Environment and Natural Resources Trust Fund

2026 Request for Proposal

General Information

Proposal ID: 2026-275

Proposal Title: Blown Away? Assessing Resilience of Minnesota Point Dunes

Project Manager Information

Name: Madison Rodman

Organization: U of MN - Duluth - Sea Grant

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Project Basic Information

Project Summary: Blown Away seeks to collaboratively develop a more thorough understanding of Minnesota Point dunes, engage volunteers in community science research, and encourage stewardship and build understanding through education and outreach.

ENRTF Funds Requested: $261,000

Proposed Project Completion: June 30, 2029

LCCMR Funding Category: Small Projects (G)
Secondary Category: Land (F)

Project Location

What is the best scale for describing where your work will take place?
Region(s): NE

What is the best scale to describe the area impacted by your work?
Region(s): NE

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.

Minnesota Point, an iconic 7-mile long sandbar protecting the Duluth harbor, faces threats from infrastructure development, coastal hazards such as flooding and erosion, and human activity. This culturally and economically significant area, home to 1,300 residents, is environmentally sensitive. The coastal dune ecosystem hosts rare, critically imperiled native plant communities, providing habitat for the endangered piping plover and the hairy-necked tiger beetle, along with multiple threatened species.

Historically, longshore transport from the north and south shores delivered beach sand to Minnesota Point, with winds mobilizing finer-grained sands to form dunes. However, construction of Duluth and Superior harbor entry breakwaters has disrupted this natural sand supply, starving the dunes. Offsetting this, the US Army Corps of Engineers (USACE) periodically nourishes the beach with dredged sand. The nourished sand tends to erode away more rapidly than natural beach sand, and the fate of the nourished sand is of interest to the USACE.

Coastal dunes are crucial for protecting Minnesota Point from flooding and erosion while enhancing its natural, cultural, and recreational values. To preserve this unique resource, a necessary first step is to assess the dunes' current status, identify restoration needs, and educate the community on their role in dune protection.

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.

This project aims to assess the current status and resilience of the Minnesota Point coastal dune ecosystem through collaborative, interdisciplinary and community-driven research. We will measure recent sediment dynamics and ecosystem health, and launch a sustainable community science program to enhance understanding of dune deposition, erosion rates, and changes in key plant species. Alongside research, we will educate the public on the importance of the dune ecosystem and the critical role of dunes in coastal resilience. By improving coordination among landowners, project partners, and the local community, we aim to empower residents and volunteers to actively participate in monitoring and conservation efforts. These activities will also foster existing partnerships and develop new collaborations among the project team and organizations invested in the well-being of Minnesota Point.

The data collected in the "Blown Away?" Project will provide valuable insights to support maintenance and planning efforts for the dunes, helping them mitigate coastal hazards and protect infrastructure and property. Ultimately, the project will strengthen our collective capacity to preserve and enhance Minnesota Point for the future benefit of wildlife, plants, visitors, and residents.

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?

The project supports the preservation and enhancement of Minnesota's natural resources by engaging community members and scientists in studying the Minnesota Point dune ecosystem. We will collect data on dune deposition rates and ecosystem health and launch a sustainable community science program. Project efforts will support our major outcome: a more thorough understanding of the resilience of Minnesota Point dunes. Ultimately the work will promote a deeper scientific understanding of the dunes, better management of human use, increased capacity for conservation, and enhanced efforts to support wildlife, plants, visitors, and residents, ensuring long-term ecological health and public benefit.

Activities and Milestones

Activity 1: Understand dune dynamics and assess ecosystem health

Activity Budget: $109,221

Activity Description:
1a. Periodically, the USACE nourishes Minnesota Point with harbor dredge sand to counteract the loss of sand from harbor structures. The nourished sand is finer than normal beach sand, and the fate of the nourishment sand is unknown. We propose that the finer-grained nourished sand is sequestered in dunes, not offshore as previously hypothesized by the USACE. Our hypothesis predicts reduced deposition in dunes following construction of breakwaters, followed by recent rejuvenation of dunes in response to beach nourishment. To test our hypothesis, we will collect and analyze shallow sediment cores from the dunes to establish a century-scale record of sand accumulation rates.

1b. Building on the Minnesota Point Environmental Management Plan (1999), we propose updating the assessment of the dune system and documenting changes. We aim to enhance our understanding of the coastal dune ecosystem's health by identifying incidence and abundance of invasive species and documenting locations of rare and protected species. Consulting plant ecologists will gather existing ecosystem level data, identify data gaps, survey the dunes, establish polygons of similar communities, and document locations of human social trails and locations of severe erosion. The assessment will take place on municipally-owned/public land on the dunes of Minnesota Point.

Activity Milestones:

Description	Approximate Completion Date
Develop sampling strategy and collect first round of sediment cores from dunes	October 31, 2026
Execute contract negotiations and conduct dune ecosystem health assessment and reporting	December 31, 2026
Analyze core samples for density of fly ash	August 31, 2027
Collect second round of cores for OSL samples	August 31, 2027
Synthesize OSL and fly ash data to construct dune depositional history	August 31, 2028

Activity 2: Develop, facilitate and support community-science dune-monitoring program

Activity Budget: $77,135

Activity Description:
2a: The project team will develop a long term, community science monitoring program for indicators and parameters of dune resilience. We will establish a variety of data collection methods for collaborative documentation of changes at priority locations on Minnesota Point. The community science program will train volunteers to gather data on vertical dune erosion and deposition, erosion (or growth) of dunes along beach, sites of extreme erosion, and vegetation density through established transects with erosion pins and repeated data collection at monumented locations. Volunteers will also contribute to a crowdsourced, long term photo record of Minnesota Point through public photo monitoring locations to capture valuable information about changing beach and dune conditions, especially pre and post storm events. Tools and data collection processes will leverage experience and lessons learned from other community science coastal monitoring programs.

2b: In partnership with the Park Point Community Club and other organizations, we will recruit volunteers through community events and newsletters. We will conduct workshops to train volunteers on data collection protocols, and Minnesota Sea Grant will create a project webpage to coordinate efforts and display collected data. Ongoing training, volunteer engagement, and program impact evaluation will also be conducted.

Activity Milestones:

Description	Approximate Completion Date
Develop sampling protocols, training materials for volunteers and select transect and monitoring locations	March 31, 2027
Install long-term photo monitoring sites (chronolog)	May 31, 2027
Establish transects, recruit and train first set of volunteers	June 30, 2027
Volunteers collect data and data entered into database	May 31, 2029
Conduct community science program evaluation, train new volunteers, assess learning, and develop final project report	June 30, 2029

Activity 3: Develop and deliver outreach and education to engage residents and visitors

Activity Budget: $67,634

Activity Description:
Minnesota Sea Grant, MP50, and Minnesota's Lake Superior Coastal Program staff will develop and lead education and outreach on coastal processes, habitats, ecosystems, and dune stewardship. This collaborative effort will leverage expertise of all project partners and share findings from other local efforts, including recent studies and projects on Wisconsin Point.

We will develop education materials based on input from the advisory committee (Activity 4) and from survey data reflecting the needs and knowledge gaps of residents and visitors. We will host a science education series where we will highlight the importance of Minnesota Point and share research results from Activities 1 and 2. In-person engagement from the project team will also take place during the busy summer beach visitation season, connecting visitors and residents with key resources about Minnesota Point dunes. We will distribute physical materials that highlight how people can get involved with the project and best practices for caring for the dunes.

Outreach and education activities will be evaluated through both qualitative and quantitative measures, including participant numbers, visitor interactions, and follow-up surveys to assess knowledge and behavior change. We anticipate that insights gained from these activities will directly inform the development of future Minnesota Point efforts.

Activity Milestones:

Description	Approximate Completion Date
Survey on resident and visitor understanding and needs to guide education and outreach	December 31, 2026
Launch of science education series	June 30, 2027
Education and outreach materials developed	June 30, 2028
Summary report of education and outreach activities and survey findings completed	April 30, 2029

Activity 4: Form and manage advisory committee to ensure project success

Activity Budget: $7,010

Activity Description:
The project team will form an advisory committee to guide the overall project, with emphasis on providing expertise to cross-discipline and cross-jurisdictional activities. Advisory committee members may include, but will not be limited to: representatives from the City of Duluth, Minnesota Department of Natural Resources, Minnesota Biological Survey, Lake Superior National Estuarine Research Reserve, Duluth Seaway Port Authority, Coastal Hazards of Superior Community of Practice, Park Point Community Club, MP50, 1854 Treaty Authority and other local partners and interested parties.

Regular advisory committee meetings will be held to discuss project progress and challenges. Activity leads and project partners will share updates on progress, while advisory committee members will support the project by providing regular feedback, suggestions for improvement, strategic connections to resources, and help to remove barriers to project implementation. Advisory committee members will also assist with the holistic analysis of dune resilience by supporting review of newly collected dune ecosystem health assessment data, past observations, and trends of the dune ecosystem. Committee evaluation will include tracking attendance and participation, documenting feedback and action items, and regularly reviewing and reporting on project milestones and outcomes to ensure project success.

Activity Milestones:

Description	Approximate Completion Date
Identify and invite advisory committee members, establish role and purpose of committee	July 31, 2026
Conduct quarterly meetings, documenting and reporting guidance and recommendations	May 31, 2029
Share final project results and data with advisory committee	June 30, 2029

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
John Swenson	University of Minnesota Duluth, Department of Earth and Environmental Sciences	Co-Principal Investigator. Develop conceptual model of dune dynamics on Minnesota Point. Design and lead pilot study to establish dune deposition rate over the last two centuries. Co-lead community science monitoring program and support and provide guidance on education and outreach activities.	Yes
Karen Gran	University of Minnesota Duluth, Department of Earth and Environmental Sciences	Co-Principal Investigator. Assist with pilot study on dune deposition rate, including geochronology work, help establish repeat dune survey and data collection protocols, and support and provide guidance on education and outreach activities.	Yes
Julie McDonnell	Minnesota Department of Natural Resources, Minnesota's Lake Superior Coastal Program	Participate on Project Management Team; Coordinate with DNR staff for Advisory Committee and additional roles; Collaborate with DNR staff to support ecosystem health assessments; Lead and support community education and outreach initiatives; Provide support for community science volunteers; Manage data effectively.	No
Patricia Sterner	Minnesota Point Preservation Society d/b/a Minnesota Point 50	Support through outreach to obtain volunteers to engage in community science; Provide support for and collaboration on educational materials and public outreach.	No
Paul Treuer	Minnesota Point Preservation Society d/b/a Minnesota Point 50	Support through outreach to obtain volunteers to engage in community science; Provide support for and collaboration on educational materials and public outreach.	No

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?

The data generated in this project will be shared throughout the project's duration and remain available indefinitely through the University of Minnesota Data Repository. Educational materials will be posted on the Minnesota Sea Grant website and shared with interested groups.

The project will launch a network of volunteers to measure key dune resilience parameters. We anticipate this network will continue, with ongoing funding pursued by Minnesota Sea Grant or other project team members as needed. Ultimately, the data collected by both researchers and community members can support future dune protection and restoration efforts by local communities, governments, and decision-makers.

Project Manager and Organization Qualifications

Project Manager Name: Madison Rodman

Job Title: Assistant Extension Professor, Resilience Extension Educator

Provide description of the project manager's qualifications to manage the proposed project.
Madison Rodman will serve as the project manager. She will oversee project team and advisory committee meetings; coordinate the team in the development of the community science program and recruitment and training of volunteers; lead the education and outreach activity development and facilitation; support analysis of data collected throughout the project; and conduct project evaluation and reporting.

Madison is the Resilience Extension Educator with the University of Minnesota Sea Grant program. She supports Minnesota communities, residents, and organizations preparing for, adapting to, and recovering from extreme weather events and climate change, especially in coastal areas. Madison brings together diverse partners, facilitates meaningful engagement, and delivers accessible, credible science, resources and programs to meet their needs. She holds a BS in Plant Biology from the University of Minnesota and a MS in Botany and Plant Pathology with an ecology concentration from Oregon State University and has certifications in college and university teaching, as well as equity and diversity work. Madison has published research and received awards for both her plant science and extension efforts including a National Science Foundation Graduate Research Fellowship award and a University of Minnesota Outstanding Community Service Staff Award. Madison is experienced in successful grant and project management and the development and implementation of community-centered science outreach and engagement programs.

Organization: U of MN - Duluth - Sea Grant

Organization Description:
Minnesota Sea Grant (MNSG) is a systemwide program of the University of Minnesota and one of 34 federal-university Sea Grant partnerships across the country supported by the National Oceanic and Atmospheric Administration in Great Lakes and coastal states that encourage the wise stewardship of our marine resources through research, outreach, communication, education and technology transfer. MNSG's mission is to inform and facilitate interaction among the public and scientists to enhance the communities, the environment, and the economies along Lake Superior and across Minnesota's inland waters by identifying information needs, supporting scientific research to address those needs, translating the resulting science into actionable information, and communicating those results to the public. MNSG concentrates on research, outreach, education, and communication in four focus areas: healthy coastal ecosystems, sustainable fisheries and aquaculture, resilient communities and economies, and environmental literacy and workforce development.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	$ Amount
Personnel								
Madison Rodman		Project manager. She will oversee project team and advisory committee meetings; coordinate the team in the development of the community science program and recruitment and training of volunteers; lead the education and outreach activity development and facilitation; support analysis of data collected throughout the project; and conduct project evaluation and reporting.			27%	0.6		$70,103
John Swenson, Co-PI		Co-Principal Investigator. Develop conceptual model of dune dynamics on Minnesota Point. Design and lead pilot study to establish dune deposition rate over the last two centuries. Co-lead community science monitoring program and support and provide guidance on education and outreach activities.			27%	0.15		$29,373
Karen Gran, Co-PI		Co-Principal Investigator. Assist with pilot study on dune deposition rate, including geochronology work, help establish repeat dune survey and data collection protocols, and support and provide guidance on education and outreach activities.			27%	0.15		$29,686
MNSG Communications Staff, to be determined		Staff support for developing webpage and interactive data tool for sharing data collected by community members.			27%	0.03		$3,104
Two Sea Grant Undergraduate Student Research/Project Assistants		Research/Project Assistants will assist with collection of survey data, preparation for education and outreach events, development and facilitation of community science program, data entry, and other project tasks to meet goals.			0%	1.5		$52,755
UMD Undergraduate Student Research/Project Assistant		Assist with field work, process fly ash samples (yr1), help set up community surveying work (yr1). Yr 2 and Yr 3 assist in field and at meetings as needed (1 week time).			0%	0.27		$8,831
							Sub Total	**$193,852**

Contracts and Services								
TBD	Service Contract	Plant ecologist contract for dune health assessment. Contractor will gather existing ecosystem level data, identify gaps, survey the dunes, map changes, establish polygons of similar communities, and document locations of social trails and locations of severe erosion among other tasks in consultation with project team				-		$45,000
Utah State University Luminescence Lab	Service Contract	Optically Stimulated Luminescence (OSL) dating at $1000/sample.				-		$12,000
							Sub Total	**$57,000**
Equipment, Tools, and Supplies								
	Tools and Supplies	Community science and outreach field supplies	Supplies to include but not limited to: Participatory science program supplies - posts, tapes, clipboards, rite in the rain paper, buckets, and stakes, and outreach supplies.					$1,600
	Tools and Supplies	Chronolog (photo monitoring) installation hardware	Brackets, screws, mounting hardware for community photo monitoring sites. Installed in compliance and cooperation with City of Duluth					$75
	Tools and Supplies	Chronolog (photo monitoring) service	Annual web service for collection and sharing of data from three community photo monitoring sites. 3 sites, $170 each annually					$1,530
	Tools and Supplies	Coring supplies	12 - 10' core tubes at $10/foot plus core caps and rental of generator					$1,500
							Sub Total	**$4,705**
Capital Expenditures								
							Sub Total	**-**
Acquisitions and Stewardship								

							Sub Total	**-**
Travel In Minnesota								
	Miles/ Meals/ Lodging	Sea Grant UMD fleet rental for an estimate 46-50 one-day trips per project year. Trip cost @$20 per day, 13 miles roundtrip average, $.30 per mile	Sea Grant personnel to travel to Minnesota Point for research, community science, and outreach efforts.					$3,393
							Sub Total	**$3,393**
Travel Outside Minnesota								
							Sub Total	**-**
Printing and Publication								
	Printing	Printing	Printing to include but not limited to: fact sheets, flyers, posters, infographics, data sheets, etc supporting research, community education, outreach, and community science activities					$2,050
							Sub Total	**$2,050**
Other Expenses								
							Sub Total	**-**
							Grand Total	**$261,000**

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				
			State Sub Total	**-**
Non-State				
In-Kind	UMN unrecovered indirect costs are calculated at the UMN federally negotiated rate for research of 54% modified total direct costs.	Indirect costs are those costs incurred for common or joint objectives that cannot be readily identified with a specific sponsored program or institutional activity. Examples include utilities, building maintenance, clerical salaries, and general supplies.	Secured	$140,940
In-Kind	Minnesota Point Preservation Society d/b/a Minnesota Point 50	Participation on project management team; participaiton in community science aspect for recruitment of community volunteers to engage in data collection; assist in community outreach and education through multiple communications outlets including Park Point Community Club meetings, information published in The Breeze (community newsletters), hosting educational sessions; assist in refining and incorporating project information into planned Information Guides for MN Point Residents and Visitors.	Secured	$64,000
In-Kind	Minnesota DNR supports this project with in-kind staff time provided through federal funds provided to Minnesota from the Coastal Zone Management Act of 1972, as amended, administered by the Office for Coastal Management, National Oceanic and Atmospheric Administration (NOAA), U.S. Department of Commerce provided to the Minnesota Department of Natural Resources (DNR) for Minnesota's Lake Superior Coastal Program	Participation on project management team; advisory committee; participate with developing RFP for consultant ecologists; participate in community science aspect related to dune ecosystem health and data collection; participate in outreach and education; and support for project data management plan and metadata	Secured	$70,701
			Non State Sub Total	**$275,641**
			Funds Total	**$275,641**

Total Project Cost: $536,641

This amount accurately reflects total project cost?

Yes

Attachments

Required Attachments

Visual Component

File: fbb00f1e-1fb.pdf

Alternate Text for Visual Component

Five photographs illustrating components of Blown Away project. They include 1946 and 2025 photos of a home on Minnesota Point showing changes to the dunes, and an overview of the three major project activities: dune assessment, community science, and education and outreach activities....

Supplemental Attachments

Capital Project Questionnaire, Budget Supplements, Support Letter, Photos, Media, Other

Title	File
UMD Authorization Letter	c8aead01-1f3.pdf
City of Duluth Mayor Support Letter	03e0048e-ed9.pdf
City of Duluth Support Letter	d17d7231-ed3.pdf
Park Point Community Club Support Letter	15753ba3-165.pdf
MP50 Support Letter	ec17ef85-58f.pdf

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 UMN Policy on travel 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?

Yes

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:

John Swenson, Karen Gran, and Brady Rivers, University of Minnesota Duluth; Julie McDonnell, Minnesota Department of Natural Resources, Minnesota's Lake Superior Coastal Program; Patricia Sterner and Paul Treuer, Minnesota Point Preservation Society d/b/a Minnesota Point 50

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

Yes, I understand