



Environment and Natural Resources Trust Fund (ENRTF) M.L. 2015 Work Plan

Date of Report: May 28, 2015

Date of Next Status Update Report: January 31, 2016

Date of Work Plan Approval:

Project Completion Date: June 30, 2017

Does this submission include an amendment request? No

PROJECT TITLE: Minnesota Biological Survey

Project Manager: Bruce Carlson

Organization: MN DNR

Mailing Address: 500 Lafayette Road

City/State/Zip Code: St Paul, MN

Telephone Number: (651) 259-5083

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

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

Location: Baseline surveys: Beltrami, St. Louis, Koochiching and Lake of the Woods counties. These include portions of the Border Lakes (212La), Littlefork Vermillion Uplands (212Ma), Agassiz Lowlands (212Mb), and Chippewa Plains (212Na) ecological subsections.

Monitoring: Selected sites statewide

Total ENRTF Project Budget:

ENRTF Appropriation: \$2,450,000

Amount Spent: \$0

Balance: 2,450,000

Legal Citation: M.L. 2015, Chp. 76, Sec. 2, Subd. 03c

Appropriation Language:

\$2,450,000 the first year is from the trust fund to the commissioner of natural resources for continuation of the Minnesota biological survey to provide a foundation for conserving biological diversity by systematically collecting, interpreting, monitoring, and delivering data on plant and animal distribution and ecology, native plant communities, and functional landscapes. Expenses are limited to those specified in the required work plan and approved by the Legislative-Citizen Commission on Minnesota Resources.

I. PROJECT TITLE: Minnesota Biological Survey

II. PROJECT STATEMENT: STATEMENT: The need to protect and manage functional ecological systems, including ecological processes and components is accelerating 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 to maintain or restore declining systems. The Minnesota Biological Survey (MBS) systematically collects, interprets and delivers data on plant and animal distribution and the ecology of native plant communities and functional landscapes. These data help prioritize actions to conserve, manage and restore Minnesota's ecological systems and critical plant and animal habitats. MBS also engages in monitoring that includes assessment of outcomes of selected conservation and management activities.

MBS data inform implementation of plans for landscape and watershed conservation and management. Data are used to prioritize sites selected for parks, natural areas, conservation easements and management of forest, peatland, prairie and riparian areas. Baseline surveys will continue in northern Minnesota (see attached map). Monitoring projects will continue in collaboration with others in response to needs identified in various plans and assessments such as the Minnesota Prairie Conservation Plan, the State Wildlife Action Plan, and forest plans and certification. MBS sites identified as having high levels of biodiversity significance will be used for the establishment of long-term DNR vegetation monitoring sites. Improved access and delivery of MBS data continues to be a priority with delivery through web-based products and publications. MBS species and vegetation databases are part of national information system networks. Museums providing repositories for MBS plant and animal collections are important partners.

III. OVERALL PROJECT STATUS UPDATES:

Project Status as of January 31, 2016

Project Status as of October 31, 2016

Project Status as of March 31, 2017

Overall Project Outcomes and Results: A final report will be submitted between June 30 and August 1 2017

IV. PROJECT ACTIVITIES AND OUTCOMES:

ACTIVITY 1: Field Surveys

Description: 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 biological diversity and ecological systems through ecological management, planning, research, and critical habitat acquisition.

Data review and Survey site identification (see Map): Plant ecologists, botanists and zoologists review existing relevant natural resource data and record information using Geographic Information Systems and other DNR information systems to consolidate and organize data. Examples of these data include forest inventories, wetlands inventories, aquatic plant surveys, wildlife habitat inventories, park surveys, soil surveys, land-use data, historical public land surveys, academic research, and records from museum collections. Using these data, supplemented by the interpretation of aerial photography or other imagery, staff identify MBS sites and species habitats for targeted surveys.

Coordination: Staff notify and coordinate activities when possible with other divisions within the DNR, universities, counties, municipalities, surveys and monitoring efforts of tribal governments, watershed districts, federal natural resource agencies, conservation organizations, corporations, and individual landowners. This is critical to the success of data consolidation and field surveys.

Field Surveys: Ground surveys to assess MBS site and native plant community quality and condition include the collection of vegetation samples in coordination with other sampling (soils, water chemistry, etc.) when possible. Additional specialized techniques are used during field seasons to survey selected rare species or groups of species (e.g., plants, birds, mammals, reptiles, amphibians, insects, fishes).

Summary Budget Information for Activity 1:

ENRTF Budget: \$ 865,053
Amount Spent: \$ 0
Balance: \$ 865,053

Outcome (see also attached map)	Completion Dates
1. Field survey Border Lakes subsection—St. Louis and Koochiching counties	Ongoing
2. Field survey Littlefork-Vermilion Uplands subsection – St. Louis County	June 30, 2017
3. Field survey Agassiz Lowlands subsection—Beltrami County	June 30, 2018
4. Field survey Agassiz Lowlands subsection—Lake of the Woods and Koochiching counties	Ongoing
5. Field survey Littlefork-Vermilion Uplands subsection – Koochiching County	Ongoing

Project Status as of January 31, 2016

Project Status as of October 31, 2016

Project Status as of March 31, 2017

Final Report Summary: A final report will be submitted between June 30 and August 1 2017

Activity 2: Monitoring

MBS will conduct selected monitoring activities collaboratively in response to needs identified in various plans and assessments. Monitoring needs have been highlighted in a number of recent initiatives such as the Minnesota Prairie Conservation Plan, the revision of the State’s Wildlife Action Plan, and the State’s Forest Certification related to areas of high conservation value. For example, in the prairie region, vegetation data collection is underway and proposed to continue to assess the effectiveness of grazing management at three grassland Wildlife Management Areas.

As related to the State’s dual forest certification, botanists and plant ecologists will continue to collect detailed data on populations of rare plants that characterize several sites of high conservation value in southeastern Minnesota. For example, in 2014, a population of green violet (*Hybanthus concolor*) a state endangered plant, was mapped at a forest of high conservation value and staff engaged in a discussion with the managers of the DNR divisions of Forestry and Fish and Wildlife to ensure that trout stream restoration and forest management practices were accomplished to sustain this population. This work will continue and will be expanded to northern forest sites with similar methods and objectives.

Due to technical expertise in skills such as plant identification, knowledge of rare species and native plant communities, MBS staff are qualified to conduct this monitoring and work with information management staff to provide for long-term public storage of data. These activities will continue at a reduced level of effort from past biennia

Summary Budget Information for Activity 2:

ENRTF Budget: \$ 355,317
Amount Spent: \$ 0
Balance: \$ 355,317

Outcome	Completion Dates
1. Sample at least 5 sites to assess outcomes of prairie management activities	June 30, 2017

2. Sample at least 5 sites to assess outcomes of forest management in high conservation value sites;	June 30, 2017
3. Sample at least 5 sites to establish monitoring baseline data for species or native plant communities in northern forest sites of biodiversity significance,	June 30, 2017

Project Status as of January 31, 2016

Project Status as of October 31, 2016

Project Status as of March 31, 2017

Final Report Summary: A final report will be submitted between June 30 and August 1 2017

Activity 3: Information System Expansion

Description: MBS data will be stored in information systems and specimens will be deposited in museums. 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.

Procedure: Data collected by MBS are entered into manual and computerized files in the DNR’s information systems. Key databases include those tracking locations of plants and animals, rare features, relevés (vegetation plot samples), aquatic plant lists/lakes, MBS sites, native plant community polygons (GIS), and animal aggregations. Locations of native plant communities and MBS sites are mapped in a recently developed DNR enterprise database using ArcGIS. Shape files of native plant communities and MBS sites are available on the Minnesota Geospatial Commons website (replaced DNR’s Data Deli).

Targeted species locations are entered into an Observation Database that is connected to Biotics, an information system developed by NatureServe, an international organization with a major focus on the storage, distribution, and interpretation of biodiversity data. Photographic vouchers, imagery, and other digital media are stored at the DNR, St. Paul. Field data sheets or data collected on field data recorders are filed electronically (scanned) and/or manually.

Data generated by monitoring activities are entered into the databases listed above or in related databases that provide for analysis. Monitoring data collected for animals might include timed searches, point counts, and plot counts, which are also stored in the Observation Database.

Information System Development: The collection and management of data utilizes GIS, global positioning systems, web-based tools and products, and field data recorders. MBS participates in the DNR’s efforts to maintain data standards and quality of data, to integrate databases, and to improve information delivery on the web. Data delivery using the web requires data standards, data security, metadata, and other documentation.

MBS also coordinates with other state and national information system developments. MBS will continue to collaborate with museums on developments related to collections management and information delivery. Specific attention related to the rapidly changing revisions of floral and faunal taxon will continue. Long-term monitoring of species and habitats is especially influenced by the need to “crosswalk” new and old names of species, which is critical to reliable analysis, interpretation and communication of results.

Preparation of Collections: All plant and animal specimens are identified and collections are prepared for permanent storage and deposited in appropriate repositories at the University of Minnesota’s J.F. Bell Museum of Natural History.

Summary Budget Information for Activity 3:

ENRTF Budget: \$ 747,542
Amount Spent: \$ 0
Balance: \$ 747,542

Outcome	Completion Dates
1. Survey data entered and managed in DNR's information systems. Includes GIS mapping and entry of species distribution data (Primary activity October through April)	Ongoing
2. Preparation & delivery of plant & animal collections to museums. Includes identification or validation of collections & preparation of labels and specimens using museum quality standards. (Primary staff activity October through April)	Ongoing
3. Monitoring data entered for future analysis (DNR Info Systems) (Primary staff activity October through April)	Ongoing

Project Status as of January 31, 2016

Project Status as of October 31, 2016

Project Status as of March 31, 2017

Final Report Summary: A final report will be submitted between June 30 and August 1 2017

Activity 4: Guidance for Conservation and Management

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.

MBS web pages are updated with new information and have links to associated resources.

www.dnr.state.mn.us/mbs/index.html

This activity includes website maintenance; book publications; participation in conservation and management planning; delivery of information to agencies, landowners and tribal organizations; and monitoring of management activities.

Book Publications: MBS has published or been a collaborator in the publication of several books including: *Minnesota's St. Croix River Valley and Anoka Sandplain*, *Native Orchids of Minnesota*, *Trees and Shrubs of Minnesota*, *Amphibians and Reptiles in Minnesota*, and series of field guides to the native plant communities of the state. A current project is a guide book to the Aspen Parkland and Red River Valley portion of Minnesota. This book is in part a response to local interest from residents of northwestern Minnesota who suggested this publication several years ago to fill a void in coverage of the natural history of the area and the lack of a substantive information to guide, interpret and increase appreciation of this landscape by residents and visitors of the region. The MBS biologists who conducted field surveys in the region are the lead authors. Their specialties are in plant ecology and rare species biology, but for this book they also have researched the history of the land, geological settings and suitable sites that highlight distinctive features of this landscape. The University of Minnesota Press has agreed to publish this book. Below is an outline of the book's contents. As of June 30, 2015 all portions will be completed and this proposal will fund the work required for final publication including review following copy-editing; review of page proofs, photography and maps.

Part 1: Landscape History

- Geologic History and Major Landforms
- Postglacial Landscape
- Vegetation at the Time of the Public Land Surveys
- Cultural Change and the Landscape
- Summary

Part 2: Native Plant Communities

- Introduction
- Fire-Dependent Forests and Woodlands
- Mesic Hardwood Forests
- Floodplain Forests
- Wet Forests

Forested Rich Peatlands
 Lakeshores
 River Shores
 Upland Prairies
 Wet Prairies
 Open Rich Peatlands
 Wet Meadows/Carrs
 Marshes
 Summary and Outlook

Part 3: Guide to Important Sites

Up to 30 sites will be featured in this section

A publisher requested that MBS write a book on the mammals of Minnesota. Scoping of this book began in 2014. Part of the information officer’s time will be expended assisting others with this publication.

Participation in conservation and management planning

Assistance from MBS biologists and ecologists with field experience is an important element to ensure that the data collected are utilized effectively. One tool is to provide the data through the internet, yet technical advice at specific planning events will continue to be important. For example when pollination legislation was implemented, the plant ecologists and entomologists in MBS were consulted to assist with the development of Best Management Practices based on the large vegetation dataset collected and maintained by MBS. Another example included the participation of an MBS ecologist in a DNR Forest planning event. The ecologist had very recently visited a remote forested area that was part of a discussion about lowland conifer management. Members of the work group benefitted from the recent data and interpretation to assist with decisions. At the local level, MBS ecologists provided staff of St Louis County with information about some recent surveys of resources in St Louis County Special Sites including an area in the Lost Lake Peatlands.

Rare resources and sites of biodiversity significance

Outcomes of MBS continue to be improved understanding of the distribution of rare plants and animals and the application of MBS sites of biological significance to planning efforts ranging from County Park acquisition planning to Scientific and Natural Area plans. An ecologist prepared an ecological evaluation for an area in Hubbard County known as Badoura Woodlands which is now a Scientific and Natural Area that includes Jack Pine Woodland. Groundwater protection is a key issue in the area and retaining native cover as opposed to agricultural conversion will help to avoid possible threats to groundwater. Minnesota’s Rare Species list was updated recently largely based on MBS surveys.

Summary Budget Information for Activity 4:

ENRTF Budget: \$ 482,088
Amount Spent: \$ 0
Balance: \$ 482,088

Outcome	Completion Dates
1. Aspen Parkland-Red River Valley guide book published by the University of Minnesota Press	June 30, 2016
2. First draft of a new book on the mammals of Minnesota (partial funding of preliminary work)	June 30, 2017
3. Prairie and Forest preliminary monitoring results delivered to the Prairie plan implementation team and wildlife managers; to the DNR’s Forest Certification teams; and to climate change teams.	January 31, 2016 October 31, 2016 June 30, 2017
4. Technical assistance: e.g., deliver and interpret data to inform conservation and management planning related to native plant communities & sites of biodiversity significance.	Throughout project period

(These include activities such as implementation of Superior National Forest projects, watershed plans, Land asset management, SNA plans, State Forest Plans, State Wildlife Action plans, climate change plans).	
5. DNR's website provides updated and accurate survey & monitoring procedures, results and tools (Examples given at right--not an exhaustive list)	January 31, 2016: Add GIS data for 1 ecological subsection to the Minnesota Geospatial Commons. June 30, 2016: Collaborate to add lakes of biological significance to the Minnesota Geospatial Commons.

Project Status as of January 31, 2016

Project Status as of October 31, 2016

Project Status as of March 31, 2017

Final Report Summary: A final report will be submitted between June 30 and August 1 2017

V. 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.

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

Project Status as of January 31, 2016

Project Status as of October 31, 2016

VI. PROJECT BUDGET SUMMARY:

A. ENRTF Budget Overview:

Budget Category	\$ Amount	Overview Explanation
Personnel:	\$ 1,911,044	<p>Botanists, Ecologists, Zoologists, and student worker for surveys, monitoring, technical assistance and interpretation.</p> <p>Botanists (2 classified 1.75 FTE for two years) position# 1 82% salary, 18% benefits; position #2 80% salary 20% benefits) Ecologists (10 unclassified 7.5 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; position #6 and #7 80% salary, 20% benefits); position #8 66% salary 34% benefits; position #9 78% salary 22% benefits; position #10 93% salary 7% benefits; Ecologists (2 classified 1.0 FTE for two years) position #1 81% salary, 19% benefits; position #2 73% salary 27% benefits Information officer to deliver data, assist with web and publications (1 FTE for two years) 67% salary 33% benefits. Zoologists (2 unclassified 0.5 FTE for two years) position #1 78% salary 22% benefits; position #2 68% salary 32% benefits. Student worker (1 unclassified 0.25 FTE for two years) 93% salary 7% benefits.</p>
Professional/Technical/Service Contracts: MNIT	\$ 111,292	GIS services via MNIT
Professional/Technical/Service Contracts: Biologists TBD, MNIT service level agreements TBD.	\$ 73,292	Contractual agreements with biologists following standard DNR procedures for contract processing for activities such as vegetation survey and monitoring. Service level agreements with MNIT for application development, information system support, and product development support following procedures required by MNIT.
Direct and necessary costs as approved by LCCMR :	\$ 234,372	Direct support services pending LCCMR approval. DNR's direct and necessary costs pay for activities that are directly related to and necessary for accomplishing appropriated programs/projects. In addition to itemized costs captured in our proposal budget, direct and necessary costs cover HR Support (~\$31,824), Safety Support (~\$7,872), Financial Support (~\$27,356), Communication Support (~\$1,141), IT Support (~\$54,552), Planning Support

		(~\$704), Procurement Support (~\$235), and division and regional program management (~\$110,688) that are necessary to accomplishing funded programs/projects.
Equipment/Tools/Supplies:	\$ 20,000	Field equipment/supplies. Equipment is used from previous survey periods when at all possible (for example-GPS units, cameras, canoes, communication equipment etc.) and items such as batteries, collecting materials, uniforms and aerial photography need to be replaced or updated.
Travel Expenses in MN:	\$ 100,000	This is largely related to field survey and monitoring. Travel expenses are subject to State of Minnesota labor agreements and DNR policy. Most travel expense is related to the 4-5 months of time when staff are conducting field work that requires food, transport in seasonal DNR fleet vehicles, and lodging
TOTAL ENRTF BUDGET:	\$2,450,000	

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 two plant ecologists (1.0 FTE for two years) is directed to field survey and monitoring and the authorship of the Aspen Parkland-Red River Valley natural history/guide book that is specifically identified in Activity #4. Due to decades of their field experience and investigation in the prairie and parkland region, these ecologists bring knowledge and perspectives that will result in a professional and accessible publication.

two botanists (1.75 FTE for two years) are needed for plant field survey and monitoring, to verify identification of plants collected by MBS botanists and plant ecologists, to coordinate with the repositories of these collections (herbaria), and to assist with data management.

Explanation of Capital Expenditures Greater Than \$5,000: NA

Number of Full-time Equivalent (FTE) Directly Funded with this ENRTF Appropriation 12 FTE each year

Number of Full-time Equivalent (FTE) Estimated to Be Funded through Contracts with this ENRTF Appropriation: TBD

B. Other Funds:

Source of Funds	\$ Amount Proposed	\$ Amount Spent	Use of Other Funds
Non-state			
State Wildlife Grant-Federal grant --pending	\$ 300,000	\$	Animal surveys, data management and monitoring.
State			

General Funds--pending	\$ 564,000,	\$	Office rent, salary of supervisor
Heritage Enhancement Account and RIM Critical(pending)	\$ 1,244,000		Salaries, contracts, supplies, office rent
Game and Fish Account	\$ 120,000		Contracts, salaries
TOTAL OTHER FUNDS:	\$ 2,228,000	\$	

VII. PROJECT STRATEGY:

A. Project Partners: The following are some of the primary partners related to this project: The Bell Museum, the Science Museum, the Superior National Forest, and Voyageurs National Park. Nature Northwest and U of M Crookston. Red Lake Reservation lands are being surveyed in collaboration with Red Lake Department of Natural Resources. NatureServe provides guidance in database structure, collection, and distribution standards.

B. Project Impact and Long-term Strategy: Future funding will be requested to address: Data gaps, including species groups or systems previously inadequately surveyed; Re-survey of landscapes altered due to habitat fragmentation, development, and invasive species, especially areas surveyed during 1980s–1990s; Additional 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; Updates to DNR’s Rare Species Guide.

C. Funding History: Below is the most recent summary of significant MBS funding. The general fund is used for expenses not covered by ENRTF (office space and some equipment for example) and supervisors’ salaries. The State Wildlife grants fund many of the animal surveys, Heritage Enhancement funds salaries and recently RIM Critical has funded the core staff of the animal survey (3 FTEs). See attached for a sampling of projects.

Funding Source and Use of Funds	Funding Timeframe	\$ Amount
ENRTF M.L. 2013, Chp. 52, Sec. 2, Subd. 03a Gen Fund State Wildlife Grant Heritage Enhancement/RIM Critical Habitat	1 July 2013- 30 June 2015	\$2,650,000 \$ 420,000 \$ 450,000 \$1,162,000
ENRTF M.L. 2011, First Special Session, Chp. 2, Art.3, Sec. 2, Subd. 03a Gen Fund State Wildlife Grant Heritage Enhancement RIM Critical Habitat	1 July 2011-30 June 2013	\$2,250,000 \$520,000 \$500,000 \$934,000 \$226,500
ENRTF M.L. 2009, Chp. 143, sec. 2, subd. 3a. Gen Fund State Wildlife Grant Heritage Enhancement	1 July 2009-30 June 2011	\$ 2,100,000 \$ 700,000 \$ 500,000 \$ 1,159,000

VIII. FEE TITLE ACQUISITION/CONSERVATION EASEMENT/RESTORATION REQUIREMENTS: NA

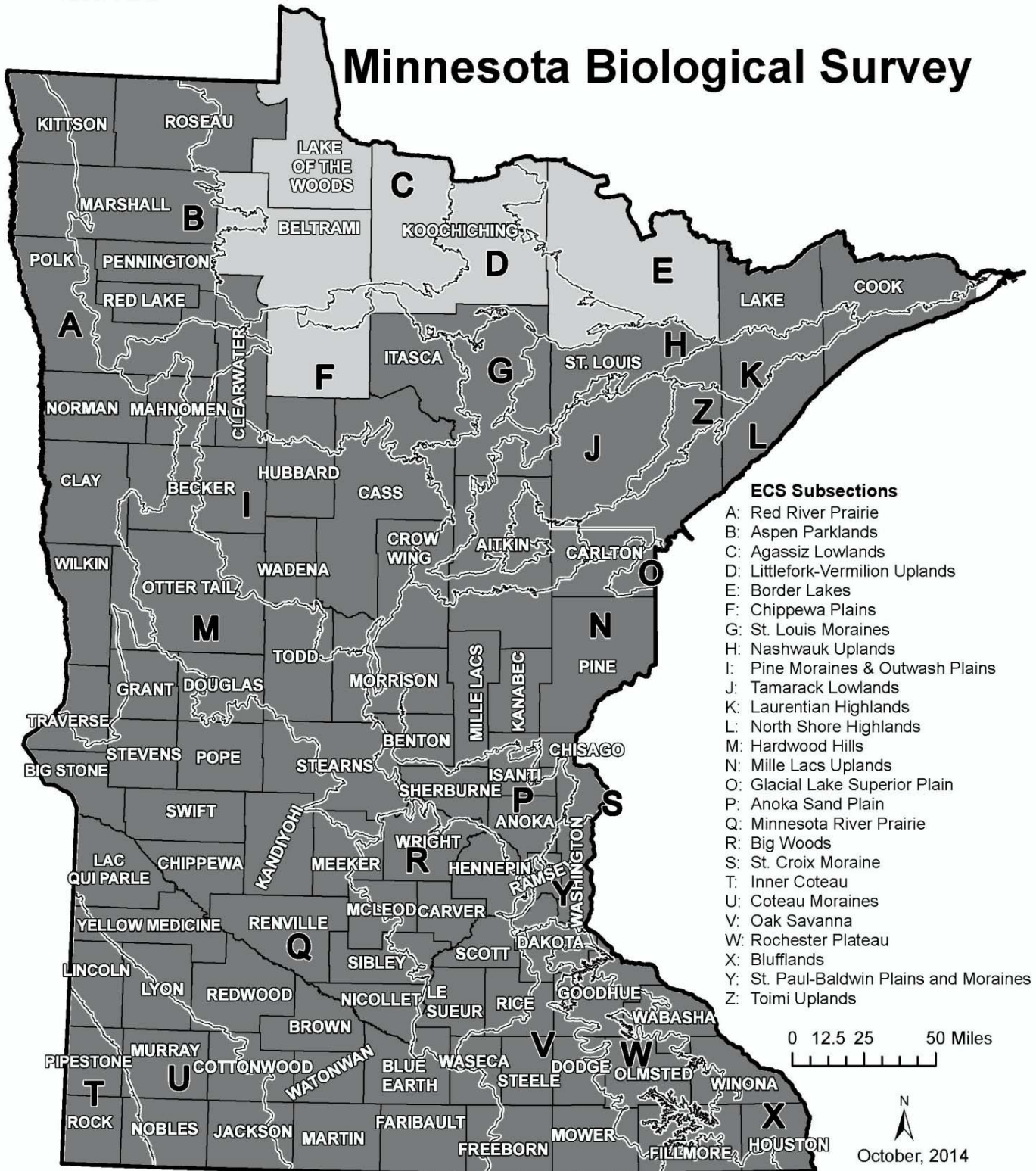
IX. VISUAL COMPONENT or MAP(S): See attached map

X. RESEARCH ADDENDUM: NA

XI. REPORTING REQUIREMENTS: Periodic work plan status update reports will be submitted not later than January 31, 2016, October 31, 2016, and March 31, 2017. A final report and associated products will be submitted between June 30 and August 15, 2017 as requested by the LCCMR.



Minnesota Biological Survey



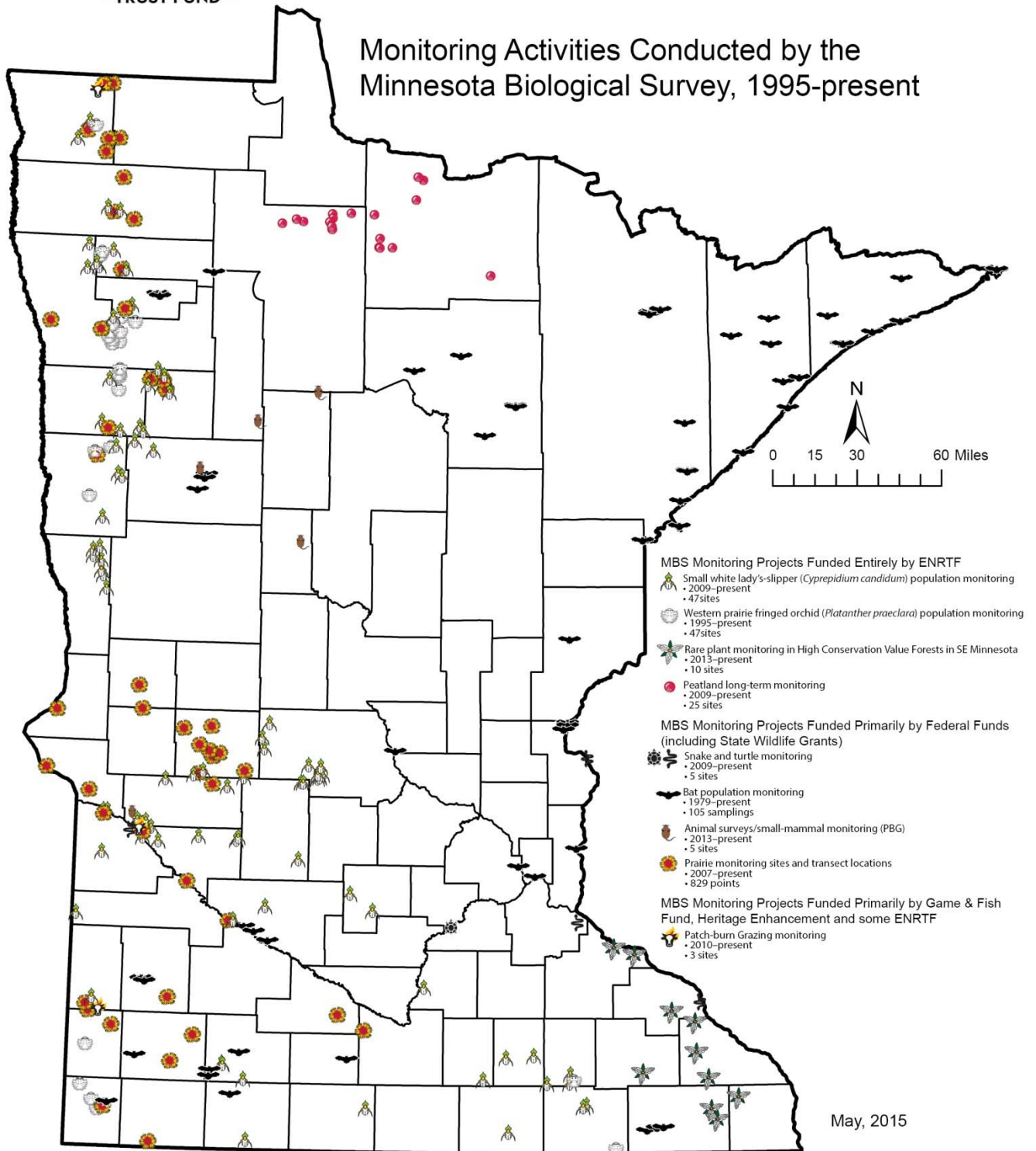
ECS Subsections

- A: Red River Prairie
- B: Aspen Parklands
- C: Agassiz Lowlands
- D: Littlefork-Vermilion Uplands
- E: Border Lakes
- F: Chippewa Plains
- G: St. Louis Moraines
- H: Nashauk Uplands
- I: Pine Moraines & Outwash Plains
- J: Tamarack Lowlands
- K: Laurentian Highlands
- L: North Shore Highlands
- M: Hardwood Hills
- N: Mille Lacs Uplands
- O: Glacial Lake Superior Plain
- P: Anoka Sand Plain
- Q: Minnesota River Prairie
- R: Big Woods
- S: St. Croix Moraine
- T: Inner Coteau
- U: Coteau Moraines
- V: Oak Savanna
- W: Rochester Plateau
- X: Blufflands
- Y: St. Paul-Baldwin Plains and Moraines
- Z: Toimi Uplands

Baseline Survey Completed 1987-2015
 Ongoing Baseline Survey 2015-2017



Monitoring Activities Conducted by the Minnesota Biological Survey, 1995-present



**Environment and Natural Resources Trust Fund
M.L. 2015 Project Budget**

Project Title: Minnesota Biological Survey
Legal Citation: M.L. 2015, Chp. 76, Sec. 2, Subd. 03c
Project Manager: Bruce Carlson
Organization: Minnesota Department of Natural Resources
M.L. 2015 ENRTF Appropriation: \$2,450,000
Project Length and Completion Date: 2 years June 2017
Date of Report: May 28, 2015



ENVIRONMENT AND NATURAL RESOURCES TRUST FUND BUDGET	Activity 1 Budget	Amount Spent	Activity 1 Balance	Activity 2 Budget	Amount Spent	Activity 2 Balance	Activity 3 Budget	Amount Spent	Activity 3 Balance	Activity 4 Budget	Amount Spent	Activity 4 Balance	TOTAL BUDGET	TOTAL BALANCE
BUDGET ITEM	Field Surveys		Monitoring			Info Management			Guidance for Conservation Management					
Personnel (Wages and Benefits)														
Personnel: (18 positions) 12 FTE each year include the proposed following State of MN employees. Salary and fringe are included in activity 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.	\$611,534	\$0	\$611,534	\$267,546	\$0	\$267,546	\$573,313	\$0	\$573,313	\$458,651	\$0	\$458,651	\$1,911,044	\$1,911,044
Botanists (2 classified 1.75 FTE for two years) position # 1 82% salary, 18% benefits; position #2 80% salary 20% benefits): \$296,590														
Ecologists (10 unclassified 7.5 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; position #8 66% salary 34% benefits; position #9 78% salary 22% benefits; position #10 93% salary 7% benefits): \$1,170,852														
Ecologists (2 classified 1.0 FTE for two years) position #1 81% salary, 19% benefits; position #2 73% salary 27% benefits): \$201,524														
Information officer (1 unclassified 1 FTE for two years) 67% salary 33% benefits: \$163,585														
Zoologists (2 unclassified .5 FTE for two years) position #1 78% salary, 22% benefits; position #2 68% salary 32% benefits): \$62,142														
Student Worker (1 unclassified 0.25 total for two years) 93% salary 7% benefits: \$16,349														
Professional/Technical/Service Contracts														
GIS services via MNIT	\$36,646	\$0	\$36,646	\$36,646	\$0	\$36,646	\$111,292	\$0	\$111,292				\$111,292	\$111,292
Contractual agreements with biologists following standard DNR procedures for contract processing for activities such as vegetation survey and monitoring. Service level agreements with MNIT for application development, information system support, and product development support following procedures required by MNIT, and support for other product developments													\$73,292	\$73,292
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.	\$10,000	\$0	\$10,000	\$8,000	\$0	\$8,000	\$2,000	\$0	\$2,000				\$20,000	\$20,000
Travel expenses in Minnesota														
Travel: In-state travel, including food (estimated \$15,000) and lodging (estimated \$20,000) expenses when in travel status. Especially used by field staff where vehicle mileage is paid for temporary use of DNR vehicles (estimated \$35,000) during the summer field surveys. This will be supplemented by other funding.	\$85,000	\$0	\$85,000	\$15,000	\$0	\$15,000							\$100,000	\$100,000
Other														
DNR's direct and necessary costs pay for activities that are directly related to and necessary for accomplishing appropriated programs/projects. In addition to itemized costs captured in our proposal budget, direct and necessary costs cover HR Support (-\$31,824), Safety Support (-\$7,872), Financial Support (-\$27,356), Communication Support (-\$1,141), IT Support (-\$54,522), Planning Support (-\$704), Procurement Support (-\$235), and division and regional program management (-\$110,688) that are necessary to accomplish funded programs/projects	\$121,873	\$0	\$121,873	\$28,125	\$0	\$28,125	\$60,937	\$0	\$60,937	\$23,437	\$0	\$23,437	\$234,372	\$234,372
COLUMN TOTAL	\$865,053	\$0	\$865,053	\$355,317	\$0	\$355,317	\$747,542	\$0	\$747,542	\$482,088	\$0	\$482,088	\$2,450,000	\$2,450,000

DNR Direct & Necessary Cost Calculator FY16

Fill in yellow cells to calculate services your program needs. All other cells are formulaic and locked.

Division: EWR
 Project Title: MBS

LCCMR Request (before D&N)	Fee Title or Easement Acquisition	Pass-through Grants	Single-source Contract		Metric	Metric Value	Number of Units	Total D&N
\$ 2,450,000		\$ -	\$ 111,292	People Support	FTE	\$ 1,326	24	\$ 31,824
				Safety Support	FTE	\$ 328	24	\$ 7,872
				Financial Support	All Other Costs	\$ 0.013	\$2,104,336	\$ 27,356
				Communication Support	Altmnts	\$ 1,141	1	\$ 1,141
				IT Support	IT User ID	\$ 2,273	24	\$ 54,552
				Planning Support	Altmnts	\$ 704	1	\$ 704
				Procurement Support	Altmnts	\$ 235	1	\$ 235
				Division Direct (project)	Cost/dollar (.0193)			\$ -
				Division Direct (program)	Cost/dollar (.0526)	0.0526		\$ 110,688
Total Direct & Necessary:								\$ 234,372
Costs before Direct and Necessary:								\$ 2,215,628
Total Project Costs:								\$ 2,450,000

Position Title	Staff Funded by Program/Project			Years	FTE-Year Units	User ID-Year Units
	FTE's Funded	Years	User ID's Needed			
botanists	1.75	2	1.75	2	3.5	3.5
ecologists	7.5	2	7.5	2	15	15
ecologists	1	2	1	2	2	2
zoologists	0.5	2	0.5	2	1	1
info officer	1	2	1	2	2	2
student worker	0.25	2	0.25	2	0.5	0.5
					0	0
SUM:					24	24

Notes on calculations

- People Support: FY14 HR Budget/2012-13 March/March FTE
- Safety Support: FY14 Safety Budget/2012-13 March/March FTE
- Financial Support: Source: FY14 OMBS Budget/FY13 Approp & Dedicated Revenue Budget
- Communication Support: FY14 OCO Budget/2013 Allotments
- Computer Support: FY14-15 MN.IT Services @ DNR SLA Budget (Governance Subtotal + IT Server Initiative/2012-13 March/March FTE)
- Planning Services: FY14 Planning Budget/2013 Allotments
- Procurement Support: FY14 Procurement Budget/2013 Allotments
- Division Support: Cost/dollar (from D&N Cost Analysis)