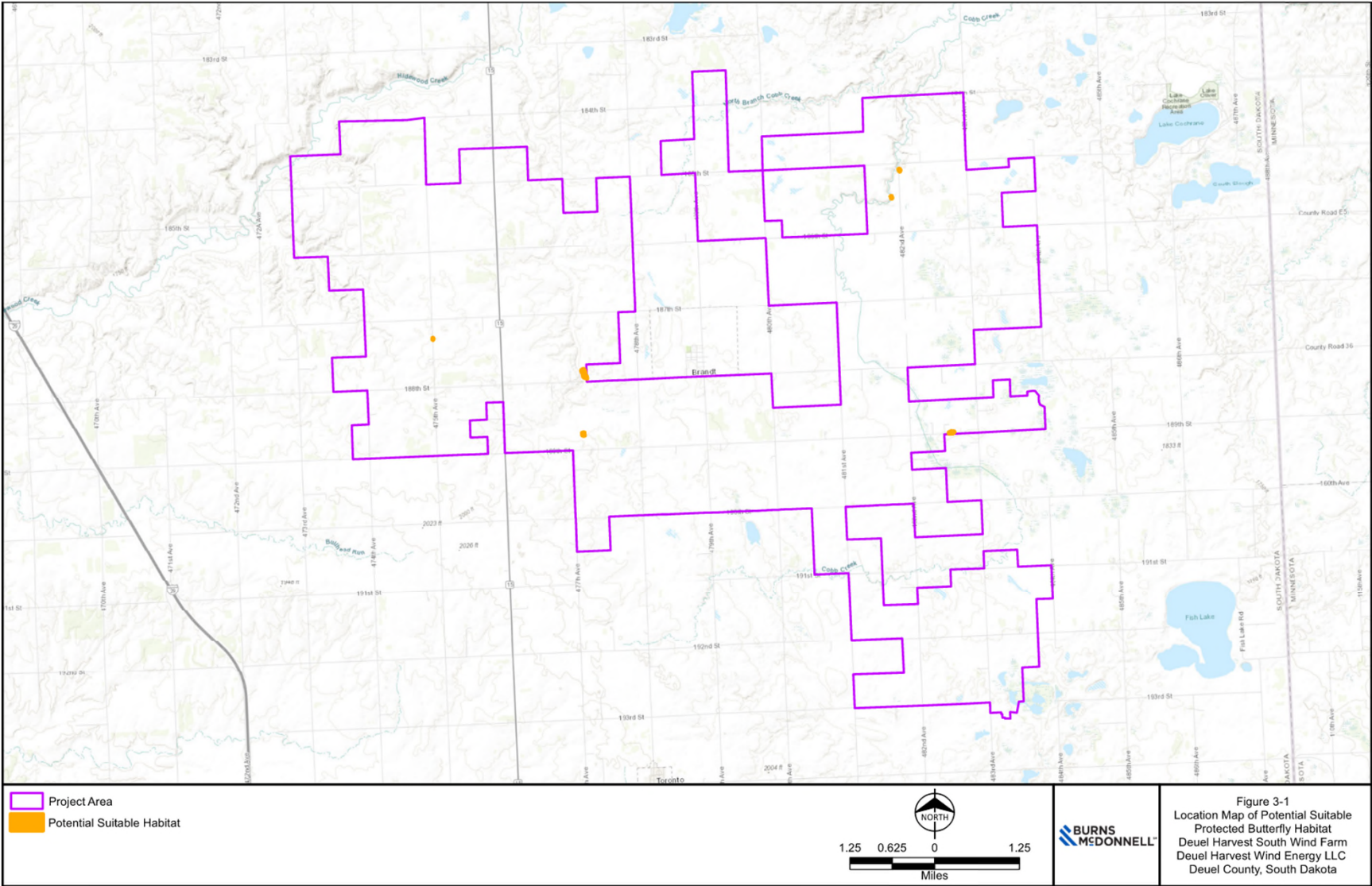
Objectives

- Identify potential Dakota skipper and Poweshiek skipperling habitat

Methods (2018)

- Followed guidelines:
 - *USFWS Guidance for Interagency Cooperation under Section 7(a)(2) of the Endangered Species Act for the Dakota Skipper, Dakota Skipper Critical Habitat, and Poweshiek Skipperling Critical Habitat: Version 1.1, May 2016*
 - *Dakota Skipper Conservation Guidelines 2016*
 - *2018 Dakota Skipper (Hesperia dacotae) North Dakota Survey Protocol*
 - *Flow Chart for Habitat Evaluation of Federally Protected Butterfly Habitat in Northeast South Dakota, Dennis Skadsen, 2017*
 - *Project Communication Regarding the Deuel Harvest Wind Project: USFWS, SDGFP, Invenergy, and Burns & McDonnell, August 1, 2018*
- GIS review: NLCD, Critical Habitat, USFWS Easements, SDSU Undisturbed Grasslands layers
 - 28 focus areas for field evaluation
- Field review of vegetation
 - Grazed pasture/range, hay prairie fields, intact grasslands, prairie remnants, topography
 - 6 focus areas determined “potential suitable habitat”

Butterfly Habitat Assessment Results (2018)



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Phillips, Michelle

From: Phillips, Michelle
Sent: Thursday, October 6, 2022 10:18 AM
To: Morey, Hilary
Cc: Giampoli, Andrea; Litchfield, Daniel; Young, Robert; Monterrosa, Monica; Gasper, Bryan R.; Wisniewski, Christa F; Natalie_Gates@fws.gov
Subject: RE: Invenergy Deuel South Development Project, CBI

Hi Hilary,

Thank you for providing South Dakota Game, Fish and Parks siting recommendations and wildlife related concerns for the proposed Deuel South Wind Project. We will review the feedback, and let you know if we have any questions. We'll be happy to provide the survey reports for those surveys conducted in our final project boundary and will share those as they are completed.

Thank you again for your continued coordination. Again, we wish you the best during your maternity leave, and look forward to coordinating again once you return.

Thank you,

Michelle Phillips | Senior Associate, Environmental Compliance & Strategy
Invenergy | Houston, TX
mphillips@invenergy.com | 251-327-7290

From: Morey, Hilary <Hilary.Morey@state.sd.us>
Sent: Monday, October 3, 2022 12:58 PM
To: Wilson, Jamie <JWilson@invenergy.com>; Natalie_Gates@fws.gov
Cc: Lieberman, Erin <ELieberman@invenergy.com>; Litchfield, Daniel <DLitchfield@invenergy.com>; Phillips, Michelle <MPhillips@invenergy.com>; Young, Robert <RYoung@invenergy.com>; Monterrosa, Monica <MMonterrosa@invenergy.com>; Gasper, Bryan R. <bgasper@burnsmcd.com>; Wisniewski, Christa F <cfwisniewski@burnsmcd.com>
Subject: [EXTERNAL] RE: Invenergy Deuel South Development Project, CBI

Hi Jamie-

Attached, please find GFP's siting recommendation letter for the Deuel Harvest South project. I would also like to request copies of any wildlife survey reports once they are completed and ready for distribution.

Thank you, and please let me know if you have any questions.

Hilary Morey (she/her) | Environmental Review Senior Biologist
 South Dakota Game, Fish and Parks
 523 East Capitol Avenue | Pierre, SD 57501
 605.773.6208 | Hilary.Morey@state.sd.us



From: Wilson, Jamie <JWilson@invenergy.com>

Sent: Tuesday, May 10, 2022 1:11 PM

To: Natalie_Gates@fws.gov; Morey, Hilary <Hilary.Morey@state.sd.us>

Cc: Lieberman, Erin <ELieberman@invenergy.com>; Litchfield, Daniel <DLitchfield@invenergy.com>; Phillips, Michelle <MPhillips@invenergy.com>; Young, Robert <RYoung@invenergy.com>; Monterrosa, Mónica <MMonterrosa@invenergy.com>; Gasper, Bryan R. <bgasper@burnsmcd.com>; Wisniewski, Christa F <cfwisniewski@burnsmcd.com>

Subject: [EXT] Invenergy Deuel South Development Project, CBI

Good afternoon Natalie and Hilary,

Attached is an abbreviated slide deck for Thursday's meeting on Deuel South Wind, focused on the objectives and methods of the surveys planned for this year. If you have some time to review the PowerPoint prior to our meeting on the 12th, that would be great. Happy to start the call off addressing any questions you have on proposed methods and focusing the remainder of our time on the development timeline, boundary modifications, resources, and next steps.

Thank you, and I look forward to speaking with you both on Thursday.

Jamie Wilson | Manager, Environmental Compliance & Strategy | She, her
Invenergy | 1401 17th Street, Suite 1100, Denver, CO 80202
jwilson@invenergy.com | 303-557-4503

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SOUTH DAKOTA DEPARTMENT OF GAME, FISH AND PARKS

523 EAST CAPITOL AVENUE | PIERRE, SD 57501

October 3, 2022

Jamie Wilson
Invenergy
1401 17th Street
Suite 1100
Denver, CO 80202

RE: Deuel Harvest Wind Project
Deuel County, South Dakota
South Dakota Game, Fish and Parks Siting Recommendations and Wildlife Concerns

Dear Jamie,

Thank you for contacting South Dakota Game, Fish and Parks (GFP) regarding the proposed Deuel Harvest South Wind Energy Project located in Deuel County, South Dakota. The proposed project will have a capacity of up to 200 MW and the total project area is estimated to be 30,870 acres. We strive to collaborate with developers of wind projects to balance wildlife conservation with wind energy development in our state. The purpose of this letter is to provide information and recommendations for the development and siting of the proposed wind facility. We have prepared the following information to address environmental concerns regarding threatened, endangered, and rare species, areas of high conservation value, and species of concern in South Dakota.

The proposed siting and operation of a wind power project has the potential to affect area wildlife by altering wildlife habitat, influencing behavior (e.g., avoidance) and increasing mortality through collisions with wind turbines. Impacts to wildlife and their associated habitats can be minimized by using responsible, wildlife friendly siting recommendations early in the project planning stage of development. Additional information and recommendations on wind facility siting can be found on our website at: https://gfp.sd.gov/userdocs/docs/SDSitingGuides_2018-10-17.pdf.

The Deuel Harvest South project was originally introduced to GFP in 2017 by Invenergy via conference call. GFP and US Fish and Wildlife Service (USFWS) participated in a conference call with Invenergy in 2018 to review the project and receive an update on Deuel Harvest South. Representatives from Invenergy, Burns & McDonnell, USFWS and GFP met virtually on May 12th, 2022, to re-introduce the project and to discuss potential wildlife related concerns, previously completed wildlife surveys and proposed future wildlife surveys. GFP appreciates the early engagement with us at this stage of project planning. We are providing this letter as a follow-up to our most recent meeting, and to document our wildlife related concerns and recommendations for the Deuel Harvest South Wind Project.

SOUTH DAKOTA NATURAL HERITAGE DATABASE

The South Dakota Natural Heritage Program monitors species at risk. Species at risk are those that are listed as threatened or endangered at the state or federal level or those that are rare. Rare species are found at the periphery of their range, have isolated populations or are species for which we simply do not have extensive information. A list of species monitored by the Natural Heritage Program can be found at <https://gfp.sd.gov/natural-heritage-program/>. We recommend a **yearly database search**, to ensure that developers are aware of changing patterns in wildlife use at a site. **Please note many places in South Dakota have not been surveyed for rare or protected species and the absence of a species from the database does not preclude its presence from your project area.**

Species records can be requested through the Natural Heritage Program at this link: <https://gfp.sd.gov/forms/heritagedata/>. Alternatively, GFP has an online Environmental Review Tool available for project planning purposes: <https://ert.gfp.sd.gov/>. This tool is free to use and has several publicly available spatial layers as well as the capability to generate a report of potential species that may be present. Data in the Tool are updated quarterly. Please note that this tool will not give specific locations of sensitive species; only a list of potential species that may be found in the project area.

We have completed an initial search of the project area and found the following records within five miles of the proposed project boundary:

Common Name	Scientific Name	State Status ^a	Federal Status ^b	SGCN ^c	Last Observed Date
Bald Eagle	<i>Haliaeetus leucocephalus</i>			Y	2021
Blackside Darter	<i>Percina maculate</i>			Y	2012
Burrowing Owl	<i>Athene cunicularia</i>			Y	1994
Dakota Skipper	<i>Hesperia dacotae</i>		FT	Y	2004
Hornyhead Chub	<i>Nocomis biguttatus</i>			Y	2011
Least Bittern	<i>Ixobrychus exilis</i>			N	1991
Northern Redbelly Dace	<i>Chrosomus eos</i>	ST		Y	2017
Powesheik Skipperling	<i>Oarisma powesheik</i>		FE	Y	2005
Regal Fritillary	<i>Argynnis idalia</i>			Y	2021
Topeka Shiner	<i>Notropis topeka</i>		FE	N	2017
Trumpeter Swan	<i>Cygnus buccinator</i>			Y	2020

^a: SE = State Endangered, ST = State Threatened

^b: FE = Federally Endangered, FT = Federally Threatened

^c: Species of Greatest Conservation Need (SGCN) as identified in the GFP Wildlife Action Plan (GFP 2014)

HABITATS IMPORTANT TO CONSERVATION IN SOUTH DAKOTA

Native Grasslands

Grasslands are of high conservation value in South Dakota, and many acres are converted to cropland annually. Approximately 70% of the native mixed-grass prairie has been lost in eastern South Dakota, and approximately 32% has been lost in western South Dakota (Wright and Wimberly 2013, Bauman et al. 2016, Bauman et al. 2016). All grasslands within the project boundary should be identified. Untilled grasslands, large grassland blocks and grasslands with native plant species are of particular importance and special care should be taken to avoid these areas. Other grassland types such as native rangeland, grazed grasslands (with native plant species), pasture (grazed grasslands with non-native plant species), and Conservation Reserve Program lands (formerly tilled lands planted to vegetative cover for erosion

control and wildlife habitat) also serve as wildlife habitat. Placement of project infrastructure (turbines, roads, etc.) in contiguous blocks of grasslands cause fragmentation and result in less suitable habitat for grassland dependent species. Early identification of grassland areas provides the information needed to avoid further grassland loss, degradation, and fragmentation. According to desktop analysis reported in the May 12, 2022, virtual meeting, the project is located in an area with approximately 72% cultivated lands, 17% grassland/herbaceous and 5% wetland cover types.

Grasslands should not be “ranked” or considered less important solely based on height of grass or composition of species. Some grassland dependent species such as Sharp-Tailed Grouse (*Tympanuchus phasianellus*), Baird’s Sparrow (*Centronyx bairdii*), and Northern Harriers (*Circus hudsonius*) require grassland patches with relatively tall (12 inches or more) vegetation and accumulation of residual litter characterized by light grazing pressure (Bakker 2005, Johnson et al. 2010, Shaffer and DeLong 2019, Bakker 2020). Other species such as Ferruginous Hawks (*Buteo regalis*), **Burrowing Owl** (documented near the project area), Thick Billed Longspur (*Rhynchophanes mccownii*), and Chestnut-collared Longspur (*Calcarius ornatus*) require open expanses of grasslands characterized by short vegetation that is typical of moderate to heavy grazing pressure (Bakker 2005, Johnson et al. 2010, Shaffer and DeLong 2019, Bakker 2020). Sprague’s Pipit (*Anthus spragueii*), Long-billed Curlew (*Numenius americanus*), Bobolink (*Dolichonyx oryzivorus*) and Dickcissel (*Spiza americana*) require grasslands with moderate grass heights and periodic disturbance from grazing, mowing or prescribed fire (Bakker 2005, Johnson et al. 2010, Shaffer and DeLong 2019, Bakker 2020). Although various patches of grassland habitat can appear in “better” or “worse” condition based on vegetation height and plant species composition, GFP considers all grassland habitat as important for wildlife based on the information presented above.

The best available information on the location of untilled grasslands for South Dakota can be found in (Bauman et al. 2014, Bauman et al. 2016, and Bauman et al. 2018). These reports and associated spatial layers are available at: <https://openprairie.sdstate.edu/>. It appears that most potentially undisturbed lands within the project area are located around streams (such as Cobb Creek) and other small drainages that exist within the project area.

Wetlands and Streams

The prairie pothole region of South Dakota supports a wide diversity of bird species (~80 species; Johnson et al. 1997). Wetland birds (such as rails, ibis, herons, **bitterns**, ducks, whooping cranes, etc.) can be susceptible to direct strikes with wind turbines (Johnson et al. 2002). Wind turbines can also displace nesting waterfowl pairs up to 800 meters (Loesch et al. 2013). Displacement of breeding waterfowl from high quality habitats could result in increased predation or reduced reproduction in and around wind energy facilities (Loesch et al. 2013).

All wetlands and other waterbodies within the project boundary should be identified and delineated. Note that wetland delineation should occur during time periods when a basin typically holds water (late spring-early summer), and that the spatial extent of a wetland may change within or among years. Please consult with the US Army Corps of Engineers to determine which regional supplement is appropriate for your project area. Avoid placing turbines in wetlands, streams or within a wetland complex (multiple wetland basins adjacent to each other that may be hydrologically connected). Wetland complexes support higher species richness compared to isolated wetlands of similar size (Naugle et al. 1999). Our search of the Natural Heritage Database documented records of Northern Tallgrass Calcareous Fens near the project area. Calcareous Fens are a rare and fragile habitat type in South Dakota and are incredibly sensitive to any disturbance (MDNR 2019). If any Calcareous Fens are documented within the project area, we recommend complete avoidance of these areas.

Invasive and Non-native Plant Species

During the construction and maintenance phase of a wind energy facility, existing roads often experience increased traffic and new turbine access roads are constructed. This increases the amount of area disturbed and increases opportunity for the introduction and establishment of invasive, non-native plant species.

Based on the information listed above, GFP recommends controlling noxious weeds at the project site, as well as revegetating with native, weed-free seed mixes.

SPECIES OF CONCERN

Grassland Nesting Birds

Grassland nesting bird populations have been declining faster than any other bird group in North America (Peterjohn and Sauer 1999, Rosenberg et al. 2019). Many grassland nesting bird species require large tracts of open, contiguous grasslands. Placement of turbines and associated infrastructure (e.g., roads) in large, in-tact grassland parcels can fragment habitat and displace certain species of grassland dependent birds such as prairie grouse (sharp-tailed grouse and greater prairie chickens), Western Meadowlark (*Sturnella neglecta*), Upland Sand Piper (*Bartramia longicauda*), Grasshopper Sparrow (*Ammodramus savannarum*), and Chestnut Collared Longspur (Pruett et al. 2009, Shaffer and Buhl 2015, Bakker 2020). Graff et al. (2016) found that direct mortality rates of turbines sited in predominately grassland (1.86 deaths/MW) vs. predominately cropland (2.55 deaths/MW) habitats in North and South Dakota were similar, however sites in grassland habitats resulted in mortalities of a greater diversity of species (30) vs. sites in cropland (9). While it would be difficult to make recommendations for each individual species of grassland bird that may be affected by energy development, GFP considers the presence of prairie grouse (in particular lek locations) to be indicators of high-quality grassland habitat and a robust ecological community due to their specific habitat needs (large tracts of intact grasslands). No historic leks were documented in or near the project area, and no lek surveys were conducted within the project area, as the project appears to be located primarily in crop ground (72%). GFP's historic lek data is not comprehensive, and it is possible that Sharp-tailed Grouse could be present within the project area, even with limited habitat. GFP does not typically request grouse lek surveys if a project contains less than 30% grassland/herbaceous cover.

To avoid impacts to prairie grouse and other grassland nesting bird populations, GFP first and foremost recommends avoiding siting project infrastructure in grassland habitat, particularly areas of the state that have been identified as Tier I and Tier II Sharp-tailed Grouse habitat. Tier I priority habitat is estimated to support approximately 20% of the Sharp-tailed grouse population in South Dakota and encompasses approximately 3.7% of the land mass of eastern South Dakota. Tier II priority habitat is estimated to support an additional 20% of the Sharp-tailed grouse population in eastern South Dakota and encompasses approximately 5% of the land mass of eastern South Dakota. Overall, 18.7% of eastern South Dakota land mass was categorized as Tier I, 2 or 3 priority habitats. This area is estimated to support 64% of the Sharp-tailed grouse population in eastern South Dakota. These priority habitat areas were developed based models developed by Runia et al. 2021. The South Dakota Environmental Review Tool includes a conservation planning layer titled "Sharp-tailed Grouse Habitat Prioritization" that may be helpful to review. This project may contain some patches of Tier I, II and III Sharp-tailed grouse habitat, and although limited, GFP still recommends avoiding placing infrastructure in these areas. Please note that data in the Environmental Review Tool cannot be downloaded. However, if you would like to obtain a copy of the shapefile with the Grouse habitat prioritization types in a compatible format for desktop evaluation, please contact GFP.

If grassland habitat cannot be avoided, we recommend minimizing impacts to prairie grouse by using a 1-mile setback of project infrastructure from any documented prairie grouse leks. This 1-mile buffer recommendation is based on data collected on hen prairie grouse in the Fort Pierre National Grasslands in South Dakota (Kirschenmann 2008). Kirschenmann (2008) reported mean distance from lek of capture to nest sites was approximately 1 mile (1.98 km for prairie chickens and 2.03 km for sharp-tailed grouse). The recommended buffer is intended to minimize disturbance from project infrastructure to important nesting and brood-rearing habitat. If grassland habitats and lek sites cannot be avoided, we further recommend a two mile no construction buffer during the lekking season, 1 March to 30 June. Prairie grouse are sensitive to noise disturbance, and construction near leks could cause birds to abandon leks. GFP's lek avoidance and minimization measures can also be found in our Prairie Grouse Management plan at: https://gfp.sd.gov/UserDocs/docs/prairie_grouse_plan_2017-2021_final.pdf

If impacts to grassland habitats cannot be avoided, GFP recommends mitigation in the form of voluntary habitat offsets/compensation. Shaffer et al. (2019) provides a science-based framework that calculates biological values lost by development in grassland or prairie pothole habitats. We suggest using this framework and associated models to estimate impacts and develop a voluntary habitat offset plan. Shaffer et al. (2022) also provides a tutorial on how to use the avian-impact off-set method that was developed in Shaffer et al. 2019. GFP employs several private lands habitat biologists, partners with several habitat conservation organizations and can assist with development of habitat offset/improvement plans. Examples of potential voluntary conservation measures could include (but are not limited to): working with landowners to create grazing management plans to enhance existing grassland habitats and increase forage production for livestock, installation of grazing infrastructure (water lines, fencing, etc.) to assist with rotational grazing, cedar removal in areas where encroachment is a threat to grasslands, conservation easements, prescribed burning plans, etc. Please contact us if you have any questions or would like to learn more about ways to improve or enhance working lands and existing grassland habitat in and around the project area.

Bats

South Dakota is home to 13 different bat species. Bats are long-lived (up to 30 years) and have low reproductive rates (1-2 pups/year). Because of this, direct mortality of bats has a disproportionately larger impact to populations. Bat mortality at wind energy facilities is one of the major concerns regarding wind energy impacts on wildlife (Arnett et al. 2016, O'Shea et al. 2016). Post-construction mortality surveys from existing wind energy facilities have shown that migratory tree-roosting bats such as the hoary bat (*Lasiurus cinereus*), eastern red bat (*Lasiurus borealis*), and silver-haired bat (*Lasionycteris noctivagans*), have the highest rates of mortality during their fall migration at wind energy facilities.

To avoid impacts to tree roosting bats, GFP recommends siting turbines at least 1,000 feet away from suitable bat habitat (e.g., forested areas, woody draws, etc.).

Raptors

Raptors (hawks, eagles, falcons, kestrels, owls, vultures, etc.) can be adversely affected by improperly sited wind energy facilities (Watson et al. 2018). Wind turbines can directly affect raptors via mortality from turbine blade strikes. Some research also suggests displacement of nesting raptors from suitable habitat (Hunt and Hunt 2006, Higgins et al. 1996). Turbines placed near escarpments or cliffs may pose a greater threat to soaring raptors due to the use of orographic updraft. Turbines sited near roosting sites, known nest locations, known stop-over sites, forest edges and proximity to water could also increase the risk of turbine strikes to raptors. On-going research and modeling efforts from the National Renewable Energy Lab suggest that collision risk for Golden Eagles is related to a combination of atmospheric updraft (e.g. thermal currents), as well as orographic updraft

(<https://www.nrel.gov/news/program/2021/novel-modeling-tool-seeks-insight-into-eagle-flight.html>).

The modelling efforts associated with this research are not yet available for use, however we provide this information for your consideration when assessing risk to soaring raptors (specifically Eagles) and the decision of whether the project will pursue an eagle take permit.

Whooping Cranes

The whooping crane is a state and federal endangered species with only one naturally occurring population. Members of this population pass through South Dakota as they migrate to and from Aransas National Wildlife Refuge in Texas to Wood Buffalo National Park in Canada. Whooping Cranes can be spotted almost anywhere in South Dakota during migration (even as far west as Rapid City, SD). However, reported sightings are most frequent near central South Dakota. Whooping cranes are large (1.5 m) birds and can have difficulty maneuvering quickly to avoid collision with powerlines and other tall structures. Powerline strikes are the most common form of mortality for fledged whooping cranes. The proposed project is located 41 miles east of the 95% migration corridor, and likely does not pose a substantial risk to whooping cranes.

Fish Species Potentially Present in the Project Area

The Topeka Shiner is a small-bodied prairie stream fish. These fish typically inhabit mid-sized prairie streams. Topeka shiners are known to inhabit Hidewood Creek, which is adjacent to the proposed project boundary. It's unclear if any impacts will occur in or near Hidewood Creek from the project. To avoid impacts to Topeka Shiner, we recommend horizontal directional drilling at any stream crossings where Topeka Shiner are known to occur. Under Section 7 of the Endangered Species Act, the U.S. Fish and Wildlife Service has authority over federally listed species. We urge you to coordinate with the U.S. Fish and Wildlife Service South Dakota Ecological Services office further on this matter.

In addition to Topeka Shiner, our search of the Natural Heritage Database also documented records of two fish species of greatest conservation need, the Hornyhead chub and Blackside Darter in Cobb Creek, which flows through the project area. It's unclear if any impacts will occur in or near Cobb Creek from the project. To avoid impacts to sensitive fish species, we again recommend horizontal directional drilling at any stream crossings on Cobb Creek.

OTHER CONSIDERATIONS

Public Lands

South Dakota is home to approximately 5 million acres of publicly accessible lands for hunting, fishing, and recreation. Public lands provide a multitude of recreational opportunities such as fishing, hunting, hiking, biking, bird watching, camping, boating, swimming, and educational opportunities. Public lands also provide a wide diversity of habitat that supports hundreds of species including birds, bats, amphibians, insects, and plants. To protect the recreational, educational, and biological integrity of these lands, they need to be identified early in the development process. Some areas may have special designations that prohibit wind energy facilities. Spatial information on public lands can be found at <https://gfp.sd.gov/maps/> and on our Environmental Review Tool. We recommend reviewing both sources of information.

If GFP owned lands (Game Production Areas) or private lands leased for hunting access (e.g., Walk-In-Area program) will be impacted by project activities, GFP requests to be notified of construction timelines, infrastructure siting and details of the potential disruption in order assess impacts to public access as well as to notify the public of any impacts to these areas. If private lands leased for hunting

access (Walk-In-Areas) will be permanently affected or hunting access prohibited, GFP may recommend voluntary mitigation/off sets to public access. It appears that one parcel of Walk-In-Area land and part or all of the Singaas Game Production Area are located within the project boundary and may be impacted by the construction and operation of the proposed wind energy facility. It is unclear at this time whether these parcels will be permanently or temporarily impacted by construction. In addition to Walk-in-Area and Game Production Areas, the project area also contains Waterfowl Production Areas, which are owned and managed by the USFWS.

Powerlines

New power lines/transmission lines are often associated with a proposed wind energy project. Powerline strikes and electrocutions are a known cause of mortality to birds. GFP recommends implementing mitigation measures described in The Avian Power Line Interaction Committee guidelines (<https://www.aplic.org/>), such as marking overhead lines to help prevent collisions. Additionally, GFP recommends avoiding placement of over-head powerlines adjacent to or between bodies of water (wetlands and lakes), as this could increase the risk of bird strikes, particularly for waterfowl. We further recommend burying collection and transmission lines when possible.

Post-Construction Surveys

GFP typically recommends at least 2 years of post-construction wildlife mortality monitoring. We also recommend the developer draft a Bird and Bat Conservation Strategy/Wildlife Conservation Plan to include with project plans after wildlife surveys and project siting is complete (or near complete).

SUMMARY

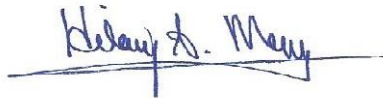
Thank you for the opportunity to provide comments on the proposed development of Deuel Harvest South Wind Facility in Deuel County, South Dakota. We strive to work with developers of wind projects to balance wildlife conservation with wind energy development in our state. In summary, GFP recommends the following to avoid or minimize impacts to wildlife, wildlife habitats and public lands:

- Consulting with GFP and USFWS early and often during the development of the project
- Making annual data requests from the South Dakota Natural Heritage Database or the Environmental Review Tool
- Conducting desktop analysis of project area to assess initial risks to wildlife and wildlife habitat
- Conducting appropriate field surveys to assess wildlife habitat and wildlife use
- Use results of wildlife field surveys to inform project siting (e.g., if a project identifies sensitive wildlife habitat or a resource rich area, the project should consider relocation)
- Calculating direct and indirect impacts of proposed project
- Avoid siting of project infrastructure in grassland, especially undisturbed grasslands
 - If grassland habitats cannot be avoided, minimize the number of turbines or site on the edges of grassland habitats rather than in large intact blocks
 - If avoidance and minimization measures cannot be utilized, GFP may recommend mitigation in the form of voluntary habitat offsets/compensation

- Prepare a voluntary habitat offset/compensation plan for unavoidable impacts to grassland habitats in the project area based on the Avian Impact Offset Method (Shaffer et al. 2019)
- Site project infrastructure in previously disturbed areas as much as possible
- Avoid siting project infrastructure in wetlands, streams, or waterbodies, as well as in wetland complexes
- Assess cumulative effects of the proposed project
- Assess impacts of the proposed project on public lands, publicly accessible lands and notify GFP of any anticipated impacts from the project

Please keep GFP involved in all future correspondence. We would appreciate a chance to review any proposed turbine lay-outs or more specific information related to project infrastructure siting when it is available. For any additional questions or information, please contact me at 605.773.6208 or the email below.

Sincerely,



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cc: Natalie Gates (USFWS Pierre)
Bryan Gasper (Burns & McDonnell)
Darren Kearney (SD PUC)
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<https://www.fws.gov/office/south-dakota-ecological-services>



In Reply Refer To:
 Project Code: 2023-0011025
 Project Name: Deuel Wind Project

November 01, 2022

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The enclosed species list identifies threatened, endangered, proposed and candidate species, as well as proposed and final designated critical habitat, that may occur within the boundary of your proposed project and/or may be affected by your proposed project. The species list fulfills the requirements of the U.S. Fish and Wildlife Service (Service) under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*).

New information based on updated surveys, changes in the abundance and distribution of species, changed habitat conditions, or other factors could change this list. Please feel free to contact us if you need more current information or assistance regarding the potential impacts to federally proposed, listed, and candidate species and federally designated and proposed critical habitat. Please note that under 50 CFR 402.12(e) of the regulations implementing section 7 of the Act, the accuracy of this species list should be verified after 90 days. This verification can be completed formally or informally as desired. The Service recommends that verification be completed by visiting the ECOS-IPaC website at regular intervals during project planning and implementation for updates to species lists and information. An updated list may be requested through the ECOS-IPaC system by completing the same process used to receive the enclosed list.

The purpose of the Act is to provide a means whereby threatened and endangered species and the ecosystems upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of threatened and endangered species and to determine whether projects may affect threatened and endangered species and/or designated critical habitat.

A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2))

(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If a Federal agency determines, based on the Biological Assessment or biological evaluation, that listed species and/or designated critical habitat may be affected by the proposed project, the agency is required to consult with the Service pursuant to 50 CFR 402. In addition, the Service recommends that candidate species, proposed species and proposed critical habitat be addressed within the consultation. More information on the regulations and procedures for section 7 consultation, including the role of permit or license applicants, can be found in the "Endangered Species Consultation Handbook" at:

<https://www.fws.gov/media/endangered-species-consultation-handbook>

Migratory Birds: In addition to responsibilities to protect threatened and endangered species under the Endangered Species Act (ESA), there are additional responsibilities under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA) to protect native birds from project-related impacts. Any activity, intentional or unintentional, resulting in take of migratory birds, including eagles, is prohibited unless otherwise permitted by the U.S. Fish and Wildlife Service (50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)). For more information regarding these Acts see <https://www.fws.gov/law/bald-and-golden-eagle-protection-act>, <https://www.fws.gov/media/endangered-species-act-1>, and/or <https://www.fws.gov/law/migratory-bird-treaty-act-1918>.

The MBTA has no provision for allowing take of migratory birds that may be unintentionally killed or injured by otherwise lawful activities. It is the responsibility of the project proponent to comply with these Acts by identifying potential impacts to migratory birds and eagles within applicable NEPA documents (when there is a federal nexus) or a Bird/Eagle Conservation Plan (when there is no federal nexus). Proponents should implement conservation measures to avoid or minimize the production of project-related stressors or minimize the exposure of birds and their resources to the project-related stressors. For more information on avian stressors and recommended conservation measures see <https://www.fws.gov/birds/bird-enthusiasts/threats-to-birds.php>.

In addition to MBTA and BGEPA, Executive Order 13186: *Responsibilities of Federal Agencies to Protect Migratory Birds*, obligates all Federal agencies that engage in or authorize activities that might affect migratory birds, to minimize those effects and encourage conservation measures that will improve bird populations. Executive Order 13186 provides for the protection of both migratory birds and migratory bird habitat. For information regarding the implementation of Executive Order 13186, please visit <https://www.fws.gov/law/migratory-birds>

Please be aware that bald and golden eagles are protected under the Migratory Bird Treaty Act (16 U.S.C. §§ 703-712, as amended), as well as the Bald and Golden Eagle Protection Act (16 U.S.C. 668 et seq.). Projects affecting these species may benefit from the development of an Eagle Conservation Plan (ECP), see guidance at this website (<https://www.fws.gov/node/266177>). An ECP can assist developers in achieving compliance with regulatory requirements, help avoid "take" of eagles at project sites, and

provide biological support for eagle permit applications. Additionally, we recommend wind energy developments adhere to our Land-based Wind Energy Guidelines for minimizing impacts to migratory birds and bats.

We have recently updated our guidelines for minimizing impacts to migratory birds at projects that have communication towers (including meteorological, cellular, digital television, radio, and emergency broadcast towers). These guidelines can be found at:

<https://www.fws.gov/story/incidental-take-beneficial-practices-communication-towers>
<http://www.towerkill.com>

According to National Wetlands Inventory maps, (available online at <https://www.fws.gov/library/collections/national-wetland-inventory>) wetlands exist adjacent to the proposed construction corridor. If a project may impact wetlands or other important fish and wildlife habitats, the U.S. Fish and Wildlife Service (Service), in accordance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321-4347) and other environmental laws and rules, recommends complete avoidance of these areas, if possible. If this is not possible, attempts should be made to minimize adverse impacts. Finally if adverse impacts are unavoidable, measures should be undertaken to replace the impacted areas. Alternatives should be examined and the least damaging practical alternative selected. If wetland impacts are unavoidable, a mitigation plan addressing the number and types of wetland acres to be impacted, and the methods of replacement should be prepared and submitted to the resource agencies for review.

Please check with your local wetland management district to determine whether Service interest lands exist at the proposed project site, the exact locations of these properties, and any additional restrictions that may apply regarding these sites. The Offices are listed below. If you are not sure which office to contact, we can help you make that decision.

U.S. Fish and Wildlife Service, Huron Wetland Management District, Federal Building, Room 309, 200 4th Street SW, Huron, SD 57350; telephone (605) 352-5894. Counties in the Huron WMD: Beadle, Buffalo, Hand, Hughes, Hyde, Jerauld, Sanborn, Sully.

U.S. Fish and Wildlife Service, Lake Andes Wetland Management District, P O Box 18, Pickstown, South Dakota, 57367; telephone (605) 487-7603. Counties in the Lake Andes WMD: Aurora, Brule, Charles Mix, Davison, Douglas.

U.S. Fish and Wildlife Service, Madison Wetland Management District, P.O. Box 48, Madison, South Dakota, 57042, telephone (605) 256-2974. Counties in the Madison WMD: Bon Homme, Brookings, Clay, Deuel, Hamlin, Hanson, Hutchinson, Kingsbury, Lake, Lincoln, McCook, Miner, Minnehaha, Moody, Turner, Union, Yankton.

U.S. Fish and Wildlife Service, Sand Lake Wetland Management District, 39650 Sand Lake Drive, Columbia, South Dakota, 57433; telephone (605) 885-6320. Counties in the Sand Lake WMD: Brown, Campbell, Edmunds, Faulk, McPherson, Potter, Spink, Walworth.

U.S. Fish and Wildlife Service, Waubay Wetland Management District, 44401 134A Street, Waubay,

South Dakota, 57273; telephone (605) 947-4521. Counties in the Waubay WMD: Clark, Codington, Day, Grant, Marshall, Roberts.

You are welcome to visit our website (<https://www.fws.gov/office/southdakota-ecological-services>) or to contact our office/staff at the address or phone number above for more information.

We appreciate your concern for threatened and endangered species. The Service encourages Federal agencies to include conservation of threatened and endangered species into their project planning to further the purposes of the Act. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office.

Attachment(s):

- Official Species List
- USFWS National Wildlife Refuges and Fish Hatcheries
- Migratory Birds
- Wetlands

Official Species List

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

South Dakota Ecological Services Field Office

420 South Garfield Avenue, Suite 400

Pierre, SD 57501-5408

(605) 224-8693

Project Summary

Project Code: 2023-0011025

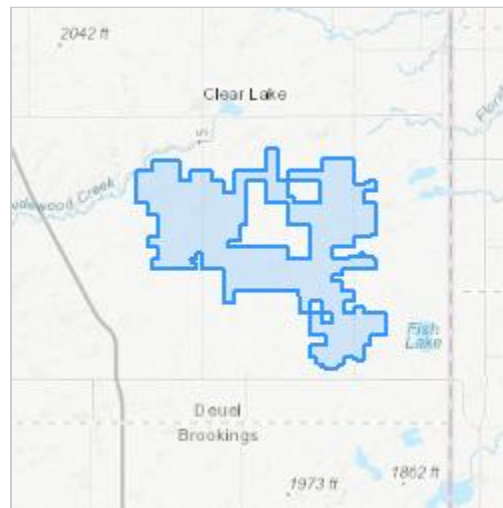
Project Name: Deuel Wind Project

Project Type: Power Gen - Wind

Project Description: Proposed wind energy facility in Deuel County, South Dakota

Project Location:

Approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@44.65217105,-96.60287540268854,14z>



Counties: Deuel County, South Dakota

Endangered Species Act Species

There is a total of 5 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

1. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Red Knot <i>Calidris canutus rufa</i> There is proposed critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1864	Threatened

Fishes

NAME	STATUS
Topeka Shiner <i>Notropis topeka</i> (=tristis) Population: Wherever found, except where listed as an experimental population There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/4122	Endangered

Insects

NAME	STATUS
Dakota Skipper <i>Hesperia dacotae</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/1028	Threatened
Monarch Butterfly <i>Danaus plexippus</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

USFWS National Wildlife Refuge Lands And Fish Hatcheries

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

The following FWS National Wildlife Refuge Lands and Fish Hatcheries lie fully or partially within your project area:

FACILITY NAME	ACRES
DEUEL COUNTY WATERFOWL PRODUCTION AREA https://www.fws.gov/refuges/profiles/index.cfm?id=64560	2,775.181

Migratory Birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described [below](#).

-
1. The [Migratory Birds Treaty Act](#) of 1918.
 2. The [Bald and Golden Eagle Protection Act](#) of 1940.
 3. 50 C.F.R. Sec. 10.12 and 16 U.S.C. Sec. 668(a)

The birds listed below are birds of particular concern either because they occur on the [USFWS Birds of Conservation Concern \(BCC\)](#) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ [below](#). This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the [E-bird data mapping tool](#) (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found [below](#).

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Baird's Sparrow <i>Ammodramus bairdii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5113	Breeds May 20 to Aug 15
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31

NAME	BREEDING SEASON
Black Tern <i>Chlidonias niger</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Franklin's Gull <i>Leucophaeus pipixcan</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Henslow's Sparrow <i>Ammodramus henslowii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10
Ruddy Turnstone <i>Arenaria interpres morinella</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Western Grebe <i>aechmophorus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31

Probability Of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see

below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

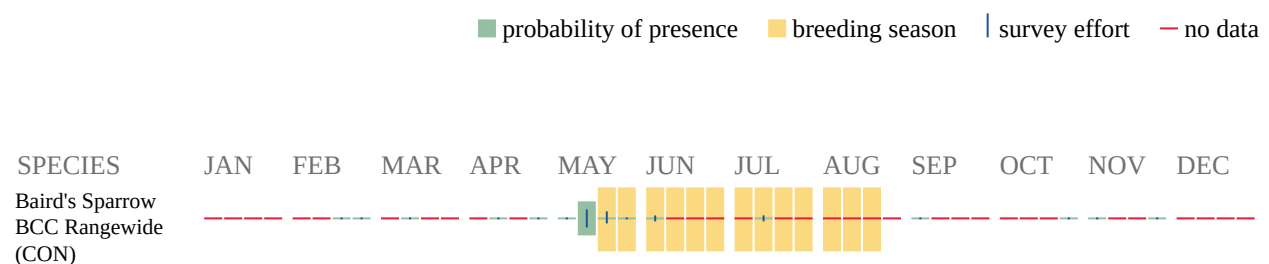
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide conservation measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

Migratory Birds FAQ

Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Conservation Measures](#) describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#)

may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle ([Eagle Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);

2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities,

should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Wetlands

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

WETLAND INFORMATION WAS NOT AVAILABLE WHEN THIS SPECIES LIST WAS GENERATED.
PLEASE VISIT [HTTPS://WWW.FWS.GOV/WETLANDS/DATA/MAPPER.HTML](https://www.fws.gov/wetlands/data/mapper.html) OR CONTACT THE FIELD OFFICE FOR FURTHER INFORMATION.

IPaC User Contact Information

Agency: Burns & McDonnell
Name: Jacob Schaffer
Address: 8201 Norman Center Drive, Suite #500
City: Bloomington
State: MN
Zip: 55437
Email: jrschaffer@burnsmcd.com
Phone: 6514855826

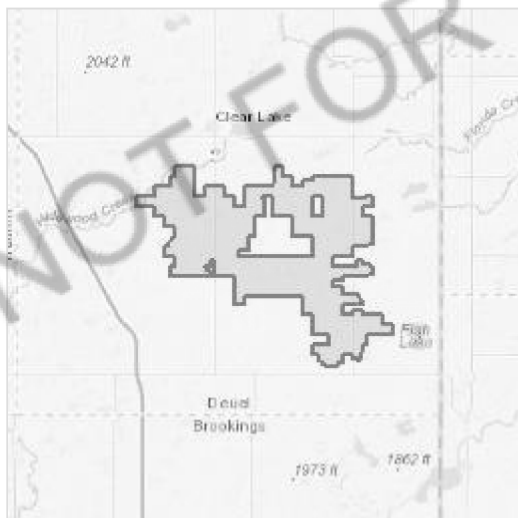
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Deuel County, South Dakota



Local office

South Dakota Ecological Services Field Office

☎ (605) 224-8693

📠 (605) 224-1416

420 South Garfield Avenue Suite 400 **149 of 216**

NOT FOR CONSULTATION

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

-
1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).

2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Northern Long-eared Bat <i>Myotis septentrionalis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9045	Threatened

Birds

NAME	STATUS
Red Knot <i>Calidris canutus rufa</i> Wherever found There is proposed critical habitat for this species. https://ecos.fws.gov/ecp/species/1864	Threatened

Fishes

NAME	STATUS
Topeka Shiner <i>Notropis topeka</i> (=tristis) There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/4122	Endangered

Insects

NAME	STATUS
Dakota Skipper <i>Hesperia dacotae</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/1028	Threatened
Monarch Butterfly <i>Danaus plexippus</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act¹ and the Bald and Golden Eagle Protection Act².

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern <https://www.fws.gov/program/migratory-birds/species>
- Measures for avoiding and minimizing impacts to birds
<https://www.fws.gov/library/collections/avoiding-and-minimizing-incident-take-migratory-birds>
- Nationwide conservation measures for birds
<https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Baird's Sparrow <i>Ammodramus bairdii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/5113	Breeds May 20 to Aug 15
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Dec 1 to Aug 31
Black Tern <i>Chlidonias niger</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3093	Breeds May 15 to Aug 20
Bobolink <i>Dolichonyx oryzivorus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 20 to Jul 31
Chimney Swift <i>Chaetura pelagica</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Mar 15 to Aug 25
Franklin's Gull <i>Leucophaeus pipixcan</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 1 to Jul 31
Henslow's Sparrow <i>Ammodramus henslowii</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3941	Breeds May 1 to Aug 31
Red-headed Woodpecker <i>Melanerpes erythrocephalus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds May 10 to Sep 10

Ruddy Turnstone *Arenaria interpres morinella*

Breeds elsewhere

This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Western Grebe *aechmophorus occidentalis*

Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

<https://ecos.fws.gov/ecp/species/6743>

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (I)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

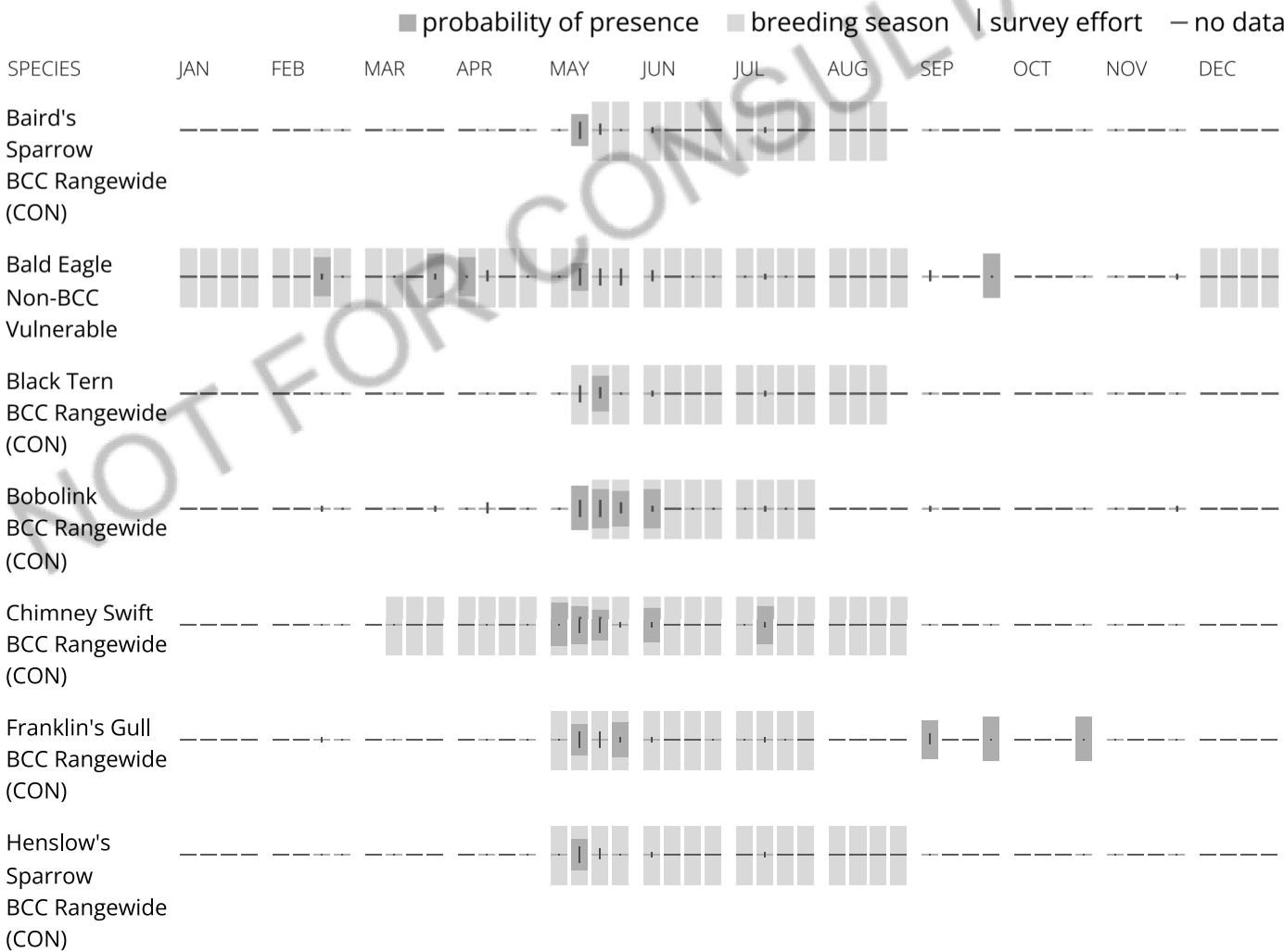
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

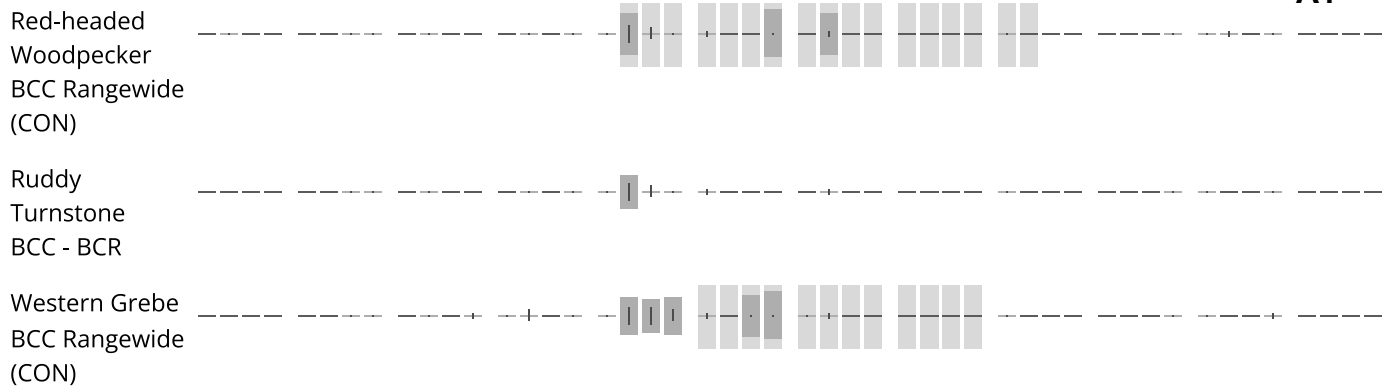
No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets.

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may query your location using the [RAIL Tool](#) and look at the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Eagle Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the [Diving Bird Study](#) and the [nanotag studies](#) or contact [Caleb Spiegel](#) or [Pam Loring](#).

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to [obtain a permit](#) to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

2/8/23, 8:05 AM

IPaC: Explore Location resources

A1

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

This location overlaps the following National Wildlife Refuge lands:

LAND	ACRES
DEUEL COUNTY WATERFOWL PRODUCTION AREA	2,775.18 acres

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies.

Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

NOT FOR CONSULTATION

Archived: Friday, June 14, 2024 7:33:13 AM
From: Phillips, Michelle
To: Ahlers, Bryce J
Cc: Giampoli, Andrea; Sievwright, Johanna
Subject: RE: [EXTERNAL] South Deuel Wind Introduction and USFWS Easements Questions
Importance: Normal

Thanks, Bryce. We appreciate the confirmation and feedback.

Michelle Phillips | Senior Associate, Environmental Compliance & Strategy
Invenergy | Houston, TX
mphillips@invenergy.com | C 251-327-7290
 Please consider the environment before printing this email

From: Ahlers, Bryce J <bryce_ahlers@fws.gov>
Sent: Tuesday, October 10, 2023 2:13 PM
To: Phillips, Michelle <MPhillips@invenergy.com>
Subject: RE: [EXTERNAL] South Deuel Wind Introduction and USFWS Easements Questions

Good afternoon,

I reviewed the KMZ attachment, the wetlands (Not the true wetland boundary) were identified correctly for each easement area that you have requested and aligns with Madison's WMDs interpretation. Please keep in mind, some of the wetland easement boundaries do fluctuate in high water years and we have those areas protected too.

Bryce Ahlers
 Wildlife Refuge Manager - Madison WMD
 U.S. Fish and Wildlife Service
 Eastern South Dakota Complex
 P.O. Box 48
 23520 SD HWY 19
 Madison SD, 57042
 605-636-3872 Direct
 605-256-2974 Office
 605-291-0164 Cell



From: Phillips, Michelle <MPhillips@invenergy.com>
Sent: Friday, October 6, 2023 2:21 PM
To: Ahlers, Bryce J <bryce_ahlers@fws.gov>
Cc: Sievwright, Johanna <JSiewwright@invenergy.com>; Giampoli, Andrea <AGiampoli@invenergy.com>; Hansen, Natoma <natoma_hansen@fws.gov>
Subject: RE: [EXTERNAL] South Deuel Wind Introduction and USFWS Easements Questions

Thank you, Bryce. The easement contracts and maps you provided were very helpful. Using a conservative approach, we digitized the easement boundaries to create geospatial data that we will use to inform infrastructure siting. Could you please review the kmz attached and confirm the content is accurate and aligns with Madison WMDs interpretation of the data? I can also send as shapefiles, if preferred.

We would like to be respectful of your time. While we no longer request a meeting given the materials you sent helped to answer our questions on several of the parcels within the project area, we are glad to schedule a call at your request.

Thank you for your consideration,

Michelle Phillips | Senior Associate, Environmental Compliance & Strategy
Invenergy | Houston, TX
mphillips@invenergy.com | C 251-327-7290
 Please consider the environment before printing this email

From: Ahlers, Bryce J <bryce_ahlers@fws.gov>
Sent: Tuesday, September 26, 2023 3:26 PM
To: Phillips, Michelle <MPhillips@invenergy.com>
Cc: Sievwright, Johanna <JSiewwright@invenergy.com>; Giampoli, Andrea <AGiampoli@invenergy.com>; Hansen, Natoma <natoma_hansen@fws.gov>
Subject: RE: [EXTERNAL] South Deuel Wind Introduction and USFWS Easements Questions

Good afternoon,

It is very nice to meet you via email. I received your contact information from Travis Runia who shared that you are the Madison Wetland Management District contact for topics related to existing USFWS easements in Deuel County. I am reaching out on behalf of the South Deuel Wind project currently in development in Deuel County, South Dakota. We are working to better understand the USFWS easements located within the project area, and we would appreciate an opportunity to discuss with you. Do you have availability this week or next to join a call?

Yes, Natoma and I could meet next week or later to discuss the project, that is if the government is still operating and not shut down.

As we are considering placing infrastructure in this area, we would like to request your help to clarify the easement boundaries. I have attached a kmz file of parcels in consideration for wind project infrastructure that have a USFWS easement on all or a portion of the parcels according to the [FWS National Realty Tract Simplified](#) data layer.

1. Does the Madison WMD office have access to the easement agreements and/or maps for the Madison WMD managed land parcels shown in the kmz file and could you share them with us?
 Attached are the easement contracts and maps associated with your proposed project area.
2. Can we assume that any wetland easement identified on a WPA/WMA or other parcel with a USFWS easement is specific to the delineated wetland basin on the parcel and that only grassland easements are for the full parcel?
 Correct, the attached wetland easement maps will identify the wetland areas that are protected per parcel of land.

During development of Deuel Harvest North Wind project in 2016-2020, we worked with Natoma Hansen from the Madison WMD on several occasions to complete similar coordination regarding parcels in question at that time. Natoma provided easement contracts and maps to help inform us of where easements were located and potential areas of overlap by project infrastructure. Please let us know if there is anything additional we can send to assist. We look forward to working with you.

Thank you,

Bryce Ahlers
Wildlife Refuge Manager - Madison WMD
U.S. Fish and Wildlife Service
Eastern South Dakota Complex
P.O. Box 48
23520 SD HWY 19
Madison SD, 57042
605-636-3872 Direct
605-256-2974 Office
605-291-0164 Cell



From: Phillips, Michelle <MPhillips@invenergy.com>
Sent: Tuesday, September 26, 2023 10:51 AM
To: Ahlers, Bryce J <bryce_ahlers@fws.gov>
Cc: Sievewright, Johanna <JSievewright@invenergy.com>; Giampoli, Andrea <AGiampoli@invenergy.com>
Subject: [EXTERNAL] South Deuel Wind Introduction and USFWS Easements Questions

This email has been received from outside of DOI - Use caution before clicking on links, opening attachments, or responding.

Hi Bryce,

It is very nice to meet you via email. I received your contact information from Travis Runia who shared that you are the Madison Wetland Management District contact for topics related to existing USFWS easements in Deuel County. I am reaching out on behalf of the South Deuel Wind project currently in development in Deuel County, South Dakota. We are working to better understand the USFWS easements located within the project area, and we would appreciate an opportunity to discuss with you. Do you have availability this week or next to join a call?

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During development of Deuel Harvest North Wind project in 2016-2020, we worked with Natoma Hansen from the Madison WMD on several occasions to complete similar coordination regarding parcels in question at that time. Natoma provided easement contracts and maps to help inform us of where easements were located and potential areas of overlap by project infrastructure. Please let us know if there is anything additional we can send to assist. We look forward to working with you.

Thank you,

Michelle Phillips | Senior Associate, Environmental Compliance & Strategy
Invenergy | Houston, TX
mphillips@invenergy.com | C 251-327-7290
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U.S. Fish and Wildlife Service (USFWS), South Dakota Game, Fish and Parks (SDGFP), Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell), and Invenergy Development Progress, and Study Results Review – South Deuel Wind Project

Attendees:

Natalie Gates, USFWS Fish and Wildlife Biologist
 Hilary Morey, SDGFP Wildlife Biologist
 Michelle Phillips, Invenergy
 Johanna Sievwright, Invenergy
 Andrea Giampoli, Invenergy
 Monica Monterrosa, Invenergy
 Robert Young, Invenergy
 Bryan Gasper, Burns & McDonnell
 Christa Wisniewski, Burns & McDonnell

Location: Virtual/Microsoft Teams Meeting

Date / Time: October 11, 2023 / 1:00 PM CDT

Attachments: PowerPoint Presentation

Agenda

- Project introduction and development timeline
- Previous agency coordination
- Summary of environmental due diligence timeline
- Review of completed survey efforts
- Questions and feedback

Meeting Objective:

The objective of the meeting was to provide an update on development status of the South Deuel Wind Project (Project), located in Deuel County, South Dakota, to the U.S. Fish and Wildlife Service (USFWS) South Dakota Ecological Services Office and South Dakota Game, Fish and Parks (SDGFP) and provide methods and results for environmental surveys conducted since the previous meeting.

Introduction

R. Young presented the Project background, proposed development and permitting schedule, and proposed construction and commercial operation dates (COD). This included a brief discussion on the evolution of the Project boundary through refinement of the areas to be included/excluded.

M. Phillips provided a brief review of the previous agency consultation history related to the Project. Previous meetings to discuss the project were held May 25, 2017, February 13, 2018, and May 12, 2022. M. Phillips then provided the survey timeline for the Project, identifying which surveys have been ongoing or occurred since the last agency meeting.

Tier 1 & 2 Due Diligence

Site Characterization

M. Phillips reviewed a summary of the results of the Site Characterization Study (SCS) for the current Project boundary. This discussion included presentation of figures and results of desktop reviews for land cover type, wetlands and waterbodies, state and federal protected species with potential to occur, federal and state managed lands, designated USFWS critical habitat, and Audubon Important Bird Areas occurring in the project or at various buffer distances around the project. Additional discussion by N. Gates and M. Phillips focused on Invenergy's due diligence efforts that have been completed for additional coordination with the USFWS Madison Wetland Management District (WMD) to understand the extents of USFWS wetland and grassland easements within the Project. M. Phillips stated that Invenergy acquired easement information from the USFWS Madison WMD. Invenergy then digitized the information, and received confirmation back from USFWS WMD that the wetland areas were identified correctly for each easement that was requested for review and the digitized data aligns with Madison's WMDs interpretation. N. Gates asked whether any setbacks were provided by the WMD. M. Phillips responded that no setback recommendations were provided and stated that Project infrastructure will avoid the mapped easement areas.

No action items were specified for follow up for the Site Characterization Study.

Tier 3 Surveys

Large-bird Avian Use Surveys

M. Phillips summarized the objective, methods and results for year 3 of the surveys for large bird usage for the Project. The year 3 field efforts began in July 2021 and were completed in June 2022. A review of the survey points and methods for the survey relative to the current Project boundary were included in this summary. No federally listed species, state-listed species, or birds of conservation concern were observed. A summary of species of greatest conservation need observed was provided. The total number of bald eagles observed during the current study period were shared with a discussion of seasonality and location of observations. A comparison of bald eagle observations from year 1, year 2, and year 3 was presented. A review of the flight path data results, eagle use minutes by point count location, and eagle nest occupancies for bald eagle observations for the year 3 surveys was included. No golden eagles had been observed in the current effort.

No action items were specified for follow up for the Large-bird Avian Use Surveys.

Raptor Nest Surveys

M. Phillips summarized the objective, methods and results for the raptor nest surveys for the Project and a surrounding survey buffer including observations, locations, and occupancy status of eagle nests, red-tailed hawk nests, great horned owl nests, and one great blue heron rookery. The aerial flight was completed March 29, 2023 using 1-mile transects.

No action items were specified for follow up for the Raptor Nest Surveys.

Bald Eagle Nest Monitoring Surveys

M. Phillips summarized the objective, methods and results for ground-based observations of the bald eagle nests conducted from March to July 2023 within the Project boundary for documentation of eagle activity including spatial distribution and use.

No action items were specified for follow up for the Bald Eagle Nest Monitoring Surveys.

Northern Long-eared Bat Habitat Assessment

M. Phillips summarized the objective, methods, and results for the northern long-eared bat habitat assessment within the Project boundary. N. Gates asked about usage of the 2023 USFWS ECOS data set for northern long-eared bat habitat that generally focuses on woodlands and waterways within the range of the species in South Dakota. M. Phillips and A. Giampoli added the above referenced data layer for review into the presentation display that showed potentially suitable habitat as it relates to the Project area. Of the forested areas greater than 10 acres identified in the project area, all were outside of the 2023 ECOS data set. Invenergy inquired about guidance for a general approach to assessing forested areas within the overall range of the northern long-eared bat but not identified as potentially suitable habitat in the 2023 USFWS ECOS data set. N. Gates stated that the behavior of the northern long-eared bat is largely known based on studies on eastern subsets of the population and those found in the western extent of the known range, including South Dakota, may act somewhat differently and use areas that are generally more open with less woody structure but still contain some waterway or wetland. Additionally, the USFWS has plans for a multi-year study on the species in the western extent of the current range with the goal of gaining additional information on habitat and landscape usage by the species in the Great Plains and generally open areas. N. Gates also stated the current USFWS guidances for northern long-eared bats are only valid until April 2024 or new guidances are released. A. Giampoli inquired whether the current USFWS guidance confirms that forested areas outside of the identified range in the 2023 ECOS data set is not considered suitable habitat. N. Gates responded that it is difficult to make that determination when taking migration into consideration and predicting where they will travel. N. Gates asked whether H. Morey had additional information to add, and she stated that SDGFP refers to USFWS for bat guidance.

No action items were specified for follow up for the Northern Long-eared Bat Habitat Assessment.

Passive Bat Acoustic Surveys

M. Phillips summarized the objective, methods, and results for the passive bat acoustic surveys within the Project boundary including the number, diversity, and characterization of the recorded bat calls. The surveys were conducted from March 31 to November 22, 2023, at two monitoring locations using 3 microphone units. The first location was a met tower in the northwest area of the project. Microphones were placed low and high on the met tower. The second location was a ground-based unit in the southeast of the project. N. Gates inquired about the location of the ground-based detector. M. Phillips showed in the presentation display that it was near a wetland complex and some woodland habitat. N. Gates inquired how calls were categorized as *Myotis* spp. or *Perimyotis* spp. B. Gasper indicated that the calls recorded were filtered through appropriate bat acoustic analytical software(s) and then reviewed by an experienced and USFWS-permitted bat biologist. No potential *Myotis* or *Perimyotis* calls were identified.

No action items were specified for follow up for the Passive Bat Acoustic Surveys.

Grassland Assessment

M. Phillips summarized the objective, methods and results for the grassland assessment within the Project boundary to identify unbroken and broken grasslands within the project. Field review

of the potential grassland observation points for human disturbance and vegetation quality occurred in October 2022 and July to August 2023. M. Phillips presented the desktop review results showing boundaries and classifications of the grasslands. Grassland categorized as High were classified as unbroken. Those classified as Low or Medium were categorized as broken. Total acreages for both categories were presented. H. Morey asked for clarification on what “human disturbance” included in the context of this effort. M. Phillips and C. Wisniewski indicated that human disturbance included evidence of tillage, development, grazing, mowing, or haying.

No action items were specified for follow up for the Grassland Assessment.

Protected Butterfly Habitat Assessment

M. Phillips summarized the objective, methods, and results associated with the Protected Butterfly Habitat Assessment for the Project. Habitat assessment efforts were completed to identify potentially suitable habitat capable of supporting Dakota skippers or Poweshiek skipperlings. Efforts included field review in November 2022 and July to August 2023 of targeted areas following Skadsen 2017 for identification of plants, topographic features, and land usage that may result in suitable habitat capable of supporting protected butterfly species. M. Phillips noted that this effort was for the Project infrastructure footprint as proposed plus a conservative buffer and not for the entire Project area. Six areas of potential suitable habitat were identified.

No action items were specified for follow up for the Protected Butterfly Habitat Assessment.

Environmental Siting Review Summary

M. Phillips presented and reviewed a summary figure of environmental data and siting setbacks incorporated by the Project including turbine placement avoiding unbroken grasslands and potentially suitable habitat for protected butterfly species, turbine setbacks from eagle nests, great horned owl nests, a red tailed hawk nest, and northern long-eared bat habitat.

No action items were specified for follow up for the Environmental Siting Review Summary.

General Comments Unrelated to a Specific Slide in the Meeting

N. Gates asked for a review of the location and activity status of the noted heron rookery. M. Phillips showed the location of the rookery, northeast of the Project within the survey buffer, and that it was inactive during the latest survey event.

N. Gates asked about the purpose or reason for the hole in the Project boundary near the center of the Project. R. Young indicated that was to exclude the City of Brandt, South Dakota and some landowners.

H. Morey asked what level of community support has been perceived by Invenergy for the Project. R. Young summarized that in general the support has been positive, building upon Invenergy’s previous efforts for Deuel Harvest (i.e., Deuel North), other developments in the region, and Invenergy’s outreach efforts.

N. Gates added in general that eagle usage and mortality on the eastern side of South Dakota has been increasing. A. Giampoli noted this statement and added that Invenergy is monitoring the overall regulatory processes and changes for eagle permitting and is developing a BBCS. N. Gates

stated that she was generally aware of 2 bald eagle incidents in eastern South Dakota, 2 bald eagle incidents in western South Dakota, and 1 bald eagle incident in central South Dakota in “recent years”, respectively, by wind generation activities. This information was not formally documented by N. Gates, but she would ask internally about any tracking database of eagle incidents by the USFWS and whether that information is publicly available.

A request for any additional questions was made by M. Phillips. No additional questions or topics were raised and the meeting was ended.

Summary of Follow-Up Actions:

- USFWS would follow up regarding the presence of any eagle incident tracking database maintained by the agency.

Attachment:

- Adobe PDF file of ArcGIS presentation that supported the discussion.

South Deuel Wind Project

Coordination with US Fish & Wildlife Service, South Dakota Game, Fish, & Parks

October 11, 2023

Meeting Agenda

- Project Development Timeline Update
- Previous Agency Coordination
- Previous Survey Efforts (2016-2019)
- Current Survey Efforts (2022-2023)
- Next Steps and Feedback

South Deuel Wind

Deuel County, South Dakota



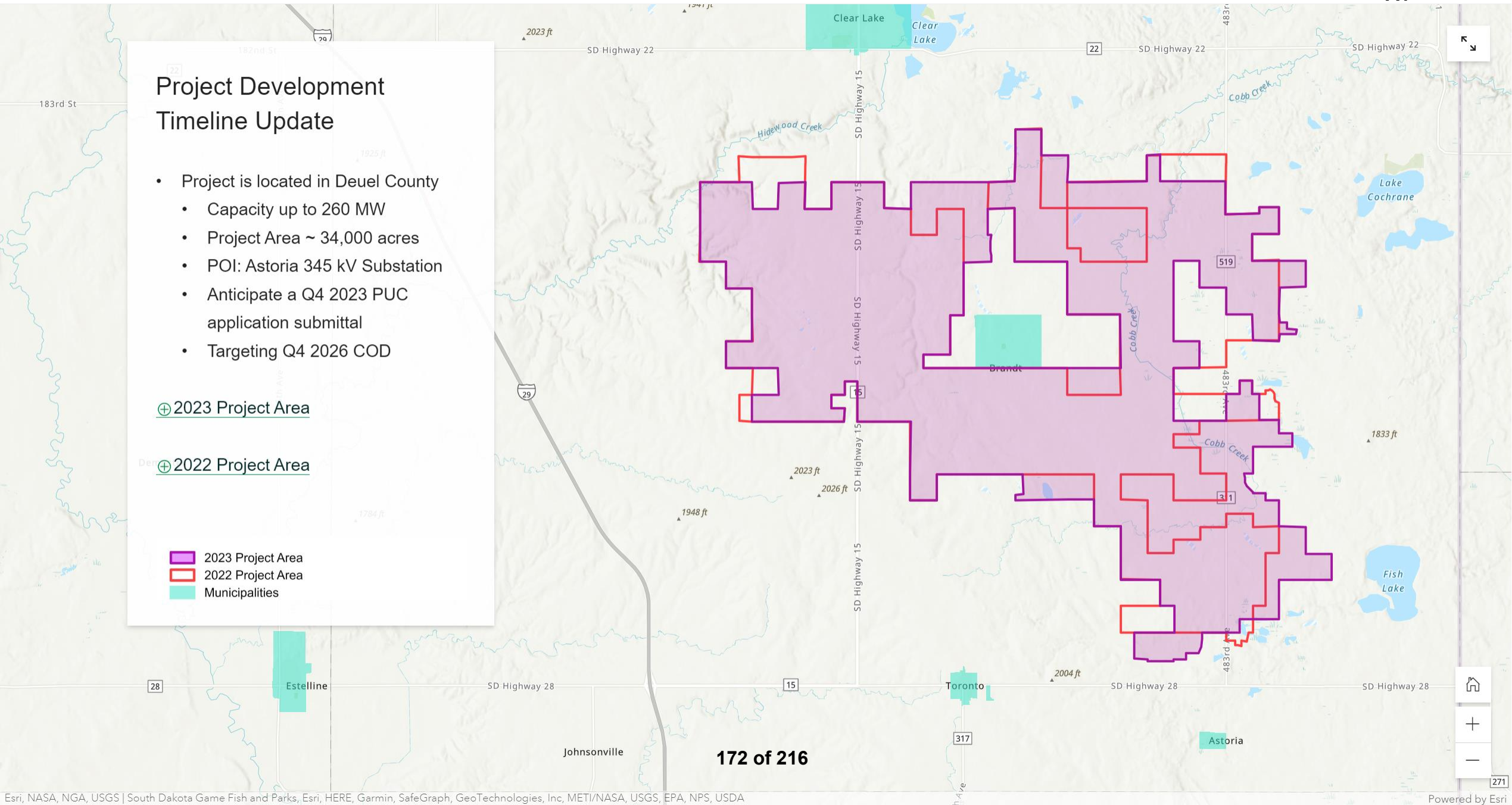
Project Development Timeline Update

- Project is located in Deuel County
 - Capacity up to 260 MW
 - Project Area ~ 34,000 acres
 - POI: Astoria 345 kV Substation
 - Anticipate a Q4 2023 PUC application submittal
 - Targeting Q4 2026 COD

 2023 Project Area

 2022 Project Area

-  2023 Project Area
-  2022 Project Area
-  Municipalities



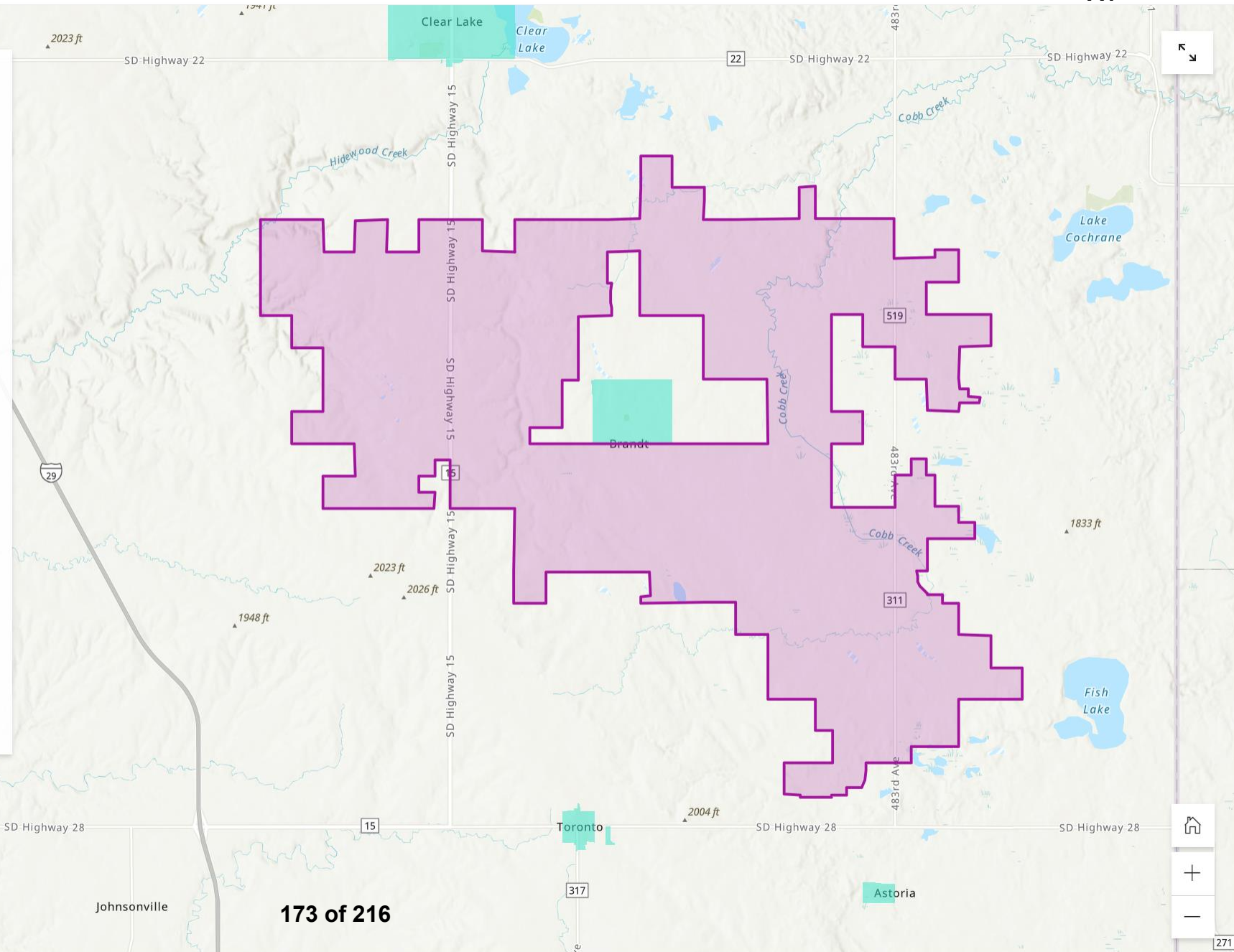
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⊗ 2023 Project Area

⊕ 2022 Project Area

 2023 Project Area
 2022 Project Area
 Municipalities



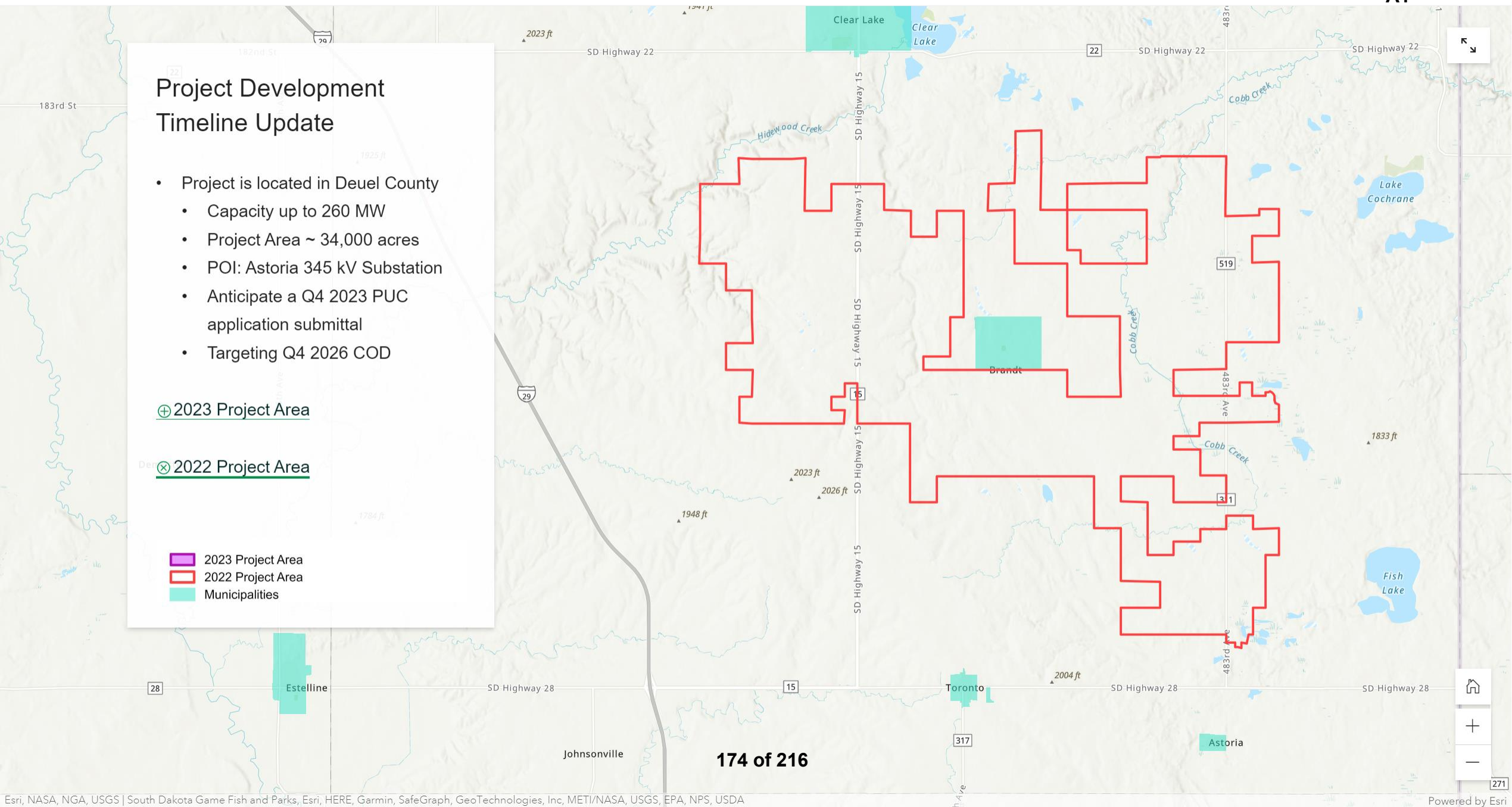
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 - Targeting Q4 2026 COD

 2023 Project Area

Deuel  2022 Project Area

-  2023 Project Area
-  2022 Project Area
-  Municipalities



Agency Coordination History

Meeting Location	Attendees	Date
Conference Call	Natalie Gates – USFWS Silka Kempema – SDGFP Leslie Murphy – SDGFP Erin Lieberman - Invenergy Michael Svedeman – Invenergy Andrea Giampoli – Invenergy	May 25, 2017
Conference Call	Natalie Gates – USFWS Silka Kempema – SDGFP Leslie Murphy – SDGFP Michael Svedeman – Invenergy Andrea Giampoli – Invenergy John Aquilino – Invenergy Bryan Gasper – Burns & McDonnell	February 13, 2018
Conference Call	Natalie Gates – USFWS Hilary Morey – SDGFP Jamie Wilson – Invenergy Michelle Phillips – Invenergy Monica Monterrosa – Invenergy Robert Young – Invenergy Dan Litchfield – Invenergy Bryan Gasper – Burns & McDonnell Christa Wisniewski – Burns & McDonnell	May 12, 2022

Invenergy

Survey Timeline

Study	Timeline
Tier 3 Avian Use Survey - YR 1	April 2016 – March 2017
Tier 3 Avian Use Survey – YR 2	May 2017 – April 2018
Tier 3 Bat Mist Netting	July – August 2016
Tier 1 & 2 Site Characterization Study	2016 – 2018, 2022, 2023
Tier 3 Avian Use Survey - YR 3	July 2021 – June 2022
Tier 3 Raptor Nest Survey	March – April 2016, 2017, 2019, 2022, 2023
Tier 3 Bald Eagle Nest Monitoring	March – July 2023
Tier 3 Northern Long-eared Bat Habitat Assessment	October 2022
Tier 3 Passive Bat Acoustic Survey	April – November 2016 & 2017, 2022
Tier 3 Grassland Assessment	October 2022, July – August 2023
Tier 3 Butterfly Habitat Assessment	August – September 2017, 2018, November 2022, July – August 2023
Tier 3 Wetland Delineations	September 2022, June – August 2023

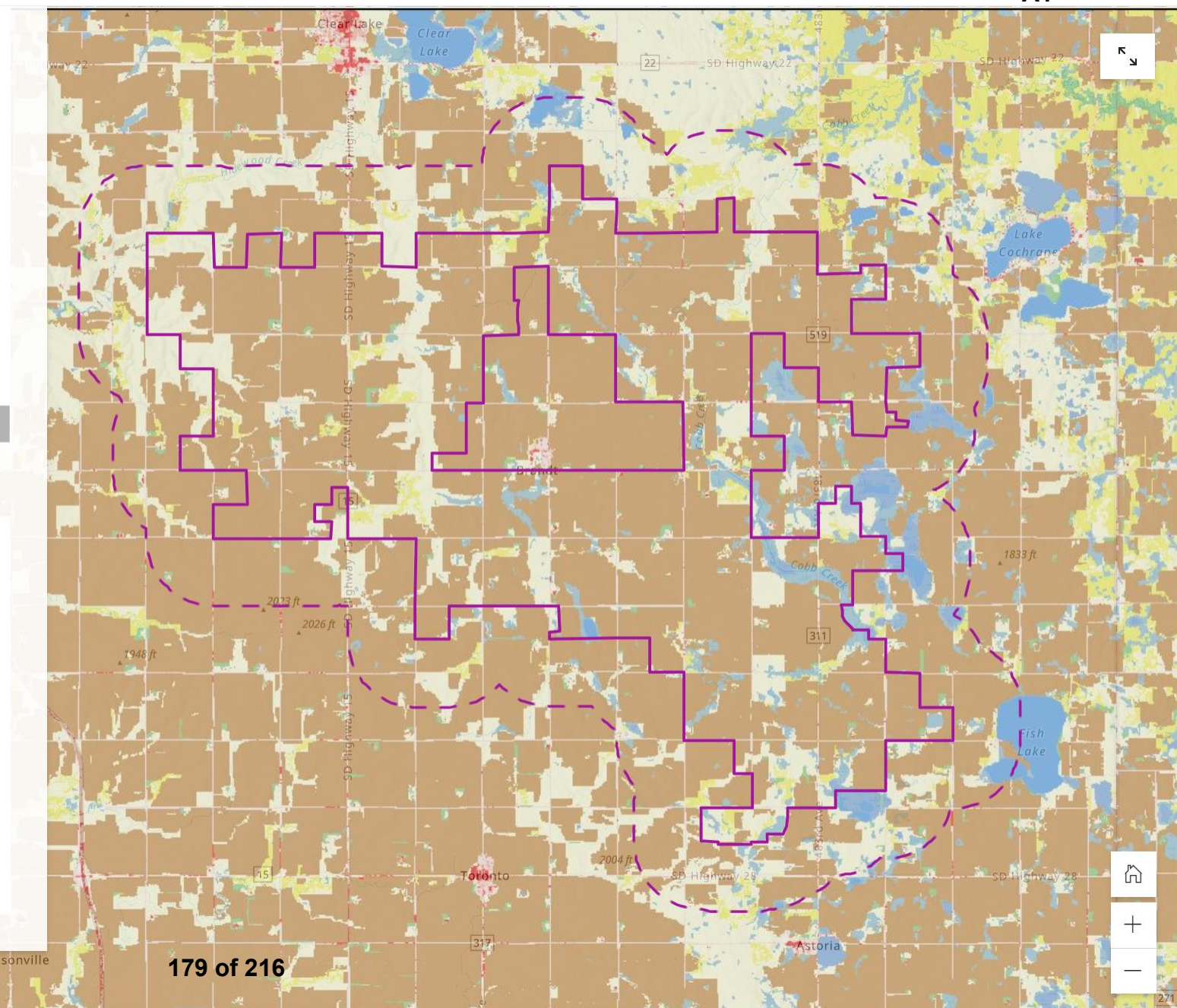
Tier 1 & 2 Site Characterization

Site Characterization: Land Cover (2 mile buffer)

Land Cover Type	Study Area: Acres	Study Area: (%)
Cultivated crops	48,292	67
Grassland/Herbaceous	14,048	20
Emergent herbaceous wetlands	3,255	5
Developed, open space	2,118	3
Pasture/hay	2,054	3
Open water	1,537	2
Deciduous forest	616	1
Developed, low intensity	153	<1
Developed, medium intensity	84	<1
Mixed forest	14	<1
Woody wetlands	11	<1
Developed, high intensity	8	<1
Shrub/Scrub	8	<1
Total	72,202	100

wetlands	3,255	5
Developed, open space	2,118	3
Pasture/hay	2,054	3
Open water	1,537	2
Deciduous forest	616	1
Developed, low intensity	153	<1
Developed, medium intensity	84	<1
Mixed forest	14	<1
Woody wetlands	11	<1
Developed, high intensity	8	<1
Shrub/Scrub	8	<1
Total	72,202	100

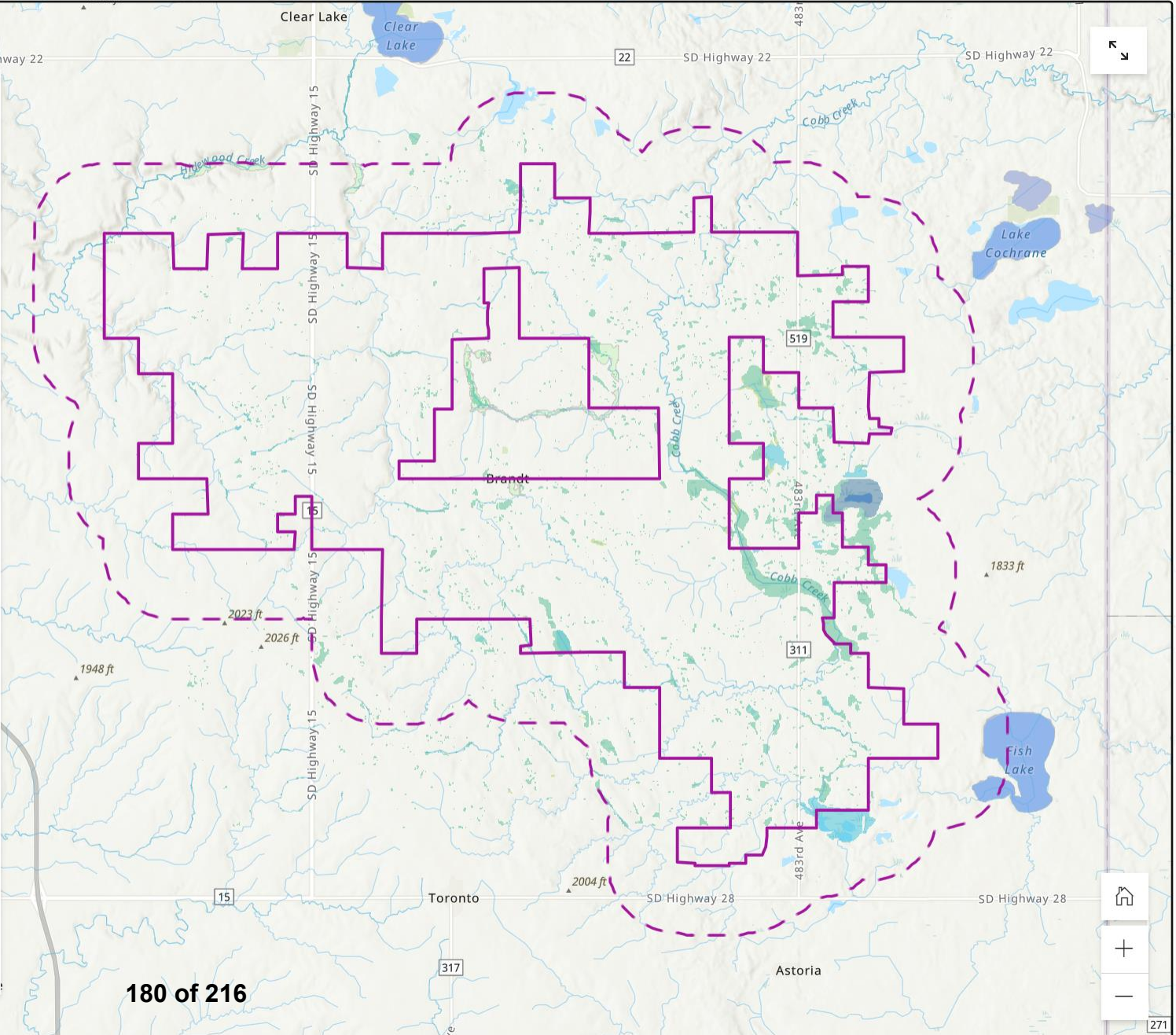
-  2023 Project Area
-  2 Mile Project Buffer
- Land Cover Type (NLCD)**
-  Open Water
-  Developed Open Space
-  Developed Low Intensity
-  Developed Medium Intensity
-  Developed High Intensity
-  Barren Land
-  Deciduous Forest
-  Mixed Forest
-  Shrub/Scrub
-  Grassland/Herbaceous
-  Pasture/Hay
-  Cultivated Crops
-  Woody Wetlands
-  Emergent Herbaceous Wetlands



Site Characterization: Wetland & Waterbodies (2 mile buffer)

Wetland Type	Study Area: Acres	Study Area: (%)
Freshwater Emergent Wetland	4,549	6
Freshwater Pond	451	<1
Freshwater Forested/Shrub Wetland	92	<1
Lake	944	<1
Riverine	246	<1
Total	6,282	

-  2023 Project Area
-  2 Mile Project Buffer
- Wetlands & Waterbodies**
-  Flowline (NHD)
-  Waterbody (NHD)
-  Floodplain (FEMA)
-  Freshwater Emergent Wetland (NWI)
-  Freshwater Pond (NWI)
-  Freshwater Forested/Shrub Wetland (NWI)
-  Riverine (NWI)
-  Lake (NWI)



Site Characterization: Managed Lands

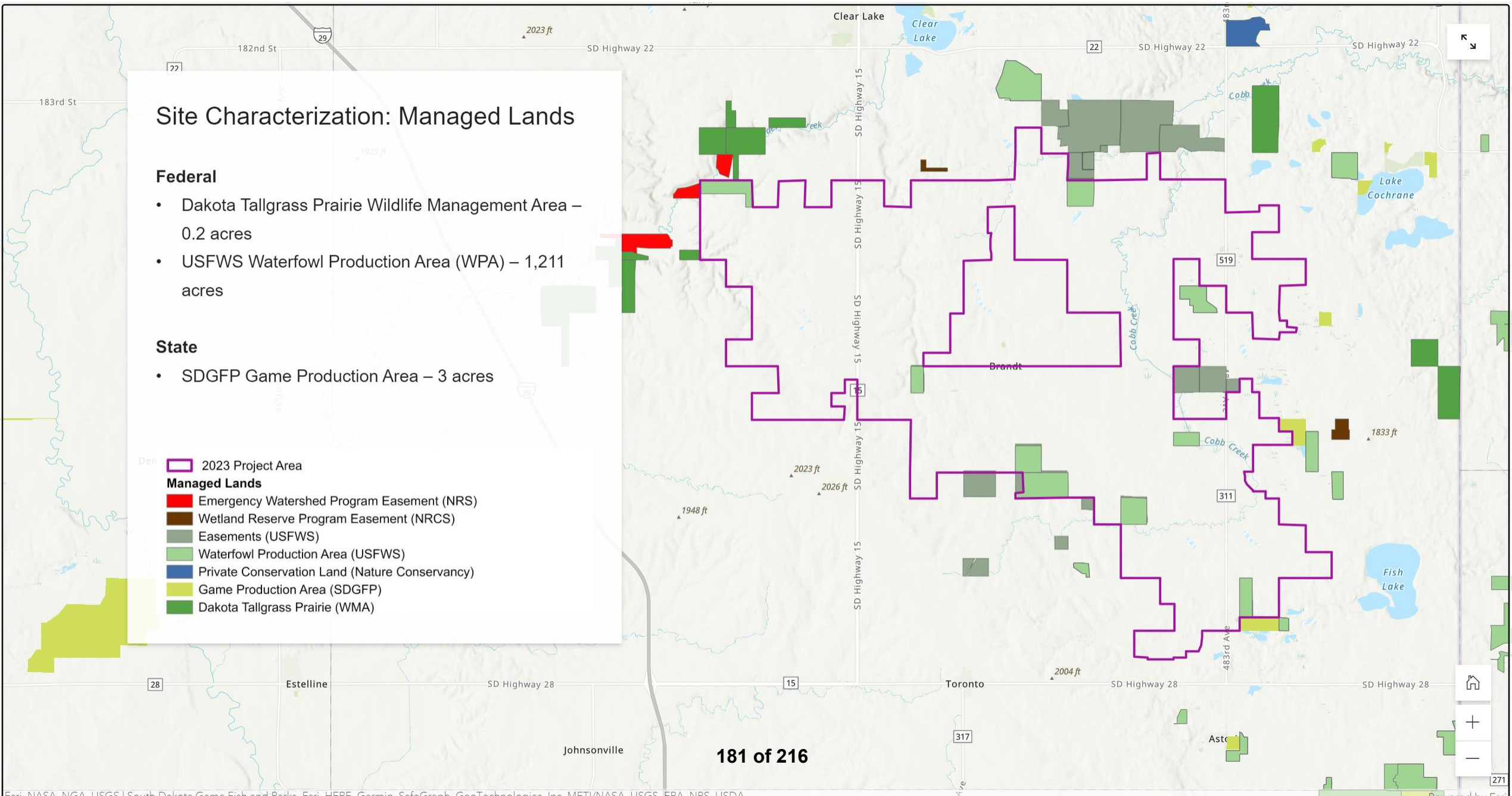
Federal

- Dakota Tallgrass Prairie Wildlife Management Area – 0.2 acres
- USFWS Waterfowl Production Area (WPA) – 1,211 acres

State

- SDGFP Game Production Area – 3 acres

-  2023 Project Area
- Managed Lands**
-  Emergency Watershed Program Easement (NRS)
-  Wetland Reserve Program Easement (NRCS)
-  Easements (USFWS)
-  Waterfowl Production Area (USFWS)
-  Private Conservation Land (Nature Conservancy)
-  Game Production Area (SDGFP)
-  Dakota Tallgrass Prairie (WMA)

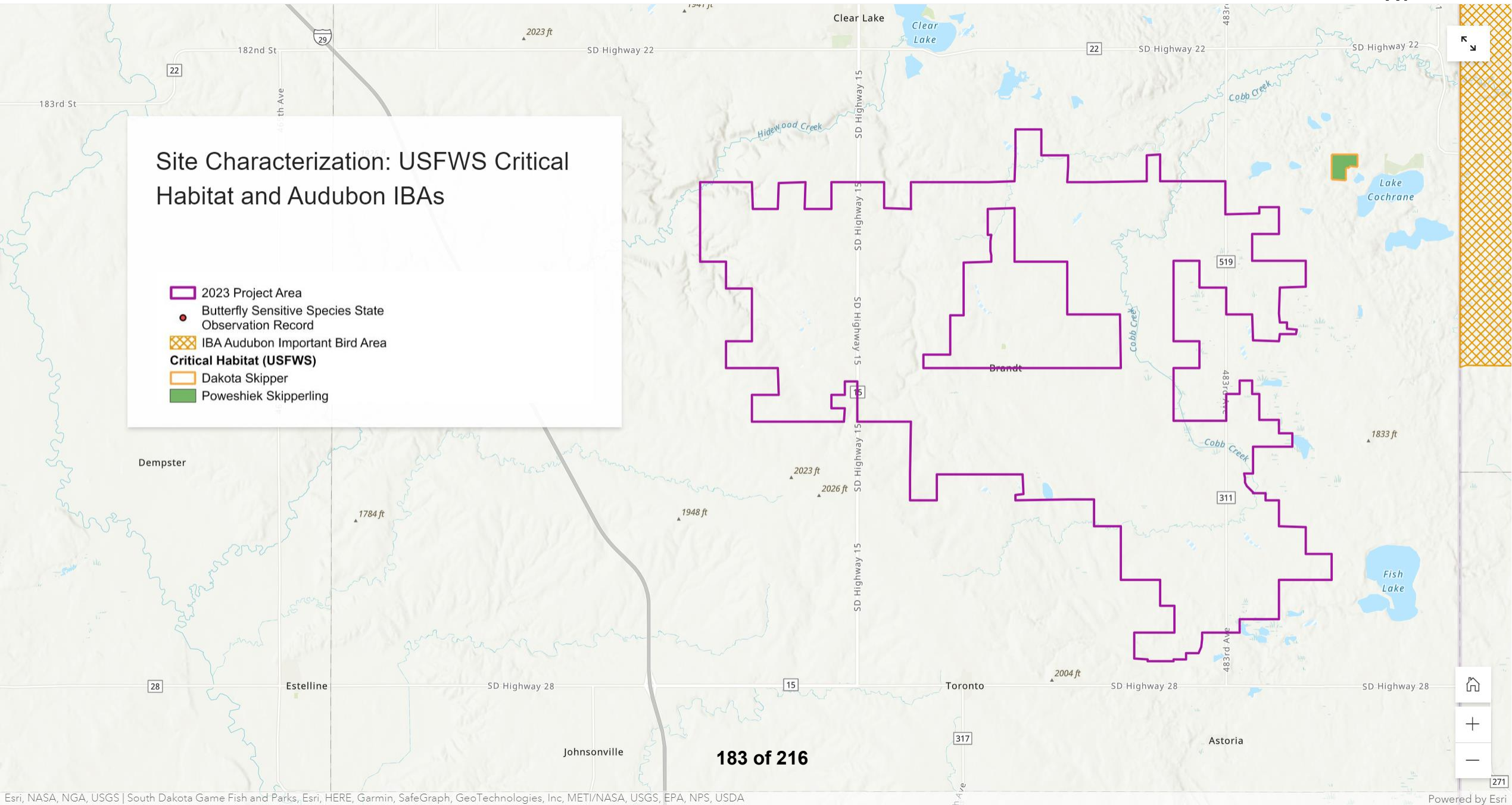


Site Characterization: Protected Species

Common Name	Federal and State Status	Potential for Occurrence
Northern long-eared bat	FE	Moderate
Tri-colored bat	FPE*	Moderate
Dakota skipper	FT	Moderate
Poweshiek skipperling	FE	Moderate
Rufa red-knot	FT	Low
Topeka shiner	FE	Low
Whooping crane	SE	Low
Osprey	ST	Low
Banded killifish	SE	Low
Northern redbelly dace	ST	Low
Northern river otter	ST	Low
Bald eagle	Protected	Moderate
Golden eagle	Protected	Low
Monarch Butterfly	Candidate	Moderate

Site Characterization: USFWS Critical Habitat and Audubon IBAs

-  2023 Project Area
-  Butterfly Sensitive Species State Observation Record
-  IBA Audubon Important Bird Area
- Critical Habitat (USFWS)**
 -  Dakota Skipper
 -  Poweshiek Skipperling



Tier 3 Surveys

Year 3 Avian Use Survey

Objectives

- Identify temporal and spatial use by large birds in the Project Area
- Document use of the Project Area by threatened, endangered, and other bird species of concern, including incidental observations
- Document eagle observations and minutes (in flight) and map eagle flight paths

Methods

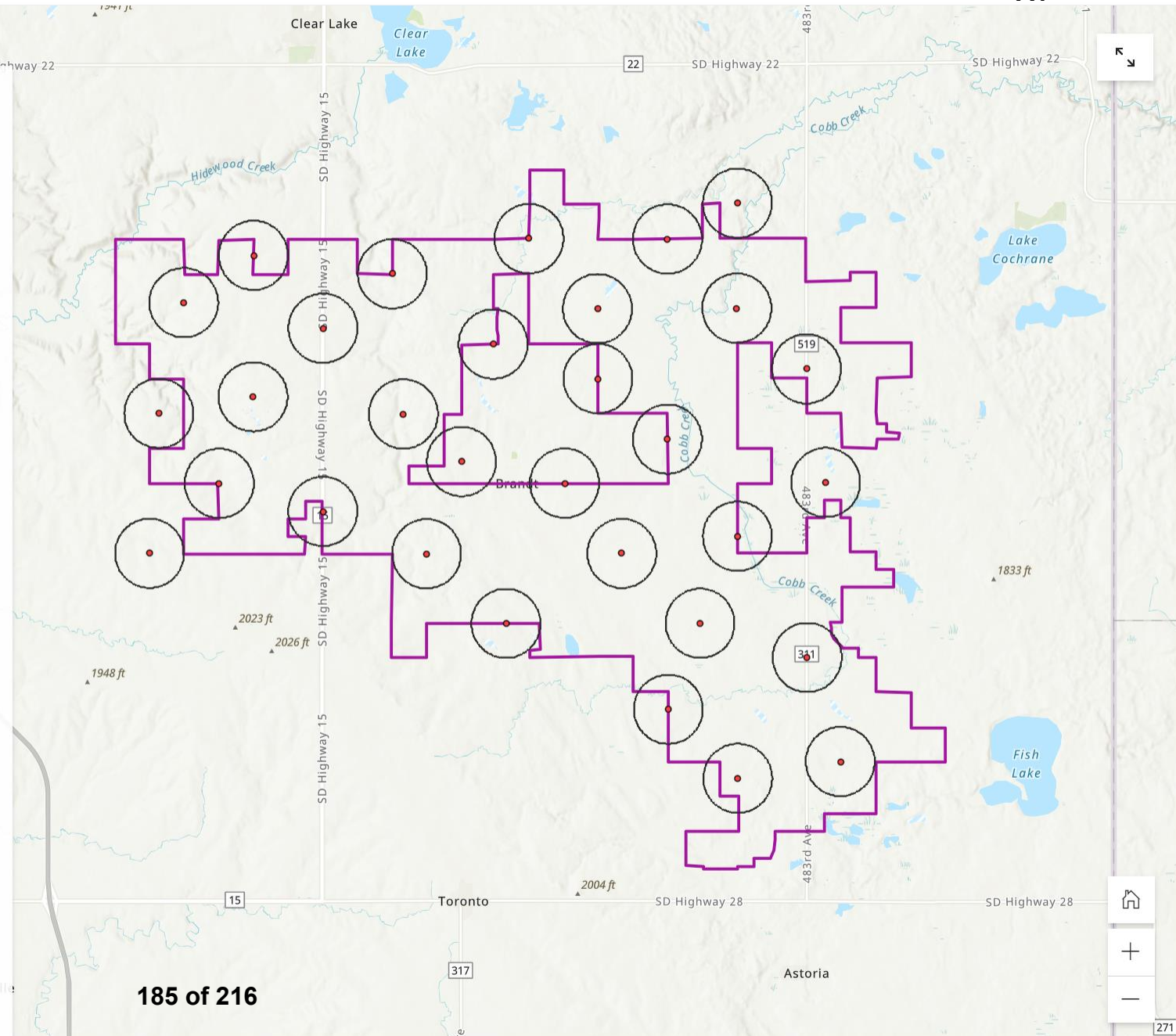
- Surveys conducted for 12 months (July 2021 – June 2022)
- 31-point count locations providing 31% coverage
- Each point surveyed once per month, conducted during daylight hours
- 60-minute monthly surveys recording large birds within an 800-m horizontal radius of each survey point

Results

Federally-Listed Species, State-Listed Species, or Birds of Conservation Concern

- None

Species of Greatest Conservation Need



- Each point surveyed once per month, conducted during daylight hours
- 60-minute monthly surveys recording large birds within an 800-m horizontal radius of each survey point

Results

Federally-Listed Species, State-Listed Species, or Birds of Conservation Concern

- None

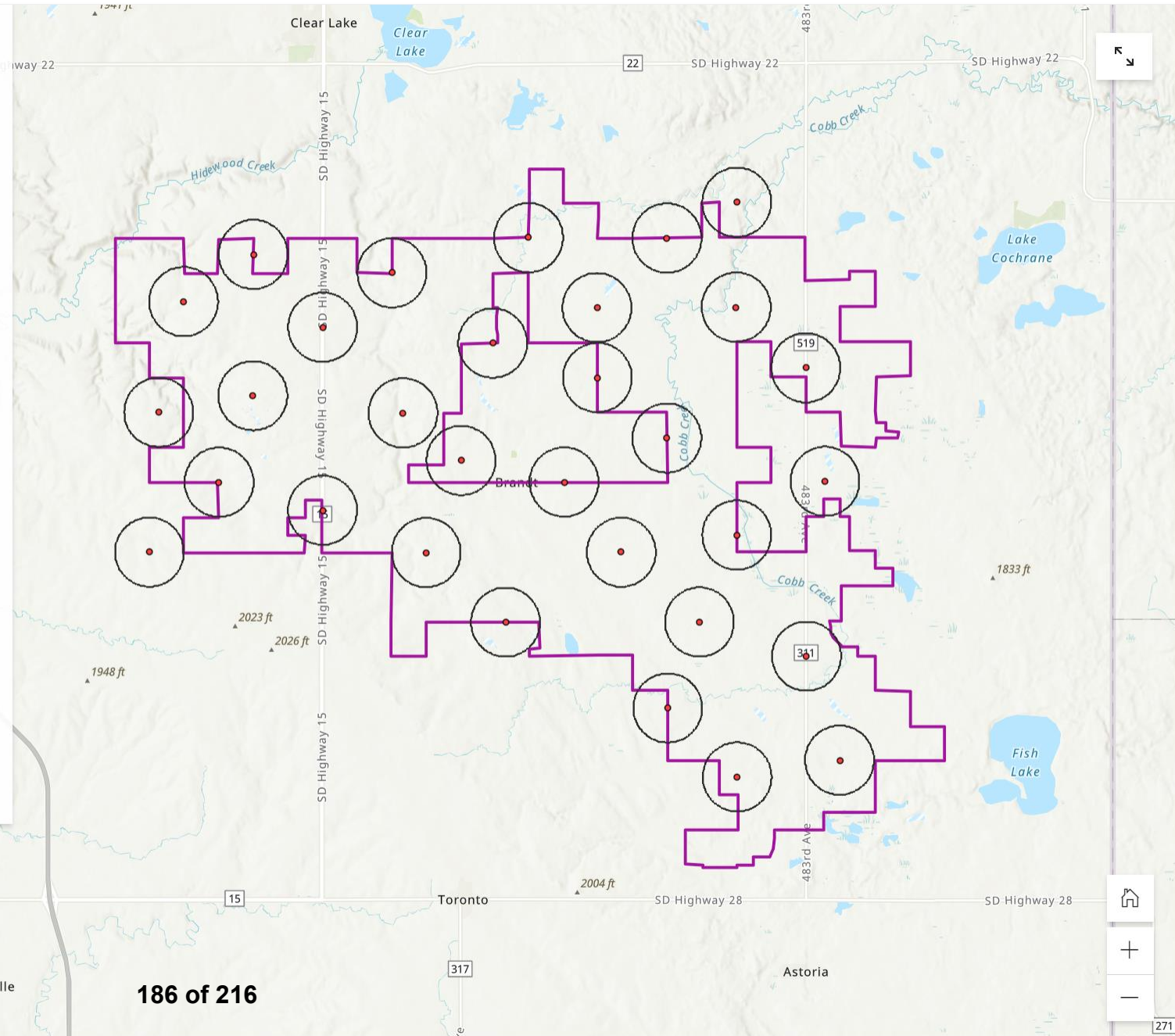
Species of Greatest Conservation Need

- American white pelican
- 10 observations
- 60 individuals observed

Protected Species

- Eagles
- 35 bald eagle observations
- 0 golden eagle observations

-  2023 Project Area
-  Survey Plot
-  Survey Location



Northern Long-eared Bat Habitat Assessment

Objectives

- Assess the presence of potential summer roosting and foraging habitat for northern long-eared bat (*Myotis septentrionalis*; NLEB) in the Project Area and 1 mile buffer

Methods

- Desktop review of 2022 National Agriculture Imagery Program (NAIP) aerial imagery to hand-digitize areas of forest.
- Areas of at least 10 acres of contiguous forest was identified as potential NLEB roosting habitat
- Field review was conducted October 10 - 12, 2022
- Dominant tree species, tree sizes, and occurrence of potential roost trees were noted

Results

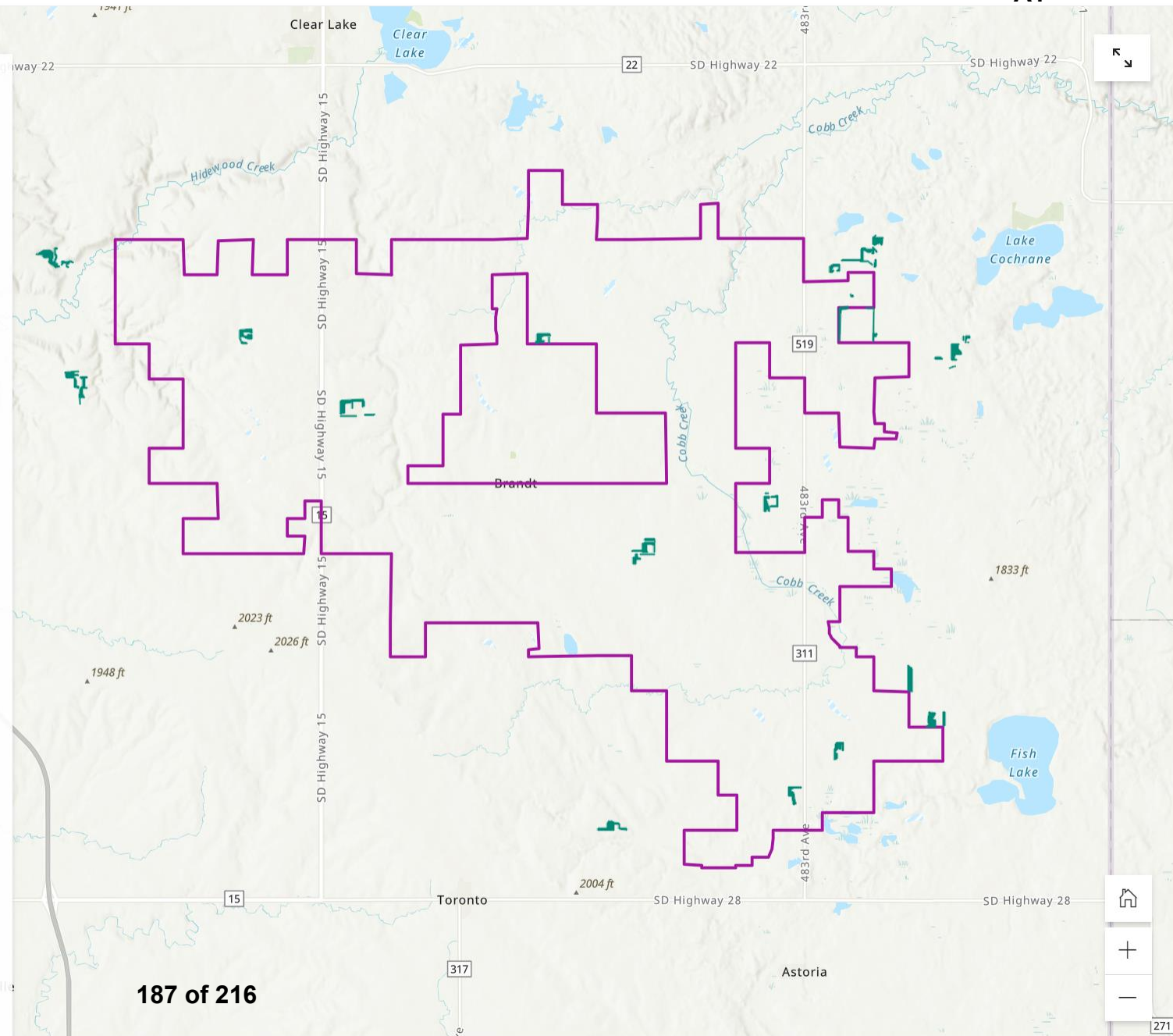
Project Area

- 6 areas - 90.3 acres
- All outside the NLEB current range

1 Mile buffer

- 9 areas - 160.4 acres

2 within the 2022 NLEB range



Program (NAIP) aerial imagery to hand-digitize areas of forest.

- Areas of at least 10 acres of contiguous forest was identified as potential NLEB roosting habitat
- Field review was conducted October 10 - 12, 2022
- Dominant tree species, tree sizes, and occurrence of potential roost trees were noted

Results

Project Area

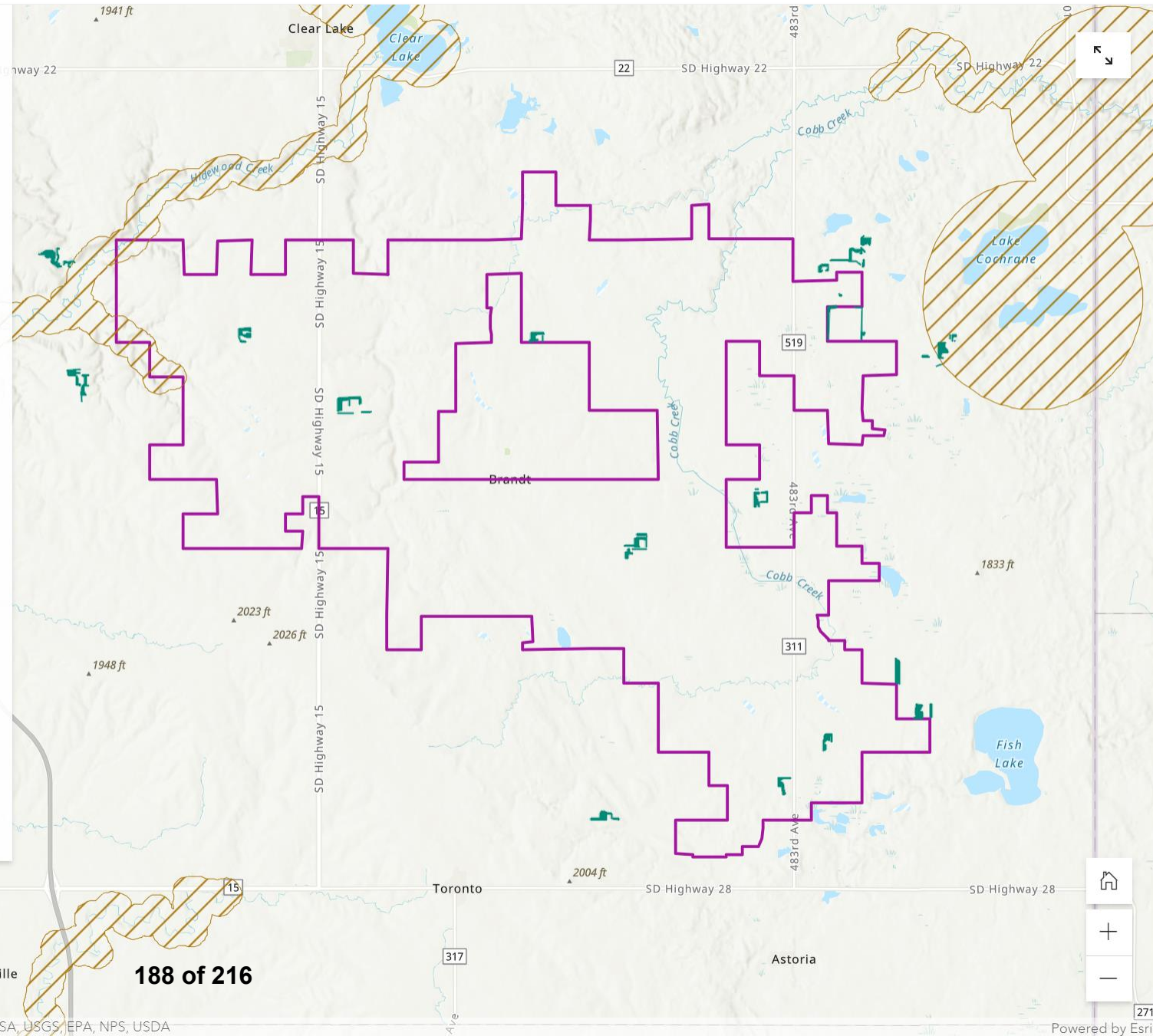
- 6 areas - 90.3 acres
- *All outside the NLEB current range*

1 Mile buffer

- 9 areas - 160.4 acres
- *2 within the 2023 NLEB range*
- *F-13 and F-15: 38.4 acres*

[!\[\]\(cf531ed27e91483460120fcc057b3901_img.jpg\) 2023 Northern Long-eared Bat Range](#)

-  2023 Project Area
-  Northern Long Eared Bat Habitat
-  Northern Long Eared Bat Range (USFWS)



Passive Bat Acoustic Survey

Objectives

- Identify the level and seasonality of bat activity (bat passes per detector night) and genus (based on frequency groups) in the Project Area

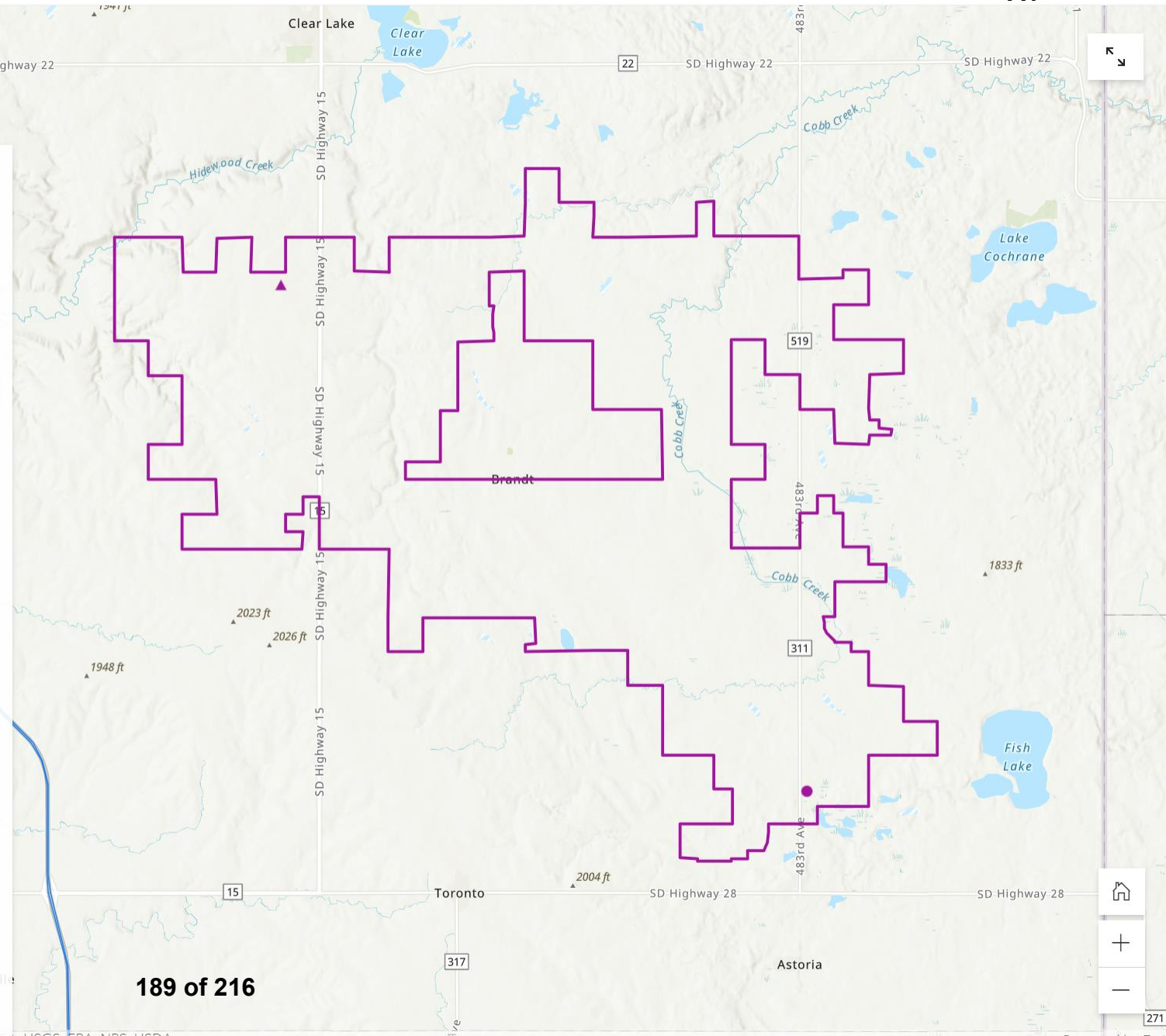
Methods

- Daily data collection from 30 minutes prior to sunset to 30 minutes after sunrise
- Survey conducted March 31 - November 2, 2022
- Two Wildlife Acoustics SM3BAT recording devices
- M-1: MET tower in open crop field with a few small woodlots nearby
- *M-1L: microphone at a height of 3 meters*
- *M-1H: microphone at a height of 45 meters*
- G-1: Ground-based location (3 meters high) in a hay field along a windbreak of eastern redcedar

Results

M-1L

- 0.4 high frequency passes/detector night
- 5.3 low frequency passes/detector night



woodlots nearby

- M-1L: microphone at a height of 3 meters
- M-1H: microphone at a height of 45 meters
- G-1: Ground-based location (3 meters high) in a hay field along a windbreak of eastern redcedar

Results

M-1L

- 0.4 high frequency passes/detector night
- 5.3 low frequency passes/detector night

M-1H

- 0.3 high frequency passes/detector night
- 5.0 low frequency passes/detector night

G-1 Low Height

- 1.0 high frequency passes/detector night
- 18.1 low frequency passes/detector night

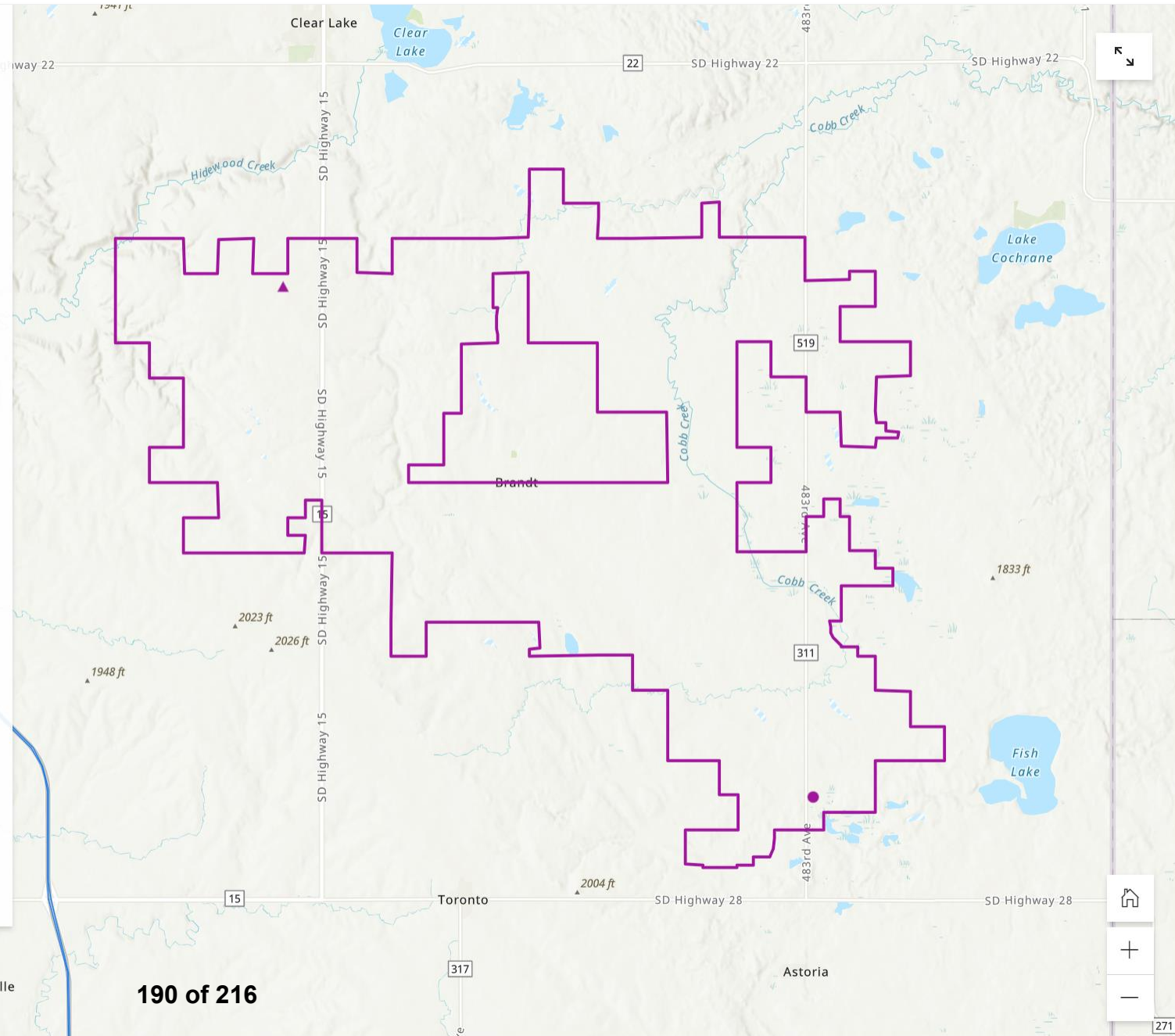
Across All Detectors:

- 0.6 high frequency passes/detector night
- 9.5 low frequency passes/detector night

 2023 Project Area

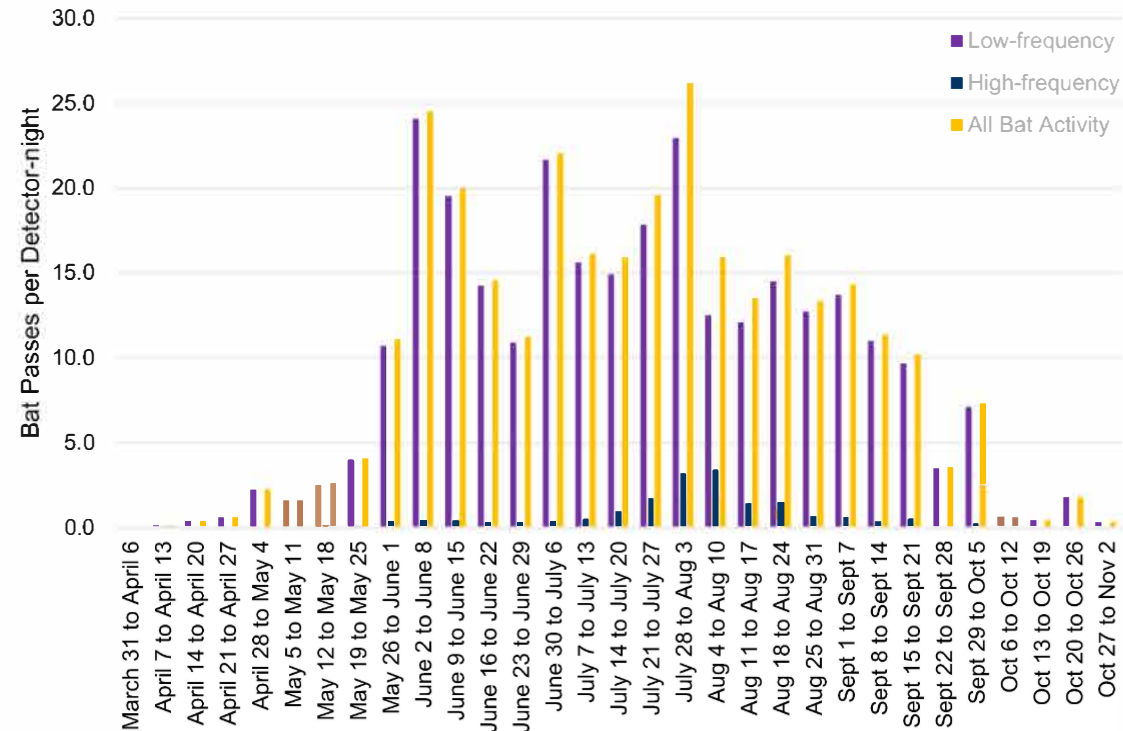
Bat Acoustic Detector Location

-  Ground Based Detector (G-1)
-  MET Tower Detector (M-1)



Passive Bat Acoustic Survey

- Bat activity was highest in the summer
 - High frequency bat species averaged 3.1 bat passes/detector night
 - Low frequency bat species averaged 3.1 bat passes/detector night
- Highest activity for low frequency bat species occurred during the week of June 2 - June 8
- Highest activity for high frequency bat species occurred during the week of August 4 - August 10
- No potential *Myotis* or *Perimyotis* calls were identified



Weekly Bat Activity Observed in the Project Area, March 31, 2022 – November 2, 2022

of Agriculture, Natural Resource Conservation Service
Field review completed October 10 - 12, 2022 and July 31 -
August 1, 2023

244 potential grassland observation points identified in desktop
analysis evaluated to determine presence of human disturbance
and vegetation quality and categorized as:

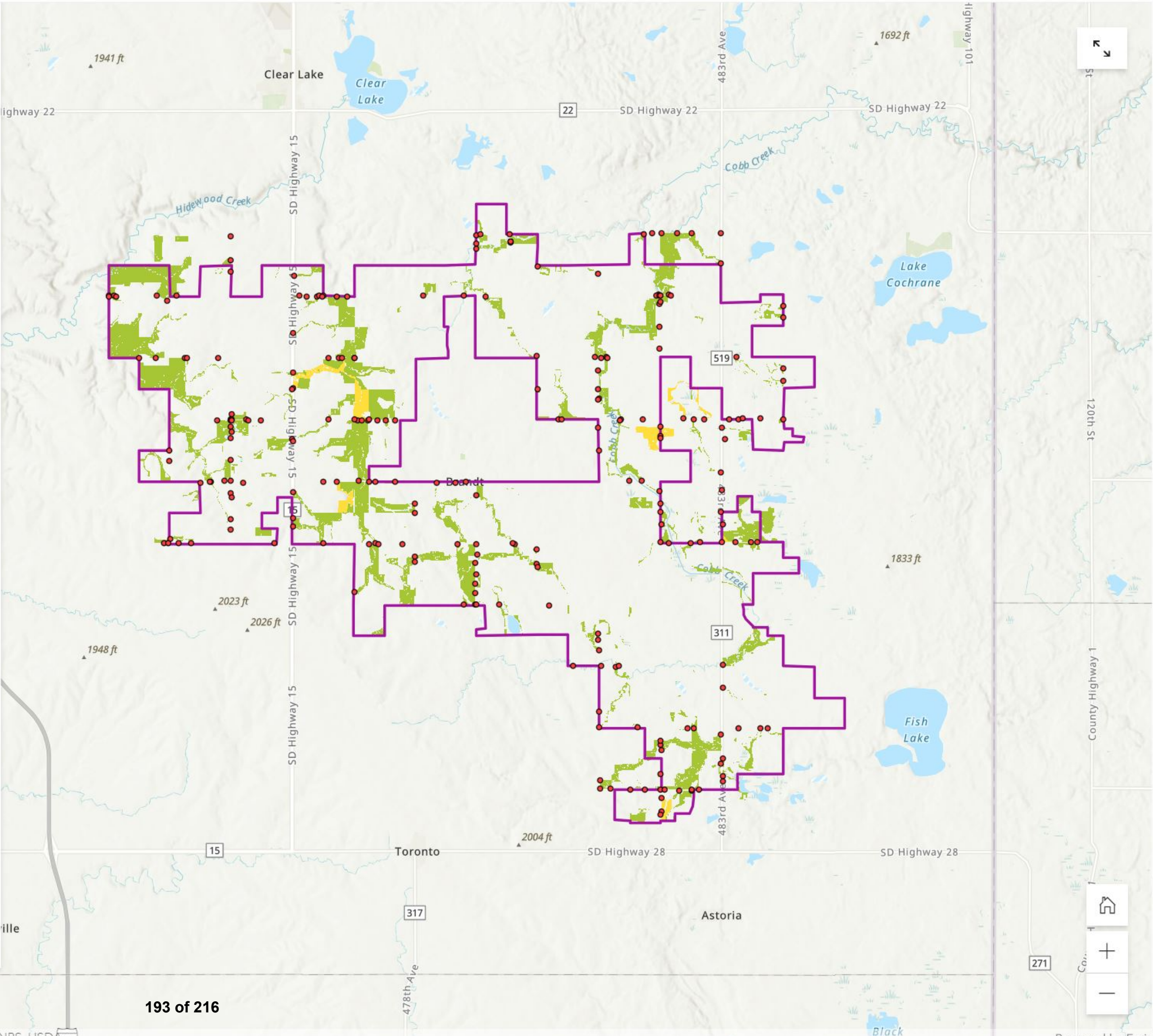
- *N/A - grassland was not present at location*
- *Low - High levels of human disturbance; vegetation consisted of few, or no native warm season grasses and the dominant grass were sod-forming, cool season species that are common in areas used for pastureland or are invasive*
- *Medium - Some presence of human disturbance; vegetation consisted of a high abundance of two or more warm season grasses; some cool season grasses present but not dominant*
- *High - No presence of human disturbance; vegetation consisted of high abundance of blooming native forbs and the dominant grasses were a variety of warm season species*

Grasslands categorized as High are classified as Unbroken

Results

- 335 acres of unbroken grasslands
- 4,788 acres of broken grassland

-  2023 Project Area
-  Survey Location
- Grasslands**
-  Broken Grassland
-  Unbroken Grassland



Butterfly Habitat Assessment

Objectives

- Identify potential Dakota skipper and Poweshiek skipperling habitat in the Project Area

Methods

- Followed USFWS guidelines
- GIS review: NLCD, Critical Habitat, USFWS Easements, SDSU Undisturbed Grasslands layers
- Field review of vegetation completed November 2 - 4, 2022 and July 31 - August 1, 2023
- 69 focus areas for were evaluated in the field using the Skadsen 2017 Habitat Flowchart
- Identified potential suitable habitat and delineated the boundaries

Results

- 6 areas (19.79 acres) of "potential

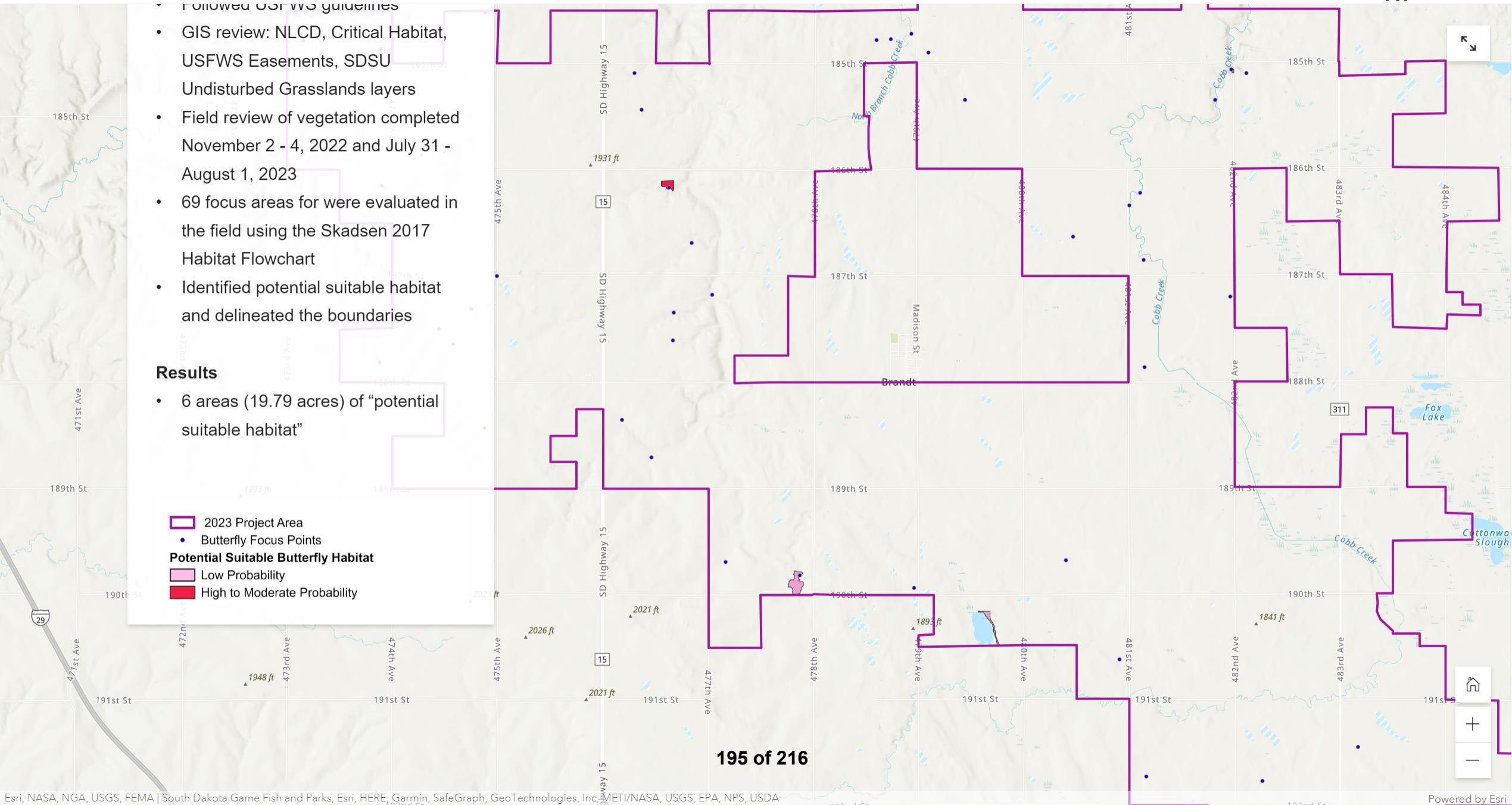
194 of 216

- Followed USFWS guidelines
- GIS review: NLCD, Critical Habitat, USFWS Easements, SDSU Undisturbed Grasslands layers
- Field review of vegetation completed November 2 - 4, 2022 and July 31 - August 1, 2023
- 69 focus areas for were evaluated in the field using the Skadsen 2017 Habitat Flowchart
- Identified potential suitable habitat and delineated the boundaries

Results

- 6 areas (19.79 acres) of “potential suitable habitat”

-  2023 Project Area
-  Butterfly Focus Points
- Potential Suitable Butterfly Habitat**
-  Low Probability
-  High to Moderate Probability



Invenergy

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One South Wacker Drive | Suite 1800 | Chicago, Illinois 60606
 T 312-224-1400 | F 312-224-1444

RE: South Deuel Wind – Tribal Historic Preservation Office (THPO) and State Historic Preservation Office (SHPO) Outreach Coordination Summary

Introduction:

Deuel Harvest Wind Energy South LLC (“South Deuel Wind”), as part of the diligence and development of the South Deuel Wind Project (“Project”), has communicated with various Tribal Historic Preservation Offices (“THPO”) and the State Historic Preservation Office (“SHPO”). The communication methods have consisted of letters, emails, and virtual meetings, through which information, documentation, and presentations regarding the Project and cultural/historical resource analysis were provided. Table 1 below shows South Deuel Wind’s efforts thus far regarding THPO and SHPO outreach related to the Project.

TABLE 1 – THPO & SHPO OUTREACH COORDINATION OVERVIEW	
DATE	OUTREACH COORDINATION SUMMARY
November 16, 2023	South Deuel Wind mailed letters to THPOs notifying them of the Project and that the Level III Cultural Resources Survey and Historical Architectural Survey had been prepared for the Project. The letters also provided Project development contact information for THPOs to reach out should they want to review the results of the surveys or other information regarding the project. See Table 2 below for the mailing list.
November 20, 2023	South Deuel Wind and their consultant, Burns & McDonnell, participated in a virtual meeting with South Dakota SHPO to introduce the Project, discuss Project progress, review survey methods, and obtain SHPO input.
December 14, 2023 – March 4, 2024	Communications with Sisseton-Wahpeton Oyate THPO staff.
December 26, 2023 – March 6, 2024	Communications with Flandreau Santee Sioux Tribe THPO staff.

Table 2 below shows the list of THPOs that South Deuel Wind mailed letters to on November 16, 2023. The purpose of the letter was to inform each of the THPO’s of the Project, the surveys completed, and the Project development contact should they want to review the surveys or inquire for more information. Two THPOs responded to the letter with further inquiries: Sisseton-Wahpeton Oyate and Flandreau Santee Sioux Tribe. Copies of these communications be found in the attached Exhibit A.



TABLE 2 – THPO NOTIFICATION LETTER MAILING LIST		
THPO/Cultural Resources Office	ADDRESS	ADDRESSEE
Cheyenne River Sioux Tribe	PO Box 590, Eagle Butte, SD 57625-0590	Steve Vance
Crow Creek Sioux Tribe	PO Box 50, Ft. Thompson, SD 57339-0050	Merle Marks
Flandreau Santee Sioux Tribe	PO Box 283, Flandreau, SD 57028-0283	Garrie Kills A Hundred
Lower Brule Sioux Tribe	PO Box 187, Lower Brule, SD 57548-0187	Christian Skunk
Oglala Sioux Tribe	PO Box 2070, Pine Ridge, SD 57770-2070	Thomas Brings
Rosebud Sioux Tribe	PO Box 809, Rosebud, SD 57570-0809	Ione Quigley
Sisseton-Wahpeton Oyate	PO Box 907, Agency Village, SD 57262-0907	Dianne Desrosiers
Standing Rock Sioux Tribe	PO Box D, Fort Yates, SD 58538-0522	Jon Eagle
Yankton Sioux Tribe	PO Box 1153, Wagner, SD 57380-1153	Kelli Huapapi

[Remainder of page intentionally left blank.]



EXHIBIT A
COMMUNICATION REFERENCE MATERIAL

Mailed letter from South Deuel Wind to various THPO's:

Tribal Historic Preservation Office
Cheyenne River Sioux Tribe
PO Box 590
Eagle Butte, South Dakota 57625-0590

November 16, 2023

Re: South Deuel Wind Farm
Deuel County, South Dakota

Dear Mr. Steve Vance,

Deuel Wind Energy South LLC (South Deuel Wind), an affiliate of Invenergy LLC, is proposing to construct an up to 260-megawatt (MW) wind farm in Deuel County, South Dakota, and has retained Burns & McDonnell Engineering Company, Inc. (Burns & McDonnell) to conduct cultural resource surveys.

South Deuel Wind is located entirely within Deuel County in the townships of Blom, Brandt, Clear Lake, Norden, and Scandinavia. The Project Boundary location is shown on Figure 1. The proposed Project consists of up to 76 turbine locations, access roads, crane paths, underground collection lines, a project substation and an associated Gen-Tie line, associated facilities and infrastructure, and a survey corridor determined by South Deuel Wind (Project Area). The Project Boundary is located approximately 3 miles south of the City of Clear Lake and 20 miles northeast of the City of Brookings. The majority of the Project Boundary is comprised of previously disturbed agricultural and pasturelands. South Deuel Wind is located in the Sections, Townships, and Ranges listed in Table 1.

Table 1: South Deuel Wind Project Boundary Legal Description

Section	Township	Range	Quad
1-5, 7-17, 19, 22, 23, 28	113N	47W, 48W, 49W	Toronto, Astoria
1-6, 8-36	114N	47W, 48W, 49W	Brandt, Clear Lake South
25, 26, 29, 30, 32, 36	115N	47W, 48W, 49W	Brandt, Clear Lake South



The project is permitted at the state and local levels; the Project does not require a federal permit. South Deuel Wind has conducted a desktop review for the Project and a Level III Intensive Archaeological Resources Survey for all areas with potential turbine, access road, and/or collector line impact(s) within the Project Area. South Deuel Wind has also completed a Historic-Age Architecture Resources Reconnaissance Survey within the Project Area and within a one-mile buffer around the Project Area.

If you would like to review the results of these analyses or would like additional information regarding the Project, please contact me by email at EMaag@invenergy.com.

Sincerely,

Erik Maag
Senior Associate, Renewable Development
Invenergy.com



South Deuel Wind and Sisseton-Wahpeton Oyate THPO Email Communications:

Iacopetti, Michael

From: Monterrosa, Monica
Sent: Wednesday, February 28, 2024 11:58 AM
To: Brent Starr
Cc: Garrison, Carol-Anne; Iacopetti, Michael
Subject: RE: [EXTERNAL] South Duel Wind

Follow Up Flag: Follow up
Flag Status: Completed

Good Morning Brent,

Thank you for your patience while we were working on the transition for Developers on this project. After reviewing the project and your interest we think that we all may benefit from having a phone call where we can explain in detail the project and the work we have done in the area so far. As I mentioned before we have a cultural report, and that we can review during that call.

Please let us know if you would like to set up a meeting/call for next week, or if you prefer to receive the report ahead of any calls. If a call sounds good to you, can you please suggest some times for next week?

Thank you,

Mónica Monterrosa, PMP | Director, Renewable Development
Invenergy | 1401 17th Street, Suite 1100, Denver, CO. 80202
mmonterrosa@invenergy.com | W (312) 582-1552 | C (312) 508-8743 | @InvenergyLLC

From: Brent Starr <bstarr@swo-nsn.gov>
Sent: Tuesday, February 13, 2024 4:30 PM
To: Monterrosa, Monica <MMonterrosa@invenergy.com>
Subject: Re: [EXTERNAL] South Duel Wind

Thank you for the update.

On Tue, Feb 13, 2024 at 3:46 PM Monterrosa, Monica <MMonterrosa@invenergy.com> wrote:

Brent,

I am writing in response to the previous email you sent to Erik Maag on December 14, 2023. Erik no longer works with Invenergy, and I am stepping in for the South Deuel Wind projects that is currently under Development.

Apologies on not sending a response before since we are going through this transition. I wanted to let you know that I am getting up to speed on the project and I have your message as a priority, and I will submit a response to your inquiry before the end of the month of February. I am waiting for the final review of the reports conducted in the project area and I will share those with you as soon as they are finalized.



In the meantime, please let me know if you have any other questions.

Best,

Mónica Monterrosa, PMP | Director, Renewable Development

Invenergy | 1401 17th Street, Suite 1100, Denver, CO. 80202

mmonterrosa@invenergy.com | W (312) 582-1552 | C (312) 508-8743 | @InvenergyLLC

From: Brent Starr <bstarr@swo-nsn.gov>
Sent: Thursday, December 14, 2023 11:00 AM
To: Maag, Erik <EMaag@invenergy.com>
Subject: [EXTERNAL] South Duel Wind

Good morning Erik, My name is Brent Starr Section 106 reviewer/TCS and I am with the Sisseton Wahpeton Oyate Tribal Historic Preservation office and I am requesting the analysis of your surveys that were conducted. I did a desktop review and there are some areas that we do have concern with. I realize that the project is not receiving any federal funding and Section 106 of the National Historic Preservation Act, 54 U.S.C 306108 and its implementing regulation, 36 CFR Part 800 does not apply here. We also request if an inadvertent discovery of cultural resources are made, that our office is contacted.

Respectfully, Brent Starr SWO THPO/ SECTION 106 Reviewer

PH# (605) 698- 3911 Ext. 8421

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South Deuel Wind and Flandreau Santee Sioux Tribe THPO Email Communications:

Iacopetti, Michael

From: Iacopetti, Michael
Sent: Monday, March 4, 2024 5:06 PM
To: waynec@swo-nsn.gov
Cc: Monterrosa, Monica
Subject: RE: [EXTERNAL] South Deuel Wind
Attachments: South Deuel Wind Project Area.kmz

Hi Wayne,

Thank you for reaching out. I'm working with Monica on this project and have attached the KMZ file per your request. Additionally, please see the below link to view the Cultural Resources Report for your review prior to a call.

 [Cultural Resources Report](#)

Regarding timelines, we completed our landowner campaign at the end of 2023, which allowed us to begin our on-site surveys in the fall of 2023. We are planning to have the state permit completed this year in 2024 and after obtaining all the required permits, we expect to start construction in 2025. There are various factors that can shift this schedule, but if everything falls into place, our goal is to have the project operational by the end of 2026.

If you'd like to touch base with us after you've had a chance to review the documents, please feel free to reach out and we can find a day/time that works to set up a call.

Thank you,

Michael Iacopetti | Associate, Renewable Development
Invenergy | One South Wacker Drive, Suite 1800, Chicago, IL 60606
miacopetti@invenergy.com | (708) 523-0049 | @InvenergyLLC

From: Wayne Cloud <waynec@swo-nsn.gov>
Sent: Thursday, February 29, 2024 10:54 AM
To: Monterrosa, Monica <MMonterrosa@invenergy.com>
Subject: [EXTERNAL] South Deuel Wind

Good morning Monica,

My name is Wayne Cloud and I work for the Sisseton Wahpeton Oyate Tribal Historic Preservation Office (SWO THPO). I'm one of the section 106 reviewers and have a couple of questions and requests if you could assist us. I understand you're in contact with Brent Starr and working on setting up a call for next week. Before the call we would like a copy of the report and a kmz or shape file of the project area so we can have a better understanding where things are at so we're not coming into the call blind. If you could also give me a quick project timeline as to when the project was proposed to when surveys were conducted and when they plan to start construction.

If you have any questions please give us a call at 605-698-3584.

Thanks,

Wayne Cloud



lacopetti, Michael

From: lacopetti, Michael
Sent: Wednesday, March 6, 2024 2:52 PM
To: sara.childers@fsst-nsn.gov
Cc: Monterrosa, Monica
Subject: RE: [EXT] RE: South Duel Wind Farm
Attachments: South Deuel General Presentation 3.6.24.pdf; South Deuel Wind Project Area.kmz

Hi Sara,

Thank you again for joining the call today and sharing a bit of your time. Attached are the project presentation from our meeting and project boundary KMZ we mentioned for your reference.

Please feel free to reach out to Monica and me with any questions you might have.

Thank you,

Michael lacopetti | Associate, Renewable Development
Invenergy | One South Wacker Drive, Suite 1800, Chicago, IL 60606
miacopetti@invenergy.com | (708) 523-0049 | @InvenergyLLC

From: lacopetti, Michael <Mlacopetti@invenergy.com>
Sent: Wednesday, February 28, 2024 3:33 PM
To: sara.childers@fsst-nsn.gov
Cc: Monterrosa, Monica <MMonterrosa@invenergy.com>; Garrison, Carol-Anne <CGarrison@invenergy.com>
Subject: RE: [EXT] RE: South Duel Wind Farm

Hi Sara,

I'm working with Monica on this project and sent a separate meeting invite out a second ago for Wednesday afternoon next week (3/6) – let me know if you don't receive it. In the meantime, please see the below link to view the Cultural Resources Report for your review prior to next week's meeting. If there's anyone else you'd like to have access to this folder, you can provide their email addresses to me so I can add them.

 [Cultural Resources Report](#)

We're looking forward to connecting and if anything comes up, feel free to reach out to us.

Thank you,

Michael lacopetti | Associate, Renewable Development
Invenergy | One South Wacker Drive, Suite 1800, Chicago, IL 60606
miacopetti@invenergy.com | (708) 523-0049 | @InvenergyLLC

From: Sara Childers <sara.childers@fsst-nsn.gov>
Sent: Wednesday, February 28, 2024 12:25 PM
To: Monterrosa, Monica <MMonterrosa@invenergy.com>
Subject: [EXTERNAL] RE: [EXT] RE: South Duel Wind Farm

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Hello,
 Yes please send us a zoom invite for an afternoon next week.
 Please send the report ahead of time so we have time to review it.
 Thank you so much,
 Sara



Sara Childers
 Tribal Historic Preservation Assistant
 p. 605.997.3891 x1226
Flandreau Santee Sioux Tribe
www.fsst-nsn.gov

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From: Monterrosa, Monica <MMonterrosa@invenergy.com>
Sent: Wednesday, February 28, 2024 12:05 PM
To: Sara Childers <sara.childers@fsst-nsn.gov>
Cc: Garrison, Carol-Anne <CGarrison@invenergy.com>; Iacopetti, Michael <MIacopetti@invenergy.com>
Subject: [EXT] RE: South Duel Wind Farm

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Good Morning Sara,

Thank you for your patience while we were working on the transition for Developers on this project. After reviewing the project and your interest, we think that we all may benefit from having a phone call where we can explain in detail the project and the work we have done in the area so far. We have conducted cultural research in the area, and we have now a cultural report, that we can review during that call.

Please let us know if you would like to set up a meeting/call for next week, or if you prefer to receive a copy of the report ahead of any calls. If a call sounds good to you, can you please suggest some times for next week?

Thank you,

Mónica Monterrosa, PMP | Director, Renewable Development
Invenergy | 1401 17th Street, Suite 1100, Denver, CO. 80202
mmonterrosa@invenergy.com | W (312) 582-1552 | C (312) 508-8743 | @InvenergyLLC

Invenergy

From: Monterrosa, Monica <MMonterrosa@invenergy.com>
Sent: Tuesday, February 13, 2024 3:52 PM
To: sara.childers@fsst-nsn.gov
Subject: RE: South Duel Wind Farm

2

Sara,

I am writing in response to the previous email you sent to Erik Maag on December 26, 2023. Erik no longer works with Invenergy, and I am stepping in for the South Deuel Wind projects that is currently under Development. Apologies on not sending a response before since we are going through this transition. I wanted to let you know that I am getting up to speed on the project and I have your message as a priority, and I will submit a response to your inquiry before the end of the month of February.

In the meantime, please let me know if you have any other questions.

Best,

Mónica Monterrosa, PMP | Director, Renewable Development
Invenergy | 1401 17th Street, Suite 1100, Denver, CO. 80202
mmonterrosa@invenergy.com | W (312) 582-1552 | C (312) 508-8743 | @InvenergyLLC

From: Sara Childers <sara.childers@fsst-nsn.gov>
Sent: Tuesday, December 26, 2023 6:31 PM
To: Maag, Erik <EMaag@invenergy.com>
Subject: [EXTERNAL] South Duel Wind Farm

Hello,

The Flandreau Santee Sioux Tribe has extensive history in the proposed foot print of this wind farm project. We are requesting our office do a Tribal Cultural Survey (TCS) before we can give a determination of effect. This would be at the applicants expense.

Daily survey rate for our crew would be \$2100 a day. I don't think it would take more than 6 days. (12 towers a day) After we are done with our survey we will send a survey report with our determination of effect. The report is usually ready within 3 days.

The ACHP this year has new guidelines in identification and evaluations of Indigenous sites. Only persons with Indigenous Knowledge can determine what is an indigenous/cultural site and then evaluate its eligibility for listing on the National Register.

I read where this does not require a federal permit but who and where does this tie into?

Thank you very much,

Sara Childers FSST THPO Assistant



Sara Childers
 Tribal Historic Preservation Assistant
Flandreau Santee Sioux Tribe
 603 W Broad Ave | Flandreau, SD 57028
 p. 605.997.3891 x1226 | www.fsst-nsn.gov

South Deuel Wind

**South Dakota State Historical
Society**

November 20, 2023



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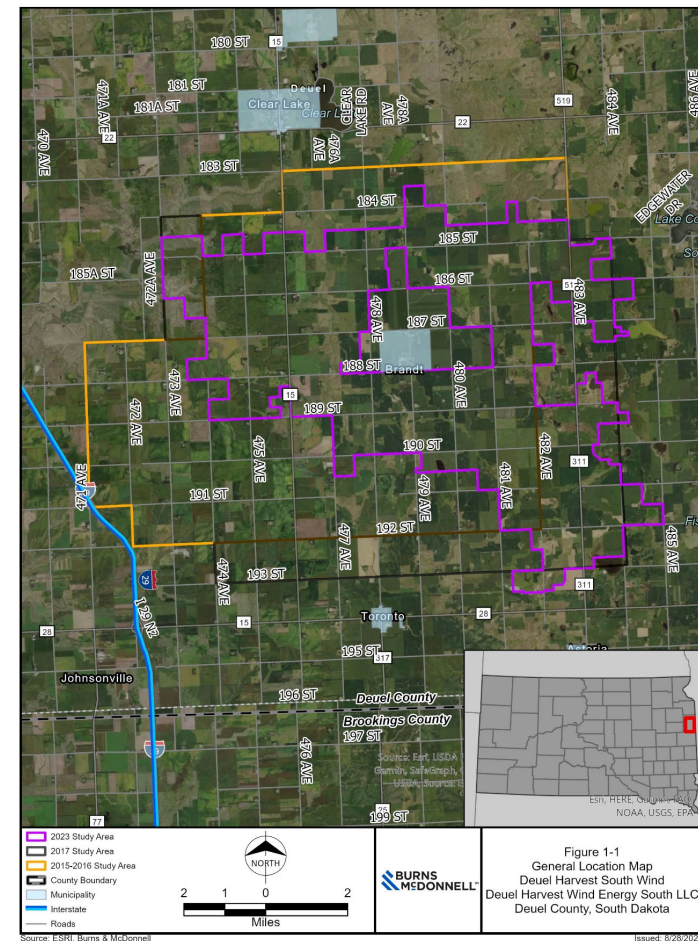
Meeting Agenda

- Project Introduction
 - Team Members
 - Project Development Timeline
- Agency Coordination
- Current Survey Methods/Efforts
- Next Steps and Feedback

Overview of South Deuel Wind Project and Development Timeline

- Project is located in Deuel County
- Capacity up to 260 MW
- Project Area ~ 38,000 acres
- POI: Astoria 345 kV Substation
- Anticipate a Q1 2024 PUC application submittal
- Targeting Q4 2026 COD
- No anticipated Federal permitting nexus

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Agency Coordination Timeline

Meeting Location	Attendees	Date
Archeologist submittal request of Archeological Records Management System (ARMS) data for the Project area	Lisa Liang – South Dakota State Historical Society John Topi – Burns & McDonnell	October 24, 2022
Email submittal of archeological site forms and State response	Megan Ostrenga - South Dakota State Historical Society Robert Young – Invenergy John Topi – Burns & McDonnell Bryan Gasper – Burns & McDonnell	September 14, 2023 September 20, 2023
Email request for tribal outreach contact information and State response	Megan Ostrenga - South Dakota State Historical Society Dustin Lloyd – South Dakota State Historical Society Robert Young – Invenergy Monica Monterrosa – Invenergy Mira Ranai - Invenergy Bryan Gasper – Burns & McDonnell John Topi – Burns & McDonnell Andrew Gottsfeld – Burns & McDonnell	September 21, 2023 September 21, 2023
Conference call	Jenna Carlson Dietmeier – South Dakota State Historical Society Duncan Trau – South Dakota State Historical Society Megan Ostrenga – South Dakota State Historical Society Dustin Lloyd – South Dakota State Historical Society Monica Monterrosa – Invenergy Mira Ranai – Invenergy Erik Maag – Invenergy Bryan Gasper – Burns & McDonnell Brandy Harris – Burns & McDonnell John Topi – Burns & McDonnell Andrew Gottsfeld – Burns & McDonnell Christa Wisniewski – Burns & McDonnell	November 20, 2023

Cultural Resource Survey Methodology

Conducted an Intensive Field Survey (Level III) of the entire component footprint.

All fieldwork was done according to the 2023 Revised State Historic Preservation Office Guidelines.

- Areas with greater than 30 percent ground surface visibility were pedestrian surveyed with transects spaced 15 meters.
- Areas with slope greater than 20 degrees were not shovel tested but were visually inspected.
- If sites were encountered on the ground surface, pedestrian transects were tightened to approximately 2.5 meters, surveying every crop row.
- GPS points were taken for artifacts, photographs and site boundaries were recorded.

Cultural Resource Survey Methodology - Continued

- Shovel tests were conducted at an interval of 30 meters, and were excavated at least 10 centimeters into sterile subsoil unless bedrock was encountered, a perched water table was reached, or substantial soil disturbance was confirmed.
- The numerous wetlands in the Project Area were not shovel tested.
- Shovel tests positive for cultural material were delineated by additional tests in the cardinal directions until two negative tests were reached.
- Shovel tests were excavated at each site, including sites identified by artifacts on the ground surface.
- Artifacts were left in situ.

Cultural Resource Survey Methodology - Continued

Buffers:

- Proposed turbine locations have a 250-foot radius.
- Access roads and collector lines were surveyed with a 50-foot buffer on either side of the centerline.
- Other Project Components, such as the substation, did not have a buffer applied and were surveyed based on proposed dimensions.

Historic Architectural Survey Methodology

- Historians conducted a reconnaissance-level historic-age architectural survey within a 1-mile buffer or Non-Physical Area of Potential Effects (APE) of the proposed project footprint (Physical APE) to evaluate for potential visual or non-physical effects of the proposed Project.
- All investigations were conducted to professional standards and guidelines in accordance with:
 - *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation* (48 FR 44716-44742)
 - *Secretary of the Interior's Identification Standards* (48 FR 44720-44723)
 - *South Dakota Architectural Survey Manual* (2023)
 - *Revised State Historic Preservation Office South Dakota Guidelines for Complying with Federal and State Preservation Laws* (2023)
 - South Dakota Codified Law (SDCL) 11.1

Historic Architectural Survey Methodology - Continued

- The historic-age resources survey was conducted in phases in August 2018 with revisits in January and June 2023.
- All field survey was conducted solely from the public ROW.
- All accessible resources within the APE were photo-documented and evaluated for NRHP eligibility by the Project's Principal Investigator.
- Historians prepared a report as per state guidelines and South Dakota SHPO survey forms for all recorded resources.

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