

**Western Governors' Wildlife Council  
Pilot Project Statement of Work  
Submitted by the States of Nebraska, North Dakota and South Dakota**

**Pilot Title: Identifying and Prioritizing Crucial Wildlife Habitats and Migratory Corridors  
in the Northern Great Plains**

**Project Objective:**

Identify, prioritize, and display in GIS format, crucial wildlife habitats and corridors in the states of Nebraska, North Dakota, and South Dakota. The resulting tool will be designed to guide siting of energy and transmission development to avoid or minimize impacts to wildlife.

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**Project Description:**

The project will 1) identify and assemble existing selected GIS data on natural resources; 2) develop species distribution models for selected target species; 3) develop and apply criteria for consistently identifying crucial habitats and corridors across the pilot states using the above data; and 4) make a set of data layers viewable on the internet to aid policymakers, stakeholders, and energy developers in decision-making. The project will use both habitat and species distribution data to identify crucial areas. The initial phase of the project will focus on wind energy and

transmission development. This development is likely to increase significantly in all three states in the near future. However, the results may be applicable to other types of development. We envision that additional species and energy resources data will subsequently be incorporated into the tool to broaden its scope.

Habitats layers initially selected to be incorporated include: wetland complexes (prairie potholes, playas), important migratory stopovers, native grasslands, native woodlands, sagebrush, and conservation lands (owned by public agencies and non-governmental organizations). The following species were selected as targets based on their susceptibility to wind energy and transmission development: whooping crane, sage grouse, greater prairie-chicken, sharp-tailed grouse, ferruginous hawk, golden eagle, burrowing owl, and several species of bats (to be determined). Species distribution models will be developed as needed. Modeling may be conducted on a state-by-state basis, depending on data compatibility. Species distribution models combine environmental data (i.e. temperature, precipitation, vegetation, climatic changes) with species occurrence information to construct the ecological requirements of a species and predict its geographic and ecological potential. The models are testable hypotheses of predicted species distributions on the landscape.

The team will develop criteria for identifying crucial habitats and corridors using guidance developed by the Western Governors' Wildlife Council. The criteria will be applied to the habitat and species distribution layers to develop crucial habitat and corridor layers. We will identify species experts in the states and use their input in developing and applying criteria. GIS layers for wind resource areas and transmission lines from the National Renewable Energy Lab will be overlaid with the wildlife layers to identify wildlife concentration areas in relation to energy development plans in each state. In addition, a web tool will be developed that, at a minimum, will allow for viewing of state spatial data (roads, rivers, counties, etc.) and the general habitats, species distribution, and crucial habitat layers. There will be three separate state websites but with similar categories of data and similar naming conventions.

Energy Nexus: The initial phase of the project is focused on guiding siting of wind energy and transmission development. It can subsequently be expanded to include other energy development.

DSS advancement: The project will assemble existing relevant natural resources data (Step 1 in WGA white paper) and conduct analyses (species distribution modeling) and apply crucial habitat criteria (Step 2). The project will begin to address Step 3 by making data layers viewable on the internet (a rudimentary DSS). As time and money allow, the web based tool will incorporate more interactive features.

Federal Agency Coordination: This project is consistent with actions identified in the SWAPs for the states of Nebraska, North Dakota, and South Dakota. Federal agencies including DOE, USFWS, BLM, USFS, USGS, NPS are already partners in the Western Governors' Wildlife Council Initiative and participated in the DSS kick-off meeting in Broomfield, CO in April 2010.

Stakeholder Involvement: Each state will develop a process to involve stakeholders in the project. Initial stakeholders with an interest in wind energy development include public utilities, wind energy companies and conservation organizations that have been involved in wind energy.

Connectivity: We plan to use the habitat and predicted species distribution layers, in conjunction with the crucial habitat layer, to identify key corridors and habitat blocks across the greater 3-state area. In the case of the northern Great Plains, known corridors primarily are those for avian migration (e.g., whooping crane migratory corridor, Central Flyway, and woodlands along the Missouri River).

Climate Change: The initial phase of the project will not address climate change.

### **Deliverables:**

See project timeline.

### **Outcomes:**

The desired outcomes of this project are 1) a tool to help make better decisions on the siting of energy and transmission development so that impacts to wildlife are avoided or minimized; 2) providing all stakeholders with access to information and GIS data layers of intact habitat, species predicted distribution, and identified crucial habitats should facilitate this outcome.

### **Constraints:**

- 1) The variability in land use data among the states will result in inconsistencies with the predictive species distributions and/or the delineation of crucial habitats and corridors.
- 2) It may not be feasible to use one model per species across the 3 state area, given the variation in data availability and collection protocols across the region.
- 3) State procurement rules may be a challenge to implement a regional project. However, we believe we can address those issues through state vendors, contracting sources, etc.

### **Assumptions:**

A primary assumption is that using a small number of species and habitat layers will result in a tool that is useful for guiding the siting of energy and transmission development such that impacts to most wildlife are avoided or minimized. The tool may only be useful for the species included in the project. However, the project should be a useful proof of concept, and we expect that more species will be added in the future.

### **Contracting:**

It was decided by the steering committee to pool most of the award from this grant. South Dakota will be the primary state for contracting this grant. However, Nebraska will request a separate contract that will assist in covering state expenditures associated with the DSS pilot project (staff time, travel, etc) and contracting services for data analysis for the state of Nebraska.

North Dakota and South Dakota will pool their allocations for the DSS contractor and associated expenditures for modeling, supplies, and travel of the contractor. Please refer to the budget spreadsheet.

**Reporting:**

Council members and/or pilot lead will verbally report regularly on the progress of their pilot meetings and other WGA-sponsored events.

**Budget: \$300,000.**

See attached budget spreadsheet.

### Northern Great Plains DSS Pilot Project Timeline

		Months							
Phase	Task	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24
One	Hire contractors for modeling	x							
	Assess, gather, and assemble the available species occurrence information. Determine limitations with regard to compatibility, geographic extent, etc	x							
	Determine what sources are available for land use/land cover data. Where useful compile the datasets for the 3-state region.	x							
	Work with contractors/biologists to determine appropriate modeling approaches for each species, given the available occurrence data, land use/land cover data, environmental variables, etc.	x	x						
Two	Extract, reclassify, process land cover categories for selected habitat layers.	x	x						
	Develop species distribution models		x	x	x				
	Contractors meet with biologists regularly to review the predictive species distribution model suggestions and model parameters for the selected species. Provide expert opinion, refine or modify where necessary.		x	x	x				
	Measure model accuracy (when appropriate), e.g. contractors could compare model to a subset of data they have reserved for that purpose.				x	x			
	Review the final versions of models					x			
	Determine and apply methods for classifying species distributions and habitat layers into WGA white paper categories 1-3 (irreplaceable, limiting, and contributing)	x	x	x	x	x			
	Develop data that integrates the white paper categories (as defined by biologists) with the models.					x			

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		Months							
Phase	Task	1-3	4-6	7-9	10-12	13-15	16-18	19-21	22-24
Three	Develop specs for a simple interactive mapping application, i.e., determine what content, tools and functionality will be available						x		
	Gather all content for the map service application including the spatial data (model outputs, historical species range, biological information, base map components etc) as well as publications/research documents that will be made available through the application						x	x	
	Create documentation to accompany website (outside the interactive mapping site itself)						x	x	
	Develop interactive mapping applications and necessary tools (one website per state)						x	x	
	Deploy websites to public								x
	Write final report and lessons learned								x