Environment and Natural Resources Trust Fund
2011-2012 Request for Proposals (RFP)

LCCMR ID: 001-A1

Project Title: Minnesota County Biological Survey (continuation)

Category: A1. Natural Resource Data and Information: Collection

Total Project Budget: $ $3,300,000

Proposed Project Time Period for the Funding Requested: 2 yrs, July 2011 - June 2013

Other Non-State Funds: $ 700,000

Summary:

Minnesota County Biological Survey systematically collects, interprets, and delivers data on the distribution and ecology of plants, animals, native plant communities and functional landscapes to guide and monitor conservation actions.

Name: Carmen Converse

Sponsoring Organization: DNR

Address: 500 Lafayette Rd

Saint Paul MN 55155

Telephone Number: 651-259-5083

Email carmen.converse@state.mn.us

Web Address http://www.dnr.state.mn.us/eco/mcbs/index.html

Location

Region: Statewide

Ecological Section: Statewide

County Name: Statewide

City / Township:

_____ Funding Priorities	_____ Multiple Benefits	_____ Outcomes	_____ Knowledge Base
_____ Extent of Impact	_____ Innovation	_____ Scientific/Tech Basis	_____ Urgency
_____ Capacity Readiness	_____ Leverage	_____ Employment	_____ TOTAL _____%

2011-2012 MAIN PROPOSAL

PROJECT TITLE: Minnesota County Biological Survey (continuation)

I. PROJECT STATEMENT

The need to protect and manage functional ecological systems, including ecological processes and component organisms continues to accelerate with increased demands for water and energy, continued habitat fragmentation, loss of species and genetic diversity, invasive species expansion, and climate change.

Since 1987 the Minnesota County Biological Survey (MCBS) has systematically collected, interpreted and delivered baseline data on the distribution and ecology of plants, animals, native plant communities, and functional landscapes. These data help prioritize actions to conserve and manage Minnesota's ecological systems and critical components of biological diversity. By July 2010 surveys will be completed in 81 of the state's 87 counties, including all counties where native prairie habitat was a targeted rare resource.

Focus of this **2-year project period**: Conduct surveys in northern Minnesota, expand information system capability and analyses, provide interpretation of results largely through publications, and establish monitoring sites on the best remaining native prairie.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Field Surveys and Monitoring **Budget: $1,200,000**

Data on the distribution and ecology of plants, animals, native plant communities (npc), and functional landscapes will be collected, providing a basis for the maintenance of elements of biological diversity and ecological systems through ecological management, planning, research, and critical habitat acquisition. Prairie sites will be monitored in collaboration with partners.

Outcome (see also attached map)	Completion Dates
1. Field survey: Lake County	Fall 2012
2. Field survey St Louis County: Nashwauk Uplands	plants, npc Fall 2011; animals begin 2012
3. Field survey St Louis: Border Lakes	animals 2013; plants, npc begin 2011
4. Field survey St Louis: Tamarack Lowlands	plants, npc, animals begin 2012
5. Field survey St Louis: Littlefork-Vermillion Uplands	plants, npc, animals begin 2011
6. Field survey: Beltrami & Clearwater counties	plants, npc Fall 2011; no animals
7. Rapid assessment: Potential survey sites identified in Lake of the Woods and Koochiching counties.	Dec 2011 (interpretation of aerial imagery/other natural resource data)
8. Prairie monitoring samples collected to measure management actions (vegetation & bird transects).	2011 (12 sites, vegetation only); 2012 (12 sites); 2013 (10 sites, birds only)
9. Prairie monitoring (establish permanent veg. plots)	2011 (10 plots); 2012 (20); 2013 (10)
10. Prairie monitoring (other animal groups)	2012 (5 sites); 2013 (10 sites)

Activity 2: Information System Expansion **Budget: $1,100,000**

MCBS will provide data and specimens to museums and information systems. This results in long-term storage of collections and databases for analysis and distribution of information to individuals, organizations, and agencies with diverse natural resource goals.

Outcome	Completion Dates
1. Survey data entered and managed in DNR's information systems.	Winter 2011, Winter 2012
2. Preparation & delivery of plant & animal collections to museums.	Winter 2011, Winter 2012
3. Monitoring data entry & analysis (DNR Info Systems)	Winter 2011, Winter 2012
4. Programming to improve long-term data storage, analytical tools.	Fill position 2011

Activity 3: Guidance for Conservation and Management **Budget: $1,000,000**

MCBS will provide interpretation of results through products and technical assistance to guide private and public conservation and management of ecological systems, rare resources, and sites of biodiversity significance.

Outcome	Completion Dates
1. DNR's website provides updated and accurate survey & monitoring procedures, results and tools. (Examples given at right--not an exhaustive list).	Add GIS map files of results in 4 counties (2011). Update Rare Species Guide for 20 species (2011), 20 species (2012). Create data portal for: -Vegetation plot data (Winter 2011) -MCBS site data (Winter 2012) -MN plant list database (June 2013)
2. Ecological Evaluations (EE) are reports describing attributes of high-biodiversity sites to guide conservation, management, and monitoring actions.	(Example: LaSalle Lake EE in Hubbard County). Write 10 EEs (Winter 2011); 20 (Winter 2012); 10 (July 2013).
3. Prairie monitoring results provided to grassland monitoring collaborative & resource managers to inform future conservation/management actions.	See items # 8, 9, 10 under Activity 1
4. Technical assistance: e.g., advice on Forest Service prescribed fire plans in BWCAW, aquatic plant management guidelines, national vegetation plot-monitoring protocol, restoration of plant communities, county plans addressing biodiversity and native habitat protection.	Throughout project period
5. Aspen Parkland-Red River Valley natural history guide book based on the results of MCBS.	Manuscript delivered Fall 2011; Publication by June 2013
6. *Amphibians and reptiles native to Minnesota* 2nd edition (with Nongame Wildlife Program).	Manuscript delivered Dec 2011; Publication by June 2013
7. *Orchids of Minnesota* 2nd edition	Manuscript delivered Fall 2011

III. PROJECT STRATEGY

A. Project Team/Partners: This request does not include funding for the following primary partners: The Bell Museum, the Science Museum, and the Superior National Forest. Red Lake Reservation lands will be surveyed pending approval by the Red Lake Tribal Council. Internationally, NatureServe provides guidance in database structure, collection, and distribution standards. The grassland monitoring collaborative includes DNR Wildlife, the Fish and Wildlife Service and TNC.

B. Timeline Requirements MCBS is proposed for completion in 2021.

C. Long-Term Strategy and Future Funding Needs: Funding for an ongoing Minnesota Biological Survey will be requested to address: **1) Data Gaps,** including survey of areas where weather conditions, life-history cycles, lack of experts, etc. left data gaps (e.g., invertebrates, aquatic plants); and identification of outstanding aquatic landscapes (lakesheds, watersheds, groundwater systems). **2) Re-Survey** of landscapes altered due to habitat fragmentation, development, and invasive species, especially where MCBS was conducted in 1980s–1990s. **3) Monitoring** of ecological conditions in sites of biodiversity significance to assess impacts of policies and management activities on ecological systems and species populations (e.g., prairie grazing, recreational activities, groundwater use, forest certification, climate change, energy, and invasive species). **4) Use of new technology** in remote sensing, data collection, analyses, modeling, and information delivery. Combine these with traditional survey methods (field biologists) and communication pathways (e.g., personal contacts by professionals, publications).

2011-2012 Detailed Project Budget

Minnesota County Biological Survey

IV. TOTAL TRUST FUND REQUEST BUDGET 2 years

BUDGET ITEM *(See List of Eligible & Non-Eligible Costs, p. 13)*	**AMOUNT**
Personnel: (18 positions) The following are State of MN employees. Salary and fringe are included in budget item. Most positions require specialized professional skills in plant and animal surveys (understanding of taxonomy, behavior, field survey techniques, statistics, sampling design, specimen preparation and documentation/data management). In addition, use of remote-sensing equipment, interpretation of aerial imagery, understanding of soils, geology, hydrology, and landscape processes are critical to accomplishing many required tasks. Finally, the understanding of the resource data enables information management staff to create programs to effectively manage data for analysis and interpretation of results. Staff skills focused on the communication of results is especially needed during this project period to meet deadlines for web-based and published products.	
Botanist* (1 classified @100% time)	$166,000
Botanists (2 unclassified @100% time)	$272,000
Ecologists** (4 classified @100% time)	$604,000
Ecologists (7 unclassified @100%)	$892,000
Information officer (1 unclassified @90% time)	$140,000
Information GIS manager*** (1 classified @100% time)	$180,000
Information managers (2 unclassified @100% time)	$350,000
Contracts: Native plant community and botanical field surveys (northern MN)	$166,000
Service-level agreements (within the DNR) for development of web-products	$100,000
Vegetation and species monitoring contracts (prairie monitoring)	$200,000
Equipment/Tools/Supplies: Field supplies to conduct biological surveys, including GPS units, data recorders, cameras, communication safety equipment (especially in Border Lakes and remote peatlands), plant and animal specimen collecting and preservation supplies, water chemistry sampling supplies, batteries, air photos, maps, water resistant note books, etc.	$50,000
Travel: In-state travel, including food and lodging expenses when in travel status. Especially used by field staff where vehicle mileage is paid for temporary use of DNR vehicles during the summer field surveys. Vehicles are often trucks due to need for access to remote locations and the need to transport canoes and kayaks (especially for aquatic plant surveys and surveys in Border Lakes, including the Boundary Waters Canoe Area Wilderness). Aerial flights also used (especially in large peatlands).	$180,000
TOTAL ENVIRONMENT & NATURAL RESOURCES TRUST FUND $ REQUEST	$3,300,000

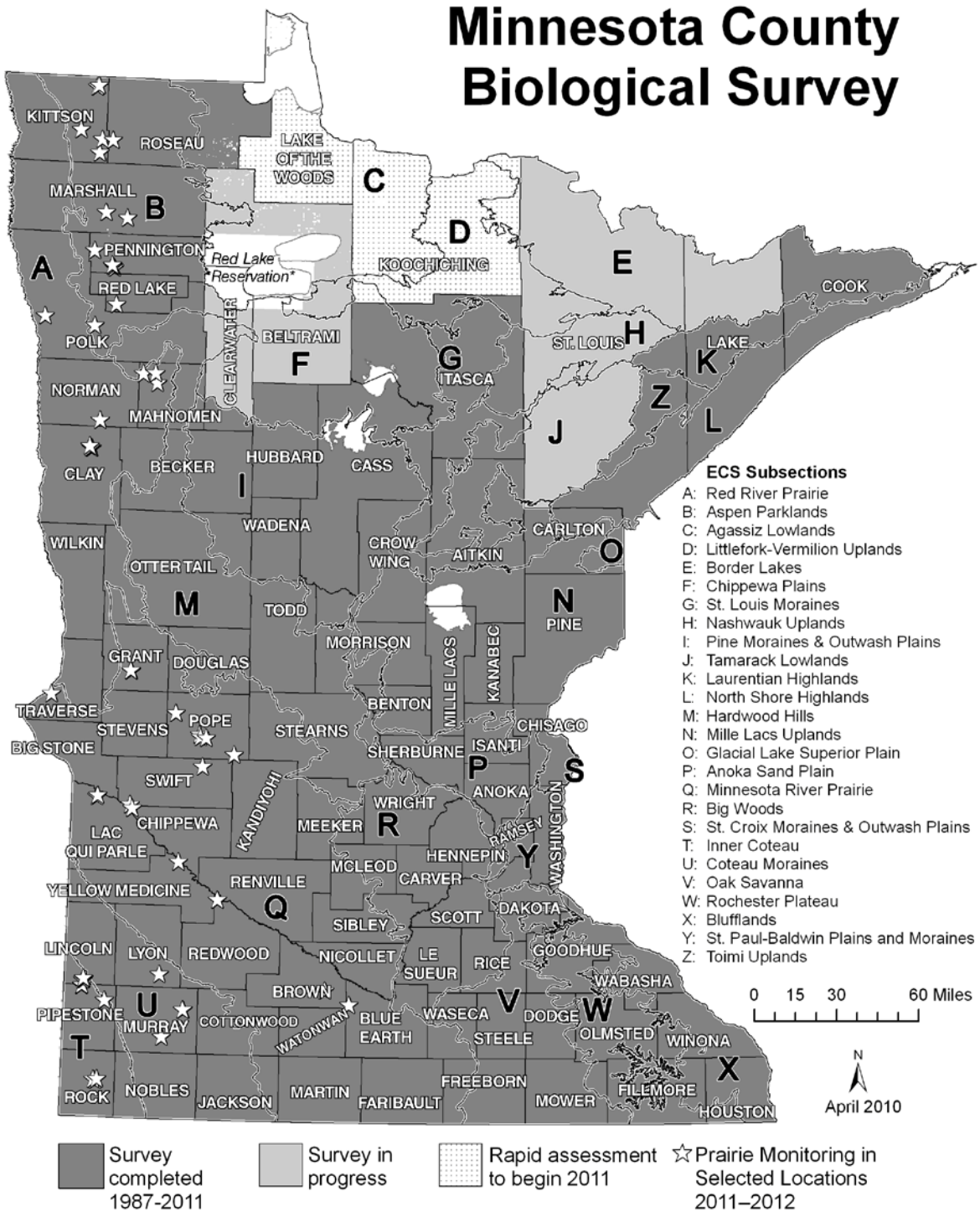
V. OTHER FUNDS

SOURCE OF FUNDS	**AMOUNT**	**Status**
Other Non-State $ Being Applied to Project During Project Period: State Wildlife Grants (Federal funding related to the State Wildlife Action Plan)	$700,000	*Pending*
Other State $ Being Applied to Project During Project Period: General Fund $670,000; Heritage Enhancement $1,160,000 (includes funding for $148,536 DNR estimated Department Shared Services; and estimated Division Support costs=$198,000).	$1,830,000	*Secured*
Recent Funding History of overall MCBS project: 1) Trust Fund 2009 = $2,100,000; **2) Trust Fund 2008** Accelerated Prairie Management, Survey, Acquisition and Evaluation (survey and monitoring portion) = $275,000 with $275,000 match from State Wildlife Grant; **3) Total other funds FY2009 and FY10:** General Fund = $ 670,000; Heritage Enhancement = $1,160,000; State Wildlife Grant = $550,000.	$5,030,000	

*Botanist Welby Smith is currently assigned to plant collection in the northern regions identified in the project and is writing an update to the book *Orchids of Minnesota* that includes additions of orchid species recently recorded by MCBS.

**Robert Dana and Nancy Sather are the two primary authors of the Aspen Parkland-Red River Valley natural history/guide book that is specifically identified in Result #3. In addition, Robert's professional skills in insect ecology and prairie plant ecology will be applied to the monitoring portion of this project. Fred Harris is a MCBS plant ecologist in the classified service who will continue to work exclusively on MCBS with this funding source. Derek Anderson is a plant database manager and plant ecologist who will continue his dual responsibilities focused on MCBS plant and plant community data collection and management.

***Jared Cruz, GIS specialist, will manage MCBS generated shape files of sites, native plant communities and other attributes for web delivery.



*Survey on Red Lake Reservation pending approval by the Red Lake Tribal Council.

LCCMR Proposal 2011-2012 Minnesota County Biological Survey

Project Manager: Carmen Converse

Affiliation: Minnesota County Biological Survey, Division of Ecological Resources
Minnesota Department of Natural Resources (DNR)

The project manager has coordinated MCBS since 1987. She prepares work plans, funding proposals, manages the budget, develops procedures and work plans, hires and supervises staff, provides direction for information management, and has oversight on technical assistance, publications, and other products related to the delivery of MCBS results. Her past work experience also includes botanical and ecological field surveys and natural area research and management.

Employment

Aug. 1993-present — Natural Resources Supervisor Senior
Minnesota Department of Natural Resources. Supervisor of the Minnesota County Biological Survey (MCBS). Coordination involves the planning and implementation of a systematic survey of significant natural areas and rare biological features to include hiring and supervision of employees, and preparation of schedules, budgets, contracts and reports

Nov. 1991-Oct. 1992 — Natural Resources Supervisor Senior
Minnesota Department of Natural Resources. Acting Supervisor of the Natural Heritage Program. Overall coordination of the program including the Research and Policy Unit and MCBS.

Mar.-Oct. 1991
Nov. 1992- — Natural Resources Supervisor
Minnesota Department of Natural Resources. Coordinator of MCBS. New classification July 1993 due to expansion of the Survey.

1987 -1990 — Natural Resources Specialist Senior Plant Ecologist/Botanist
Minnesota Department of Natural Resources, Natural Heritage Program. Coordinator of MCBS.

1987 — Natural Resource Specialist Plant Ecologist/Botanist
Minnesota Department of Natural Resources, Natural Heritage Program. Evaluated natural areas, identified rare plant locations, assisted with data management and environmental review.

Education

1970-75 — UNIVERSITY OF WISCONSIN-MADISON
Bachelor of Science
Natural Resources. Majored in horticulture with emphasis in botany.

1981-82 — UNIVERSITY OF MINNESOTA
Course work in library science, Spanish, statistics, and management information systems.