



Environment and Natural Resources Trust Fund

2025 Request for Proposal

General Information

Proposal ID: 2025-126

Proposal Title: Aquatic Invasive Species: From Problems to Real-World Solutions

Project Manager Information

Name: Nicholas Phelps

Organization: U of MN - MAISRC

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Project Basic Information

Project Summary: MAISRC will launch 20-24 high-priority projects aimed at solving Minnesota's AIS problems using a rigorous, prioritized, and collaborative process. Results will be delivered to end-users through strategic communication and outreach.

ENRTF Funds Requested: \$6,500,000

Proposed Project Completion: June 30, 2029

LCCMR Funding Category: Aquatic and Terrestrial Invasive Species (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.

Aquatic invasive species (AIS) are a real and growing threat to Minnesota's lakes, rivers, and wetlands. The impacts of AIS are being felt from the end of our docks to state budgets – degrading our ecosystems, economies, and way of life. The stakes are high, and Minnesotans are responding. We invest millions of dollars and countless hours each year to prevent and control infestations. These necessary investments have no doubt resulted in positive outcomes; however, they have yet to solve the long-term problem.

In 2012, Minnesota identified a path forward: The Minnesota Aquatic Invasive Species Research Center (MAISRC) was established with ENRTF support, becoming a national leader. A Minnesota program, committed to providing solutions for Minnesota. Through groundbreaking and solutions-oriented research, we have filled key knowledge gaps, developed new tools, informed decisions in real-time, and built capacity at all levels by translating science into action. MAISRC has put solutions to our AIS problems within reach.

It is imperative that we remain committed to a long-term vision for AIS response in Minnesota, one that is informed by actionable science and collaborative management implementation. Success stories are emerging (i.e., non-native phragmites, common carp, etc.) and more must be pursued.

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.

MAISRC is driven to discover research-based solutions to Minnesota's AIS problems. We have a proven track record of addressing manager-identified problems through innovative, rigorous, and highly collaborative research. We have brought together ~37 different project managers and their experienced/diverse teams to pursue ~65 ENRTF-funded research projects (some multi-phase) on a range of high-priority species and strategies for AIS prevention, control, and management. Our accomplishments are numerous, with some highlighted in the infographic. For more, visit: www.maisrc.umn.edu.

We propose to build on past success and continue forward momentum by launching additional projects through our competitive RFP process, informed by our extensive research needs assessment and partner engagement. All research will be vetted by internal and external reviewers to ensure both scientific rigor and practical application. For all new projects and those funded with previous ENRTF appropriations, we will continue to prioritize communication and outreach to ensure results are effectively delivered to managers, practitioners, and the public to build our State's response capacity. We will continue to consult our external Advisory Board, Technical Advisory Board, and our Fellows Group to stay mission-oriented.

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 continue to advance scientific understanding and build capacity aimed at solving Minnesota's AIS problems. Through workshops and direct communication, we will translate our science and deliver tools directly to local, state, tribal, and federal AIS managers. We will broadly share recommendations with diverse audiences, through media interviews, local presentations, webinars, published manuscripts, and more. Hands-on experiences will train students to be the next generation of AIS professionals. We expect the outcomes of this project will empower Minnesotans, from the dock to the state capital, and everywhere in between, to be an active participant in solving Minnesota's AIS problems.

Activities and Milestones

Activity 1: Implementing a collaborative and interdisciplinary AIS research and outreach program

Activity Budget: \$650,971

Activity Description:

The value of a Center-based approach to AIS research is invaluable and reaches far beyond what fragmented efforts could accomplish. We will provide leadership by establishing priorities, facilitating coordination, evaluating research progress in real-time, and being a trusted go-to resource for countless individuals, agencies, and advisory committees. We will provide physical infrastructure, shared equipment, and lab support in ways that maximize resource efficiency and effectiveness across ENRTF-appropriations and individual projects. We will also continue to foster a highly collaborative research community, bringing together the best-and-brightest from across disciplines and institutions to develop creative solutions to complicated problems.

We will continue to support the advancement of our science towards management action and engage the partners at every step in the process. Since inception, MAISRC has been featured in ~600 media stories, published ~150 manuscripts and numerous factsheets, trained ~450 community science volunteers, and presented our work countless times to end-users in in-person, virtual, and written formats. MAISRC staff and researchers meet regularly with managers, practitioners, lake associations, etc. to ensure the translation of technical science into meaningful real-world action. The emphasis we place on end-user engagement and coordination is unique among academic programs and brings significant value to individual projects.

Activity Milestones:

Description	Approximate Completion Date
Prioritize 2028 research needs through research needs assessment process	December 31, 2027
Initial dissemination of results and next steps identified for projects completed December 31, 2027	June 30, 2028
Prioritize 2029 research needs through research needs assessment process	December 31, 2028
Initial dissemination of results and next steps identified for projects completed December 31, 2028	June 30, 2029
Continued dissemination of research results from past MAISRC subprojects and provide science-based recommendations	June 30, 2029

Activity 2: Advancing innovative research to develop solutions and build statewide capacity

Activity Budget: \$5,849,029

Activity Description:

We will offer a competitive RFP in years one and two of this project, launching 20-24 new and continuation subprojects (approximately \$200k-250k each, with two-year durations) addressing Minnesota’s highest priority research needs on emerging and existing AIS threats. New lines of research will be focused on needs identified by our comprehensive research needs assessment. These new subprojects will provide a pipeline of innovation and collaboration. Concurrently, existing projects with high potential will be evaluated through the competitive peer-review process and continued. By providing a long-term strategy to build upon and transition promising research, MAISRC is best positioned to realize the value of previous research investments. We have demonstrated the rigor and success of this process by launching and supporting dozens of highly impactful new and continuation subprojects in previous RFP cycles.

Our RFP is open to all Minnesota-based researchers and we encourage creation and collaboration of multi-disciplinary teams. As a result, we have brought together new teams and agency partnerships from across the state and world, adding much-needed expertise and leveraging significant non-ENRTF funds. This coordinated process has also avoided

duplication of research efforts and identified gaps where we have successfully recruited new research expertise to complement our current team.

Activity Milestones:

Description	Approximate Completion Date
Internal and external review of 2025 RFP proposals	September 30, 2025
Award subproject funding to 10-12 proposals from 2025 RFP, subprojects begin on January 1, 2026	September 30, 2025
Issue 2026 RFP on high priority research needs	March 31, 2026
Internal and external review of 2026 RFP proposals	September 30, 2026
Award subproject funding to 10-12 proposals from 2026 RFP, subprojects begin on January 1, 2027	September 30, 2026
Issue 2027 RFP on high priority research needs	March 31, 2027
Subprojects awarded in 2025 RFP completed (subprojects run January 1, 2026 - December 31, 2027)	December 31, 2027
Subprojects awarded in 2026 RFP completed (subprojects run January 1, 2027 - December 31, 2028)	December 31, 2028

Project Partners and Collaborators

Name	Organization	Role	Receiving Funds
Invasive Species Program Staff	MN Dept of Natural Resources	Staff from the MN DNR Invasive Species Program sit on the MAISRC Technical Committee and participate in the biennial Research Needs Assessment process to identify priority species and research needs.	No
External Researchers & Managers	State, federal, and tribal agencies, counties, watershed districts, soil and water conservation districts, etc.	As a part of the Research Needs Assessment process, MAISRC brings representatives to the table from multiple external research and management agencies to participate in the prioritization of research needs.	No
Community Partners	County AIS managers, lake associations, and non-profits	MAISRC partners with local governments and community organizations to disseminate research findings and help translate research into tools and resources that are available to both managers and the public.	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?

MAISRC has a demonstrated track record of not only conducting high-quality research, but also providing the public and managers with research tools and science-based information in understandable formats. We are committed to research transparency and long-term public accessibility of data and related products. ENRTF funding would ensure that these activities will continue until 2029. We have, and will continue to, leverage the ENRTF investment with significant UMN support (faculty positions, foregone ICR, etc.), direct legislative funding, and external grant support from 'Partnership Projects'. However, to ensure MAISRC remains focused on Minnesota's priorities and solutions-oriented research, additional ENRTF support remains crucial.

Other ENRTF Appropriations Awarded in the Last Six Years

Name	Appropriation	Amount Awarded
Building Knowledge and Capacity to Solve AIS Problems	M.L. 2019, First Special Session, Chp. 4, Art. 2, Sec. 2, Subd. 06a	\$4,000,000
Building Knowledge And Capacity For AIS Solutions	M.L. 2021, First Special Session, Chp. 6, Art. 6, Sec. 2, Subd. 06e	\$3,750,000
Developing Research-Based Solutions to Minnesota's AIS Problems	M.L. 2023, , Chp. 60, Art. 2, Sec. 2, Subd. 06b	\$4,941,000

Project Manager and Organization Qualifications

Project Manager Name: Nicholas Phelps

Job Title: Director and Associate Professor

Provide description of the project manager’s qualifications to manage the proposed project.

Dr. Nick Phelps has been the Director of the Minnesota Aquatic Invasive Species Research Center (MAISRC) since 2016 and was an original MAISRC faculty member when the Center was created in 2012. In addition, Dr. Phelps is an Associate Professor in the Department of Fisheries, Wildlife, and Conservation Biology at the University of Minnesota. His research focuses on emerging threats to the health and sustainability of aquatic ecosystems, which lie at the intersection of animals, humans and the environment. Dr. Phelps has managed ~\$37M in competitive grant funding, led large international collaborations, held numerous outreach and public engagement events, and published ~75 peer-reviewed manuscripts and book chapters. Under his leadership, MAISRC has become a national leader in solutions-oriented research on AIS and a go-to source for science-based information for AIS managers, practitioners, and the public.

Organization: U of MN - MAISRC

Organization Description:

The Minnesota Aquatic Invasive Species Research Center (MAISRC) uses innovative science to develop solutions to Minnesota's AIS problems. Our mission is to develop research-based solutions that can reduce the impacts of AIS in Minnesota by preventing spread, controlling populations, and managing ecosystems; and to advance knowledge of AIS to inspire action by others. MAISRC was created in 2012 with broad bipartisan, public, agency, and University support thanks to funding from the Environment and Natural Resources Trust Fund. Support from the State of Minnesota ensures that MAISRC can leverage our capacity and partnerships around the world to address local issues.

Budget Summary

Category / Name	Subcategory or Type	Description	Purpose	Gen. Ineligible	% Benefits	# FTE	Classified Staff?	\$ Amount
Personnel								
Project Manager		Lead MAISRC research activities and coordinate with local, state, and national agencies and AIS professionals.			37.1%	1		\$237,518
Co-Project Manager		Coordinate MAISRC research program, outreach to stakeholders, and dissemination of research findings.			37.1%	1		\$145,600
Communications Manager		Maintain MAISRC communications platforms to effectively disseminate research findings and connect MAISRC research with the public.			33.5%	1		\$104,313
Co-PIs		20 Co-PIs to perform research on the prevention, control and management on AIS in Minnesota. Positions will be funded through research projects that are funded by MAISRC RFPs.			37.1%	1.6		\$257,555
Post-Doctoral Associates		15 Post-docs to perform research on the prevention, control and management on AIS in Minnesota. Position will be funded through research projects that are funded by MAISRC RFPs.			27.1%	30		\$2,518,750
Graduate Students		16 Graduate students to perform research on the prevention, control and management on AIS in Minnesota. Position will be funded through research projects that are funded by MAISRC RFPs. Fringe rate includes cost of tuition.			48%	16		\$1,745,716
Undergraduate Students		18 Undergraduate students to perform research on the prevention, control and management on AIS in Minnesota. Position will be funded through research projects that are funded by MAISRC RFPs.			0%	9		\$246,548
							Sub Total	\$5,256,000
Contracts and Services								
Private Contractors	Professional or Technical Service Contract	Mailing, communications services, web hosting, software subscriptions, etc. More detail provided as specific research projects are proposed.				-		\$100,000

Co-PIs	Sub award	Subawards to Co-PIs outside of the UMN (e.g. USGS, other colleges/universities). More detail provided as specific research projects are proposed.				-		\$175,000
University of Minnesota	Internal services or fees (uncommon)	UMN contract research services (e.g. genetic analysis, supercomputing). More detail provided as specific research projects are proposed.				-		\$100,000
Private Contractors	Professional or Technical Service Contract	Lab and field equipment rental and repair. More detail provided as specific research projects are proposed.				0		\$51,500
Private Contractors	Professional or Technical Service Contract	Space and facility rental for events, meetings, and workshops. More detail provided as specific research projects are proposed.				-		\$11,500
							Sub Total	\$438,000
Equipment, Tools, and Supplies								
	Tools and Supplies	General Operating Supplies	Supplies for research coordination and workshops (e.g. paper, office supplies), provisions for external meetings and events. More detail provided as specific research projects are proposed.	X				\$8,000
	Tools and Supplies	Field/Lab Equipment	Supplies for research in the field and lab (e.g. Piping, fish food, gas for boats, tanks, reagents, sampling supplies, and other consumables). More detail provided as specific research projects are proposed.					\$280,000
	Equipment	Field/Lab Equipment	Equipment for research in the field and lab (e.g. storage containers, software, nets, and other equipment). More detail provided as specific research projects are proposed.					\$275,000
							Sub Total	\$563,000
Capital Expenditures								

							Sub Total	-
Acquisitions and Stewardship								
							Sub Total	-
Travel In Minnesota								
	Miles/ Meals/ Lodging	Travel for MAISRC staff and researchers. More detail provided as specific research projects are proposed.	Conduct research, AIS coordination meetings, and dissemination of research results.					\$126,000
	Conference Registration Miles/ Meals/ Lodging	Project Manager registration and travel to two conferences over the course of the project (4 years). Co-PI's registration and travel to one in-state conference per project. More detail provided as specific research projects are proposed.	Presentation of research findings.					\$44,000
							Sub Total	\$170,000
Travel Outside Minnesota								
	Miles/ Meals/ Lodging	Project Manager travel to four regional AIS meetings.	Coordination of AIS research with regional managers and researchers.	X				\$4,500
	Conference Registration Miles/ Meals/ Lodging	Project Manager to travel to one national conference over the course of the project (4 years). Co-PIs travel to national conferences, with prior approval.	Presentation of research findings to strategic audiences and expanding AIS research for Minnesota.	X				\$43,500
							Sub Total	\$48,000
Printing and Publication								
	Printing	Research support materials, mailed surveys, research reports, etc. More detail provided as specific research projects are proposed.	Dissemination of research findings and support for research activities.					\$25,000
							Sub Total	\$25,000
Other Expenses								
							Sub Total	-
							Grand Total	\$6,500,000

Classified Staff or Generally Ineligible Expenses

Category/Name	Subcategory or Type	Description	Justification Ineligible Expense or Classified Staff Request
Equipment, Tools, and Supplies		General Operating Supplies	MAISRC research teams often conduct workshops, public surveys, and stakeholder meetings and participate in dissemination events that require basic office supplies such as paper, pens, name tags, file folders, etc. Office materials like these are not provided by the UMN.
Travel Outside Minnesota	Miles/Meals/Lodging	Project Manager travel to four regional AIS meetings.	Working with regional AIS managers and researchers is essential to advancing AIS solutions for Minnesota by sharing knowledge and coordinating control/management efforts across state boundaries that are rooted in the latest science. Participating in regional meetings allows MAISRC to engage in AIS prevention and management efforts that will have direct impacts on Minnesota waters.
Travel Outside Minnesota	Conference Registration Miles/Meals/Lodging	Project Manager to travel to one national conference over the course of the project (4 years). Co-PIs travel to national conferences, with prior approval.	Sharing research findings at regional and national conferences allows MAISRC researchers to connect with others in the field and advance knowledge and AIS solutions. Shared research findings directly impact Minnesota by bringing new ideas and information into the state that can further AIS prevention, control, and management efforts.

Non ENRTF Funds

Category	Specific Source	Use	Status	Amount
State				
In-Kind	University of Minnesota foregone indirect costs	Administrative support of MAISRC activities including payroll and human resources, finance, facilities, and IT.	Secured	\$3,156,541
Cash	Environment and Natural Resources Appropriation M.L. 2023, Ch. 60, Art. 1, Sec. 3, Subd. 3(j)	\$1,820,000 for MAISRC's core work to prioritize, support, and develop research-based solutions that can reduce the effects of aquatic invasive species in Minnesota by preventing spread, controlling populations, and managing ecosystems and to advance knowledge to inspire action by others. \$2,000,000 for Lab to Lakes special project working with local partners to implement MAISRC research findings.	Pending	\$3,820,000
Cash	Environment and Natural Resources Appropriation M.L. 2023, Ch. 60, Art. 1, Sec. 3, Subd. 6, Sec. 9(a)	Lab to Lakes special project to enhance and implement MAISRC's research-based solutions through: (1) implementation of a watershed-scale carp management plan and additional research focused on site-specific method refinement and evaluation; (2) creation of a long-term monitoring program with state and local partners that evaluates the feasibility of whole-lake zebra mussel control projects and the development of criteria for selecting and managing lakes; (3) refinement and implementation of large scale surveillance and early detection methods for high-priority aquatic invasive species; and (4) development and sharing, with relevant experts and stakeholders, contingency plans regarding the potential risks of aquatic invasive species.	Pending	\$1,000,000
			State Sub Total	\$7,976,541
Non-State				
			Non State Sub Total	-
			Funds Total	\$7,976,541

Total Project Cost: \$14,476,541

This amount accurately reflects total project cost?

Yes

Attachments

Required Attachments

Visual Component

File: [f7333440-8e3.pdf](#)

Alternate Text for Visual Component

The visual component includes a map of Minnesota that depicts research activities throughout the state and highlights notable accomplishments. A description of a three-step process for MAISRC research: 1. Ideas and needs, 2. Research, 3. Real-world solutions. A timeline depicts the MAISRC funding cycle, with overlapping RFPs and 2-year projects....

Supplemental Attachments

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

Title	File
Full description of visual component	c190e2ab-a2b.docx
UMN Sponsored Projects Office approval	8013afdf-d08.pdf

Administrative Use

Does your project include restoration or acquisition of land rights?

No

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:

Cori Mattke, University of Minnesota