MINNESOTA AQUATIC INVASIVE SPECIES RESEARCH CENTER

UNIVERSITY OF MINNESOTA

Request for Research Proposals

For New Lines of Research

The Minnesota Aquatic Invasive Species Research Center (MAISRC) at the University of Minnesota is seeking proposals for research studies to advance early detection and prevention of the establishment aquatic invasive species (AIS), create and improve options for AIS control, and assess risk and species impacts to prioritize management actions in Minnesota. Through this competitive Request for Proposals (RFP), MAISRC will administer an estimated $2,300,000 to fund high-priority research needs focused on both new lines of research and continuation of existing projects.

MAISRC conducted a comprehensive research needs assessment in 2025, which included input from AIS managers, researchers, and the public, to identify and prioritize research needs that will advance science-based solutions for AIS in Minnesota. The 20 research priorities listed below were identified as part of this needs assessment and are focused on new lines of research.

Anticipated funding availability is January 1, 2027 through December 31, 2028. There is no budget limit for each proposal or a set number of proposals that will be funded.

Proposals are invited from investigators at any Minnesota-based academic, governmental (federal, tribal, state, local), or non-profit research institution or organization with demonstrated capacity to conduct rigorous scientific research. Proposed work should build capacity within and benefit the state of Minnesota. Multi-disciplinary and multi-investigator projects bringing together diverse skillsets are strongly encouraged. Research teams may include expertise from outside of Minnesota, but please note that some restrictions apply to out-of-state spending of grant funds.

Projects are expected to use state-of the-art techniques and approaches and should produce both peer-reviewed publications and translation to broader audiences. Dedicated research space and other resources in the MAISRC Containment Laboratory may be available for use by funded projects. In addition, MAISRC staff can assist with the development and implementation of stakeholder engagement activities, as well as data management and visualization.

To discuss opportunities for collaboration and networking, stakeholder engagement, or use of the MAISRC Containment Laboratory, please contact MAISRC staff at maisrc@umn.edu.

Proposal Selection Process

Pre-proposals will be reviewed by a committee consisting of MAISRC's Director, Research Chair, two members of MAISRC's Advisory Board, and two technical reviewers. Evaluation will be based on the degree to which the pre-proposal addresses research priorities, the likelihood that the research will generate findings that are applicable to solving AIS problems in Minnesota in the short or long-term, and the demonstrated capacity of

the team to perform the proposed research. Proposed engagement with end users of the research and the potential to leverage additional funding will also be considered.

Investigators of pre-proposals that are selected by the committee will be invited to submit a full proposal that will undergo full scientific peer-review before final funding decisions are made. The timeline of the proposal selection process is as follows:

Pre-proposals due	March 2, 2026
Invitations for full proposals sent	April 2026
Full proposals due	May 2026
Peer-review of full proposals	May – June 2026
Final selection and notification of funding awards	July 2026
Work plan development/project set-up	August – September 2026
Projects begin	January 1, 2027

Pre-proposal Instructions

The deadline for pre-proposals is March 2, 2026 at 11:59 PM CST. All documents must be submitted to maisrc@umn.edu following the guidelines below. For questions about research priorities or to discuss research ideas, contact MAISRC staff at maisrc@umn.edu.

Pre-Proposal Components:

1. Project proposal – *submit in one PDF; download template*
    - Cover Sheet – *1 page limit; included in template*
    - Pre-proposal Narrative – *3-page limit; included in template*
    - Researcher Qualifications – *provide a CV for all primary investigators; 2-page limit each*
    - Project Manager's Organization Description – *1 page limit*
    - Citations
2. Project Budget – *submit in MS Excel; download template*
3. Optional Attachments – *letters of support, etc.*

The 2026 MAISRC RFP is primarily funded by the Environment and Natural Resource Trust Fund (ENRTF), which is administered by the Legislative-Citizen Commission on Minnesota Resources (LCCMR); therefore, all submissions to the MAISRC RFP must be in alignment with LCCMR's guidance on allowable expenses.

For UMN proposals: Please do not submit through SPA. However, we recommend that you discuss your pre-proposal with your finance team, department head, and others who would eventually need to approve your proposal to streamline the submission/approval process in the event that you are invited to submit a full proposal.

Research Priorities

Proposals for research on the following topics will be considered for funding – topics are not listed in priority order. If not specifically addressed in the priorities listed below, the species being studied must be included on the MAISRC 2026 species priority list. Research that is not focused on addressing one of the following priorities will not be considered for funding.

A: Early detection and preventing the establishment of priority species

1. Quantify the effectiveness and economic value of efforts to prevent and reduce the spread of AIS.
2. Develop field-deployable and scalable detection methods (e.g., LAMP, remote sensing, drones) for incipient AIS invasions in natural environments.
3. Develop non-lethal methods for detecting pathogens relevant to the private and public aquaculture sectors, such as viral hemorrhagic septicemia virus (VHSV), bacterial kidney disease (BKD), and other priority pathogens.

B: Creating and improving options for control of priority species

1. Develop innovative and environmentally safe control technologies for priority AIS populations, including long-term research initiatives focused on novel and cost-effective biochemical products or genetic approaches. Real-world evaluation of technologies with near-term management application and engagement with potential end users are encouraged.
2. Develop expanded genomic resources for freshwater ecosystems, including sequencing genomes of priority AIS and non-AIS species to guide development of eDNA resources, genetic biocontrol, and other applications for AIS management.
3. Conduct ecotoxicological assessments for Minnesota priority native species (esp. Blanding's turtles and pugnose shiners) focused on pesticides used for aquatic invasive species control. Use results to develop recommendations to help guide permit and management decision-making.
4. Evaluate potential methods to reduce regrowth of starry stonewort by targeting bulbils in sediments.
5. Investigate seasonal herbicide application regimes to improve effectiveness and/or selectivity for control of Eurasian watermilfoil, starry stonewort, or curlyleaf pondweed.
6. Develop potential novel control methods for spiny water flea populations.
7. Develop new invasive fish removal techniques that are effective for invaded areas with small population sizes, for which current methods may be inadequate.
8. Assess the effectiveness of heat, water flow, shading, light, baits, and/or electrical guidance systems to attract silver carp into stationary traps for removal at existing barriers.
9. Develop self-limiting genetic biocontrol methods to suppress bighead and silver carp populations. Collaborate with decision makers to consider potential for future adoption and technology readiness.

C: Assessing risk and species impacts to prioritize management actions

1. Evaluate the economic impact of AIS introductions (e.g., starry stonewort, zebra mussel, Eurasian milfoil) on property values, business, and tourism over time to inform cost-benefit analyses, communication efforts, and management decisions.

2. Assess the risk of AIS spread from the Organisms in Trade (OIT) supply chain and develop improved methods for surveillance and risk mitigation.
3. Evaluate the potential effects of climate change (including temperature, precipitation, and/or overwintering conditions) on the distribution and impacts of high-priority AIS to inform prevention, management, and adaptation strategies.
4. Evaluate potential genetic and/or environmental factors that influence the likelihood of establishment and subsequent population dynamics of zebra mussels.
5. Develop applied knowledge on European frogbit life history, ecophysiology, and invasion risk to inform surveillance and rapid response strategies in Minnesota.
6. Investigate the effects of invasive aquatic plants and control of said plants on water quality to help set realistic goals for management.
7. Develop risk management scenarios (e.g., high risk/low intervention, low risk/high intervention) that incorporate stakeholder perspectives to reduce the likelihood of upstream migration of invasive fish (e.g., round goby, northern snakehead, black carp) to Minnesota via the Mississippi River, with an emphasis on passage through Lock and Dam 19.
8. Evaluate and refine strategies for risk-based surveillance of viral hemorrhagic septicemia virus in Minnesota to guide fish transportation and stocking decisions.