
Appendix C

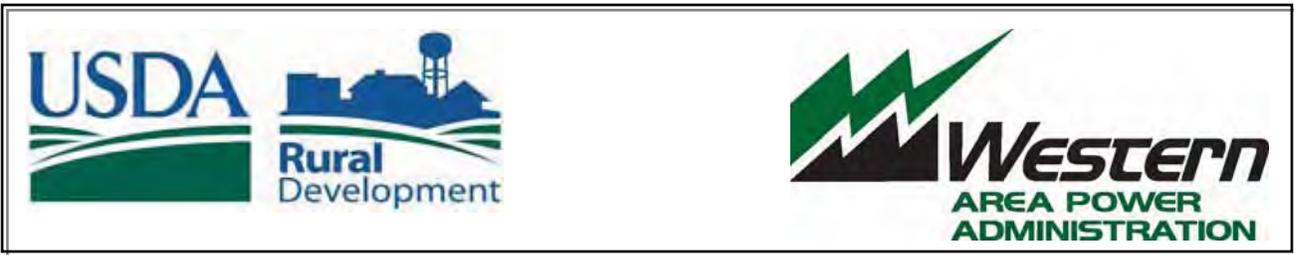
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Appendix C

Biological Resources

- USFWS interagency letter dated April 9, 2009
- USFWS scoping response letter dated May 13, 2009
- USFWS request for Federally listed species dated October 14, 2009
- USFWS request response letter dated November 12, 2009
- **Table C-1** Wildlife Species Observed in the Crow Lake Alternative (2008-2009 Field Surveys)
- **Table C-2** Summary of individuals and group observations for fixed-point bird use surveys at the PrairieWinds SD1 Crow Lake Wind Resource Area, March 19 – May 27, 2009
- **Table C-3** Total number of groups and individuals for each bird type and species observed during transect bird use surveys at the PrairieWinds SD1 Crow Lake Wind Resource Area, June 2 – July 7, 2009
- **Table C-4** Wildlife Species Observed in the Winner Alternative (2008-2009 Field Surveys)
- **Table C-5** Summary of individuals and group observations for fixed-point bird use surveys at the PrairieWinds SD1 Winner Wind Resource Area, April 6 – May 22, 2009
- **Table C-6** Total number of groups and individuals for each bird type and species observed during transect bird use surveys at the PrairieWinds SD1 Winner Wind Resource Area, June 12 – July 10, 2009

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April 09, 2009

Pete Gober
US Fish and Wildlife Service
Ecological Services Field Office
420 S. Garfield Avenue, Suite 400
Pierre, SD 57501-5408

Dear Pete Gober:

The purpose of this letter is to inform you of a proposed project and to provide notice that Western and RUS intend to prepare an Environmental Impact Statement (EIS) addressing their respective Federal actions. This letter also serves as an invitation for an interagency meeting as well as provides information to you about our scoping process.

PrairieWinds SD1, Incorporated (PrairieWinds), a subsidiary of Basin Electric Power Cooperative (Basin Electric), has proposed to develop a wind-powered generating facility in south-central South Dakota, either near Wessington Springs or near Winner. Basin Electric has requested to interconnect the proposed project with Western Area Power Administration's (Western) transmission system. PrairieWinds has requested financing for the proposed project from the Rural Utilities Service (RUS), an agency within the U.S. Department of Agriculture (USDA).

Basin Electric's generator interconnection request and PrairieWinds's financing request triggers a National Environmental Policy Act (NEPA) review process of the proposed project by Western and RUS, respectively. Western and RUS are serving as co-lead Federal agencies for preparation of the EIS. Western will serve as the lead Federal agency for consultations with the U.S. Fish and Wildlife Service under section 7 of the Endangered Species Act and for consultations with the South Dakota State Historic Preservation Office under section 106 of the National Historic Preservation Act.

Western and RUS invite you to attend an interagency meeting occurring on April 28, 2009 to provide you input on the proposed project's scoping process. During the meeting we would like

to discuss the project component details, obtain input to understand any issues that your Agency believes are important in the EIS analysis, and review the project schedule. The interagency meeting details are as follows:

Best Western Ramkota Hotel
920 W Sioux Ave
Pierre, South Dakota 57501-1800
Tuesday, April 28, 2009
9 a.m. to 11 a.m.

In addition, this letter serves to invite your agency to become a cooperating agency in the EIS process for the proposed project. The Council on Environmental Quality NEPA Implementing Regulations (40 CFR part 1501.6) emphasizes agency cooperation and authorizes the designated lead Federal agency to request that other Federal agencies with jurisdiction by law be a cooperating agency. Additionally, the lead Federal agency may request that any other Federal agency with special expertise with respect to any environmental issue to be addressed in the EIS also be a cooperating agency. Designated cooperating agencies have certain responsibilities to support the NEPA process, as specified in 40 CFR 1501.6 (b). The benefits of becoming a cooperating agency include disclosure of relevant information early in the EIS process and establishment of a mechanism to address any intergovernmental issues. Should your agency decide not to become a formal cooperating agency for the EIS, you will continue to be kept informed of project developments through the project mailing list, and you will receive the draft and final EIS documents. Any concerns or comments your agency provides to us during the NEPA process, and in a timely fashion, will be fully considered in finalizing the EIS and our Records of Decision (RODs).

The proposed PrairieWinds project would involve the installation and operation of a 150-megawatt (MW) wind energy facility that would feature 101 wind turbine generators. Each turbine generator would have a hub height of 262 feet and a turbine rotor diameter of 252 feet. The total height of each wind turbine would be 389 feet with a blade in the vertical position. The towers would be constructed of tubular steel, approximately 15 feet in diameter at the base, with internal joint flanges. The color of the towers and rotors would be standard white or off-white. During construction, a work/staging area at each turbine would include the crane pad and rotor assembly area, temporarily disturbing an area about 190 feet by 210 feet.

Each wind turbine would be connected by a service road for access and a 34.5-kilovolt (kV) buried electrical collection system that would ultimately route the power from each turbine to a central collector substation, where voltage would be stepped up for interconnection to Western's transmission system. About 30 to 40 miles of new access roads would be built to facilitate both

construction and maintenance of the turbines. Approximately 25 to 35 miles of existing roads would be used and, where appropriate, improved.

Two sites for the wind-powered generation facility are under consideration (see enclosed map). One site is located on about 37,000 acres and is approximately 15 miles north of White Lake, South Dakota, within Brule, Aurora, and Jerauld counties. The other alternative site would be located within an area about 83,000 acres, and is about 8 miles south of Winner, South Dakota, and is entirely within Tripp County.

The site that is approximately 37,000 acres near White Lake, South Dakota, would require a new 230-kV transmission line to deliver the power from the collector substation(s) to a new 230-kV Western interconnection point at Western's Wessington Springs Substation, located in Jerauld County. The Wessington Springs Substation is located approximately 9 to 12 miles from the proposed collector substation(s). The proposed line would be built using wood or steel H-frame (two pole) structures or steel single-pole structures. The structures would be about 85 to 95 feet high and span about 800 feet.

The other alternative site, approximately 83,000 acres near Winner, South Dakota, would require a 34.5-kV to 115-kV collector substation(s) as well as a 115-kV transmission line to interconnect to Western's existing 115-kV Winner Substation. Other facilities necessary for this site would be similar to those described for the site above.

The no action alternative will also be considered.

There is a chance that the final interconnection studies will conclude that other transmission facilities, such as network upgrades remote from the project site, would be required. If the project moves forward and it is determined that other facilities are needed to support the interconnection request, Western and RUS will complete the appropriate level of environmental review.

We want to ensure that any important environmental concerns and natural resources and/or places of interest for your Agency within the project area are considered and addressed in the EIS. At this time, we would appreciate receiving any information that you would be willing to share with us on any unique or special resources or areas in or near the proposed project. If you are aware of any other individuals or affiliated organizations that should be consulted regarding this project, please let us know. A full list of all other agencies and individuals receiving this letter is enclosed.

If any additional agency representatives wish to be added to the project's mailing list and/or receive a copy of the Draft and Final EIS, please contact Ms. Liana Reilly or Mr. Dennis Rankin

at the phone numbers or addresses listed below. 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. Comments on the proposed project will be accepted and considered throughout the NEPA process.

At this time, Western and RUS are conducting scoping, including public scoping meetings, to ensure that interested members of the public, potentially affected landowners and lessees, and Federal, state, local, and tribal agencies have an opportunity to provide input on the scope of the EIS and the alternatives that will be addressed in the EIS. Western, RUS, and PrairieWinds representatives will be available at the scoping meetings for one-on-one discussions, to provide information about the proposed project, answer questions, and will take verbal and written comments from interested parties. Information will be available at two public scoping meetings as follows:

Holiday Inn Express and Suites
1360 East Highway 44
Winner, South Dakota 57580
Tuesday, April 28, 2009
4 p.m. to 7 p.m.

Commerce Street Grille
118 North Main Street
Plankinton, South Dakota 57368
Wednesday, April 29, 2009
4 p.m. to 7 p.m.

During this scoping phase, we would like to obtain input to understand any issues that your Agency believes are important. Western and RUS request that you comment on the proposal, offer suggestions to improve the proposal and suggest alternative actions. Please identify any issues of concern about potential environmental impacts. Please address comments, questions or concerns to Ms. Liana Reilly or Mr. Dennis Rankin at the addresses below.

Ms. Liana Reilly
Document Manager
Western Area Power Administration
Corporate Services Office - A7400,
P.O. Box 281213
Lakewood, Colorado 80228-8213
Phone: (720) 962-7253 or (1-800) 336-7288
Fax: (720) 962-7263
E-mail: reilly@wapa.gov

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,
Phone: (202) 720-1953
Fax: (202) 720-0820
E-mail: dennis.rankin@wdc.usda.gov

We look forward to hearing from you.

Sincerely,

A handwritten signature in black ink that reads "Nicholas J. Stas". The signature is written in a cursive, flowing style.

Nick Stas
Environmental Manager
Upper Great Plains Region
Western Area Power Administration

Enclosures

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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 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

OCT 14 2009

Mr. Pete Gober, Field Supervisor
U.S. Fish and Wildlife Service
South Dakota Field Office
420 South Garfield Ave., Suite 400
Pierre, South Dakota 57501-5408

RE: Endangered Species Act Section 7 Consultation, Proposed Prairie Winds SD1 Wind Energy Facility, Aurora, Brule, Jerauld, and Tripp Counties, South Dakota

Dear Mr. Gober:

The U.S. Department of Energy's Western Area Power Administration (Western), and the U.S. Department of Agriculture's Rural Utilities Service (RUS) [the Agencies] are currently considering whether to provide electrical interconnection and financing, respectively, for the construction of a 150-MW wind generating facility on one of two proposed sites in the subject counties. The proposed facility called Prairie Winds SD1 would be developed, constructed, and operated by Prairie Winds SD1 Incorporated, a wholly owned subsidiary of Basin Electric Power Cooperative, Inc., of Bismarck, ND.

Western and RUS are the co-lead Federal agencies responsible for compliance with the National Environmental Policy Act (NEPA) and related statutes [including the Endangered Species Act of 1973 (ESA)] for the proposed project. The Agencies issued a Notice of Intent (NOI) to prepare an Environmental Impact Statement (EIS) dated April 9, 2009, to which your office responded in a letter dated May 13, 2009.

The purpose of this letter is to inform you of our intended approach to consultation under Section 7(a) of the ESA, and designate a non-federal agent for consultation. Your May 13, 2009, letter provided sufficient information on listed species in the proposed project counties to allow us to begin the preparation of a Biological Assessment (BA) and related activities. Per your letter, the following are the current Federally-listed species in the proposed project counties:

Mr. Pete Gober

<u>Status</u>	<u>Species/Listing Name</u>
E	Crane, whooping except where EXPN (<i>Grus americana</i>)
T	Plover, piping except Great Lakes watershed (<i>Charadrius melodus</i>)
E	Shiner, Topeka (<i>Notropis topeka (=tristis)</i>)
E	American Burying beetle (<i>Nicrophorus americanus</i>)

We request that you provide any updates or changes to this list, otherwise we will proceed with our analysis based on the four species listed. A project description was provided in the Agencies' April 9, 2009, letter and it has not changed since then.

RUS will be the lead agency for Section 7 consultation, with the assistance of Western and their EIS contractor. We wish to designate as our agent for consultation Mr. Patrick Golden of Heritage Environmental Consultants in Denver, Colorado. Mr. Golden can be reached at (303) 618-7910 or by email at pgolden@heritage-ec.com. Heritage will be preparing the BA under supervision and for final approval by the Agencies. We trust that Mr. Golden will be able to work with your office directly for any information or other needs as he prepares the BA.

If you have any questions or require additional information please contact Richard Fristik, Sr. Environmental Protection Specialist, RUS, Engineering and Environmental Staff at (202) 720-5093, or e-mail richard.fristik@wdc.usda.gov; or contact Ms. Misti Schriener, Biologist, Western at (720) 962-7239, or e-mail mschriener@wapa.gov.

Sincerely,

Mark S. Plank

MARK S. PLANK
 Director
 Engineering and Environmental Staff
 Water and Environmental Programs
 USDA, Rural Utilities Service

cc: EES file EES DRankin EES RFristik EES MPlank S/O SD

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

Ms. Misti K. Schriener
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Bismarck, ND 58503

Draft: EES RFristik, (202) 720-5093, 10/6/09; final mw 10/7/09
Recall: s/wep/rfristik/PW_SD_1_S 7 initial letter

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United States Department of the Interior

FISH AND WILDLIFE SERVICE

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

November 12, 2009

Mr. Mark Plank, Director
USDA Rural Utilities Service
Engineering and Environmental Staff
Water and Environmental Program
1400 Independence Avenue, S.W.
Washington, DC 20250-0700

Re: Proposed Prairie Winds SD1 Wind Energy
Facility - Aurora, Brule, Jerauld, and Tripp
Counties, South Dakota

Dear Mr. Plank:

This letter is in response to your request dated October 14, 2009, for an update of federally-listed species (originally provided in our May 13, 2009, letter to your agency and the Western Area Power Administration [Western]) that may occur in the proposed project area(s) of the above referenced Prairie Winds SD1 Wind Energy Facility. It is our understanding that two sites are currently being evaluated for this facility: the Crow Lake site (Aurora/Jerauld/Brule Counties) and the Winner site (Tripp County).

We acknowledge your proposed approach to the section 7 consultation process with your agency, the U.S. Department of Agriculture- Rural Utilities Service (USDA-RUS), as the lead to be assisted by the Western/their Environmental Impact Statement contractor and the designation of Mr. Patrick Golden of Heritage Environmental Consultants in Denver, Colorado, as your agent for consultation purposes.

In accordance with section 7(c) of the Endangered Species Act (ESA), as amended, 16 U.S.C. 1531 et seq., we have determined that the following federally listed species may occur in the project area (this list is considered valid for 90 days):

<u>Species</u>	<u>Status</u>	<u>Expected Occurrence</u>
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, Nesting.
Topeka shiner (<u>Notropis topeka</u>)	Endangered	Resident, Waterways of Jerauld and Aurora Counties.

The detailed information for the above species provided in our May 13, 2009, letter remains pertinent.

If the USDA-RUS 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.

In addition to your consideration of the above federally listed species, please note that a substantial 90-day finding was recently issued by the U.S. Fish and Wildlife Service (Service) in response to a petition to list a species likely to occur within both of the potential Prairie Winds SD1 project sites: the northern leopard frog (Federal Register, Volume 74, No. 125, Wednesday, July 1, 2009, pages 31389-31401). The positive 90-day finding for the northern leopard frog does not afford it any level of protection under the ESA; however, a status review (12-month finding) is currently underway wherein the Service will determine whether listing of the western portion of the northern leopard frog's population - west of the Mississippi River/Great Lakes Region - is warranted. The conclusion of the status review will be either a) the species does not warrant listing (i.e., no further action will be taken), or b) the species is warranted for ESA protection (i.e., it becomes a candidate species and may be proposed for listing immediately or sometime in the future). We recommend that you remain vigilant for the changing status of the northern leopard frog and consider the development and implementation of proactive measures to conserve northern leopard frog individuals and populations during all phases and activities associated with the proposed Prairie Winds SD1 Wind Energy Facility. You may contact Natalie Gates of this office at (605) 224-8693, Extension 234, for updates of the northern leopard frog's status and/or view pertinent information the following website: http://www.fws.gov/southwest/es/Arizona/Northern_Frog.htm.

Please note that the bald eagle (*Haliaeetus leucocephalus*) occurs throughout South Dakota in all seasons, and new nests are appearing each year. While ESA protections for the bald eagle have been removed, effective August 8, 2007, the species will continue to be protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act. These laws protect bald eagles from a variety of harmful actions and impacts. Our agency has developed guidance for the public regarding means to avoid take of the bald eagle under these laws. The “*National Bald Eagle Management Guidelines*” are available online at: <http://www.fws.gov/migratorybirds/baldeagle.htm>. We recommend reviewing these guidelines as they serve to advise of circumstances where these laws may apply and to assist in avoiding potential violations on this and future projects.

While most species of migratory birds do not receive ESA protections, they are protected by the MBTA and are trust resources of the Service. As indicated in our May 13, 2009, letter submitted to the USDA-RUS and the Western, recent avian surveys in central South Dakota have detected species included in our “*Birds of Conservation Concern 2008*” publication; these species likely occur on both of the proposed sites for the Prairie Winds SD1 Wind Energy Facility based on known habitats occurring in these areas. The establishment of turbines in avian habitats has the potential to negatively affect migratory birds; thus, we continue to recommend avoidance, minimization, and finally, offsetting measures which may be outlined in an Avian and Bat Protection Plan or a separate plan designed to reduce any unavoidable detrimental effects to species protected by the MBTA. Particularly when turbine placement must occur within grasslands, we strongly recommend development of mitigative/offsetting measures for this habitat and its associated wildlife.

The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when specifically authorized by the Department of the Interior. While the MBTA has no provision for allowing unauthorized take, the Service realizes that some birds may be killed as a result of this project even if all reasonable measures to protect them are used. The Service’s Office of Law Enforcement carries out its mission to protect migratory birds through investigations and enforcement as well as by fostering relationships with individuals, companies, and industries that have taken effective steps to minimize their impacts on migratory birds and by encouraging others to enact such programs. It is not possible to absolve individuals, companies, or agencies from liability even if they implement avian mortality avoidance or similar conservation measures. However, the Office of Law Enforcement focuses its resources on investigating and prosecuting individuals and companies that take migratory birds without regard for their actions or without following an agreement to avoid take.

The Service has developed an online reporting system for avian mortalities. Instructions for our “*Bird Fatality/Injury Reporting Program*” may be found online at: http://www.aplic.org/USFWS_BirdFatality_FilerInstructions.pdf, and the reporting site itself is located online at: <https://birdreport.fws.gov/>. Migratory bird mortalities or injuries located by your company, by contractors, or other individuals should be recorded to this online site within 30 days of discovery. This reporting system may be used to compliment an Avian and Bat Protection Plan.

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 comments. If you have any questions on these comments, please contact Natalie Gates of this office at (605) 224-8693, Extension 234.

Sincerely,



Pete Gober
Field Supervisor
South Dakota Field Office

cc: Western; Lakewood, CO
(Attention: Misti Schriener)
Heritage Environmental Consultants; Denver, CO
(Attention: Patrick Golden)

Table C-1 Wildlife Species Observed in the Crow Lake Alternative (2008-2009 Field Surveys)

Common Name	Scientific Name	Common Name	Scientific Name
Birds			
Cooper's Hawk	<i>Accipiter cooperii</i>	Northern Bobwhite	<i>Colinus virginianus</i>
Western Grebe	<i>Aechmophorus occidentalis</i>	Rock Pigeon	<i>Columba livia</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Eastern Wood Pewee	<i>Contopus virens</i>
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	American Crow	<i>Corvus brachyrhynchos</i>
Northern Pintail	<i>Anas acuta</i>	Yellow Warbler	<i>Dendroica petechia</i>
American Widgeon	<i>Anas Americana</i>	Bobolink	<i>Dolichonyx oryzivorus</i>
Green-winged Teal	<i>Anas carolinensis</i>	Little Blue Heron	<i>Egretta caerulea</i>
Northern Shoveler	<i>Anas clypeata</i>	Horned Lark	<i>Eremophila alpestris</i>
Cinnamon Teal	<i>Anas cyanoptera</i>	Brewer's Blackbird	<i>Euphagus cyanocephalus</i>
Blue-winged Teal	<i>Anas discors</i>	Prairie Falcon	<i>Falco mexicanus</i>
Mallard	<i>Anas platyrhynchos</i>	American Kestrel	<i>Falco sparverius</i>
Gadwall	<i>Anas strepera</i>	American Coot	<i>Fulica americana</i>
Great Blue Heron	<i>Ardea herodias</i>	Common Snipe	<i>Gallinago gallinago</i>
Redhead	<i>Aythya Americana</i>	Common Loon	<i>Gavia immer</i>
Ring-necked Duck	<i>Aythya collaris</i>	Common Yellowthroat	<i>Geothlypis trichas</i>
Greater Scaup	<i>Aythya marila</i>	Sandhill Crane	<i>Grus canadensis</i>
Canvasback	<i>Aythya valisineria</i>	Barn Swallow	<i>Hirundo rustica</i>
Upland Sandpiper	<i>Bartramia longicauda</i>	Baltimore Oriole	<i>Icterus galbula</i>
Canada Goose	<i>Branta canadensis</i>	Orchard Oriole	<i>Icterus spurius</i>
Snowy Owl	<i>Bubo scandiacus</i>	Loggerhead Shrike	<i>Lanius ludovicianus</i>
Great horned Owl	<i>Bubo virginianus</i>	California Gull	<i>Larus californicus</i>
Cattle Egret	<i>Bubulcus ibis</i>	Ring-billed Gull	<i>Larus delawarensis</i>
Bufflehead	<i>Bucephala albeola</i>	Franklin's Gull	<i>Larus pipixcan</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Marbled Godwit	<i>Limosa fedoa</i>
Broad-winged Hawk	<i>Buteo platypterus</i>	Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>
Swainson's Hawk	<i>Buteo swainsoni</i>	Song Sparrow	<i>Melospiza melodia</i>
McCown's Longspur	<i>Calcarius mccownii</i>	Common Merganser	<i>Mergus merganser</i>
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	Brown-headed Cowbird	<i>Molothrus ater</i>
White-rumped Dandpiper	<i>Calidris fuscicollis</i>	Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>
American Goldfinch	<i>Carduelis tristis</i>	Ruddy Duck	<i>Oxyura jamaicensis</i>
Willet	<i>Catoptrophorus semipalmatus</i>	House Sparrow	<i>Passer domesticus</i>
Chimney Swift	<i>Chaetura pelagica</i>	Savannah Sparrow	<i>Passerculus sandwichensis</i>
Killdeer	<i>Charadrius vociferous</i>	American White Pelican	<i>Pelecanus erythrorhynchos</i>
Snow Goose	<i>Chen caerulescens</i>	Cliff Swallow	<i>Petrochelidon pyrrhonota</i>
Common Nighthawk	<i>Chordeiles minor</i>	Double-crested Cormorant	<i>Phalacrocorax auritus</i>
Northern Harrier	<i>Circus cyaneus</i>	Ring-necked Pheasant	<i>Phasianus colchicus</i>
Marsh Wren	<i>Cistothorus palustris</i>	Black-capped Chickadee	<i>Poecile atricapillus</i>

Table C-1 Wildlife Species Observed in the Crow Lake Alternative (2008-2009 Field Surveys)

Common Name	Scientific Name	Common Name	Scientific Name
Northern Flicker	<i>Colaptes auratus</i>	Vesper Sparrow	<i>Pooecetes gramineus</i>
Bobwhite Quail	<i>Colinus virginianus</i>	Great-tailed Grackle	<i>Quiscalus mexicanus</i>
Bank Swallow	<i>Riparia riparia</i>	Common Grackle	<i>Quiscalus quiscula</i>
Dickcissel	<i>Spiza americana</i>	Greater Yellowlegs	<i>Tringa melanoleuca</i>
Clay Colored Sparrow	<i>Spizella pallida</i>	Solitary Sandpiper	<i>Tringa solitaria</i>
Chipping Sparrow	<i>Spizella passerine</i>	House Wren	<i>Troglodytes aedon</i>
Field Sparrow	<i>Spizella pusilla</i>	American Robin	<i>Turdus migratorius</i>
N. Rough-wingedSwallow	<i>Stelgidopteryx serripennis</i>	Greater Prairie-Chicken	<i>Tympanuchus cupido</i>
Forster's Tern	<i>Sterna forsteri</i>	Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>
Western Meadowlark	<i>Sturnella neglecta</i>	Eastern Kingbird	<i>Tyrannus tyrannus</i>
European Starling	<i>Sturnus vulgaris</i>	Western Kingbird	<i>Tyrannus verticalis</i>
Tree Swallow	<i>Tachycineta bicolor</i>	Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>
Brown Thrasher	<i>Toxostoma rufum</i>	Mourning Dove	<i>Zenaida macroura</i>
Mammals			
Coyote	<i>Canis latrans</i>	White-tailed Deer	<i>Odocoileus virginianus</i>
Black-tailed Prairie Dog	<i>Cynomys ludovicianus</i>	Fox Squirrel	<i>Sciurus niger</i>
White-tailed Jackrabbit	<i>Lepus townsendii</i>	ThirteenLine Ground Squirrel	<i>Spermophilus tridecemlineatus</i>
Striped Skunk	<i>Mephitis mephitis</i>	Cottontail Rabbit	<i>Sylvilagus floridanus</i>
Mink	<i>Mustela vison</i>	Eastern Cottontail Rabbit	<i>Sylvilagus floridanus</i>
Mule Deer	<i>Odocoileus hemionus</i>	Badger	<i>Taxidea taxus</i>
Amphibians			
Spring Peeper	<i>Pseudacris crucifer</i>		

Table C-2 Summary of individuals and group observations for fixed-point bird use surveys at the PrairieWinds SD1 Crow Lake Wind Resource Area, March 19 – May 27, 2009

Species	Scientific Name	Spring	
		# grps	# obs
Waterbirds		29	176
American White Pelican	<i>Pelecanus erythrorhynchos</i>	2	49
Black-crowned Night-Heron	<i>Nycticorax nycticorax</i>	1	4
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	2	40
Forster's Tern	<i>Sterna forsteri</i>	1	1
Franklin's Gull	<i>Larus pipixcan</i>	6	25
ring-billed Gull	<i>Larus delawarensis</i>	12	30
Sandhill Crane	<i>Grus canadensis</i>	3	24
unidentified gull		2	3
Waterfowl		155	1,053
Blue-winged Teal	<i>Anas discors</i>	9	29
Canada Goose	<i>Branta canadensis</i>	20	666
Gadwall	<i>Anas strepera</i>	4	9
Green-winged Teal	<i>Anas crecca</i>	1	2
Mallard	<i>Anas platyrhynchos</i>	86	213
Northern Pintail	<i>Anas acuta</i>	23	55
Northern Shoveler	<i>Anas clypeata</i>	8	24
Ring-necked Duck	<i>Aythya collaris</i>	1	1
Snow Goose	<i>Chen caerulescens</i>	1	50
unidentified duck		2	4
Shorebirds		87	96
Common Snipe	<i>Gallinago gallinago</i>	1	1
Killdeer	<i>Charadrius vociferous</i>	64	69
Marbled Godwit	<i>Limosa fedoa</i>	9	12
Upland Dandpiper	<i>Bartramia longicauda</i>	13	14
Rails/Coots		1	2
American Coot	<i>Fulica americana</i>	1	2
Raptors		56	58
American Kestrel	<i>Falco sparverius</i>	5	5
Broad-winged Hawk	<i>Buteo platypterus</i>	3	3
Cooper's Hawk	<i>Accipiter cooperii</i>	1	1
Great Horned Owl	<i>Bubo virginianus</i>	1	1
Northern Harrier	<i>Circus cyaneus</i>	22	22
Prairie Falcon	<i>Falco mexicanus</i>	1	1
Red-tailed Hawk	<i>Buteo jamaicensis</i>	11	11
Swainson's Hawk	<i>Buteo swainsoni</i>	6	7
unidentified buteo		6	7
Upland Gamebirds		162	180
Greater Prairie-Chicken	<i>Tympanuchus cupido</i>	4	5
Ring-necked Pheasant	<i>Phasianus colchicus</i>	156	173
Dharp-tailed Grouse	<i>Tympanuchus phasianellus</i>	2	2
Doves/Pigeons		47	62
Mourning Dove	<i>Zenaida macroura</i>	47	62
Large Corvids		2	2
American Crow	<i>Corvus brachyrhynchos</i>	2	2
Passerines		321	533
American Goldfinch	<i>Carduelis tristis</i>	1	2
American Robin	<i>Turdus migratorius</i>	4	6
Baltimore Oriole	<i>Icterus galbula</i>	2	2
Barn Swallow	<i>Hirundo rustica</i>	13	21
Bobolink	<i>Dolichonyx oryzivorus</i>	8	9
Brown-headed Cowbird	<i>Molothrus ater</i>	24	44

Table C-2 Summary of individuals and group observations for fixed-point bird use surveys at the PrairieWinds SD1 Crow Lake Wind Resource Area, March 19 – May 27, 2009

Species	Scientific Name	Spring	
		# grps	# obs
Chipping Sparrow	<i>Spizella passerine</i>	1	1
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	2	5
Common Grackle	<i>Quiscalus quiscula</i>	7	17
Dickcissel	<i>Spiza Americana</i>	2	2
Eastern Kingbird	<i>Tyrannus tyrannus</i>	2	2
European Starling	<i>Sturnus vulgaris</i>	3	8
Horned Lark	<i>Eremophila alpestris</i>	25	56
Loggerhead Shrike	<i>Lanius ludovicianus</i>	1	1
Orchard Oriole	<i>Icterus spurius</i>	1	1
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	62	184
Savannah Sparrow	<i>Passerculus sandwichensis</i>	5	5
Song Sparrow	<i>Melospiza melodia</i>	1	1
Tree Swallow	<i>Tachycineta bicolor</i>	2	2
unidentified sparrow		1	3
unidentified swallow		1	2
Western Kingbird	<i>Tyrannus verticalis</i>	1	1
Western Meadowlark	<i>Sturnella neglecta</i>	150	156
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	1	1
Yellow Warbler	<i>Dendroica petechia</i>	1	1
Other Birds		14	15
Common Nighthawk	<i>Chordeiles minor</i>	4	4
Northern Flicker	<i>Colaptes auratus</i>	9	10
unidentified woodpecker		1	1
Unidentified Birds		1	1
unidentified bird		1	1
Overall		875	2,178

Table C-3 Total number of groups and individuals for each bird type and species observed during transect bird use surveys at the PrairieWinds SD1 Crow Lake Wind Resource Area, June 2 – July 7, 2009

Species/Type	Scientific Name	# grps	# obs
Waterbirds		8	12
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	7
Forster's Tern	<i>Sterna forsteri</i>	1	1
Great Blue Heron	<i>Ardea herodias</i>	2	2
unidentified tern		2	2
Waterfowl		43	128
Blue-winged Teal	<i>Anas discors</i>	8	20
Canada Goose	<i>Branta canadensis</i>	1	5
Gadwall	<i>Anas strepera</i>	1	1
Mallard	<i>Anas platyrhynchos</i>	15	44
Northern Pintail	<i>Anas acuta</i>	5	10
Northern Shoveler	<i>Anas clypeata</i>	2	10
Redhead	<i>Aythya Americana</i>	1	1
Ring-necked Duck	<i>Aythya collaris</i>	1	1
unidentified Duck		9	36
Shorebirds		71	93
Common Snipe	<i>Gallinago gallinago</i>	3	3
Killdeer	<i>Charadrius vociferous</i>	21	24
Marbled Godwit	<i>Limosa fedoa</i>	5	6
unidentified sandpiper		1	1
Upland Sandpiper	<i>Bartramia longicauda</i>	40	58
Willet	<i>Catoptrophorus semipalmatus</i>	1	1
Rails/Coots		1	1
American Coot	<i>Fulica americana</i>	1	1
Raptors		12	12
<i>Northern Harrier</i>		11	11
Northern Harrier	<i>Circus cyaneus</i>	11	11
<i>Owls</i>		1	1
Great Horned Owl	<i>Bubo virginianus</i>	1	1
Upland Gamebirds		86	118
Greater Prairie-Chicken	<i>Tympanuchus cupido</i>	12	23
Ring-necked Pheasant	<i>Phasianus colchicus</i>	72	93
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>	2	2
Doves/Pigeons		26	41
Mourning Dove	<i>Zenaida macroura</i>	25	38
Tock Pigeon	<i>Columba livia</i>	1	3
Passerines		1,636	2,417
<i>Passerines</i>		9	11
unidentified passerine		9	11
<i>Blackbirds/Orioles</i>		910	1,509
Brown-headed Cowbird	<i>Molothrus ater</i>	273	544
Bobolink	<i>Dolichonyx oryzivorus</i>	70	83
Brewer's Blackbird	<i>Euphagus cyanocephalus</i>	1	1
Common Grackle	<i>Quiscalus quiscula</i>	23	37
European Starling	<i>Sturnus vulgaris</i>	2	36
Great-tailed Grackle	<i>Quiscalus mexicanus</i>	3	3
Orchard Oriole	<i>Icterus spurius</i>	1	1
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	120	225
Western Meadowlark	<i>Sturnella neglecta</i>	396	535
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	21	44
<i>Finches</i>		6	7

Table C-3 Total number of groups and individuals for each bird type and species observed during transect bird use surveys at the PrairieWinds SD1 Crow Lake Wind Resource Area, June 2 – July 7, 2009

Species/Type	Scientific Name	# grps	# obs
American Goldfinch	<i>Carduelis tristis</i>	6	7
<u>Flycatchers</u>		42	54
Eastern Kingbird	<i>Tyrannus tyrannus</i>	32	41
Western Kingbird	<i>Tyrannus verticalis</i>	10	13
<u>Grassland/Sparrows</u>		585	669
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	70	83
Clay-colored Sparrow	<i>Spizella pallid</i>	12	13
Chipping Sparrow	<i>Spizella passerine</i>	16	17
Dickcissel	<i>Spiza Americana</i>	23	26
Field Sparrow	<i>Spizella pusilla</i>	8	8
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	282	340
Horned Lark	<i>Eremophila alpestris</i>	2	2
McCown's Longspur	<i>Calcarius mccownii</i>	1	1
Savannah Sparrow	<i>Passerculus sandwichensis</i>	123	123
Song Sparrow	<i>Melospiza melodia</i>	1	2
unidentified sparrow		43	50
Vesper Sparrow	<i>Pooecetes gramineus</i>	4	4
<u>Swallows</u>		75	158
Bank Swallow	<i>Riparia riparia</i>	10	12
Barn Swallow	<i>Hirundo rustica</i>	55	128
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	5	8
N. Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	2	5
unidentified swallow		3	5
<u>Thrushes</u>		4	4
American Robin	<i>Turdus migratorius</i>	3	3
unidentified bluebird		1	1
<u>Warblers</u>		3	3
Common Yellowthroat	<i>Geothlypis trichas</i>	1	1
Yellow Warbler	<i>Dendroica petechia</i>	2	2
<u>Wrens</u>		2	2
House Wren	<i>Troglodytes aedon</i>	1	1
Marsh Wren	<i>Cistothorus palustris</i>	1	1
Other Birds		1	1
<u>Woodpeckers</u>		1	1
Northern Flicker	<i>Colaptes auratus</i>	1	1
Unidentified Birds		1	1
unidentified bird		1	1
Overall		1,885	2,824

Table C-4 Wildlife Species Observed in the Winner Alternative (2008-2009 Field Surveys)

Common Name	Scientific Name	Common Name	Scientific Name
Birds			
Cooper's Hawk	<i>Accipiter cooperii</i>	Common snipe	<i>Gallinago gallinago</i>
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	Common yellowthroat	<i>Geothlypis trichas</i>
Wood Duck	<i>Aix sponsa</i>	Sandhill crane	<i>Grus canadensis</i>
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	Bald eagle	<i>Haliaeetus leucocephalus</i>
Northern Pintail	<i>Anas acuta</i>	Barn swallow	<i>Hirundo rustica</i>
American Widgeon	<i>Anas americana</i>	Orchard oriole	<i>Icterus spurius</i>
Green-winged Teal	<i>Anas carolinensis</i>	Dark-eyed junco	<i>Junco hyemalis</i>
Northern Shoveler	<i>Anas clypeata</i>	Northern shrike	<i>Lanius excubitor</i>
Blue-winged Teal	<i>Anas discors</i>	Loggerhead shrike	<i>Lanius ludovicianus</i>
Mallard	<i>Anas platyrhynchos</i>	Marbled godwit	<i>Limosa fedoa</i>
Teal species	<i>Anas spp</i>	Red-headed woodpecker	<i>Melanerpes erythrocephalus</i>
Gadwall	<i>Anas strepera</i>	Wild turkey	<i>Meleagris gallopavo</i>
Great Blue Heron	<i>Ardea herodias</i>	Song sparrow	<i>Melospiza melodia</i>
Burrowing Owl	<i>Athene cunicularia</i>	Black-and-white warbler	<i>Mniotilta varia</i>
Lesser Scaup	<i>Aythya affinis</i>	Brown-headed cowbird	<i>Molothrus ater</i>
Ring-necked Duck	<i>Aythya collaris</i>	Ruddy duck	<i>Oxyura jamaicensis</i>
Greater Scaup	<i>Aythya marila</i>	Osprey	<i>Pandion haliaetus</i>
Canvasback	<i>Aythya valisineria</i>	Savannah sparrow	<i>Passerculus sandwichensis</i>
Upland Sandpiper	<i>Bartramia longicauda</i>	American white pelican	<i>Pelecanus erythrorhynchos</i>
Canada Goose	<i>Branta canadensis</i>	Cliff swallow	<i>Petrochelidon pyrrhonota</i>
Great horned Owl	<i>Bubo virginianus</i>	Double-crested cormorant	<i>Phalacrocorax auritus</i>
Cattle Egret	<i>Bubulcus ibis</i>	Wilson's phalarope	<i>Phalaropus tricolor</i>
Bufflehead	<i>Bucephala albeola</i>	Ring-necked pheasant	<i>Phasianus colchicus</i>
Red-tailed Hawk	<i>Buteo jamaicensis</i>	Downy woodpecker	<i>Picoides pubescens</i>
Rough-legged Hawk	<i>Buteo lagopus</i>	Pied-billed grebe	<i>Podilymbus podiceps</i>
Ferruginous Hawk	<i>Buteo regalis</i>	Black-capped chickadee	<i>Poecile atricapillus</i>
Swainson's Hawk	<i>Buteo swainsoni</i>	Common grackle	<i>Quiscalus quiscula</i>
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	Bank swallow	<i>Riparia riparia</i>
American Goldfinch	<i>Carduelis tristis</i>	Eastern bluebird	<i>Sialia sialis</i>
Turkey Vulture	<i>Cathartes aura</i>	White-breasted nuthatch	<i>Sitta carolinensis</i>
Belted Kingfisher	<i>Ceryle alcyon</i>	Dickcissel	<i>Spiza americana</i>
Killdeer	<i>Charadrius vociferous</i>	Clay-colored sparrow	<i>Spizella pallida</i>
Lark Sparrow	<i>Chondestes grammacus</i>	Chipping sparrow	<i>Spizella passerine</i>
Common Nighthawk	<i>Chordeiles minor</i>	Field sparrow	<i>Spizella pusilla</i>
Northern Harrier	<i>Circus cyaneus</i>	N. rough-winged swallow	<i>Stelgidopteryx serripennis</i>
Northern Flicker	<i>Colaptes auratus</i>	Western meadowlark	<i>Sturnella neglecta</i>
Northern Bobwhite	<i>Colinus virginianus</i>	European starling	<i>Sturnus vulgaris</i>
Rock Dove	<i>Columba livia</i>	Starling	<i>Sturnus vulgaris</i>
American Crow	<i>Corvus brachyrhynchos</i>	Tree swallow	<i>Tachycineta bicolor</i>
Blue Jay	<i>Cyanocitta cristata</i>	Brown thrasher	<i>Toxostoma rufum</i>

Table C-4 Wildlife Species Observed in the Winner Alternative (2008-2009 Field Surveys)

Common Name	Scientific Name	Common Name	Scientific Name
Tundra Swan	<i>Cygnus columbianus</i>	Lesser yellowlegs	<i>Tringa flavipes</i>
Bell's Vireo	<i>Dendroica castanea</i>	House wren	<i>Troglodytes aedon</i>
Yellow-rumped Warbler	<i>Dendroica coronata</i>	American robin	<i>Turdus migratorius</i>
Yellow Warbler	<i>Dendroica petechia</i>	Greater prairie-chicken	<i>Tympanuchus cupido</i>
Bobolink	<i>Dolichonyx oryzivorus</i>	Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>
Horned Lark	<i>Eremophila alpestris</i>	Eastern kingbird	<i>Tyrannus tyrannus</i>
Prairie Falcon	<i>Falco mexicanus</i>	Western kingbird	<i>Tyrannus verticalis</i>
American Kestrel	<i>Falco sparverius</i>	Yellow-headed blackbird	<i>Xanthocephalus xanthocephalus</i>
American Coot	<i>Fulica americana</i>	Mourning dove	<i>Zenaida macroura</i>
Mammals			
Black-tailed prairie dog	<i>Cynomys ludovicianus</i>	White-tailed deer	<i>Odocoileus virginianus</i>
Opossum	<i>Didelphis virginiana</i>	Muskrat	<i>Ondatra zibethicus</i>
Pocket gopher	<i>Geomys bursarius</i>	Raccoon	<i>Procyon lotor</i>
White-tailed jackrabbit	<i>Lepus townsendii</i>	Cottontail rabbit	<i>Sylvilagus floridanus</i>
Striped skunk	<i>Mephitis mephitis</i>	Badger	<i>Taxidea taxus</i>
Mule deer	<i>Odocoileus hemionus</i>	Red fox	<i>Vulpes vulpes</i>
Reptiles and Amphibians			
Painted turtle	<i>Chrysemys picta</i>	Spring peeper	<i>Pseudacris crucifer</i>
Bull snake	<i>Pituophis catenifer sayi</i>	Northern leopard frog	<i>Rana pipiens</i>

Table C-5 Summary of individual and group observations for fixed-point use surveys at the PrairieWinds SD1 Winner Wind Resource Area, April 6 – May 26, 2009.

Species	Scientific Name	Spring	
		# grps	# obs
Waterbirds		8	115
American White Pelican	<i>Pelecanus erythrorhynchos</i>	1	2
Cattle Egret	<i>Bubulcus ibis</i>	1	1
Double-crested Cormorant	<i>Phalacrocorax auritus</i>	3	109
Great blue Heron	<i>Ardea herodias</i>	2	2
Sandhill Crane	<i>Grus canadensis</i>	1	1
Waterfowl		50	90
Blue-winged Teal	<i>Anas discors</i>	5	10
Canada Goose	<i>Branta canadensis</i>	7	11
Gadwall	<i>Anas strepera</i>	1	2
Lesser Scaup	<i>Aythya affinis</i>	1	2
Mallard	<i>Anas platyrhynchos</i>	29	52
Northern Pintail	<i>Anas acuta</i>	3	4
Northern Shoveler	<i>Anas clypeata</i>	1	1
Ring-necked Duck	<i>Aythya collaris</i>	1	4
unidentified duck		1	3
Wood Duck	<i>Aix sponsa</i>	1	1
Shorebirds		71	75
Common Snipe	<i>Gallinago gallinago</i>	11	11
Killdeer	<i>Charadrius vociferus</i>	24	24
Lesser Yellowlegs	<i>Tringa flavipes</i>	3	7
Marbled Godwit	<i>Limosa fedoa</i>	1	1
Upland Sandpiper	<i>Bartramia longicauda</i>	32	32
Raptors		27	30
American Kestrel	<i>Falco sparverius</i>	4	5
Ferruginous Hawk	<i>Buteo regalis</i>	1	1
Great horned Owl	<i>Bubo virginianus</i>	1	1
Northern Harrier	<i>Circus cyaneus</i>	7	7
Red-tailed Hawk	<i>Buteo jamaicensis</i>	4	4
Rough-legged Hawk	<i>Buteo lagopus</i>	1	2
Swainson's Hawk	<i>Buteo swainsoni</i>	4	4
unidentified buteo		5	6
Vultures		7	12
turkey vulture	<i>Cathartes aura</i>	7	12
Upland Gamebirds		131	230
Greater Prairie-Chicken	<i>Tympanuchus cupido</i>	7	35
Ring-necked Pheasant	<i>Phasianus colchicus</i>	112	132
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>	3	6
Wild turkey	<i>Meleagris gallopavo</i>	9	57
Doves/Pigeons		55	78
Mourning Dove	<i>Zenaida macroura</i>	54	76
Rock Pigeon	<i>Columba livia</i>	1	2
Large Corvids		11	13
American Crow	<i>Corvus brachyrhynchos</i>	11	13
Passerines		315	552
American Robin	<i>Turdus migratorius</i>	22	24
Baltimore Oriole	<i>Icterus galbula</i>	3	3
Barn Swallow	<i>Hirundo rustica</i>	4	4
Blue Jay	<i>Cyanocitta cristata</i>	2	2

Table C-5 Summary of individual and group observations for fixed-point use surveys at the PrairieWinds SD1 Winner Wind Resource Area, April 6 – May 26, 2009.

Species	Scientific Name	Spring	
		# grps	# obs
Bobolink	<i>Dolichonyx oryzivorus</i>	4	5
Brown-headed Cowbird	<i>Molothrus ater</i>	15	30
Chipping Sparrow	<i>Spizella passerina</i>	2	25
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	1	5
Common Grackle	<i>Quiscalus quiscula</i>	16	43
Dark-eyed Junco	<i>Junco hyemalis</i>	2	5
Eastern Bluebird	<i>Sialia sialis</i>	2	2
Eastern Kingbird	<i>Tyrannus tyrannus</i>	4	6
European Starling	<i>Sturnus vulgaris</i>	9	23
Horned Lark	<i>Eremophila alpestris</i>	6	6
Loggerhead Shrike	<i>Lanius ludovicianus</i>	2	3
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	59	199
Savannah Sparrow	<i>Passerculus sandwichensis</i>	2	2
Song Sparrow	<i>Melospiza melodia</i>	1	1
Western Kingbird	<i>Tyrannus verticalis</i>	1	1
Western Meadowlark	<i>Sturnella neglecta</i>	157	162
Yellow-rumped Warbler	<i>Dendroica coronata</i>	1	1
Other Birds		28	28
Downy Woodpecker	<i>Picoides pubescens</i>	1	1
Northern Flicker	<i>Colaptes auratus</i>	23	23
Ted-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	1	1
unidentified woodpecker		3	3
Overall		703	1,223

Table C-6 Total number of groups and individuals for each bird type and species observed during breeding bird transect surveys at the PrairieWinds SD1 Winner Wind Resource Area, June 12 – July 10, 2009

Species/Type	Scientific Name	# grps	# obs
Waterbirds		14	14
Great Blue Heron	<i>Ardea herodias</i>	14	14
Waterfowl		21	50
Blue-winged Teal	<i>Anas discors</i>	2	11
Canvasback	<i>Aythya valisineria</i>	1	1
Mallard	<i>Anas platyrhynchos</i>	18	38
Shorebirds		192	225
Common Snipe	<i>Gallinago gallinago</i>	18	18
Killdeer	<i>Charadrius vociferus</i>	36	46
Upland Sandpiper	<i>Bartramia longicauda</i>	135	156
Wilson's Phalarope	<i>Phalaropus tricolor</i>	3	5
Raptors		12	12
<u>Buteos</u>		9	9
Red-tailed Hawk	<i>Buteo jamaicensis</i>	7	7
unidentified buteo		2	2
<u>Falcons</u>		1	1
Prairie Falcon	<i>Falco mexicanus</i>	1	1
<u>Owls</u>		1	1
Great Horned Owl	<i>Bubo virginianus</i>	1	1
<u>Other Raptors</u>		1	1
unidentified raptor		1	1
Upland Gamebirds		30	34
Greater Prairie-Chicken	<i>Tympanuchus cupido</i>	3	6
Northern Bobwhite	<i>Colinus virginianus</i>	1	1
Ring-necked Pheasant	<i>Phasianus colchicus</i>	24	25
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>	1	1
Wild Turkey	<i>Meleagris gallopavo</i>	1	1
Doves/Pigeons		69	92
Mourning Dove	<i>Zenaida macroura</i>	69	92
Passerines		1,390	1,787
<u>Blackbirds/Orioles</u>		736	1,096
Brown-headed Cowbird	<i>Molothrus ater</i>	73	134
Bobolink	<i>Dolichonyx oryzivorus</i>	115	139
Common Grackle	<i>Quiscalus quiscula</i>	11	99
Orchard Oriole	<i>Icterus spurius</i>	1	1
Red-winged Blackbird	<i>Agelaius phoeniceus</i>	116	262
Western Meadowlark	<i>Sturnella neglecta</i>	417	456
Yellow-headed Blackbird	<i>Xanthocephalus xanthocephalus</i>	3	5
<u>Creepers/Nuthatches</u>		1	1
White-breasted Nuthatch	<i>Sitta carolinensis</i>	1	1
<u>Finches</u>		5	5
American Goldfinch	<i>Carduelis tristis</i>	5	5
<u>Flycatchers</u>		13	14
Eastern Kingbird	<i>Tyrannus tyrannus</i>	7	8
Western Kingbird	<i>Tyrannus verticalis</i>	6	6
<u>Grassland/Sparrows</u>		570	578
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	11	12
Dickcissel	<i>Spiza americana</i>	108	109
Field Sparrow	<i>Spizella pusilla</i>	5	5

Table C-6 Total number of groups and individuals for each bird type and species observed during breeding bird transect surveys at the PrairieWinds SD1 Winner Wind Resource Area, June 12 – July 10, 2009

Species/Type	Scientific Name	# grps	# obs
Grasshopper Sparrow	<i>Ammodramus savannarum</i>	58	58
Horned Lark	<i>Eremophila alpestris</i>	6	10
Lark Sparrow	<i>Chondestes grammacus</i>	2	2
Savannah Sparrow	<i>Passerculus sandwichensis</i>	361	361
unidentified sparrow		19	21
<u>Mimids</u>		1	1
Brown Thrasher	<i>Toxostoma rufum</i>	1	1
<u>Swallows</u>		42	70
Bank Swallow	<i>Riparia riparia</i>	1	1
Barn Swallow	<i>Hirundo rustica</i>	17	22
Cliff Swallow	<i>Petrochelidon pyrrhonota</i>	7	9
N. Rough-winged Swallow	<i>Stelgidopteryx serripennis</i>	1	4
Tree Swallow	<i>Tachycineta bicolor</i>	13	29
unidentified swallow		3	5
<u>Thrushes</u>		7	7
American Robin	<i>Turdus migratorius</i>	2	2
unidentified bluebird		5	5
<u>Titmice/Chickadees</u>		1	1
Black-capped Chickadee	<i>Poecile atricapillus</i>	1	1
<u>Vireos</u>		2	2
Bell's Vireo	<i>Dendroica castanea</i>	2	2
<u>Warblers</u>		8	8
Black-and-white Warbler	<i>Mniotilta varia</i>	1	1
Common Yellowthroat	<i>Geothlypis trichas</i>	3	3
Yellow Warbler	<i>Dendroica petechia</i>	4	4
<u>Wrens</u>		1	1
House Wren	<i>Troglodytes aedon</i>	1	1
<u>Corvids</u>		3	3
American Crow	<i>Corvus brachyrhynchos</i>	3	3
Other Birds		16	18
<u>Woodpeckers</u>		9	11
Northern Flicker	<i>Colaptes auratus</i>	7	9
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	1	1
unidentified woodpecker		1	1
<u>Other Birds</u>		7	7
Common Nighthawk	<i>Chordeiles minor</i>	7	7
Overall		1,744	2,232