

**Environment and Natural Resources Trust Fund  
2017 Request for Proposals (RFP)**

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**Project Title:**

Minnesota Biological Survey

**ENRTF ID: 006-A**

**Category:** A. Foundational Natural Resource Data and Information

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**Total Project Budget:** \$ 2,955,861

**Proposed Project Time Period for the Funding Requested:** 2 years, July 2017 – June 2019

**Summary:**

MBS proposes baseline biological field surveys in three northern counties; targeted field surveys of sensitive plant species, pollinators, and plant communities; digital maps; book drafts; technical guidance; and data management.

**Name:** Bruce Carlson

**Sponsoring Organization:** MN DNR

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**Web Address** http://www.dnr.state.mn.us/mbs/index.html

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**Location**

**Region:** Statewide

**County Name:** Aitkin, Becker, Carlton, Carver, Cass, Chippewa, Chisago, Clay, Crow Wing, Dakota, Dodge, Fillmore, Houston, Itasca, Kittson, Koochiching, Lac qui Parle, Lake of the Woods, Mahnommen, Marshall, Meeker, Mille Lacs, Mower, Nicollet, Norman, Pennington, Polk,

**City / Township:**

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**Alternate Text for Visual:**

A map of Minnesota counties underlying general locations of baseline and targeted field surveys that are proposed in Activities 1 and 2.

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



**PROJECT TITLE:** Minnesota Biological Survey

**I. PROJECT STATEMENT**

The Minnesota Biological Survey (MBS) proposes to 1) continue toward statewide completion of baseline surveys started in 1987; 2) provide targeted field surveys for sensitive species, pollinators, and high-quality native plant communities; 3) process, store and deliver field survey data; and 4) provide new biological reports, book drafts, technical guidance, and outreach.

This proposal will bring to completion baseline field surveys in all of Lake of the Woods County, at least 90% of St. Louis County, and at least 25% of Koochiching County. Targeted field surveys (Activity 2) are also proposed in select native prairies, wetlands, and forests. This work will deliver new data and products (Activities 3 and 4) that are foundational to biodiversity conservation and management in Minnesota. Recent examples of delivery and interpretation of data by MBS include identification, restoration and management of Scientific and Natural Areas; updates and revisions to Minnesota’s list of endangered, threatened and special concern species; development of pollinator best-management practices; site selection and seed mix development for cover crop, buffer, and clean water initiatives; and technical support tools for stream and watershed management. MBS has particular ENRTF-invested expertise and capacity to efficiently and effectively deliver the stated outcomes.

**II. PROJECT ACTIVITIES AND OUTCOMES**

**Activity 1: Statewide Baseline Biological Survey; 85 of 87 counties complete.** Budget: \$883,368  
 Conduct baseline field surveys in Lake of the Woods, Koochiching and St. Louis counties on the distribution and ecology of native plants and animals, native plant communities, and the most intact landscapes.

<b>Outcome</b>	<b>Completion Date</b>
1. Baseline field survey Lake of the Woods County – 100% complete.	Sept. 2018
2. Baseline field survey St. Louis County – >90% complete.	June 2019
3. Baseline field survey Koochiching County – >25% complete.	June 2019
4. Baseline field survey for aquatic (lake) plants – ~125 lakes in 8 counties.	Ongoing
5. Ground truthing and verification for native plant community mapping.	Ongoing

**Activity 2: Targeted Field Surveys** Budget: \$641,451  
 Collect and deliver field survey data and provide analysis on targeted high-quality native plant communities, sensitive species, and pollinators. This work delivers new data and analysis that either 1) add value to existing ENRTF investments in data collection and analysis or 2) address foundational needs in Minnesota science and collaborative plans and projects.

<b>Outcome</b>	<b>Completion Date</b>
1. Targeted, plant and vegetation field surveys in high-quality prairie wetland complexes in Lac qui Parle, Big Stone, Swift, and Chippewa counties.	June 30, 2019
2. Vegetation and botanical field surveys in previously undocumented native prairies. ~250 sites in 11 counties. A subset of sites selected for pollinator field surveys.	June 30, 2019
3. Sensitive prairie orchid field surveys and volunteer coordination. ~90 sites in 24 counties. >500 volunteer hours.	Ongoing
4. Targeted field surveys of sensitive forest plants, pollinators, and vegetation in high-	June 30, 2019



**Environment and Natural Resources Trust Fund (ENRTF)**

**2017 Main Proposal**

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quality native forest plant communities. <u>&gt;</u> 15 sites in ~10 counties.	
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**Activity 3: Data, Specimens, and Maps**

Budget: \$1,088,015

Process and enter data from Activities 1 and 2 into existing DNR databases. Prepare and submit plant and animal specimens to repositories in Minnesota (e.g., Bell Museum of Natural History). Create digital maps (GIS polygon data) for high-quality native plant communities and sites.

Outcome	Completion Date
1. Field data processed and entered into DNR’s information systems.	Ongoing
2. Plant and animal collections prepared and delivered to Minnesota repositories.	Ongoing
3. Digital maps (GIS polygon data) created for native plant communities and sites.	Ongoing

**Activity 4: Outreach and Technical Guidance**

Budget: \$343,027

Provide interpretation of results of Activities 1, 2 and 3 through products and technical assistance to guide conservation and management of native plant communities, rare species, and ecological systems (e.g., watersheds, sites of biodiversity significance).

Outcome	Completion Date
1. First draft of a new book on the mammals of Minnesota.	June 30, 2019
2. Final draft of new book on sedges and rushes of Minnesota.	June 30, 2018
3. Biological reports, technical guidance, presentations, and trainings delivered.	Ongoing
4. DNR’s website and social media updated with current survey results.	Ongoing

**III. PROJECT STRATEGY**

**A. Project Team/Partners**

MBS is part of the DNR Division of Ecological & Water Resources with close interaction and collaboration with the Scientific & Natural Area Program and the Nongame Wildlife Program. The federally-funded State Wildlife Grants Program is the primary funding complement to this proposal for animal survey activities. MBS is in regular coordination and collaboration with partners including other DNR Divisions, the Bell Museum of Natural History, Minnesota Landscape Arboretum, Natural Resources Research Institute, the Science Museum of Minnesota, the US Forest Service, the US Fish & Wildlife Service, The Nature Conservancy, and the Minnesota Zoo.

**B. Project Impact and Long-Term Strategy**

MBS data, analysis, products, and technical guidance have proven critical and foundational to countless societal and scientific applications. MBS is funded by ENRTF, State General Fund, State Fish & Game Fund, Heritage Enhancement, and Federal State Wildlife Action Plan dollars. DNR is actively developing new strategies to sustainably fund MBS. MBS is developing a strategic plan to guide work and funding priorities.

MBS will continue to offer LCCMR proposals that address relevant needs and add value to existing ENRTF investments, including completion of the statewide baseline biological survey; species and ecosystem monitoring; product development (e.g., books, maps); targeted field surveys to inform conservation and management decisions ; and field surveys for under-surveyed taxa and systems.

**C. Timeline Requirements**

MBS will complete the statewide baseline survey (Activity 1) in 2021. Targeted field survey, data and specimen work, products, and outreach as identified in this proposal are representative of ongoing needs.

## 2017 Detailed Project Budget

**Project Title:** Minnesota Biological Survey

### IV. TOTAL ENRTF REQUEST BUDGET 2 years

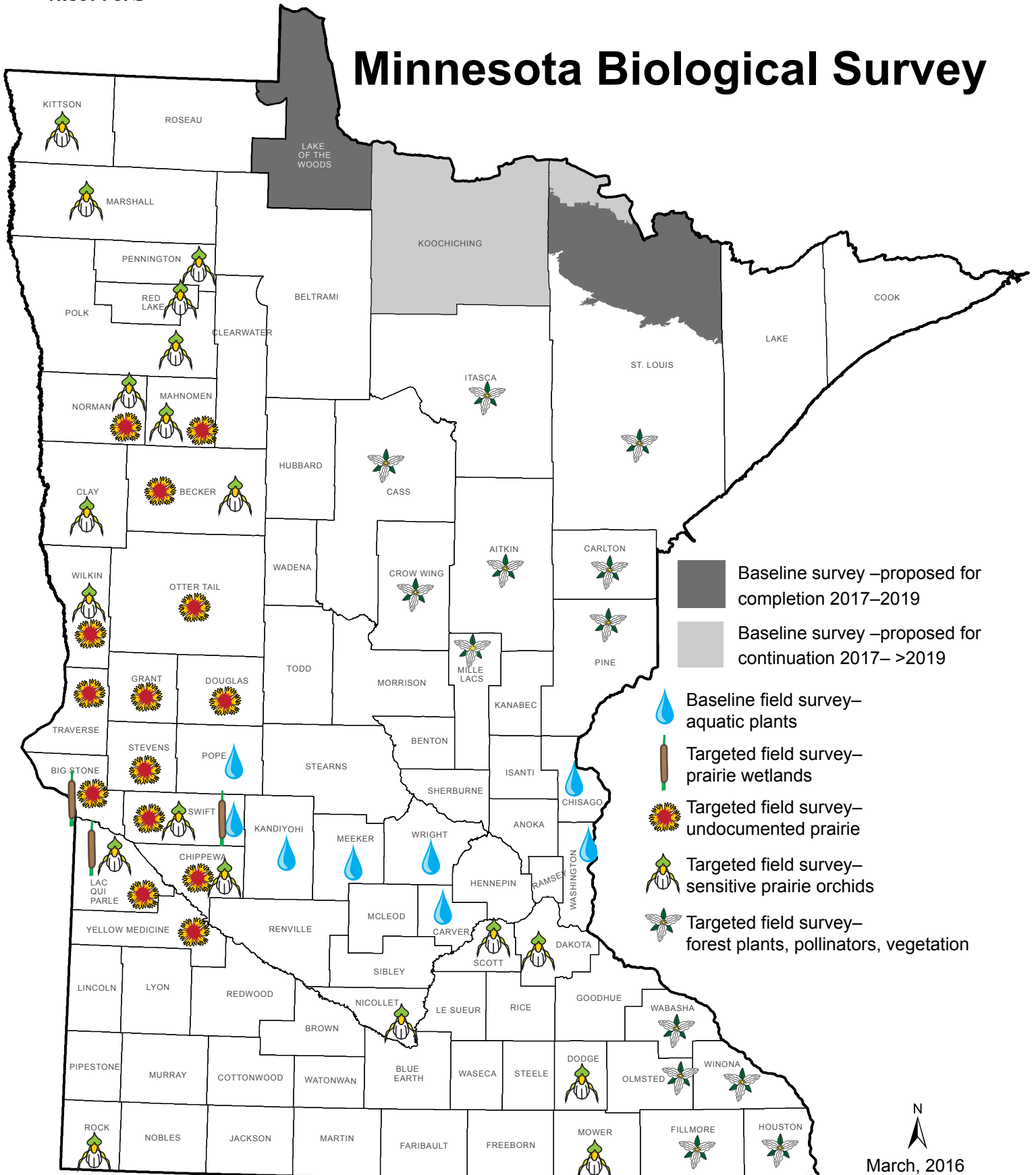
<b>BUDGET ITEM</b>	<b>AMOUNT</b>
<b>Personnel:</b>	
Botanists (2 classified 1.75 FTE for two years) position# 1 82% salary, 18% benefits; position #2 80% salary 20% benefits)	\$ 313,460
Aquatic Botanist (1 unclassified 0.5 FTE for two years) position# 1 82% salary, 18% benefits	\$ 81,600
Plant Ecologists (7 unclassified 7.0 FTE for two years) position #1 72% salary, 28% benefits; positions #2 68% salary, 32% benefits; position #3 65% salary, 35% benefits; position # 4 78% salary, 22% benefits; position #5 70% salary, 30% benefits; positions #6 & #7 80% salary, 20% benefits.	\$ 1,165,090
Research Ecologists (2 classified 1.0 FTE for two years) position #1 81% salary, 19% benefits; position #2 73% salary 27% benefits.	\$ 216,200
Entomologists - Pollinator Specialists (2.0 FTE for two years) positions TBD.	\$ 315,950
Data Manager (1 classified 0.2 FTE for two years) 68% salary, 32% benefits.	\$ 36,900
Data Assistant (1 unclassified 1.0 FTE for two years) position TBD.	\$ 92,300
Information officer (1 unclassified 1.0 FTE for two years) 67% salary 33% benefits.	\$ 184,500
<b>Professional/Technical/Service Contracts:</b> MN.IT for GIS services.	\$ 120,000
<b>Professional/Technical/Service Contracts:</b> Biologists TBD, MN.IT service level agreements TBD.	\$ 90,000
<b>Equipment/Tools/Supplies:</b> Equipment is used from previous survey periods when at all possible (e.g. GPS units, cameras, canoes, communication equipment, etc.). Items such as batteries, collecting materials, aerial photography need to be replaced or updated.	\$ 40,000
<b>Travel:</b> Travel expenses for MN travel only. This is related to field survey in Activities 1 & 2. Travel expenses are subject to State of MN labor agreements and DNR policy. Most travel expenses are related to the 4-6 months of time when staff are conducting field work that requires food, transportation in seasonal DNR fleet vehicles, and lodging.	\$ 120,000
<b>Direct and Necessary:</b> DNR's direct and necessary costs pay for activities that are directly related to and necessary for accomplishing appropriated projects. HR Support (~\$42,512), Safety Support (~\$11,907), Financial Support (~\$37,184), Communication Support (~\$1,316), IT Support (~\$85,833), Planning Support (~\$912), and Procurement Support (~\$197).	\$ 179,861
<b>TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND \$ REQUEST =</b>	<b>\$ 2,955,861</b>

### V. OTHER FUNDS

<b>SOURCE OF FUNDS</b>	<b>AMOUNT</b>	<b>Status</b>
<b>Other Non-State \$ To Be Applied To Project During Project Period:</b>		
Federal - State Wildlife Grants	~\$750,000	Pending
Federal - Endangered & Threatened Species	~\$50,000	Pending
<b>Other State \$ To Be Applied To Project During Project Period:</b>		
General Fund	~\$750,000	Pending
Heritage Enhancement	~\$1,200,000	Pending
Game & Fish Fund	~\$160,000	Pending
Clean Water Legacy Fund	~\$90,000	Pending
<b>In-kind Services To Be Applied To Project During Project Period:</b>	N/A	N/A
<b>Funding History:</b>		
ML2015 - MN Biological Survey (2 years; to be spent by June 30, 2017)	\$ 2,450,000	Secured
ML2013 - MN County Biological Survey	\$ 2,650,000	Spent
ML2011 - MN County Biological Survey	\$ 2,250,000	Spent
ML2009 - MN County Biological Survey	\$ 2,100,000	Spent
ML2007 - MN County Biological Survey	\$ 1,500,000	Spent
ML2005 - MN County Biological Survey	\$ 1,000,000	Spent
ML2003 - MN County Biological Survey	\$ 900,000	Spent
ML2001 - MN County Biological Survey	\$ 800,000	Spent
ML1999 - MN County Biological Survey	\$ 1,600,000	Spent
ML1997 - MN County Biological Survey	\$ 1,200,000	Spent
ML1995 - MN County Biological Survey	\$ 900,000	Spent
ML1993 - MN County Biological Survey	\$ 900,000	Spent
ML1991 - MN County Biological Survey	\$ 1,000,000	Spent
<b>Remaining \$ From Current ENRTF Appropriation: Balance as of 3/7/2016</b>		
ML2015 - MN Biological Survey (2 years)	\$1,620,399	To be spent by 6/2017



# Minnesota Biological Survey



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March, 2016

## Project Manager Qualifications

Project Manager: Bruce Carlson, Program Supervisor, MN Biological Survey  
Affiliation: Department of Natural Resources, Minnesota Biological Survey  
Mailing Address: 500 Lafayette Road, Box 25, St. Paul, MN 55155-4025  
Telephone: 651-259-5083  
Email: bruce.carlson@state.mn.us

Bruce Carlson has been Supervisor of the MN Biological Survey (MBS) since 2015. He manages MBS budgets, priorities, and staff to survey, monitor, analyze, and disseminate information on Minnesota native biodiversity and ecological systems. Background and professional experience includes extensive work in native plant community and native species field survey and mapping, ecological land management, project management, and collaborative natural resource and conservation planning.

### Work Experience

2015 – present	Program Supervisor, MBS, DNR Division of Ecological & Water Resources
2007 – 2015	NE Regional Plant Ecologist, DNR Division of EWR
1997 – 2007	Plant Ecologist/Botanist, MBS, DNR Division of EWR
1996 – 1997	Project Specialist, Wetlands Program, MN office, National Audubon Society
1995 – 1996	Field Research Assistant, University of MN, Dept. of Horticulture Science
1992 – 1995	Herbarium Curatorial Specialist, Bell Museum of Natural History, U of MN

### Education

1995 Bachelor of Science, Biology, University of Minnesota

### Project Manager Responsibilities

Bruce Carlson will provide overall project direction, budget management, staff supervision, work plans, and activity updates. In his capacity as MBS Program Supervisor and previous work experience, Bruce has demonstrated his ability to manage budgets, direct staff, coordinate with partners, and efficiently and effectively deliver project outcomes.

### Organization Description

MBS systematically collects, interprets, and delivers baseline data on the distribution and ecology of native animals, plants, plant communities, and native landscapes. Delivery of these data helps guide management, conservation, and monitoring of critical habitat and ecological functions.