Environment and Natural Resources Trust Fund

2026 Request for Proposal

General Information

Proposal ID: 2026-073

Proposal Title: Conserving Rare Plants by Understanding Their Pollinators

Project Manager Information

Name: Jessica Petersen

Organization: MN DNR - Ecological and Water Resources Division

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Project Basic Information

Project Summary: Rare plants that require insect pollination are threatened by pollinator declines. This work will uncover what insects are pollinating rare plants and provide a foundation for future conservation actions.

ENRTF Funds Requested: $299,000

Proposed Project Completion: June 30, 2029

LCCMR Funding Category: Small Projects (G)

Secondary Category: Fish and Wildlife (D)

Project Location

What is the best scale for describing where your work will take place?

Statewide

What is the best scale to describe the area impacted by your work?

Statewide

When will the work impact occur?

During the Project and In the Future

Narrative

Describe the opportunity or problem your proposal seeks to address. Include any relevant background information.

Insects provide pollination services for the nutritious food we eat. The phrase, “thank a pollinator for one in three bites of food” applies to tomatoes, pumpkins, blueberries and apples that all rely on insects to produce seeds and ultimately fruit. Many of the rare plants Minnesotans treasure also rely on pollinators to produce seeds for future generations of plants. Pollinators are essential for the continued survival of rare plants. The ENRTF funded project “Tools for supporting healthy ecosystems and pollinators” (M.L. 2021-03n) uncovered that 67% (259/388) of rare plants in Minnesota are reliant on insects for pollination. There is growing global concern regarding the decline of pollinators, with significant implications for biodiversity and ecosystem function. In Wisconsin, for example, there aren’t enough insects visiting plants like the Eastern White Fringed Prairie Orchid or the Prairie Shooting Star to produce seed for future generations of these rare plants. In Minnesota, we don’t know what insects pollinate the rare plants that require insect-mediated pollination, let alone whether the plants are receiving enough pollen to produce viable seeds. Surveys of the pollinators and pollination services are necessary to understand how to conserve this vital function.

What is your proposed solution to the problem or opportunity discussed above? Introduce us to the work you are seeking funding to do. You will be asked to expand on this proposed solution in Activities & Milestones.

We propose to address this poorly understood ecosystem function of pollination by surveying the insects that visit rare plants. This project will weave together investments from several ENRTF projects including: 1. three projects that in total documented the bee diversity in Minnesota, 2. information gained from MN PlantWatch on the locations of rare plant populations, and a 3. database of the pollination requirements of all plants in Minnesota. These three resources provide the foundation for the Minnesota Biological Survey (MBS) to visit known populations of rare plants and conduct surveys of insect pollinators. We propose to survey at least 8 species of rare plants that require insect pollinators and are likely the most vulnerable to pollinator declines based on the attributes derived from the pollination database.

What are the specific project outcomes as they relate to the public purpose of protection, conservation, preservation, and enhancement of the state’s natural resources?

We will produce and deliver information on the insects that pollinate rare plants in Minnesota. By understanding the pollinators that provide this critical ecosystem function, we will offer prescriptive conservation and management action options that will help support the pollinators and in turn the rare plants they pollinate. New information will be delivered through the Minnesota Rare Species Guide. We will offer the content to organizations that deliver information about plants including the Minnesota Biodiversity Atlas and Minnesota Wildflowers. Conservation prescriptions will include specific actions, such as planting hostplants, alternative nectar resources, or ways to improve nesting habitat.

Activities and Milestones

Activity 1: Surveying Pollinators of Rare Plants

Activity Budget: $299,000

Activity Description:
We will identify plant species that are particularly sensitive to changes in pollinator populations, based on their biological and ecological attributes. We will collect or photograph where possible, insect visitors to rare plants. The insects will be identified and databased over the winter months. All specimens will be accessioned into the University of Minnesota Insect Collection. We will then compile information on the pollinators and conservation actions to support the insects that provide pollination services, and distribute it through the Rare Species Guide pages for each plant species surveyed.

Activity Milestones:

Description	Approximate Completion Date
Draft a list of plants to survey	March 31, 2027
Survey insects from rare plants	September 30, 2028
Identify insect pollinators of rare plants	March 31, 2029
Deliver content through updates to the Rare Species Guide pages for each plant surveyed	June 30, 2029

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Dr. Robin Thomson	University of Minnesota	Dr. Robin Thomson is the curator of the insect collection and will support new accessions of specimens collected throughout the course of this project and facilitate use of the collection for the purposes of specimen identification.	No
Dr. Zach Portman	University of Minnesota	Dr. Zach Portman will confirm identifications of bees collected through this project.	Yes

Long-Term Implementation and Funding

Describe how the results will be implemented and how any ongoing effort will be funded. If not already addressed as part of the project, how will findings, results, and products developed be implemented after project completion? If additional work is needed, how will this work be funded?
This timeframe will produce a product that will stand alone. Ongoing improvements to the products and ongoing dissemination of the products will be achieved through standard DNR operating budgets and staffing.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Tools For Supporting Healthy Ecosystems And Pollinators	M.L. 2021, First Special Session, Chp. 6, Art. 5, Sec. 2, Subd. 03n	$198,000
Developing Conservation Priorities for Rare and Specialist Bees	M.L. 2023, , Chp. 60, Art. 2, Sec. 2, Subd. 03j	$619,000

Project Manager and Organization Qualifications

Project Manager Name: Jessica Petersen

Job Title: Terrestrial Insect Ecologist

Provide description of the project manager's qualifications to manage the proposed project.
Dr. Jessica Petersen will lead the project coordination including coordinating among the plant ecologists and the bee survey assistants. The project manager will be responsible for developing and implementing a work plan including achievable outcomes and tracking and reporting on project progress.

Dr. Petersen has been employed by the Minnesota Biological Survey for the past 7 years. During this time she has managed teams of scientists, delivered scientific content to practitioners by hosting webinars, podcasts, and written content for the public and the scientific community. Jessica has helped to manage several successful LCCMR projects involving bee and butterfly conservation. She has training and experience conducting scientific research in such topics as bee and butterfly community ecology, plant-insect interaction, pollination, and prairie ecology that have resulted in 20 co-authored scientific publications, 12 invited presentations, and 14 extension and outreach publications. Dr. Petersen has taught 6 undergraduate biology courses including topics such as Geographic Information Systems (GIS), entomology, and critical thinking.

Organization: MN DNR - Ecological and Water Resources Division

Organization Description:
This proposed project directly supports the DNR Conservation Agenda, Goal 1: Natural Resource Conservation. Increasing our understanding of a primary ecosystem function such as pollination is critical to understanding resiliency of our natural resources. The EWR Strategic Plan lists "biological diversity" as one of eight strategic issues and includes

specifically plant pollination as a key ecosystem service. This project will fill in gaps in our knowledge about rare plant-pollinator interactions that can ensure their mutual conservation. Goal 1 of the Minnesota Wildlife Action Plan, “ensure the long-term health and viability of Minnesota’s wildlife with a focus on species that are rare, declining, or vulnerable to decline” is supported through this project. By focusing on the rare pollen and nectar resources that bees and other pollinators need to complete their lifecycle, we can understand ways to conserve these vulnerable species. In the Minnesota Biological Survey Strategic Plan, researching the relationships among plants and pollinators is specifically defined as a priority action under the strategic goal of collecting biological data and information: “Strategy 1.3 - Research native and rare biological diversity to address specific questions, detect patterns, and test alternatives. Priority Action: Research relationships among plants and pollinators”.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
Bee Biologist		Project coordination, field surveys, specimen curation			32%	1.5		$139,371
Bee Survey Assistant		Field surveys, specimen curation			32%	1.5		$112,490
							Sub Total	**$251,861**
Contracts and Services								
University of Minnesota - Cariveau Native Bee Lab	Subaward	Bee identification services				0.2		$4,000
							Sub Total	**$4,000**
Equipment, Tools, and Supplies								
	Tools and Supplies	Equipment ($1000) and curation ($1000)	This project will require insect curation supplies and supplies needed for collecting insects including insect pins, labels, nets.					$2,000
							Sub Total	**$2,000**
Capital Expenditures								
							Sub Total	**-**
Acquisitions and Stewardship								
							Sub Total	**-**
Travel In Minnesota								
	Miles/ Meals/ Lodging	Lodging and meals ($3742) and fleet ($4000).	We will conduct mostly day trips to visit each plant species, approximately					$7,742

			$1700 in lodging and meals each year of the project, plus an additional $2000 in fleet services (1400 miles x 0.70 mileage rate)					
							Sub Total	**$7,742**
Travel Outside Minnesota								
							Sub Total	**-**
Printing and Publication								
							Sub Total	**-**
Other Expenses								
		People support ($6145), safety support ($974), financial support ($2990), communication support ($1902), IT support ($20,015), planning support ($1371)	Direct and necessary					$33,397
							Sub Total	**$33,397**
							Grand Total	**$299,000**

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request

Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
In-Kind	General Fund	Project supervision, subject matter expertise	Pending	$15,000
In-Kind	Heritage Enhancement	Project oversight, planning, and subject matter expertise	Pending	$15,000
			State Sub Total	**$30,000**
Non-State				
			Non State Sub Total	**-**
			Funds Total	**$30,000**

Total Project Cost: $329,000

This amount accurately reflects total project cost?

Yes

Attachments

Required Attachments

Visual Component

File: a5722dde-879.pdf

Alternate Text for Visual Component

Describes the need to document the insects that pollinate rare plants. Three examples of attributes that indicate vulnerability to insect declines. Solution to collect information on pollinators of rare plants that are most vulnerable. Inform management decisions and conservation actions to support pollinators of rare plants....

Administrative Use

Does your project include restoration or acquisition of land rights?

No

Do you understand that travel expenses are only approved if they follow the "Commissioner's Plan" promulgated by the Commissioner of Management of Budget or, for University of Minnesota projects, the University of Minnesota plan?

Yes, I understand the Commissioner's Plan applies.

Does your project have potential for royalties, copyrights, patents, sale of products and assets, or revenue generation?

No

Do you understand and acknowledge IP and revenue-return and sharing requirements in 116P.10?

N/A

Do you wish to request reinvestment of any revenues into your project instead of returning revenue to the ENRTF?

N/A

Does your project include original, hypothesis-driven research?

No

Does the organization have a fiscal agent for this project?

No

Does your project include the pre-design, design, construction, or renovation of a building, trail, campground, or other fixed capital asset costing $10,000 or more or large-scale stream or wetland restoration?

No

Do you propose using an appropriation from the Environment and Natural Resources Trust Fund to conduct a project that provides children's services (as defined in Minnesota Statutes section 299C.61 Subd.7 as "the provision of care, treatment, education, training, instruction, or recreation to children")?

No

Provide the name(s) and organization(s) of additional individuals assisting in the completion of this proposal:

MNDNR, University of Minnesota

Do you understand that a named service contract does not constitute a funder-designated subrecipient or approval of a sole-source contract? In other words, a service contract entity is only approved if it has been selected according to the contracting rules identified in state law and policy for organizations that receive ENRTF funds through direct appropriations, or in the DNR's reimbursement manual for non-state organizations. These rules may include competitive bidding and prevailing wage requirements

N/A