APPENDIX E

REDACTED BALD EAGLE STICK NEST & SHARP-TAILED GROUSE LEK SURVEY REPORT

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2013 Bald Eagle Stick Nest (*Haliaeetus leucocephalus*) & Sharp-tailed Grouse (*Tympanuchus phasianellus*) Lek Survey Report

Montana-Dakota Utilities Co.
Otter Tail Power Company

Big Stone South to Ellendale Project

May 2013

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Sensitive information such as lek and nest locations within the text (and Figure 1) have been redacted from this version of the report.

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Executive Summary

HDR Engineering, Inc. (HDR) was retained to evaluate the presence of bald eagle stick nests and sharp-tailed grouse lek presence along the Big Stone South to Ellendale Project (Project). The Project will be located between the proposed Ellendale 345kV Substation, near Ellendale, North Dakota and the Big Stone South Substation, which is part of a separate project, near Big Stone City, South Dakota. The survey area included a 2-mile-wide buffer along the approximately 160-170-mile-long preferred route.

Bald eagles (*Haliaeetus leucocephalus*) are federally protected under the Bald and Golden Eagle Protection Act (Eagle Act). Sharp-tailed grouse (*Tympanuchus phasianellus*) is managed as a game species in South Dakota by the South Dakota Game Fish & Parks and in North Dakota by the North Dakota Fish and Game Department.

The objective of conducting bald eagle stick nest and sharp-tailed grouse lek surveys was to confirm their presence or absence in areas of appropriate habitat along the preferred route. Appropriate nesting habitat for bald eagles are mature, super-canopy type trees in close proximity to open water. In the survey area, this habitat is primarily associated with the Prairie Coteau Lake District and the James River including its tributaries. Appropriate habitat for sharp-tailed grouse leks are large tracts of relatively unfragmented native grasslands. HDR conducted bald eagle stick nest surveys and sharp-tailed grouse lek surveys in areas of appropriate habitat that are located within 2.0 miles of the preferred route.

HDR biologists conducted ground surveys between April 29 and May 2, 2013. Biologists identified three active bald eagle stick nests in Brown County, South Dakota, with the nearest nest located approximately 0.7 miles from the preferred route. No sharp-tailed grouse leks were observed, but at least three non-displaying individuals were consistently observed at one location. Since grouse were present, but not displaying, pre-construction surveys for lek sites will be completed to minimize impacts.

Introduction

Montana-Dakota Utilities Co. (Montana-Dakota) and Otter Tail Power Company (Otter Tail Power) are proposing to construct a 345 kV transmission line in North Dakota and South Dakota known as the Big Stone South to Ellendale Project (Project). The transmission line will be approximately 160-170-miles-long and will connect a new Ellendale 345 kV Substation, proposed to be located about 1.5 miles west of Ellendale in Dickey County, North Dakota, to the Big Stone South Substation, which is part of a separate project (Big Stone South to Brookings project). The Big Stone South Substation is anticipated to be located near the Big Stone Plant in Big Stone City, Grant County, South Dakota. The proposed Project is designed to increase generation outlet capability in eastern South Dakota and southern North Dakota, improve regional reliability, and enhance local community reliability.

Because of federal and state regulations and known wildlife resources in the Project area, surveys for bald eagle stick nests and sharp-tailed grouse lek surveys were conducted to assess presences or absences of these species.

The survey area includes a 2.0-mile buffer along the approximately 160-170-mile-long preferred route. Survey methods were designed to document bald eagle stick nest and sharp-tailed grouse lek locations. Bald eagle surveys focused on stands of mature trees in close proximity to open water. Sharp-tailed grouse lek surveys focused on relatively unfragmented grassland blocks of approximately 2 square miles or more. Surveyors utilized methodologies that involved point surveys from the ground near sites where the preferred route crosses potentially suitable breeding habitat. These surveys were completed between April 29 and May 2, 2013.

Regulatory Framework

The Bald and Golden Eagle Protection Act (Eagle Act) prohibits the take of bald and golden eagles. The Eagle Act defines "take" to include "pursue, shoot, shoot at, poison, wound, kill, capture, trap, collect, molest or disturb a bald or golden eagle including any part, nest, or egg thereof…" In 2009, two new permit rules were created for eagles – 50 CFR 22.26 and 50 CFR 22.27 (DOI, 2009). Under 50 CFR 22.26, United States Fish and Wildlife Service (USFWS) can authorize limited take of bald and golden eagles when the take is associated with, but not the purpose of an otherwise lawful activity, and cannot practicably be avoided. Under 50 CFR 22.27, USFWS can provide for the intentional take of eagle nests where necessary to alleviate a safety hazard to people or eagles, to ensure public health and safety, where nest prevents use of a human-engineered structure, and where the activity or mitigation for the activity will provide a net benefit to eagles. Only inactive nests are allowed to be taken, without the exceptions provided above. In some cases, the Eagle Act may protect roost sites if site-specific circumstances suggest a disturbance to wintering eagles. Those culpable under the Eagle Act may be prosecuted according to civil or criminal penalties (imprisonment and fines), depending on the severity of the violation.

To ensure the intent of the Eagle Act is met by USFWS policy, and nesting bald eagles receive adequate protection from human disturbance during the breeding season, the USFWS developed the National Bald Eagle Management Guidelines (2007). These guidelines call for a 660 foot buffer to be established at active eagle nests for newly established transmission lines visible from a nest. It stipulates no construction activity should take place within this buffer during the

breeding season. In the Upper-Midwest and Northern Great Plains, the breeding season begins February 15th and ends August 1st.

The sharp-tailed grouse is not protected under the federal Migratory Bird Treaty Act (MBTA), but is protected under South Dakota State Title 41-11-4 which states "no person may hunt, take, kill … sharp-tailed grouse… .", except as provided in Title 41-11-5, which establishes a hunting season for this species. As such, South Dakota Game Fish & Parks has expressed concern regarding impacts to this species. North Dakota State Chapter 20.1-04 contains similar language regarding the take of game birds in that state.

Bald Eagle Biology

Bald eagles are a uniquely North American species that historically occurred throughout the contiguous United States and Alaska. The largest North American breeding populations are in Alaska and Canada. There are nesting records for 45 of the lower 48 states, with significant bald eagle nesting populations in the Great Lakes States, Florida, the Pacific Northwest, the Greater Yellowstone area, and the Chesapeake Bay region. Pesticides and habitat loss reduced the species in the lower 48 states to about 4 percent of original population by the 1960's, and many of the Midwestern states had lost their breeding populations by that time. With the development of regulations (Endangered Species Act [bald eagle de-listed in 2007], Eagle Act) and the restrictions placed on certain pesticides, the population rebounded. Healthy populations now occur throughout the bald eagle's historic range (USFWS, 2011).

The life history of bald eagles can be broadly categorized into nesting and non-nesting periods. The nesting period varies by latitude; in the Midwest, it begins with courtship and nest building in late January and early February, and ends when the young fledge by late July. In addition, many breeding pairs over-winter near their breeding site. Some studies have also found that many breeding sites become active prior to the onset of major migratory movements in the spring (HDR, 2011). Adult and immature bald eagles migrate separately. The period between September through November is considered the non-nesting period by regulating agencies (USFWS, 2011).

Nesting Period

Bald eagles are a documented breeding species in South Dakota and North Dakota. Current South Dakota Game Fish & Parks records indicate that over 128 active nesting territories were recorded in 2012 (AP, 2013) and occur in all three South Dakota counties crossed by the preferred route. In North Dakota, State Game and Fish Conservation Biologists estimate there are about 100 nesting territories in the state (NDGFD, 2013a) and have documented nesting occurrences in Dickey County, North Dakota. Figure 1 [redacted] displays the location of known bald eagle nests near the Project area.

During the nesting period, breeding bald eagles occupy and defend a territory that includes the active nest. This may also include one or more alternate nests that are not used for nesting in a given year. Established pairs are known to overwinter together and maintain pair bonds. Bald eagles tend to return to the same territory, but not necessarily the same nest, year after year. Potentially suitable habitat for nest sites in the Northern Glaciated Plains Ecoregion of North and South Dakota are typically a mature stand of cottonwood within a 1.0 mile of a large body of water (Grier and Guinn, 2003). This may include a lake, reservoir, or river that supports a suitable fish population.

Non-Nesting Period

During the winter, eagles from northern states and Canada may migrate to find food. They move with irregular progression along rivers, pushed by cold temperatures, snow cover, and the availability of food such as fish, waterfowl, or carrion. The birds begin arriving in Great Plains States during September and become more numerous through January depending on the harshness of the winter. In 2013, 458 wintering eagles were documented in South Dakota along the Lower Missouri River in central South Dakota (SDGFP, 2013a). No records of wintering bald eagles near the Project are available, which is likely due to the lack of suitable wintering habitat in this area.

An abundant, readily available food supply in conjunction with one or more suitable night roost sites is the primary characteristic of winter habitat. The majority of wintering eagles are found near open water where they feed on fish and waterfowl. Mammalian carrion, such as livestock and road kills, are an important alternate source of food at some locations. At night, wintering eagles may congregate at communal roost trees or sites. Secondary characteristics of winter night roost sites include areas that provide eagles a degree of protection from cold weather and may be associated with landforms that shelter birds from prevailing cold winds. The same roosts are used year after year and are generally stands of mature cottonwood elm or maple trees near feeding sites, such as open water supporting fish or waterfowl (Martell et. al. 1991).

Evidence of spring migration may be observed in January, when eagles gather at staging areas along rivers or other water bodies. The eagles move north, pausing only for unfavorable weather conditions or where concentrations of waterfowl are available as a food source.

Sharp-tailed Grouse Biology

Sharp-tailed grouse are a North American species of non-migratory upland game bird, which inhabits a wide range of open and unfragmented grasslands, mixed-shrub and steppe habitats (USDA, 1999), of the Northern Great Plains, Rocky Mountains and Upper Midwest. Preferred habitat blocks are greater than two contiguous square miles of unfragmented grasslands. Although, recent observations indicate croplands have become an important resource, as its traditional grassland habitat that has been converted into agricultural production. This medium sized grouse is round bodied, with short legs and cryptic coloration featuring dark-brown, blackish, and ruff barring. It consumes a variety of forbs, fruits, grains, buds, and insects (Connelly et al.1998).

Its range extends from the Alaskan Interior in the northwest, to the Great Lakes States in the east, and Colorado in the south. This species originally occupied 21 states, however breeding sharp-tailed are now restricted to 10 states. Distribution contractions have been experienced primarily in the southern part of its range (i.e. Iowa, Illinois, Nevada, Kansas, California); however, sharp population declines have also been observed in the upper Midwest where breeding populations still persist (MNDNR, 2013). Populations in Central Canada and in the Great Plains States of North Dakota, South Dakota, Nebraska, and eastern Montana are more secure (Connelly et al.1998). Most population declines have been attributed to conversion of native grasslands to agricultural production, a problem that may be compounded by recent loss of Conservation Reserve Program (CRP) acreage due to high commodity prices that have incentivized farmers to convert these fields back to row crops (Orth, 2012).

The life history of sharp-tailed grouse can be broadly categorized into nesting/lekking and non-lekking periods. Lekking occurs in South Dakota between March and July, when males form large groups to perform courtship displays. Female visitation to lek sites typically peaks between mid-April and mid-May, but may occur later in the year if initial breeding/nesting attempts fail. Sharp-tailed grouse are likely to be most densely concentrated near lek sites between March and July, with nests typically located between 0.25 and 1.0 mile of the lek site. During the remainder of the year (non-lekking period), sharp-tailed grouse disperse to small home ranges often found within 1.3 miles of the lek site (Connelly et al.1998).

Nesting & Lekking Period

Leks form perennially between March and July, as males assemble to perform group courtship displays, with locations persisting from year to year when conditions remain favorable. Leks are often located on a bare or sparsely vegetated knoll or small rise. Leks typically consist of 8 to 12 displaying males and form as males begin to arrive at the display site approximately 45 minutes before sunrise. Display activity typically occurs for 3 to 4 hours after sunrise. Males display by rushing forward or in a circular motion, while rapidly stamping their feet with an extended neck, spread wings, and an erect tail. Female lek participation is more subdued, as they observe displaying males from the edge of the lek, before entering the lek only to select a mate and to copulate.

Brood size is approximately 12 eggs, with nests located between 0.25 and 1.0 mile of the lek site. In general, habitats with structural diversity of grasses, shrubs, and forbs provide high quality nesting habitat as chicks rely on insects as a food source. Hatching occurs between 7 and 12 days subsequent to egg laying. The chicks begin to resemble small adults after 8 to 10 weeks and have reached full maturity by mid-September or October (Connelly et al.1998).

Non-Nesting Period

Sharp-tailed grouse are a non-migratory species, so their home range is typically in close proximity to their lek site, but may be narrower than those habitats utilized during breeding. Riparian areas, deciduous hardwood shrub draws, and forested groves are important cover from harsh winter conditions; although, sharp-tailed grouse will always roost on the ground. Croplands can be a more important foraging area during this time.

Sharp-tailed grouse also exhibit flocking behavior during the non-nesting period, as groups of 5 to 10 birds will form in mid-September or early October. Some males may attend leks during the fall, primarily to establish territories for the subsequent breeding season. (Connelly et al.1998, USDA, 1999).

Survey Area

The preferred route from west to east starts at the proposed Ellendale 345kV Substation in Dickey County, North Dakota and ends at the Big Stone South Substation in Grant County, South Dakota (Figure 1 [redacted] displays the preferred route and survey area). The Project is approximately 160-170-miles-long. A 2-mile buffer established the survey area.

The landscape of the survey area is part of the Northern Glaciated Plains Ecoregion, which occupies the transitional zone between tall grass and short grass prairies. Although historically

dominated by grasslands, much of the landscape is now row crops or other forms of agricultural production.

Glaciation by the Des Moines Lobe during the most recent Ice Age is the primary geologic force, which influenced the diverse landforms of the area. Notably, the Prairie Coteau is a prominent feature in Clark, Codington, Day and Grant Counties, and rises approximately 300 feet to 600 feet above the surrounding landscape. Its fringe is marked by steep escarpments, especially along the eastern edge where difficult terrain has prevented large tracts of grasslands from being tilled/converted to agricultural production. The interior of the Prairie Coteau is characterized by tightly undulating terrain, which has no drainage pattern. This has led to the formation of abundant semi-permanent and seasonal wetlands across the landscape along with a large chain of lakes. This hydrology and higher annual precipitation has allowed burr oak (*Quercus macrocarpa*), green ash (*Fraxinus pennsylvanica*), and eastern cottonwoods (*Populus deltoides*) to establish along the shorelines of these features (Bryce, et al., 1998).

To the west of the Prairie Coteau, near Brown County, South Dakota, the landscape descends to Drift Plains and the Glacial Lake Dakota Basin, where the topography is gently undulating to flat. Temporary and seasonal wetlands are common in these landscapes (Bryce, et al., 1998). The James River is the most notable hydrologic feature in this area, which meanders through a broad floodplain in the Glacial Lake Dakota Basin. The Maple River and Elm River are also prominent drainage features in the area. Green ash and eastern cottonwoods are common along these rivers.

In all areas, farmsteads and rural residential development are widely dispersed; common crops include flax, winter wheat, barley, and canola. Most roads within in the survey area are secondary highways, rural gravel roads, or section roads.

Bald eagle surveys focused on stands and individual mature trees in close proximity to large bodies of open water. Habitat in the survey area, which included areas near the James River, Elm River, Maple River, Whetstone River (North & South Fork), and the lakes near Butler, South Dakota, were of particular interest because they are prominent water resources in the region.

Sharp-tailed grouse surveys focused on large tracts of relatively unfragmented grassland, which are primarily located along the eastern escarpment of the Prairie Coteau in Grant County, South Dakota. However, less prominent grassland tracts along the preferred route were also observed.

Methods

Bald Eagle Stick Nest Survey

Two qualified avian biologists conducted this survey by systematically traveling public roads to observe areas of potentially suitable habitat for large stick nests. Surveys were conducted from public rights-of-way (ROWs). Surveys were conducted between April 29 and May 2, 2013, at the end of the pre "leaf-out" period. This timeframe was selected because eagles are actively breeding/nesting during this time and pre-leaf-out conditions allow unobstructed views of potential nest sites.

Areas of potentially suitable habitat were identified using HDR's Bald Eagle Breeding Habitat Model (BEBHM) (Schubbe et al. 2012) and by consulting known occurrences of previous nest sites (MNDNR, 2013, NDGFD 2013b, SDGFP 2013b). The BEBHM identifies forested areas adjacent to rivers and bodies of open water using GIS software. A map of the BEBHM and of known nesting locations was used to identify areas of potentially suitable habitat. These areas were visually observed in the field with the naked eye to locate potential nest sites, while traveling public roads or visiting public lands within 2 miles of the preferred route. When appropriate, potential nest sites (large stick nests, areas harboring suitable nest trees near water or areas identified as high quality habitat based upon the BEBHM) were observed using 10x binoculars or a vehicle mounted scope with a 20-60x magnifying capability, to verify the presence or absence of bald eagles on or in the vicinity of the nest. When possible, biologists took a photograph of nesting evidence, typically an adult on the nest. Additionally, the location of the nest was recorded on a 1:24,000 scale aerial photo along with the number of eagles present, their age and their behavior.

Sharp-tailed Grouse Lek Survey

Two qualified avian biologists conducted the survey by observing areas of potentially suitable breeding habitat for sharp-tailed grouse leks from public roads between April 29 and May 2, 2013. Surveys were conducted from public rights-of-way ROWs. Surveys were conducted using United States Bureau of Land Management (BLM) standardized protocol for Sharp-tailed Grouse Lek Surveys (ground) as a guideline (BLM, 2011). Due to time constraints, surveys were conducted on consecutive days, between 7:00 and 10:00 am, and between 7:30 and 8:30 pm.

Surveys were conducted by slowly driving roads in potentially suitable breeding habitat, stopping approximately every 0.5 mile to listen for the vocalizations of breeding grouse (breeding sharp-tailed grouse can be heard up to a mile away during optimal conditions). Potentially suitable breeding habitat for sharp-tailed grouse was located during previous windshield surveys of the area and using GIS software to identify large tracts of grassland in the vicinity of the preferred route. The largest blocks of potentially suitable breeding habitat is located where the preferred route crosses the eastern escarpment of the Prairie Coteau.

When sharp-tailed grouse were observed, their numbers, location and behavior were recorded. If possible, 10x binoculars or a vehicle mounted scope with a 20-60x magnifying capability was used to enhance field observations.

Results

HDR conducted surveys for bald eagle stick nests and sharp-tailed grouse leks beginning April 28th, 2013 and ending on May 2nd, 2013. Figure 1 [redacted] displays the location of active bald eagle nests and sharp-tailed grouse observations.

Bald Eagle Stick Nests

Biologists searched potentially suitable habitat for nesting bald eagles under suitable weather conditions (i.e. clear or overcast skies with no precipitation).

No bald eagle nests were found within 660 feet of the preferred route. Three active bald eagle nests were documented within two miles of the preferred route. All three are located along the James River or its tributaries (Elm River and Maple River) in Brown County, South Dakota. Figure 1 displays the location of active bald eagle nests observed during this survey (*Figure 1 redacted for confidentiality*).

The Maple River nest is located in the [redacted] in Brown County, South Dakota. This nest is located approximately 0.8 miles east of the preferred route. An adult bald eagle was observed incubating on this nest on May 1, 2013. The nest is located in a small stand of mature cottonwood trees, approximately 0.3 miles east of the Maple River. A second large stick nest is located in this stand, which is likely an alternative nest. It appeared to be occupied by a great horned owl (*Bubo virginianus*) at the time of the survey. The river channel in this location appears to be artificially widened to create a reservoir-like basin. The landscape in the vicinity of this nest is dominated by agricultural row crops; although, pastureland and USFWS grasslands have preserved some of the original character of this area. Seasonal and semi-permanent emergent wetlands are abundant to the south and east of this nest.

The Elm River Nest is located in the [redacted] in Brown County, South Dakota. This nest is located approximately 0.7 miles north of the preferred route. An adult bald eagle was observed incubating on this nest on April 30, 2013. The nest is located in a mature green ash, which is part of a stunted shelter belt. The nest is located approximately 750 feet south of the Elm River. The river channel in this location is highly sinuous with abandoned channels and oxbow lakes as prominent features in the area. Land use in the area is dominated by agricultural row crop fields; although, the nest tree appears to be located in an emergent wetland associated with the Elm River floodplain. A large semi-permanent emergent wetland is located to the southeast.

The James River Nest is located in the [redacted] in Brown County, South Dakota. This nest is located approximately 1.6 miles south of the preferred route. An adult bald eagle was observed incubating on this nest on May 1, 2013. The nest is located in a mature green ash located in the floodplain, immediately adjacent the current James River Channel. The landscape in the vicinity of the nest is characterized by the uniformly flat James River Floodplain which is approximately 1.0 to 1.5 miles wide in this area. The floodplain is dominated by seasonal and semi-permanent emergent wetlands and unvegetated mudflats. Outside the flood plain, the landscape is comprised primarily of agricultural row crop fields.

Sharp-tailed Grouse Leks

No active sharp-tailed grouse leks were located within 2.0 miles of the preferred route. Areas of potentially suitable breeding habitat were observed for leks and vocalizations during the evening hours of April 29, 2013; morning and evening hours of April 30, 2013and May 1, 2013; and during the morning hours of May 2, 2013.

At least three, and up to four, individual adult sharp-tailed grouse were observed during several surveys in the vicinity of [redacted]. Observations were typically of flushed individuals and displaying behavior was not observed. Surveys were conducted in this vicinity during each survey period, but no displaying males were observed, nor were vocalizations heard; therefore it did not appear that a lek was located in this area. The habitat in the vicinity of these observations is mostly upland grassland which has retained some native characteristics (i.e. little bluestem [*Schizachyrium scoparium]),* but agricultural row crops are present. Figure 1 [redacted] displays the location of these observations.

A previously documented lek site is located approximately 0.25 miles south of the preferred route in [redacted] in grassland habitat associated with the eastern escarpment of the Prairie Coteau. Habitat observed in this location is a mosaic of upland and mesic grasslands perforated by numerous semi-permanent wetlands. Native grasses such as little bluestem (*Schizachyrium scoparium*) are common in grasslands, but cool season grasses such as smooth brome (*Bromus inermis*) are also common. Wetlands mostly have a fringe dominated by cattails (*Typha spp.*). This area was surveyed during the morning hours of April 29, April 30, and May 2, 2013. No sharp-tailed grouse were observed or heard.

Conclusions

Surveys were conducted between April 29 and May 2, 2013 to document the absence or presence of bald eagle sick nests and sharp-tailed grouse leks within 2.0 miles of the preferred route. Surveys were conducted from public ROWs.

All major river crossings and lakeshores in the vicinity of the preferred route were monitored for bald eagle stick nests by systematically driving public roads. Three nests were located within 2.0 miles of the route, which are associated with the James River, Elm River, and Maple River. All three nests are located in Brown County, South Dakota. Each nest is located at least 0.7 miles away from the preferred route; therefore, direct effects are not anticipated. In open landscapes, the USFWS typically places a 660 foot buffer around active nests, where construction activity is prohibited during the breeding season. All nests are outside of this distance from the preferred route.

Areas of appropriate habitat were monitored for the presence or absence of sharp-tailed grouse leks. No sharp-tailed grouse leks were observed; although, a small number of sharp-tailed grouse were consistently observed near the intersection of [redacted]. The persistent presence of a small number of individual sharp-tail grouse infers a small lek may occur in the grasslands along the [redacted] border; however, the presence of a lek was not confirmed since displaying individuals were not observed. Due to the potential for suitable habitat located near the preferred route and grouse present, but not displaying lek behavior, the Applicants will conduct pre-construction surveys for new and verified lek sites to minimize impacts.

Previously documented lek sites in [redacted] were monitored for the presence of leks, but no sharp-tailed grouse were observed in these locations.

While bald eagle nests and individual sharp-tailed grouse were observed during this survey, these observations will not have routing or construction scheduling implications on the Project. Bald eagle nests were located at distances about 0.7 miles or further from the preferred route, which is greater than the 660 foot buffer the USFWS typically places around these features to minimize affects. Although individual sharp-tailed grouse were observed, no lekking behavior was recorded.

Literature Cited

AP. 2013, February 11. Bald Eagles Thriving in South Dakota Habitat. *Rapid City Journal*.

Baker, R., & Monstad, Y. 2005. *2005 Minnesota Bald Eagle Surveys.* Nongame Wildlife Program. St. Paul, Minnesota: Minnesota Department of Natural Resources.

Bryce, S. A., Omernik, J. M., Pater, D. E., Ulmer, M., Schaar, J., Freeouf, J., et al. 1998. Ecoregions of North Dakota and South Dakota. Reston, Virginia: U.S. Geological Survey.

Bureau of Land Management. 2011, January. Wildlife Survey Protocols. Newcastle, WY.

Connelly, J. W., Gratson, M. W., & Reese, K. P. 1998. Sharp-tailed Grouse (Tympanuchus phasianellus). *The Birds of North America Online*. (A. Poole, Ed.) Ithaca: Cornell Lab of Ornithology. Retrieved from http://bna.birds.cornell.edu/bna/species/354/

Department of Interior (DOI). 2009, September 11. 50 CFR Parts 13 and 22. *Eagle Permits; Take Necessary to Protect Interests in Particular Localities; Final Rules* Retrieved from USFWS: *http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BaldEagle/Final%20Disturbance%20Rule%209%20Sept%202009.pdf*

eBird. 2013. *eBird: An Online Database of Bird Distribution and Abundance [web application]*. (I. N. eBird, Producer) Retrieved from http://www.ebird.org

Grier, J. W., & Guinn, J. E. 2003. *Bald eagle habitats and responses to human disturbances in Minnesota.* . Minnesota Department of Natural Resources, Final report submitted to the Natural Heritage and Nongame Reserach Program.

Martell, M. C., Gieck, J., Nibe, D., Erickson, B., Mandernack, B., & Redig, P. T. 1991. *Bald Eagle Winder Roosts on the Mississippi and Wisconsin Rivers.* Minnesota Department of Natural Resources.

Minnesota Department of Natural Resources (MN DNR). 2012, July. Natural Heritage Information System. *License Agreement 647*. Natural Heritage & Nongame Research Program, Division of Ecological Services.

MN DNR. 2013. *Sharp-tailed Grouse (Typanuchus phasianellus)*. Retrieved from MN DNR: http://www.dnr.state.mn.us/birds/sharptailedgrouse.html

North Dakota Game & Fish Department (NDGFD). 2013a, March 18. *Report Bald Eagle Nest Sightings*. Retrieved May 24, 2013, from http://gf.nd.gov/news/report-bald-eagle-nest-sightings

NDGFD. 2013b. Natural Heritage Information.

Orth, M. R. 2012. Distribution and Landscape Attributes of Greater-Prairie Chickens and Sharp-tailed Grouse Outside of their Traditional Range in South Dakota. *A thesis submitted in partial fulfillment of the requirements of the Master of Science*. South Dakota State University.

Schubbe, J., Krych, S., Moreira, B., & Touhey, S. 2012. Bald Eagle Breeding Habitat Model. *Wind Wildlife Reserach Meeting IX*. Broomfield, CO: Online Edition.

South Dakota Game Fish & Parks (SDGFP). 2013a. *Midwinter Bald Eagle Survey Results: South Dakota Standardized Routes*. Retrieved May 24, 2013, from http://gfp.sd.gov/outdoor-learning/bald-eagle-awareness-days/midwinter.aspx

SDGFP. 2013b. Natural Heritage Information.

United States Fish & Wildlife Service (USFWS). 2007, May. National Bald Eagle Management Guidelines. Retrieved from USFWS: http://www.fws.gov/migratorybirds/CurrentBirdIssues/Management/BaldEagle/NationalBaldEagleManagementGuidelines.pdf

USFWS: South Dakota Field Office. 2011. *Bald Eagle (Haliaeetus luecocephalus)*. Retrieved from http://www.fws.gov/southdakotafieldoffice/EAGLE.HTM

United States Department of Agriculture: Natural Resource Conservation Service (USDA, NRCS). 1999. *Sharp-tailed Grouse (Tympanuchus phasionellus).* USDA, NRCS.

Figure 1 – Previously Documented Bald Eagle Nests & Sharp-tailed Grouse Lek Sites with Active Bald Eagle Nests & Sharp-tailed Grouse Observations

-Figure redacted for confidentiality.