



# Environment and Natural Resources Trust Fund (ENRTF)

## M.L. 2019 ENRTF Work Plan (Main Document)

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**Today's Date:** 5/29/2019

**Date of Next Status Update Report:** March 1, 2020

**Date of Work Plan Approval:**

**Project Completion Date:** June 30, 2022

**Does this submission include an amendment request?** \_\_\_

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**PROJECT TITLE:** Minnesota Biological Survey - Continuation

**Project Manager:** Bruce Carlson

**Organization:** MN DNR

**College/Department/Division:** Division of Ecological & Water Resources, MN Biological Survey Unit

**Mailing Address:** 500 Lafayette Road, Box 25

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**Email Address:** bruce.carlson@state.mn.us

**Web Address:** <https://www.dnr.state.mn.us/mbs/index.html>

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**Location:** Aitkin, Anoka, Becker, Beltrami, Big Stone, Carlton, Chippewa, Chisago, Clay, Cook, Crow Wing, Fillmore, Houston, Isanti, Itasca, Kittson, Koochiching, Lake, Lake of the Woods, Lincoln, Mahnomon, Marshall, Meeker, Mille Lacs, Norman, Olmsted, Otter Tail, Pennington, Pine, Polk, Pope, Ramsey, Redwood, Roseau, St. Louis, Stearns, Stevens, Swift, Todd, Wabasha, Wadena, Washington, Winona, and Wright counties.

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**Total Project Budget:** \$1,500,000

**Amount Spent:** \$0

**Balance:** \$1,500,000

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**Legal Citation:** M.L. 2019, Chp. xx, Sec. xx, Subd. xx

**Appropriation Language:**

## I. PROJECT STATEMENT:

The Minnesota Biological Survey (MBS) proposes to collect and deliver foundational natural resource data and information on native and rare species, pollinators, and native plant communities. This work will deliver new data and products that help guide and prioritize biodiversity and water conservation and management throughout Minnesota.

This proposal will 1) bring to completion field surveys in all of Lake of the Woods County, St. Louis County, and Koochiching County thereby completing field work for the statewide, baseline county-by-county survey started in 1987 for native terrestrial plants, plant communities, birds, amphibians, reptiles, and small mammals; 2) continue towards statewide completion of aquatic (lake) plant surveys; 3) update and enhance 1980s–90s field surveys and monitoring data in select native prairies, wetlands, and forests that are important to current collaborative planning and management initiatives or of imminent conservation attention; and 4) provide new biological reports, a new book, technical guidance, and outreach resulting from 1-3 above.

Recent examples of delivery and interpretation of MBS data 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; delivery of biological specimens for the UMN Bell Museum’s Minnesota Biodiversity Atlas (ENRTF ML18 004-A); 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. OVERALL PROJECT STATUS UPDATES:

**First Update March 1, 2020**

**Second Update September 1, 2021**

**Third Update March 1, 2021**

**Fourth Update September 1, 2022**

**Fifth Update March 1, 2022**

**Final Report between project end (June 30) and August 15, 2022**

## III. PROJECT ACTIVITIES AND OUTCOMES:

### **ACTIVITY 1: County Biological Surveys – complete Lake of the Woods, St. Louis, and Koochiching Counties**

**Description:** MBS will bring to completion, in the three remaining counties, statewide county-by-county baseline field surveys begun in 1987 on the distribution and ecology of native terrestrial plants, plant communities, birds, amphibians, reptiles, and small mammals.

**ACTIVITY 1 ENRTF BUDGET: \$791,538**

<b>Outcome</b>	<b>Completion Date</b>
1. Baseline field survey completed for Northwest Angle, Lake of the Woods County	June 2021
2. Baseline field survey completed for St. Louis County	June 2021

3. Baseline field survey completed for Koochiching County	June 2021
4. Field data entered into DNR databases; specimens delivered to MN repositories.	Ongoing

**ACTIVITY 2: Enhance Surveys and Monitoring in High Priority Sites and Ecological Systems**

**Description:** Collect and deliver field survey data and provide analysis on targeted lakes, high-quality native plant communities, sensitive species, and pollinators that either 1) expand upon existing or previous ENRTF investments in data collection and analysis or 2) address foundational needs in Minnesota science and collaborative plans and projects.

**ACTIVITY 2 ENRTF BUDGET: \$318,462**

Outcome	Completion Date
1. Statewide lake surveys continued for native and rare aquatic plants. ~125 lakes in 8 counties.	June 2021
2. Field surveys completed of newly documented prairie vegetation and rare species in northwestern Minnesota. ~200 sites in 16 counties.	June 2021
3. 1980s–90s field surveys updated and enhanced for rare species, pollinators, or native vegetation in eastern Minnesota. >10 sites TBD from ~26 counties.	June 2021
4. Field data entered into DNR databases; specimens delivered to MN repositories.	Ongoing

**ACTIVITY 3: Deliver survey results**

**Description:** 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).

**ACTIVITY 3 ENRTF BUDGET: \$390,000**

Outcome	Completion Date
1. Final draft delivered for publication of new book on ferns and fern allies of Minnesota.	June 2021
2. Digital maps (GIS polygon data) created for native plant communities and sites. Targeted field surveys to address mapping questions and quality control.	Ongoing
3. DNR’s website and social media updated with current survey results; biological reports, technical guidance, presentations, and trainings delivered.	Ongoing

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#### **IV. DISSEMINATION:**

**Description:** MBS data are stored primarily in the Division of Ecological and Water Resources information systems, which are increasingly linked to other databases in the MN DNR. In addition, MBS procedures, updates, recent maps, and links to related data are presented on the DNR website. Many GIS datasets are delivered to clients through the web. MBS regularly provides vegetation plot data from the relevé database to researchers at academic institutions, other agencies and organizations. Data on rare species are available through agreements with the requesting agency and the DNR. For data on locations or rare features, a data request form is available via the web: <http://www.dnr.state.mn.us/nhnrp/nhis.html>

MBS publishes and distributes survey results in a variety of formats for various audiences. Many products are available as enterprise datasets on the DNR website, including GIS shape files of native plant communities and MBS sites, native plant community field guides, and guides to sampling techniques such as vegetation plot data collection using the relevé method. MBS web pages are updated with new information and have links to associated resources. <http://www.dnr.state.mn.us/mbs/index.html>

The DNR and Legislative libraries and other local information repositories (such as libraries within counties) have access to published products, including books, maps, reports, field guides and digital media. MBS has published several books and field guides.

Staff routinely make presentations that describe MBS methodologies and results to a wide range of audiences including county boards, local planning groups, citizen advisory groups, other biologists, land managers, and students. MBS staff provide local planners with ecological interpretations describing important sites of biodiversity identified during the Survey to assist with management plans.

Physical collections are deposited at Minnesota repositories, primarily at the University of Minnesota's J.F. Bell Museum of Natural History and at the Science Museum of Minnesota, St. Paul. As part of a larger network of museums and herbaria, these cooperators are essential to the documentation and sharing of MBS results. MBS and museum staff meet periodically to address curatorial, data management, and interpretive needs.

MBS also delivers data through an international organization, NatureServe, and also shares data with cooperators at colleges and universities.

The Minnesota Environment and Natural Resources Trust Fund (ENRTF) will be acknowledged through use of the trust fund logo or attribution language on project print and electronic media, publications, signage, and other communications per the [ENRTF Acknowledgement Guidelines](#).

**First Update March 1, 2020**

**Second Update September 1, 2021**

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**Fourth Update September 1, 2022**

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#### **V. ADDITIONAL BUDGET INFORMATION:**

##### **A. Personnel and Capital Expenditures**

**Explanation of Capital Expenditures Greater Than \$5,000:** N/A

**Explanation of Use of Classified Staff:** Any classified staff position paid for by ENRTF will either: 1) be backfilled with a new position OR 2) the work done by this position will be delayed, eliminated, or completed by the start of the project. The activities of all or portions of the following four classified staff are directly related to this work program. A portion of the time of one entomologist (0.5 FTE for one year) is directed to pollinator field surveys and data management in Activity 2. Due to extensive entomological field and data analysis experience, this entomologist brings knowledge and perspectives that will result in high quality results.

**Total Number of Full-time Equivalents (FTE) Directly Funded with this ENRTF Appropriation:**

Enter Total Estimated Personnel Hours for entire duration of project: 28,912	Divide total personnel hours by 2,080 hours in 1 yr = TOTAL FTE: 13.9
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**Total Number of Full-time Equivalents (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation:**

Enter Total Estimated Contract Personnel Hours for entire duration of project: 1664	Divide total contract hours by 2,080 hours in 1 yr = TOTAL FTE: 0.8
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**VI. PROJECT PARTNERS:**

**A. Partners outside of project manager’s organization receiving ENRTF funding**

University of Minnesota Press, costs for publishing of Activity 3, Outcome 1: a new book on ferns and fern allies of Minnesota.

**B. Partners outside of project manager’s organization NOT receiving ENRTF funding**

Name	Title	Affiliation	Role
George Weiblen	Professor and Science Director	UMN Bell Museum	Biological specimen curation; MN Biodiversity Atlas
Ralph Holzenthal	Professor	UMN Dpt. Of Entomology	Biological specimen curation.
Phil Delphy	Endangered Species Coordinator.	US Fish & Wildlife Service	Listed species coordination and collaboration.

**VII. LONG-TERM- IMPLEMENTATION AND FUNDING:**

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, State Heritage Enhancement Fund, and Federal State Wildlife Action Plan dollars. DNR is developing new strategies to sustainably fund MBS. MBS has developed a 10-year strategic plan to guide work and funding priorities through 2018. MBS will continue to offer LCCMR proposals that address relevant needs and add value to existing ENRTF investments, including completion of statewide baseline biological surveys; species and ecosystem monitoring; product development (e.g., books, maps); targeted field surveys to inform conservation and management planning and decisions; and field surveys for under-surveyed taxa and ecological systems.

**VIII. REPORTING REQUIREMENTS:**

- Project status update reports will be submitted March 1 and September 1 each year of the project
- A final report and associated products will be submitted between June 30 and August 31, 2022

**Attachment A:**  
**Environment and Natural Resources Trust Fund**  
**M.L. 2019 Budget Spreadsheet**



**Legal Citation:**  
**Project Manager:** Bruce Carlson  
**Project Title:** Minnesota Biological Survey  
**Organization:** Minnesota Department of Natural Resources  
**Project Budget:** \$1,500,000  
**Project Length and Completion Date:** 3 years, June 30, 2022  
**Today's Date:** 8/27/2018

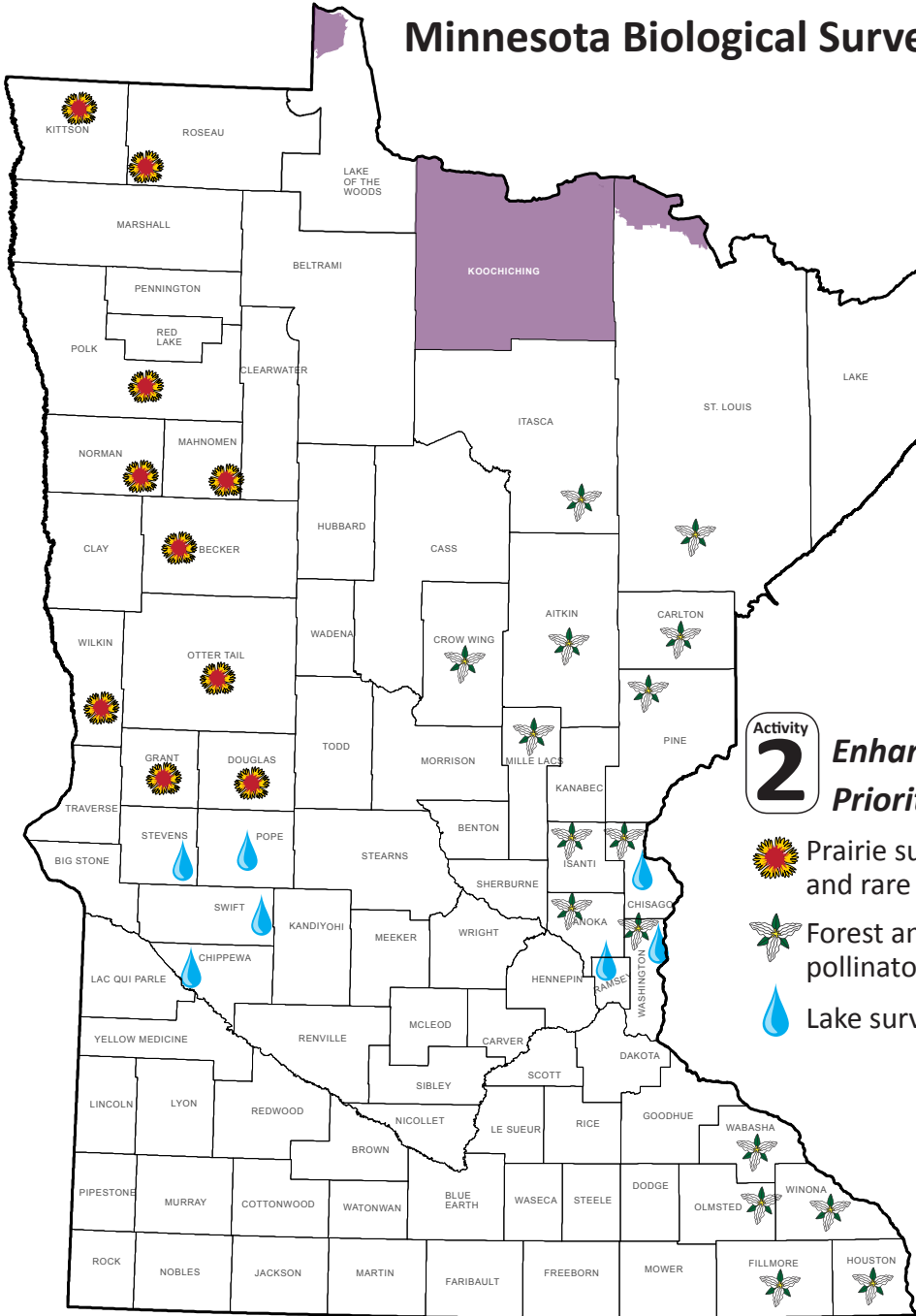
ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Budget	Amount Spent	Balance
<b>BUDGET ITEM</b>			
<b>Personnel (Wages and Benefits)</b>	\$ 1,254,276	\$ -	\$ 1,254,276
Botanist \$83,691 (82% salary, 18% benefits) 0.5 FTE for two years			
Plant Ecologists \$918,733 (position #1 72% salary, 28% benefits; positions #2 and #3 66% salary, 34% benefits; position # 4 76% salary, 24% benefits; positions #5 71% salary, 29% benefits) 5.0 FTEs for two years			
Entomologist/Pollination Specialist \$35,387 (71% salary, 29% benefits) 0.25 FTE for two years			
Data/Specimen Assistant \$38,189 (63% salary, 37% benefits) 0.2 FTE for two years			
Project/Data Coordinator \$80,026 (59% salary, 41% benefits) 1.0 FTE for one year			
Information officer \$98,251 (64% salary 36% benefits) 0.5 FTE for two years.			
<b>Professional/Technical/Service Contracts</b>			
MN.IT for embedded GIS services (equivalent to 0.4FTE for each of 2 years)	\$ 60,000	\$ -	\$ 60,000
Joint Powers Agreement with University of Minnesota Press for book publication	\$ 15,000	\$ -	\$ 15,000
<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.) but replaced, repaired, or updated as necessary. Items such as batteries, specimen collecting materials, aerial photography need to be replaced or updated each field season.	\$ 5,000	\$ -	\$ 5,000
<b>Travel expenses in Minnesota</b>			
Travel expenses for MN travel related to field survey in Activities 1 & 2. Travel expenses are subject to State of MN labor agreements and DNR policy. Food (\$15,000), transportation in seasonal DNR fleet vehicles (\$35,000), and lodging (\$25,000).	\$ 75,000	\$ -	\$ 75,000
<b>Other</b>			
Direct and Necessary: DNR's direct and necessary costs pay for activities that are directly related to and necessary for accomplishing appropriated projects. HR Support (~\$20,537), Safety Support (~\$4,254), Financial Support (~\$17,110), Communication Support (~\$1,251), IT Support (~\$46,513), and Planning Support (~\$1,059).	\$ 90,724	\$ -	\$ 90,724
<b>COLUMN TOTAL</b>	\$ 1,500,000	\$ -	\$ 1,500,000

OTHER FUNDS CONTRIBUTED TO THE PROJECT	Status (secured or pending)	Budget	Spent	Balance
<b>Non-State:</b>				
Federal - State Wildlife Grants FY20 and FY21	Pending	\$ 500,000	\$ -	\$ 500,000
<b>State:</b>				
General Fund FY20 and FY21	Pending	\$ 500,000	\$ -	\$ 500,000
Heritage Enhancement FY20 and FY21	Pending	\$ 600,000	\$ -	\$ 600,000
In kind: N/A		\$ -	\$ -	\$ -

PAST AND CURRENT ENRTF APPROPRIATIONS	Amount legally obligated but not yet spent	Budget	Spent	Balance
<b>Current appropriation:</b>				
ML2017 - MN Biological Survey	\$ 1,728,878	\$ 2,900,000	\$ 1,171,122	\$ 1,728,878
<b>Past appropriations:</b>				
ML2015 - MN Biological Survey	\$ -	\$ 2,450,000	\$ 2,450,000	\$ -
ML2013 - MN County Biological Survey	\$ -	\$ 2,650,000	\$ 2,650,000	\$ -
ML2011 - MN County Biological Survey	\$ -	\$ 2,250,000	\$ 2,250,000	\$ -
ML2009 - MN County Biological Survey	\$ -	\$ 2,100,000	\$ 2,100,000	\$ -
ML2007 - MN County Biological Survey	\$ -	\$ 1,500,000	\$ 1,500,000	\$ -
ML2005 - MN County Biological Survey	\$ -	\$ 1,000,000	\$ 1,000,000	\$ -
ML2003 - MN County Biological Survey	\$ -	\$ 900,000	\$ 900,000	\$ -
ML2001 - MN County Biological Survey	\$ -	\$ 800,000	\$ 800,000	\$ -
ML1999 - MN County Biological Survey	\$ -	\$ 1,600,000	\$ 1,600,000	\$ -
ML1997 - MN County Biological Survey	\$ -	\$ 1,200,000	\$ 1,200,000	\$ -
ML1995 - MN County Biological Survey	\$ -	\$ 900,000	\$ 900,000	\$ -
ML1993 - MN County Biological Survey	\$ -	\$ 900,000	\$ 900,000	\$ -
ML1991 - MN County Biological Survey	\$ -	\$ 1,000,000	\$ 1,000,000	\$ -






# Minnesota Biological Survey-Continuation



**Activity 1** *County Biological Surveys*

Baseline survey completed by 2021

**Activity 2** *Enhance Surveys and Monitoring in High-Priority Sites and Ecological Systems*

-  Prairie surveys of undocumented native vegetation and rare species
-  Forest and wetland surveys for rare species, pollinators, vegetation
-  Lake surveys for native and rare aquatic plants



**Activity 3** *Interpret and Deliver Survey Results*

