

## **APPENDIX F**

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### **AGENCY LETTERS AND RESPONSES**



**South Dakota PrairieWinds Project  
Environmental Impact Statement (EIS)**

Thank you for your interest in the proposed South Dakota PrairieWinds Project (Project). Please complete the appropriate sections of this form to be included on the Project mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (720) 962-7263, mailed to the address on the back of this form or sent to the **Project Email Address: [sdprairiewinds@wapa.gov](mailto:sdprairiewinds@wapa.gov)**. Comments on the project scope and alternatives should be received by **May 15, 2009**, to be considered in defining the scope for the Draft EIS. For more information about the Project, please go to the **Project Website:**

**<http://www.wapa.gov/sdprairiewinds.htm>.**

- ☐ I would like to be kept informed of the ongoing progress of this Project. Please include my name on the mailing list.
- ☐ I prefer electronic/email communication.
- ☐ I prefer paper mailings.

**Please Print Contact Info Below**

Name:

*Gail Arnott*

Organization:

*Westington Springs  
Area Development Corp.*

E-mail address:

Daytime Phone No. (optional):

Street Address:

City / State / Zip Code:

Please indicate any questions, comments or concerns you have about the Project in the comment section below (continue on separate sheet if necessary).

*Thank you for coming with appropriate  
SMEs.*

*I'm most concerned about the  
environmental process. Can it be more  
clearly specified & expedited? Our  
national energy policies & national  
security in general, are impacted  
by excessive oil import. Wind  
& other renewables are time  
sensitive*

**Thank you for your time and interest in the South Dakota PrairieWinds Project.**

**From:** <Debra.Ascher@state.sd.us>  
**To:** <reilly@wapa.gov>  
**CC:** <Tom.Kirschenmann@state.sd.us>  
**Date:** 5/12/2009 3:02 PM  
**Subject:** Prairie Winds project  
**Attachments:** Prairie Winds Scoping Letter May 2009.doc; FromKempemaToBerg17Dec2007.pdf; GFPReviewPrairieWinds\_2008-12-30.pdf

Liana,

I have attached a letter and the enclosures to this email for the EIS from the South Dakota Department of Game, Fish, and Parks. The original letter will follow in regular US Mail.

<<Prairie Winds Scoping Letter May 2009.doc>>  
<<FromKempemaToBerg17Dec2007.pdf>>  
<<GFPReviewPrairieWinds\_2008-12-30.pdf>>

Debra Ascher, Executive Secretary  
SD Department of Game, Fish, and Parks  
2nd Floor Foss Building  
523 East Capitol Ave  
Pierre, SD 57501  
Phone 605.773.3718  
debra.ascher@state.sd.us



**DEPARTMENT OF GAME, FISH, AND PARKS**

Foss Building  
523 East Capitol  
Pierre, South Dakota 57501-3182

May 12, 2009

Ms. Liana Reilly  
Document Manager  
Western Power Administration  
Cooperate Services Office – A7400  
P.O. Box 281213  
Lakewood, CO 80228-8213

Dear Ms. Reilly,

This is in response to your letter dated April 9, 2009 regarding notice of Prairie Winds SD1 wind power project, its associated Environmental Impact Statement (EIS), and invitations to participate in an interagency meeting, and to serve as a cooperating agency in the development in the EIS. The location of this project would either be near Wessington Springs or Winner, South Dakota.

We recognize and appreciate your efforts in keeping our Department informed on the development of this proposed project. As you may be aware, our Department has provided information and comments on both of the proposed sites/potential wind power projects. Correspondence has been exchanged between various staff in our Department either with Basin Electric, Terracon Consultants, Inc., or Western Area Power Administration via letters, emails, and phone calls regarding Natural Heritage Program data, information on private lands enrolled in conservation programs, environmental review comments, and suggestions to improved proposed pre-construction wildlife survey protocol.

In brief, the State of South Dakota supports the responsible development of alternative sources of energy and appreciates the consideration of direct and indirect impacts of wind power development on wildlife. These impacts include mortality from turbine strikes, habitat alteration, and behavior modification from improperly sited wind power projects.

Potential impacts to the following should be addressed in the EIS:

- High quality and/or contiguous grassland habitats
- Areas with high concentrations of wetlands

- Wildlife species including the American Burying beetle, Whooping Crane, Trumpeter Swan, area-sensitive grassland bird species, and migratory tree-roosting bats

The cumulative affects of existing wind power projects, the proposed wind power project and potential future development and associated infrastructure (transmission lines, roads, etc.) also should be addressed.

Please refer to the letters from our Department dated December 14, 2007 to James Berg of Basin Electric Power Cooperative and December 30, 2008 to Kim Austin of Terracon Consultants, Inc. for more detailed information including issues that our Department considers important and ways to address potential impacts. These letters and the associated Natural Heritage Program data also provide the information on unique and/or special resources or areas in the proposed project areas.

Please keep our Department informed of project developments and on your contact list during the NEPA process. Please provide this information to Tom Kirschenmann, Chief of Terrestrial Resources at 523 East Capitol, Pierre, SD, 57501.

Sincerely,

Jeffrey R. Vonk,  
Department Secretary

Enclosures (2)

cc: Tony Leif, Division of Wildlife Director  
Tom Kirschenmann, Chief of Terrestrial Resources, DOW  
Silka Kempema, Wildlife Biologist, DOW



## DEPARTMENT OF GAME, FISH AND PARKS

Foss Building  
523 East Capitol  
Pierre, South Dakota 57501-3182

December 14, 2007

James Berg  
Water Quality/Waste Management Coordinator  
Basin Electric Power Cooperative  
1717 East Interstate Ave  
Bismarck, ND 58503-0564

RE: Environmental review of two potential  
wind power projects near the cities of  
Reliance and Crow Lake, SD

Dear Mr. Berg:

The following comments are in response to your letter dated 16 November 2007 requesting environmental review of two potential wind power projects near the cities of Reliance and Crow Lake, SD. This letter addresses environmental concerns regarding sensitive wildlife species and habitats, and other state wildlife interests such as migratory birds, bats, grassland and wetland resources, and environmental properties.

Doug Backlund, our Natural Heritage Database (NHD) manager, has provided location information on rare and protected species known to be within the proposed project areas and included in our NHD. Please note that absence of a species from the NHD does not preclude its presence in either of the proposed project areas. Many areas in South Dakota have not been surveyed for native wildlife species. An invoice for the database search is enclosed. If you have further questions regarding the NHD search, please contact Doug Backlund at (605) 773-4345. If you have specific questions about the plant records, please contact our botanist, Dave Ode, at (605) 773-4227.

The proposed siting and operation of a wind power project has the potential to directly and indirectly impact area wildlife by killing bats and birds (wind turbine and power line strikes) and altering wildlife habitat (fragmentation, degradation, and conversion) and behavior (breeding and daily and seasonal movements). While we applaud efforts to provide alternative energy sources, we offer the following information on grassland and wetland habitats and associated species. We also provide additional suggestions on avoiding impacts to these wildlife resources. If impacts are unavoidable, we recommend mitigation to avoid or lessen direct and indirect impacts.

## **Ecoregions**

The Reliance Proposed Project Area is located within the River Breaks and the Subhumid Pierre Shale Plains ecoregions (Bryce et al. 1998). The River Breaks ecoregion is characterized by steep and dissected topography especially along tributaries to the Missouri River. Topographical variation has precluded cultivation, much of the area remains as native rangeland. Also interspersed with wooded draws, this ecoregion is a haven for wildlife. The Plains ecoregion is characterized by rolling plains with occasional topographical relief from buttes and badlands. The land is cultivated in the lower lying areas to small grains and alfalfa; steep and broken areas are native rangelands. The region is susceptible to soil erosion.

The Crow Lake Proposed Project Area is located primarily within the Southern Missouri Coteau Slope (Bryce et al. 1998). The level to rolling uplands characteristic of this region are converted to agricultural crops (small grains and row crops). The simple stream drainages are often grazed.

## **Grasslands**

Both of the proposed project areas are located within the mixed-grass prairie zone. Native grasslands within this zone are decreasing at an alarming rate. Seventy percent of the native mixed-grass prairie has been lost in South Dakota (Samson et al. 1998). Other grassland types such as native rangeland (grazed grasslands with native plant spp.), pasture (grazed grasslands with non-native plant spp.) and Conservation Reserve Program lands (formerly tilled lands planted to vegetative cover for erosion control and wildlife habitat) serve as wildlife habitat (Haufler 2005). Fragmentation resulting from woody encroachment, road construction, and conversion of surrounding habitat has resulted in remaining grassland types existing as smaller disjunct patches. These patches often provide less suitable habitat for many native species of grassland wildlife.

The Reliance Proposed Project Area contains large areas of contiguous grasslands, especially in the northern and western portions. Although the Southern Missouri Coteau Slope ecoregion is described as extensively cultivated, the Crow Lake Proposed Project Area is primarily native prairie and contiguous grassland habitat still exist within the center of this project area. Efforts should be made to avoid activities in contiguous grassland areas that may fragment these habitat types.

## **Grassland birds**

Specifically, placement of turbines in the proposed project areas may alter habitat and behavior of grassland birds. Grassland birds have shown the most consistent and long term declines of any other group of bird species in North America (Peterjohn and Sauer 1999). Several grassland bird species are known to be area sensitive (Johnson, 2001, Johnson and Igl 2001). Area-sensitive species known to occur in the Crow Lake proposed project area include Northern harrier, upland sandpiper, sedge wren, field sparrow, vesper sparrow, savannah sparrow, grasshopper sparrow, dickcissel, bobolink, and Western meadowlark. Similar grassland bird species may be expected to be found in the Reliance proposed project area.

The proposed project areas are in the current geographic distribution of the greater prairie chicken. This species also is known to be area-sensitive, requiring comparatively large tracts of open, contiguous grassland. The lesser prairie chicken, a similar species found more commonly in the southern Great Plains, avoids nesting within 400 m of transmission lines or improved roads. This suggests that placement of turbines and associated infrastructure (roads and



transmission lines) also may negatively affect greater prairie chickens. A second prairie grouse species, the sharp-tailed grouse, also is a known breeder in both proposed project areas.

Properly timed, species-appropriate surveys for prairie grouse (greater prairie chickens and sharp-tailed grouse) and other grassland bird species should be conducted pre-construction. Breeding ground surveys for prairie grouse species should be conducted in the spring (late March through April). Surveys for other breeding grassland birds are best conducted in June, although mid-May through early July is acceptable.

Upland birds are known to be susceptible to direct strikes with wind turbines. Based on a study conducted in the Buffalo Ridge area of Minnesota (Higgins et al. 2007), upland bird species with known wind turbine strike mortality and known to occur in the Crow Lake proposed project area include the Bell's vireo, sedge wren, grasshopper sparrow, and western meadowlark. Burrowing owls have been documented to occur near the Crow Lake proposed project area. This species is most often found within black-tailed prairie dog colonies in South Dakota. This owl is also known to suffer from direct strikes with wind turbines in other areas of the country (Smallwood et al. 2007). Similar bird species may also be found in the Reliance Proposed Project Area.

### **Wetlands**

The Crow Lake proposed project area is located within the Prairie Pothole region. This glaciated region, characterized by high densities of wetland basins of various depths and sizes, extends from Iowa into Minnesota, the Dakotas, Montana, and parts of Canada. It is the major waterfowl production area in North America. Wetland losses in the Prairie Pothole Region are staggering and range from 99% in Iowa to 35% in South Dakota. The number of wetland basin densities (# of basins/10 mi<sup>2</sup>) in the proposed project area is 90-100 basins/10 miles<sup>2</sup> (Johnson and Higgins 1997). This is some of the lower basins density levels in the Prairie Pothole region. Although wetland densities are comparatively lower than elsewhere in the in the Prairie Pothole Region, care must be taken to avoid impacts to the wetland resources in this glaciated region. Although the Reliance Proposed Project Area is not within the Prairie Pothole region, proper there are still numerous wetlands and lakes in the area. Micro-siting of turbines within the proposed project area should avoid placement of turbines in areas with conglomerations or wetlands and lakes.

### **Wetland birds**

Waterbird species such as pied-billed, eared, and Western grebes, great egret, great blue heron, Franklin's gull, black tern, marbled godwit, and Wilson's phalarope are known to occur near the Crow Lake proposed project area. The black tern, marbled godwit and Wilson's phalarope are species of particular concern in South Dakota; they are recognized as Species of Greatest Conservation Need (South Dakota Department of Game, Fish and Parks 2006) and are priority level I species in the South Dakota All-Bird Conservation Plan (Bakker 2005).

Wetland birds also are susceptible to direct strikes with wind turbines. Based on a study conducted in the Buffalo Ridge area of Minnesota (Higgins et al 2007), species with known wind turbine strike mortality and are known to occur in the Crow Lake proposed project area include ruddy duck, American coot, and Franklin's gull. Similar species should be expected to occur at the Reliance site. Proper siting of turbines, outside of daily and seasonal movement and migration routes of waterbirds and waterfowl, and the protection of remaining wetlands within the proposed project area is crucial to reduce the impact to wetland dependent species.



## Bats

Construction of a wind power plant may affect daily and seasonal bat movements between breeding, wintering/hibernation, and foraging areas. Thirteen species of bats are currently known to be found in South Dakota and are considered either summer or year-round residents or migratory (Table 1).

Table 1. South Dakota Bats

Common Name	Scientific Name	State Residency
Big Brown Bat	<i>Eptesicus fuscus</i>	Year-round resident
Fringed Myotis	<i>Myotis thysanodes</i>	Year-round resident
Little Brown Myotis	<i>Myotis lucifugus</i>	Year-round resident
Long-eared Myotis	<i>Myotis evotis</i>	Year-round resident
Long-legged Myotis	<i>Myotis volans</i>	Year-round resident
Northern Myotis	<i>Myotis septentrionalis</i>	Year-round resident
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	Year-round resident
Western Small-footed Myotis	<i>Myotis ciliolabrum</i>	Year-round resident
Hoary Bat	<i>Lasiurus cinereus</i>	Summer resident
Red Bat	<i>Lasiurus borealis</i>	Summer resident
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	Summer resident
Evening Bat	<i>Nycticeius humeralis</i>	Migratory
Eastern pipistrell	<i>Pipistrellus subflavus</i>	unclassified

There has been limited research conducted on bats in South Dakota. However, Swier (2006) and Bales (2007) reported six species of bats occurring near the proposed project areas: 1) big brown bat, 2) silver-haired bat 3) hoary bat, 4) red bat, 5) little brown myotis, and 6) Northern myotis.

Of these six species, the silver-haired bat and Northern myotis are considered rare and monitored by the Natural Heritage Program (NHP). Silver-haired bats have a probable distribution throughout the state of South Dakota. They are classified as a tree bat requiring trees for roosting and maternity sites. In eastern South Dakota, they are found roosting in wooded areas along water courses. In treeless areas, they use fence post piles, boards, and bricks for roosts. Foraging areas include corridors found along roads and waterways. The earliest spring migration record for this species is late-April in Brookings County. Fall migration begins in late-August to early-September. In the Black Hills, most silver-haired bats are captured during the summer (June to September). Mating takes place during late summer and two pups are usually born in June. Structural tree-age diversity in roosting habitats is required for this species.

The Northern myotis has a probable distribution throughout the state. In central and eastern South Dakota it is found most often in riparian forest along rivers and streams. Summer roosts in this part of the state are found in trees (cavities or under loose bark) or buildings. Caves, quarries, and old mines serve as winter hibernation sites. This species does not forage over water. Instead the Northern myotis often forages over forested hillsides and ridges, just under the forest canopy. Breeding occurs in autumn; one pup is born the following July. Threats to this species include lost of hibernation sites, nursery trees, and foraging habitat and

disturbance at hibernation and nursery sites (under loose tree bark or under house shingles).

Based on a study conducted in the Buffalo Ridge area of Minnesota (Higgins et al 2007) the big brown bat, silver-haired bat, hoary bat, and red bat species currently known to be within the proposed project area are also known to be directly killed due to strikes with wind turbines. Because of limited, project-specific data, we would suggest pre-construction surveys of the area for potential bat habitat and species. Surveys for species should be conducted for at least one full year before construction.

Recently, South Dakota Department of Game, Fish and Parks (SDGFP) in cooperation with the South Dakota Bat Working Group (SDBWG), developed the *South Dakota Bat Management Plan* specific to bats and their habitats in South Dakota (<http://www.sdgifp.info/Wildlife/Diversity/batmanagmentplan71304.pdf>). Please review this document for pertinent information. Again, because bats reside and migrate through South Dakota, it is important to evaluate the propose project area for roosting, feeding, migration and/or stopover habitat and to survey these areas for bats.

### **Protected Species**

Bald eagles are known to nest in the Reliance Proposed Project Area. Bald eagles are a state threatened species and are protected federally under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. In addition, migrant bald eagles are possible in the spring and fall. This proposed project location is within the primary migration route of the 'Aransas National Wildlife Refuge to Wood Buffalo National Park' population of whooping cranes. This species is protected as endangered under both state and federal laws. Placement of turbines in this area could very likely increase the chances of wind turbine and power line strikes and electrocutions. We are exceptionally concerned about the direct impacts a potential wind power project may have on this population of whooping cranes.

*Crow Lake Proposed Project Area* – No records of nesting bald eagle occur in this proposed project area. However, bald eagles do nest in Brule County and new nests are appearing in the state each year. Although no records of the endangered whooping crane occur in this proposed project area, several sightings have occurred in Brule and Aurora Counties.

New and existing power lines associated with the proposed project should be buried, marked, or retrofitted to reduce strikes and electrocutions of whooping cranes and other bird species. The Avian Protection Power line Interaction Committee (APLIC) has developed two documents that may be of use: 1) *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* and 2) *Mitigating Bird Collisions with Power lines*. Both of these documents are available from the Edison Institute (<http://www.aplic.org/>, under 'products and services').

### **Landscape considerations**

Placement of a wind power project should take into account larger landscape-level (e.g. surrounding land uses) and cumulative impacts (e.g. existing and potential wind power projects) as well as project associated infrastructure (i.e. transmission lines and roads).

### **Public lands**

Part of the Reliance Propose Project Area lies within the Lower Brulé Sioux Tribe Indian Reservation. I would recommend you contact Ben Janis, Director of Lower Brule Department of Wildlife, Fish, and Recreation (phone: 605-473-5666, fax: 605473-1120) for Tribal input

regarding this proposed wind power project.

Two SDGFP Game Production Areas (GPA) are located within and adjacent to the Crow Lake Proposed Project Area (Crow Lake GPA and Horseshoe Lake GPA, respectively). Placement of public lands is often done in areas with existing and potential wildlife habitat. Managing these lands for wildlife is conducted in the public interest. These lands may be affected by the placement of a wind power project in the vicinity. The Wildlife Division of SDGFP has an online database of public land locations within South Dakota. You can access this resource via the web at <http://www.sdgifp.info/Wildlife/PublicLands/PubLand.htm>.

### **Migrating wildlife**

The resulting mosaic of grassland and wetland basins and linear wetland corridors makes these proposed project areas an important migration route for birds (e.g., neotropical migrants, shorebirds, and waterfowl). The Central Flyway, an important pathway for migratory ducks, geese, swans, and cranes runs through the midsection of the country, including South Dakota. Species using this flyway during migration, and particularly during inclement weather when birds alter their flight altitude, may suffer increased mortality due to direct strikes with wind turbines and associated power lines. Appropriately timed, pre-construction surveys for migratory bird species should be conducted. Spring migration can begin as early as late-March to early-April and tapering off in mid-May, depending on the species. Fall migration can begin as early as mid-July and extend through October/November depending on species and weather conditions.

### **Powerlines**

Construction of powerlines is often associated with a proposed wind power project. Power line strikes are a known cause of mortality to birds (Erickson et al. 2005). Waterfowl (ducks, geese, swans), cranes, raptors, and passerines are species most susceptible to powerline collisions. Power line strikes are one of the greatest threats to the endangered whooping crane. The Avian Protection Power line Interaction Committee has developed two documents that may be of use to reduce powerline strikes and mortality: 1) *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* and 2) *Mitigating Bird Collisions with Power lines*. Both of these documents are available from the Edison Institute (<http://www.aplic.org/>, under 'products and services'). The new and existing power lines associated with the proposed project should be buried, marked, or retrofitted to reduce strikes and electrocutions of birds.

### **Non-native/invasive plant species**

During the construction and maintenance phase of a wind power project new roads are constructed and existing roads often experience increased traffic. This increased amount of disturbance allows for the introduction and establishment of non-native/invasive plant species. Resulting control of those species through pesticides and herbicides may also impact habitats of rare wildlife species. Non-native plant species are one of the major threats to threatened and endangered wildlife species. Improved access (via roads) can also increase human disturbance to wildlife in the area.

### **Monitoring and Research**

If monitoring plans involve live trapping or collection of wildlife species, you must first obtain a collection permit from our agency. Also, we kindly request that if you or your

associates observe any of the animal or plant species monitored by the NHP, please contact myself or any of our NHP staff ([http://www.sdgifp.info/Wildlife/Diversity/staff\\_contact.htm](http://www.sdgifp.info/Wildlife/Diversity/staff_contact.htm)).

A list of species monitored by the NHP can be found at:

<http://www.sdgifp.info/Wildlife/Diversity/RareAnimal.htm> and

<http://www.sdgifp.info/Wildlife/Diversity/rareplant2002.htm>.

Northern Prairie Wildlife Research Center, a part of the US Geological Survey, is currently investigating the influence of wind generators on breeding grassland bird density and species composition in the Dakotas. The preliminary results of this study may be of interest to you. Please contact Jill Shaffer (701-253-5547 or [jshaffer@usgs.gov](mailto:jshaffer@usgs.gov)) for more information.

### Siting Guidelines

In coordination with the SDBWG, the SDGFP has developed *Siting Guidelines for Wind Power Projects in South Dakota*. This document addresses many of the general concerns involved with siting wind power projects in South Dakota and may be found at on the World Wide Web (<http://www.sdgifp.info/Wildlife/Diversity/windpower.htm>). I have enclosed a copy for your convenience.

### Summary

As outlined above, our agency has concerns regarding direct and indirect impacts to wildlife and habitats in association with the siting of the proposed wind power projects. During the project planning state, appropriately timed and species appropriate wildlife surveys should be conducted for a minimum of one year, to determine bird and bat use of the project areas. Based upon results of these baseline surveys, project construction should be modified, continued, or cancelled. If the project is continued and because of the potential impacts placement of the proposed wind power project would have on wildlife and habitats in the region, we recommend the placement of turbines in areas currently disturbed (e.g. cultivated areas) and the use of existing infrastructure (roads and transmission lines) as much as possible. In addition, monitoring should be conducted for a minimum of two years post-construction to determine if and how many bird and bat strikes are caused by this project, if habitats have been significantly altered, and if wildlife habitats in the project area and surrounding areas have been impacted. Any mitigation should be carefully planned, funded, and followed.

The SDGFP appreciates the opportunity to provide comments on the proposed wind power projects. As a follow-up to this early screening and information gathering portion of your project planning, I would be willing to conduct a site visit with you or a representative of Basin Electric or Tetra Tech to further discuss these potential wind power projects. If you have any questions on the above comments, please feel free to contact me at 605-773-2742 or [Silka.Kempema@state.sd.us](mailto:Silka.Kempema@state.sd.us).

Regards,



Silka L. F. Kempema  
Terrestrial Wildlife Biologist

Enclosure: (3)

CC: Doug Backlund, SD Game, Fish and Parks, Pierre, SD  
Jack Freidel, SD Game, Fish and Parks, Chamberlain, SD  
Natalie Gates, US Fish and Wildlife Service, Pierre, SD  
Andy Lindbloom, SD Game, Fish and Parks, Ft. Pierre, SD  
Jill Shaffer, US Geological Survey, Jamestown, ND

### References

- Bakker, K. K. 2005. South Dakota All Bird Conservation Plan. South Dakota Department of Game, Fish and Parks, Wildlife Division Report 2005-09, Pierre, South Dakota. 131 pages. Online at: <http://www.sdgifp.info/Wildlife/Diversity/Birdplan.pdf>
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Nation's Biological Resources, Vol. 2. U.S. Department of the Interior, U.S. Geological Survey.

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South Dakota Department of Game, Fish and Parks. 2006. South Dakota Comprehensive Wildlife Conservation Plan. South Dakota Department of Game, Fish and Parks Wildlife Division Report 2006-08, Pierre, South Dakota. 248 pages. Online at: [http://www.sdgifp.info/Wildlife/Diversity/Comp\\_Plan.htm](http://www.sdgifp.info/Wildlife/Diversity/Comp_Plan.htm)

Swier, V. J. 2006. Recent distribution and life history information for bats of eastern South Dakota. Museum of Texas Tech University Occasional Papers No. 264. Texas Tech University Natural Science Research Laboratory, Lubbock, Texas. 21 pages.

**Element Occurrence Records for Reliance Project Area  
South Dakota Natural Heritage Database  
December 5, 2007**

**Scientific Name:** *Asclepias lanuginosa*  
**Common Name:** Woolly Milkweed  
**Global Rank:** G4?  
**State Rank:** S2  
**Township Range:** 107N074W  
**Section:** 08  
"Shaley soil of upland prairie hillside."

**Occurrence #:** 3  
**Last Observed:** 1967-06-23  
**State Status:**  
**Federal Status:**  
**County:** Lyman

**Scientific Name:** *Grus americana*  
**Common Name:** Whooping Crane  
**Global Rank:** G1  
**State Rank:** SNA  
**Township Range:** 106N073W  
**Section:** 36  
2 ADULTS RESTING

**Occurrence #:** 93  
**Last Observed:** 1996-04-12  
**State Status:** SE  
**Federal Status:** LE  
**County:** Lyman

**Scientific Name:** *Grus americana*  
**Common Name:** Whooping Crane  
**Global Rank:** G1  
**State Rank:** SNA  
**Township Range:** 105N072W  
**Section:** 08  
1 Whooping Crane seen flying

**Occurrence #:** 121  
**Last Observed:** 2003-11-01  
**State Status:** SE  
**Federal Status:** LE  
**County:** Lyman

**Scientific Name:** *Haliaeetus leucocephalus*  
**Common Name:** Bald Eagle  
**Global Rank:** G5  
**State Rank:** S1B,S2N  
**Township Range:** 105N073W  
**Section:** 1  
NESTING PAIR, 2 FULLY FEATHERED BUT NOT QUITE FLEDGED  
YOUNG ON JUNE 27. 2004-nest occupied with 2 fledged.

**Occurrence #:** 38  
**Last Observed:** 2004-07-04  
**State Status:** ST  
**Federal Status:**  
**County:** Lyman

**Scientific Name:** *Haliaeetus leucocephalus*  
**Common Name:** Bald Eagle  
**Global Rank:** G5  
**State Rank:** S1B,S2N  
**Township Range:** 106N072W  
**Section:** 31  
Female incubating, male nearby

**Occurrence #:** 59  
**Last Observed:** 2004-04-08  
**State Status:** ST  
**Federal Status:**  
**County:** Lyman



**Element Occurrence Record for Crow Lake Project Area**  
**South Dakota Natural Heritage Database**  
**December 5, 2007**

**Scientific Name:** *Chlidonias niger*  
**Common Name:** Black Tern  
**Global Rank:** G4  
**State Rank:** S3B  
**Township Range:** 106N066W  
**Section:** 26

**Occurrence #:** 4  
**Last Observed:** 1993-07-07  
**State Status:**  
**Federal Status:**  
**County:** Jerauld

20+ CIRCLING AND CALLING OVER ISOLATED CATTAIL  
STAND



**DEPARTMENT OF GAME, FISH AND PARKS**

Foss Building  
523 East Capitol  
Pierre, South Dakota 57501-3182

**INVOICE**

December 5, 2007

Fee for South Dakota Natural Heritage Database Search performed for:

**James Berg**  
**Basin Electric Power Cooperative**  
**1717 East Interstate Avenue**  
**Bismarck, North Dakota 58503-0564**

1 hour of staff time @ \$30.00 per hour	\$30.00
<u>Two computer searches @ \$30.00 per search</u>	<u>\$60.00</u>
<b>TOTAL</b>	<b>\$90.00</b>

**For review of the following projects:**

**Proposed Wind Energy Facilities near Reliance and Crow Lake.**

**Make check payable to SD Dept. of Game, Fish and Parks**

**Submit payment to:**

South Dakota Dept. of Game Fish and Park  
523 E. Capitol-Foss Bldg.  
Pierre, SD 57501  
**ATTN: Doug Backlund**



## DEPARTMENT OF GAME, FISH AND PARKS

Foss Building  
523 East Capitol  
Pierre, South Dakota 57501-3182

December 30, 2008

Kim R. Austin  
Terracon Consultants, Inc.  
1815 South Eisenhower  
Wichita, KS 67209

RE: South Dakota Department of Game, Fish  
and Parks (SDGFP) environmental review of  
Prairie Winds Project in Tripp County, South  
Dakota

Dear Ms. Austin,

This letter is in response for your request for review of a proposed wind farm located on 75,000 acres in Tripp County. Please let us know if you have additional details regarding associated infrastructure, nameplate capacity or if major changes are made to the proposed project.

The proposed siting and operation of a wind power project has potential to directly and indirectly impact area wildlife. This may occur by altering important and declining habitats and influencing both breeding and movement behavior of wildlife and/or by killing bats and birds through wind turbine and power line strikes. While we applaud efforts to provide renewable energy sources, we offer the following information on wildlife habitats and associated species that contribute to South Dakota's natural heritage and that may be impacted by wind energy development. If major direct and indirect impacts are predicted, we recommend avoidance. If minor impacts are unavoidable, we recommend mitigation to lessen these impacts. We also provide additional contacts and resources for further information.

Doug Backlund, our Natural Heritage Program Database (NHPD) manager, will be providing you location information for species at risk and/or those that are rare and known to be within the Proposed Project Area. Species at risk are those that are threatened or endangered (legally protected) or rare. Rare species are those that are declining and restricted to limited habitat, peripheral to a jurisdiction, isolated or disjunct due to geographic or climatic factors or that are classified as such due to lack of survey data. Please note that absence of a species from the NHPD does not preclude its

presence in the Proposed Project Area. Many places in South Dakota have not been surveyed for rare or protected species. If you have questions regarding the NHPD search, please contact Doug Backlund at (605) 773-4345 or [Doug.Backlund@state.sd.us](mailto:Doug.Backlund@state.sd.us).

## HABITAT

**Ecoregions** (Bryce et al. 1998) - The Proposed Project Area is located primarily within two ecoregions: 1) Keya Paha Tablelands 2) Ponca Plains. The northern extension of the Proposed Project Area lies within the Subhumid Pierre Shale Plains. Ecoregions are areas that are similar in the type, quality, and quantity of environmental resources (e.g. geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology).

The Keya Paha Tablelands are found in the western half of the Proposed Project Area. This ecoregion is made of sandy, level to rolling plains. Annual precipitation is 16-20". Potential natural vegetation includes blue and sideoats grama, western wheatgrass, little bluestem, and needleandthread. Land use is predominately cattle ranching interspersed with some cropland (dryland and irrigated). The Ponca Plains are found in the eastern portion of the Proposed Project Area. These level to gently rolling plains are unglaciated. This ecoregion is more mesic than the Keya Paha Tablelands (20-22" annual precipitation). Little bluestem, prairie sandreed, green needlegrass and needleandthread are potential natural vegetation grass species. Intensive row crop agriculture is located in some portions of this ecoregion. Cattle are grazed on certain soils.

**Grasslands** - The Proposed Project Area is located within the mixed-grass prairie zone. Native prairie within this zone is decreasing at an alarming rate. Seventy percent of the native mixed-grass prairie has been lost in South Dakota (Samson et al. 1998). Areas of untilled prairie have high conservation value for wildlife, especially those that contain a high diversity of both plant and animal species with invasive species being rare or absent. Based upon soil-type, areas of untilled native prairie most likely remain in the Proposed Project Area. Every effort should be made to avoid placement of turbines in high quality native prairie.

Other grassland types are found in the Proposed Project Area. These include rangeland, pasture, hayland, or idle grassland. Rangeland supports native vegetation suitable for grazing or browsing. It includes areas where native vegetation has been reestablished. The vegetation is mainly grasses, grasslike plants, forbs, or shrubs. The amounts and kinds of native vegetation in any one area are determined by the soil, topography, climate, past use, and management. Pasture and hayland are used for the production of adapted domesticated perennial forage plants that are grazed or hayed. These forage plants may be either native or introduced species and may be seeded alone or in mixtures. An example of idle grasslands is Conservation Reserve Program land (highly-erodible, tilled land taken out of crop production). These agricultural and idle grassland types serve as important habitat for grassland wildlife (Haufler 2005).

One of the major threats to grassland dependent wildlife is habitat degradation and destruction. This degradation can result from fragmentation (unnatural woody encroachment and plantings in inappropriate places, road construction, etc.). Some grassland wildlife species depend on large patches of habitat. These smaller disjunct patches often provide less suitable habitat for many native species of grassland wildlife. Due to the nature of the sandy soils and the large amount of rangeland in the area, much of the Proposed Project Area (excluding the northern extension and the extreme eastern edge) presumably contains large contiguous tracts of grassland. Efforts should be made to avoid activities that may fragment contiguous grassland tracts.

**Wetlands** (Rieger et al. 2006) – Natural wetland basins of various depths and sizes occur throughout South Dakota. In western South Dakota, a small proportion of the land area is comprised of wetlands. In this drier western region, these wetlands are particularly important and especially so in times of drought. Tripp County contains the greatest number of wetland basins (12.1%) of all western South Dakota basins. Tripp County also has the fifth largest wetland basin area in western South Dakota. In addition, this county has the highest wetland basin density (50 basins/10km<sup>2</sup>) of the 22 western South Dakota counties. Placement of turbines should avoid areas with concentrations of wetlands.

## WILDLIFE

**Grassland birds** - Grassland birds have shown the most consistent and long term declines of any other group of bird species in North America (Peterjohn and Sauer 1999). Placement of a wind farm in the Proposed Project Area may reduce habitat suitability for grassland birds (increase habitat fragmentation and invasive species) and modify behavior (e.g. avoidance). Some grassland bird species have been shown to favor large grassland patches (Johnson 2001, Johnson and Igl 2001, Svedarsky et al. 2003). Species that may occur in or near the Proposed Project Area and that have indicated area sensitivity include northern harrier, upland sandpiper, grasshopper sparrow, and bobolink.

Two grassland bird species of interest to SDGFP that may be found in the Proposed Project Area include the sharp-tailed grouse and greater prairie chicken. Note that the greater prairie chicken is a Species of Greatest Conservation Need as identified in our State Wildlife Action Plan ([http://www.sdgfp.info/Wildlife/Diversity/Comp\\_Plan.htm](http://www.sdgfp.info/Wildlife/Diversity/Comp_Plan.htm)).

The primary range of the sharp-tailed grouse in South Dakota is west of the Missouri River. It is a common (more than 25 individuals would be seen in appropriate habitat by a single observer) permanent resident. Sharp-tailed grouse are known to occur in Tripp County, near the Proposed Project Area. This species prefers grassland habitat (mid- to tall-grasses) with brushy draws and thickets. Courtship activity on communal display grounds (leks) occurs between late-March through April. Nesting also begins during this time. Leks are located on hilltops or other elevated sites with minimal vegetation. Nest sites are found within approximately 0.5 miles of the lek. Nests typically hatch

from last week in May through the first week in June. Deterioration of native grasslands, reduction of nesting and brood rearing cover, and variable climatic factors are limiting factors for this species.

The greater prairie-chicken is an uncommon (fewer than 25 individuals would be seen in appropriate habitat by a single observer) permanent resident in Tripp County. This species prefers tall- to mixed-grass prairies. Breeding behavior occurs on communal display grounds (leks) primarily between late-March through April. Nesting occurs in mid-May to June. Leks are located on barren areas or on areas with minimal cover. This species nests in grasslands (prairies, pastures, hayfields) located near (1-3 miles) lek site. Loss and fragmentation of tallgrass prairie considered reason for population declines.

These two species are known to be area-sensitive, requiring comparatively large tracts of open, contiguous grassland. The lesser prairie chicken, a similar species found more commonly in the southern Great Plains, avoids nesting within 400 m of transmission lines or improved roads (Pitman et al. 2005). This suggests that placement of turbines and associated infrastructure (roads and transmission lines) also may negatively affect greater prairie chickens.

We recommend that properly timed, species-appropriate surveys for breeding grassland birds be conducted before construction. Many privately-owned areas in South Dakota have not been surveyed for grassland songbirds or prairie grouse. Grassland songbird surveys are best conducted in June, although mid-May through early July is acceptable. Breeding ground (lek) surveys for prairie grouse species should be conducted in the spring (late March through April). Our agency respectfully requests a written summary of these surveys.

**Waterfowl** - The trumpeter swan is monitored by the Natural Heritage Program and these records show breeding pairs in or near the Proposed Project Area boundary. This species is a rare breeder in western South Dakota and records show migration through eastern South Dakota. An overwintering population of birds exists in the southcentral to southwestern portion of the state. These are most likely different individuals that those that breed here. This species inhabits shallow lakes and open marshes. Nesting occurs from mid-April through July. Five eggs are laid with an average of three young produced. Fledglings are present in South Dakota as late as August and September. Young birds can fly at 90-122 days after hatching. Adult pair bonds are maintained for life. Records of migration through eastern South Dakota are as early as April and banding recoveries show movement south in late-October and early-November. This species is sensitive to disturbance and pollution. Winter habitat availability and quality are a concern for this species. The trumpeter swan is the largest of the swans found in South Dakota. It can be differentiated from other swans by its size, yellow lores, and the visible kink at the base of the neck when the animal is at rest.

**Waterbirds** - This proposed project location is within the primary migration route of the 'Aransas National Wildlife Refuge to Wood Buffalo National Park' population of

whooping cranes. This species is protected as endangered under both state and federal laws. Placement of turbines in this area could very likely increase the chances of wind turbine and power line strikes and electrocutions. We are concerned about the direct impacts a potential wind power project may have on this population of whooping cranes. This species is state and federally protected. The federal Endangered Species Act is administered by the US Fish and Wildlife Service. As such, I recommend contacting the U.S. Fish and Wildlife (USFWS) Ecological Services Field Office in Pierre, SD for further information (605-224-8693 or [southdakotafieldoffice@fws.gov](mailto:southdakotafieldoffice@fws.gov)). Also, please note that Virginia rails have been documented breeding on Little Dog Ear Lake Game Production Area.

**Raptors** - Improperly sighted wind farms are known to cause significant mortality to raptors. The Swainson's hawk is a raptor monitored by the NHP and has been documented breeding in the Proposed Project Area. Swainson's hawk is a common migrant in the state. In the north and west it is a common breeder; it is uncommon to rare in other portions of the state. This is a raptor of prairies and agricultural land with scattered trees. Spring migration occurs in the latter part of April with most birds returning south in mid-September. Nesting for this species takes place from late April to early August. This species may be easily disturbed during nesting.

In consideration of high soaring birds, especially raptors, placement of turbines in areas of elevation (e.g. ridges) should be avoided if raptor use is high. The Proposed Project Area should be surveyed for these high-raptor use areas.

Our records indicate no nesting bald eagles in the area. However, they may be nesting in the area without our knowledge. Migrant bald eagles also are possible in the spring and fall. Please know that the bald eagle is state protected as a threatened species. This species also is protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act which are both administered by the USFWS. As such, I recommend contacting the USFWS Ecological Services Field Office in Pierre.

**Bats** – Construction of a wind power project may interfere with daily and seasonal bat movements between breeding and foraging areas, including mortality of individual bats. There has been limited research conducted on bats in South Dakota. However, thirteen species of bats are currently known to be found in South Dakota, some of which are summer residents, year-round residents, or migratory (Table 1).

Table 1. South Dakota Bats

Common Name	Scientific Name	State Residency
Big Brown Bat	<i>Eptesicus fuscus</i>	Year-round resident
Fringed-tailed Myotis*	<i>Myotis thysanodes</i>	Year-round resident
Little Brown Myotis	<i>Myotis lucifugus</i>	Year-round resident
Long-eared Myotis*	<i>Myotis evotis</i>	Year-round resident
Long-legged Myotis	<i>Myotis volans</i>	Year-round resident
Northern Myotis*	<i>Myotis septentrionalis</i>	Year-round resident



Townsend's Big-eared Bat*	<i>Corynorhinus townsendii</i>	Year-round resident
Western Small-footed Myotis	<i>Myotis ciliolabrum</i>	Year-round resident
Hoary Bat	<i>Lasiurus cinereus</i>	Summer resident
Eastern Red Bat	<i>Lasiurus borealis</i>	Summer resident
Silver-haired Bat*	<i>Lasionycteris noctivagans</i>	Summer resident
Evening Bat*	<i>Nycticeius humeralis</i>	Migratory
Eastern pipistrell	<i>Pipistrellus subflavus</i>	unclassified

\* = monitored by the Natural Heritage Program

Six bat species have a probable current distribution in Tripp County: 1) Northern myotis, 2) Western small-footed myotis, 3) little brown myotis, 4) silver-haired bat, 5) big brown bat, 6) eastern red bat, 7) hoary bat (Higgins et al 2000). The silver-haired bat, one of South Dakota's tree-roosting and migratory bats, is rare and monitored by the NHP (Table 1). Silver-haired bats have a probable distribution throughout the state of South Dakota. They require trees for roosting and maternity sites. In eastern South Dakota, they are found roosting in wooded areas along water courses. In treeless areas, they use fence post piles, boards, and bricks for roosts. Foraging areas include corridors found along roads and waterways. In the Black Hills, most silver-haired bats are captured during the summer (June to September). Mating takes place during late summer and two pups are usually born in June. Structural diversity in roosting habitats is required for this species. Because of limited, project-specific data we suggest pre-construction surveys of the area for potential bat habitat and species. Surveys for species should be conducted for at least one full year before construction. Please provide a written summary of these surveys to our agency.

South Dakota Department of Game, Fish and Parks in cooperation with the South Dakota Bat Working Group (SDBWG), developed the *South Dakota Bat Management Plan* specific to bats and their habitats in South Dakota (<http://www.sdgifp.info/Wildlife/Diversity/batmanagementplan71304.pdf>). Please review this document for additional pertinent information.

**Migrating Wildlife** - Both bats and birds are known to be susceptible to direct strikes with wind turbines. Bat species that migrate long distances, such as migratory tree-roosting species, are commonly found killed by wind farms in the United States (Kunz et al. 2007). Red, hoary and silver-haired bats are migratory tree-roosting species. However, other species also are susceptible to direct strikes (i.e. big brown bat; Higgins et al. 2007). The earliest spring migration record for silver-haired bats in South Dakota is late-April in Brookings County. Fall migration for this species begins in late-August to early-September. It is hypothesized that red bats migrate into the state in April and leave in August and September. Specific timing of hoary bat migration in South Dakota is not known.

At currently levels of wind energy development in the United States, it is estimated that avian mortality associated with wind turbines is less than 1% of all avian collision fatalities (Erickson et al. 2001). Even this mortality can be reduced by siting wind power

projects in areas that have low bird use. The Central Flyway, an important pathway for migratory ducks, geese, swans, and cranes runs through the midsection of the country, including South Dakota. Species using this flyway during migration, and particularly during inclement weather when birds alter their flight altitude, may suffer increased mortality due to direct strikes with wind turbines and associated power lines. Rivers are often used to guide in migration. The Missouri River also is located within this Flyway. Spring migration can begin as early as late-March and tapering off in mid-May, depending on the species. Fall migration can begin as early as mid-July and extend through October/November depending on weather conditions and species.

Placement of turbines should be in areas away from daily and seasonal migration routes (i.e. to and from feeding or roosting areas and to and from breeding or wintering grounds) of both birds and bats. If this proposed project is constructed, we recommend conducting post-construction mortality searches for both bats and birds for two years post-construction to evaluate siting decisions. These searches should estimate searcher efficiency and incorporate scavenging trials. A written report of these surveys should be provided to our agency.

**Invertebrates** - The American burying beetle has been extirpated from approximately 90% of its former range. This species is known to remain in seven states, including South Dakota. Within the state, the range of the American burying beetle is restricted to areas relatively undisturbed by human influence and commonly with sandy soils. This species is found in southern Trip County and portions of Todd and Gregory Counties. It is found within the Proposed Project Area boundary.

The American burying beetle is a large (25-45 mm or 1-1.5"), black and orange, carrion-eating beetle. It is nocturnally active requiring night time air temperatures at a minimum of 60°F. This species can be distinguished from similar beetles by its orange-red pronotum and frons. This beetle uses carcasses that weight 100-250 grams (0.2-0.6 lbs). These carcasses are located using chemoreceptors. Carcasses are buried and preserved with bodily secretions. A brood chamber is built adjacent to the carcass and approximately 10-30 eggs are laid in June and July. Adults care for the resulting larvae by feeding them carrion. Teneral beetles emerge in July and August. After an underground, overwintering period, these young, soft beetles become the entire adult population the following year. Only one brood is raised/year. Adults die after the breeding season, living only for approximately one year. Adult beetles can fly moderate distances. Reasons for decline are complex and not well understood but include habitat fragmentation and isolation, reduction in availability of preferred carrion sizes, human activity, pesticides, and behavior modification from artificial night lighting. This species is federally protected. Please contact the USFWS Ecological Services Field Office in Pierre, SD. More information on the population found in South Dakota can be found at <http://www.sdgifp.info/wildlife/diversity/ABB/ABB.htm>.

## OTHER

**Landscape considerations** - Placement of a wind power project should take into account larger landscape-level (e.g. surrounding land uses) and cumulative impacts (e.g. existing and potential wind power projects) as well as project associated infrastructure (i.e. transmission lines and roads).

**Public lands** - Placement of public lands is often done so in areas with existing and potential wildlife habitat. Management of these lands, for wildlife, is conducted in the public interest. Wildlife that use these areas may be affected by the placement of a wind power project in the area. There are three tracts of public lands that exist near or just within the Proposed Project Area boundary: 1) Dog Ear Lake, 2) Little Dog Ear Lake, and 3) and Roosevelt Dam. The location of these and other public lands can be found on line at <http://www.sdgfp.info/Wildlife/PublicLands/PubLand.htm>. All three of these Game Production Areas have records of species monitored by the NHP.

**Powerlines** – New power lines are often associated with a proposed wind power project. Power line strikes are a known cause of mortality to birds (Erickson et al. 2005). Waterfowl (ducks, geese, swans, and cranes), raptors, and passerines are species most susceptible to powerline collisions. The Avian Protection Power line Interaction Committee has developed two documents that may be of use to reduce powerline strikes and mortality: 1) *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* and 2) *Mitigating Bird Collisions with Power Lines*. Both of these documents are available from the Edison Institute (<http://www.aplic.org/>, under 'products and services'). New and existing power lines associated with the proposed project should be buried if at all possible, marked, or retrofitted to reduce strikes and electrocutions of bird species.

**Non-native/invasive plant species** - During the construction and maintenance phase of a wind power project existing roads often experience increased traffic and new roads are constructed. This increases the amount of area disturbed and increases opportunity for the introduction and establishment of non-native plant species. Resulting control of those species through pesticides and herbicides may also impact habitats of rare wildlife species. Invasive, non-native plant species are one of the major threats to threatened and endangered wildlife species. Improved access can also increase human disturbance to wildlife in the area. Any disturbance to native vegetation should be kept to a minimum. Disturbed areas should be revegetated using native seed sources. The Natural Resource Conservation Service Plant Materials Center in Bismarck, ND may serve as a good source of information on native plantings (<http://plant-materials.nrcs.usda.gov/ndpmc/>). Additional information on where to get these seed sources and how and why to establish them can be found at the following links:

- Five Reasons to Choose Native Grasses
  - <http://www.plant-materials.nrcs.usda.gov/pubs/ndpmctn7875.pdf>
- Five Myths Concerning Native Grass Varieties

- <http://www.plant-materials.nrcs.usda.gov/pubs/ndpmcsy5406.pdf>
- Origins of Native Grass and Forb Releases
  - <http://www.plant-materials.nrcs.usda.gov/pubs/ndpmctn6786.pdf>
- Conservation Seed/Plant Vendors List
  - <http://plant-materials.nrcs.usda.gov/NDPMC/pubs/ndpmcot8-CSPVendor.pdf>
- Prairie Landscaping Seed/Plant Vendors List
  - <http://plant-materials.nrcs.usda.gov/NDPMC/pubs/ndpmcot8-PLVendor.pdf>

**Research and monitoring** - Northern Prairie Wildlife Research Center, a part of the US Geological Survey, is currently investigating the influence of wind generators on breeding grassland bird density and species composition in the Dakotas. The results of this study may be of interest as you work on the siting and development of this proposed project. Please contact Jill Shaffer (701-253-5547 or [jshaffer@usgs.gov](mailto:jshaffer@usgs.gov)) for more information.

Please note that if survey and monitoring activities includes live trapping or collection of wildlife species, you must first obtain a collection permit from our agency. If these activities include bats, specific sampling and collection protocols must be followed for a collectors permit to be issued. More information can be found by contacting Doug Backlund or at the following websites:

- Scientific Collectors Permit
  - [http://www.sdgfp.info/Wildlife/Diversity/free\\_scientific\\_collector.htm](http://www.sdgfp.info/Wildlife/Diversity/free_scientific_collector.htm)
- Bat Sampling and Collection Protocol Guidelines and Requirements
  - <http://www.sdgfp.info/Wildlife/Diversity/batprotocol.pdf>

If during your monitoring activities you or your associates observe any of the animal or plant species monitored by the NHP, we request that reports of these observations be provided to the NHP. A list of monitored species can be found at <http://www.sdgfp.info/Wildlife/Diversity/>.

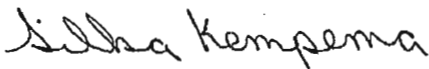
**Siting** - In coordination with the SDBWG, the SDGFP has developed *Siting Guidelines for Wind Power Projects in South Dakota*. This document addresses many of the concerns involved with siting wind power projects in South Dakota and may be found on the web (<http://www.sdgfp.info/Wildlife/Diversity/windpower.htm>). These voluntary guidelines are currently being updated using a multi-stakeholder, consensus-based approach. A new set of guidelines is scheduled to be available in the spring of 2009.

**Summary** - As outlined above, our agency has concerns regarding direct and indirect impacts to wildlife and habitats in association with the siting of the proposed project. The Proposed Project Area contains quality habitats with a variety of wildlife species important to the natural heritage of South Dakota. Of particular concern are impacts to large native prairie areas, the American burying beetle, whooping crane, and trumpeter swan. Because of the potential impacts placement of the proposed wind power project would have on unique and declining habitats in the region and their associated species, we recommend the following:

- Avoid placement of turbines in high quality native prairie.
- Avoid activities that may fragment contiguous grassland tracts.
- Avoid placement of turbines in wetland areas, especially those with high concentrations of basins.
- Properly timed, species-appropriate surveys for breeding grassland birds should be conducted before construction.
- Avoid placement of turbines in areas with high use by raptors.
- Conduct pre-construction surveys for potential bat habitat and species.
- Place turbines away from daily and seasonal bird and bat migration routes.
- Conduct post-construction mortality searches for bats and birds ( $\geq$  two years).
- Power lines should be buried, marked, or retrofitted.

The SDGFP appreciates the opportunity to provide comments. If you have any questions on the above comments, please feel free to contact me at 605-773-2742 or [Silka.Kempema@state.sd.us](mailto:Silka.Kempema@state.sd.us).

Regards,



Silka L. F. Kempema  
Terrestrial Wildlife Biologist

## LITERATURE CITED

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# United States Department of the Interior

BUREAU OF LAND MANAGEMENT  
South Dakota Field Office  
310 Roundup Street  
Belle Fourche, South Dakota 57717-1698  
<http://www.blm.gov/mt>



In Reply Refer To:

1790  
RWP

May 7, 2009

Ms. Liana Reilly, Document Manager  
Western Area Power Administration  
Corporate Services Office, A7400  
P.O. Box 281213  
Lakewood, Colorado 80228-8213

Dear Ms. Reilly:

The Bureau of Land Management appreciates the opportunity to review and provide comments regarding the subject ER 09/396. However, the BLM has no jurisdiction or authority with respect to the project, the agency does not have expertise or information relevant to the project, nor does the agency intend to submit comments regarding the project.

If you have any questions, please contact Russ Pigors at 605-892-7006, or at the address or email address above.

Sincerely,

Marian M. Atkins  
Field Manager, South Dakota



**South Dakota PrairieWinds Project  
Environmental Impact Statement (EIS)**

Thank you for your interest in the proposed South Dakota PrairieWinds Project (Project). Please complete the appropriate sections of this form to be included on the Project mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (720) 962-7263, mailed to the address on the back of this form or sent to the **Project Email Address: [sdprairiewinds@wapa.gov](mailto:sdprairiewinds@wapa.gov)**. Comments on the project scope and alternatives should be received by **May 15, 2009**, to be considered in defining the scope for the Draft EIS. For more information about the Project, please go to the **Project Website:**

**<http://www.wapa.gov/sdprairiewinds.htm>.**

- ☒ I would like to be kept informed of the ongoing progress of this Project. Please include my name on the mailing list.  
☒ I prefer electronic/email communication.  
☐ I prefer paper mailings.

***Please Print Contact Info Below***

Name:

SANDRA BRADWISCH

Organization:

White Lake City Council

E-mail address:

Daytime Phone No. (optional):

Street Address:

City / State / Zip Code:

Please indicate any questions, comments or concerns you have about the Project in the comment section below (continue on separate sheet if necessary).

I am pleased and it is my pleasure to welcome all of you  
to WHITE LAKE South Dakota.

Should you have any questions or if I can be of help  
please contact me.

Sincerely,

Sandra Bradwisch

**Thank you for your time and interest in the South Dakota PrairieWinds Project.**



**South Dakota PrairieWinds Project  
Environmental Impact Statement (EIS)**

Thank you for your interest in the proposed South Dakota PrairieWinds Project (Project). Please complete the appropriate sections of this form to be included on the Project mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (720) 962-7263, mailed to the address on the back of this form or sent to the **Project Email Address: [sdprairiewinds@wapa.gov](mailto:sdprairiewinds@wapa.gov)**. Comments on the project scope and alternatives should be received by **May 15, 2009**, to be considered in defining the scope for the Draft EIS. For more information about the Project, please go to the **Project Website: <http://www.wapa.gov/sdprairiewinds.htm>**.

- ☐ I would like to be kept informed of the ongoing progress of this Project. Please include my name on the mailing list.
- ☐ I prefer electronic/email communication.
- ☐ I prefer paper mailings.

***Please Print Contact Info Below***

Name:

Jim Burg

Organization:

Wess. Spr. Mayor

E-mail address:

Daytime Phone No. (optional):

Street Address:

City / State / Zip Code:

Please indicate any questions, comments or concerns you have about the Project in the comment section below (continue on separate sheet if necessary).

I feel Fish and Wildlife has as much to gain from the development of clean renewable energy. However Fish and Wildlife is the greatest impediment to wind development. If the requirements were spelled out and approval given if these requirements were met it would be acceptable. However if appears that compliance is a continually moving target, very difficult to meet. Every wind development I have been involved with says Fish and Wildlife compliance is by far the most difficult. I feel wind development will enhance habitat by making a turbine farm hard to till and the income from turbines will reduce the pressure to break habitat for a more profitable use. I have heard federal Fish and Wildlife representatives compliment and encourage clean wind energy development but EIS, especially endangered species make this a real challenge.

**Thank you for your time and interest in the South Dakota PrairieWinds Project.**



### South Dakota PrairieWinds Project Environmental Impact Statement (EIS)

Thank you for your interest in the proposed South Dakota PrairieWinds Project (Project). Please complete the appropriate sections of this form to be included on the Project mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (720) 962-7263, mailed to the address on the back of this form or sent to the **Project Email Address: [sdprairiewinds@wapa.gov](mailto:sdprairiewinds@wapa.gov)**. Comments on the project scope and alternatives should be received by **May 15, 2009**, to be considered in defining the scope for the Draft EIS. For more information about the Project, please go to the **Project Website: <http://www.wapa.gov/sdprairiewinds.htm>**.

- ☐ I would like to be kept informed of the ongoing progress of this Project. Please include my name on the mailing list.
- ☐ I prefer electronic/email communication.
- ☐ I prefer paper mailings.

**Please Print Contact Info Below**

Name:

Jennifer Clements

Organization:

SD Aeronautics Commission

E-mail address:

Daytime Phone No. (optional):

Street Address:

City / State / Zip Code:

Please indicate any questions, comments or concerns you have about the Project in the comment section below (continue on separate sheet if necessary).

Light all Turbines - For maximum Mitigation

- ① Clear aero Hazard
- ② Mitigated to max extent possible
- ③ Not lighting every tower does not constitute max mitigation
- ④ Comm Resolves they should all be lit.

Thank you for your time and interest in the South Dakota PrairieWinds Project.

**From:** <Mike.Cornelison@state.sd.us>  
**To:** <sdprairiewinds@wapa.gov>  
**Date:** 4/22/2009 2:26 PM  
**Subject:** RE: Maps failed to go through

Liana I did get you message not sure why the maps failed.

-----Original Message-----

From: sdprairiewinds sdprairiewinds [mailto:sdprairiewinds@wapa.gov]  
Sent: Wednesday, April 22, 2009 2:53 PM  
To: Cornelison, Mike  
Subject: Maps failed to go through

Hello Mike-

I tried to send you the more detailed maps for the SD PrairieWinds Project, but the email got sent back to me. I will try to send them one at a time momentarily.

Thank you for your interest and support for the project.

Best regards,  
Liana

Liana Reilly  
NEPA Project Manager



**From:** sdprairiewinds  
**To:** Mike.Cornelison@state.sd.us  
**Date:** 4/20/2009 7:00 AM  
**Subject:** Re: Western & RUS (EIS) site maps (Crow Lake Site and Winner Site)

Dear Mr. Cornelison,

Thank you for your comment and your interest in the South Dakota Prairie Winds Project. We hope to have more detailed maps at the interagency meeting as well as at the scoping meetings. You can also check our website for updated information: [www.wapa.gov/sdprairiewinds.htm](http://www.wapa.gov/sdprairiewinds.htm). Any updated information will be posted there as soon as it is available. The applicant for the project is currently working on printing more detailed maps for next weeks meetings.

Please let us know if there is anything else that we can do to assist you.

Best regards,  
Liana

Liana Reilly  
NEPA Project Manager

>>> <Mike.Cornelison@state.sd.us> 4/15/2009 10:27 AM >>>  
We received an invitation dated April 9th 2009 to participate in your interagency meeting scheduled on April 28th and to attend scoping meetings for the project. Do either of you have knowledge of who to contact to get either an expanded site map or something with more detail. I was having trouble seeing much detail in the site map sent with the invitation. My phone number is 605-773-4172.

**From:** <Postmaster>  
**To:** <sdprairiewinds@wapa.gov>  
**Date:** 4/22/2009 11:21 AM  
**Subject:** Delivery Notification <mike.cornelison@state.sd.us>  
**Attachments:** status.txt; Maps

This is a delivery status notification, automatically generated by MTA asmtpgw2u.wapa.gov on Wed, 22 Apr 2009 11:20:44 -0600

Regarding recipient(s) : mike.cornelison@state.sd.us

Delivery status : Failed. Message could not be delivered to domain <state.sd.us> .Failed while initiating the protocol. <[('mike.cornelison@state.sd.us', 550, 'Rule imposed mailbox access for mike.cornelison@state.sd.us refused')]]>

MTA Response :550

The original message headers are included as attachment.



Commissioners:

Denny Deffenbaugh, Chairman  
Dennis Vedral  
Robert Sperl, Sr.  
Darrell Bentz  
Lance Matucha

**Gregory County  
Board of Commissioners**

P.O. Box 437  
221 E. 8<sup>th</sup> Street  
Burke, South Dakota 57523-0437

Phone:

(605)775-2664

Fax:

(605)775-2596

May 6, 2009

Ms. Liana Reilly  
Western Area Power Administration  
Corporate Services Office, A7400  
PO Box 281213  
Lakewood, Colorado 80228-8213

Dear Ms. Reilly,

Gregory County supports wind farm development in Gregory County and is requesting that you provide power lines to handle wind energy.

Of course, as you are aware, Federal and State statutes must be complied with.

Sincerely yours,



Denny Deffenbaugh, Chairman  
Gregory County Commissioners

*Hard copy coming in mail.*



## United States Department of the Interior

### FISH AND WILDLIFE SERVICE

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

May 13, 2009

Ms. Liana Reilly, Document Manager  
Western Area Power Administration  
Corporate Services Office, A7400  
P.O. Box 281213  
Lakewood, Colorado 80228-8213

Mr. Dennis Rankin, Project Manager  
Engineering and Environmental Staff  
Rural Utilities Service, Utilities Program  
1400 Independence Avenue SW, Mail Stop 1571  
Washington D.C. 20250-1571

Re: Notice of Intent to Prepare an Environmental  
Impact Statement for Prairie Winds SD1  
Wind Farm, South Dakota

Dear Ms. Reilly and Mr. Rankin:

This letter is in response to your April 9, 2009, letter regarding the Notice of Intent to prepare an Environmental Impact Statement (EIS) for the above referenced project; a 150-megawatt, 101-turbine wind-powered generating facility proposed for south-central South Dakota to be located either near the town of Wessington Springs or the town of Winner. Coordination with the U.S. Fish and Wildlife Service (Service) has already been initiated for this project by your agencies and the applicant, Prairie Winds SD1, Inc. (a subsidiary of Basin Electric Power Cooperative), and their consultants. As part of this continued coordination effort, we herein submit formal comments on this project by the May 15, 2009, deadline as requested in your letter to assist in the development of the upcoming EIS.

The two sites being considered for placement of this wind farm are: 1) the Crow Lake Site (37,000 acres in Brule, Aurora, and Jerauld Counties) and 2) the Winner Site (83,000 acres in Tripp County). Per your letter, the proposed turbines will be 389 feet tall with turbine rotor diameters of 252 feet. The towers will be 15 feet wide at the base, placed on a concrete pad, temporarily disturbing a 190 x 210 foot area per turbine during construction. Thirty (30) to 40 miles of new access roads are planned, and a buried collection system will electrically connect

the turbines to a substation where voltage can be stepped up for interconnection with the Western Area Power Administration's (WAPA) transmission line. Construction of up to perhaps 12 miles of overhead high voltage transmission lines (34.5-115 kV) and other associated appurtenances will be required at both locations.

It is our understanding that the U.S. Department of Agriculture's Rural Utilities Service may provide funding for this project, and the WAPA is considering an interconnection request by Prairie Winds SD1 to WAPA's existing transmission lines. While your agencies are the Federal co-leads for this project, it has been decided that the WAPA will lead the section 7 process under the Endangered Species Act (ESA).

Your letter included an invitation to an agency meeting on April 28, 2009, which Natalie Gates of this office attended, plus an invitation to become a cooperating agency in the development of the EIS for this project. Mr. Harris Hoistad of our Huron Wetland Management District (WMD) also attended the April 28, 2009, meeting, and had indicated his interest in representing the Service as a cooperating agency for this project at that meeting. The Huron WMD administers Service fee title and easement properties in some of the counties proposed for construction. While Mr. Hoistad accepts your invitation and shall serve as your primary contact in that regard, we respectfully request that you include this office in such cooperating agency correspondences as well, thereby allowing the opportunity for input from the Ecological Services branch of the Service in addition to the Refuges program perspective provided by the Huron WMD. Natalie Gates will continue to serve as your Ecological Services contact.

### **Federally Listed Species**

In accordance with section 7(c) of the 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(s) (this list is considered valid for 90 days):

<u>Species</u>	<u>Status</u>	<u>Expected Occurrence</u>
Whooping crane ( <u>Grus americana</u> )	Endangered	Migration
American burying beetle ( <u>Nicrophorus americanus</u> )	Endangered	Resident, Tripp County
Piping plover ( <u>Charadrius melodus</u> )	Threatened	Migration
Topeka shiner ( <u>Notropis topeka</u> )	Endangered	Known resident, waterways in Jerauld and Aurora Counties

Whooping cranes migrate through central South Dakota on their way to northern breeding grounds and southern wintering areas. They occupy numerous habitats such as cropland and pastures; wet meadows; shallow marshes; shallow portions of rivers, lakes, reservoirs, and stock

ponds; and both freshwater and alkaline basins for feeding and loafing. Overnight roosting sites frequently require shallow water in which to stand and rest. If whooping crane stopover habitat exists within either proposed project site, potential whooping crane impacts should be considered. Whooping cranes are large birds with low maneuverability. Line strike mortality is the greatest known threat to fledged whooping cranes. Whooping crane interactions with wind turbines are not currently known; however, collisions with turbines may be possible, and/or loss of stopover habitat in the migration corridor may be realized if whooping cranes tend to avoid wind farms. Additionally, should construction occur during spring or fall migration, the potential for disturbances exists, stressing the whooping cranes at critical times of the year. Any whooping crane sightings should be reported to the Service; a standard reporting form is available from this office.

The American burying beetle is a known resident of southern Tripp County and has also been documented within Bennett, Todd, and Gregory Counties. Recent studies have shown some preference by this species for sandy or sandy-loam grasslands with interspersed stands of low-meadow cottonwoods; however, they will use various types of soil and habitat if the right type of food is available. The life cycle of the American burying beetle includes time spent underground during the summer months as eggs, larvae, and pupae, with adults present for part of that time; thus, the potential exists to excavate American burying beetles during June, July, and August. Adults are also present underground during winter, so it is possible to destroy American burying beetles via ground disturbance as they hibernate. These potential affects to the American burying beetle should be considered at the proposed Winner Site.

Piping plovers may occur within the proposed project areas although, in South Dakota, this shorebird species occupies habitat primarily along the Missouri River; thus, any birds present at either proposed wind turbine site would likely be passing over/through the site during migration to breeding/wintering areas. The species has been known to collide with overhead power lines; interactions with wind turbines are unknown. Piping plovers use sparsely vegetated interchannel sandbars, islands, and shorelines for nesting, foraging, and brood-rearing. The birds typically breed in South Dakota between the dates of May 1 and August 15.

Topeka shiners occupy tributaries within the Big Sioux, Vermillion, and James River watersheds in eastern South Dakota. Firesteel Creek, West Branch of Firesteel Creek, and Dry Run Creek are waterways in Jerauld and Aurora Counties that are known to be occupied by this minnow species. Should the Crow Lake Site be selected and the project involves direct or indirect impacts to these known occupied waterways or other tributaries to the James River, potential effects to the Topeka shiner should be considered. Examples may include power line/road crossings of these streams or upland construction adjacent to these waterways that could result in instream sedimentation.

If the WAPA or their designated representative 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.



## Wind Energy and Wildlife

Among the Service's primary concerns regarding wind turbines are avian collision mortality and the loss of habitat/habitat avoidance behaviors by wildlife. While there is still much to be learned regarding wind turbine-wildlife interactions, we do know that wind turbines can have adverse impacts on some species. Turbine location, spacing, aspect, lighting, size, and design are all potential factors related to the risk posed to resident and migratory wildlife as are the types of surrounding habitats, use of these habitats by various species of wildlife, landscape features, prey base, migration corridors, and behavioral patterns. Recent studies of grassland nesting birds have shown a tendency for avoidance of areas immediately surrounding turbines causing an indirect loss of habitat. Direct loss of habitat caused by the footprint of the turbines and associated roads and structures is another concern, along with loss of habitat that can occur with encroachment of invasive weeds as a result of these disturbances. Currently, perhaps the best means of minimizing impacts to wildlife is to avoid constructing within high wildlife use areas. Placement of turbines within existing cropland is recommended for this reason. When unavoidable impacts to fish and wildlife species and their habitats are anticipated, we recommend that offsetting measures be developed and implemented. We encourage inclusion of a mitigation plan within the draft EIS to serve this purpose.

### Wind Turbine Guidelines

You are aware that the Service has developed voluntary "*Interim Guidelines to Avoid and Minimize Wildlife Impacts from Wind Turbines*" (available online at <http://www.fws.gov/habitatconservation/Service%20Interim%20Guidelines.pdf>.) to assist energy companies in accomplishing the goal of reducing the risk posed by turbines to wildlife. The guidelines stress the importance of proper evaluation of potential wind turbine development sites, appropriate location and design of turbines and related facilities, and pre- and post-construction research and monitoring. Potential Impact Index (PII) scores, as recommended by our guidelines, were developed for each proposed site (results: PIIs of 269 and 239 for Winner and Crow Lake sites, respectively) and a reference site (result: PII of 331) located near the Lake Andes/Karl Mundt National Wildlife Refuges, South Dakota. Again, please note that previously disturbed sites (e.g., cropland) are recommended areas for turbines to minimize habitat loss and associated wildlife impacts. If construction must occur within intact native grasslands, offsetting and/or mitigative measures should be considered for the conservation of prairie wildlife, particularly migratory birds.

The South Dakota Department of Game, Fish and Parks (SDDGFP) has coordinated with the South Dakota Public Utilities Commission (SDPUC) regarding distribution of the SDDGFP's "*Siting Guidelines for Wind Power Projects in South Dakota*" to wind developers intending to construct projects within the state of South Dakota. You may wish to contact the SDPUC and/or the Wildlife Diversity Division of the SDDGFP in Pierre, South Dakota, for more information. Contact information may be found on their respective websites: <http://puc.sd.gov/> and <http://www.sdgifp.info/Wildlife/Diversity/index.htm>. The guidelines themselves may be found online at: <http://www.sdgifp.info/wildlife/diversity/windpower.htm>.

## Birds of Conservation Concern

The Migratory Birds Division of the Service has published "*Birds of Conservation Concern 2008*" (<http://www.fws.gov/migratorybirds/reports/BCC2008/BCC2008.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. We refer you to page 71 (Table 46) of that report for a list of birds of conservation concern in Region 6 (the Service Region where your project is proposed). Recent avian surveys at other sites in central South Dakota have documented numerous species that are included in Region 6's Birds of Conservation Concern list, such as northern harrier, upland sandpiper, marbled godwit, burrowing owl, grasshopper sparrow, chestnut-collared longspur, and bobolink. Depending upon available habitat, it is likely that some/all of these and perhaps other species of concern may be found in either the Winner or Crow Lake Sites. A primary threat to these species is habitat loss and fragmentation. In accordance with the National Environmental Policy Act and Executive Order 13186 regarding migratory bird protection/conservation, we recommend avoidance, minimization, and finally, offsetting measures to reduce the unavoidable impacts to species protected by the Migratory Bird Treaty Act (MBTA). MBTA compliance may be partially addressed in an Avian and Bat Protection Plan (see below); however, a separate mitigation plan that specifically addresses direct and indirect take of birds during and after construction (via collision, habitat loss, and habitat avoidance) is also recommended. This office can assist with development of such a plan.

## Meteorological Towers

Meteorological towers constructed in association with wind turbines are often similar in design to typical communications towers: tall, lighted, lattice structured, and guyed. These types of towers can be problematic for birds, particularly during inclement weather, as they enter the lighted area, become reluctant to leave it, and suffer mortality as they circle the structure and collide with the guy wires or the lattice of the tower itself. We are aware that meteorological towers already exist at the proposed sites but are uncertain of the tower designs. Guidance set forth in "*U.S. Fish and Wildlife Service Interim Guidelines for Recommendations on Communications Tower Siting, Construction, Operation and Decommissioning*" may be found online at <http://www.fws.gov/habitatconservation/communicationtowers.html>. We recommend adherence to these guidelines for construction of new towers and retrofitting of existing towers to minimize the threat of avian mortality at these structures. Please note that it may be possible to apply some of these guidelines to the turbine towers as well.

In order to obtain information on the usefulness of the communications tower guidelines in preventing birds strikes and to identify any recurring problems with their implementation which may necessitate modifications, please advise us of the final location and specifications of any towers associated with the wind turbine project and which of the measures recommended for the protection of migratory birds were implemented. If any of the recommended measures cannot be implemented, please explain why they were not feasible. A Tower Site Evaluation Form is also available via the above communications tower website:

(<http://www.fws.gov/habitatconservation/communicationtowers.html>). Please complete this form and forward it to our office.

## 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 and 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 [www.eei.org](http://www.eei.org) or by calling 1-800-334-5453.

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 may 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 avian electrocutions. Perch guards placed on other poles have 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. 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 large 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 "*Mitigating Bird Collisions With Power Lines: The State of the Art in 1994*" which may be obtained by contacting the Edison Electric Institute at the same website and telephone number listed above. While line marking is recommended to reduce the risk of collision, it does not preclude line strike mortality entirely. Thus, marking of additional, existing overhead lines is recommended as a means to further mitigate the potential for line strike mortality to migratory birds, including threatened/endangered species such as the whooping crane.

### **Avian and Bat Protection Plans**

The Service has coordinated with the Avian Power Line Interaction Committee (APLIC) to develop guidelines to assist companies in formulating Avian Protection Plans (APP). APPs are utility-specific and designed to reduce avian and operational risks that result from avian interactions with electric utility facilities, but they may be adapted to wind energy facilities as well and include consideration of bat species which are known to suffer mortality at wind farms. We encourage the project developer of the proposed wind farm to investigate the formulation of an A(and B [bat])PP and incorporate that into the draft EIS. The guidelines may be accessed at APLIC's website at <http://www.aplic.org/>.

### **MBTA and Bald and Golden Eagle Protection Act (BGEPA)**

Although the Service's tower, utility, and wind turbine guidelines will provide some protection for migratory birds, implementation of these measures alone will not remove any liability should violations of the law occur. Please be apprised of the potential application of the MBTA of 1918, as amended, 16 U.S.C. 703 et seq., and the BGEPA of 1940, as amended, 16 U.S.C. 668 et seq., to your project. The MBTA does not require intent to be proven and does not allow for "take," except as permitted by regulations. Section 703 of the MBTA provides: "Unless and except as permitted by regulations . . . it shall be unlawful at any time, by any means, or in any manner, to . . . take, capture, kill, attempt to take, capture, or kill, possess . . . any migratory bird, any part, nest, or eggs of any such bird . . . ." The BGEPA prohibits knowingly taking, or taking with wanton disregard for the consequences of an activity, any bald or golden eagles or their body parts, nests, or eggs, which includes collection, molestation, disturbance, or killing activities.

It is understood that some birds may be killed even if all reasonable conservation measures are implemented. The Service's Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement and through fostering relationships with individuals and industries seeking to eliminate their impacts to migratory birds. While it is not



possible under the MBTA and the BGEPA to absolve individuals or companies from liability by following these guidelines, enforcement will be focused on those individuals or companies that take migratory birds with disregard for the law and where no legitimate conservation measures have been applied.

### **Bats**

Bats are known to suffer mortality due to direct collisions with wind turbines, and it has been recently determined that many also die as a result of air pressure changes at the turbine blades that cause internal injuries. The SDDGFP has completed a state management plan for bats and may be able to provide additional information and/or recommendations regarding this project. If you have not already done so, please contact Silka Kempema at the SDDGFP-Wildlife Division, Joe Foss Building, 523 East Capitol Avenue, Pierre, South Dakota 57501, Telephone No. (605) 773-2742, for more information.

### **U.S. Geological Survey (USGS) Research**

The Northern Prairie Wildlife Research Center of Jamestown, North Dakota, has initiated studies of avian responses to wind turbines in both North Dakota and South Dakota. Their research may be relevant to your project, depending on habitat within the project area(s). We recognize that a consultant has already been hired for the Prairie Winds Project and that wildlife surveys are currently underway as of this writing. However, we recommend that you contact Ms. Jill Shaffer of the Northern Prairie Wildlife Research Center at (701) 253-5547 for more information about the USGS project; the preliminary results of that ongoing study appear pertinent to Prairie Winds.

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

The Service appreciates the opportunity to provide scoping comments and looks forward to development of the draft EIS. If you have any questions on these comments, please contact Natalie Gates of this office at (605) 224-8693, Extension 234.

Sincerely,



*Acting  
For*

Pete Gober  
Field Supervisor  
South Dakota Field Office

cc: USFWS/Huron WMD; Huron, SD  
(Attention: Harris Hoistad)  
Secretary, SDDGFP; Pierre, SD  
(Attention: Silka Kempema)  
USGS/NPWRC; Jamestown, ND  
(Attention: Jill Shaffer)  
USFWS/LE; Pierre, SD  
(Attention: Bob Prieksat)

**From:** <Suzanne\_Gucciardo@nps.gov>  
**To:** <sdprairiewinds@wapa.gov>  
**CC:** <Dan\_Wiley@nps.gov>, <Nicholas\_Chevance@nps.gov>, <Denise\_Nelson@nps.gov...>  
**Date:** 5/15/2009 3:54 PM  
**Subject:** Proposed PrairieWinds Project, South Dakota, NPS Comments

OFFICIAL CORRESPONDENCE SENT VIA ELECTRONIC MAIL

Lewis and Clark National Historic Trail  
National Park Service  
Midwest Region  
601 Riverfront Drive  
Omaha, Nebraska 68102

NO HARD COPY TO FOLLOW

15 May 2009

Liana Reilly, Document Manager  
Western Area Power Administration  
Corporate Services Office A7400  
PO Box 281218  
Lakewood, CO  
sdprairiewinds@wapa.gov

It is our understanding that your office is accepting agency comment on the proposed South Dakota Prairie Winds Project. The National Park Service (NPS) is submitting the following comment with respect to the Lewis and Clark National Historic Trail (NHT), which preserves and promotes the 1804-1806 route of the Corps of Discovery Expedition. This historic trail includes the entire Missouri River from its headwaters in Montana to its confluence with the Mississippi near St. Louis, Missouri, and which was the principle travel route of the Expedition east of the Rocky Mountains. In establishing the trail under the National Trail System Act (NTSA), Congress authorized preservation of the historic trail and the designation of auto tour routes along public roads and highways as close as reasonable to the historic route, and on both sides of river courses. This results in a trail corridor that is difficult to define in general terms and is best considered on a case-by-case basis when evaluating impacts to resources of concern. As trail administrator, the NPS is interested in potential affects on a wide range of natural, cultural, educational and recreational resources associated with the Lewis and Clark NHT corridor. This letter concerns impacts that will result from the development of the PrairieWinds Project.

Both under the NTSA and the Organic Act, the NPS is charged with preservation of natural scenes and landscapes for enjoyment by future generations. The Lewis and Clark NHT extends more than 3,700 miles through both urban and undeveloped areas. Those areas where the natural scenes are little altered since the days of Lewis and Clark are few and becoming more rare each year. The States of Montana, North Dakota and South Dakota, with their low populations and agrarian economies, retain the best examples of the environment as experienced by members of the Corps. In recent years, development of both renewable and non-renewable energy sources are quickly altering the landscape in these states.

Development of wind farms requires vast areas of land and introduces an

industrial landscapes unimagined just a few decades ago. Recent generator designs have increased heights and greater blade lengths than in the past, greatly increasing the distance over which they are visible. With increasing prevalence of wind farms across the nation, there has been an increase in public opposition for a number of reasons. Chief among these are the degradation of visual scenes, both directly during the day and at night from required safety lights. The NPS is sensitive to impacts on the visual scenes along the Lewis and Clark NHT and its associated auto tour routes. While acknowledging the need for renewable energy development, we oppose developments sited where there would be a major degradation to the views experienced by visitors along the NHT.

Two alternative locations are proposed for the Prairiewinds development. The Winner Project site extends to about seven miles from the designated auto tour route along US 18/SD 47. The Crow Lake Project location is more than 17 miles from the closest auto tour route on the east side of the Missouri, and is more than 20 miles from the river. The relatively low relief of the terrain in this region which makes development of wind energy feasible also allows wind generators to be visible over great distances. It might be assumed that the more distant site would have less of an impact on NHT users. However, the Environmental Impact Statement should include an adequate analysis of visual resource effects for both two locations for trail users, local residents and general travelers through the area. Individual siting of towers may need to be considered to determine the cumulative effect of the project on specific viewsheds, such as the L&C Visitor Center at the I-90 rest area near Chamberlain, SD, and other locations affiliated with the NHT.

We anticipate reviewing the draft EIS and other documents for all resource areas as the NEPA process proceeds for the PrairieWinds project. If there is specific information we could offer to assist with this process feel free to contact myself or my staff at:

Suzanne Gucciardo, Natural resources Specialist at  
Suzanne\_Gucciardo@nps.gov 402-661-1874 or  
Denise Nelson, Environmental Specialist at Denise\_Nelson@nps.gov  
402-6611812.

Sincerely,

//Dan Wiley//

Dan Wiley  
Chief Integrated Resources Stewardship  
601 Riverfront Drive  
Omaha, NE 68102  
402-661-1830 FAX 402-661-1831  
Dan\_Wiley@nps.gov



**South Dakota PrairieWinds Project  
Environmental Impact Statement (EIS)**

Thank you for your interest in the proposed South Dakota PrairieWinds Project (Project). Please complete the appropriate sections of this form to be included on the Project mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (720) 962-7263, mailed to the address on the back of this form or sent to the **Project Email Address: [sdprairiewinds@wapa.gov](mailto:sdprairiewinds@wapa.gov)**. Comments on the project scope and alternatives should be received by **May 15, 2009**, to be considered in defining the scope for the Draft EIS. For more information about the Project, please go to the **Project Website:**

**<http://www.wapa.gov/sdprairiewinds.htm>**.

- ☒ I would like to be kept informed of the ongoing progress of this Project. Please include my name on the mailing list.  
☐ I prefer electronic/email communication.  
☒ I prefer paper mailings.

***Please Print Contact Info Below***

Name:

Rod NARTOG

E-mail address:

Organization:

GREGORY COUNTY REC CORP

Daytime Phone No. (optional):

Street Address:

City / State / Zip Code:

Please indicate any questions, comments or concerns you have about the Project in the comment section below (continue on separate sheet if necessary).

THIS IS A MUCH NEEDED PROJECT  
IN SOUTH CENTRAL SOUTH DAKOTA IN  
FOR IN THE WHOLE STATE WE ARE  
NEEDING THIS EXPANSION OF THE WAPA  
POWER LINES TO EXPORT DEVELOPING  
WIND POWER

Thank you for your time and interest in the South Dakota PrairieWinds Project.

ROBERT E. KOVACEVICH, P.L.L.C.

A PROFESSIONAL LIMITED LIABILITY COMPANY

818 WEST RIVERSIDE  
SUITE 525  
SPOKANE, WASHINGTON 99201-0995  
509/747-2104  
FAX 509/625-1914  
email: kovacevichrobert@qwestoffice.net

May 4, 2009

Liana Reilly  
Western Area Power Administration  
Corporate Services Office  
A7400 P.O. Box 281213  
Lakewood, Colorado 80228-8213

Dear Ms. Reilly:

Please send us the information as indicated.

We have a site on the Blackfeet Reservation in Montana.

Very truly yours,

**ROBERT E. KOVACEVICH, P.L.L.C.**

A handwritten signature in black ink, appearing to read "Bob (15)".

**ROBERT E. KOVACEVICH**  
Attorney at Law

REK/lr



**From:** sdprairiewinds  
**To:** kovacevichrobert@qwestoffice.net  
**Date:** 5/13/2009 7:27 AM  
**Subject:** South Dakota PrairieWinds Project

Dear Mr. Kovacevich,

Thank you for your interest in the South Dakota PrairieWinds Project.

We have received your letter and would be happy to get you information on the project. It is unclear from your letter what information you would like. You can find general information about the project and the information that was presented at the scoping meetings on our website:

[www.wapa.gov/transmission/sdprairiewinds.htm](http://www.wapa.gov/transmission/sdprairiewinds.htm). If you would like additional information, please let us know.

Best regards,  
Liana

Liana Reilly  
NEPA Project Manager



### South Dakota PrairieWinds Project Environmental Impact Statement (EIS)

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- ☒ I would like to be kept informed of the ongoing progress of this Project. Please include my name on the mailing list.  
☒ I prefer electronic/email communication.  
☐ I prefer paper mailings.

#### *Please Print Contact Info Below*

Name:

*Michelle LaPointe*

Organization:

*N/A*

E-mail address:

Daytime Phone No. (optional):

Street Address:

City / State / Zip Code:

Please indicate any questions, comments or concerns you have about the Project in the comment section below (continue on separate sheet if necessary).

*What size or high are your wind testers?*

*How many testing sites in Corridor do you have?*

*How many acres does this corridor cover?*

*What size of Sub Station & MW?*

*How many species will be affected especially those on endangered list (if any)?*

*Any Cultural impact and are the govt parties participating in a government-to-government relationship w/local tribes?*

Thank you for your time and interest in the South Dakota PrairieWinds Project.



**From:** sdprairiewinds  
**To:** lakota001@hotmail.com  
**CC:** Rod O'Sullivan  
**Date:** 5/14/2009 1:43 PM  
**Subject:** South Dakota PrairieWinds Question Responses

Dear Ms. LaPointe,

Thank you for your interest in the South Dakota PrairieWinds Project.

We have received your comments and want to be sure to respond to your questions. With regards to wind testers, I am thinking that you are referring to meteorological towers. There are four met towers on each site and they stand 60 meters.

Next you asked about project/corridor size. As noted in our notice of intent as well as the other information noted on our website, there are two potential project locations. One of which is 37,000 acres (the Crow Lake site) and the other is 83,000 acres (the Winner site).

You also asked about substation size and MW. To find details on the substations, you can contact Rod O'Sullivan in our Upper Great Plains Office at 406 247 4792.

Next, with regards to species potentially affected as well as cultural areas that may be affected, we will not know that until we perform our environmental and cultural analyses. These items will be addressed in our Environmental Impact Statement.

Finally, with regards to tribal consultation, we are in fact proceeding with the government-to-government consultation process with the tribes.

I hope these answer your questions.

Best regards,  
Liana

Liana Reilly  
NEPA Project Manager



### South Dakota PrairieWinds Project Environmental Impact Statement (EIS)

Thank you for your interest in the proposed South Dakota PrairieWinds Project (Project). Please complete the appropriate sections of this form to be included on the Project mailing list and/or to provide comments. Written comments can be submitted at the Scoping Meeting, faxed to (720) 962-7263, mailed to the address on the back of this form or sent to the **Project Email Address: [sdprairiewinds@wapa.gov](mailto:sdprairiewinds@wapa.gov)**. Comments on the project scope and alternatives should be received by **May 15, 2009**, to be considered in defining the scope for the Draft EIS. For more information about the Project, please go to the **Project Website: <http://www.wapa.gov/sdprairiewinds.htm>**.

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- ☐ I prefer paper mailings.

#### ***Please Print Contact Info Below***

Name:

*Buren Lindbloom*

Organization:

*M.D.*

E-mail address:

Daytime Phone No. (optional):

Street Address:

City / State / Zip Code:

Please indicate any questions, comments or concerns you have about the Project in the comment section below (continue on separate sheet if necessary).

*Merabet S. D. Automation's concern*

**Thank you for your time and interest in the South Dakota PrairieWinds Project.**

**From:** sdprairiewinds  
**To:** Carla Loop  
**Date:** 5/1/2009 10:08 AM  
**Subject:** Re: Mailing List

Hello Carla-

Thank you for your interest in the SDPW project. I will add your names to the mailing list. Please let me know if there is anything else that I can do!

Best regards,  
Liana

Liana Reilly  
NEPA Project Manager

>>> Carla Loop <[cloop@fs.fed.us](mailto:cloop@fs.fed.us)> 4/30/2009 12:41 PM >>>  
Hi Liana. Please add myself (address in signature block) and Ruben Leal, District Ranger at Ft. Pierre National Grassland to the mailing list for the wind powered generating facilities. I understand that the proposed sites for these are either near Wessington Springs or Winner, SD. Thanks!

Ruben's address is:

Ruben Leal  
1020 North Deadwood Street  
Ft. Pierre, SD 57532

Carla Loop  
Realty Specialist  
Nebraska National Forest  
125 N Main  
Chadron, NE 69337  
(308) 432-0336 [cloop@fs.fed.us](mailto:cloop@fs.fed.us)

**From:** <Jack.Mitchell@state.sd.us>  
**To:** <sdprairiewinds@wapa.gov>  
**CC:** <Steve.Kolbeck@state.sd.us>, <Dustin.Johnson@state.sd.us>, <Kevin.Tveidt...>  
**Date:** 5/1/2009 12:06 PM  
**Subject:** Wind Turbine Projects (EIS Impact Statement)

05/01/09

Sirs,

I am replying to a request (EIS) of yours concerning wind projects in South Dakota. My name is John (Jack) Mitchell, 713 N. Madison Ave., Pierre, S.D. 57501. I am currently a member of the South Dakota Aeronautics Commission, since (1997), a pilot since (1965), and a retired (1985) FAA Air Traffic Controller.

My intent in this communication is to express my concerns with wind turbines being constructed that are not lighted ! During many of our commission meetings we have these type issues come up on our agenda. Most all of the requests have been approved until our meeting on 4/28/09 when a "farm" of these wind turbines were restricted to approval, because not all of them were going to be lighted. ie: (Aviation Systems Inc. Wind Farm near Highmore, S.D.) 12 turbines will be lighted with a red light and 6 will have no lights. Keep in mind, as you probably already know, Federal regulations have precedence over any State regulations or actions on the part of the South Dakota Aeronautics Commission.

The FAA (Great Lakes Region) says on their approval that only perimeter turbine towers need to be lighted, however it appears that FAA (Great Lakes Region) does not handle their approvals with the same thought in mind that FAA (Central Region) does, because the (Central Region) is much more restrictive. I have been informed that the (Central Region) requires all of the wind turbine towers to be lighted ,not just the perimeter.. We have a huge amount of inconsistencies ! It has occurred a number of times in South Dakota that ONLY a partial number of wind turbines have been required to be lighted by the FAA. From my experience on the South Dakota Aeronautics Commission over the past 3-5 years I have learned that the FAA (Great Lakes Region) only requires the PERIMETER of the wind towers to be lighted, so this leaves a false sense of security to the night-time pilot, because the center of this perimeter is not lighted. I hope you can understand where I am coming from when the night-time pilot who may need to make an emergency landing finds out he is coming head on with a wind turbine that he didn't know was there, because it was unlighted !

Since I am a pilot and do know about night time emergencies in an aircraft I am of the belief that EVERY obstacle that goes up into navigatable airspace should have a light on it and be properly marked for daylight visual reference. I urge your committee to make every effort possible to make sure that ALL of the wind towers going up into airspace be lighted at night and properly marked for day time visual reference. Thank you.

P.S. I would like to be kept informed of the ongoing progress of the Project, by paper mailings

Sincerely,  
John (Jack) Mitchell  
713 N. Madison Ave.

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P.S. I would like to be kept informed of the ongoing progress of the Project, by paper mailings

Sincerely,  
John (Jack) Mitchell  
713 N. Madison Ave.  
Pierre, S.D. 57501  
605-224-4471 or cell 605-222-4471

Note: Bruce Lindholm would you pass this along to Chm. Nelson via FAX, Thank you

**From:** sdprairiewinds  
**To:** Jack.Mitchell@state.sd.us  
**Date:** 5/6/2009 7:06 AM  
**Subject:** RE: Wind Turbine Projects (EIS Impact Statement)

Dear Mr. Mitchell,

We received your comment on 5/1/09.

Thank you for your interest in the South Dakota PraireWinds Project.

Best regards,  
Liana

Liana Reilly  
NEPA Project Manager

>>> <[Jack.Mitchell@state.sd.us](mailto:Jack.Mitchell@state.sd.us)> 5/2/2009 12:32 PM >>>

Would appreciate an acknowledgement of receipt my message dated 5/1/09.  
Thank you  
Jack Mitchell, S.D. Aeronautics Commission

-----Original Message-----

From: Mitchell, Jack  
Sent: Friday, May 01, 2009 1:06 PM  
To: '[sdprairiewinds@wapa.gov](mailto:sdprairiewinds@wapa.gov)'  
Cc: Kolbeck, Steve; Johnson, Dustin (PUC); Tveidt, Kevin;  
Lindholm, Bruce; Bingner, Randy  
Subject: Wind Turbine Projects (EIS Impact Statement)

05/01/09

Sirs,

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The FAA (Great Lakes Region) says on their approval that only

# INTERTRIBAL COUNCIL ON UTILITY POLICY

>>>> P.O. Box 224, Ft. Pierre, SD 57532 Phone: 605-280-7999 <<<<  
President Patrick Spears < Bill Schumacher > Secretary Robert Gough <

April 28, 2009

Tim Meeks, Administrator  
Western Area Power Administration  
12155 W. Alameda Pkwy.  
P.O. Box 281213  
Lakewood, CO 80228-8213

## **Re: Notification by WAPA to Tribal Governments On Proposed Wind Energy Projects In the WAPA - UGPR**

The Honorable Tim Meeks,

It has recently been brought to our attention through the Rosebud Sioux Tribe, one of the member Tribes of Intertribal COUP, that Basin Electric is proposing a 198 MW wind energy project at a site in South Dakota, one near Wessington Springs, SD or near Winner, SD. Scoping meetings on the intention to conduct an Environmental Impact Study under NEPA on this proposed project are scheduled for April 27-28, 2009 at these locations and in Pierre, SD sponsored by the Western Area Power Administration (WAPA) and the Rural Utility Service (RUS).

Our concern is one of policy and practice in the notification process to the Tribes conducted by WAPA and responsibilities in our government to government relationship as defined by the treaties with the United States government. A letter of notification on the proposed meetings was sent to the Bureau of Indian Affairs at Aberdeen who in turn notified some of the Tribes later last week.

It is our position that the Tribes should be notified directly on proposed wind projects on treaty lands and especially when then are proposed within the original boundaries of a federally recognized reservation, such as the Winner, South Dakota site, and almost more importantly, when those proposed projects will directly impact transmission capacity for tribal projects on the WAPA transmission system.

Cheyenne River Sioux Tribe ⊕ Cheyenne River Telephone Authority ⊕ Flandreau Santee Sioux Tribe  
Lower Brule Sioux Tribe ⊕ Northern Arapaho Tribe ⊕ Oglala Sioux Tribe ⊕ Omaha Tribe of Nebraska and Iowa ⊕  
Rosebud Sioux Tribe ⊕ Sisseton-Wahpeton Oyate ⊕ Spirit Lake Sioux Tribe ⊕ Standing Rock Sioux Tribe ⊕ Three  
Affiliated Tribes of Ft. Berthold ⊕ Turtle Mountain Band of Chippewa Indians ⊕ Yankton Sioux Tribe

As you are aware from our involvement in the WAPA Wind and Hydropower Feasibility Study and from our recent meeting with you and your staff on the 400 MW Intertribal COUP Wind Project, both the Rosebud and Pine Ridge Indian Reservations are interested in wind



development and are arrayed on the 115 kV line that runs west through Winner from the Ft. Randall dam. Our position is that WAPA has the ability and obligation to negotiate directly with the Tribes on supplemental power purchases. As each project site requires interconnection studies and given the limited capacity on the WAPA transmission system, we request direct communication on proposed projects that will impact tribal plans for wind development and use of the WAPA grid system.

The Tribes are aware that non-tribal environmental organizations, weed control groups near the project sites for the EIS were contacted directly, while no Tribal governments nor Intertribal organization, such as Intertribal COUP, were included in any communications from WAPA. Intertribal COUP and the Tribes developing wind projects with the intent of interconnection to WAPA are offended by the oversight of your staff to notify us directly.

WAPA's own website at < <http://www.wapa.gov/newsroom/FactSheets/factsnative.htm> > notes its connections to western Tribes:

**Native American power customers**

More than 300 Native American tribes are located in Western's 15-state service territory, and 900 miles of transmission line cross reservations and tribal lands.  
□ Nearly 100 tribes receive Federal hydropower allocations from Western.

We employ a full-time tribal liaison and conduct government-to-government consultations for National Environmental Policy Act and other actions. Tribes learn of energy development opportunities through Western and can take advantage of our resource planning assistance and other energy services.

This is precisely the type of "action" where we would expect Mr. Steve Tromly, WAPA's full-time tribal liaison, if not other staff members, to have had the awareness and interest to notify at least the interested Tribes of this proposal and public meeting. We are respectfully requesting that each Tribal government and Intertribal COUP be included in continued correspondence on the proposed Basin 198 MW wind project and any other wind generation projects that are on Tribal Treaty lands in the WAPA Upper Great Plains Region, and to the respective Tribes in the other WAPA regions, for that matter. We are sending a copy of this letter to the State Director of the USDA SD Rural Development Office.

Respectfully,



Patrick Spears, President

Cc: COUP Tribes

Jafar Karim, State Director  
USDA Rural Development State Office  
200 4<sup>th</sup> Street, SW, Federal Building, Room 210  
Huron, SD 57350





**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 8**

1595 Wynkoop Street  
DENVER, CO 80202-1129  
Phone 800-227-8917  
<http://www.epa.gov/region08>

MAY 14 2009

Ref: 8EPR-N

Ms. Liana Reilly  
NEPA Document Manager  
Western Area Power Administration  
Corporate Services Office – A7400  
P.O. Box 281213  
Lakewood, CO 80228-8213

Mr. Dennis Rankin  
Project Manager  
Engineering and Environmental Staff  
Rural Utilities Service, Utilities Program  
1400 Independence Ave. SW, Mail Stop 1571  
Washington D.C., 20250-1571

RE: EPA Scoping Comments for Prairie Winds

Dear Ms. Reilly and Mr. Rankin:

The U.S. Environmental Protection Agency (EPA) Region 8 has reviewed Western Area Power Administration's (Western) and Rural Utilities Service's (RUS) Environmental Assessment for the Prairie Winds SD1, Incorporated (Prairie Winds) proposed wind-powered generating facility in south-central South Dakota. In accordance with EPA responsibilities under the National Environmental Policy Act (NEPA), and EPA's authority under Section 309 of the Clean Air Act, EPA offers the enclosed comments for your consideration.

**Proposal**

Prairie Winds', a subsidiary of Basin Electric Power Cooperative (Basin Electric), proposal for a 150-megawatt wind energy facility includes 101 wind turbine generators at a blade-height of 389 feet each, to be constructed in one of two sites under consideration. One site is located on approximately 37,000 acres and is 15 miles north of White Lake, South Dakota. An alternative site is located on approximately 83,000 acres and is 8 miles south of Winner, South Dakota. Basin Electric proposes to interconnect the proposed project with Western's transmission system and approximately 40 miles of new roads are expected to be built for this project.

**Range of Alternatives**

The EIS should summarize the criteria and process that were used to develop the proposed alternatives, including any environmental criteria used to identify potential sites. The EIS should also disclose the reasoning used to eliminate alternatives.

## **Environmental Concerns**

Listed below are environmental issues commonly applicable to the proposed wind energy development project.

### *1. Protecting water quality*

The EIS should clearly describe water bodies within the analysis area which may be impacted by project activities. An analysis of the area's geology, topography, soils and stream stability in terms of erosion and mass failure potential may be necessary to adequately evaluate the potential risks to surface and subsurface water quality and quantity, aquatic habitat, and other resources from specific project activities. The EIS should also include the construction, design and operational practices that will be incorporated into the project to protect water quality from erosion. Some examples include the need for a stormwater construction permit and design practices that will be used to minimize the erosion from turbine pad runoff, roads, culverts, etc.

Events during project construction, including road building, such as vehicular spills of hazardous or toxic materials could result in significantly more adverse habitat and water quality impacts. The EIS should describe vehicle maintenance facilities (if any), and spill and release response capabilities. Storm water management should also be evaluated. Specific BMPs should be implemented to protect water quality from storm water runoff, including contaminated runoff from construction and maintenance activities. Examples of these practices include the following:

- Preserve existing vegetation during clearing and grading;
- Divert upland runoff around exposed soils;
- Use sediment barriers to trap soil in runoff where sheet flows occur;
- Protect slopes and channels from gullyng;
- Install sediment traps and settling basins to reduce the velocity of channeled runoff;
- Store chemicals for project activities in covered containers in a specific location;
- Identify areas and procedures for fueling, and provide a protected vehicle washout;
- Preserve vegetation near all waterways; and
- Inspect the effectiveness of best management practices.

The EIS should provide information on Clean Water Act (CWA) Section 303(d) impaired waters in the project area, if any, and should describe existing restoration and enhancement efforts for those waters and any mitigation measures that will be implemented to avoid further degradation of impaired waters. The EIS should also disclose how the project proponent plans to coordinate with any on-going protection efforts. Maps outlining the project area(s) including road placement in relation to water resources is recommended to be included in the EIS.

### *2. Protecting wetlands and riparian areas and associated ecosystems*

Under Section 404 of the CWA, a permit is required from the U.S. Army Corps of Engineers (Corps) for the discharge of dredge or fills material into waters of the U.S. We

recommend, that the EIS include the environmental analysis that might be needed to obtain a 404 permit, including the identification of potential wetlands both jurisdictional and non jurisdictional, development of a range of alternatives that includes the least damaging practicable alternative for avoiding wetlands, and development of a wetlands mitigation plan if needed. Under the Section 404(b)(1) guidelines, it is presumed that for non-water dependent activities there is an alternative available that will not impact waters of the U.S.

Executive Order 11990, "Protection of Wetlands," signed in 1978 and amended in 1988, addresses potential long and short-term adverse impacts associated with the destruction or modification of wetlands. In addition, the national wetlands policy has established an interim goal of "No Overall Net Loss of the Nation's Remaining Wetlands" and a long-term goal of increasing quantity/quality of the Nation's wetlands resource base ("Presidential Wetland Policy of 1993"). In accordance with the intent of the order and national policy, EPA suggests a mitigation commitment that indirect draining of, or direct disturbance of, wetland areas will be avoided if at all possible, and requiring complete avoidance of disturbance to any fen wetland (a Category I resource).

### 3. *Protecting air quality*

Protection of air quality should be addressed in the EIS. The EIS should present existing air quality conditions in the project vicinity, including criteria pollutants and air quality related values (AQRV). The amount of mobile and non-road source emissions activities should be quantified and disclosed. Particulate emissions from construction activities and ongoing operation of the roadways should also be addressed. The EIS should evaluate and disclose air quality impacts and, if necessary, detail mitigation steps that will be taken to minimize associated adverse impacts. This analysis should address and disclose the project's potential affect on all criteria pollutants (especially PM10 and PM 2.5) under the National Ambient Air Quality Standards (NAAQS) and AQRV regarding the protection of any affected Federal Class I Areas designated under the Clean Air Act. Any significant concentrations of hazardous air pollutants should be evaluated to ensure public health protection.

### 4. *Effects on wildlife habitat and vegetation*

Wind energy generation projects potentially may disrupt important wildlife species habitat. During construction of the proposed project, vegetation would be cleared and soils moved during road building activities, the establishment of wind turbine foundations, and construction of substation(s) and other associated facilities. The effects of project activities on area ecology, including vegetation, wildlife and their habitats, should be disclosed and evaluated in the EIS. The EIS should describe the current quality and capacity of habitat and its use by wildlife in the proposed project area. The EIS should include a description of any critical habitat for the species, identify any impacts the proposed project will have on the species and their critical habitats, and describe how the proposed project will meet all requirements under the Endangered Species Act (ESA). Continuous, uninterrupted habitat is particularly important to prairie ecosystems. The EIS should evaluate for fragmentation impacts on individual prairie species related to placement of a large number of turbines, support structures, right of ways, and



new roads. A proposed mitigation plan with detailed mitigation steps to minimize or eliminate adverse impacts should be presented.

The EIS should include maps that identify locations of important migration corridors of birds in the project area, and identify potential avian collision hazard areas. Avian flyways and migration corridors should be avoided, as well as areas where birds are highly concentrated. Having a thorough understanding of bird flight patterns in and around the project area will be beneficial in determining a turbine layout that will be effective in reducing the likelihood of migratory bird mortalities. The configuration of turbines should be explored to reduce the risk of avian mortality. Sources of avian mortality at wind farm facilities include guy wires, transmission lines and electrocution from power lines. The EIS should evaluate potential effects on birds, including bird mortality and changed migratory patterns, and identify mitigation to avoid adverse effects to birds.

The relatively high rate of bat fatalities related to wind energy projects is an increasing concern. Bat migration corridors should also be identified and mapped in the EIS, and these areas should be avoided. Locations where there are known bat hibernating, breeding, and maternity/nursery colonies should also be avoided when placing turbines. Barotrauma has been identified in numerous studies as a cause for high bat mortality rates. The potential impacts to bats and mitigation plans for offsetting these should be addressed in the EIS.

If any pesticides and herbicides will be used for pest control or vegetation treatment during the proposed project operations, the EIS should disclose any potential toxic hazards related to the application of the chemicals, and describe what actions will be taken to assure that impacts by toxic substances released to the environment will be minimized. If vegetation burning is proposed, then the EIS should include a smoke management program that would be followed to reduce public health impacts and potential ambient air quality exceedances. A noxious weeds management plan should also be considered to reduce the risk of the dispersion of invasive species.

EPA supports project strategies that include a monitoring program that can identify problems as they occur so that corrective actions or additional mitigation can be implemented. A monitoring program could be designed to include an effective feedback element, including implementation and effectiveness monitoring. Consider developing a monitoring plan for terrestrial and aquatic habitats prior to disruption in order to establish a valid baseline database from which to measure and detect future impacts. It may be helpful if the monitoring plan utilizes available information from state environmental and conservation agencies, and nonprofit conservation organizations to help establish baseline conditions prior to project development. This information could be helpful to monitor bird and bat mortality rates as well as infestation of noxious weeds.

##### *5. Road and construction issues*

The EIS should evaluate effects of any proposed road improvements, new road construction, and general right of way construction and operation activities on the area. The

evaluation should include increased access, travel management and enforcement aspects, as well as impact to the flora and fauna of the area. Dust particulates from construction, and ongoing operations on roadways are important concerns. Airborne dust may not only be a visual nuisance, but can be potentially dangerous to asthma sufferers. Sedimentation run-off can severely impact the aquatic environment. Construction techniques such as 95% base compaction prior to placement of gravel, culverts for water drainage, steep slope construction measures to prevent erosion, and appropriate dust control methods (such as placement of a non-chlorine based dust abatement chemical treatment), are important dust suppression and sediment reduction techniques. Detailed plans for addressing dust control for the project should be included. The plans should include, though are not limited to dust suppression methods, inspection schedules, and documentation and accountability processes.

#### 6. *Cumulative impacts*

The EIS should examine the cumulative impacts of development. In determining whether a project may have a significant effect on the human environment, it should analyze direct and indirect effects, including past, present and reasonably foreseeable future activities. The impacts should be analyzed according to airsheds and watersheds for example, rather than political boundaries. The assessment should include the cumulative impact of energy-related activities, agriculture and other reasonably foreseeable energy development projects, and any other activities within the project area that may affect air and water quality.

#### 7. *Environmental Justice*

The proposed wind power integration project should include potential impacts on low income, minority, and/or Tribal communities. The project evaluation should consider how to meet environmental justice requirements consistent with Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations," applicable to federal agencies that conduct activities that substantially affect human health or the environment. In accordance with this order, the EIS should disclose and evaluate environmental justice issues associated with impacts on rural low-income communities by the proposed actions for the reasonably foreseeable development analysis.

#### 8. *Greenhouse gases and climate change*

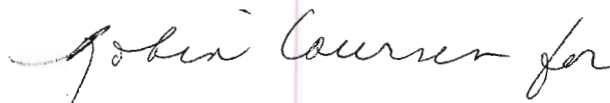
Global climate change has become an increasingly important issue of concern to address in NEPA documentation. The Supreme Court Opinion in *Massachusetts, et. al. v. EPA*, issued April 2, 2007, indicated that the Court considers it "reasonably foreseeable" that greenhouse gases (GHGs) produced by man's activities are contributing to climate change. EPA recently published an Advanced Notice of Proposed Rulemaking (July 11, 2008) to solicit public comment on climate change and the regulation of greenhouse gases under the Clean Air Act, (please refer to <http://www.epa.gov/climatechange/anpr.html>).

In the interim period as regulations are being developed, EPA recommends that for NEPA disclosure purposes the EIS estimate annual greenhouse gas emissions that is expected

during operations, and describe that in terms of CO<sub>2</sub> equivalents in metric tons per year and per megawatt hour produced. The EIS should compare these values to estimated greenhouse gas emissions on a regional or statewide scale. For example, comparing the magnitude of annual emissions from other sources in South Dakota such as coal-fired powerplants will enable the decision makers to better understand the level of greenhouse gases associated with the proposed project. The EIS should also discuss voluntary measures available to reduce and offset greenhouse gas emissions.

EPA appreciates the opportunity to provide detailed scoping comments at this early stage of the EIS process. In summary, EPA's primary concerns to consider for the proposed wind energy project are protection of water quality, wetlands and riparian areas and associated ecosystems, air quality, and impacts to wildlife. If we may provide further explanation of our comments during this phase of your planning process, please contact me at 303-312-6004, or Melanie Wasco of my staff at 303 312-6540.

Sincerely,

A handwritten signature in cursive script, appearing to read "Larry Svoboda".

Larry Svoboda  
Director, NEPA Program  
Ecosystems Protection and Remediation



## DEPARTMENT OF GAME, FISH, AND PARKS

Foss Building  
523 East Capitol  
Pierre, South Dakota 57501-3182

May 12, 2009

Ms. Liana Reilly  
Document Manager  
Western Power Administration  
Cooperate Services Office – A7400  
P.O. Box 281213  
Lakewood, CO 80228-8213

Dear Ms. Reilly,

This is in response to your letter dated April 9, 2009 regarding notice of Prairie Winds SD1 wind power project, its associated Environmental Impact Statement (EIS), and invitations to participate in an interagency meeting, and to serve as a cooperating agency in the development in the EIS. The location of this project would either be near Wessington Springs or Winner, South Dakota.

We recognize and appreciate your efforts in keeping our Department informed on the development of this proposed project. As you may be aware, our Department has provided information and comments on both of the proposed sites/potential wind power projects. Correspondence has been exchanged between various staff in our Department either with Basin Electric, Terracon Consultants, Inc., or Western Area Power Administration via letters, emails, and phone calls regarding Natural Heritage Program data, information on private lands enrolled in conservation programs, environmental review comments, and suggestions to improved proposed pre-construction wildlife survey protocol.

In brief, the State of South Dakota supports the responsible development of alternative sources of energy and appreciates the consideration of direct and indirect impacts of wind power development on wildlife. These impacts include mortality from turbine strikes, habitat alteration, and behavior modification from improperly sited wind power projects.

Potential impacts to the following should be addressed in the EIS:

- High quality and/or contiguous grassland habitats
- Areas with high concentrations of wetlands



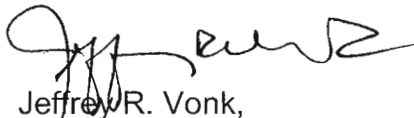
- Wildlife species including the American Burying beetle, Whooping Crane, Trumpeter Swan, area-sensitive grassland bird species, and migratory tree-roosting bats

The cumulative affects of existing wind power projects, the proposed wind power project and potential future development and associated infrastructure (transmission lines, roads, etc.) also should be addressed.

Please refer to the letters from our Department dated December 14, 2007 to James Berg of Basin Electric Power Cooperative and December 30, 2008 to Kim Austin of Terracon Consultants, Inc. for more detailed information including issues that our Department considers important and ways to address potential impacts. These letters and the associated Natural Heritage Program data also provide the information on unique and/or special resources or areas in the proposed project areas.

Please keep our Department informed of project developments and on your contact list during the NEPA process. Please provide this information to Tom Kirschenmann, Chief of Terrestrial Resources at 523 East Capitol, Pierre, SD, 57501.

Sincerely,



Jeffrey R. Vonk,  
Department Secretary

Enclosures (2)

cc: Tony Leif, Division of Wildlife Director  
Tom Kirschenmann, Chief of Terrestrial Resources, DOW  
Silka Kempema, Wildlife Biologist, DOW





## DEPARTMENT OF GAME, FISH AND PARKS

Foss Building  
523 East Capitol  
Pierre, South Dakota 57501-3182

December 30, 2008

Kim R. Austin  
Terracon Consultants, Inc.  
1815 South Eisenhower  
Wichita, KS 67209

RE: South Dakota Department of Game, Fish  
and Parks (SDGFP) environmental review of  
Prairie Winds Project in Tripp County, South  
Dakota

Dear Ms. Austin,

This letter is in response for your request for review of a proposed wind farm located on 75,000 acres in Tripp County. Please let us know if you have additional details regarding associated infrastructure, nameplate capacity or if major changes are made to the proposed project.

The proposed siting and operation of a wind power project has potential to directly and indirectly impact area wildlife. This may occur by altering important and declining habitats and influencing both breeding and movement behavior of wildlife and/or by killing bats and birds through wind turbine and power line strikes. While we applaud efforts to provide renewable energy sources, we offer the following information on wildlife habitats and associated species that contribute to South Dakota's natural heritage and that may be impacted by wind energy development. If major direct and indirect impacts are predicted, we recommend avoidance. If minor impacts are unavoidable, we recommend mitigation to lessen these impacts. We also provide additional contacts and resources for further information.

Doug Backlund, our Natural Heritage Program Database (NHPD) manager, will be providing you location information for species at risk and/or those that are rare and known to be within the Proposed Project Area. Species at risk are those that are threatened or endangered (legally protected) or rare. Rare species are those that are declining and restricted to limited habitat, peripheral to a jurisdiction, isolated or disjunct due to geographic or climatic factors or that are classified as such due to lack of survey data. Please note that absence of a species from the NHPD does not preclude its

presence in the Proposed Project Area. Many places in South Dakota have not been surveyed for rare or protected species. If you have questions regarding the NHPD search, please contact Doug Backlund at (605) 773-4345 or [Doug.Backlund@state.sd.us](mailto:Doug.Backlund@state.sd.us).

## HABITAT

**Ecoregions** (Bryce et al. 1998) - The Proposed Project Area is located primarily within two ecoregions: 1) Keya Paha Tablelands 2) Ponca Plains. The northern extension of the Proposed Project Area lies within the Subhumid Pierre Shale Plains. Ecoregions are areas that are similar in the type, quality, and quantity of environmental resources (e.g. geology, physiography, vegetation, climate, soils, land use, wildlife, and hydrology).

The Keya Paha Tablelands are found in the western half of the Proposed Project Area. This ecoregion is made of sandy, level to rolling plains. Annual precipitation is 16-20". Potential natural vegetation includes blue and sideoats grama, western wheatgrass, little bluestem, and needleandthread. Land use is predominately cattle ranching interspersed with some cropland (dryland and irrigated). The Ponca Plains are found in the eastern portion of the Proposed Project Area. These level to gently rolling plains are unglaciated. This ecoregion is more mesic than the Keya Paha Tablelands (20-22" annual precipitation). Little bluestem, prairie sandreed, green needlegrass and needleandthread are potential natural vegetation grass species. Intensive row crop agriculture is located in some portions of this ecoregion. Cattle are grazed on certain soils.

**Grasslands** - The Proposed Project Area is located within the mixed-grass prairie zone. Native prairie within this zone is decreasing at an alarming rate. Seventy percent of the native mixed-grass prairie has been lost in South Dakota (Samson et al. 1998). Areas of untilled prairie have high conservation value for wildlife, especially those that contain a high diversity of both plant and animal species with invasive species being rare or absent. Based upon soil-type, areas of untilled native prairie most likely remain in the Proposed Project Area. Every effort should be made to avoid placement of turbines in high quality native prairie.

Other grassland types are found in the Proposed Project Area. These include rangeland, pasture, hayland, or idle grassland. Rangeland supports native vegetation suitable for grazing or browsing. It includes areas where native vegetation has been reestablished. The vegetation is mainly grasses, grasslike plants, forbs, or shrubs. The amounts and kinds of native vegetation in any one area are determined by the soil, topography, climate, past use, and management. Pasture and hayland are used for the production of adapted domesticated perennial forage plants that are grazed or hayed. These forage plants may be either native or introduced species and may be seeded alone or in mixtures. An example of idle grasslands is Conservation Reserve Program land (highly-erodible, tilled land taken out of crop production). These agricultural and idle grassland types serve as important habitat for grassland wildlife (Haufler 2005).

One of the major threats to grassland dependent wildlife is habitat degradation and destruction. This degradation can result from fragmentation (unnatural woody encroachment and plantings in inappropriate places, road construction, etc.). Some grassland wildlife species depend on large patches of habitat. These smaller disjunct patches often provide less suitable habitat for many native species of grassland wildlife. Due to the nature of the sandy soils and the large amount of rangeland in the area, much of the Proposed Project Area (excluding the northern extension and the extreme eastern edge) presumably contains large contiguous tracts of grassland. Efforts should be made to avoid activities that may fragment contiguous grassland tracts.

**Wetlands** (Rieger et al. 2006) – Natural wetland basins of various depths and sizes occur throughout South Dakota. In western South Dakota, a small proportion of the land area is comprised of wetlands. In this drier western region, these wetlands are particularly important and especially so in times of drought. Tripp County contains the greatest number of wetland basins (12.1%) of all western South Dakota basins. Tripp County also has the fifth largest wetland basin area in western South Dakota. In addition, this county has the highest wetland basin density (50 basins/10km<sup>2</sup>) of the 22 western South Dakota counties. Placement of turbines should avoid areas with concentrations of wetlands.

## WILDLIFE

**Grassland birds** - Grassland birds have shown the most consistent and long term declines of any other group of bird species in North America (Peterjohn and Sauer 1999). Placement of a wind farm in the Proposed Project Area may reduce habitat suitability for grassland birds (increase habitat fragmentation and invasive species) and modify behavior (e.g. avoidance). Some grassland bird species have been shown to favor large grassland patches (Johnson 2001, Johnson and Igl 2001, Svedarsky et al. 2003). Species that may occur in or near the Proposed Project Area and that have indicated area sensitivity include northern harrier, upland sandpiper, grasshopper sparrow, and bobolink.

Two grassland bird species of interest to SDGFP that may be found in the Proposed Project Area include the sharp-tailed grouse and greater prairie chicken. Note that the greater prairie chicken is a Species of Greatest Conservation Need as identified in our State Wildlife Action Plan ([http://www.sdgfp.info/Wildlife/Diversity/Comp\\_Plan.htm](http://www.sdgfp.info/Wildlife/Diversity/Comp_Plan.htm)).

The primary range of the sharp-tailed grouse in South Dakota is west of the Missouri River. It is a common (more than 25 individuals would be seen in appropriate habitat by a single observer) permanent resident. Sharp-tailed grouse are known to occur in Tripp County, near the Proposed Project Area. This species prefers grassland habitat (mid- to tall-grasses) with brushy draws and thickets. Courtship activity on communal display grounds (leks) occurs between late-March through April. Nesting also begins during this time. Leks are located on hilltops or other elevated sites with minimal vegetation. Nest sites are found within approximately 0.5 miles of the lek. Nests typically hatch

from last week in May through the first week in June. Deterioration of native grasslands, reduction of nesting and brood rearing cover, and variable climatic factors are limiting factors for this species.

The greater prairie-chicken is an uncommon (fewer than 25 individuals would be seen in appropriate habitat by a single observer) permanent resident in Tripp County. This species prefers tall- to mixed-grass prairies. Breeding behavior occurs on communal display grounds (leks) primarily between late-March through April. Nesting occurs in mid-May to June. Leks are located on barren areas or on areas with minimal cover. This species nests in grasslands (prairies, pastures, hayfields) located near (1-3 miles) lek site. Loss and fragmentation of tallgrass prairie considered reason for population declines.

These two species are known to be area-sensitive, requiring comparatively large tracts of open, contiguous grassland. The lesser prairie chicken, a similar species found more commonly in the southern Great Plains, avoids nesting within 400 m of transmission lines or improved roads (Pitman et al. 2005). This suggests that placement of turbines and associated infrastructure (roads and transmission lines) also may negatively affect greater prairie chickens.

We recommend that properly timed, species-appropriate surveys for breeding grassland birds be conducted before construction. Many privately-owned areas in South Dakota have not been surveyed for grassland songbirds or prairie grouse. Grassland songbird surveys are best conducted in June, although mid-May through early July is acceptable. Breeding ground (lek) surveys for prairie grouse species should be conducted in the spring (late March through April). Our agency respectfully requests a written summary of these surveys.

**Waterfowl** - The trumpeter swan is monitored by the Natural Heritage Program and these records show breeding pairs in or near the Proposed Project Area boundary. This species is a rare breeder in western South Dakota and records show migration through eastern South Dakota. An overwintering population of birds exists in the southcentral to southwestern portion of the state. These are most likely different individuals than those that breed here. This species inhabits shallow lakes and open marshes. Nesting occurs from mid-April through July. Five eggs are laid with an average of three young produced. Fledglings are present in South Dakota as late as August and September. Young birds can fly at 90-122 days after hatching. Adult pair bonds are maintained for life. Records of migration through eastern South Dakota are as early as April and banding recoveries show movement south in late-October and early-November. This species is sensitive to disturbance and pollution. Winter habitat availability and quality are a concern for this species. The trumpeter swan is the largest of the swans found in South Dakota. It can be differentiated from other swans by its size, yellow lores, and the visible kink at the base of the neck when the animal is at rest.

**Waterbirds** - This proposed project location is within the primary migration route of the 'Aransas National Wildlife Refuge to Wood Buffalo National Park' population of



whooping cranes. This species is protected as endangered under both state and federal laws. Placement of turbines in this area could very likely increase the chances of wind turbine and power line strikes and electrocutions. We are concerned about the direct impacts a potential wind power project may have on this population of whooping cranes. This species is state and federally protected. The federal Endangered Species Act is administered by the US Fish and Wildlife Service. As such, I recommend contacting the U.S. Fish and Wildlife (USFWS) Ecological Services Field Office in Pierre, SD for further information (605-224-8693 or southdakotafieldoffice@fws.gov). Also, please note that Virginia rails have been documented breeding on Little Dog Ear Lake Game Production Area.

**Raptors** - Improperly sighted wind farms are known to cause significant mortality to raptors. The Swainson's hawk is a raptor monitored by the NHP and has been documented breeding in the Proposed Project Area. Swainson's hawk is a common migrant in the state. In the north and west it is a common breeder; it is uncommon to rare in other portions of the state. This is a raptor of prairies and agricultural land with scattered trees. Spring migration occurs in the latter part of April with most birds returning south in mid-September. Nesting for this species takes place from late April to early August. This species may be easily disturbed during nesting.

In consideration of high soaring birds, especially raptors, placement of turbines in areas of elevation (e.g. ridges) should be avoided if raptor use is high. The Proposed Project Area should be surveyed for these high-raptor use areas.

Our records indicate no nesting bald eagles in the area. However, they may be nesting in the area without our knowledge. Migrant bald eagles also are possible in the spring and fall. Please know that the bald eagle is state protected as a threatened species. This species also is protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act which are both administered by the USFWS. As such, I recommend contacting the USFWS Ecological Services Field Office in Pierre.

**Bats** – Construction of a wind power project may interfere with daily and seasonal bat movements between breeding and foraging areas, including mortality of individual bats. There has been limited research conducted on bats in South Dakota. However, thirteen species of bats are currently known to be found in South Dakota, some of which are summer residents, year-round residents, or migratory (Table 1).

Table 1. South Dakota Bats

Common Name	Scientific Name	State Residency
Big Brown Bat	<i>Eptesicus fuscus</i>	Year-round resident
Fringed-tailed Myotis*	<i>Myotis thysanodes</i>	Year-round resident
Little Brown Myotis	<i>Myotis lucifugus</i>	Year-round resident
Long-eared Myotis*	<i>Myotis evotis</i>	Year-round resident
Long-legged Myotis	<i>Myotis volans</i>	Year-round resident
Northern Myotis*	<i>Myotis septentrionalis</i>	Year-round resident

Townsend's Big-eared Bat*	<i>Corynorhinus townsendii</i>	Year-round resident
Western Small-footed Myotis	<i>Myotis ciliolabrum</i>	Year-round resident
Hoary Bat	<i>Lasiurus cinereus</i>	Summer resident
Eastern Red Bat	<i>Lasiurus borealis</i>	Summer resident
Silver-haired Bat*	<i>Lasionycteris noctivagans</i>	Summer resident
Evening Bat*	<i>Nycticeius humeralis</i>	Migratory
Eastern pipistrell	<i>Pipistrellus subflavus</i>	unclassified

\* = monitored by the Natural Heritage Program

Six bat species have a probable current distribution in Tripp County: 1) Northern myotis, 2) Western small-footed myotis, 3) little brown myotis, 4) silver-haired bat, 5) big brown bat, 6) eastern red bat, 7) hoary bat (Higgins et al 2000). The silver-haired bat, one of South Dakota's tree-roosting and migratory bats, is rare and monitored by the NHP (Table 1). Silver-haired bats have a probable distribution throughout the state of South Dakota. They require trees for roosting and maternity sites. In eastern South Dakota, they are found roosting in wooded areas along water courses. In treeless areas, they use fence post piles, boards, and bricks for roosts. Foraging areas include corridors found along roads and waterways. In the Black Hills, most silver-haired bats are captured during the summer (June to September). Mating takes place during late summer and two pups are usually born in June. Structural diversity in roosting habitats is required for this species. Because of limited, project-specific data we suggest pre-construction surveys of the area for potential bat habitat and species. Surveys for species should be conducted for at least one full year before construction. Please provide a written summary of these surveys to our agency.

South Dakota Department of Game, Fish and Parks in cooperation with the South Dakota Bat Working Group (SDBWG), developed the *South Dakota Bat Management Plan* specific to bats and their habitats in South Dakota (<http://www.sdgap.info/Wildlife/Diversity/batmanagementplan71304.pdf>). Please review this document for additional pertinent information.

**Migrating Wildlife** - Both bats and birds are known to be susceptible to direct strikes with wind turbines. Bat species that migrate long distances, such as migratory tree-roosting species, are commonly found killed by wind farms in the United States (Kunz et al. 2007). Red, hoary and silver-haired bats are migratory tree-roosting species. However, other species also are susceptible to direct strikes (i.e. big brown bat; Higgins et al. 2007). The earliest spring migration record for silver-haired bats in South Dakota is late-April in Brookings County. Fall migration for this species begins in late-August to early-September. It is hypothesized that red bats migrate into the state in April and leave in August and September. Specific timing of hoary bat migration in South Dakota is not known.

At currently levels of wind energy development in the United States, it is estimated that avian mortality associated with wind turbines is less than 1% of all avian collision fatalities (Erickson et al. 2001). Even this mortality can be reduced by siting wind power



projects in areas that have low bird use. The Central Flyway, an important pathway for migratory ducks, geese, swans, and cranes runs through the midsection of the country, including South Dakota. Species using this flyway during migration, and particularly during inclement weather when birds alter their flight altitude, may suffer increased mortality due to direct strikes with wind turbines and associated power lines. Rivers are often used to guide in migration. The Missouri River also is located within this Flyway. Spring migration can begin as early as late-March and tapering off in mid-May, depending on the species. Fall migration can begin as early as mid-July and extend through October/November depending on weather conditions and species.

Placement of turbines should be in areas away from daily and seasonal migration routes (i.e. to and from feeding or roosting areas and to and from breeding or wintering grounds) of both birds and bats. If this proposed project is constructed, we recommend conducting post-construction mortality searches for both bats and birds for two years post-construction to evaluate siting decisions. These searches should estimate searcher efficiency and incorporate scavenging trials. A written report of these surveys should be provided to our agency.

**Invertebrates** - The American burying beetle has been extirpated from approximately 90% of its former range. This species is known to remain in seven states, including South Dakota. Within the state, the range of the American burying beetle is restricted to areas relatively undisturbed by human influence and commonly with sandy soils. This species is found in southern Trip County and portions of Todd and Gregory Counties. It is found within the Proposed Project Area boundary.

The American burying beetle is a large (25-45 mm or 1-1.5"), black and orange, carrion-eating beetle. It is nocturnally active requiring night time air temperatures at a minimum of 60°F. This species can be distinguished from similar beetles by its orange-red pronotum and frons. This beetle uses carcasses that weight 100-250 grams (0.2-0.6 lbs). These carcasses are located using chemoreceptors. Carcasses are buried and preserved with bodily secretions. A brood chamber is built adjacent to the carcass and approximately 10-30 eggs are laid in June and July. Adults care for the resulting larvae by feeding them carrion. Teneral beetles emerge in July and August. After an underground, overwintering period, these young, soft beetles become the entire adult population the following year. Only one brood is raised/year. Adults die after the breeding season, living only for approximately one year. Adult beetles can fly moderate distances. Reasons for decline are complex and not well understood but include habitat fragmentation and isolation, reduction in availability of preferred carrion sizes, human activity, pesticides, and behavior modification from artificial night lighting. This species is federally protected. Please contact the USFWS Ecological Services Field Office in Pierre, SD. More information on the population found in South Dakota can be found at <http://www.sdgap.info/wildlife/diversity/ABB/ABB.htm>.

## OTHER

**Landscape considerations** - Placement of a wind power project should take into account larger landscape-level (e.g. surrounding land uses) and cumulative impacts (e.g. existing and potential wind power projects) as well as project associated infrastructure (i.e. transmission lines and roads).

**Public lands** - Placement of public lands is often done so in areas with existing and potential wildlife habitat. Management of these lands, for wildlife, is conducted in the public interest. Wildlife that use these areas may be affected by the placement of a wind power project in the area. There are three tracts of public lands that exist near or just within the Proposed Project Area boundary: 1) Dog Ear Lake, 2) Little Dog Ear Lake, and 3) and Roosevelt Dam. The location of these and other public lands can be found on line at <http://www.sdgfp.info/Wildlife/PublicLands/PubLand.htm>. All three of these Game Production Areas have records of species monitored by the NHP.

**Powerlines** – New power lines are often associated with a proposed wind power project. Power line strikes are a known cause of mortality to birds (Erickson et al. 2005). Waterfowl (ducks, geese, swans, and cranes), raptors, and passerines are species most susceptible to powerline collisions. The Avian Protection Power line Interaction Committee has developed two documents that may be of use to reduce powerline strikes and mortality: 1) *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* and 2) *Mitigating Bird Collisions with Power Lines*. Both of these documents are available from the Edison Institute (<http://www.aplic.org/>, under 'products and services'). New and existing power lines associated with the proposed project should be buried if at all possible, marked, or retrofitted to reduce strikes and electrocutions of bird species.

**Non-native/invasive plant species** - During the construction and maintenance phase of a wind power project existing roads often experience increased traffic and new roads are constructed. This increases the amount of area disturbed and increases opportunity for the introduction and establishment of non-native plant species. Resulting control of those species through pesticides and herbicides may also impact habitats of rare wildlife species. Invasive, non-native plant species are one of the major threats to threatened and endangered wildlife species. Improved access can also increase human disturbance to wildlife in the area. Any disturbance to native vegetation should be kept to a minimum. Disturbed areas should be revegetated using native seed sources. The Natural Resource Conservation Service Plant Materials Center in Bismarck, ND may serve as a good source of information on native plantings (<http://plant-materials.nrcs.usda.gov/ndpmc/>). Additional information on where to get these seed sources and how and why to establish them can be found at the following links:

- Five Reasons to Choose Native Grasses
  - <http://www.plant-materials.nrcs.usda.gov/pubs/ndpmctn7875.pdf>
- Five Myths Concerning Native Grass Varieties

- <http://www.plant-materials.nrcs.usda.gov/pubs/ndpmcsy5406.pdf>
- Origins of Native Grass and Forb Releases
  - <http://www.plant-materials.nrcs.usda.gov/pubs/ndpmctn6786.pdf>
- Conservation Seed/Plant Vendors List
  - <http://plant-materials.nrcs.usda.gov/NDPMC/pubs/ndpmcot8-CSPVendor.pdf>
- Prairie Landscaping Seed/Plant Vendors List
  - <http://plant-materials.nrcs.usda.gov/NDPMC/pubs/ndpmcot8-PLVendor.pdf>

**Research and monitoring** - Northern Prairie Wildlife Research Center, a part of the US Geological Survey, is currently investigating the influence of wind generators on breeding grassland bird density and species composition in the Dakotas. The results of this study may be of interest as you work on the siting and development of this proposed project. Please contact Jill Shaffer (701-253-5547 or [jshaffer@usgs.gov](mailto:jshaffer@usgs.gov)) for more information.

Please note that if survey and monitoring activities includes live trapping or collection of wildlife species, you must first obtain a collection permit from our agency. If these activities include bats, specific sampling and collection protocols must be followed for a collectors permit to be issued. More information can be found by contacting Doug Backlund or at the following websites:

- Scientific Collectors Permit
  - [http://www.sdgifp.info/Wildlife/Diversity/free\\_scientific\\_collector.htm](http://www.sdgifp.info/Wildlife/Diversity/free_scientific_collector.htm)
- Bat Sampling and Collection Protocol Guidelines and Requirements
  - <http://www.sdgifp.info/Wildlife/Diversity/batprotocol.pdf>

If during your monitoring activities you or your associates observe any of the animal or plant species monitored by the NHP, we request that reports of these observations be provided to the NHP. A list of monitored species can be found at <http://www.sdgifp.info/Wildlife/Diversity/>.

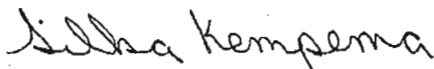
**Siting** - In coordination with the SDBWG, the SDGFP has developed *Siting Guidelines for Wind Power Projects in South Dakota*. This document addresses many of the concerns involved with siting wind power projects in South Dakota and may be found on the web (<http://www.sdgifp.info/Wildlife/Diversity/windpower.htm>). These voluntary guidelines are currently being updated using a multi-stakeholder, consensus-based approach. A new set of guidelines is scheduled to be available in the spring of 2009.

**Summary** - As outlined above, our agency has concerns regarding direct and indirect impacts to wildlife and habitats in association with the siting of the proposed project. The Proposed Project Area contains quality habitats with a variety of wildlife species important to the natural heritage of South Dakota. Of particular concern are impacts to large native prairie areas, the American burying beetle, whooping crane, and trumpeter swan. Because of the potential impacts placement of the proposed wind power project would have on unique and declining habitats in the region and their associated species, we recommend the following:

- Avoid placement of turbines in high quality native prairie.
- Avoid activities that may fragment contiguous grassland tracts.
- Avoid placement of turbines in wetland areas, especially those with high concentrations of basins.
- Properly timed, species-appropriate surveys for breeding grassland birds should be conducted before construction.
- Avoid placement of turbines in areas with high use by raptors.
- Conduct pre-construction surveys for potential bat habitat and species.
- Place turbines away from daily and seasonal bird and bat migration routes.
- Conduct post-construction mortality searches for bats and birds ( $\geq$  two years).
- Power lines should be buried, marked, or retrofitted.

The SDGFP appreciates the opportunity to provide comments. If you have any questions on the above comments, please feel free to contact me at 605-773-2742 or [Silka.Kempema@state.sd.us](mailto:Silka.Kempema@state.sd.us).

Regards,



Silka L. F. Kempema  
Terrestrial Wildlife Biologist

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## DEPARTMENT OF GAME, FISH AND PARKS

Foss Building  
523 East Capitol  
Pierre, South Dakota 57501-3182

December 14, 2007

James Berg  
Water Quality/Waste Management Coordinator  
Basin Electric Power Cooperative  
1717 East Interstate Ave  
Bismarck, ND 58503-0564

RE: Environmental review of two potential  
wind power projects near the cities of  
Reliance and Crow Lake, SD

Dear Mr. Berg:

The following comments are in response to your letter dated 16 November 2007 requesting environmental review of two potential wind power projects near the cities of Reliance and Crow Lake, SD. This letter addresses environmental concerns regarding sensitive wildlife species and habitats, and other state wildlife interests such as migratory birds, bats, grassland and wetland resources, and environmental properties.

Doug Backlund, our Natural Heritage Database (NHD) manager, has provided location information on rare and protected species known to be within the proposed project areas and included in our NHD. Please note that absence of a species from the NHD does not preclude its presence in either of the proposed project areas. Many areas in South Dakota have not been surveyed for native wildlife species. An invoice for the database search is enclosed. If you have further questions regarding the NHD search, please contact Doug Backlund at (605) 773-4345. If you have specific questions about the plant records, please contact our botanist, Dave Ode, at (605) 773-4227.

The proposed siting and operation of a wind power project has the potential to directly and indirectly impact area wildlife by killing bats and birds (wind turbine and power line strikes) and altering wildlife habitat (fragmentation, degradation, and conversion) and behavior (breeding and daily and seasonal movements). While we applaud efforts to provide alternative energy sources, we offer the following information on grassland and wetland habitats and associated species. We also provide additional suggestions on avoiding impacts to these wildlife resources. If impacts are unavoidable, we recommend mitigation to avoid or lessen direct and indirect impacts.

## **Ecoregions**

The Reliance Proposed Project Area is located within the River Breaks and the Subhumid Pierre Shale Plains ecoregions (Bryce et al. 1998). The River Breaks ecoregion is characterized by steep and dissected topography especially along tributaries to the Missouri River. Topographical variation has precluded cultivation, much of the area remains as native rangeland. Also interspersed with wooded draws, this ecoregion is a haven for wildlife. The Plains ecoregion is characterized by rolling plains with occasional topographical relief from buttes and badlands. The land is cultivated in the lower lying areas to small grains and alfalfa; steep and broken areas are native rangelands. The region is susceptible to soil erosion.

The Crow Lake Proposed Project Area is located primarily within the Southern Missouri Coteau Slope (Bryce et al. 1998). The level to rolling uplands characteristic of this region are converted to agricultural crops (small grains and row crops). The simple stream drainages are often grazed.

## **Grasslands**

Both of the proposed project areas are located within the mixed-grass prairie zone. Native grasslands within this zone are decreasing at an alarming rate. Seventy percent of the native mixed-grass prairie has been lost in South Dakota (Samson et al. 1998). Other grassland types such as native rangeland (grazed grasslands with native plant spp.), pasture (grazed grasslands with non-native plant spp.) and Conservation Reserve Program lands (formerly tilled lands planted to vegetative cover for erosion control and wildlife habitat) serve as wildlife habitat (Haufler 2005). Fragmentation resulting from woody encroachment, road construction, and conversion of surrounding habitat has resulted in remaining grassland types existing as smaller disjunct patches. These patches often provide less suitable habitat for many native species of grassland wildlife.

The Reliance Proposed Project Area contains large areas of contiguous grasslands, especially in the northern and western portions. Although the Southern Missouri Coteau Slope ecoregion is described as extensively cultivated, the Crow Lake Proposed Project Area is primarily native prairie and contiguous grassland habitat still exist within the center of this project area. Efforts should be made to avoid activities in contiguous grassland areas that may fragment these habitat types.

## **Grassland birds**

Specifically, placement of turbines in the proposed project areas may alter habitat and behavior of grassland birds. Grassland birds have shown the most consistent and long term declines of any other group of bird species in North America (Peterjohn and Sauer 1999). Several grassland bird species are known to be area sensitive (Johnson, 2001, Johnson and Igl 2001). Area-sensitive species known to occur in the Crow Lake proposed project area include Northern harrier, upland sandpiper, sedge wren, field sparrow, vesper sparrow, savannah sparrow, grasshopper sparrow, dickcissel, bobolink, and Western meadowlark. Similar grassland bird species may be expected to be found in the Reliance proposed projected area.

The proposed project areas are in the current geographic distribution of the greater prairie chicken. This species also is known to be area-sensitive, requiring comparatively large tracts of open, contiguous grassland. The lesser prairie chicken, a similar species found more commonly in the southern Great Plains, avoids nesting within 400 m of transmission lines or improved roads. This suggests that placement of turbines and associated infrastructure (roads and

transmission lines) also may negatively affect greater prairie chickens. A second prairie grouse species, the sharp-tailed grouse, also is a known breeder in both proposed project areas.

Properly timed, species-appropriate surveys for prairie grouse (greater prairie chickens and sharp-tailed grouse) and other grassland bird species should be conducted pre-construction. Breeding ground surveys for prairie grouse species should be conducted in the spring (late March through April). Surveys for other breeding grassland birds are best conducted in June, although mid-May through early July is acceptable.

Upland birds are known to be susceptible to direct strikes with wind turbines. Based on a study conducted in the Buffalo Ridge area of Minnesota (Higgins et al. 2007), upland bird species with known wind turbine strike mortality and known to occur in the Crow Lake proposed project area include the Bell's vireo, sedge wren, grasshopper sparrow, and western meadowlark. Burrowing owls have been documented to occur near the Crow Lake proposed project area. This species is most often found within black-tailed prairie dog colonies in South Dakota. This owl is also known to suffer from direct strikes with wind turbines in other areas of the country (Smallwood et al. 2007). Similar bird species may also be found in the Reliance Proposed Project Area.

### **Wetlands**

The Crow Lake proposed project area is located within the Prairie Pothole region. This glaciated region, characterized by high densities of wetland basins of various depths and sizes, extends from Iowa into Minnesota, the Dakotas, Montana, and parts of Canada. It is the major waterfowl production area in North America. Wetland losses in the Prairie Pothole Region are staggering and range from 99% in Iowa to 35% in South Dakota. The number of wetland basin densities (# of basins/10 mi<sup>2</sup>) in the proposed project area is 90-100 basins/10 miles<sup>2</sup> (Johnson and Higgins 1997). This is some of the lower basins density levels in the Prairie Pothole region. Although wetland densities are comparatively lower than elsewhere in the in the Prairie Pothole Region, care must be taken to avoid impacts to the wetland resources in this glaciated region. Although the Reliance Proposed Project Area is not within the Prairie Pothole region, proper there are still numerous wetlands and lakes in the area. Micro-siting of turbines within the proposed project area should avoid placement of turbines in areas with conglomerations or wetlands and lakes.

### **Wetland birds**

Waterbird species such as pied-billed, eared, and Western grebes, great egret, great blue heron, Franklin's gull, black tern, marbled godwit, and Wilson's phalarope are known to occur near the Crow Lake proposed project area. The black tern, marbled godwit and Wilson's phalarope are species of particular concern in South Dakota; they are recognized as Species of Greatest Conservation Need (South Dakota Department of Game, Fish and Parks 2006) and are priority level I species in the South Dakota All-Bird Conservation Plan (Bakker 2005).

Wetland birds also are susceptible to direct strikes with wind turbines. Based on a study conducted in the Buffalo Ridge area of Minnesota (Higgins et al 2007), species with known wind turbine strike mortality and are known to occur in the Crow Lake proposed project area include ruddy duck, American coot, and Franklin's gull. Similar species should be expected to occur at the Reliance site. Proper siting of turbines, outside of daily and seasonal movement and migration routes of waterbirds and waterfowl, and the protection of remaining wetlands within the proposed project area is crucial to reduce the impact to wetland dependent species.

## Bats

Construction of a wind power plant may affect daily and seasonal bat movements between breeding, wintering/hibernation, and foraging areas. Thirteen species of bats are currently known to be found in South Dakota and are considered either summer or year-round residents or migratory (Table 1).

Table 1. South Dakota Bats

Common Name	Scientific Name	State Residency
Big Brown Bat	<i>Eptesicus fuscus</i>	Year-round resident
Fringed Myotis	<i>Myotis thysanodes</i>	Year-round resident
Little Brown Myotis	<i>Myotis lucifugus</i>	Year-round resident
Long-eared Myotis	<i>Myotis evotis</i>	Year-round resident
Long-legged Myotis	<i>Myotis volans</i>	Year-round resident
Northern Myotis	<i>Myotis septentrionalis</i>	Year-round resident
Townsend's Big-eared Bat	<i>Corynorhinus townsendii</i>	Year-round resident
Western Small-footed Myotis	<i>Myotis ciliolabrum</i>	Year-round resident
Hoary Bat	<i>Lasiurus cinereus</i>	Summer resident
Red Bat	<i>Lasiurus borealis</i>	Summer resident
Silver-haired Bat	<i>Lasionycteris noctivagans</i>	Summer resident
Evening Bat	<i>Nycticeius humeralis</i>	Migratory
Eastern pipistrell	<i>Pipistrellus subflavus</i>	unclassified

There has been limited research conducted on bats in South Dakota. However, Swier (2006) and Bales (2007) reported six species of bats occurring near the proposed project areas: 1) big brown bat, 2) silver-haired bat 3) hoary bat, 4) red bat, 5) little brown myotis, and 6) Northern myotis.

Of these six species, the silver-haired bat and Northern myotis are considered rare and monitored by the Natural Heritage Program (NHP). Silver-haired bats have a probable distribution throughout the state of South Dakota. They are classified as a tree bat requiring trees for roosting and maternity sites. In eastern South Dakota, they are found roosting in wooded areas along water courses. In treeless areas, they use fence post piles, boards, and bricks for roosts. Foraging areas include corridors found along roads and waterways. The earliest spring migration record for this species is late-April in Brookings County. Fall migration begins in late-August to early-September. In the Black Hills, most silver-haired bats are captured during the summer (June to September). Mating takes place during late summer and two pups are usually born in June. Structural tree-age diversity in roosting habitats is required for this species.

The Northern myotis has a probable distribution throughout the state. In central and eastern South Dakota it is found most often in riparian forest along rivers and streams. Summer roosts in this part of the state are found in trees (cavities or under loose bark) or buildings. Caves, quarries, and old mines serve as winter hibernation sites. This species does not forage over water. Instead the Northern myotis often forages over forested hillsides and ridges, just under the forest canopy. Breeding occurs in autumn; one pup is born the following July. Threats to this species include lost of hibernation sites, nursery trees, and foraging habitat and

disturbance at hibernation and nursery sites (under loose tree bark or under house shingles).

Based on a study conducted in the Buffalo Ridge area of Minnesota (Higgins et al 2007) the big brown bat, silver-haired bat, hoary bat, and red bat species currently known to be within the proposed project area are also known to be directly killed due to strikes with wind turbines. Because of limited, project-specific data, we would suggest pre-construction surveys of the area for potential bat habitat and species. Surveys for species should be conducted for at least one full year before construction.

Recently, South Dakota Department of Game, Fish and Parks (SDGFP) in cooperation with the South Dakota Bat Working Group (SDBWG), developed the *South Dakota Bat Management Plan* specific to bats and their habitats in South Dakota (<http://www.sdgfp.info/Wildlife/Diversity/batmanagementplan71304.pdf>). Please review this document for pertinent information. Again, because bats reside and migrate through South Dakota, it is important to evaluate the proposed project area for roosting, feeding, migration and/or stopover habitat and to survey these areas for bats.

### **Protected Species**

Bald eagles are known to nest in the Reliance Proposed Project Area. Bald eagles are a state threatened species and are protected federally under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. In addition, migrant bald eagles are possible in the spring and fall. This proposed project location is within the primary migration route of the 'Aransas National Wildlife Refuge to Wood Buffalo National Park' population of whooping cranes. This species is protected as endangered under both state and federal laws. Placement of turbines in this area could very likely increase the chances of wind turbine and power line strikes and electrocutions. We are exceptionally concerned about the direct impacts a potential wind power project may have on this population of whooping cranes.

*Crow Lake Proposed Project Area* – No records of nesting bald eagle occur in this proposed project area. However, bald eagles do nest in Brule County and new nests are appearing in the state each year. Although no records of the endangered whooping crane occur in this proposed project area, several sightings have occurred in Brule and Aurora Counties.

New and existing power lines associated with the proposed project should be buried, marked, or retrofitted to reduce strikes and electrocutions of whooping cranes and other bird species. The Avian Protection Power line Interaction Committee (APLIC) has developed two documents that may be of use: 1) *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* and 2) *Mitigating Bird Collisions with Power lines*. Both of these documents are available from the Edison Institute (<http://www.aplic.org/>, under 'products and services').

### **Landscape considerations**

Placement of a wind power project should take into account larger landscape-level (e.g. surrounding land uses) and cumulative impacts (e.g. existing and potential wind power projects) as well as project associated infrastructure (i.e. transmission lines and roads).

### **Public lands**

Part of the Reliance Proposed Project Area lies within the Lower Brule Sioux Tribe Indian Reservation. I would recommend you contact Ben Janis, Director of Lower Brule Department of Wildlife, Fish, and Recreation (phone: 605-473-5666, fax: 605-473-1120) for Tribal input



regarding this proposed wind power project.

Two SDGFP Game Production Areas (GPA) are located within and adjacent to the Crow Lake Proposed Project Area (Crow Lake GPA and Horseshoe Lake GPA, respectively). Placement of public lands is often done in areas with existing and potential wildlife habitat. Managing these lands for wildlife is conducted in the public interest. These lands may be affected by the placement of a wind power project in the vicinity. The Wildlife Division of SDGFP has an online database of public land locations within South Dakota. You can access this resource via the web at <http://www.sdgfp.info/Wildlife/PublicLands/PubLand.htm>.

### **Migrating wildlife**

The resulting mosaic of grassland and wetland basins and linear wetland corridors makes these proposed project areas an important migration route for birds (e.g., neotropical migrants, shorebirds, and waterfowl). The Central Flyway, an important pathway for migratory ducks, geese, swans, and cranes runs through the midsection of the country, including South Dakota. Species using this flyway during migration, and particularly during inclement weather when birds alter their flight altitude, may suffer increased mortality due to direct strikes with wind turbines and associated power lines. Appropriately timed, pre-construction surveys for migratory bird species should be conducted. Spring migration can begin as early as late-March to early-April and tapering off in mid-May, depending on the species. Fall migration can begin as early as mid-July and extend through October/November depending on species and weather conditions.

### **Powerlines**

Construction of powerlines is often associated with a proposed wind power project. Power line strikes are a known cause of mortality to birds (Erickson et al. 2005). Waterfowl (ducks, geese, swans), cranes, raptors, and passerines are species most susceptible to powerline collisions. Power line strikes are one of the greatest threats to the endangered whooping crane. The Avian Protection Power line Interaction Committee has developed two documents that may be of use to reduce powerline strikes and mortality: 1) *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006* and 2) *Mitigating Bird Collisions with Power lines*. Both of these documents are available from the Edison Institute (<http://www.aplic.org/>, under 'products and services'). The new and existing power lines associated with the proposed project should be buried, marked, or retrofitted to reduce strikes and electrocutions of birds.

### **Non-native/invasive plant species**

During the construction and maintenance phase of a wind power project new roads are constructed and existing roads often experience increased traffic. This increased amount of disturbance allows for the introduction and establishment of non-native/invasive plant species. Resulting control of those species through pesticides and herbicides may also impact habitats of rare wildlife species. Non-native plant species are one of the major threats to threatened and endangered wildlife species. Improved access (via roads) can also increase human disturbance to wildlife in the area.

### **Monitoring and Research**

If monitoring plans involve live trapping or collection of wildlife species, you must first obtain a collection permit from our agency. Also, we kindly request that if you or your



associates observe any of the animal or plant species monitored by the NHP, please contact myself or any of our NHP staff ([http://www.sdgifp.info/Wildlife/Diversity/staff\\_contact.htm](http://www.sdgifp.info/Wildlife/Diversity/staff_contact.htm)).

A list of species monitored by the NHP can be found at:

<http://www.sdgifp.info/Wildlife/Diversity/RareAnimal.htm> and

<http://www.sdgifp.info/Wildlife/Diversity/rareplant2002.htm>.

Northern Prairie Wildlife Research Center, a part of the US Geological Survey, is currently investigating the influence of wind generators on breeding grassland bird density and species composition in the Dakotas. The preliminary results of this study may be of interest to you. Please contact Jill Shaffer (701-253-5547 or [jshaffer@usgs.gov](mailto:jshaffer@usgs.gov)) for more information.

### **Siting Guidelines**

In coordination with the SDBWG, the SDGFP has developed *Siting Guidelines for Wind Power Projects in South Dakota*. This document addresses many of the general concerns involved with siting wind power projects in South Dakota and may be found at on the World Wide Web (<http://www.sdgifp.info/Wildlife/Diversity/windpower.htm>). I have enclosed a copy for your convenience.

### **Summary**

As outlined above, our agency has concerns regarding direct and indirect impacts to wildlife and habitats in association with the siting of the proposed wind power projects. During the project planning state, appropriately timed and species appropriate wildlife surveys should be conducted for a minimum of one year, to determine bird and bat use of the project areas. Based upon results of these baseline surveys, project construction should be modified, continued, or cancelled. If the project is continued and because of the potential impacts placement of the proposed wind power project would have on wildlife and habitats in the region, we recommend the placement of turbines in areas currently disturbed (e.g. cultivated areas) and the use of existing infrastructure (roads and transmission lines) as much as possible. In addition, monitoring should be conducted for a minimum of two years post-construction to determine if and how many bird and bat strikes are caused by this project, if habitats have been significantly altered, and if wildlife habitats in the project area and surrounding areas have been impacted. Any mitigation should be carefully planned, funded, and followed.

The SDGFP appreciates the opportunity to provide comments on the proposed wind power projects. As a follow-up to this early screening and information gathering portion of your project planning, I would be willing to conduct a site visit with you or a representative of Basin Electric or Tetra Tech to further discuss these potential wind power projects. If you have any questions on the above comments, please feel free to contact me at 605-773-2742 or [Silka.Kempema@state.sd.us](mailto:Silka.Kempema@state.sd.us).

Regards,



Silka L. F. Kempema  
Terrestrial Wildlife Biologist

Enclosure: (3)

CC: Doug Backlund, SD Game, Fish and Parks, Pierre, SD  
Jack Freidel, SD Game, Fish and Parks, Chamberlain, SD  
Natalie Gates, US Fish and Wildlife Service, Pierre, SD  
Andy Lindbloom, SD Game, Fish and Parks, Ft. Pierre, SD  
Jill Shaffer, US Geological Survey, Jamestown, ND

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**Element Occurrence Records for Reliance Project Area  
South Dakota Natural Heritage Database  
December 5, 2007**

**Scientific Name:** *Asclepias lanuginosa*  
**Common Name:** Woolly Milkweed  
**Global Rank:** G4?  
**State Rank:** S2  
**Township Range:** 107N074W  
**Section:** 08  
"Shaley soil of upland prairie hillside."

**Occurrence #:** 3  
**Last Observed:** 1967-06-23  
**State Status:**  
**Federal Status:**  
**County:** Lyman

**Scientific Name:** *Grus americana*  
**Common Name:** Whooping Crane  
**Global Rank:** G1  
**State Rank:** SNA  
**Township Range:** 106N073W  
**Section:** 36  
2 ADULTS RESTING

**Occurrence #:** 93  
**Last Observed:** 1996-04-12  
**State Status:** SE  
**Federal Status:** LE  
**County:** Lyman

**Scientific Name:** *Grus americana*  
**Common Name:** Whooping Crane  
**Global Rank:** G1  
**State Rank:** SNA  
**Township Range:** 105N072W  
**Section:** 08  
1 Whooping Crane seen flying

**Occurrence #:** 121  
**Last Observed:** 2003-11-01  
**State Status:** SE  
**Federal Status:** LE  
**County:** Lyman

**Scientific Name:** *Haliaeetus leucocephalus*  
**Common Name:** Bald Eagle  
**Global Rank:** G5  
**State Rank:** S1B,S2N  
**Township Range:** 105N073W  
**Section:** 1  
NESTING PAIR, 2 FULLY FEATHERED BUT NOT QUITE FLEDGED  
YOUNG ON JUNE 27. 2004-nest occupied with 2 fledged.

**Occurrence #:** 38  
**Last Observed:** 2004-07-04  
**State Status:** ST  
**Federal Status:**  
**County:** Lyman

**Scientific Name:** *Haliaeetus leucocephalus*  
**Common Name:** Bald Eagle  
**Global Rank:** G5  
**State Rank:** S1B,S2N  
**Township Range:** 106N072W  
**Section:** 31  
Female incubating, male nearby

**Occurrence #:** 59  
**Last Observed:** 2004-04-08  
**State Status:** ST  
**Federal Status:**  
**County:** Lyman

**Element Occurrence Record for Crow Lake Project Area**  
**South Dakota Natural Heritage Database**  
**December 5, 2007**

**Scientific Name:** *Chlidonias niger*  
**Common Name:** Black Tern  
**Global Rank:** G4  
**State Rank:** S3B  
**Township Range:** 106N066W  
**Section:** 26

**Occurrence #:** 4  
**Last Observed:** 1993-07-07  
**State Status:**  
**Federal Status:**  
**County:** Jerauld

20+ CIRCLING AND CALLING OVER ISOLATED CATTAIL  
STAND



**DEPARTMENT OF GAME, FISH AND PARKS**

Foss Building  
523 East Capitol  
Pierre, South Dakota 57501-3182

**INVOICE**

December 5, 2007

Fee for South Dakota Natural Heritage Database Search performed for:

**James Berg**  
**Basin Electric Power Cooperative**  
**1717 East Interstate Avenue**  
**Bismarck, North Dakota 58503-0564**

1 hour of staff time @ \$30.00 per hour	\$30.00
<u>Two computer searches @ \$30.00 per search</u>	<u>\$60.00</u>
<b>TOTAL</b>	<b>\$90.00</b>

**For review of the following projects:**

**Proposed Wind Energy Facilities near Reliance and Crow Lake.**

Make check payable to **SD Dept. of Game, Fish and Parks**

Submit payment to:

South Dakota Dept. of Game Fish and Park  
523 E. Capitol-Foss Bldg.  
Pierre, SD 57501  
**ATTN: Doug Backlund**



**From:** sdprairiewinds  
**To:** Kevin Solie; Yufna Soldier Wolf  
**Date:** 5/1/2009 10:08 AM  
**Subject:** RE: Northern Arapahoe Tribal Archaeological Consultants-monitors for areas of migration of the Northern Arapahoe Tribe.

Hear Yufna Soldier Wolf,

Thank you for your email, letter and phone call. I am forwarding this information to Basin Electric who is dealing with hiring contractors for the archeological work for the project.

Kevin-see below and attached for information from Yufna Soldier Wolf. Her phone number is 406 861 5796.

Best regards,  
Liana Reilly

>>> Yufna Soldier Wolf <[nativenunu@yahoo.com](mailto:nativenunu@yahoo.com)> 4/30/2009 3:24 PM >>>

Hello Liana Reilly,

I had seen your ad in the newspaper. I would just like to introduce you to our organization: Northern Arapahoe Tribal Consultants. We are enrolled tribal members of the Northern Arapahoe Tribe who understand the energy companies who look for natural resources. What we like to do is protect and mitigate some areas due to plants, animals, water, air, and most of all TCPs in the EIS stage. We do understand Sec.#106 and NAGPRA. This consultation is head up by my father Mark Soldier Wolf. Please read the letter attached.

Thank You and we look forward to hearing from you.

Northern Arapahoe Tribal Archaeological Consultants

Mark Soldier Wolf

P.O. Box 314

St. Stephens, WY 82524

(307) 857-2779 or Cell is (406) 861-5796

[nativenunu@yahoo.com](mailto:nativenunu@yahoo.com)

Have a great day!

Yufna Soldier Wolf

[nativenunu@yahoo.com](mailto:nativenunu@yahoo.com)

"While swimming in the sea of knowledge, I live in a world of ignorance and fear."GJ

United States Department of Agriculture

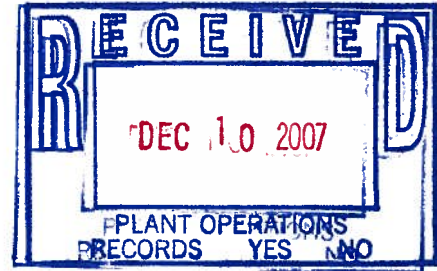


Natural Resources Conservation Service  
200 Fourth Street SW  
Huron, South Dakota 57350

Phone: (605) 352-1200  
Fax: (605) 352-1270

December 6, 2007

Mr. James A. Berg  
Basin Electric Power Cooperative  
1717 East Interstate Avenue  
Bismarck, North Dakota 58503-0564



RE: Study Area Environmental Scan, South Dakota

Dear Mr. Berg:

We have reviewed the study areas for a wind energy facility in portions of Lyman, Jerauld, Aurora, and Brule Counties, in South Dakota.

The Natural Resources Conservation Service holds no easements in the study areas.

As part of your study process, please check for areas of prime and important farmland in the study area. Ideally, the wind generators or other structures will not be placed on areas of prime or important farmland. Prime and important farmland maps can be generated on the Web Soil Survey at: <http://websoilsurvey.nrcs.usda.gov>. After outlining the area of interest, go to the "Soil Data Explorer" tab, and under the "Suitabilities and Limitations for use" tab, choose "Land Classifications", then "Farmland Classification" to generate prime and important farmland maps of the study areas.

If you have any questions, or need further assistance, contact Dan Shurtliff at 605-352-1254.

Sincerely,

A handwritten signature in blue ink that reads "Jerome Schaar".

JEROME M. SCHAAR  
State Soil Scientist

cc:

Shane Reis, DC, NRCS, Kennebec FO  
Tom Clemens, DC, NRCS, Plankinton FO  
Donna Tiede, DC, NRCS, Wessington Springs FO  
Steve Auch, DC, NRCS, Chamberlain FO