# Michigan Sea Grant 2025 Request for Proposals for Core Research Projects

**Research Program Overview**

Michigan Sea Grant (MISG) is inviting proposals for innovative research projects for the 2026–2028 funding period that begins on February 1, 2026. All MISG funds are awarded via a competitive process involving external peer review and external advisory panel recommendations.

**Core Research Projects**

Research on issues affecting the Great Lakes ecosystem and its communities, and that will have clear application to management, policy, or conservation or address a clear partner need or question. Funding up to $110,000 per year. Note that MISG funding requires a 50% non-federal match – see below for more information. MISG has identified a set of priority topics listed in the Appendix that are aligned with our 2024-2027 Strategic Plan.



## Information and Guidelines for Core Research Proposals

MISG is accepting proposals for Core Research projects for the 2026-2028 funding cycle. University-based researchers are encouraged to submit research projects that fulfill critical research needs for the Great Lakes and its coastal ecosystems and communities, can be translated to management, policy, or conservation application and decision-making, and fit within the focus areas of the 2024-2027 Michigan Sea Grant Strategic Plan. MISG seeks to bring together innovative research teams from Michigan universities and, where possible, leverage active research programs conducted by federal and state agencies. MISG encourages proposals that recruit and engage with students and staff from all Michigan communities. The projects will run for two years, and the maximum annual research project budget is $110,000 per year, for a project total of $220,000, including indirect costs. The proposal is also required to provide non-federal matching funds provided by the Principal Investigator of at least 50% of the amount requested from MISG (see more information in Non-Federal Match section below).

### Core Research Proposal Priority Topics

For the 2025 RFP, MISG has identified several priority topics, as listed in the Appendix at the end of this document. However, other research topics that align with the 2024-2027 Strategic Plan will be accepted.

*Developing an Alternate Core Research Topic*

Research teams can propose a Core Research project for a topic not described in this RFP. When doing so, provide the following additional information:

- Explain why the issue is a challenge, how it relates to MISG's Strategic Plan, and why it is of interest to resource management agencies at the local, state, regional, Tribal, or federal level.
- Demonstrate that the topic is amenable to analysis based on existing data and information.

**Important Dates**

- **March 14, 2025** – Letters of Intent (LOI) are due by 5 p.m. ET. LOIs should be submitted through the MISG website
- **May 27, 2025** – Questions about the RFP can be submitted to MSG-RFPinfo@umich.edu until 5 p.m. (ET). Responses will be posted on the MISG website as soon as possible after questions are received.
- **May 30, 2025** – Full research proposals are due by 5 p.m. ET. Full proposals should be submitted through the MISG website
- **September 2025** – Notification of final proposal funding decisions.
- **February 1, 2026** – Funding for new projects begins, pending federal appropriations.
- **February 1, 2026, through January 31, 2028** – Timeline for projects approved for funding.

**Eligibility**

Qualified researchers at universities and colleges, including community and Tribal colleges, located in Michigan are eligible to be Principal Investigators on MISG-funded projects. Lead scientists must have Principal Investigator standing at an accredited Michigan institution to be eligible for funding. However, project team members are not limited to researchers at these organizations. For example, project team members may include people from federal, state, Tribal, and local agencies; non-governmental organizations and community groups; K-12 schools; and other organizations relevant to the project. Project team members may be at institutions outside of the state of Michigan, but PIs must be in Michigan. Note that federal collaborators are ineligible to receive any funding. MISG encourages eligible applicants from all Michigan communities. Individuals currently serving as a member of the MISG Advisory Committee are ineligible to apply.

**Questions and Informational Webinar**

Questions related to this RFP, whether technical or content-related, should be submitted to the Michigan Sea Grant Research Program Manager (MSG-RFPinfo@umich.edu) by the respective deadlines listed above. Responses to questions will be posted on the MISG Research website. MISG will also host a webinar during early February (TBD) to introduce the RFP process and answer any questions. Details will be provided on our website and social media.

# Letter of Intent Guidelines

Note that PIs are **required** to submit a Letter of Intent (LOI) to be eligible to submit a full proposal. LOIs not received by the deadline (March 14, 2025) will not be considered. Investigators must submit their LOI as a PDF through our website. LOIs will not be peer reviewed and evaluated, but rather will be used to identify the number and topics of full proposals expected to be received to help plan the full proposal review process and begin identifying appropriate reviewers. The LOI should include the items listed below.

1) Cover Page that includes:
   - Project title
   - Principal investigator (PI)
   - Title and position(s)
   - Institution
   - Postal mailing address
   - Email address
   - Telephone number
   - Co-investigators and institutions
   - Estimated total amount to be requested each year from MISG. This amount should include all direct and indirect costs such as supplies, travel, fringe benefits, student assistantships, etc., but does not need to be itemized until the full proposal is submitted.
   - Estimated total amount of non-federal match expected to be provided each year by the PI (see Non-Federal Match section below for additional information)

2) A brief (1-2 pages) Project Narrative that includes:
   - Statement of Research Need – how your research would advance the body of knowledge or address an important problem for Michigan's Great Lakes. Does the project benefit all communities in Michigan's coastal regions?
   - Project Goals and Objectives – what this project will accomplish, including the objectives or hypotheses of your research.
   - Research Methods – techniques you plan to use to achieve your objectives.
   - Research Relevance and Dissemination Plan – summary of the relevance of the project to Michigan's Great Lakes and the Michigan Sea Grant 2024-2027 Strategic Plan and include any other state, federal, or private organizations involved in this proposal, including level of participation and funding. Note that it is not necessary to contact or secure a commitment from these individuals and organizations at the LOI stage. Also provide a brief description of how you will share your research findings with relevant partners.
   - Project Team and Collaborators – project team and individual responsibilities. Identify steps taken to recruit a team including students, staff, and co-PIs from a variety of Michigan's communities.

- Data Management Plan – NOAA regulations require a data management plan to make data available within two years of award completion. If you will generate new data, you will be required to submit a data management plan as part of your final proposal. The MISG data management plan can be found here.

3) Office of Management and Budget-approved Demographics Question (optional). In accordance with OMB SPD 15, the lead PI/Applicant should complete this online form. Submission of the requested information is voluntary and is not a precondition of award. Any individual not wishing to submit some or all the information should check the box provided for this purpose or skip the question. Upon receipt of the application, this form will be separated from the application. This form will not be duplicated, and it will not be a part of the review process. Data will be confidential. To answer these question, please use this form.

**Non-Federal Match**

LOIs may document the source of a 50% non-federal match for each year of the project; note that all full proposals will require this information. For example, if the PI requests $60,000 in a year, at least $30,000 in non-federal match must be provided during that year for a total of $90,000 put toward the project in that year. Potential sources of the match include foregone faculty and staff salary and fringe benefits (e.g., student mentoring, technical support of project); foregone university indirect costs; equipment; ship time; office or laboratory space; and third-party matching funds or gifts. Note that researchers are encouraged to work with their institution's business office and MISG to ensure that proposed sources of matching funds follow the federal cost policy for eligible match prior to submitting a full proposal.

## Full Proposal Guidelines

The proposal narrative should be a maximum of 10 pages, including elements 3-8 below. The title page, non-technical summary, list of potential peer reviewers, references, current and pending support, bios, budgets, and letters of support do not count toward the page limit. Please use 1-inch margins and 12-point Times New Roman font. See details below.

1) Cover Page that includes:
   - Project title
   - Principal investigator (PI)
   - Title and position(s)
   - Institution
   - Postal mailing address
   - Email address
   - Telephone number
   - Co-investigators and institutions
   - Non-technical summary: Provide a 200-word summary suitable for a general audience that describes the proposed core research and why it is important.

2) Peer Reviewers – at least three potential reviewers for the proposal from institutions other than those represented by the project team and outside of the State of Michigan. Include name, institution, phone number, and e-mail address. These reviewers will be included in the pool of experts that MISG may contact for reviews.
3) Introduction – a statement of the research problem or question that identifies the purpose and significance of the research. Include background info that will:
    - Clarify the research question.
    - Identify what research has been done, what is needed, and how those relate to the proposed research.
    - Explain how your research addresses current issues identified by state, regional, Tribal, or federal agencies for Michigan's Great Lakes as well as priorities outlined in the Michigan Sea Grant 2024-2027 Strategic Plan.

4) Project Description (including Methods or Approach) – a comprehensive description of the research objectives and the research design/methods proposed to accomplish those objectives.
    - If applicable, identify the hypothesis tested for each objective.
    - Methodology – a detailed technical overview of your proposed research design and methods. If your proposal relies on developing new methods, give the reviewers ample information about the starting point for those new methods and how they will evolve over the course of the project. Be sure to identify specific methods and tools (e.g., models, special analytical approaches, etc.) to be used. Make it clear how the proposed methods are appropriate for each objective and how they will succeed.
    - What are the expected outcomes and outputs?
    - Applicability – how your research is relevant and will contribute to the body of knowledge in the topic area.

5) Dissemination Plan – plan to ensure that your research findings are communicated to appropriate end-users or partners. These activities should go beyond conference presentations and peer reviewed publications, although those are also important. Depending on the project, regular meetings with partners, organized workshops, and similar in-depth interactions may be productive. Working with an Extension educator can be a great way to connect with relevant partners but is not required. Note that some funding may need to be allocated to these activities.

6) Project Timeline – a timeline of the research stages by project quarter that includes project tasks, team leader, and support for each element.

7) Overview of Research Team – summary of the research team's previous accomplishments and their relevance to this specific project. Indicate why the research team is appropriate for this project and whether individuals, sub-units, or the entire team have worked (together or separately)

on similar projects. Specify the roles and responsibilities of each team member, including who will be involved in day-to-day project activities. Identify steps taken to recruit a team including students, staff, and co-PIs from a variety of Michigan communities, if applicable.

8) References – provide those cited in the proposal body.

9) Qualifications – curriculum vitae of the PI and co-PIs. Each CV should be no more than two pages and should include relevant publications.

10) Ongoing Support – current and pending support of the PI and co-PIs. Indicate if any of those projects are complementary to the proposed project.

11) Data Sharing Plan – If your project produces environmental data, it must conform to NOAA's Data Sharing Directive for Grants, Cooperative Agreements, and Contracts. Proposals submitted in response to this RFP must include a Data Management Plan describing how these requirements will be satisfied. To comply with this requirement, the PI must complete the Sea Grant Data Sharing form located here and include information for all applicable datasets related to your project(s) explaining how the data and metadata will be provided. The NOAA data sharing policy requires:
    - Environmental data generated by a grant project must be made available after a reasonable period of exclusive use.
    - Grant application must describe the plan to make the data available (Principal Investigators are expected to execute the plan). Even if your proposed activities do not generate any environmental data, you still must address the requirement. For example, include the statement: "This project will not generate any environmental data."

12) NEPA Environmental Compliance Questionnaire – All funded projects are required to complete the NEPA Environmental Compliance Questionnaire. This questionnaire is used by NOAA to collect information about proposed activities for NEPA and other environmental compliance requirements associated with the proposed project. All questions must be addressed - if the question is not applicable to your proposed activity, please explain why the requested information is not relevant. The PI must complete this form located on our website. Additional guidance can be provided upon request.

13) Supporting Documentation – Letters of support are optional; if included, please submit no more than three letters.

14) NOAA Budget Form – a detailed budget and budget justification using the 90-4 form available on the proposal submission web page. The Excel-based form includes tabs for annual expenses, a summary of expenses, and a budget justification. Submit the budget as a separate Excel file when submitting your application. The 90-4 budget form can be found on our website.

15) Office of Management and Budget-approved Demographics Question (optional) – In accordance with OMB SPD 15, the lead PI/Applicant should complete this online form. Submission of the requested information is voluntary and is not a precondition of award. Any individual not wishing to submit some or all the information should check the box provided for this purpose or skip the question. Upon receipt of the application, this form will be separated from the application. This form will not be duplicated, and it will not be a part of the review process. Data will be confidential. To answer these question, please use this form.

**Proposal Evaluation Criteria**

Proposals must comply with all submission instructions and proposal guidelines in order to be considered for funding, and PIs must have submitted a LOI. Each compliant, full proposal will be peer-reviewed in writing by three experts in the field of the proposed project from outside of Michigan, then discussed by a review panel of experts. The panel might include one of the peer review writers. Peer reviewers will provide both written comments and a proposal rating using the criteria below.

All written peer reviews will be provided to the review panel, which will review the proposals and provide advice on funding priorities to the MISG management team. Review panelists will read all of the proposals, and each reviewer will be prepared to lead a panel discussion of one or more proposals depending on the total number of proposals being reviewed. The panelists will discuss each proposal, evaluate the relevance of the project to the MISG 2024-2027 Strategic Plan and research goals, and assess if the project is fundable. The outcome of the panel review will be a final score for each project, an assessment of the fundability, and funding priority recommendations. Funding decisions are made by the MISG Management Team and incorporate all reviews and rankings as well as availability of funding, prior award performance of applicants, balance across institutions, focus areas, and programmatic needs, objectives, and priorities. All recommendations must be approved by NOAA National Sea Grant prior to a research grant being awarded.

Applicants should directly and explicitly address the following criteria within their proposal. Each submittal will be rated under a point system with a total of 100 points possible. Applicants will be evaluated based on the quality and extent to which they address the criteria; failure to provide applicable information in the proposal will affect the score.

1) Team qualifications – 10 points
   Do the researchers demonstrate adequate awareness of significant ongoing or previous work?
   Does the research team have the skills and background needed to perform the work?

2) Serving All of Michigan's Communities – 10 points
   As identified above, projects are encouraged that will benefit all communities and/or recruit team members from a variety of Michigan communities. Does the team include (or have clear plans to recruit) members (e.g., students, staff, co-PIs) from a variety of Michigan communities? Or does this research benefit multiple Michigan communities?

3) Project Design – 40 points
Are the project objectives clearly stated? Does the study logically relate to the stated objectives? Are the methods appropriate and feasible? Are they innovative? Will the data be analyzed in an appropriate way? Is the proposed time frame adequate to complete the project? Are facilities, management structure, and partnership arrangements sufficient to produce expected impacts? Are appropriate levels of program resources (FTEs and budget) dedicated to achieve expected impacts? Is the budget reasonable?

4) Relevance and Impacts of Proposed Research – 20 points
Does this project address one of the identified priority topics? Is the specific issue to be addressed a valid and significant one? Does it bring together innovative teams from Michigan and, where possible, leverage active programs conducted by federal, state, or local agencies, NGOs, or other relevant partners? Does the project fulfill critical needs and priorities described in the 2024-2027 Michigan Sea Grant Strategic Plan? Will the data generated by this project significantly advance the scientific body of knowledge or improve our understanding of social systems?

5) Partner or End-User Engagement – 10 points
Do the researchers clearly identify potential users of the information being developed in the project? Are the investigators in contact with these end-users or partners during project development and/or are the pathways from this project to application of its results clearly described?

6) Dissemination Plan – 10 points
Do the researchers describe effective ways to communicate results of the project, and do these plans go beyond typical conference presentations and peer-reviewed publications?

**About the Michigan Sea Grant Research Program**

Michigan Sea Grant-supported projects address issues affecting the Great Lakes and Michigan's coastal areas and include Integrated Assessments and basic research. The goals are to develop information, create tools, and build partnerships that will improve decision-making for particularly challenging coastal issues in the state and to fulfill critical research needs for the Great Lakes and coastal systems. For more information, please see: www.michiganseagrant.org/research

**About Michigan Sea Grant**

Michigan Sea Grant helps to foster economic growth and protect Michigan's coastal, Great Lakes resources through research, education and outreach. Please see www.michiganseagrant.org/ for more information.

# APPENDIX: PRIORITY TOPICS FOR MISG 2025 RFP

## Focus Area: Environmental Literacy and Workforce Development

**Indigenous Ways of Knowing (IWOK):**
How does teaching IWOK in environmental education affect learning outcomes?

## Focus Area: Healthy Coastal Ecosystems

1. **Nutrient mitigation effectiveness for practices aiming to reduce nutrients to Saginaw Bay, Lake St Clair, or WLE (including wetlands)**
   Michigan Sea Grant is interested in funding research that determines the effectiveness of agricultural best management practices in reducing the discharge of nutrients into the western Lake Erie basin, Lake St. Clair and the Saginaw Bay. This could include evaluating the impacts of different types of constructed wetlands.

2. **Harmful algal blooms**
   We are interested in funding research related to harmful algal blooms in two areas: 1. Aquatic research, and 2. Watershed research. Specifically, we solicit project ideas related to the following research questions and research gaps:
   - Transformation of nitrate delivered to downstream water bodies into reduced forms that are favored by cyanobacteria. How long does that process take? How does the timing of nitrogen delivery shape the bloom dynamics?
   - The need to better understand the reasons for shift in bloom temporality, especially as it relates to future climate scenarios
   - Ultimate causes of elevated bioavailable phosphorus- whether it's associated with overapplication of manure (i.e., high soil test P in a field) or poor placement of commercial fertilizer (i.e., soil phosphorus stratification) or something else entirely (i.e., hydrology, soil type, etc.). Research to better understand these relative drivers would be essential to ensure the right implementation of conservation practices to reduce these loads
   - Meta-analysis of studies on soil phosphorus in agricultural fields related to fertilizer use and identify potential demonstration farms to show success
   - Better understanding of the use of in-stream (or in-ditch) practices to reduce nutrient loading, especially novel approaches uncommon to the Midwest. It would also be nice to see more work to identify the source of suspended sediments- i.e., fields or stream banks?

3. **Connections between Great Lakes and groundwater**
   Research in this topic could examine: Connections between groundwater quality and Great Lakes water quality; connections between lake levels and groundwater levels; how human activity inland affects groundwater quality, hydrology, and public health risk.

4. **Ocean Acidification**
   The Great Lakes (similar to other freshwater and marine systems around the world) are projected to experience acidification. Great Lakes Sea Grant programs are prioritizing research to a) elucidate spatiotemporal trends in carbonate chemistry within the Great Lakes region, b) consider potential effects of carbonate chemistry changes on physical, chemical and biological, including upper trophic level, dynamics of the Great Lakes and c) use social and natural science methods to explore management strategies in regard to carbonate chemistry changes. (for NOAA perspective and priorities on Great Lakes Acidification Research see Chapter 11: https://oceanacidification.noaa.gov/wp-content/uploads/2023/02/ResearchPlan2020-2029_comp.pdf)

5. **Per- and polyfluoroalkyl substances (PFAS)**
   Michigan Sea Grant wishes to fund the development and implementation of PFAS assessment, removal, and prevention projects that benefit coastal habitat, waterways, and Great Lake resources. PFAS are defined as "widely used, long lasting chemicals, components of which break down very slowly over time". We wish to fund researchers to investigate and prevent the adverse impacts of PFAS in water, air, fish, and soil.

6. **Winter Limnology**
   In-lake processes have long been understudied during the winter in the Great Lakes, but have recently received increasing attention. We seek to build on these initial efforts through proposals to better understand ecological, biogeochemical, and physical patterns and processes during winter. In particular, we look to support projects that study multiple sites and sample multiple times to better understand how variable the ecosystem is over the winter, what drives variation, and what the impacts are on following spring and summer. These projects might include remote sensing and/or modeling.

## Focus Area: Resilient Communities and Economies

1. **Nature-based solutions/green infrastructure on shorelines**
   Shoreline development is occurring along Michigan's coastline. There is a need to better understand the effectiveness and feasibility of green and nature-based coastal management solutions, from a permitting and technological standpoint, to maintain beaches/coastlines.

2. **Effective transdisciplinary collaboration and science translation of coastal resilience and coastal water level frameworks and data**
   We are interested in funding research related to the most effective ways to conduct transdisciplinary collaboration on coastal resilience research, as well as how to effectively engage in science translation to appropriate stakeholders and end users. What could help engineers and municipalities more quickly adopt and understand the upcoming updated IGLD, through such means as outreach materials and plans, tutorials, workshops, etc.?

## Focus Area: Sustainable Fisheries & Aquaculture

1. **Climate change and local fisheries**
   How climate change is impacting local fisheries, especially related to shorter winters (affecting winter tourism and ice fishing seasons), changing food webs, and changing fish behaviors or recruitment.

2. **Species decline**
   Both recreational and commercial fishing species' populations are declining. There is a need to understand what factors impede survival of early life stages of certain fish species, as well as understand sustainable predator-prey dynamics and updated modeling of such dynamics. This research could cover the wide geography of Michigan's lake coastlines.

3. **Aquaculture**
   We are interested in funding research related to the aquaculture industry of Michigan. Specifically we are interested in projects which seek to understand consumer values related to aquaculture; ecological impacts of aquaculture systems; the impact of aquaculture regulations on production; the overall economic impact of the aquaculture industry; and research that seeks to compare contaminant levels in farm-raised and wild caught fish of the GL region.

4. **Fish consumption and health**
   Understanding fish consumption risks and benefits. Fish consumption is an important tradition in many Michigan communities. There are micronutrients providing dietary benefits, but there are also bioaccumulation risks associated with consuming toxins present in local fish. How can researchers help populations in Michigan understand risk associated with fish consumption?

5. **Charter fishing issues**
   There are a number of areas of research pertaining to charter fishing that can help the state better understand its impact. There is a need for research on such topics as what fish are caught and which are thrown out, as well as understanding the economic impact of the charter fishing industry in Michigan.

6. **Economic value of Great Lakes fisheries**
   This topic can be broadly interpreted, as long as researchers ensure their proposed project aligns with MISG's 2024-2027 Strategic Plan and the focus area of sustainable fishers & aquaculture.

7. **Considerations for serving all of Michigan's and Great Lakes' Fisheries**
   This topic can be broadly interpreted, though certain issues are of interest to MISG, including local and traditional ecological knowledge integration and integration of all populations into stakeholder engagement

8. **Angler Values and Motivations**
   The following issues are of particular interest within this topic:

- Document the ways in which user and nonuser groups value Great Lakes fisheries, including existence value, recreational value, etc.
- Consider angler values and motivations relative to catch-and-release policies
- Detail the expectations stakeholders have about fishery management
- Document the motivations of Great Lakes anglers

9. **Oral histories of maritime/fisheries heritage**
   The fishing and maritime industries in Michigan contain many aging workers, recreational fishers, and anglers. There is a need to capture oral histories of the state's aging fisheries workforce and recreational charter fishers.