

**REGION 3 ENDANGERED SPECIES  
SECTION 6 GRANT PROPOSAL**

**Project Title: Wisconsin Endangered and  
Threatened Species  
Investigation**

**State: Wisconsin  
Project No.: E-13-1**

**TITLE:** Karner Blue Butterfly Distance Sampling Design and Statistical Support.

**YEARS OF PROJECT:** January 1, 2009- December 31, 2009

**BACKGROUND:** The Wisconsin Department of Natural Resources (WI DNR) has the legislative authority to manage all resident species of fish and wildlife as well as manage wild plants on public lands. The U.S. Fish and Wildlife Service (USFWS) acknowledged this authority and entered into an Endangered Species Cooperative Agreement for the management of all resident endangered and threatened fish or wildlife within the state on September 28, 1976 and for the management of all endangered and threatened species of plants within the state on October 1, 1981. The WI DNR has submitted annual reports on the activities carried out under the authorities granted by these Cooperative Agreements. Based upon these reports the USFWS has renewed the agreements. These cooperative Agreements also qualify WI DNR to be eligible to receive US Endangered Species Act, Section 6 funding.

**NEED:** The Karner blue butterfly ( Kbb) was listed as federally endangered in December of 1992. It is found in early successional oak savanna and barrens habitats that are globally imperiled. Recovery goals and objectives are addressed in the Karner Blue Butterfly Recovery Plan, September 2003. The Wisconsin Wildlife Action Plan entitled Wisconsin's Strategy for Wildlife Species of Greatest Conservation Need (2006) identifies conservation of the Kbb as a high priority. Recommended actions include the preparation of recovery implementation plans for the species, the preparation of site-specific management plans for Kbb metapopulations, and implementation of critical conservation practices.

This Kbb recovery initiative is intended to demonstrate recovery for the Kbb in Wisconsin. An appropriate statistical sample design will enable the assessment of Kbb habitat and populations in order to determine conservation needs for each recovery property. This will allow the development of recovery implementation plans for each state-owned recovery site. The plans will include schedules for barrens habitat enhancement and restoration.

**OBJECTIVE:** This project will provide statistical design and analysis for the Karner Blue Butterfly (Kbb) Recovery Program in Wisconsin.

**EXPECTED RESULTS OR BENEFITS:** By managing for Kbb, a keystone species for the imperiled barrens habitat, many other associated species will benefit. The federally endangered Kirtland's warbler will directly benefit from the shifting mosaic strategy that is implemented in WI for the Kbb. Phlox moth, frosted elfin, western slender glass lizard, Blanding's turtle and other state listed species will also benefit. Barrens are expected to be a priority habitat in the implementation of the Wisconsin Wildlife Action Plan. The Kbb recovery initiative and this project will directly benefit barrens communities. These benefits will be complemented by and will support other State and federal endangered resource efforts into the future.

**APPROACH:** Accurate Kbb population estimates are needed to develop recovery implementation plans for each recovery property. Distance sampling methodology, endorsed by the U.S. Geological Service and adopted by the national Kbb Recovery Monitoring Sub-team will be used to estimate population levels. Property staff will be trained in the field application of Distance through the technical resource pool of the Wisconsin Recovery Working Group. A qualified statistician will develop sampling designs for each property and will process sampling data and develop population models as needed. The University of Wisconsin Forest Ecology Laboratory will develop a Kbb emergence model that will be a vital component of the Distance methodology. The emergence model is being developed under a separate contract with Wisconsin DNR. This statistical design and data analysis phase is a critical part of the overall Kbb recovery initiative.

This position will not implement any activities that will disturb or otherwise directly impact the Karner blue butterfly or any other endangered species. It is not a field position. The only indirect impact will be that survey crews, following the statistical design and protocols developed by the statistician, will walk through occupied Kbb habitat recording Kbb observations and barrens habitat data.

This grant is expected to fund statistical design and analysis needs for the Kbb recovery program for one year beginning in late 2008 when current funding for the position is exhausted. During that time it is expected that initial sampling designs will be completed for all of the state Kbb recovery properties, initial data will have been collected and analyzed, initial population estimates will have been developed and necessary adjustments will have been made to the sample designs. Continuing statistical support beyond the extent of this project grant is very likely, as periodic monitoring will be an ongoing component of the recovery process.

**ESTIMATED COST:** \$ 15,000 Total; \$ 11,250 Federal; \$ 3,750 state.

Funding request:

Wages:	\$10,400	(25% of one FTE @ \$20.00/hr.)
Indirect:	2,500	(approx. 25% of wages)
Direct:	<u>2,100</u>	(travel, supplies)
Total:	\$ 15,000	

**LOCATION:** Kbb recovery will be conducted on nine properties owned or managed by the State of Wisconsin. Sampling design and data analysis will be conducted from the Central Office by a qualified statistician with periodic visits to recovery properties to become familiar with sites, to conduct training, or to monitor sampling activities.

**PROJECT LEADERS:** Rebecca Schroeder, WI DNR Bureau of Endangered Resources, P.O. Box 7921, Madison, WI 53707; (608) 266-5244; Rebecca.Schroeder@ wisconsin.gov; and Robert Hess, Karner Blue Butterfly Recovery Coordinator, WI DNR Bureau of Endangered Resources, P.O. Box 7921, Madison, WI 53707; (715-884-2726), Robert.Hess@wisconsin.gov

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**Job Schedule:** January 1, 2009 -December 31, 2009

<u>Activity</u>	<u>Total Cost</u>
Job 1. Develop a statistical design and conduct analysis for Karner Blue Butterfly surveys in Wisconsin	\$ 15,000
	FEDERAL SHARE \$ 11,250
	STATE SHARE \$ 3,750

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