Request for Proposals

Effectiveness Assessment of the Little Rapids Habitat Restoration Project within the St. Marys River Area of Concern

Overview

The NOAA Restoration Center (RC) and the University of Michigan Cooperative Institute for Great Lakes Research (CIGLR) are soliciting proposals from our Regional Consortium members to identify a team with the expertise and capacity to conduct scientifically rigorous post-restoration monitoring and produce an effectiveness assessment to evaluate the longer-term efficacy of the Little Rapids restoration project.

In 2016, a habitat restoration project funded through the Great Lakes Restoration Initiative (GLRI) was completed in the St. Marys River Area of Concern to address the historical loss of rapids habitat and remove two habitat-related Beneficial Use Impairments. The restoration project involved replacing two culverts that were restricting flow with a larger bridge to reconnect hydrology and restore rapids fisheries habitat in this area. Post-restoration monitoring conducted 1-2 years following restoration showed improvements to physical habitat and a shift in biotic assemblages to those associated with rapids habitat, but spawning by target native fish was not observed. Now that the restored habitat has had additional time to mature, the NOAA RC would like to re-evaluate the project's effectiveness in supporting native fish species.

Successful applicants should submit a proposal that describes (1) how they plan to address the research questions outlined in the Scope of Work and (2) how they are well positioned to conduct post-restoration monitoring and an effectiveness assessment. Respondents are also encouraged to demonstrate their experience engaging with stakeholders and partners as well as producing peer-reviewed publications. Proposals are due Monday, May 27th, 2024. Up to $300,000 is available for an 18-month period to conduct post-restoration monitoring and produce an effectiveness assessment of the Little Rapids restoration project.

Project Description

In 2016, a habitat restoration project funded through the Great Lakes Restoration Initiative (GLRI) was completed in the St. Marys River Area of Concern (AOC) to address the historical loss of rapids habitat and remove two habitat-related Beneficial Use Impairments (BUIs). The restoration project involved replacing two small culverts that were restricting flow with a larger bridge to reconnect hydrology and restore rapids fisheries habitat on the northwest side of Sugar Island, MI, in an area referred to as Little Rapids. Targeted fish species expected to use the restored habitat for spawning included lake sturgeon, coregonines (cisco and lake whitefish), walleye and other lithophilic spawners, including non-native but recreationally important salmonids. The target benthic invertebrate community within the restored rapids was a diverse and abundant assemblage typical of cold, clean, flowing streams, specifically from the Ephemeroptera (mayflies), Plecoptera (stoneflies) and Trichoptera (caddisflies) orders (abbreviated EPT). The relative abundance of the EPT species compared to all invertebrates sampled is commonly used as an index for determining water and habitat quality, where streams with higher numbers of EPT species equate to higher water quality.

Monitoring was conducted in the Little Rapids area prior to restoration during the summers of 2013 and 2014 to document baseline conditions in biological communities, water quality, and habitat, and again in 2017 and 2018 after restoration was complete. Specific monitoring parameters assessed before and after flow was restored to Little Rapids included physical habitat and water velocity; macroinvertebrate community composition and abundances; larval, juvenile and adult fish use; water quality; and presence of benthic algae. Results demonstrated that the removal of the undersized culverts to improve flow conveyance with a bridge improved water quality and restored the physical conditions for at least 7 acres of rapids habitat, meeting the physical habitat targets of the restoration effort. Although the total abundance and richness of macroinvertebrates was reduced following the restoration, the pre-restoration population of lentic macroinvertebrates was replaced with those preferring clean, fast moving (lotic) habitat (e.g. EPT species). Changes in larval and adult fish assemblages were consistent with a shift to rocky, fast-flowing conditions; however, spawning by the native target species was not observed. Although the physical habitat conditions, including depth, current velocity, and substrate size, were within the range of preferred habitat conditions for the native target fish species, additional time may be needed for their populations to respond.

Longer-term monitoring is needed to determine if changes to the aquatic invertebrate community are sustained and the extent to which native fish species, coregonines (cisco and lake whitefish), and lake sturgeon may be using the habitat, since a successful native fishery here will ultimately support the overall fishery of the Great Lakes. Thus, monitoring in the 5-to-10-year post-construction period will provide an assessment of project effectiveness better aligned with long-term monitoring efforts associated with spawning reefs in other connecting channels, such as the St. Clair and Detroit Rivers.

Scope of Work

Proposals should address the following research questions, as identified by the Little Rapids project team:

1. Are the target fish species using the restored Little Rapids habitat for spawning and/or other life stage requirements? If so, to what extent?
2. What evidence, if any, is there to show the restored rapids habitat is sustaining target fish species spawning activity and/or other life stage requirements?
3. What evidence, if any, is there to show that the macroinvertebrate population of the restored Little Rapids habitat has changed to resemble a stable and diverse lotic community with an abundance of organisms to support and sustain the upper food chain?
4. Is there evidence that nuisance or invasive aquatic plant species are present? If so, is there any evidence of impacts to the conditions found in the newly restored Little Rapids habitat?

The scope of work should include the following tasks:

A. Project start-up and coordination with project partners
B. Quality Assurance Project Plan (QAPP) development
C. Technical research design and methods
    a. Project description

b. Goals and objectives
c. Detailed timeline including proposed field work, deliverables, and major milestones

D. Data management and analysis
E. Dissemination of results

Understanding the potential impacts of upstream water releases from the Soo Locks Compensating Works on habitat quality in the Little Rapids restoration area is important for long-term habitat resilience. Applicants should plan to coordinate as appropriate with federal, state, and tribal agency monitoring efforts within the St. Marys River.

Deliverables List

The primary outcome of the project will be an effectiveness assessment of the Little Rapids habitat restoration project in the St. Marys River. A final presentation of results and semi-annual progress reports detailing the project and its findings will be used by NOAA RC and the Little Rapids project team to evaluate whether the restoration project is meeting biological conditions for macroinvertebrate and fishery habitat. In addition to the above, the research team will be required to prepare a submission-ready manuscript by the end of the project period.

1. Regular engagement with the CIGLR project manager and the NOAA RC technical monitor: The Regional Consortium PI will be responsible for maintaining regular communication with the CIGLR project manager and the NOAA RC technical monitor, ensuring objectives and milestones are met, and overseeing project finances. At a minimum, the research team will be responsible for participating in quarterly status update meetings with NOAA RC and CIGLR.
2. Semi-annual progress reports: The Regional Consortium PI will be responsible for producing semi-annual progress reports for NOAA RC review.
3. Presentation of results: At the conclusion of the project, the research team will present project results to the Little Rapids advisory committee. In addition to providing a post-restoration assessment of effectiveness, the presentation will address the following questions:
    a. What could improve the restoration project (for instance, would additional habitat features improve success or resilience)?
    b. What can we learn that can be used to inform future restoration design or fisheries management?
4. Submission-ready manuscript: In lieu of a final report, the Regional Consortium PI will develop a submission-ready manuscript by the end of the project period that summarizes the monitoring effort and provides an assessment of restoration effectiveness.
5. Quality Assurance Project Plan (QAPP): the Regional Consortium PI must submit a QAPP at the beginning of the project implementation period which describes general quality assurance (QA) procedures and quality control (QC) specifications that will be implemented to ensure that data collected for the project are of sufficient quality to meet the project objectives. QAPPs are needed for all types of environmental information to be collected under the project, including biological monitoring, topographic and bathymetric survey, sediment testing, and geotechnical investigation. More QAPP guidance available here.

6. Data sharing: All electronic data files related to habitat monitoring and evaluation, along with all relevant QA/QC documentation and metadata must be managed in full compliance with NOAA's policy on the dissemination and sharing of research results. All aspects of the research must be carefully documented, stored, and made available in an agreed upon public repository concurrent with the submission-ready manuscript.

Eligibility

This opportunity is open only to members of the CIGLR Regional Consortium. Any principal investigator affiliated with a CIGLR Regional Consortium institution or organization may apply for funding. Regional consortium members include: Central Michigan University, Cornell University, Grand Valley State University, Lake Superior State University, University of Michigan, University of Minnesota-Duluth, Michigan State University, Ohio State University, University of Wisconsin-Milwaukee, University of Windsor, The Nature Conservancy - Great Lakes, National Wildlife Federation Great Lakes Regional Center, LimnoTech, Fondriest Environmental, and Great Lakes Environmental Center.

Period of Performance

July 1, 2024 – December 31, 2025 (unless otherwise negotiated)

Proposal Specifications

Respondents are required to submit one electronic copy of their proposal. The package shall include:

1. Title Page, including proposal title, contact information for the Principal Investigator and Financial Representative, names and affiliations of any other investigators, project period, and budget amount requested.
2. Project Summary, not to exceed one (1) page.
3. Proposed Scope of Work, not to exceed ten (10) typed, single-spaced pages including any tables, figures, or other visuals. Please use Times New Roman 12-point font and 1 inch margins.
4. Statement of Qualifications and directly relevant experience for senior personnel and/or organization, not to exceed five (5) pages (optional).
5. A detailed budget table and budget narrative that includes the following:
    a. Personnel (type, number, rate/hour)
    b. Equipment, materials, etc.
    c. Travel, lodging, etc.
    d. Other direct costs
    e. Indirect costs (26% according to the CIGLR Consortium MOU)
    f. Total cost (not to exceed $300,000)
6. List of references who may be contacted about qualifications and experience, not to exceed one (1) page (optional).
7. Curriculum vitae or resumes for project team members, not to exceed two (2) pages per team member, and a project team organization chart.
8. Data management plan. More guidance available here.

Proposal Submission

Please submit your proposal electronically to CIGLR Project Manager Patrick Kelly at rpkel@umich.edu and copy the NOAA Technical Monitor at terry.heatlie@noaa.gov.

Proposal Evaluation

Proposals will be evaluated by the Little Rapids advisory committee, composed of representatives from CIGLR, NOAA RC, and the Little Rapids project team based on the following criteria:

1. Quality of science and technical knowledge to conduct scientifically rigorous post-restoration monitoring and an assessment of restoration effectiveness to evaluate the longer-term efficacy of the Little Rapids restoration project.
2. Clarity and presentation of proposal.
3. Cost, schedule, and feasibility.
4. Technical experience.
5. Demonstrated successful cooperation with local, state, federal, and tribal governments as well as community stakeholders.
6. Demonstrated ability to collaborate on peer-reviewed research publications.

Timeline

April 8th 2024 Request for Proposals (RFP) release
May 27th 2024 Proposals due
June 28th 2024 Final Selection
July 1st 2024 – December 31st 2025 Anticipated subcontract period

Disclaimer

This RFP does not commit CIGLR to award a contract or to pay any costs incurred during the preparation of the proposal. CIGLR reserves the right to reject any or all of the proposals for completing this work. CIGLR also reserves the right to eliminate the need for the selected respondent to complete one or more tasks, pending the outcome of preceding related tasks or issues, and/or the availability of project partners to complete that task.

Questions

Applicants may direct any questions to CIGLR Project Manager Patrick Kelly at rpkel@umich.edu and copy the NOAA Technical Monitor at terry.heatlie@noaa.gov.