

**Environment and Natural Resources Trust Fund  
2019 Request for Proposals (RFP)**

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**Project Title:**

**ENRTF ID: 004-A**

Minnesotas Ecological Monitoring Network - Continuation

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

**Sub-Category:**

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**Total Project Budget: \$** 696,004

**Proposed Project Time Period for the Funding Requested:** June 30, 2022 (3 yrs)

**Summary:**

The project will expand upon the statewide network of permanent ecological monitoring plots developed in 2017 to track long-term status and trends in Minnesotas prairies, forests and wetlands.

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**Name:** Hannah Texler

**Sponsoring Organization:** MN DNR

**Title:** Plant Survey Supervisor

**Department:** Ecological and Water Resources

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St. Paul MN 55155

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**Web Address** www.dnr.state.mn.us/mbs

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**Location**

**Region:** Statewide

**County Name:** Statewide

**City / Township:**

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**Alternate Text for Visual:**

A map shows current and potential future locations of plots; there is a scale diagram of the plot layout, and a photo of an ecologist sampling a quadrat.

<input type="checkbox"/>	Funding Priorities	<input type="checkbox"/>	Multiple Benefits	<input type="checkbox"/>	Outcomes	<input type="checkbox"/>	Knowledge Base
<input type="checkbox"/>	Extent of Impact	<input type="checkbox"/>	Innovation	<input type="checkbox"/>	Scientific/Tech Basis	<input type="checkbox"/>	Urgency
<input type="checkbox"/>	Capacity	<input type="checkbox"/>	Readiness	<input type="checkbox"/>	Leverage	<input type="checkbox"/>	TOTAL <input type="checkbox"/> %
<input type="checkbox"/> If under \$200,000, waive presentation?							



## Environment and Natural Resources Trust Fund (ENRTF) 2019 Main Proposal

**PROJECT TITLE:** Minnesota's Ecological Monitoring Network - Continuation

### I. PROJECT STATEMENT

This project will expand upon the statewide network of permanent ecological monitoring plots developed in 2017 to track long-term status and trends in Minnesota's prairies, forests and wetlands. The Ecological Monitoring Network (EMN) was developed in response to the need for data about how the state's native grasslands, wetlands, and forests are changing in response to stressors such as changes in climate and management, increases in non-native invasive species and pollution, and increased pressures on land and water use.

Phase 1 of this project, the development of the network design and sampling methods and collection of field data, was funded by LCCMR (M.L. 2016, Chp 186, Sec. 2, Subd. 03d) and is still in progress. With the help of many collaborators, the network's goals and objectives, design, and sampling methods were developed and put into place with 48 plots established in 2017. The plots were placed randomly throughout the state in order to extrapolate results to all native vegetation in Minnesota. Sixty-three percent of the plots were in Minnesota Biological Survey (MBS) sites of biodiversity significance. A total of 665 plant species occurred in the 48 plots, ranging from 10 to 92 species per plot. Invasive species occurred in 67% of the plots.

In 2018, these sites will be re-sampled, and an additional 12 sites will be established. An analysis of year to year change will be completed in 2018, and this will help us determine the total number of plots needed to sample the state. This ML19 proposal will build upon the initial LCCMR investment by expanding the network of plots by seeking other scientists to do complimentary research on EMN plots.

The MBS program, with its statewide experience surveying Minnesota's native habitats, will build on Phase 1 to lead Phase 2 of the project to:

- **Add 150 additional permanent monitoring sites** to the existing network of 60 sites that will capture more of Minnesota's diverse landforms and native plant communities, and revisit a subset of the existing sites.
- **Collect key data** (vegetation data, wildlife habitat metrics, forest stand metrics, soils, and water chemistry) from all of these sites, and pollinator data from a subset of the sites.
- **Distribute and interpret the data** to land managers and other stakeholders.

### II. PROJECT ACTIVITIES AND OUTCOMES

#### Activity 1: Collect Vegetation Data from 150 New Plots

**Description:** This project proposes to add 150 new permanent plots to the existing network of 60 plots established in the ML16 project, using the methods developed during the pilot project. A portion of the plots from the pilot project will be monitored again in this period to gain information about year to year changes. Data will be collected on all plant species, and depending on the habitat of each plot, other variables such as deer browse, coarse woody debris measurements, water chemistry, or measurements of grassland structure will be collected. Data collected will be entered into the EMN Database at the end of each field season. MBS staff will analyze and evaluate data after each field season for its effectiveness in addressing EMN monitoring goals and objectives. A variety of analytical approaches will be used to assess the status of 1) environmental variables associated with statewide vegetation, 2) population trends (species-level), 3) native plant community structure, and 4) native plant community composition.

#### ENRTF BUDGET: \$596,004

Outcome	Completion Date
1. Data collected at 150 monitoring sites	9/30/2021
2. Data entered into the Ecological Monitoring Network Database	2/28/2021
3. Specimen preparation and delivery of specimens to museum collections	6/30/2021



**Environment and Natural Resources Trust Fund (ENRTF)**  
**2019 Main Proposal**

4. Annual and comprehensive reports prepared	6/30/2021
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**Activity 2: Data Distribution, Education and Outreach**

**Description:** Results will be published on the DNR MBS Ecological Monitoring Network website. Individual site data will be sent to the owners or managers of the land where each site is located. As results from sites sampled more than once are evaluated, technical guidance derived from the results will be conveyed to natural resource managers. Presentations to nonprofit organizations, natural resource managers, and universities will be made to inform audiences of monitoring results and recruit other researchers to use the network.

**ENRTF BUDGET: \$ 100,000**

Outcome	Completion Date
1. Results placed on the Ecological Monitoring Network website after each field season	3/31/2021
2. Annual summary reports distributed to landowners or managers after each field season	3/31/2021
3. Descriptions of the project's methods, initial findings, and maps showing approximate plot locations will be posted on the website.	6/30/2021
4. Conduct public outreach and technical guidance activities.	6/30/2021

**III. PROJECT PARTNERS:**

**A. Partners receiving ENRTF funding:** NA

**B. Partners NOT receiving ENRTF funding**

Name	Title	Affiliation	Role
Meredith Cornett	Director of Conservation Science	The Nature Conservancy	Provide remotely sensed landscape level data for landscape analyses

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

Agency will develop long-term cooperative funding for sustaining the work over time.

**V. TIME LINE REQUIREMENTS:**

This phase of the project will be complete at the end of the three year period.

## 2019 Proposal Budget Spreadsheet

**Project Title: Minnesota's Ecological Monitoring Network - Continuation**

### IV. TOTAL ENRTF REQUEST BUDGET - 3 years

BUDGET ITEM	AMOUNT
<b>Personnel:</b> Project Coordinator (Research Scientist 2) - 0.5 FTE (76% salary, 24% benefits) for 3 years - \$116,756 Monitoring Botanist (NR Spec Int) - 4 at 0.5 FTE (71% salary, 21% benefits) for 3 years - \$272,296 Seasonal Monitoring Botanist (NR Spec) - 3 seasonal (70% salary, 30% benefits) for 3 years - \$50,022 Statistician (Research Scientist 3) - 0.5 FTE (76% salary, 24% benefits) for 3 years - \$91,704	\$530,778
<b>Professional/Technical Service Contracts for MNIT database development</b>	\$35,000
<b>Equipment/Tools/Supplies:</b> iPads (2 @ \$500), peat samplers (2 @ \$1,000), field supplies (\$1,000) for plot markers, waterproof notebooks, safety gear, etc.; specimen collection supplies (\$1,000)	\$5,000
<b>Acquisition (Fee Title or Permanent Easements):</b>	N/A
<b>Travel Exp:</b> Monthly vehicle charges (\$3,500), mileage (\$8,000), lodging (\$28,500), and meals (\$10,000) to collect field data at monitoring sites throughout the state for 3 seasons	\$50,000
<b>Direct and Necessary:</b> Direct and necessary expenses: People Support (~\$18,838); Safety Support (~\$3,902); Financial Support (~\$7,512); Communication Support (~\$1,251); IT Support (~\$42,665); and Planning Support (~\$1,059) necessary to accomplish funded programs/projects.	\$75,226
	\$696,004

### V. OTHER FUNDS

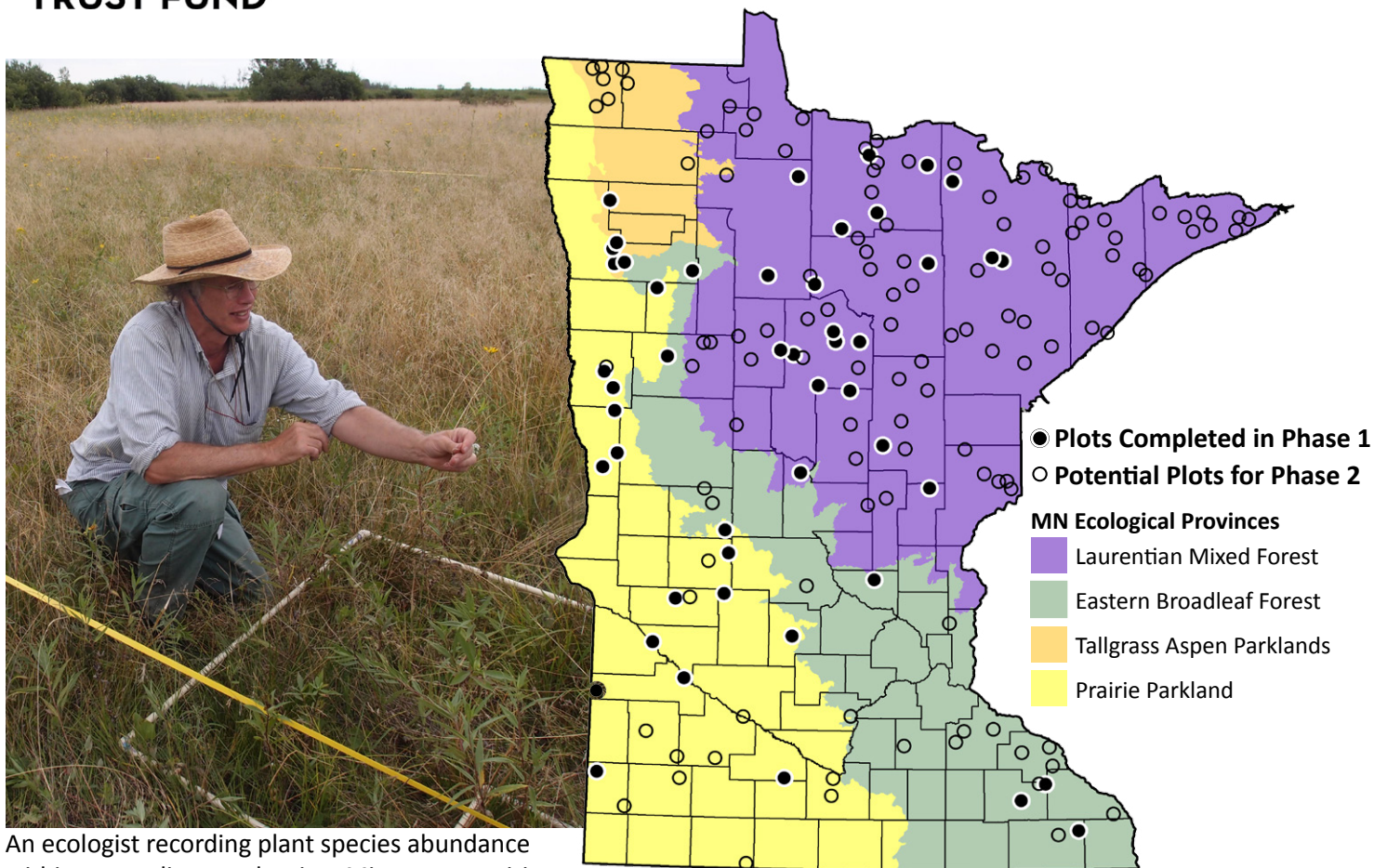
SOURCE OF FUNDS	AMOUNT	Status
<b>Other Non-State \$ To Be Applied To Project During Project Period:</b> State Wildlife Grants - Federal (in-kind support) - \$5,000	\$5,000	Pending
<b>Other State \$ To Be Applied To Project During Project Period:</b> General Fund (in-kind support) - \$50,000 Heritage Enhancement (in-kind support) - \$10,000 Game and Fish Fund (in-kind support) - \$5,000 Parks and Trails Legacy Fund (in-kind support) - \$5,000 Forest Management Investment Account (in-kind support) - \$5,000	\$70,000	Pending
<b>In-kind Services To Be Applied to Project During Project Period:</b> N/A	\$ -	
<b>Past and Current ENRTF Appropriation:</b> ML2016 - Statewide Monitoring Network for Changing Habitats in Minnesota	\$500,000	In progress, will be spent by June 30, 2018
<b>Other Funding History:</b> State Wildlife Grants (Federal) - \$14,000 General Fund - \$61,500 Heritage Enhancement - \$52,000 Game and Fish Fund - \$51,000 Parks and Trails Legacy Fund - \$6,300 Forest Management Investment Account - \$10,000	\$194,800	Pending



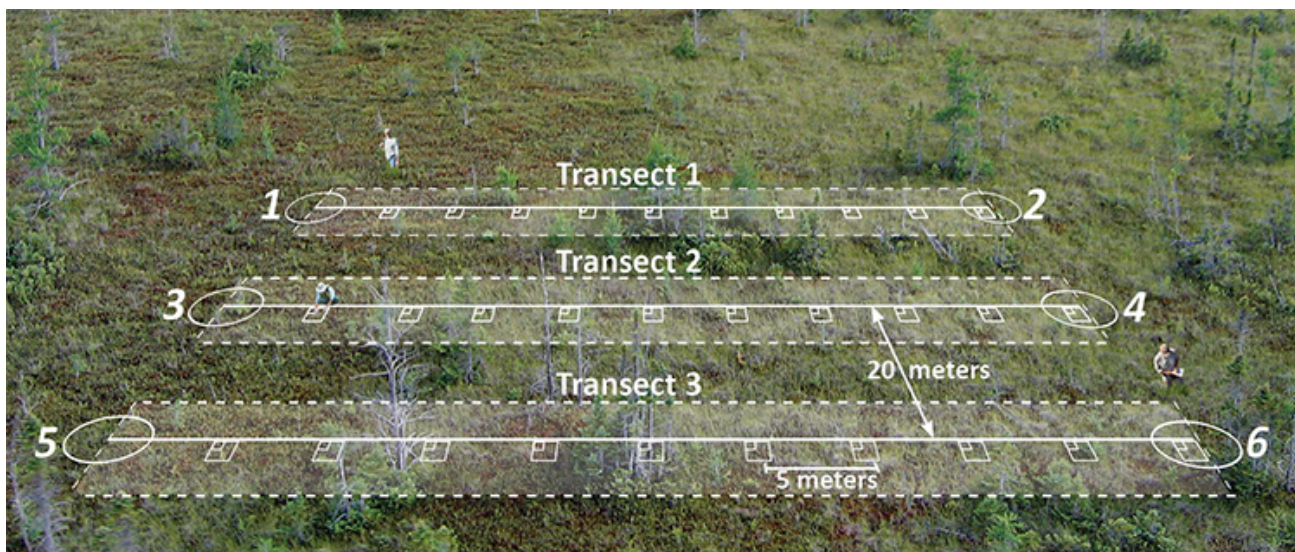


## Minnesota's Ecological Monitoring Network – Continuation

*Improving land use decision making and sustainable resource management through greater reliance on scientific knowledge*



An ecologist recording plant species abundance within a sampling quadrat in a Minnesota prairie.



A scale diagram of the plot, showing three 50 meter transects along which vegetation, soils, water chemistry, deer browse, and other measurements are collected.

## Project Manager Qualifications

Project Manager: Hannah Texler, Plant Survey Supervisor, Minnesota Biological Survey  
Affiliation: Department of Natural Resources, Minnesota Biological Survey  
Mailing Address: 500 Lafayette Road, Box 25, St. Paul, MN 55155-4025  
Telephone: 651-259-5048  
Email: [hannah.texler@state.mn.us](mailto:hannah.texler@state.mn.us)

Hannah Texler has been Plant Survey Supervisor of the Minnesota Biological Survey (MBS) since June 2015. She manages priorities and staff to survey, monitor, and disseminate information on Minnesota's botanical and plant ecological systems and serves as the project manager for Minnesota's Ecological Monitoring Network. Background and professional experience include extensive work in native plant community and native plant species field survey and mapping, ecological land management, project management, and collaborative natural resource and conservation planning.

### Work Experience

2015 – present	Plant Survey Supervisor, MBS, DNR Division of Ecological and Water Resources (EWR)
1995 – 2015	Regional Plant Ecologist, Central Region, DNR Division of EWR
1990 – 1995	Plant Ecologist/Botanist, MBS, DNR Division of EWR
1985-1990	Management Specialist, Scientific and Natural Areas Program, DNR Division of EWR
1981-1985	Graduate Teaching Assistant, Michigan State University
1982, 1985	Plant Ecologist (contracted), Michigan Natural Features Inventory
1979-1981, 1983	Biological Technician, National Park Service (Everglades & Olympic National Park, Indiana Dunes National Lakeshore)

### Education

1985	Master of Science, Botany, Michigan State University
1979	Bachelor of Science, Botany, University of Florida

### Project Manager Responsibilities

Hannah Texler will provide overall project direction, budget management, staff supervision, work plans, and activity updates. In her capacity as MBS Plant Survey Supervisor and from previous work experience, Hannah has demonstrated her ability to direct staff, coordinate with partners, manage budgets, 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, native plants, plant communities, and native landscapes. Delivery of these data helps guide management, conservation, and monitoring of critical habitat and ecological functions.