Environment and Natural Resources Trust Fund
2012-2013 Request for Proposals (RFP)

Project Title: **ENRTF ID:** **082-E1**

Minnesota Biological Survey

Topic Area: E1. NR Info Collection /Analysis - Statewide

Total Project Budget: $ 2,600,000

Proposed Project Time Period for the Funding Requested: 2 yrs, July 2013 - June 2015

Other Non-State Funds: $ 0

Summary:

Minnesota 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.

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Sponsoring Organization: MN DNR

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Location

Region: 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 _____%

PROJECT TITLE: Minnesota Biological Survey

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 clean water, energy and arable land. Habitat fragmentation, loss of plant and animal species and genetic diversity, changing landscape patterns, contamination of water resources and invasive species expansion require data and analytical tools to optimize conservation of the most functional systems and provide guidance and monitoring to maintain or restore declining systems.

The Minnesota Biological Survey (MBS) systematically collects, interprets and delivers data on the distribution and ecology of plants, animals, native plant communities and functional landscapes. These data help prioritize actions to conserve, manage, restore and monitor Minnesota's ecological systems and critical plant and animal habitats. For example MBS data inform implementation of plans for sustainable prairie and forest management (DNR, county, USFS, private) and assist in targeting high quality landscapes for parks and natural areas by entities such as counties and lakeshore associations. Surveys will continue in northern Minnesota and monitoring projects will be expanded in western and southeastern Minnesota to measure the effectiveness of management and conservation efforts in MBS sites with high biodiversity significance. Improved access and delivery of MBS data continues to be a priority and delivery through web-based products, publications, and professional technical assistance will continue. MBS species and vegetation databases are part of national information system networks. Museums providing repositories for MBS plant and animal collections are also important partners in the coordination of related database development. Decision support systems (DSS) that provide analytical tools to assess multivariate data will be explored in selected watersheds to integrate MBS data with other environmental, social and economic data to help users optimize goals of clean water and biodiversity cost-effectively at local levels.

II. DESCRIPTION OF PROJECT ACTIVITIES

Activity 1: Field Surveys **Budget: $ 900,000**

Data on the distribution and ecology of plants, animals, native plant communities and functional landscapes will be collected, providing a basis for the maintenance of elements of biodiversity and ecological systems through ecological management, planning, research, and critical habitat acquisition.

Outcome (see also attached map)	Completion Dates
1. Field survey Lake County: Border Lakes subsection	2013
2. Field survey St. Louis County: Border Lakes subsection	Continuing
3. Field survey St. Louis County: Tamarack Lowlands, Nashwauk, St. Louis Moraine and Littlefork-Vermillion Uplands subsections	2014
4. Field survey Beltrami & Clearwater counties (all subsections)	2015
5. Field survey Lake of the Woods County (all subsections)	Continuing
6. Field survey Koochiching County (all subsections)	Continuing

Activity 2: Monitoring **Budget: $ 300,000**

MBS will conduct selected monitoring activities in collaboration with others in response to needs identified in various plans and assessments. Examples include the Minnesota Prairie

Conservation Plan 2010, the State Wildlife Action Plan, the State of Minnesota's dual forest certification and national species vulnerability assessments.

Outcome (see also attached map)	Completion Dates
1. Identify permanent vegetation monitoring plots statewide	January 2014
2. Sample selected permanent vegetation monitoring plots	2013 (10); 14 (20)
3. Sample up to 3 prairie sites to assess specific management activities	Continuing
4. Continue monitoring of sensitive prairie plant species	2014, 2015
5. Sample selected sites related to sustainable forest management	2014, 2015

Activity 3: Information System Expansion **Budget: $ 800,000**

MBS 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	Continuing
2. Preparation & delivery of plant & animal collections to museums	Continuing
3. Monitoring data entered and analyzed (DNR Info Systems)	Continuing
4. Programming to improve long-term data storage, analytical tools, and data transfer	Continuing

Activity 4: Guidance for Conservation and Management **Budget: $600,000**

MBS will provide interpretation of results through products and technical assistance to guide conservation and management of ecological systems, rare resources, and sites of biodiversity significance. Decision support systems (DSS) in at least two watersheds will be used to help integrate environmental, social and economic data to optimize conservation efforts.

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)	Improved data portals for vegetation plot data (2013) & MBS site data (2014); Add GIS data for two subsections to the Data Deli
2. Ecological Evaluations (EE) are reports describing attributes of sites of biodiversity significance to guide conservation, management & monitoring	Write 5 EEs (Winter 2013) Write 10 EEs (Winter 2014)
3. Prairie & forest monitoring preliminary results delivered	See items # 1-5 under Activity 2
4. Technical assistance: e.g. Forest Service planning, restoration of native plant communities	Throughout project period
5. Aspen Parkland-Red River Valley guide book	Publication by June 2014
6. DSS project is completed in at least two watersheds to identify conservation efforts	June 2015

III. PROJECT STRATEGY

A. Project Team/Partners: This request does not include funding for the following partners: The Bell Museum, the Science Museum, the Superior National Forest, TNC, and NatureServe.

B. Timeline Requirements: MBS is proposed to complete its first statewide survey in 2021.

C. Long-Term Strategy and Future Funding Needs: MBS will request funds to address: **Data Gaps,** including survey of areas where species groups or systems were inadequately surveyed (invertebrates, aquatic features); **Re-Survey** of landscapes altered due to habitat fragmentation, development, and invasive species, especially areas surveyed during 1980s–1990s; **Monitoring** of ecological impacts of policies and management on ecological systems and species populations; **Use of new technology** in remote sensing, data collection, analysis, modeling, and information delivery.

2012-2013 Detailed Project Budget

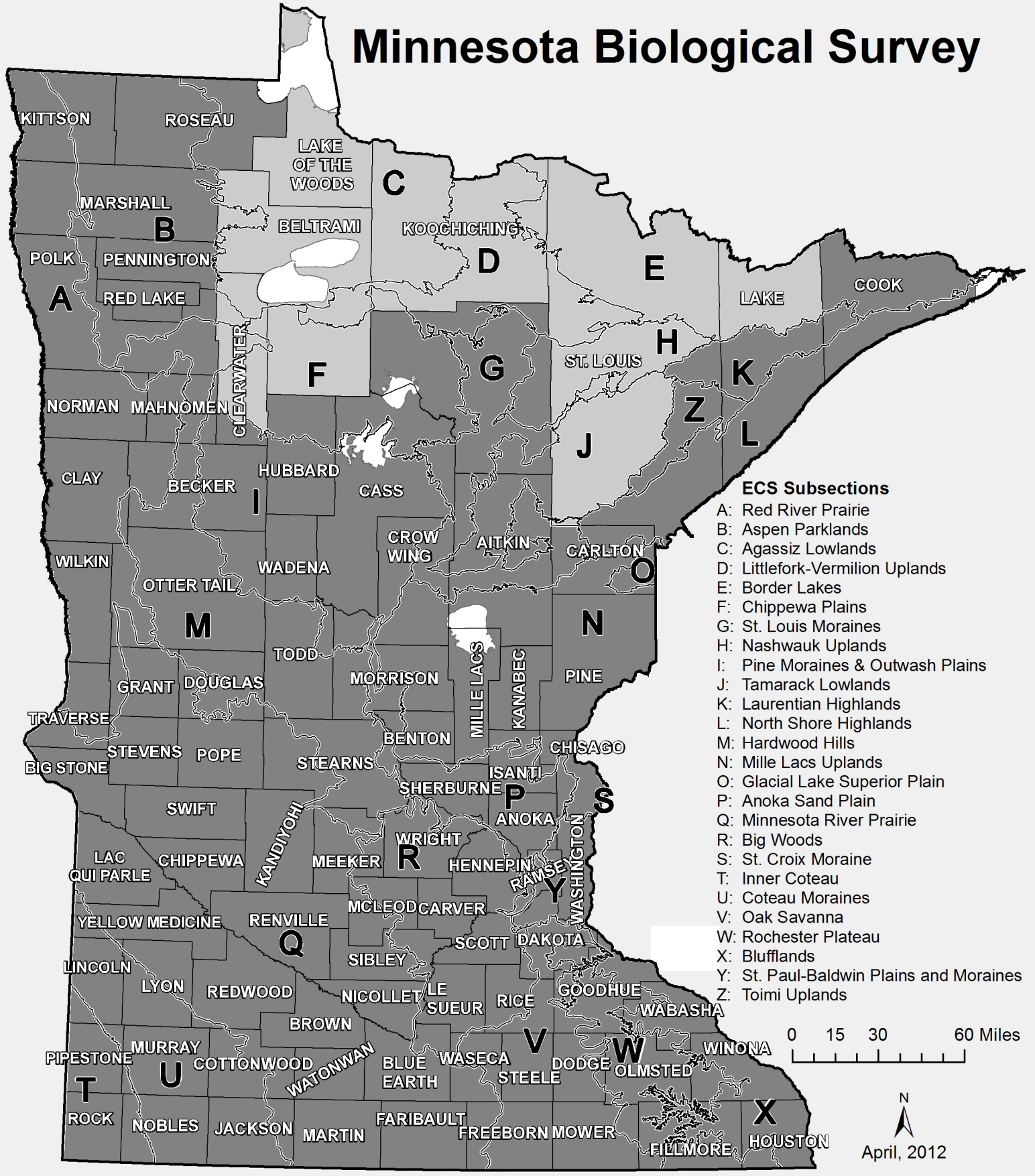
Minnesota Biological Survey

IV. TOTAL TRUST FUND REQUEST BUDGET 2 years

BUDGET ITEM *(See List of Eligible & Non-Eligible Costs, p. 13)*	**AMOUNT**
Personnel: (16 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 (2 classified @100% time)	$331,000
Ecologists (8 unclassified @100%)	$980,000
Information officer (1 unclassified @90% time)	$140,000
Information GIS manager (1 classified @50% time)	$129,000
student worker (1 @25% time)	$13,000
Contracts: Native plant community/botanical survey and monitoring contracts	$150,000
Service-level agreements for development of information system products	$100,000
DNR used a rate of 6.5% to calculate costs for direct support services, which are DNR's direct and necessary business services required to support this proposal.	$169,000
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.	$15,000
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).	$135,000
TOTAL ENVIRONMENT & NATURAL RESOURCES TRUST FUND $ REQUEST	$2,600,000

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)	$550,000	*Pending*
Other State $ Being Applied to Project During Project Period: General Fund $520,000; Heritage Enhancement $710,000, RIM Crit Habitat $450,000	$1,680,000	*Pending*
Recent Funding History of overall MCBS project: 1) ENTRF 2011 = $2,250,000; **FY2010 and FY11:** General Fund = $ 685,000; Heritage Enhancement = $1,160,000; State Wildlife Grant = $550,000.	$4,645,000	



05/03/2012

Survey completed 1987-2013

Survey in progress 2013

LCCMR Proposal 2012-2013 Minnesota Biological Survey

Project Manager: Carmen Converse

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

The project manager has coordinated the Minnesota Biological Survey 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 MBS results. Past work experience includes botanical and ecological field surveys, vegetation and plant monitoring and research. In addition, she has experience in the private wholesale and retail nursery trade and in prairie restoration.

The Minnesota Department of Natural Resources' overall mission is to work with citizens to conserve and manage the state's natural resources, to provide outdoor recreation opportunities, and to provide for commercial uses of natural resources in a way that creates a sustainable quality of life.