Ecosystem Health and Sustainable Fish Populations

Ecological and Biological Research to Inform Management

Request for Preliminary Proposals

2020 Application Guidance

Application Requirements

The Great Lakes Fishery Trust (GLFT) invites preliminary proposals for Great Lakes fisheries projects under its **Ecosystem Health and Sustainable Fish Populations** grant program. This request for proposals (RFP) process will be used for the disbursement of up to $1.3 million in grants for the Ecological and Biological Fisheries Research to Inform Management funding theme.

In 2019, the GLFT embarked upon a year-long effort to update its strategic plan. Through that process, the trust identified a pressing need for increased effort to answer critical research questions regarding the lake whitefish population in the upper Great Lakes. The GLFT is dedicating a minimum of $500,000 of its 2020 fisheries research budget to lake whitefish research and intends to continue prioritizing lake whitefish research for at least five years. With its investments in lake whitefish research, the GLFT seeks to:

- Increase the amount of management-relevant, scientifically sound research related to lake whitefish populations in the upper Great Lakes
- Build the base of knowledge regarding underlying causes of declining lake whitefish populations
- Inform management strategies for lake whitefish in the upper Great Lakes with sound research and science

This application guide provides background on this funding category and will assist you with the funding criteria and preliminary proposal requirements. The forms and instructions necessary to guide you through the application process are provided below. Applications must be submitted through the GLFT's Web-based grant management system.

The Web-based application system will prompt you with the mandatory questions, file uploads, and instructions to guide you through the application process.

To begin, visit the Apply Now page on our website where you will find Application Guidance Documents and other useful information to help you complete an application.

Grant opportunities for which the GLFT is currently accepting applications can be viewed by clicking the Browse Our Active Grant Opportunities button, which will take you to a page with online applications. Click on the title of the grant opportunity in which you are interested and follow the instructions to apply.

You will be required to create a user account to submit an application. You will be asked for an email address and password. If you do not have a user account in our system, click on Create an Account and follow the instructions provided. You may then proceed to the grant application.

If you already have an account but do not know your password, click on Forgot Your Password and instructions for changing your password will be sent to your email address.

If you have previously submitted a grant application to the GLFT, you may already have a user account based on your email address. If you are unable to sign up for a new account using your email address, you may already have an existing account. If you experience this problem, you may reset your password by clicking the Forgot Your Password link. If you need assistance to set up your account, please contact GLFT staff.

When completing the online application:

- Save your work often
- When uploading a document, click Save to complete the file transfer
- You may leave your work and return at a later time to complete the application
- To return to an online application you have already begun, click on the Dashboard button, which will appear in the upper right corner of the page after you log in (the Dashboard page will provide access to your applications and/or active projects)
- Make sure your answers to each question are within the text field limits
- Check each field before it is submitted
- Be sure to answer all of the required questions

- The system will not allow an application to be submitted if a required question is not answered
- No changes can be made to the application once it is submitted (if an error was made, contact the GLFT staff)

Applicants are encouraged to log in to the site and review the application well in advance of the submission deadline.

Submission and Award Dates

Applications are due by **Friday, January 10, 2020,** at 5:00 PM EST. Late preliminary proposals will not be accepted.

The GLFT's Scientific Advisory Team (SAT) will review the preliminary proposals and invite a subset of applicants to submit full proposals for funding consideration based upon the criteria identified herein.

Applicant Eligibility

Proposals are encouraged from educational, governmental, tribal, and nonprofit institutions with a 501(c)(3) designation from the IRS. Canadian public and nonprofit organizations may also be eligible but should contact GLFT staff prior to submitting a preliminary proposal.

Questions and Answers

The GLFT will accept questions about our submission and review process, as well as our funding priorities, via email to cproudfoot@glft.org. Questions received by January 6, 2020, will be posted to our website with a response so all prospective applicants may benefit from the inquiry and response.

Additional Information

This grant announcement, further information on the GLFT, descriptions of projects previously funded by the GLFT, and information regarding funding opportunities for other Great Lakes fishery-related projects can be found on the GLFT website at www.glft.org.

Background on the GLFT's Mission, Goals, and Priorities for Fisheries Research

The mission of the GLFT is to provide funding to enhance, protect, and rehabilitate Great Lakes fishery resources to compensate for lost use and enjoyment caused by the operation of the Ludington Pumped Storage Plant. The GLFT pursues its mission through investments in three broad categories: Access to the Great Lakes Fishery, Great Lakes

Stewardship, and Ecosystem Health and Sustainable Fish Populations. Fisheries research is one of several grant types under the Ecosystem Health and Sustainable Fish Populations category.

The broad goals of investments in ecological and biological research to inform fisheries management are to:

- Create a more resilient and stable fish community
- Increase the sustainable value of the fishery to stakeholders
- Foster and increase self-sustaining fish populations

The key intended outcomes for fisheries research investments are to:

- Enhance the ability of managers and their agencies to understand, anticipate, adapt, and respond to changes in the fishery and ecosystem
- Build research capacity and management expertise needed to understand and manage the Great Lakes ecosystem for sustainable production of valuable species

Additional Principles and Processes that Drive Trust Grantmaking

The GLFT pursues its fisheries research efforts through competitive grantmaking within established thematic areas and through funder-directed grants. Funded activities include hypothesis-driven research, as well as tools, resources, and capacity-building efforts that support the development or use and application of research.

Please note and carefully attend to the following as you develop your preproposal:

1. The GLFT prioritizes efforts that draw a clear line between the topic of the research and a potential management action and seeks to fund research that is aligned with the *Joint Strategic Plan for Management of the Great Lakes Fisheries*. Research lacking clear management implications or management demand for the specific information to be generated by the research effort will generally not be funded, and in all cases will not compete favorably with research proposals clearly linked to implications for fishery managers. See further detail on the *Joint Strategic Plan* at the end of this document.
2. By terms of the settlement agreement that established and currently funds the GLFT, the trust prioritizes research relevant to the Lake Michigan fishery. See the end of this document for further information about this priority.
3. In proposals tied to any research theme, applicants are encouraged to include resources for related efforts to build management capacity or collaborative capacity (e.g., conferences and workshops, modeling, data-sharing vehicles, synthetic papers).
4. Applicants are encouraged to develop proposals that are responsive to multiple themes.

The preproposal review criteria are found beginning on page 18 of this document.

Lead Priority: Lake Whitefish Recruitment

In 2019, the trust is reserving at least $500,000 of its 2020 fisheries research budget for lake whitefish research and intends to prioritize lake whitefish research for at least five years. The GLFT will implement its priority through a combination of competitive and funder-directed grant processes.

In February 2018, the GLFT and the Great Lakes Fishery Commission (GLFC) hosted a workshop to understand recent trends in lake whitefish populations across the three upper lakes, engage fishery managers in discussion about importation management risks they face, identify their needs to address those risks, determine information gaps, and develop possible priorities for research and management action. The results of this workshop are summarized in the *Developing Research Priorities for Lake Whitefish in the Upper Great Lakes: Results of a Workshop Sponsored by the Great Lakes Fishery Trust and Great Lakes Fishery Commission* proceedings document.

Lake whitefish has been one of the most highly sought commercial fish species in the Great Lakes for well over a century. Like many native fish species, lake whitefish suffered first from habitat loss associated with industrialization and logging practices and overfishing, then from introduction of Atlantic Ocean species to the Great Lakes during the 1930s and 1940s. However, following implementation of the sea lamprey control program, coupled with the initiation of salmon and trout plantings that utilized and reduced alewife as well as rainbow smelt abundance, lake whitefish recovered to historic levels. By the early 1970s, whitefish were the mainstay for the state-licensed commercial fisheries in the three upper Great Lakes, and since the early 1980s, lake whitefish has been the cornerstone for the tribal commercial fishery, composing 60 to 70 percent of total landings. Strong, consistent reproduction and subsequent recruitment of lake whitefish to the fishable populations in Lakes Michigan and Huron during the late 1990s to the early 2000s drove commercial yields to levels not seen in either lake since the early 20th century.

Since the early 2000s, lake whitefish populations in the four lower Great Lakes have experienced a steady and substantial decline that continues to the present. Additional research is needed to understand the interactions between physical and biological processes that drive lake whitefish populations or act as bottlenecks to the populations. Understanding the linkage between physical and biological stressors to the populations will help identify potential management solutions.

The GLFT invites proposals responding to research topics identified in the proceedings document. In 2020, the GLFT's primary interests in this research theme are:

- **Synthetic papers exploring bottlenecks to recruitment:** The GLFT invites proposals to develop a synthesis of existing data and research that explores possible mechanisms that explain observed trends in lake whitefish recruitment, including current and

historical growth rates and densities, as well as where the recruitment bottleneck(s) may be occurring. The synthesis should examine geospatial differences in whitefish recruitment within and among the Upper Great Lakes. In this research, investigators should explore the conditions that were historically favorable for lake whitefish recruitment and evaluate contributions to the decline in recruitment, including factors such as the role of invasive species and disease—most notably dreissenid mussels, round goby, and viral hemorrhagic septicemia (VHS)—coupled with ongoing nutrient reductions. The research should also consider how these, and other factors as appropriate, influence recruitment and year-class strength.

- **Data-driven original research on bottlenecks to recruitment and early life history:** The GLFT invites proposals for original research, which may include or integrate hypothesis-driven research, modeling, descriptive studies, and other data-intensive science focused on potential contributors to the recruitment bottleneck as identified in the proceedings document. The trust has **particular interest** in proposals relating to the potential impact of lake trout predation on lake whitefish. Other potential contributors to the recruitment bottleneck identified in the proceedings document include dreissenid mussels, nutrient reductions, competition between lake trout and lake whitefish for spawning habitat, pathogens such as VHS, and round goby. All study designs should be spatially and temporally explicit to account for the significant local variation in recruitment patterns that is in evidence, should use existing data where it is well suited to answer study questions, and should seek to build on and advance the base of understanding demonstrated in the proceedings document.[1]

Additional Research Themes

In 2020, the GLFT will grant as much as $800,000 to research efforts responding to one or more of the following themes. Applicants are encouraged to focus on one or more of the six areas:

Fish recruitment

Ecosystem disruption

Habitat research and evaluation

Aquatic invasive species

Native species rehabilitation (lake sturgeon emphasis)

Emerging Issues

[1] Consult the GLFT-funded white paper for information on existing data.

Fish Recruitment

The GLFT invites proposals for research that describes and clarifies mechanisms (such as abiotic conditions, predation, competition, or fish health) that affect the reproduction and recruitment of commercially or recreationally important Great Lakes fish species, including salmonids as well as nonsalmonids experiencing recent and unexplained declines in abundance, growth, survival, and/or condition factor.

Ecosystem Disruption

Ecosystem disruptions such as invasive species, food-web changes, climate change, or habitat loss or degradation frequently affect the reproduction, recruitment, and condition factor of commercially or recreationally important Great Lakes fish species. The GLFT invites proposals for research efforts that will contribute to scientific understanding of the relationships between one or more specific ecosystem disruptions and the reproduction, recruitment, or condition factor of commercially or recreationally important Great Lakes fish species or the food webs that support them, and yield implications for fishery managers.

Researchers proposing under this theme are cautioned to take particular care to ensure that the proposed research is germane to management decision making. When applying under this category, applicants should carefully demonstrate the potential value of the research for fishery management, paying particular attention to prompts related to the problem statement, project goal, methods and activities, potential management benefits and outcomes, target audiences, and the usefulness of the results.

Habitat Research and Evaluation

In recent years many funders—including the GLFT through its habitat RFPs—have invested in various on-the-ground efforts designed to restore or improve habitat for commercially or recreationally important Great Lakes fish species. These efforts include coastal wetland restoration, stream restoration, construction of spawning reefs, dam removals, road-stream crossing efforts, and other work to enhance connectivity. While there is occasional pre-/postmonitoring of interventions, there is need for more substantial scientific inquiry regarding the benefits and limitations of various strategies, the role of other environmental factors in determining success or failure, or the cost/benefit considerations of various potential approaches.

As funding for habitat restoration in the Great Lakes basin has increased, so too has effort to develop tools and systems to help decision makers use habitat information. The GLFT has funded the development of several computerized tools, and the GLFC is in the midst of identifying priority sites for habitat restoration.

In 2020, the GLFT invites proposals for habitat research and science with the following characteristics and emphases:

- Hypothesis-driven research or other data-intensive studies that build evidence regarding the choices, strategies, and situational factors that contribute to positive outcomes from habitat restoration efforts for reproduction or recruitment
- Targeted evaluations of the effectiveness of new or experimental approaches in habitat restoration and fish passage
- Use and application of computerized habitat-information platforms and tools to support adaptive management or decision making
    - E.g., the Great Lakes Aquatic Habitat Framework (GLAHF),[2] the GLFC Barrier Removal Collaboration Suite,[3] Fishwerks,[4] or similar tools, the use of which may be in service of adaptive management and decision making related to habitat or other fishery questions influenced by or dependent on habitat
- Development of supporting modules for established habitat information platforms and for established decision-support tools that enable managers and regulatory agencies to evaluate potential social-cultural, biological, and ecological trade-offs of removal projects within and among watersheds (**Note:** Proposals should not duplicate previously funded projects.)

Applicants should note that the GLFT funds on-the-ground habitat restoration work through a separate RFP. Direct research on the fishery impacts of habitat degradation and loss should be pursued through the Ecosystem Disruption theme described earlier in this document.

Aquatic Invasive Species

The GLFT's **primary interests** in this category are in innovative research, development, or analysis leading to detection of invasive species in the Great Lakes, prevention of the introduction of invasive species in the Great Lakes, or the control or suppression of established species. Supported projects may include:

[2] GLAHF is a spatial framework of nested grids designed to link data and allows data aggregation and viewing spatial information at multiple scales. GLAHF can be used to relate habitat-based characteristics to specific biological components of the ecosystem (e.g., ice cover, substrate, currents, temperature, upwelling, tributary inputs), relate biotas to ecological habitat types, set spatial priorities and track progress for monitoring or restoration, integrate research and management actions, and more.

[3] The GLFC Barrier Removal Collaboration Suite is an application that improves your ability to share your views on water barriers and tributaries, comment on others' views, create topics to discuss, and form shared interest groups to collaborate on barriers.

[4] Fishwerks is a Web-based geographic information system platform that integrates with sophisticated optimization tools to help maximize the efficiency of habitat improvement projects for migratory fish in the Great Lakes basin.

- Research, development, and evaluation of innovative new technologies to curtail new introductions through established vectors (e.g., ballast water) or to control or suppress established invasive species
- Research, development, and evaluation of methods for detecting invasive species, including the presence of such species, their abundance, and/or their distribution
- Development of ecological and economic risk assessments to define and evaluate new invaders or the potential introduction of new invaders (e.g., snakehead)

The GLFT does not fund primary eradication of invasive plant species such as phragmites and does not fund sea lamprey control outside the limited context of research, development, and evaluation of innovative new technologies to control lamprey in fish passage/connectivity designs. Additionally, the GLFT does not fund primary monitoring efforts related to invasive species.

Native Species Rehabilitation (Lake Sturgeon Emphasis)

The GLFT funds research on native species rehabilitation. In 2020, the trust's **primary interest** is in proposals related to lake sturgeon rehabilitation, but proposals related to rehabilitation of other commercially or recreationally significant native species are also invited.

Native Species Rehabilitation

The GLFT invites proposals for research that addresses rehabilitation strategies for commercially or recreationally significant Great Lakes native species (e.g., lake trout, yellow perch, ciscoes) experiencing recent declines in abundance, growth, survival, and/or condition factor.

Lake Sturgeon Rehabilitation

In 2020, the GLFT invites proposals relating to rehabilitation of lake sturgeon that respond to priorities established in a series of GLFT workshops on this topic. Applicants considering a proposal related to lake sturgeon rehabilitation are strongly encouraged to consult workshop reports and other biennial conference proceedings.

Comprehensive lake sturgeon rehabilitation will likely be achieved only on a basinwide scale, either for one of the Great Lakes or the entire basin; thus, rehabilitation will require the coordination of multiple research and management agencies. Accordingly, all proposals under this research area are strongly encouraged to incorporate and further develop meaningful partnerships among state, federal, tribal, and academic institutions, as this will be a factor considered in review.

In 2020, the GLFT invites proposals that address the following research topics:

- **Understanding Population Dynamics**: Monitor, evaluate, and advance understanding of the dynamics related to sustainability and growth of existing lake sturgeon populations, including those being reestablished or enhanced through directed rehabilitation actions such as streamside rearing propagation, construction and operation of fish passage facilities, or other habitat or regulatory improvements. Evaluate population-specific factors limiting survival, recruitment, and population growth in each remnant and recently reintroduced lake sturgeon population, as well as current demographic trajectories of existing populations.
- Respond to the following priorities identified in the 2011 workshop proceedings document, Enhancing Lake Sturgeon Passage at Hydroelectric Facilities in the Great Lakes:
    - **Lake sturgeon behavior during migration and passage:** Specific research activities in this category may include telemetry studies that seek to determine if upstream/downstream migratory routes are random or based on stream flow or the behavior of adults and juveniles after entering impoundments.
    - **Physiological consequences of passage:** Recent work suggests that passage compromises the physiological condition of sturgeon in general, but individual sturgeon do recover well from a single passage attempt. Research in this category would benefit from studies seeking to determine the physiological impacts of multiple passage attempts, including trap and transfer techniques, and differences related to size, sex, and reproductive condition.
    - **Passage design, technology, implementation, and development of operational windows:** There are many inventive engineering solutions that can be applied to lake sturgeon passage efforts; however, the implementation of these solutions would be greatly enhanced with studies seeking to tie specific technologies with survival rates of adults, juveniles, and larvae.
    - **Advancement of technologies that improve assessment and monitoring:** Perhaps one of the largest gaps to lake sturgeon passage involves how to measure success; thus, research attempting to deploy novel techniques to quantify movement and theoretical or empirical research attempting to tie passage efforts to population-level parameters (e.g., recruitment) would be desirable.

Emerging Issues

This funding theme allows for applications proposing ecological and biological fisheries research (or related capacity building) that is aligned with management needs and the intent of the strategic plan, but not accommodated within established themes. This includes:

- Research that bears directly on the intended goals and outcomes expressed in the strategic plan, addressing an emergent issue or change significant for fishery management (e.g., related to fish health) but lying outside the scope of other articulated GLFT research themes

- Inquiries initiated under a past, duly funded GLFT grant, where results and need warrant continued support but the content is no longer aligned with the priorities expressed in the strategic plan
- Research that bears directly on the priorities and interests expressed in key management documents for the Lake Michigan fishery but lies outside the scope of articulated GLFT research themes[5]

The GLFT has relatively **greater interest** in this category in efforts that address issues of high management priority or urgency and unmet need. The GLFT **will not fund**, through this thematic area, research suited to one of its other established research theme areas. Additionally, the GLFT does not fund research related to sea lamprey control, inshore fisheries, or the human health effects of environmental toxins present in Great Lakes fish, nor does it fund activities or expenses that have been the traditional responsibility of state, federal, or tribal natural resource management agencies.

Lake Michigan Priority

Whether shore-based fishing access, stewardship, dam removals, or fisheries research, all GLFT-funded projects must have benefits directed primarily to the Great Lakes. The settlement agreement establishing the GLFT further requires that priority be given to efforts that benefit the Lake Michigan fishery. Projects outside of the Lake Michigan basin are considered if their results and outcomes are transferable to Lake Michigan. Projects that examine the consequences of environmental pollutants on the recruitment or health of a Great Lakes fish species are eligible.

It is important to note that the GLFT's Lake Michigan priority emphasizes *benefit* to the Lake Michigan fishery, as opposed to *activity limited* to Lake Michigan. In the context of fisheries research, the question is not whether there are "feet on the ground" in Lake Michigan, but whether proposed research will yield high-priority knowledge and information for the Lake Michigan fishery. For example, in some areas of research inquiry, cross-lake comparative efforts may hasten learning, as compared to studies focused exclusively on Lake Michigan. Such cross-lake studies are encouraged. Applicants may wish to consult documents generated by the Lake Michigan Committee of the Great Lakes Fishery Commission to identify research priorities for the Lake Michigan fishery (further information on this committee is provided immediately below).

[5] Relevant documents include *Research Priorities of the Lake Michigan Committee*, *Fish-Community Objectives for Lake Michigan; Lake Michigan Environmental Objectives*, *Fishery Research Priorities: Great Lakes Fish Health Committee*, and *A Guide for the Rehabilitation of Lake Trout in Lake Michigan*. Applicants may also wish to consider other items at the Lake Michigan Committee's website.

Joint Strategic Plan for Management of the Great Lakes Fisheries

Through its strategic planning, the GLFT established a close relationship between its intentions for support of Ecological and Biological Fisheries Research to Inform Management and *A Joint Strategic Plan for Management of the Great Lakes Fisheries* (joint plan).

The interagency management of fishery resources in the Great Lakes was formalized in the 1980s in the joint plan, which provides a process and structure for a consensus approach to fish-community management on each of the Great Lakes. This process, facilitated by the GLFC, relies on individual lake committees representing the fishery resource management agencies with management responsibilities on each of the Great Lakes. The lake committees have adopted fish-community objectives for each lake, containing consensus recommendations on goals and objectives for the respective fish communities. The individual lake committees are supported by technical committees, and in many cases, by task or working groups focused on specific species or issues. Through these structures, the management agencies have developed and adopted various planning documents, and routinely identify priority research needs.

As noted in the GLFT's strategic plan, since the GLFT board and SAT members represent either the agencies involved in the development of the fish-community objectives for Lake Michigan (and oth*er Great Lakes) or the constituent organizations that provided advice, it makes sense that the GLFT's priorities for management-oriented research support the recommendations contained in the fish-community objectives and the accompanying species plans and research priorities.

Ecosystem Health and Sustainable Fish Populations
Ecological and Biological Fisheries
Research to Inform Management

Preliminary Proposal Requirements

The online application will prompt you to provide the following information:

Basic Information

Project title:

Applicant eligibility: Does your organization have a nonprofit status with a 501(c)(3) designation from the IRS (or is it a nongovernmental organization that holds charitable status in your country), or is it considered to be an educational or governmental (including tribal) organization? (Y/N)

Organization: Some individuals who submit proposals to the GLFT have affiliations with multiple entities. You will be asked to select the organization the grant would be awarded to. If the organization you are submitting a proposal under is not listed, you may add the organization online or contact GLFT staff for assistance. All applications should be submitted by the organization that would receive funding from the GLFT.

Applicant Information and History

Principal investigator (PI) contact information:

Co-investigator(s): If the project includes co-investigators, provide the name, organization, and department for each co-investigator.

Has the PI or co-PI applied to the GLFT before? (Y/N)

Has the PI or co-PI previously received a grant award from the GLFT? (Y/N)

Prior GLFT-funded projects summary: If the PI or co-PI has previously received a GLFT grant, provide a brief summary (including the GLFT grant number and title) of the work and identify any publications that resulted from the project(s). (Limit your response to 200 words.)

Active research commitments: List all active research commitments (project title and funder) of the PI and the approximate time commitments to each.

Is this proposal, or a similar proposal, currently under consideration by any other funders? (Y/N)

If so, please identify all entities that are concurrently reviewing the proposal.

Grant Request

Requested amount
Match amount
Project start date
Project end date
Has your organization proposed this project to the GLFT in the past? (Y/N)

Proposal

Project Summary

Briefly explain what the project proposes to accomplish using terminology that would be appropriate to include on the GLFT website to communicate project goals to a general audience. (Limit your response to 75 words.)

GLFT thematic area: Indicate the GLFT thematic area(s) the proposed project would support. The areas are: lake whitefish recruitment (lead priority), fish recruitment, native species rehabilitation, habitat research and evaluation, ecosystem disruptions, and emerging issues.

Project Description

1. ***Problem statement.*** Explain in quantitative and qualitative terms the importance of the problem relative to Great Lakes fisheries. Describe the problem affecting Great Lakes fisheries **AND** the ability of fisheries managers to resolve it. The problem statement (or needs assessment) is a key element of a proposal. An applicant may include data that

support the problem statement. The information provided should be both factual and directly related to the problem addressed by the proposal. (Limit your response to 300 words.)

2. ***Project goal.*** Describe the basis for the proposed research and hypotheses and assumptions that will be tested, models that will be developed or applied, descriptive data that will be generated, or other data-intensive science that will be carried out. For basic research projects, provide documentation of a clear consensus that such efforts are essential to address a critical issue facing fishery managers.[6] For capacity-building projects (e.g., workshops, shared databases, white papers) describe the intended goal of the project. (Limit your response to 300 words.)
3. ***Methods and/or activities.*** Describe the activities that will take place in order to achieve project objectives. If relevant, identify any pilot work necessary to substantiate the proposed methodology, describe specific methods that have been successfully applied to other projects, and/or describe alternative research approaches that were considered and explain why they were rejected. (Limit your response to 300 words.)
4. ***Geographic focus area***. Explain the geographic impact area of the project. All GLFT-funded projects must have benefits directed primarily to the Great Lakes. Projects outside of the Lake Michigan basin are considered if their results and outcomes are transferable to Lake Michigan. Refer to the website or to page 11 in this document for more detail about the Lake Michigan priority. (Limit your response to 100 words.)
5. ***Potential management benefits and outcomes of proposed project.*** Describe the impact of your project and its ability to advance management goals of the Great Lakes fishery (e.g., how will fisheries managers use information developed by the project, and to what end?). (Limit your response to 200 words.)
6. ***Relationship of the project to ongoing activities.*** Provide information demonstrating that the proposed project will not duplicate existing research activities in the region. Describe how the project may complement existing research efforts. If the project is closely tied to ongoing work, explain how coordination will occur. (Limit your response to 200 words.)
7. ***Prior experience.*** Provide information that demonstrates your ability to successfully manage grants or projects of similar size and complexity. Identify key members of the project team by name and title. Do not submit curriculum vitae at this time. (Limit your response to 75 words.)

[6] Basic research is work of an exploratory nature conducted in order to acquire knowledge of the underlying foundations of phenomena and observable facts *without any obvious practical application in view*.

Communications

8. ***Target audience.*** Describe the resource managers at the local, state, tribal, and federal levels who will find the outcome of this research most beneficial. (Limit your response to 100 words.)
9. ***Usefulness of results***. How will the resource managers, listed above, be able to use this research to solve problems dealing with the fishery? (Limit your response to 100 words.)
10. ***Distribution of findings***. The GLFT is committed to effectively communicating research to resource managers, and has created a set of communication priorities to that end. Those priorities include research dissemination through the following media: academic journals, conferences/workshops, webinars, and email distribution. Please list the specific medium(s) (e.g., ABC Email Listserv, XYZ Conference, etc.) through which the research results will be disseminated. Note: The GLFT will require all funded researchers to seek a presentation before a relevant committee of the GLFC and will monitor progress on this front. For those projects that are designed to synthesize and disseminate information from existing research, explain how your project will aid resource managers. (Limit your response to 150 words.)

Project Budget

Enter the following information on the online application form when prompted.

Budget Narrative

Preliminary proposals must provide a budget highlighting category line items listed below and identify other monies that will be raised to support the proposed work. Definitions on the budget categories can be found at www.glft.org on the Resources page. For the preliminary proposal, provide the cumulative budget information with the amount requested from the GLFT. The expense categories listed below may not be changed.

Note: According to the GLFT overhead policy for all projects, administrative/overhead costs are limited to 10 percent of the total salaries and wages.

- Salaries
- Fringe benefits
- Materials/supplies
- Other direct expenses
- Contracted services
- Indirect costs (administrative/overhead)
- Amount requested from GLFT
- Matching funds
- Total project cost

Briefly explain how the figures in each budget category were estimated and justify the need for the costs. Projects with financial support from other sources are encouraged. Although matching funds are not required, proposals that include funding from other sources will be favored. If matching funds or in-kind contributions are involved, please a) identify the

sources and amounts of these and explain for each whether these have been requested, pledged, or secured; b) explain whether the GLFT funds are to be used as a match requirement, and, if so, what percentage of GLFT funds would be used to complete specific items (e.g., 30 percent of needed funds for a task would be from the GLFT, 70 percent from other sources); and c) address contingency plans if pending funding is not realized. (Limit your response to 150 words.)

Review Process

The Scientific Advisory Team, consisting of 12 members representing parties to the Settlement Agreement that established the GLFT (and other fisheries scientists designated under the agreement), will review the preliminary proposals based upon the GLFT's Funding Criteria (see next section) on Tuesday, February 11, 2020. Invited full proposals will be due on Monday, April 13, 2020. Full proposals will be subjected to external peer review and be evaluated by the SAT. The SAT will then make funding recommendations to the board of trustees. Grants are targeted for award in August 2020.

Additional Questions

If you have further questions about the funding process, please contact Cody Proudfoot, grant manager, at 517-371-7468.

Funding Criteria

Project Size

There are no cost or time limitations on grant requests; however, projects will be evaluated on the cost versus the expected benefits, as well as upon the reasonableness of the time requested to complete the project.

Who Can Apply?

Proposals are encouraged from educational, governmental, tribal, and nonprofit institutions with a 501(c)(3) designation from the IRS. Canadian public and nonprofit organizations also may be eligible, but should contact GLFT staff prior to submitting a proposal.

Evaluation of Preliminary Proposals

Preliminary proposals will be evaluated on the degree to which they meet the following eight criteria:

- **Project applicants must be a public entity, nonprofit organization, or private educational institution.**

  Organizations receiving funds and managing a project must demonstrate evidence of current 501(c)(3) tax status with the IRS.

- **Projects must not duplicate ongoing activities in the region or activities funded by alternative sources.**

  Projects must represent new efforts not currently under way in the Great Lakes region.

- **Projects must target RFP priorities and have measurable outcomes.**

  Project proposals must address research priorities outlined in the request for proposals and contain measurable objectives and processes for measuring success.

- **Projects must have direct fisheries management implications.**

  The GLFT funds basic research only when there is a clear consensus that such efforts are essential to address a critical issue facing fishery managers. (See Project Goal in Project Description section for the definition of basic research.)

- **Projects must have scientific merit.**

  The GLFT believes strongly in the importance of scientific merit, as determined through an external peer review process and by an independent peer-review panel, when selecting projects for funding.

- **Projects must have benefits directed primarily to the Great Lakes.**

  Projects must provide benefits to the Great Lakes fishery. Projects with benefits (e.g., findings, protocols, new capacity) directed primarily to the Lake Michigan fishery are of higher priority than projects without significant benefit to the Lake Michigan fishery.

- **Project applicants must have demonstrated an ability to undertake such projects.**

  Project applicants must be able to demonstrate prior experience in successfully managing similar grants or projects.

- **Projects must be feasible and cost-effective.**

  Costs should be aligned with potential benefits, and the proposed project timeline should be realistic given the scope of proposed work.

In addition, preliminary proposals that exhibit the following four attributes will be reviewed more favorably than those lacking these qualities:

- **Responsive to lake whitefish priority**

  As noted above, the GLFT has adopted lake whitefish recruitment as a lead priority for the next five years. Proposals that build from the proceedings document associated with the February 2018 GLFT/GLFC workshop are of high priority.

- **Highly visible results**

  Dissemination of results to resource managers and other appropriate forums or groups should be incorporated into the project proposal. At a minimum, successful applicants will be required to seek the opportunity to present their findings to a relevant audience connected to the GLFC. An additional and broader vision for dissemination of results is encouraged.

- **Management support**

  Projects should have demonstrated support from representatives of the management community, and/or be responsive to published priorities of management agencies. Expressions of broader support (e.g., from organizations interested in Great Lakes fisheries, from the scientific community) are pertinent as well.

- **Collaborative approach**

  Efforts that involve collaboration between and among researchers and management agencies are preferred.

- **Facilitation of future uses of GLFT funds**

  Projects should provide information or results that will help guide future research activities of the GLFT.