# APPENDIX B

# CORRESPONDENCE

TETRA TECH

November 30, 2007

Ms. Laurie Fairchild, Field Supervisor
United States Fish and Wildlife Service
Twin Cities Ecological Services Field Office
4101 East 80th Street
Bloomington, MN 55425-1665

Subject: Proposed Flat Hill Windparks I & II
Noble Environmental Power, LLC

Dear Ms. Fairchild:

Tetra Tech Inc. has been contracted by Noble Environmental Power, LLC to conduct a Critical Issues Analysis desktop review for the target area located in Clay and Wilkin Counties, Minnesota. As part of this process, we are required to obtain information regarding proposed activities for the target area and how they will affect listed threatened/endangered species, candidate species, species of concern, and critical habitats in the project area. Specific site information and maps of the target areas have been included for your review.

| | |
|---|---|
| Site Address: | Clay County (portions of Moland and Spring Prairie Townships) and Wilkin County (portions of Deerhorn Township) |
| Legal Description: | See attached listing of Township, Range, Sections for proposed Windparks Flat Hill I & II |
| Project Description: | Noble Environmental Power, LLC proposes to construct a 200 MW Windpark (Flat Hill I) within a 20,000-acre portion of Clay County and a 200 MW Windpark (Flat Hill II) within a 20,000-acre portion of Wilkin County. |

We would appreciate a response within 30 days of receipt of this letter indicating whether the project will affect resources under your jurisdiction. We will need a response even if there will be no effect. Please note, we are aware that for our project area designated as Flat Hill I, the southeastern portion of the southern leg is currently owned by the Nature Conservancy. The client is not proposing activities on these smaller sections.

Included in your response, we would appreciate information on listed species that may occur in the target areas, prairie chicken booming ground locations, and species occurrences and critical habitats in and around the target area. References or enclosures of guidance materials or recommendations for proposed projects such as this would be appreciated as well.

Your time and effort regarding this request are greatly appreciated. If you have questions or need additional information, please feel free to contact me at 612-643-2227.

Sincerely,

Melissa Doperalski
Wildlife and Conservation Biologist

Tetra Tech EM Inc.
2001 Killebrew Drive, Suite 141, Bloomington, MN 55425
Tel 612.643.2200 Fax 612.643.2201 www.tetratech.com

Enclosure

# Flat Hill I Project Area Quad Sections

| COUNTY | TOWN | RANGE | SECTION | TRS |
|---|---|---|---|---|
| CLAY | 140 | 46 | 23 | T140N R46W S23 |
| CLAY | 140 | 46 | 24 | T140N R46W S24 |
| CLAY | 140 | 47 | 27 | T140N R47W S27 |
| CLAY | 140 | 47 | 26 | T140N R47W S26 |
| CLAY | 140 | 46 | 30 | T140N R46W S30 |
| CLAY | 140 | 46 | 29 | T140N R46W S29 |
| CLAY | 140 | 46 | 28 | T140N R46W S28 |
| CLAY | 140 | 46 | 27 | T140N R46W S27 |
| CLAY | 140 | 46 | 31 | T140N R46W S31 |
| CLAY | 140 | 46 | 32 | T140N R46W S32 |
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| CLAY | 140 | 46 | 34 | T140N R46W S34 |
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| CLAY | 139 | 46 | 32 | T139N R46W S32 |
| CLAY | 139 | 46 | 33 | T139N R46W S33 |

# Flat Hill I Project Area Quad Sections

| COUNTY | TOWN | RANGE | SECTION | TRS |
|---|---|---|---|---|
| CLAY | 141 | 46 | 25 | T141N R46W S25 |
| CLAY | 141 | 45 | 30 | T141N R45W S30 |
| CLAY | 141 | 46 | 33 | T141N R46W S33 |
| CLAY | 141 | 46 | 34 | T141N R46W S34 |
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| CLAY | 141 | 46 | 36 | T141N R46W S36 |
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| CLAY | 140 | 46 | 1 | T140N R46W S1 |
| CLAY | 140 | 45 | 6 | T140N R45W S6 |
| CLAY | 140 | 47 | 9 | T140N R47W S9 |
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| CLAY | 140 | 47 | 24 | T140N R47W S24 |
| CLAY | 140 | 46 | 19 | T140N R46W S19 |
| CLAY | 140 | 46 | 20 | T140N R46W S20 |
| CLAY | 140 | 46 | 21 | T140N R46W S21 |
| CLAY | 140 | 46 | 22 | T140N R46W S22 |

# Flat Hill II Project Area Quad Sections

| COUNTY | TOWN | RANGE | SECTION | TRS |
|---|---|---|---|---|
| CLAY | 137 | 46 | 31 | T137N R46W S31 |
| CLAY | 137 | 47 | 33 | T137N R47W S33 |
| CLAY | 137 | 47 | 34 | T137N R47W S34 |
| CLAY | 137 | 47 | 36 | T137N R47W S36 |
| WILK | 136 | 46 | 7 | T136N R46W S7 |
| WILK | 136 | 46 | 18 | T136N R46W S18 |
| WILK | 136 | 47 | 5 | T136N R47W S5 |
| WILK | 136 | 47 | 4 | T136N R47W S4 |
| WILK | 136 | 47 | 3 | T136N R47W S3 |
| WILK | 136 | 47 | 2 | T136N R47W S2 |
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| WILK | 136 | 47 | 18 | T136N R47W S18 |
| WILK | 136 | 47 | 17 | T136N R47W S17 |
| WILK | 136 | 47 | 16 | T136N R47W S16 |
| WILK | 136 | 47 | 15 | T136N R47W S15 |
| WILK | 136 | 47 | 14 | T136N R47W S14 |
| WILK | 136 | 47 | 13 | T136N R47W S13 |
| WILK | 136 | 47 | 20 | T136N R47W S20 |
| WILK | 136 | 47 | 21 | T136N R47W S21 |
| WILK | 136 | 47 | 22 | T136N R47W S22 |
| WILK | 136 | 47 | 23 | T136N R47W S23 |

Please do not staple
request documents

| For Agency Use Only |
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| Received _____ Due _____ RUSH |
| Related ES# |
| Search Radius _____ mi. ER/All EQs |
| Quads |
| Map'd ____ C / NoC Let ____ Inv ____ Log out |

**MINNESOTA NATURAL HERITAGE INFORMATION SYSTEM DATA REQUEST FORM**

DATE OF REQUEST: November 30, 2007

WHO IS REQUESTING THE INFORMATION?


Name and Title: **Melissa Doperalski, Wildlife and Conservation Biologist**
Agency/Company: **Tetra Tech EM, Inc. (MN)**
Address: **2001 Killebrew Drive, Suite 141** **Bloomington** **MN** **55425**
Phone: **612-643-2227** FAX: **612-643-2201** E-mail: **melissa.doperalski@ttemi.com**


THIS INFORMATION IS BEING REQUESTED ON BEHALF OF (if applicable): **Noble Environmental Power, LLC**

WHAT INFORMATION DO YOU NEED?

__X__ Printouts of know occurrences of federally and state listed plants and animals; native plant communities; critical habitat areas, and aggregation sites such as bat hibernacula, colonial waterbird nesting sites, and prairie chicken booming grounds.

_____ Information listed above, plus geological features and state rare species with no legal status.

__X__ Other (specify): **State Recreation and/or Natural Areas**

Frequent applicants: Check here if you DO NOT need a copy of the field-by-field explanation of the printout: ____

WHERE IS THE AREA OF INTEREST? 1) **ENCLOSE A MAP** showing detailed boundaries of the project area (topographic or aerial photos are preferred.) 2) If a GIS shapefile of the project area is available, please provide a copy.

| For Agency Use Only: Region | **PROVIDE THE FOLLOWING REQUIRED PROJECT INFORMATION** |
|---|---|
| | County Township# Range# Section(s) (and half-section, quarter-section, etc. if known) |
| | ___ **See attached listing of County Township, Range, and Sections for target area.** |
| | Project name: **Flat Hill I Windpark and Flat Hill II Windpark** |
| | Project Proposer: **Noble Environmental Power, LLC** |
| | Project Description: **Noble Environmental Power, LLC proposes to construct a 200 MW Windpark (Flat Hill I) within a 20,000-acre portion of Clay County and a 200 MW Windpark (Flat Hill II) within a 20,000-acre portion of Wilkin County**. |
| | Past Land-Use of Project Site: **Variety of land uses associated with the target area.** |

HOW WILL THE INFORMATION BE USED? Describe planned use of information, including in what form and detail you wish to publish this information, if any. **Information provided will be written into a Critical Issues Analysis Report to be provided to the Project Proposer. The report will document any significant findings related to Natural Resources, as identified by the Minnesota Department of Natural Resources and other agencies.**

**TURN-AROUND TIME**
**Requests generally take 2 to 3 weeks from date of receipt to process, and are processed in the order received.**

**FEES**
**For-profit organizations are charged a fee for this service. In addition, a fee may be charged for large requests from any source. A surcharge (currently $50) is applied for rush orders; if this is a rush order, please check the blank below. Fees subject to change. A fee schedule is available upon request. Please do not include payment with your request; an invoice will be included with our response letter.**
**_____ Rush**

"The information supplied above is complete and accurate. I understand that material supplied to me from the Minnesota Natural Heritage Information System is copyrighted and that I am not permitted to reproduce or publish any of the copyrighted material without prior written permission from the Minnesota DNR. Further, if permission to publish is given, I understand that I must credit the Minnesota Natural Heritage and Nongame Research Program, Minnesota Department of Natural Resources as the source of the material"

Signature _____

| Mail completed forms to: | | For further information call: |
|---|---|---|
| Endangered Species Environmental Review Coordinator<br>Sarah.hoffman@(dnr.state.mn.us) | *(for project reviews)* | (651) 296-8319 or 296-8279 |
| **or** | | |
| Assistant Database Manager<br>Sharron.nelson@(dnr.state.mn.us) | *(for general requests)* | (651) 296-8324 |
| **at** | | |

Natural Heritage and Nongame Research Program
Department of Natural Resources
500 Lafayette Road, Box 25
St. Paul, Minnesota 55155

Or FAX completed forms to: (651) 296-1811

Additional information about the Natural Heritage & Nongame Research Program is available at
http://www.dnr.state.mn.us/ecological_services/nhnrp/index.html

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For Agency Use Only:

EO's requiring comment

| Sources contacted | Topic | Response |
|---|---|---|
| _____ | _____ | _____ |
| _____ | _____ | _____ |
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Response Summary _____

_____ Responder _____

Revised 12/04

# Flat Hill I Project Area Quad Sections

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# Flat Hill I Project Area Quad Sections

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| CLAY | 139 | 46 | 28 | T139N R46W S28 |
| CLAY | 139 | 46 | 32 | T139N R46W S32 |
| CLAY | 139 | 46 | 33 | T139N R46W S33 |

# Flat Hill II Project Area Quad Sections

| COUNTY | TOWN | RANGE | SECTION | TRS |
|---|---|---|---|---|
| CLAY | 137 | 46 | 31 | T137N R46W S31 |
| CLAY | 137 | 47 | 33 | T137N R47W S33 |
| CLAY | 137 | 47 | 34 | T137N R47W S34 |
| CLAY | 137 | 47 | 36 | T137N R47W S36 |
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| WILK | 136 | 46 | 18 | T136N R46W S18 |
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# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Twin Cities Field Office
4101 American Blvd E.
Bloomington, Minnesota 55425-1665


FEB 13 2008

Ms. Melissa Doperalski
Tetra Tech
2001 Killebrew Drive, Suite 141
Bloomington, Minnesota 55425

Dear Ms. Doperalski:

This letter is a follow-up to discussions regarding the Flat Hills Windpark proposed by Nobles Environmental Power, LLC. The project is planned in two phases, a 200 MW Windpark located within a 20,000-acre portion of Clay County and a 200 MW Windpark located within a 20,000-acre portion of Wilkin County, Minnesota (see attached). A project of this size may contain between 200-400 turbines, with associated transmission lines, access roads, temporary construction zones, and substations. The project is in the preliminary planning stage and Tetra Tech has requested a broad scale evaluation of sensitive resources within the project area to inform the planning process. The following comments provide a broad review of the fish and wildlife resources as well as a discussion of the potential for adverse impacts and our recommendations to address the impacts as planning progresses.

There are no federally listed threatened or endangered species as described under the Endangered Species Act of 1973 (ESA), as amended, within Wilkin County. However, the Western prairie fringed orchid (Platanthera praeclara), a plant species listed as threatened under the ESA, occurs within Clay County and suitable habitat for this species (prairies and wet meadows) occurs from Sections 22 and 23 (T140N, R46W) and Section 20 (T140N, R45W) to the northern boundary of the proposed project area.

Several Wildlife Management Areas (WMA), managed by the MNDNR, and Waterfowl Production Areas (WPA), managed by the Service, are located on the northeast boundary of the project area. Jeral WMA, Hatchett Lake WPA, Jarvis WPA, and several wetland easements are clustered in and adjacent to Section 6 (T140N, R25W). These areas are managed to attract and sustain resident and migratory bird populations.

There are a number of avian species of concern within the proposed project area. The Service has defined Resource Conservation Priorities to include species in the greatest need of attention due to documented population declines and/or rarity in the Region. Of particular concern within the proposed project area are the chestnut-collared longspur, Smith's longspur, American golden plover, Nelson's sharp-tailed sparrow, marbled godwit and short-eared owl. Other species of concern which may be affected by the

project include the sandhill crane, Northern harrier, and Swainson's hawk. In addition, the project lies directly within the path of a Greater prairie-chicken corridor which the Minnesota Department of Natural Resources (MNDNR) has been establishing between Crookston and Big Stone.

The majority of rare avian species and species of concern located in the project area are dependent upon native prairie/grasslands for a portion or all of their life history. The potential threats to these resources posed by wind farm construction and operation fall within several categories:

- Habitat elimination/degradation – Turbines and associated infrastructure located in rare or high quality habitats directly eliminates these resources from the local ecosystem. This could severely impact the population of a species such as the Western prairie fringed orchid. Avian species would be forced to search out other areas to roost, feed, and nest, an activity which can cause indirect mortality through lower fitness during the breeding season or a complete disruption of breeding activities altogether.

- Direct mortality – Research continues to refine our knowledge of the adverse effects of wind turbines on migrating and nesting birds. Thus far, studies and monitoring reports have shown that direct mortality is likely to be more significant for certain species. These include birds which fly relatively low between nesting and feeding areas (e.g. sandhill cranes) and birds which employ breeding displays that carry them into the rotor-swept height of the turbines (e.g., chestnut-collared longspur). In addition, transmission lines, a necessary component of all wind farm projects, kill thousands of birds each year.

- Avoidance – Some species avoid tall structures during migration, breeding displays and nesting. For instance, studies have shown the greater prairie-chicken to be particularly sensitive to tall structures when conducting breeding and nesting activities and to exhibit avoidance behavior 5-10 miles from the structure.

In general, the Service supports windfarm construction outside areas of high quality habitat and concentrated wildlife resources. The more agricultural landscape of Wilkin County appears suitable for a large-scale windfarm similar to the one proposed. The habitat resources within the Clay County project area, however, are of higher quality and include a host of sensitive species. The following recommendations are considered essential components of a well planned project which includes a reasoned evaluation of environmental resource impacts and potential mitigation measures:

1. Turbines are located outside sensitive habitat areas, including grasslands, prairie and wetlands.

2. Connecting transmission lines are buried to the maximum extent possible and/or use existing poles and alignments.

3. Wide buffers are incorporated in areas with north-south forested corridors; these are often associated with rivers and streams, particularly in the Buffalo River watershed. Songbirds use forested corridors as stopovers during migration, and travel as much as 10-25 miles per day along the corridor during daytime hours.

4. Buffers (minimum half-mile) are established for those areas managed to attract resident and migratory birds.

5. Pre-and post-project monitoring methodology be determined, in conjunction with the Service and MNDNR as needed, to focus on avian resources most likely to be affected by the project, e.g grassland birds. This effort should be initiated as soon as possible to fully incorporate pre-construction monitoring and allow the data to inform final turbine configuration.

6. It appears that the project will require a thorough review of turbine locations to ensure avoidance of Western prairie fringed orchids. Surveys may be a necessary component of this review; therefore, the project proponent should contact our office if it is determined that turbines may be located in Sections which include suitable orchid habitat.

We appreciate the opportunity to provide comments on the proposed project and look forward to providing further technical assistance as planning progresses. If you have questions regarding our comments, please contact staff biologist, Ms. Laurie Fairchild, at (612) 725-3548.

Sincerely,

Tony Sullins
Field Supervisor

Paul Stolen, DNR
Shelley Becklund, DNR
Scott Kahan, Detroit Lakes WMD
Jeff Gosse, RO
Bob Russell, Migratory Birds

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
Twin Cities Field Office
4101 American Blvd E.
Bloomington, Minnesota 55425-1665


July 8, 2008

Ms. Melissa Doperalski
Tetra Tech
2001 Killebrew Drive, Suite 141
Bloomington, Minnesota 55425

Dear Ms. Doperalski:

This letter is in response to on-going discussions between the Fish and Wildlife Service (Service), Tetra Tech, and Nobles Environmental Power regarding the proposed Flat Hills Windpark (Windpark), Phase I, located in Clay County. Previous discussions, meetings, and our comment letter dated February 13, 2008, have provided fish and wildlife resource information for the proposed site, the Service's related environmental concerns, and methods to minimize adverse impacts. The following comments are meant to confirm our understanding of the project as currently proposed, summarize on-going survey efforts, and document outstanding recommendations/accomplishments yet to be completed.

Project Area

A revised layout for the Windpark was presented by Nobles Environmental Power in a meeting held at the Minnesota Department of Natural Resources office on April 8, 2008. The modified plan shows all turbines located west of Highway 9, thereby avoiding the majority of the habitat and wildlife concerns presented in earlier discussions. During the April meeting we expressed strong support for the revised layout.

Migratory Bird and Bat monitoring efforts

Tetra Tech has been conducting greater prairie chicken, grassland bird and overall avian abundance monitoring, beginning in April 2008. This effort will continue and as data is collected, reports will be shared with the Service and MnDNR so that sensitive areas are identified prior to project construction. A 90-day bat acoustic survey is proposed for the area, beginning in July, as well as an 8-week grassland bird survey (pers.comm., S. Flannery, Tetra Tech). Post-construction monitoring is also proposed, with report copies provided to the agencies as they become available.

Transmission lines and associated infrastructure

Although there is no final layout available, Nobles Environmental Power has made a commitment to siting access roads in previously disturbed areas (e.g. cropland) and burying transmission lines whenever possible. Those lines that are not buried may be marked to minimize bird strikes, if necessary. The proposed project will require a new substation which will also be sited in previously disturbed habitat.

Our February letter contained a list of recommendations that we considered essential components of a well planned wind farm proposal. Three of the six items concerned avoidance of sensitive habitats and wildlife resources; the revised project has met these criteria, including avoidance of potential western prairie fringed orchid habitat. Consideration of appropriate buffers for sensitive resources that cannot be completely avoided were discussed in Recommendations 3 and 4; although we cannot make a definitive assessment without knowledge of above ground transmission lines and access roads, it appears that the project has adequately addressed these criteria as well. The remaining recommendation dealt with pre- and post-construction monitoring for affected avian species with a particular focus on grassland birds. Discussions regarding methodology and requirements for this effort are on-going.

We appreciate the coordination and cooperation expended thus far to ensure a final product which addresses all the environmental concerns raised during the project review phase. We look forward to further discussions regarding monitoring and the layout of the final proposed project. Please continue to coordinate with Ms Laurie Fairchild, of this office, at 612-725-3548, as the project progresses.

Sincerely,

Tony Sullins
Field Supervisor

cc: Paul Stolen, MnDNR
Scott Kahan, Detroit Lakes WMD
Jeff Gosse, Ecological Services, RO
Bob Russell, Migratory Birds, RO
Jim Leach, Refuges, RO

# Minnesota Department of Natural Resources

Natural Heritage and Nongame Research Program, Box 25

500 Lafayette Road

St. Paul, Minnesota 55155-4025

Phone: (651) 259-5109 Fax: (651) 296-1811 E-mail: lisa.joyal@dnr.state.mn.us


January 9, 2007

Ms. Melissa Doperalski
Tetra Tech EM, Inc.
2001 Killebrew Drive, Suite 141
Bloomington, MN 55425

Re: Request for Natural Heritage information for vicinity of proposed Flat Hill I & Flat Hill II Windparks; Clay and Wilkin Counties
NHNRP Contact #: ERDB 20080394

Dear Ms. Doperalski,

The Minnesota Natural Heritage database has been reviewed to determine if any rare plant or animal species or other significant natural features are known to occur within an approximate one-mile radius of the area indicated on the map enclosed with your information request. Based on this review, there are 157 known occurrences of rare species or native plant communities in the area searched (for details, please see the enclosed database printouts and the explanation of selected fields). Please address the following issues in the Public Utilities Commission (PUC) Site Permit Application for this project.

- The Minnesota County Biological Survey has identified several "Sites of Biodiversity Significance" within and adjacent to the proposed project area, including Bluestem Scientific and Natural Area, Buffalo River State Park, and a Site of Outstanding Biodiversity Significance within the project boundary in T140N R46W Section 11. "Sites of Biodiversity Significance" are areas with varying levels of native biodiversity that may contain high quality native plant communities, rare plants, rare animals, and/or animal aggregations. Outstanding ranking sites are defined as sites containing the best occurrences of the rarest species, the most outstanding examples of the rarest native plant communities, and/or the largest, most intact functional landscapes present in the state. These particular Sites, as discussed below, contain many native plant communities that provide habitat for several rare features. (GIS shapefiles of MCBS Sites of Biodiversity Significance and MCBS Native Plant Communities can be downloaded from the DNR's Data Deli website at http://deli.dnr.state.mn.us/data_search.html.) We encourage you to consider project alternatives that would avoid direct or indirect impacts to these ecologically significant areas.

  Bluestem Prairie Scientific and Natural Area is located within and adjacent to the Flat Hill I project area in T139N R46W Sections 15, 21, 22, 27, 28, 33, & 34. Scientific and Natural Areas (SNA) are legally designated public nature preserves established to protect the state's rarest natural features and sensitive resources. These natural areas are given the highest level of protection and the utmost consideration in assessing potential impacts from nearby projects. The PUC Site Permit Application should include a determination of whether or not the project as proposed has the potential to impact the SNA, the rare features the SNA supports, or public use of the SNA. If so, avoidance and protection measures must be proposed. This particular SNA is owned by The Nature Conservancy. It is one of the largest continuous, undisturbed grasslands in Minnesota, and it is one of the highest quality prairie sites in the United States. If you have not

done so already, I recommend that you contact the Conservancy's Northern Tallgrass Prairie Office at 218-498-2679 to discuss this project.

Buffalo River State Park is located adjacent to the Flat Hill I project area in T139N R46W Sections 10, 11, 14, & 15. (Shapefiles of State Park Statutory Boundaries can be downloaded from the DNR's Data Deli website at http://deli.dnr.state.mn.us/index.html.) Please contact Park Manager, Brian Nelson at 218-498-2124, to discuss any concerns he may have regarding the project as it relates to the state park.

- The above Sites provide essential habitat for several rare birds including the Henslow's sparrow (*Ammodramus henslowii*) and chestnut-collared longspur (*Calcarius ornatus*), both state-listed as endangered; the loggerhead shrike (*Lanius ludovicianus*) and Wilson's phalarope (*Phalaropus tricolor*), both state-listed as threatened; and the marbled godwit (*Limosa fedoa*) and greater prairie-chicken (*Tympanuchus cupido*), both state-listed species of special concern. Wind farms can affect birds due to collision mortality, displacement due to disturbance, habitat fragmentation, and habitat loss. Even if collision mortality rates are low, the additional mortality may be significant for rare species. There is also some evidence to suggest that grassland birds are deterred from nesting in otherwise appropriate habitat by the presence of tall structures in the vicinity. As such, we recommend that wind turbines not be placed within at least ¼ mile, and preferably ½ mile, of prairie remnants.

  The Bluestem Prairie/Buffalo River State Park area and the Felton Prairie Complex north of the project area have been identified by Audubon Minnesota and the DNR Nongame Program as Important Bird Areas. Important Bird Areas (IBA) are part of an international conservation effort aimed at conserving critical bird habitats. They are voluntary and non-regulatory, but the designation does demonstrate the biological value of this area.

  Given the wind project's proximity to this ecologically significant area, the occurrence of endangered and threatened birds in the vicinity, and the potential for wind turbines to cause avian mortality, we strongly encourage pre- and post-development avian monitoring. Any cumulative impact assessment should also address the issue of avian mortality.

- The project area also contains known booming grounds of the greater prairie-chicken. Because booming grounds may move slightly from year to year, please contact the Area Wildlife Manager Don Schultz, at 218-739-7576, for the most recent data on prairie-chicken use of this area.

  If the project area is still used as a booming ground, we recommend that there be no construction work in the area from April 1 - May 15 in order to avoid disturbing prairie chickens during their critical booming period. In addition, because other species of prairie grouse exhibit extreme avoidance of vertical features and/or structural habitat fragmentation, we recommend minimizing roads, fences, and other infrastructure. Hagen et al. (Wildlife Society Bulletin 2004, 32:69-82) recommend that wind turbines be placed at least 1.25 miles from lesser prairie-chicken (*Tympanuchus pallicicinctus*) habitat. For all prairie grouse, the U.S. Fish and Wildlife Service recommends that, where feasible, turbines not be placed within 5 miles of known booming grounds.

- Several rare butterflies have been documented within native prairie in the vicinity of the proposed project, including the assiniboia skipper (*Hesperia comma assiniboia*), a state-listed endangered species; the dakota skipper (*Hesperia dacotea*), a state-listed threatened species; and the powesheik skipper (*Oarisma powesheik*) and regal frittilary (*Speyeria idalia*), both state-listed species of special concern. The dakota skipper has also been designated by the U. S. Fish

and Wildlife Service as a candidate species for protection under the federal Endangered Species Act. These butterflies are completely dependent upon the survival of native prairie habitat. Yet, less than 1% of Minnesota's native prairie remains and this remaining prairie mostly consists of widely scattered small fragments surrounded by agriculture and development. As a result, small colony sizes (due to past habitat loss) and further habitat destruction are the primary threats facing these rare species in Minnesota. The use of herbicides to control weeds or shrubs can also eliminate critical nectar sources, and insecticide drift from nearby agricultural fields may kill these butterflies.

To protect the assiniboia and dakota skippers, and other prairie obligate butterfly species, it is imperative that destruction and disturbance of native prairie remnants be avoided. **Please contact me** if project planning within any prairie areas proceeds, as potential impacts to the assiniboia skipper and the dakota skipper will need to be addressed and further survey work will be required. We will need to discuss potential contractors, survey protocol, and other requirements **before any survey work is initiated**.

- Western prairie fringed orchids, a federally-listed threatened and state-listed endangered plant species, have been documented in the Bluestem Prairie SNA and may occur in suitable habitat within the project boundary. Western prairie fringed orchids usually occur in remnant native tallgrass prairies and sedge meadows, but have also been observed at disturbed sites. The majority of known sites in Minnesota are on coarse calcareous till or sandy soils.

  Given the extreme rarity and protected status of this species, any suitable habitat for this species within the project area will need to be identified. We recommend marking and avoiding these areas. If this is not possible and suitable habitat will be disturbed by the proposed project, a botanical survey for this species will be needed. If this is the case, **please contact me before any survey work is initiated**, as we will need to first discuss potential contractors, survey protocol, and other requirements.

- In the mid-1800s, eighteen million acres of prairie covered Minnesota. Given that more than 99% of this prairie habitat has been destroyed and more than one-third of Minnesota's endangered, threatened, and special concern species are now dependent on the remaining small fragments of Minnesota's prairie ecosystem, we feel that all prairie remnants merit protection. The proposed project boundary contains many native prairie remnants including a railroad right-of-way prairie. (GIS shapefiles of MCBS Native Plant Communities and MCBS Railroad Rights-of-Way Prairies can be downloaded from the DNR's Data Deli website at http://deli.dnr.state.mn.us/data_search.html.) Sterile sedge (*Carex sterilis*), a state-listed threatened species, and several plant species of special concern have been documented within these prairies. As such, turbine locations, access roads, and utility routes should avoid all native prairie remnants. **If any prairie will be impacted by the proposed project**, **biological surveys for rare butterflies** (as mentioned above) **and rare plants will be required, and endangered species permits will likely be necessary**. Please contact me before any survey work is initiated.

  We request that a native prairie protection and management plan be submitted to the Natural Heritage and Nongame Research Program. The plan should include measures to avoid impacts to native prairie and measures to mitigate for impacts if unavoidable. If you have not done so already, please contact DNR Prairie Management Specialist Shelley Becklund, at 218-739-7576 ext. 262, to discuss this project and the prairie protection plan.

- Several mussel species including the black sandshell (*Ligumia recta*), a state-listed species of special concern, have been documented in the Buffalo River in the immediate vicinity of the

proposed project. Because they are declining nationwide, freshwater mussels are considered one of North America's most imperiled groups of animals. In Minnesota, 25 of our 48 native mussel species are listed as either endangered, threatened, or of special concern. The primary reason behind the decline is the degradation of our lakes and rivers due to runoff and physical changes such as damming, channelization, and dredging. Mussels are particularly vulnerable to deterioration in water quality, especially increased siltation. As such, it is important that sound erosion and sediment control practices be implemented and maintained near the river.

- If it is determined that the project will impact any species listed as either endangered or threatened, you will need to contact Rich Baker, Minnesota Endangered Species Coordinator, at 651-259-5073 to discuss the endangered species permitting process. Minnesota's endangered species law (MS 84.0895) and associated rules (MR 6212.1800 -6212.2300 and 6134) prohibit the taking of threatened or endangered species without a permit. For animals, taking includes pursuing, capturing, or killing. I have enclosed some additional information on the permitting process for your reference.

- Please send me a copy of the Preconstruction Biological Preservation Survey required by the PUC.

- We encourage you to also consider alternate locations for the proposed Flat Hill I wind farm, so that the most appropriate site in this area may be selected. Further guidance on wind farm siting can be found at http://www.fws.gov/midwest/eco_serv/wind/guidance/.

- The Natural Heritage and Nongame Research Program does not have any concerns regarding the Flat Hill II project area.

- Given the presence of federally-listed species within the project area, I also recommend that you contact Laurie Fairchild with the U.S. Fish & Wildlife Service, at 612 725-3548 ext. 214, to discuss all applicable federal regulations.

The Natural Heritage database is maintained by the Natural Heritage and Nongame Research Program, a unit within the Division of Ecological Resources, Department of Natural Resources. It is continually updated as new information becomes available, and is the most complete source of data on Minnesota's rare or otherwise significant species, native plant communities, and other natural features. Its purpose is to foster better understanding and protection of these features.

Because our information is not based on a comprehensive inventory, there may be rare or otherwise significant natural features in the state that are not represented in the database. A county-by-county survey of rare natural features is now underway, and has been completed for Clay and Wilkin Counties. Our information about native plant communities is, therefore, quite thorough for these counties. However, because survey work for rare plants and animals is less exhaustive, and because there has not been an on-site survey of all areas of each county, ecologically significant features for which we have no records may exist on the project area.

The enclosed results of the database search are provided in two formats: short record report and long record report. To control the release of locational information, which might result in the damage or destruction of a rare element, both printout formats are copyrighted.

The short record report provides rare feature locations only to the nearest section, and may be reprinted, unaltered, in an Environmental Assessment Worksheet, municipal natural resource plan, or report compiled by your company for the project listed above. If you wish to reproduce the short record report for any other purpose, please contact me to request written permission. **The long record report includes more detailed locational information, and is for your personal use only. If you wish to reprint the long record report for any purpose, please contact me to request written permission.**

Please be aware that review by the Natural Heritage and Nongame Research Program focuses only on *rare natural features*. It does not constitute review or approval by the Department of Natural Resources as a whole. If you require further information on the environmental review process for other natural resource-related issues, you may contact your Regional Environmental Assessment Ecologist, Paul Stolen, at (218) 308-2672.

An invoice in the amount of $241.29 will be mailed to you under separate cover within two weeks of the date of this letter. You are being billed for the database search and printouts, and staff scientist review. Thank you for consulting us on this matter, and for your interest in preserving Minnesota's rare natural resources.

Sincerely,

Lisa Joyal

Lisa Joyal
Endangered Species Environmental Review Coordinator

encl: Database search results
Rare Feature Database Print-Outs: An Explanation of Fields
Endangered Species Permitting Process

cc: Brian Nelson, DNR
Don Schulz, DNR
Shelley Becklund, DNR
Paul Stolen, DNR
Katie Haws, DNR
Becky Marty, DNR
Matt Langan, DNR
Laurie Fairchild, USFWS

**Minnesota Natural Heritage & Nongame Research Program**
**Short Record Report of Element Occurrences within 1 mile radius of:**
Flat Hill I and Flat Hill II Windpark
Multiple TRS
Clay and Wilkin Counties

| Element Name and Occurrence Number | Federal Status | MN Status | State Rank | Global Rank | Last Observed Date | EO ID # |
|---|---|---|---|---|---|---|
| **Clay County, MN** | | | | | | |
| Ammodramus henslowii (Henslow's Sparrow) #3<br>Location Description: T139N R46W S23, T139N R46W S15, T139N R46W S10, T139N R46W S22 | | END | S1B | G4 | 2001-06-02 | 1427 |
| Ammodramus henslowii (Henslow's Sparrow) #13<br>Location Description: T140N R46W S14, T140N R46W S11 | | END | S1B | G4 | 1980-07 | 8696 |
| Botrychium campestre (Prairie Moonwort) #29<br>Location Description: T141N R46W S36, T141N R45W S31 | | SPC | S3 | G3G4 | 1995-05-30 | 24845 |
| Botrychium simplex (Least Moonwort) #23<br>Location Description: T141N R46W S36, T141N R45W S31 | | SPC | S3 | G5 | 1988-06-08 | 22899 |
| Calamagrostis montanensis (Plains Reedgrass) #3<br>Location Description: T139N R46W S16, T139N R46W S9, T139N R46W S11, T139N R46W S10, T139N R46W S15, T139N R46W S2, T139N R46W S3, T139N R46W S14 | | SPC | S3 | G5 | 1962-06-30 | 3891 |
| Calamagrostis montanensis (Plains Reedgrass) #6<br>Location Description: T139N R46W S15 | | SPC | S3 | G5 | 1985-07-10 | 3894 |
| Calcarius ornatus (Chestnut-collared Longspur) #1<br>Location Description: Legal description is too lengthy to fit in allotted space. | | END | S1B | G5 | 1992-05-24 | 1463 |
| Carex hallii (Hall's Sedge) #27<br>Location Description: T140N R46W S11 | | SPC | S3 | G4?Q | 1986-08-25 | 8673 |
| Carex scirpoidea (Northern Singlespike Sedge) #1<br>Location Description: T138N R46W S8, T139N R46W S33, T138N R46W S5, T138N R46W S4, T139N R46W S32, T138N R46W S10, T138N R46W S9, T138N R46W S3, T139N R46W S34 | | SPC | S3 | G5 | 1964-06-02 | 4081 |
| Carex scirpoidea (Northern Singlespike Sedge) #7<br>Location Description: T139N R46W S22, T139N R46W S15 | | SPC | S3 | G5 | 1980-06-23 | 4087 |
| Carex sterilis (Sterile Sedge) #19<br>Location Description: T140N R46W S26 | | THR | S2 | G4 | 1985-07-16 | 7689 |
| Carex sterilis (Sterile Sedge) #20<br>Location Description: T140N R46W S26, T140N R46W S22, T140N R46W S27, T140N R46W S23 | | THR | S2 | G4 | 1985-06-28 | 7679 |
| Carex sterilis (Sterile Sedge) #33<br>Location Description: T140N R46W S11 | | THR | S2 | G4 | 1986-08-25 | 8669 |
| Cypripedium candidum (Small White Lady's-slipper) #18<br>Location Description: T139N R46W S23, T139N R46W S16, T139N R46W S15, T139N R46W S27, T139N R46W S14, T139N R46W S21, T139N R46W S22 | | SPC | S3 | G4 | 1988-06-09 | 4300 |

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| Element Name and Occurrence Number | Federal Status | MN Status | State Rank | Global Rank | Last Observed Date | EO ID # |
|---|---|---|---|---|---|---|
| **Clay County, MN** | | | | | | |
| Cypripedium candidum (Small White Lady's-slipper) #149<br>Location Description: T139N R46W S3, T139N R46W S10 | | SPC | S3 | G4 | 1987-05-15 | 7717 |
| Cypripedium candidum (Small White Lady's-slipper) #172<br>Location Description: T140N R45W S6, T141N R45W S33, T141N R45W S32, T140N R45W S5 | | SPC | S3 | G4 | 1988-06-09 | 9163 |
| Cypripedium candidum (Small White Lady's-slipper) #189<br>Location Description: T139N R46W S28, T139N R46W S27 | | SPC | S3 | G4 | 1992-07- | 13899 |
| Cypripedium candidum (Small White Lady's-slipper) #219<br>Location Description: T139N R46W S11, T139N R46W S10 | | SPC | S3 | G4 | 1993 | 18148 |
| Cypripedium candidum (Small White Lady's-slipper) #374<br>Location Description: T140N R46W S34, T140N R46W S27 | | SPC | S3 | G4 | 1981-05-29 | 34391 |
| Dry Hill Prairie (Northern) Type #6<br>Location Description: T139N R46W S15, T139N R46W S11, T139N R46W S10, T139N R46W S14 | | N/A | S1 | GNR | 1988-06-14 | 6682 |
| Dry Sand - Gravel Prairie (Northern) Type #16<br>Location Description: T140N R46W S10, T140N R46W S11 | | N/A | S2 | GNR | 1986-08-25 | 1324 |
| Dry Sand - Gravel Prairie (Northern) Type #19<br>Location Description: T139N R46W S15 | | N/A | S2 | GNR | 1985-07-11 | 6680 |
| Dry Sand - Gravel Prairie (Northern) Type #24<br>Location Description: T141N R46W S36, T141N R45W S31 | | N/A | S2 | GNR | 1987-09-17 | 7763 |
| Dry Sand - Gravel Prairie (Northern) Type #28<br>Location Description: T141N R46W S26, T141N R46W S25 | | N/A | S2 | GNR | 1988-06-16 | 9555 |
| Dry Sand - Gravel Prairie (Northern) Type #53<br>Location Description: T140N R46W S2, T140N R46W S11 | | N/A | S2 | GNR | 1987 | 12508 |
| Gaillardia aristata (Blanket-flower) #11<br>Location Description: T139N R46W S22 | | SPC | S3 | G5 | 1980-06-10 | 12759 |
| Gentiana affinis (Northern Gentian) #5<br>Location Description: T139N R46W S22, T139N R46W S21, T139N R46W S15, T139N R46W S16 | | SPC | S3 | G5 | 1982-08-13 | 4726 |
| Gentiana affinis (Northern Gentian) #30<br>Location Description: T140N R46W S11 | | SPC | S3 | G5 | 1986-08-25 | 8670 |
| Gentianella amarella ssp. acuta (Felwort) #4<br>Location Description: T140N R46W S22 | | SPC | S3 | G5T5 | 1987-09-17 | 7682 |

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| Element Name and Occurrence Number | Federal Status | MN Status | State Rank | Global Rank | Last Observed Date | EO ID # |
|---|---|---|---|---|---|---|
| **Clay County, MN** | | | | | | |
| Gentianella amarella ssp. acuta (Felwort) #5<br>Location Description: T140N R46W S2, T140N R46W S11 | | SPC | S3 | G5T5 | 1986-08-25 | 8671 |
| Helianthus nuttallii ssp. rydbergii (Nuttall's Sunflower) #2<br>Location Description: T139N R46W S3, T139N R46W S16, T139N R46W S9, T139N R46W S11, T139N R46W S14, T139N R46W S15, T139N R46W S10, T139N R46W S2 | | SPC | S3 | G5T5 | 1962-08-30 | 4791 |
| Helictotrichon hookeri (Oat-grass) #15<br>Location Description: T139N R46W S16, T139N R46W S9, T139N R46W S10, T139N R46W S15 | | SPC | S3 | G5 | 1962-07-11 | 11100 |
| Hesperia comma assiniboia (Assiniboia Skipper) #10<br>Location Description: T140N R46W S11 | | END | S1 | G5 | 1988-08-22 | 6272 |
| Hesperia dacotae (Dakota Skipper) #6<br>Location Description: T139N R46W S15, T139N R46W S14 | C | THR | S2 | G2 | 1996-07-07 | 2414 |
| Hesperia dacotae (Dakota Skipper) #7<br>Location Description: Legal description is too lengthy to fit in allotted space. | C | THR | S2 | G2 | 2005-07-15 | 2415 |
| Heterodon nasicus (Western Hognose Snake) #24<br>Location Description: T139N R46W S22, T139N R46W S15 | | SPC | S3 | G5 | 1993-04- | 18670 |
| Heterodon nasicus (Western Hognose Snake) #26<br>Location Description: T139N R46W S15 | | SPC | S3 | G5 | 1995-06-22 | 21109 |
| Lanius ludovicianus (Loggerhead Shrike) #11<br>Location Description: T139N R46W S16, T139N R46W S9, T139N R46W S11, T139N R46W S10, T139N R46W S14, T139N R46W S15, T139N R46W S13, T139N R46W S22, T139N R46W S26, T139N R46W S23, T139N R46W S27, T139N R46W S24 | No Status | THR | S2B | G4 | 1995-06 | 2498 |
| Lanius ludovicianus (Loggerhead Shrike) #43<br>Location Description: T140N R45W S6, T141N R45W S32, T141N R45W S33, T140N R45W S5, T140N R46W S2, T141N R46W S36, T140N R46W S1, T141N R46W S35 | No Status | THR | S2B | G4 | 2006-04-17 | 6811 |
| Lanius ludovicianus (Loggerhead Shrike) #45<br>Location Description: T140N R46W S26, T140N R46W S27, T140N R46W S23, T140N R46W S25, T140N R45W S30, T140N R46W S14 | No Status | THR | S2B | G4 | 1995-06-15 | 6813 |
| Ligumia recta (Black Sandshell) #361<br>Location Description: T139N R46W S10 | | SPC | S3 | G5 | 2004-08-26 | 32692 |
| Limosa fedoa (Marbled Godwit) #55<br>Location Description: T141N R46W S26 | | SPC | S3B | G5 | 1988-05-29 | 8708 |

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| Element Name and Occurrence Number | Federal Status | MN Status | State Rank | Global Rank | Last Observed Date | EO ID # |
|---|---|---|---|---|---|---|
| **Clay County, MN** | | | | | | |
| Limosa fedoa (Marbled Godwit) #56<br>Location Description: T140N R46W S11 | | SPC | S3B | G5 | 1988-05-28 | 8709 |
| Limosa fedoa (Marbled Godwit) #57<br>Location Description: T140N R46W S12, T140N R46W S11 | | SPC | S3B | G5 | 1988-05-28 | 8710 |
| Limosa fedoa (Marbled Godwit) #58<br>Location Description: T140N R46W S12, T140N R46W S11 | | SPC | S3B | G5 | 1988-05-28 | 8634 |
| Limosa fedoa (Marbled Godwit) #61<br>Location Description: T139N R46W S23, T139N R46W S15, T139N R46W S11, T139N R46W S10, T139N R46W S14, T139N R46W S22 | | SPC | S3B | G5 | 1988-06-05 | 8712 |
| Limosa fedoa (Marbled Godwit) #63<br>Location Description: T141N R46W S35, T141N R46W S26 | | SPC | S3B | G5 | 1988-06-13 | 8714 |
| Limosa fedoa (Marbled Godwit) #94<br>Location Description: T140N R47W S12, T140N R47W S2, T140N R47W S1, T140N R47W S11 | | SPC | S3B | G5 | 1978-06-06 | 9498 |
| Limosa fedoa (Marbled Godwit) #95<br>Location Description: T140N R47W S12, T140N R47W S1 | | SPC | S3B | G5 | 1980-07-02 | 9499 |
| Limosa fedoa (Marbled Godwit) #96<br>Location Description: T140N R46W S8, T140N R46W S5 | | SPC | S3B | G5 | 1978-06-06 | 9500 |
| Limosa fedoa (Marbled Godwit) #97<br>Location Description: T140N R46W S9, T140N R46W S8 | | SPC | S3B | G5 | 1978-06-06 | 9501 |
| Limosa fedoa (Marbled Godwit) #98<br>Location Description: T140N R46W S9, T140N R46W S16 | | SPC | S3B | G5 | 1980-07-02 | 9502 |
| Limosa fedoa (Marbled Godwit) #99<br>Location Description: T140N R46W S10, T140N R46W S14, T140N R46W S11, T140N R46W S15 | | SPC | S3B | G5 | 1978-06-06 | 9503 |
| Limosa fedoa (Marbled Godwit) #100<br>Location Description: T140N R46W S14, T140N R46W S11 | | SPC | S3B | G5 | 1978-06-06 | 9504 |
| Mesic Prairie (Northern) Type #24<br>Location Description: T141N R46W S36, T140N R46W S2, T141N R46W S35 | | N/A | S2 | GNR | 1985-07-10 | 344 |
| Mesic Prairie (Northern) Type #25<br>Location Description: T140N R46W S2, T140N R46W S11 | | N/A | S2 | GNR | 1985-07-12 | 345 |

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**Minnesota Natural Heritage & Nongame Research Program**
**Short Record Report of Element Occurrences within 1 mile radius of:**
Flat Hill I and Flat Hill II Windpark
Multiple TRS
Clay and Wilkin Counties

| Element Name and Occurrence Number | Federal Status | MN Status | State Rank | Global Rank | Last Observed Date | EO ID # |
|---|---|---|---|---|---|---|
| **Clay County, MN** | | | | | | |
| Mesic Prairie (Northern) Type #26<br>Location Description: T140N R46W S33, T140N R46W S27, T140N R46W S34, T140N R46W S28 | | N/A | S2 | GNR | 1985-07-16 | 346 |
| Mesic Prairie (Northern) Type #27<br>Location Description: T140N R46W S26, T140N R46W S27 | | N/A | S2 | GNR | 1985-07-16 | 347 |
| Mesic Prairie (Northern) Type #33<br>Location Description: T139N R46W S22, T139N R46W S21 | | N/A | S2 | GNR | 1985-07-11 | 354 |
| Mesic Prairie (Northern) Type #89<br>Location Description: T139N R46W S11, T139N R46W S10 | | N/A | S2 | GNR | 1988-06-14 | 6681 |
| Mesic Prairie (Northern) Type #97<br>Location Description: T139N R46W S15 | | N/A | S2 | GNR | 1995-08-09 | 6683 |
| Mesic Prairie (Northern) Type #137<br>Location Description: T140N R46W S34 | | N/A | S2 | GNR | 1987-09-23 | 7736 |
| Mesic Prairie (Northern) Type #139<br>Location Description: T141N R45W S30, T141N R46W S25, T141N R45W S31, T141N R46W S36 | | N/A | S2 | GNR | 1987-09-17 | 7734 |
| Mesic Prairie (Northern) Type #140<br>Location Description: T140N R45W S6 | | N/A | S2 | GNR | 1994-08-24 | 7739 |
| Mesic Prairie (Northern) Type #146<br>Location Description: T139N R46W S9, T139N R46W S10 | | N/A | S2 | GNR | 1988-06-14 | 7847 |
| Mesic Prairie (Northern) Type #147<br>Location Description: T139N R46W S15, T139N R46W S11, T139N R46W S10, T139N R46W S14 | | N/A | S2 | GNR | 1988-06-15 | 7848 |
| Mesic Prairie (Northern) Type #148<br>Location Description: T139N R46W S3, T140N R46W S34 | | N/A | S2 | GNR | 1988-08-12 | 7853 |
| Mesic Prairie (Northern) Type #149<br>Location Description: T140N R46W S2, T140N R46W S11 | | N/A | S2 | GNR | 1973 | 7851 |
| Mesic Prairie (Northern) Type #150<br>Location Description: T141N R46W S36, T141N R46W S26, T141N R46W S25, T141N R46W S35 | | N/A | S2 | GNR | 1988-06-16 | 7852 |
| Mesic Prairie (Northern) Type #170<br>Location Description: T139N R46W S27, T139N R46W S26 | | N/A | S2 | GNR | 1988-08-21 | 9557 |
| Mesic Prairie (Northern) Type #255<br>Location Description: T139N R46W S22 | | N/A | S2 | GNR | 1985-07-11 | 22185 |

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**Minnesota Natural Heritage & Nongame Research Program**
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Flat Hill I and Flat Hill II Windpark
Multiple TRS
Clay and Wilkin Counties

| Element Name and Occurrence Number | Federal Status | MN Status | State Rank | Global Rank | Last Observed Date | EO ID # |
|---|---|---|---|---|---|---|
| **Clay County, MN** | | | | | | |
| Mesic Prairie (Northern) Type #257<br>Location Description: T139N R46W S22, T139N R46W S15 | | N/A | S2 | GNR | 1989-08-24 | 15999 |
| Mesic Prairie (Northern) Type #262<br>Location Description: T139N R46W S23, T139N R46W S14, T139N R46W S15 | | N/A | S2 | GNR | 1989-08-24 | 22190 |
| Mesic Prairie (Northern) Type #263<br>Location Description: T139N R46W S15, T139N R46W S11, T139N R46W S10, T139N R46W S14 | | N/A | S2 | GNR | 1988-06-14 | 22191 |
| Mesic Prairie (Northern) Type #264<br>Location Description: T139N R46W S3, T139N R46W S10 | | N/A | S2 | GNR | 1996-06-16 | 22194 |
| Mesic Prairie (Northern) Type #266<br>Location Description: T141N R46W S35 | | N/A | S2 | GNR | 1994 | 12507 |
| Mesic Prairie (Northern) Type #267<br>Location Description: T141N R45W S32 | | N/A | S2 | GNR | 1994-08-24 | 21881 |
| Microtus ochrogaster (Prairie Vole) #38<br>Location Description: T139N R46W S22 | | SPC | S3 | G5 | 1991 | 13610 |
| Microtus ochrogaster (Prairie Vole) #39<br>Location Description: T139N R46W S23, T139N R46W S22 | | SPC | S3 | G5 | 1991 | 13607 |
| Microtus ochrogaster (Prairie Vole) #43<br>Location Description: T141N R46W S36, T141N R45W S31, T141N R46W S25 | | SPC | S3 | G5 | 1995 | 18136 |
| Native Plant Community, Undetermined Class #771<br>Location Description: T140N R46W S2, T140N R46W S12, T140N R46W S11, T140N R46W S1 | | N/A | SNR | GNR | 1986-08-25 | 6689 |
| Native Plant Community, Undetermined Class #1456<br>Location Description: T139N R46W S27, T139N R46W S26 | | N/A | SNR | GNR | 1988-08-21 | 22186 |
| Native Plant Community, Undetermined Class #1524<br>Location Description: T139N R46W S3, T140N R46W S33, T140N R46W S34 | | N/A | SNR | GNR | 1994-08-03 | 21770 |
| Native Plant Community, Undetermined Class #1908<br>Location Description: T139N R46W S15, T139N R46W S11, T139N R46W S10, T139N R46W S14 | | N/A | SNR | GNR | 1988-06-14 | 22192 |
| Oarisma powesheik (Powesheik Skipper) #43<br>Location Description: T139N R46W S15 | | SPC | S3 | G2G3 | 1996-07-13 | 2713 |
| Oarisma powesheik (Powesheik Skipper) #162<br>Location Description: T139N R46W S16, T139N R46W S15 | | SPC | S3 | G2G3 | 1996-07-07 | 5374 |

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**Minnesota Natural Heritage & Nongame Research Program**
**Short Record Report of Element Occurrences within 1 mile radius of:**
Flat Hill I and Flat Hill II Windpark
Multiple TRS
Clay and Wilkin Counties

| Element Name and Occurrence Number | Federal Status | MN Status | State Rank | Global Rank | Last Observed Date | EO ID # |
|---|---|---|---|---|---|---|
| **Clay County, MN** | | | | | | |
| Oarisma powesheik (Powesheik Skipper) #163<br>Location Description: T139N R46W S15 | | SPC | S3 | G2G3 | 1996-07-08 | 5369 |
| Oarisma powesheik (Powesheik Skipper) #164<br>Location Description: T139N R46W S23, T139N R46W S27, T139N R46W S26, T139N R46W S22 | | SPC | S3 | G2G3 | 1996-07-12 | 5370 |
| Oarisma powesheik (Powesheik Skipper) #165<br>Location Description: T139N R46W S15, T139N R46W S27, T139N R46W S26, T139N R46W S14, T139N R46W S22, T139N R46W S23 | | SPC | S3 | G2G3 | 1996-07-12 | 5371 |
| Oeneis uhleri varuna (Uhler's Arctic) #5<br>Location Description: T139N R46W S10, T139N R46W S15, T139N R46W S14, T139N R46W S16 | | END | S1 | G5T4 | 1968-06-15 | 2734 |
| Orobanche fasciculata (Clustered Broomrape) #1<br>Location Description: T139N R46W S16, T139N R46W S9, T139N R46W S11, T139N R46W S10, T139N R46W S15, T139N R46W S2, T139N R46W S3, T139N R46W S14 | | SPC | S3 | G4 | 1947-06-27 | 5110 |
| Orobanche ludoviciana (Louisiana Broomrape) #11<br>Location Description: T140N R46W S10, T140N R46W S11 | | SPC | S3 | G5 | 1986-08-25 | 8672 |
| Orobanche ludoviciana (Louisiana Broomrape) #12<br>Location Description: T139N R46W S15, T139N R46W S10 | | SPC | S3 | G5 | 1988-06-14 | 9576 |
| Perognathus flavescens (Plains Pocket Mouse) #18<br>Location Description: T139N R46W S23, T139N R46W S14, T139N R46W S26, T139N R46W S22 | | SPC | S3 | G5 | 1980-08-05 | 15923 |
| Phalaropus tricolor (Wilson's Phalarope) #108<br>Location Description: T140N R46W S22 | | THR | S2B | G5 | 2007-06-12 | 34442 |
| Platanthera praeclara (Western Prairie Fringed Orchid) #26<br>Location Description: T139N R46W S23, T139N R46W S26, T139N R46W S22, T139N R46W S13 | LT | END | S1 | G2 | 2007-07-09 | 10337 |
| Speyeria idalia (Regal Fritillary) #145<br>Location Description: T139N R46W S22, T139N R46W S14, T139N R46W S10, T139N R46W S11, T139N R46W S16, T139N R46W S15, T139N R46W S9 | | SPC | S3 | G3 | 1968-09-02 | 23670 |
| Speyeria idalia (Regal Fritillary) #152<br>Location Description: T139N R46W S23, T139N R46W S15, T139N R46W S14, T139N R46W S22 | | SPC | S3 | G3 | 1980-07-14 | 23678 |
| Speyeria idalia (Regal Fritillary) #153<br>Location Description: T139N R46W S15, T139N R46W S14 | | SPC | S3 | G3 | 1996-07-07 | 23679 |
| Speyeria idalia (Regal Fritillary) #177<br>Location Description: T139N R46W S16, T139N R46W S10, T139N R46W S15 | | SPC | S3 | G3 | 1995-07-13 | 25090 |

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Flat Hill I and Flat Hill II Windpark
Multiple TRS
Clay and Wilkin Counties

| Element Name and Occurrence Number | Federal Status | MN Status | State Rank | Global Rank | Last Observed Date | EO ID # |
|---|---|---|---|---|---|---|
| **Clay County, MN** | | | | | | |
| Speyeria idalia (Regal Fritillary) #178<br>Location Description: T139N R46W S22, T139N R46W S15 | | SPC | S3 | G3 | 1995-07-13 | 25092 |
| Speyeria idalia (Regal Fritillary) #179<br>Location Description: T139N R46W S23, T139N R46W S27, T139N R46W S26, T139N R46W S22 | | SPC | S3 | G3 | 1995-07-13 | 25298 |
| Speyeria idalia (Regal Fritillary) #258<br>Location Description: T140N R46W S11 | | SPC | S3 | G3 | 1988-08-12 | 32851 |
| Tympanuchus cupido (Greater Prairie-chicken) #72<br>Location Description: T141N R46W S35, T140N R46W S3, T140N R46W S2, T141N R46W S34 | No Status | SPC | S3 | G4 | 1991 | 3227 |
| Tympanuchus cupido (Greater Prairie-chicken) #73<br>Location Description: T140N R46W S10, T140N R46W S14, T140N R46W S15 | No Status | SPC | S3 | G4 | 2001 | 3228 |
| Tympanuchus cupido (Greater Prairie-chicken) #74<br>Location Description: T140N R46W S23, T140N R46W S15, T140N R46W S22 | No Status | SPC | S3 | G4 | 2001 | 3229 |
| Tympanuchus cupido (Greater Prairie-chicken) #75<br>Location Description: T140N R46W S35, T140N R46W S27, T140N R46W S34 | No Status | SPC | S3 | G4 | 1982 | 3230 |
| Tympanuchus cupido (Greater Prairie-chicken) #76<br>Location Description: T140N R45W S20, T140N R45W S21, T140N R45W S17 | No Status | SPC | S3 | G4 | 1976 | 3231 |
| Tympanuchus cupido (Greater Prairie-chicken) #77<br>Location Description: T139N R46W S16, T139N R46W S10, T139N R46W S9 | No Status | SPC | S3 | G4 | 1983 | 3232 |
| Tympanuchus cupido (Greater Prairie-chicken) #98<br>Location Description: T139N R46W S27, T139N R46W S34 | No Status | SPC | S3 | G4 | 2005-06-09 | 3253 |
| Tympanuchus cupido (Greater Prairie-chicken) #99<br>Location Description: T140N R46W S26, T140N R46W S27, T140N R46W S22 | No Status | SPC | S3 | G4 | 1982 | 3254 |
| Tympanuchus cupido (Greater Prairie-chicken) #100<br>Location Description: T141N R46W S36, T141N R46W S25 | No Status | SPC | S3 | G4 | 1991 | 3255 |
| Tympanuchus cupido (Greater Prairie-chicken) #193<br>Location Description: T139N R46W S22, T139N R46W S27 | No Status | SPC | S3 | G4 | 2005-06-09 | 6901 |
| Tympanuchus cupido (Greater Prairie-chicken) #194<br>Location Description: T140N R46W S14, T140N R46W S11, T140N R46W S13 | No Status | SPC | S3 | G4 | 1996 | 6902 |
| Tympanuchus cupido (Greater Prairie-chicken) #195<br>Location Description: T140N R46W S26, T140N R46W S27, T140N R46W S23 | No Status | SPC | S3 | G4 | 1999 | 6903 |

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| Element Name and Occurrence Number | Federal Status | MN Status | State Rank | Global Rank | Last Observed Date | EO ID # |
|---|---|---|---|---|---|---|
| **Clay County, MN** | | | | | | |
| Tympanuchus cupido (Greater Prairie-chicken) #197<br>Location Description: T141N R46W S35, T141N R46W S26, T141N R46W S27 | No Status | SPC | S3 | G4 | 2001 | 6905 |
| Tympanuchus cupido (Greater Prairie-chicken) #200<br>Location Description: T140N R46W S10, T140N R46W S11, T140N R46W S2 | No Status | SPC | S3 | G4 | 2001 | 6908 |
| Tympanuchus cupido (Greater Prairie-chicken) #403<br>Location Description: T139N R46W S15, T139N R46W S11, T139N R46W S14 | No Status | SPC | S3 | G4 | 2001 | 10234 |
| Tympanuchus cupido (Greater Prairie-chicken) #410<br>Location Description: T140N R46W S10, T140N R46W S4, T140N R46W S9 | No Status | SPC | S3 | G4 | 1992 | 11437 |
| Tympanuchus cupido (Greater Prairie-chicken) #411<br>Location Description: T140N R46W S9, T140N R46W S16, T140N R46W S17 | No Status | SPC | S3 | G4 | 1992 | 11438 |
| Tympanuchus cupido (Greater Prairie-chicken) #463<br>Location Description: T141N R46W S36, T141N R45W S31, T141N R46W S25 | No Status | SPC | S3 | G4 | 2000 | 13942 |
| Tympanuchus cupido (Greater Prairie-chicken) #490<br>Location Description: T140N R45W S6, T141N R45W S32, T140N R46W S1, T140N R45W S5 | No Status | SPC | S3 | G4 | 1994 | 18255 |
| Tympanuchus cupido (Greater Prairie-chicken) #492<br>Location Description: T140N R46W S10, T140N R46W S3 | No Status | SPC | S3 | G4 | 2001 | 18257 |
| Tympanuchus cupido (Greater Prairie-chicken) #525<br>Location Description: T141N R45W S20, T141N R45W S28, T141N R45W S29 | No Status | SPC | S3 | G4 | 1994 | 20728 |
| Tympanuchus cupido (Greater Prairie-chicken) #532<br>Location Description: T141N R46W S32, T141N R46W S31, T140N R46W S5, T140N R46W S6 | No Status | SPC | S3 | G4 | 1998 | 21736 |
| Tympanuchus cupido (Greater Prairie-chicken) #533<br>Location Description: T140N R46W S26, T140N R46W S35, T140N R46W S36 | No Status | SPC | S3 | G4 | 2001 | 21737 |
| Tympanuchus cupido (Greater Prairie-chicken) #555<br>Location Description: T139N R46W S34, T139N R46W S33, T139N R46W S28 | No Status | SPC | S3 | G4 | 1996 | 12753 |
| Tympanuchus cupido (Greater Prairie-chicken) #599<br>Location Description: T141N R46W S36, T140N R46W S1, T140N R46W S2 | No Status | SPC | S3 | G4 | 2001 | 23970 |
| Tympanuchus cupido (Greater Prairie-chicken) #620<br>Location Description: T139N R46W S16, T139N R46W S9, T139N R46W S15 | No Status | SPC | S3 | G4 | 2000 | 28442 |
| Tympanuchus cupido (Greater Prairie-chicken) #675<br>Location Description: T141N R46W S35 | No Status | SPC | S3 | G4 | 2002 | 31137 |

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| Element Name and Occurrence Number | Federal Status | MN Status | State Rank | Global Rank | Last Observed Date | EO ID # |
|---|---|---|---|---|---|---|
| **Clay County, MN** | | | | | | |
| Tympanuchus cupido (Greater Prairie-chicken) #702<br>Location Description: T140N R46W S24, T140N R46W S13, T140N R45W S18, T140N R45W S19 | No Status | SPC | S3 | G4 | 2003 | 32003 |
| Tympanuchus cupido (Greater Prairie-chicken) #703<br>Location Description: T140N R46W S26, T140N R46W S24, T140N R46W S23, T140N R46W S25 | No Status | SPC | S3 | G4 | 2003 | 32004 |
| Tympanuchus cupido (Greater Prairie-chicken) #735<br>Location Description: T139N R46W S14, T139N R46W S15 | No Status | SPC | S3 | G4 | 2005-06-09 | 32723 |
| Tympanuchus cupido (Greater Prairie-chicken) #780<br>Location Description: T139N R46W S30 | No Status | SPC | S3 | G4 | | 33339 |
| Tympanuchus cupido (Greater Prairie-chicken) #821<br>Location Description: T140N R46W S12, T140N R46W S13 | No Status | SPC | S3 | G4 | 2007 | 34344 |
| Wet Brush-Prairie (Northern) Type #43<br>Location Description: T140N R46W S34 | | N/A | S3 | GNR | 1994-08-03 | 21769 |
| Wet Prairie (Northern) Type #17<br>Location Description: T140N R46W S11 | | N/A | S3 | GNR | 1985-07-12 | 433 |
| Wet Prairie (Northern) Type #48<br>Location Description: T139N R46W S22, T139N R46W S15 | | N/A | S3 | GNR | 1989-08-24 | 6677 |
| Wet Prairie (Northern) Type #87<br>Location Description: T140N R46W S34, T140N R46W S27 | | N/A | S3 | GNR | 1987-09-23 | 7742 |
| Wet Prairie (Northern) Type #88<br>Location Description: T140N R46W S22, T140N R46W S21 | | N/A | S3 | GNR | 1987-09-17 | 7748 |
| Wet Prairie (Northern) Type #100<br>Location Description: T139N R46W S22 | | N/A | S3 | GNR | 1985-07-11 | 7957 |
| Wet Prairie (Northern) Type #103<br>Location Description: T141N R46W S26 | | N/A | S3 | GNR | 1988-06-16 | 9558 |
| Wet Prairie (Northern) Type #104<br>Location Description: T139N R46W S3, T139N R46W S4 | | N/A | S3 | GNR | 1988-08-12 | 9559 |
| Wet Prairie (Northern) Type #105<br>Location Description: T139N R46W S34, T139N R46W S27 | | N/A | S3 | GNR | 1988-08-21 | 9560 |
| Wet Prairie (Northern) Type #106<br>Location Description: T139N R46W S15, T139N R46W S11, T139N R46W S10, T139N R46W S14 | | N/A | S3 | GNR | 1988-06-15 | 9561 |

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| Element Name and Occurrence Number | Federal Status | MN Status | State Rank | Global Rank | Last Observed Date | EO ID # |
|---|---|---|---|---|---|---|
| **Clay County, MN** | | | | | | |
| Wet Prairie (Northern) Type #108<br>Location Description: T139N R46W S11, T139N R46W S10 | | N/A | S3 | GNR | 1988-06-14 | 9578 |
| Wet Prairie (Northern) Type #153<br>Location Description: T141N R45W S29 | | N/A | S3 | GNR | 1994-08-24 | 21941 |
| Wet Prairie (Northern) Type #160<br>Location Description: T139N R46W S35, T139N R46W S26, T139N R46W S27 | | N/A | S3 | GNR | 1988-08-21 | 7849 |
| Wet Prairie (Northern) Type #166<br>Location Description: T139N R46W S10 | | N/A | S3 | GNR | 1988-06-14 | 22193 |
| Wet Prairie (Northern) Type #167<br>Location Description: T140N R46W S34, T140N R46W S33 | | N/A | S3 | GNR | 1994-08-03 | 21768 |
| Wet Prairie (Northern) Type #168<br>Location Description: T140N R46W S22, T140N R46W S27 | | N/A | S3 | GNR | 1987-09-17 | 5911 |
| Wet Prairie (Northern) Type #169<br>Location Description: T140N R46W S36, T140N R46W S35, T139N R46W S1, T139N R46W S2 | | N/A | S3 | GNR | 1985-07-16 | 349 |
| Wet Saline Prairie (Northern) Type #8<br>Location Description: T140N R46W S11 | | N/A | S2 | GNR | 1986-08-25 | 6392 |
| Wet Seepage Prairie (Northern) Type #6<br>Location Description: T140N R46W S26 | | N/A | S2 | GNR | 1985-07-16 | 434 |
| Wet Seepage Prairie (Northern) Type #12<br>Location Description: T140N R46W S23, T140N R46W S22 | | N/A | S2 | GNR | 1987-09-17 | 6675 |
| Wet Seepage Prairie (Northern) Type #37<br>Location Description: T140N R46W S14, T140N R46W S12, T140N R46W S11, T140N R46W S13 | | N/A | S2 | GNR | 1985-07-12 | 12332 |
| **Wilkin County, MN** | | | | | | |
| Mesic Prairie (Northern) Type #145<br>Location Description: T136N R47W S27, T136N R47W S23, T136N R47W S26 | | N/A | S2 | GNR | 1988-06-16 | 7765 |

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| | |
|---|---|
| **From:** | Shelley Becklund |
| **To:** | Kinny, John; |
| **CC:** | |
| **Subject:** | Re: Flat Hill I Wind Park |
| **Date:** | Wednesday, February 13, 2008 5:14:45 PM |
| **Attachments:** | |

---

Hi John

Thanks for the information. I'll review as soon as I get a chance. I did copy Lisa Joyal that I received this information from you.

Regards,

Shelley Becklund
Regional SNA Management Specialist
MN DNR Scientific & Natural Areas Program
1509 1st Ave. N.
Fergus Falls, MN 56537
Shelley.Becklund@dnr.state.mn.us
(218) 739-7576 x 262 (office)
(2180 739-7601 (fax)

>>> "Kinny, John" <john.kinny@ttemi.com> 2/11/2008 3:22 PM >>>
Greetings,

Please find the attached map and project area quad sections for the Flat Hill Wind Park that we discussed Friday afternoon. The project area consists of two main areas, an area for turbines to the north and a narrow transmission corridor extending south. Approximately 130 GE XLE turbines are proposed for the northern portion of the project area. The turbine tower is approximately 262 feet tall and the blades are 130 feet long for a total height of nearly 400 feet. I believe our client would like to put the transmission corridor along Highway 9.

We are very interested in finding out if there is any remnant prairie in the following sections:

T 140 N, R 46 W, S 4

T 140 N, R 46 W, S 3

T 140 N, R 46 W, S 9

T 140 N, R 46 W, S 10

T 140 N, R 46 W, S 16

T 140 N, R 46 W, S 15

T 140 N, R 46 W, S 21

T 140 N, R 46 W, S 22

We have used the DNR Data Deli and biological survey. You mentioned that you might have better data than this. Do you have any records of remnant prairie in these sections? Can you share your data? I would greatly appreciate any better data that you may be able to provide to help in with our constraints mapping. If you do not have better data we will more than likely need to do ground surveys of these sections. Can you make any recommendations on what would satisfy the DNR in the form of ground surveys for remnant prairie areas?

As I mentioned during our conversation I would greatly appreciate a response from you regarding the project as it relates to the native prairie in the area. I would like to be able to show Lisa Joyal with the DNR that we have contacted you and started a conversation about the project. I will be emailing you another map in the next day or so showing the land our client has signed leases for or is negotiating leases. This may aid you in making recommendations. Please, don't hesitate to contact me with any questions.

John Kinny | Environmental Scientist
Direct: 612.643.2235 | Main: 612.643.2200 | Fax: 612.643.2201
john.kinny@ttemi.com

Tetra Tech | EMI
2001 Killebrew Drive, Suite 141 | Bloomington, Minnesota 55425 |
www.tetratech.com

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# Minnesota Department of Natural Resources

DIVISION OF FISH & WILDLIFE
1509 1st Avenue North
Fergus Falls, MN 56537
218-739-7576


February 19, 2008

John Kinny
Tetra Tech
2001 Killebrew Drive, Suite 141
Bloomington, MN 55425

Dear Mr. Kinny

As we discussed, I'm sending you updated prairie chicken booming grounds locations within your project area that we have found in our annual population survey. The information is from the 2005-2007 surveys. The 2006 and 2007 information has location to the section level while the 2005 data has locations to the ¼ section.

It sounds like our Department will be coordinating review of this project and I'm expecting more information on how that will be handled in the near future. If you have further questions, please contact Lisa Joyal at (651) 259-5109.

Sincerely,

Don Schultz
Area Wildlife Supervisor

| | |
|---|---|
| **From:** | Brian Nelson |
| **To:** | Kinny, John; |
| **CC:** | Chris Weir-Koetter; |
| **Subject:** | Re: Flat Hill I Wind Park |
| **Date:** | Monday, February 11, 2008 9:54:03 AM |
| **Attachments:** | |

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Hi John,

Park staff have reviewed your map and see no immediate concerns regarding your proposed project and Buffalo River State Park. We would however like you to look at the areas around the park that act as buffer areas for us. These areas are important for a variety of wildlife. One area that may be of concern would be the Wildlife Refuge that is located directly north of the park. Another would be any Nature Conservancy properties near or around this proposed project. The land owners should be contacted and given a chance to give their input. If you have any questions please feel free to call me at 218-498-2124. Thanks.

Brian Nelson
Park Manager
Buffalo River State Park
218-498-2124

>>> "Kinny, John" <john.kinny@ttemi.com> 2/8/2008 9:25 AM >>>
Greetings Brian,

Please find the attached map and list of project area quad sections for the Flat Hill I Wind Farm project that we discussed on Wednesday. As I mentioned during our conversation, I would greatly appreciate a response from you regarding concerns you may have as the project relates to the Buffalo State Park. I will be contacting Chris Weir-Koetter soon to discuss any concerns she may have as the projects relates to the State Park. If you have any questions, comments, or concerns please feel free to contact me.

John Kinny | Environmental Scientist
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The Nature Conservancy
Protecting nature. Preserving life.™

The Nature Conservancy in Minnesota
1101 West River Parkway, Suite 200
Minneapolis, Minnesota 55415

Tel (612) 331-0750
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nature.org/minnesota

March 11, 2008

Mr. John Kinny
TETRA Technologies, Inc.
Flat Hill I Wind Park
2001 Killebrew Drive, Suite 141
Bloomington, MN 55425

Dear John Kinny:

Thank you for the opportunity to comment on the siting of the proposed Flat Hill I Wind Park in Clay County, MN. The Nature Conservancy is a private nonprofit conservation organization whose mission is to preserve the plants, animals and natural communities that represent the diversity of life on Earth by protecting the lands and waters they need to survive. The Nature Conservancy supports the development of renewable energy that carefully account for the habitat needs of native plants and animals. A list of our suggestions for ways in which the proposed project could be enhanced in these areas is found below and additional details follow.

- Site project in area away from native prairie.
- Site project away from greater prairie chicken leks.
- Investigate wind turbine impacts on bat species in project area.
- Make wind turbines more visible to birds and bats.
- Avoid introduction and spread of invasive species during all phases of construction.

By way of background, in the mid-1800's over eighteen million acres of prairie stretched across Minnesota. Today, less than 1% of the original prairie remains. The proposed Flat Hill I Wind Park falls within the Agassiz Beach Ridges (ABR), a priority conservation area for The Nature Conservancy (TNC). The ABR landscape harbors some of the last remaining prairie in Minnesota and provides habitat for many rare and endangered plant and animal species, wetlands, and other natural communities. Specifically, the proposed project area is near the Bluestem and Felton Prairie Complexes, two sites of high biodiversity significance with several types of native prairie remnants that provide important habitat for grassland birds and other wildlife.

Of all the impacts the proposed project will have on the ABR/Bluestem/Felton Complex area, habitat fragmentation is of greatest concern. Densities of grassland and wading birds, waterfowl, and raptors are often lower in areas near turbines. Many grassland bird species, such as the greater prairie chicken avoid fragmented habitats altogether. Disturbance of mating and nesting areas during construction and subsequent operations and maintenance could lead to reductions in the already sparse populations of these birds. Greater prairie chickens nest in the proposed area, and are vulnerable to such disturbances. For this reason, the US Fish and Wildlife Service recommends siting wind turbines at least 5 miles away from prairie grouse booming grounds/leks. Other research suggests that the radius should be smaller, e.g. 1.25 miles.

Other concerns relate to the impact of turbines and overhead power lines on migration corridors for birds and bats, and the wind industry has made great strides in addressing these issues over the last few decades. The Bluestem and Felton Complexes support a diversity of grassland and wetland bird species. Others, such as the whooping crane, a state and federally listed endangered species, migrate through the proposed project area. Power line strikes are one of the greatest potential threats to migratory species in the area. Siting this project in a location further west from the Bluestem and Felton Complexes would help to minimize bird and bat mortality associated with the Flat Hill I Wind Park. If the project were to be built in

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the Bluestem and Felton Complex areas, we encourage project developers to bury all power lines and clearly mark or retrofit any necessary guide wires to reduce avian mortality. Other options include making turbines more visible, such as color marking blades and strategic night lighting.

Less information is available on wind turbine effects on bat mortality. Collision deaths involving bats occur primarily during the spring and fall migratory periods, but are also possible during feeding and mating activities and are primarily caused by spinning blades. Minnesota hosts 7 species of bats, all of which may occur within the proposed project area. We strongly encourage siting of turbines to limit exposure to bat populations, and encourage on-site surveys to determine peak migration windows with subsequent shut-down during those periods. We recommend TETRA Technologies, Inc. work with experts in the area, through such groups as The Wildlife Society, to identify other potential migration corridors and to site the project to accommodate migration pathways.

To preserve all of these invaluable resources, we strongly encourage alternative placement of wind turbines in cultivated agricultural lands that have already been altered and fragmented and therefore offer less valuable wildlife habitat. In particular, siting wind turbines on agricultural land will enable the last of the native prairie to persist, including plants and animals that rely on prairie habitat. Given the amount of cropland in the area compared to remaining natural areas, this would be easily accomplished and should be stressed during the siting process.

If locating the wind farm on existing natural areas is unavoidable, the utmost care must be taken during construction to avoid the introduction of noxious weeds and invasive species into native prairie. Trenching for power line burial, road building and temporary earth moving for crane pads and turnarounds destroy plant communities and soil structure leaving areas vulnerable to erosion and invasives. Further, the operations and maintenance phase and associated disturbance on maintenance roads provide a continuous vector for the introduction and spread of invasive and noxious species such as Canada thistle and leafy spurge, and maintenance vehicles can be a conduit to the direct spread of noxious weeds. The presence of these species reduces habitat integrity. In addition, the long-term expense associated with control of these species on the part of the landowner and/or TETRA Technologies, Inc. could result in significant financial investment. Successful restoration of these areas using local ecotype native seed should take place promptly following construction.

The Nature Conservancy would be happy to provide you with any of the research studies discussed in this letter.

Based on preliminary siting maps, we urge project planners to redirect wind energy development toward project areas further west from the Agassiz Beach Ridges Landscape and the Bluestem and Felton Prairie Complexes in order to avoid detrimental impacts to remaining prairie and wetland habitats and associated bird species. If the project must be in the ABR, we suggest considering the section of the Flat Hill I Wind Park project area west of Highway 9 as an alternative site.

We appreciate the efforts of TETRA Technologies, Inc. to address environmental issues of concern relating to this project and hope that their consideration of local natural resources will extend to future projects. The Nature Conservancy looks forward to a continuing conversation with TETRA Technologies, Inc. in seeking best-practice approaches to the complicated issues surrounding wind and wildlife.

Sincerely,

Peggy Ladner

Peggy Ladner
State Director

The Nature Conservancy
Protecting nature. Preserving life.™

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nature.org

Mr. Sean Flannery
Tetra Tech
2001 Killebrew Drive, Suite 141
Bloomington, MN 55425

October 8, 2008

Dear Mr. Flannery:

This letter sumarizes discussions between The Nature Conservancy (TNC), Tetra Tech, and Noble Environmental Power (NEP) regarding the proposed Noble Flat Hill Windpark I, in Clay County, Minnesota. Previous discussions, meetings, and our comment letter dated March 11, 2008, have provided NEP and Tetra Tech with TNC's environmental concerns and suggestions to minimize adverse environmental impacts.

Of several impacts addressed, habitat fragmentation of local native prairie was of greatest concern. To address this issue TNC recommended that the project area be moved to the west of Highway 9. NEP and Tetra Tech revised the proposed project area to address this concern. A revised layout for the windpark was presented by NEP in a meeting held at the Minnesota Department of Natural Resources (MDNR) office on April 8, 2008. The modified plan shows all turbines located west of Highway 9, thereby reducing many of the habitat and wildlife concerns presented in earlier discussions. TNC has expressed a strong preference for this revised layout, and appreciates the efforts of NEP and Tetra Tech to make the changes.

To address TNC's concern for avian species in the area, Tetra Tech has been conducting Greater Prairie Chicken, grassland bird, and overall avian abundance monitoring beginning April 2008. This effort will continue, and as data are collected, reports will be shared with MDNR, U.S. Fish and Wildlife Service (USFWS) and TNC so sensitive areas can be identified prior to project construction. Tetra Tech has also initiated a 90-day bat acoustic survey for the area to address concerns for bat species in the area. TNC is pleased that NEP and Tetra Tech have addressed suggestions to minimize adverse impacts to avian and bat species in the project area.

Although the final layout is not available, NEP has commited to siting all turbines and associated facilities in previously disturbed areas (i.e., cropland). Siting turbines in croplands avoids impacts to native prairie and other sensitive habitat, thereby reducing habitat fragmentation. TNC is pleased that NEP is concerned about impacts to the environment and willing to adjust previous project plans to minimize these impacts.

Our March letter contained a list of recommendations that we considered essential components of a well-planned wind farm proposal. TNC feels that the revised project has met these criteria by avoiding sensitive habitats and wildlife resources, including native prairie habitat, and initiating pre-construction monitoring to assess the potential effects on avian and bat species.

TNC supports the development of renewable energy that carefully accounts for the habitat needs of native plants and animals. We appreciate the coordination and cooperation expended thus far by NEP to ensure a final product which addresses all the environmental concerns raised during the project review phase. We look forward to further discussions regarding monitoring and the layout of the final project. Thank you for your consideration.

Sincerely,

Tom Landwehr
Assistant State Director

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