Environment and Natural Resources Trust Fund
2018 Request for Proposals (RFP)

Project Title: **ENRTF ID:** **118-C**

Morris Prairie Pollinator Demonstration and Education

Category: C. Environmental Education

Total Project Budget: $ 681,000

Proposed Project Time Period for the Funding Requested: 3 years, July 2018 to June 2021

Summary:

Project will restore and demonstrate a native prairie habitat in order to enhance the local ecosystem for beneficial pollinators as well as to offer educational opportunities.

Name: Steven Poppe

Sponsoring Organization: U of MN

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Location

Region: Central

County Name: Stevens

City / Township: Morris

Alternate Text for Visual:

Visual shows proposed restoration area to be restored with pollinator friendly native plants-outlined in black. Project area is east of Morris, MN and south of state Hwy. 329 on the property of the University of MN West Central Research and Outreach Center

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

PROJECT TITLE: Morris Prairie Pollinator Demonstration and Education

I. PROJECT STATEMENT

This project will restore and demonstrate a 17-acre native prairie habitat in Morris, MN, to enhance the local ecosystem for beneficial pollinators and native species of plants as well as offer educational opportunities for visitors. The Pomme de Terre River watershed area in west central Minnesota was once a sprawling prairie, home to beneficial pollinator species and prairie vegetation. Now, however, we've seen a devastating decline of beneficial pollinator species and a disruption to the remaining native prairie ecosystem due to land conversion to industrial agriculture. The lack of diversity or availability of pollen and nectar sources can cause certain pollinator populations to develop health disorders and ultimately die off. Expressing concern over pollinator decline, consumers are seeking ways to remedy the pollinator crisis. Previous research conducted at the University of Minnesota West Central Research and Outreach Center (WCROC) along with the Natural Resources Conservation Service (NRCS), and UM Morris (UMM) demonstrated the effectiveness of habitat restoration on pollinator abundance and diversity, and documented which plant species are most attractive to different pollinator taxa. We aim to restore prairie habitat so beneficial pollinators can flourish.

We will provide educational interpretation throughout the demonstration site to encourage visitors to connect with the prairie habitat and to learn how to protect or enhance habitats on their own properties. The location of the restoration project has a walk and bike trail meandering through it, making the site an ideal location for consumer education on prairie habitat restoration. Used by thousands each year, the trail connects the WCROC Horticulture Display Garden, the Pomme de Terre Overlook, the City of Morris Pomme de Terre Park, and UMM. Along the trail, we will install and maintain wayside rest areas complete with interpretive kiosks, signage, and brochures so visitors can be educated on the importance of beneficial pollinators and how to make their own landscapes more pollinator-friendly. We will also work with UMM faculty/students to develop activities that extend beyond the prairie into the classrooms.

We will work with prairie restoration specialists to remove all non-native vegetation and restore diverse native vegetation to a 17-acre portion of grassland. The project will consist of two phases. 1) Removal of non-native vegetation from the project site, and 2) restoration of a diverse selection of native grasses and forbes. According to a 2011 Xerces Society study, providing a diverse habitat with abundant nectar and pollen sources is arguable the most effective method of enhancing or protecting a local beneficial pollinator population. Selection of plant materials will be based on previous research with the NRCS and UMM to offer viable food sources to native pollinators. High quality prairie plant assemblages will be placed across the moisture gradient to sustain plant communities including short/dry prairie mix, mesic prairie mix, wet prairie mix and milkweed for monarch butterfly larval food. The outcomes will be an improved landscape that supports bees, butterflies and other beneficial pollinators, and an enhanced local prairie ecosystem.

ll. PROJECT ACTIVITIES AND OUTCOMES

Activity 1: *Remove non-native vegetation from the project area.* **Budget: $52,000**
Remove trees and shrubs. In order to minimize soil disturbance work will be completed when the ground is frozen.

Outcome	Completion Date
1. To guarantee successful establishment of this pollinator habitat project non-native vegetation needs to be removed first.	*12/1/2018*

Activity 2: *Vegetation management and annual maintenance.*
Invasive and non-invasive vegetation exists in the project area in varying densities.

Budget: $33,000

Outcome	Completion Date
1. Develop aggressive site preparation to eradicate undesirable species.	*6/1/2020*

2. Perform annual maintenance to continually eliminate unwanted vegetation.	*6/1/2020*

Activity 3: *Seeding of native pollinator prairie and planting of oak savannah landscape.* **Budget: $151,000**

Outcome	Completion Date
1. To enhance pollinator habitat planting of native prairie including short/dry, mesic prairie and wet prairie species *will be seeded*	*10/1/2020*
2. To enhance prairie landscape, that once existed 200 years ago Bur Oak trees will be planted	*7/1/2021*

Activity 4: *Educate students and trail visitors about beneficial pollinators, native prairie ecosystems, and how to create native habitats.* **Budget: $445,000**

The project site is adjacent to a well-used public trail system, and thus offers the opportunity to educate visitors on the importance of pollinators and native ecosystems.

Outcome	Completion Date
1. Partner with Morris Area School and UMM to offer pollinator education in the classroom and outdoor learning experiences.	*7/1/2021*
2. Identify and collaborate with professionals to create and construct unique wayside shelters, kiosks and trail signage to educate trail visitors.	*7/1/2020*

III. PROJECT STRATEGY

A. Project Team/Partners

Steven R. Poppe, WCROC Horticulture Scientist, will serve as PI and project manager. He will be responsible for all reports and deliverables. Tom Holm (WCROC Researcher 2) will be involved in maintenance projects and handle all tree care. WCROC Landscape Gardener will coordinate educational activities and land management. Esther Jordan (WCROC Communications Specialist) will coordinate outreach activities. Kristen Lamberty, UMM Associate Professor of Computer Science, along with two UMM undergraduate research students, will design, develop, and evaluate interactive materials to engage community members with learning about pollinators and the prairie pollinator demonstration project. All WCROC and UMM project team members are proposed to receive money from this trust fund. Contributing partners include: Margaret Kuchenreuther (UMM Associate Professor) as a consultant with prairie ecology/management and student involvement; Blaine Hill (City Manager, Morris) for community outreach; Wayne Markegard (NRCS Plant Materials Specialist) as a consultant to identify prairie seed mixes; Nick Milbrandt (Morris Area High School Ag Instructor) for pollinator education in the classroom and student outdoor learning experiences with bee keeping and pollinator habitat project; City of Morris Tree Board co-sponsoring bur oak tree planting.

B. Project Impact and Long-Term Strategy

The overall goal of the project is to educate students and visitors and restore what once was native prairie land to a thriving pollinator habitat, thus offering diverse and abundant food sources for beneficial pollinators as well as enhancing the natural landscape surrounding the Pomme de Terre watershed area. This collaborative project will build on our past pollinator research which explored native plant species and their attractiveness to pollinators. Not only will the project site serve a vital role in the health of our pollinator populations, but will also offer students and the public a way to engage with nature. Outreach activities will occur as students and visitors use and enjoy the adjacent trail system. Educational field trips for school-age students will be arranged, high school students will experience bee hives and UMM students will have access to the site as an outdoor lab. The project does not need additional investment other than funding requested from the ENRTF to be completed.

C. Timeline Requirements

This project is proposed for 3 years beginning July 1, 2018 and ending July 1, 2021. This time frame will allow for removal of non-native vegetation, multiple herbicide applications, seeding of proposed project area and planting of oak savannah. Outreach activities for students, visitors and community members will be coordinated as soon as the habitat is established. Wayside shelters and educational kiosks will be constructed prior to native seeding. Trail signage will go in after project completion.

2018 Detailed Project Budget

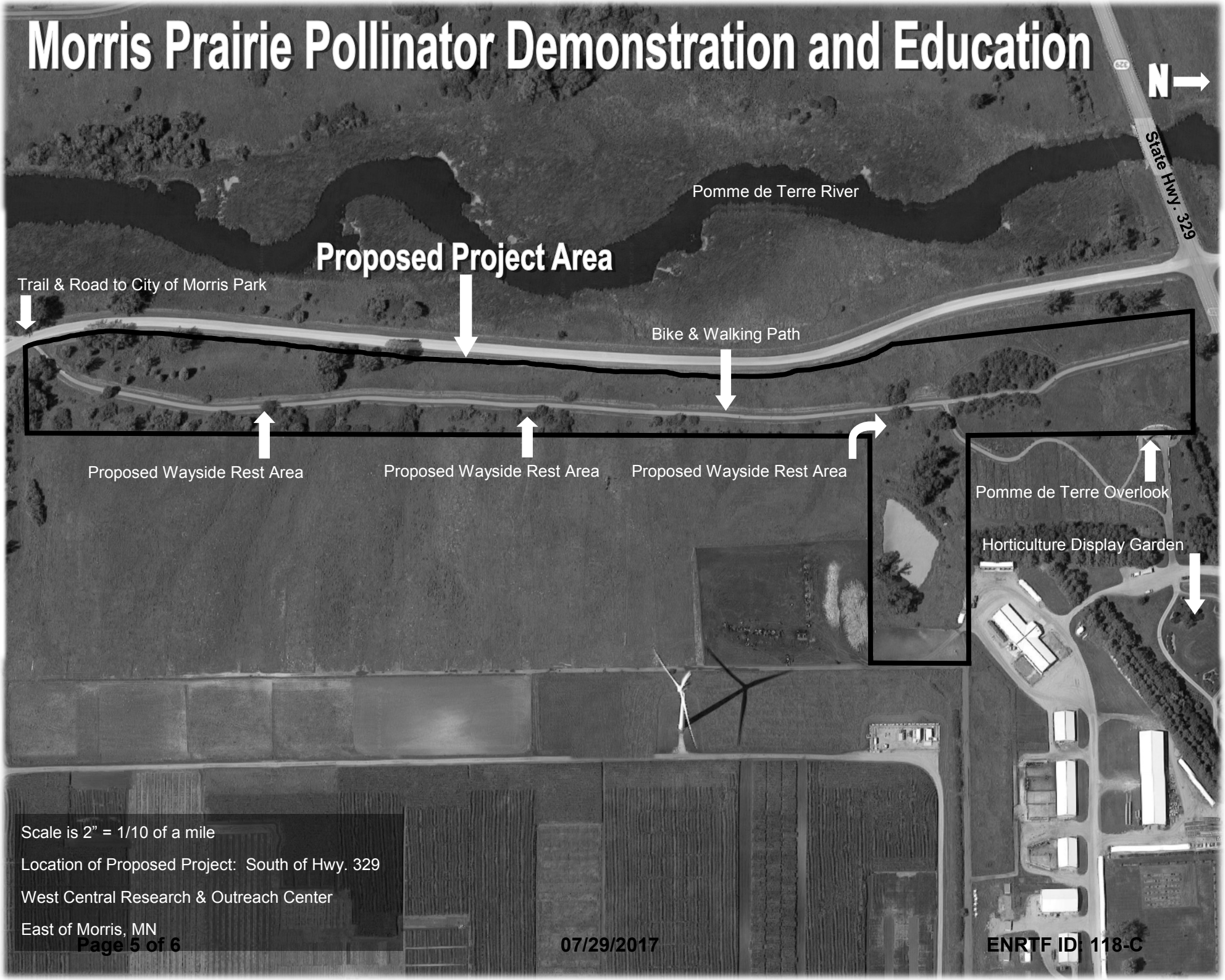
Project Title: Morris Prairie Pollinator Demonstration and Education

IV. TOTAL ENRTF REQUEST BUDGET: 3 years

BUDGET ITEM	AMOUNT
Personnel	
Steven Poppe, Project Manager, 3.0 % FTE in year 1, 2, and 3; 26.0 % fringe rate	7000
WCROC Landscape Gardener, 50% FTE in year 1, 2 and 3; 26.0% fringe rate	$ 90,000
Esther Jordan, Communication Specialist, 25% FTE in year 2, and 3; 26.0% fringe rate	24,000
Tom Holm, Researcher II, 3.0% FTE in year 2, and 3; 26.0% fringe rate	4,000
Kristin Lamberty, UMM Computer Science Faculty, 6 weeks summer salary in year 1, 2; 50% sabbatical funding and 4 weeks summer salary year 3; 33.5% fringe rate	113,000
2 UMM students, 10 weeks summer salary in year 1,2, and 3; 2 UMM students 30 weeks academic year 1, 2, and 3; $11.50/hour student rate	51,000
Professional/Technical/Service Contracts	
Praire Restoration Specialists (competive bid)-site preperation including mowing, multiple herbicide applications, controlled burns, maintenance management, planting of native prairie.	74,000
Excavating contractors (competitive bid)-removing non-native vegetation, (trees and shrubs)	52,000
Tree Nursery (competitive bid)-Purchase and planting Bur Oak trees	16,000
Engineer and Architect Services (competitive bid)-Wayside shelters, kiosks, trail signs, benches, solar powered lights for kiosk/shelter and geotechnical testing.	236,000
Equipment/Tools/Supplies:	
15 Beehive protection suits and gloves for students	4,000
Water tank with pump and motor to assist with watering Bur Oak trees	5,000
Travel:	
Kristin Lamberty and UMM students to present findings at one conference in year 3	5,000
TOTAL ENVIRONMENT AND NATURAL RESOURCES TRUST FUND $ REQUEST =	$ 681,000

V. OTHER FUNDS *(This entire section must be filled out. Do not delete rows. Indicate "N/A" if row is not applicable.)*

SOURCE OF FUNDS	AMOUNT	Status
In-kind Services To Be Applied To Project During Project Period: The 54% inforegone federally negotiated ICR funding constitutes the University of Minnesot'a cost share to the project.	**$367,740**	Secured
Other Non-State $ To Be Applied To Project During Project Period: *Indicate any additional non-state cash dollars secured or applied for to be spent on the project during the funding period. For each individual sum, list out the source of the funds, the amount, and indicate whether the funds are secured or pending approval.*	N/A	*Indicate: Secured or Pending*
Other State $ To Be Applied To Project During Project Period: *Indicate any additional state cash dollars (e.g., bonding, other grants) secured or applied for to be spent on the project during the funding period. For each individual sum, list out the source of the funds, the amount, and indicate whether the funds are secured or pending approval.*	N/A	*Indicate: Secured or Pending*
In-kind Services To Be Applied To Project During Project Period: *Indicate any additional in-kind service(s) secured or applied for to be spent on the project during the funding period. For each type of service, list type of service(s), estimated value, and indicate whether it is secured or pending. In-kind services listed must be specific to the project.*	N/A	*Indicate: Secured or Pending*
Past and Current ENRTF Appropriation: *Specify dollar amount and year of appropriation from any current ENRTF appropriation for any directly related project of the project manager or organization that remains unspent or not yet legally obligated at the time of proposal submission. Be as specific as possible. Indicate the status of the funds.*	N/A	Indicate: Unspent? Legally Obligated? Other?
Other Funding History: *Indicate funding secured but to be expended prior to July 1, 2018, for activities directly relevant to this specific funding request. State specific source(s) of funds and dollar amount.*	N/A	



07/29/2017

ENRTF ID: 118-C

Steven R. Poppe, Principle Investigator / Project Manager

Steven R. Poppe has been with the horticulture department at the University of Minnesota West Central Research and Outreach Center, Morris, MN, for 41 years. He is a Sr. Horticulture Scientist, and serves as a program leader. Steve has participated as Principal Investigator in numerous horticulture research projects funded by EPA (American Farmland Trust), MN Department of Ag, North American Strawberry Growers Association, MN Fruit and Vegetable Growers Association, MN Nursery and Landscape Association and private funded research projects. Steve provides scientific evaluations of annual and herbaceous perennial flowers, small fruits including strawberries and raspberries, vegetables, high tunnel and low tunnel research, invasive insect trials, weed control studies and pollinator trials including native prairie restoration. Steve has received several awards and honors with a special service award from the USDA Natural Resources Conservation Service (NRCS) plant materials program. He was recognized for his outstanding support for the NRCS plant materials program and work in Minnesota and the Northern Lake States. Over the past 30 years, he has coordinated woody plant evaluations leading to 14 new plant releases, integrated NRCS information into his University programs, and provided valuable guidance and technical information to the Minnesota Plant Materials Committee. Steve also coordinates many educational events including Horticulture Night. This annual event, normally held the last Thursday in July, draws approximately 1,600 people from around the region, making it one of the largest educational events within the U of MN College of Food, Agricultural and Natural Resource Sciences.

The primary organization is the University of Minnesota West Central Research and Outreach Center (WCROC), Morris, MN, which will serve as the project location for environmental education of native prairie habitat restoration. The WCROC is a 1,100 acre agricultural experiment station that has focused on agriculture research and education since 1910. The 14 acres of display and research gardens provides horticulture education, demonstrates landscape design and plant material for area homeowners, gardeners and specialty crop producers. The WCROC's mission is to provide research-based innovation and outreach by vigorously pursuing opportunities for agricultural producers and rural citizens while identifying and responding to emerging trends, developing dynamic solutions, and offering active learning experiences. The WCROC was selected as the 2011 Outstanding Conservationist for Stevens County by the Stevens Soil and Water Conservation District Board.

Support for the project team includes prairie ecology and management faculty from the University of Minnesota Morris (UMM), Plant Materials Specialist from the NRCS Plant Materials Center, Bismarck, ND, and collaboration with the Morris Area High School Agriculture Teacher, UMM Professor of Computer Science, City of Morris Tree Board as well as the Morris City Manager.