



ENVIRONMENTAL AND ECONOMIC RESEARCH AND DEVELOPMENT PROGRAM

A Wildlife Mapping Tool to Guide Renewable Wind Energy Project Siting in the Upper Mississippi River Basin's Driftless Area

Executive Summary August 2012

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The Upper Mississippi River Basin's Driftless Area is an unglaciated region located in southwestern Wisconsin, southeastern Minnesota, northeastern Iowa, and extreme northwest Illinois. Its topography is characterized by large river valleys, ridges, and coulees. Much of the landscape is forested with agricultural land interspersed among ridge tops and valley bottoms. The Driftless Area lies within the Upper Mississippi River Basin, which is recognized as a globally important bird migration corridor.

Several wind energy projects have been proposed within the Driftless Area in recent years. This project addresses an identified need for mapping wind energy and wildlife resources within the Driftless Area. The specific objectives of the project were to compile, organize, manage, and distribute spatial data layers that identify bird and bat concentration areas, significant natural resource areas (e.g. state parks, wildlife areas), infrastructure (e.g. transmission lines, transportation), wind resource areas, and existing land cover.

A series of maps demonstrating areas of protected lands and known sensitive natural resource areas was developed based on the digital spatial data that was acquired and reviewed for the project. While the map series is not intended to provide an explicit measure of relative risks to wildlife from wind energy development within the Driftless Area, it does provide a valuable tool for assessing potential wind energy sites following existing U.S. Fish and Wildlife Service guidance. For example, the map series clearly demonstrates where protected lands occur (e.g. federal wildlife refuges, state parks, and state wildlife areas), as well as areas that have been designated as Important Bird Areas, which in some cases extend beyond the boundaries of the protected lands. Also included in the map series are the predicted relative abundances for breeding bird species of conservation concern, and a draft migratory landbird stop over model depicting potential habitat use and distribution for migrating landbirds. Unfortunately, similar maps could not be produced for bats, as bat spatial data is not as advanced or readily available as it is for birds. As part of the map series, a wind energy development map provides information on existing wind energy facilities, existing electrical transmission infrastructure, and wind resource data for the Driftless Area. General, landscape level comparisons can be made between areas identified as protected or environmentally sensitive and areas having wind energy development potential.

The compiled spatial data layers can be used by stakeholders during wind energy site evaluation and characterization, and project review, to better understand the landscape context and potential wildlife concerns surrounding a proposed wind energy project site within the Driftless Area. The map series serves as a decision support tool and research guide for wind energy developers and regulatory agencies addressing wind wildlife issues in the Driftless Area, and can be used within existing site evaluation and screening guidance developed for the wind energy industry. It is made available to stakeholders through the *Driftless Area Wind Energy / Wildlife Decision Support System (DSS)* developed by project partner, U.S. Geological Survey - Upper Midwest Environmental Sciences Center (<http://umesc-gisdb03.er.usgs.gov/windpower/dss.htm>). As additional mapping and data applicable to wind energy and wildlife become available for the region, the DSS website will provide an outlet for distributing the information. Future work will focus on incorporating additional sources of spatial data (e.g. refined migratory landbird stopover map) and maintaining the DSS for stakeholder use and access.

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