

**Foxtail Wind, LLC**

700 Universe Boulevard  
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November 29, 2017

North Dakota Public Service Commission  
600 E. Boulevard, Dept. 408  
Bismarck, ND 58505-0480

Dear Commissioners,

Foxtail Wind, LLC is providing this letter to respond to comments submitted by the U.S Fish and Wildlife Service (USFWS) North Dakota Field Office in a letter to the Commission dated November 14, 2017. Below, we identify each USFWS comment in ***bold italics*** and provide a response for the consideration of the Commission in plain text directly following the comment. Foxtail provided the draft WCS to the USFWS in August of 2017 and has since held multiple telephone conversations with the USFWS regarding implementation of their comments resulting in the revised WCS being filed with this letter. During those telephone conversations, the USFWS acknowledged their draft letter did not address receipt of the WCS as their typical approach has been to avoid commenting on a draft document. The USFWS also acknowledged that Foxtail has been actively collaborating with the USFWS and NDGFD on revisions based on their comments that may not be apparent from review of the letter because it only addresses technical reports. Foxtail hopes that the additional information provided in these responses and in the revised WCS will assist the Commission with their review.

Response to U.S. Fish and Wildlife Service (USFWS) comment letter to PSC (14 November 2017):

- 1. During the past 18 months, wind energy industry representatives (including the Company), the North Dakota Game and Fish Department, non-governmental organizations, and the Service's Division of Ecological Services at the North Dakota Field Office have engaged in a voluntary collaborative process to: 1) build a shared understanding of the conservation needs of species of concern in North Dakota and 2) improve the predictability and uncertainty associated with regulatory processes. In particular, the collaborative effort is intended to achieve the outcome of increasing domestic energy production without further diminishing the status of species of concern in North Dakota. This can be***

**achieved by siting and designing wind energy infrastructure that will avoid or ameliorate additional threats to imperiled biomes and the species that rely on these biomes in the State. To accomplish this outcome, participants have focused on establishing a structured approach to establishing common practices for implementing the WEG [USFWS voluntary Wind Energy Guidelines] in North Dakota, by following the five-fold vision of the WEG:**

- **Promote compliance with relevant wildlife laws and regulations;**
- **Encourage scientifically rigorous survey, monitoring, assessment, and research designs proportionate to the risk to species of concern;**
- **Produce potentially comparable data across the Nation;**
- **Mitigate, including avoid, minimize, and compensate for potential adverse effects on species of concern and their habitats; and,**
- **Improve the ability to predict and resolve effects locally, regionally, and nationally.**

**The Service does not consider the proposed design of the Project as a case-study example of the envisioned collaborative process mentioned above, because the final Statewide framework has not yet been developed. However, the Company has demonstrated strong support for and investment into this voluntary effort, and the Service is encouraged by the dedicated good-faith effort of the Company to improve the efficacy of the WEG for use on the siting and design of future Projects in North Dakota. The following comments and suggestions are offered to improve the quality of the environmental resource reports and overall implementation of the WEG pursuant to the proposed construction and operation of the Foxtail Wind Energy Center.**

Foxtail appreciates this acknowledgment of our efforts by USFWS, and notes that we have coordinated with USFWS throughout the development of the Foxtail Project. It is our understanding from this collaboration that the USFWS does not intend for the approach developed by the above-referenced industry-agency collaborative to be applied to Foxtail at this late stage of development.

- 2. The Service considers the methods described in Section 2.0 of the NPS to be an appropriate initial step for evaluating the general location of native prairie grasslands in the Project Area. However, there are inherent limitations in using the same methods to discriminate habitat quality at finer scales. For these reasons, a subsequent effort was launched in August 3-4, 2015, to address the uncertainty contained in the findings of the 2014 habitat survey, by collecting more detailed plant community information (reported in the HSR report). The 2015 habitat surveys (HSR) involved visits to 27 habitat sites and the Service found the reported information an improvement compared to the habitat description in the NPS.**

***However, the Service noticed the habitat field surveys were conducted at sites that were all subjected to "light grazing" (based upon data contained in the field survey forms). This may simply be a coincidence, but if not, the report should explain the reasoning for restricting the 2015 habitat surveys to lightly-grazed sites. If this was a conscious decision, the conclusion that the Project Area contains 26.0 acres of Dakota skipper and Poweshiek skipperling (Oarisma poweshiek) suitable habitat may be underestimated because moderately grazed sites should also be evaluated as potentially suitable habitat for both species. Grazing intensity of both low and moderate cattle utilization classes, as classified with the parameters in both the Native Prairie Survey and Habitat Suitability Resurvey Reports should be considered within the range of compatibility for the Dakota skipper and Poweshiek skipperling.***

Foxtail believes the USFWS interpretation of Tetra Tech's Dakota skipper habitat assessment is inaccurate. The grazing intensity of all grasslands surveyed was documented during the 2014 Native Prairie Survey. These areas were then classified as Excellent/Likely, Good/Possible, or Poor/Unlikely habitat for the Dakota skipper based on grazing intensity and presence of key plant species. Excellent and Good quality habitats exhibited signs of light and moderate grazing, respectively. The 2015 Dakota skipper habitat delineation surveys focused on areas of Excellent and Good quality habitats in which Project infrastructure was proposed at the time; therefore, these areas included both low and moderate cattle utilization classes. The manner in which grazing intensity was incorporated into the Dakota skipper habitat assessment is described in Section 5.1.1 of the WCS. The areas identified as Good or Excellent Dakota skipper habitat were additionally used in a subsequent analysis of high quality native prairie habitat that Foxtail developed in coordination with the USFWS. These areas of skipper habitat were cross-tabulated with contiguous grasslands  $\geq 160$  acres to identify areas of high quality native prairie that are unfragmented. We believe this analytical approach provides the best available delineation of this important habitat type.

- 3. The Service agrees with the stated reference to native prairie grasslands as "one of the most endangered ecosystems in North America" (NPS report, pg. 1). Native prairie grasslands are home to some highly specialized flora and fauna and represents one of the highest conservation priorities of the Service as well as other conservation organizations. Some ESA-listed species that occur in North Dakota are either grassland obligates or depend upon grasslands for the majority of their life cycle (one mammal, two invertebrates, and one plant). Thus, there is a potential for land use decisions that result in grassland loss or modification to affect species other than birds.***

***Over fourteen thousand acres of native prairie is reported to occur in the Project Area (78 percent of the Project Area evaluated). In regards to differentiating between permanent and temporary as well as direct and indirect effects of the***

***Project, The Service recommends the Native Prairie Survey report be revised to address habitat loss and degradation, habitat fragmentation, displacement and behavioral changes, and indirect effects pursuant to the WEG (Tier 3, pp 25-26)***

The correct percentage of native prairie within the Project Area (all land within Project Boundary) is now approximately 71 percent. Of that area, the amount of high quality native prairie that will be permanently impacted is 7.40 acres, and the total amount of native prairie of any quality that will be permanently impacted is 38.86 acres. These potential impacts are addressed in the revised WCS in Section 7.4 and Table 13.

The WCS follows the USFWS Region 6 Bird and Bat Conservation Strategy (BBCS) Outline, and assesses potential impacts due to collision, electrocution, disturbance, displacement, habitat fragmentation, behavioral effects such as attraction to modified habitats, and other indirect effects that may impact population health. Foxtail believes the WCS is the appropriate document in which to analyze impacts per the WEG, and they are considered in Sections 6.1.1 through 6.1.4 of that document.

- 4. It is our understanding that the current layout of the turbines is final, thus approximately 31 percent (24 of 75) of the turbines proposed for construction will be located in native prairie grassland tracts with no history of tillage. Additional impacts to grasslands are expected from the associated roads and infrastructure, although locations of these features are not discussed in detail nor are they depicted in the report figures. Neither the NSP nor HSR reports contain estimates and descriptions of the expected loss of grasslands due to the Project infrastructure (above and below ground) and operation. However, the Service considers this information one of the most important outcomes of the WEG Tier 3 evaluations as it would inform the planning and implementation of any voluntary mitigation referenced in the WEG. The Service therefore recommends these reports be updated to describe the anticipated direct and indirect effects of project infrastructure and operations with reference to: 1) untilled native soils; 2) native prairie grassland communities; and 3) endemic (obligate) fauna. As one example the Company could improve the quality of the environmental risk assessment for the Project by evaluating fragmentation effects as measured by a changes in the number of native (untilled) prairie habitat patches, patch edge-to-interior ratio, mean distance between patches (isolation factors), or mean patch size of native prairie grasslands and/or soils (or other similar metrics). Because behavioral and displacement responses to fragmentation varies among species and individuals within a species, a spatial study of the fragmentation effects may be one of the best ways to evaluate the more subtle degradation in the function of the native prairie system due to any unavoidable construction and operational impacts.***

To address agency comments, the updated WCS contains an analysis of native prairie habitat based on suitable Dakota skipper habitat and contiguous native grasslands  $\geq 160$

acres to capture unfragmented parcels. This analysis was developed in coordination with USFWS. The final turbine array for the Project contains 5 turbines in high quality native prairie (all in Good/Possible skipper habitat) as identified in the revised analysis, 42 turbines in other native prairie (i.e., Poor/Unlikely skipper habitat), 3 turbines in tame (previously tilled by agriculture) grasslands, and the remainder in croplands, based on 2017 field delineations. Under WEG Tier 3, native prairie impacts are quantified in the WCS, which makes a commitment to develop an offset mitigation package. See Sections 5.4, 6.1.1, 6.1.3, and 7.4.

Native prairie grassland communities have been delineated and avoided to the extent practicable in order to minimize impacts to endemic wildlife. We believe the approach used by the Project conforms to current best practices and that the additional analyses suggested go beyond any analysis we are aware of being performed for previous wind projects. Although the metrics suggested are known to be important to habitat selection of some species of grassland birds, we are not aware of any clear linkage to utility for siting a wind farm in the context of WEG implementation. We acknowledge that the location and configuration of native prairie is a data gap in North Dakota. That data gap, among others, is one of the primary reasons that Foxtail is participating in the voluntary and industry-led collaborative to facilitate responsible wind energy siting.

- 5. The Service found the Eagle Report to be succinctly written and informative. The findings concluded that the risk for the incidental take of bald eagles (*Haliaeetus leucocephalis*) was low (3 bald eagles observed during a total of 480 hrs of monitoring within the Project Area). No golden eagles (*Aquila chrysaetos*) were observed. Surprisingly, 43 bald eagles were observed during the March 2015 aerial raptor nest survey. The difference in observations is likely to due to greater area of coverage per unit of time afforded by the aircraft and a larger survey area (a 10-mi buffer around the Project Area was established for the raptor nest survey area). Nonetheless, the Service infers the eagle use of the Project Area may be higher than what was observed and calculated (0.77 eagle use minutes) based upon the reported observations from aerial raptor nest survey. The Service agrees that the data currently suggest a low exposure risk for bald and golden eagle interaction with the Project.***

Assessing risk to eagles requires the use of multiple lines of evidence. In Foxtail's view, this evidence indicates that the risk to eagles is well within the range of projects previously permitted by the Commission. Criteria for assessing risk to eagles per the USFWS Eagle Conservation Plan Guidance are (1) eagle use within the project area, (2) location of important eagle use areas such as nests and roosts with respect to the project, and (3) flight and behavior patterns with respect to the project area. The three criteria are applied to the Foxtail project in separate paragraphs below, then considered in combination to assess the weight of evidence regarding risk.

The draft WCS provided to the USFWS in August contained information for 2014-15 eagle use surveys and 2017 eagle use surveys. At that time, eagle-use surveys in 2014-15 surveys had detected 3 eagles in 480 hours and those in 2017 had detected 6 golden and 8 bald eagles in 176 hours of survey effort. Additional surveys since August 2017 have resulted in 1 additional bald eagle observation and have increased the total survey effort to 304 hours. The rate of eagle sightings in 784 hours of survey is consistent with low use of the Project Area by eagles.

There are no documented important eagle use areas within the Project Area, and there is only one bald eagle nest within a 10-mile radius of the Project (the nest is 2.9 miles from the Project). Risk associated with nests is therefore low. The 43 bald eagles observed incidentally during the 2015 raptor nest survey are less informative about exposure risk within the Project. Of the 43 eagles observed during that aerial survey, only 1 was within the Project Boundary, consistent with a low risk of exposure within the Project. The location of these incidental sightings near water bodies to the east of the Project in March is consistent with a seasonal movement of eagles through the general area; if there were important use areas within the Project Area, eagle use surveys would likely have detected larger numbers of eagles in at least one of the two years of surveys.

Eagle flight patterns and behavior within and near the Project Area are not indicative of any areas of concentrated or repeated use. Flight paths within the Project Area are depicted on Figure 12 in Section 5.2.2 of the WCS. The episodic nature of eagle observations in Spring 2015 and Spring 2017 suggests that most bald eagle use of the area around the Project is associated with migration, rather than residence. This suggests relatively low risk, because migrants are only exposed to potential hazards in an area they are transiting briefly.

It is our view that based on the totality of evidence collected for the Project that eagle use within the Project Area is low, that there are no nests or other important eagle use areas within the Project Area, and that migrating bald eagles sometimes appear in higher numbers outside the Project in association with attractive features several miles from the Project. These are the same lines of evidence that the USFWS appeared to evaluate in arriving at their interpretation that risk to eagles from the Project appeared to be low.

- 6. Fall 2014 and Spring 2015 Avian Survey Report (Avian Report). The executive summary (p.2) and Section 4 (Discussion, p.17) contain the statement "...the greatest potential impact of wind facilities to avian species is collisions with turbines rather than disturbance or displacement." The Service found no scientific information cited or reported that supports this statement. The Service recommends this statement be deleted or clarified and supported with supporting information. In addition, the Service recommends the Avian Report be updated to***

***address all effects, including the effects of disturbance and displacement, thereby not limiting the analysis to those effects with the greatest potential to impact avian species as stated in the report. Adding this analysis and discussion will result in better alignment with the goals and purposes of the WEG Tier 3 studies.***

The comment requests retroactive modification of a historical report; whereas Foxtail believes it is more appropriate to incorporate analysis into the WCS. Habitat avoidance and displacement is discussed in general on pages 1-2 of the 2014 fall and spring avian use surveys. The statements about collision being the greatest potential impact of this project on the avian community were based on the general composition of the avian community documented at the Project and the composition of habitats within the Project area (disturbed habitats, including tame grasslands, fragments of native prairie, agriculture and wetlands). The report discloses the potential for impacts to grouse associated with displacement on p. 21. However, data available for North America support the conclusion that direct impacts due to collision occur to some extent at most wind farms, whereas disturbance, displacement, and habitat fragmentation have been shown to be temporary at the few locations studied to date (e.g. Shaffer and Buhl 2015, Strickland et al 2011, Leddy 1999), and no consistent pattern of avoidance has been demonstrated.

The analyses presented in the Avian Report conform to industry standards for pre-construction avian use surveys at wind energy facilities, the purpose of which are to characterize the avian community of the Project and estimate mean use by the individuals detected. A more detailed and comprehensive analysis of potential project-related effects to the avian community is appropriately included in Sections 6.1.1.1 to 6.1.1.5 of the WCS.

- 7. The Service agrees that migration surveys (Section 1.2, p. 2) can be useful to estimate bird use of an area when applying the methods described by Reynolds et al. (1980) and recommended in the WEG (p. 28). However, the Service believes establishing 800m (0.5 mi) radius survey areas (equivalent to 503 ac or 201 ha survey areas) to detect presence of grassland songbirds, as done for the project, likely resulted in a high rate of non-detection for a number of species..... Any individual birds or species that were undetected would contribute to causing an underestimate in the findings of the observational data in regards to species abundance or the number of species in the Project area. This potential source of observer bias should be discussed and, if possible, be accounted for in the frequency data presented in the Avian Report.***

The 800-m radius point counts used for the Project are industry standard methodology for the objective of the surveys, which is to characterize the avian community of the Project and estimate mean relative use of the species. As such, differential detection probability as a function of distance is not problematic because the surveys are not intended to measure absolute abundance of the species using the Project. Tetra Tech

ensured representative sampling of the bird community by placing point counts in a stratified random manner with respect to habitat features. The resulting estimates of avian community structure are substantially similar to those reflected in the BBS and CBC data analyzed for the Project WCS in Section 4.2, which indicates the sampling was adequate to achieve the goal of the surveys.

8. ***The executive summary and Section 4 (Discussion, p. 17) indicate the Project will have low likelihood of population level effects. However, the Service found no estimates of the predicted number of avian mortalities induced by the Project (by species, per year and overall during the life of the Project). Detecting and/or describing population level effects, should they occur, generally requires an explicit analysis of the spatial scale, time scale, species, population trends, population stressors, local and regional habitat conditions/carrying capacity, source/sink dynamics, and/or intra- or interspecific competition. The Avian Report contained a brief discussion (pp. 17-19) on the most abundant species detected during the spring and fall surveys as well as selected fatality rates for some species reported at other operating projects. However, species of conservation concern, such as those designated in North Dakota and reported in the 2015 North Dakota State Wildlife Action Plan (Dyke et al. 2015; State Plan), were never mentioned in the Discussion (Section 4) of the Avian Report.***

The goal of avian surveys under the WEG is to identify the bird community using the Project Area and measure its mean relative use of the Project Area. Analysis of potential risks and impacts is conducted in Section 6.1.1 of the Project WCS. We believe the approach used by the Project conforms to current best practices and that the additional analyses suggested go beyond any analysis we are aware of being performed for previous wind projects. The Project WCS does, however, provide explicit assessment in qualitative terms of potential impacts to species designated in the 2015 North Dakota State Wildlife Action Plan (see Sections 3.2.1, 4.1, 4.2, 5.1, 5.2, and 6.1 of the WCS).

9. ***The Service recommends the Avian Report be updated to include the expected (total and number for each species) fatalities that would be expected based on the reported survey information in the Project Area for each species. For example, the Avian Report (p. 17) presented the avian fatality rate in the northern Great Plains of 0.81 - 5.59 birds/MW/yr (Erickson et al. 2014). Based on these rates (Erickson et al. 2014), a 150 MW project can be expected to kill between 3,645 to 25,155 birds during a 30-yr operating period. If the Company considers this rate range applicable to the Project as suggested (Avian Report, p.17), the Service recommends developing spatially explicit fatality projections and associated (potential) habitat avoidance areas for sensitive avian species based on the spatial extent of the occurrence data within the Project Area from the fall 2014 and spring 2015 surveys. This would readily inform the risk profile of individual***

***turbines (based upon the current siting plan), placement of infrastructure, Tier 4 and 5 studies, and the post-construction monitoring plan.***

As the USFWS suggests, the annual rate of total bird fatalities can be approximately predicted based on fatalities experienced at other wind farms in the region. It appears the USFWS extrapolation to 30-year fatality totals is based on the range of projects reported by Erickson et al (2014) for the northern Great Plains; however, Foptail believes that the average rate for the Northern Great Plains is more representative of typical fatality rates that can be expected at a wind farm in the region. Using the most reliable published mean fatality rate estimates from Erickson et al. 2014 (2.08 birds/MW/year) and Loss et al. 2014 (1.81 birds/MW/year), Foptail projects bird fatalities to total 271 to 312 per year at a 150-MW facility (Section 6.1.1 of the WCS). If we assume a constant fatality rate over 30 years, as the USFWS does, this range equates to approximately 8,130 to 9,360 potential bird fatalities over 30 years. For perspective, we examined Partners in Flight estimates of the Bird Conservation Region 11 (prairie potholes) where the Project area occurs and populations of the 20 most-frequently killed bird species at wind farms. We further restricted our analysis to the estimated breeding population within North Dakota. These populations range in size from range from 14,000 (Bell's vireo) to 16 million (horned lark) individuals. If the fatality rates at the Project are similar to those reported by Erickson et al. (2014), we can reasonable expect them to account for 0.014 – 0.043% of these regional populations annually.

The spatial approach suggested by USFWS would require that there be known quantitative relationships among mean use, habitat types, and fatality rates; however, there is no known quantitative relationship that provides such predictive power. The approach suggested by the USFWS would therefore be overly speculative in Foptail's opinion, and would be unlikely to provide conservation benefits based on best available scientific data.

***10. In summary, the Service infers that Project will result in the permanent loss and fragmentation of native prairie grasslands and soils.***


The impacts to native prairie have been quantified in the Project WCS and Foptail is working with the USFWS to develop an appropriate offsetting mitigation package. Additionally, Foptail notes that considerable up-front avoidance effort have been expended in siting and micro siting of the Project; much of it in coordination with the USFWS. The ongoing coordination with the USFWS has included the following correspondence, meetings, and conferences:

- 4 November 2008. Email correspondence from USFWS regarding easements
- 2 December 2008. Inquiry letter from Tetra Tech, Inc. to USFWS
- 22 December 2008. Response letter from USFWS Kulm Wetland Management District

- 4 February 2009. Response letter from USFWS North Dakota Field Office
- 4 March 2015. Letter request for Tier 1/Tier 2 information from Tetra Tech, Inc. to USFWS
- 7 April 2015. Meeting with USFWS North Dakota Field Office
- 27 March 2017. Request for updated biological resource information from Tetra Tech, Inc. to USFWS
- 10 April 2017. Teleconference with USFWS Kulm Wetland Management District
- 8 May 2017. Transmittal of wetland easement information from USFWS
- 12 May 2017. Teleconference with USFWS Kulm Wetland Management District
- 20 May 2017. Teleconference with USFWS Kulm Wetland Management District
- 14 September 2017. Teleconference with USFWS, NDGFD, DNV GL, and Foxtail Wind, LLC to solicit comments on WCS
- 19 September 2017. Second teleconference with USFWS, NDGFD, DNV GL, and Foxtail Wind, LLC discuss agency comments on draft WCS
- 9 October 2017. Email transmittal of USFWS comments on draft WCS to Foxtail Wind, LLC
- 31 October 2017. Teleconference to discuss native prairie mitigation with USFWS and DNV GL
- 9 November 2017. Teleconference to discuss native prairie mitigation with USFWS, DNV GL, and Foxtail, LLC

Foxtail Wind, LLC thanks the Commission for the opportunity to respond to the USFWS comments. Additionally, we have attached to this letter a matrix describing the USFWS comments on the draft WCS and Foxtail's responses to those comments for consideration of the Commission.

Sincerely,



Kimberly Wells, Ph.D.