2018 Call for Proposals
Great Lakes Research Consortium
Small Grants Program

Offered by:

Great Lakes Research Consortium, NYS Department of Environmental Conservation
and the New York Great Lakes Basin Advisory Council

General Information

2018 RFP Modifications

- *RFP due January 29, 2018*
- *Funding period will be April 1, 2018 through December 31, 2019*
- *A budget template is included for your convenience*
- *A Data Assurance Plan is now required for all water quality monitoring projects*
- *Outcomes and deliverables must now be presented in table format*
- *Matching funds are not required and should not be included in the budget*

Program Goals: This small grants program provides seed funding for new, cooperative projects that improve our understanding of, and/or management of, New York's Great Lakes basin. The program supports collaborative projects and grant awards can be used for basic or applied research, project planning, as seed money for pilot projects that will lead to larger projects, or to support small-scale projects consistent with the objectives below.

Money available: Pending availability of funds, the maximum amount for an individual grant is $25,000. However, projects asking for less than the maximum are encouraged. The money for this program comes from the New York State Environmental Protection Fund's (NYSEPF) Ocean-Great Lakes Ecosystem Conservation Act (OGLECA) programs. These are New York State-appropriated funds subject to all applicable state rules and regulations. **No indirect costs are allowed**. We expect to fund 4-6 projects through this solicitation. Award decisions are expected in March 2018 while funds are anticipated to be available for an April 1, 2018 through December 31, 2019 award period.

Proposal Submission: Proposal submissions should be sent electronically **as a single PDF file** attachment to GLRC@esf.edu. Documents should be checked for viruses or malware prior to sending and any documents that fail the campus security screening will be deleted without opening. *Electronic versions of the proposals should be received no later than midnight on **January 29th, 2018**. Prior to funding, all successful recipients will be asked to submit an original signed copy of the proposal to:* Great Lakes Research Consortium, SUNY College of Environmental Science & Forestry, 253 Baker Lab, Syracuse, NY 13210. Questions may be addressed to Greg Boyer, Director of the GLRC, at GLRC@esf.edu or by phone at 315-470-6720.

Funding Criteria: The intent of the Great Lakes Research Consortium (GLRC) small grants program is to promote research that contributes to the protection and restoration of the health of the Great Lakes and contributes to ecosystem-based management of the basin's natural

resources and environmental quality. *Projects funded by this small grant program must meet one or more of the priority categories listed below, and must satisfy the following criteria:*

Appropriate: Project must be consistent with the goals and purposes of the New York's Great Lakes Basin: Interim Action Agenda (GLAA) as described in this request for proposals.

Collaborative: Project must foster communication and cooperative action between New York's colleges and universities, state and local government, business and industry, and environmental or conservation organizations. Collaborative projects involving more than one institution and those providing support for internships working with local government and community organizations are strongly encouraged.

Effective: Proposals must demonstrate how the project will (a) promote ecosystem-based management or science-informed decision-making and (b) lead to measurable progress in achieving the goals and priorities of the GLAA.

Productive: The project must have defined qualitative or quantitative outcomes. Those projects which clearly demonstrate the potential to grow into larger projects consistent with the GLAA goals and purposes are highly encouraged. These outcomes now need to be presented in table format (see template).

Relevant: Projects should describe their relevance to New York State Great Lakes efforts as described in the GLAA (http://www.dec.ny.gov/lands/91881.html). This action agenda brings together new priorities, as well as existing environmental, social and economic goals previously identified for New York's Great Lakes region, using an ecosystem-based management approach. Priorities include: (a) virtually eliminate discharges of persistent toxic substances, (b) control sediment, nutrient and pathogen releases, (c) accelerate the delisting of New York's Areas of Concern, (d) combat invasive species, (e) conserve and restore fish and wildlife, (f) conserve Great Lakes water supplies, (g) enhance coastal resiliency and ecosystem integrity, (h) promote smart growth, redevelopment and adaptive reuse, (i) enhance recreation and tourism opportunities and (j) plan for future energy development. In addition, the GLAA includes four cross-cutting priorities to (k) support and promote partnerships among stakeholders, (l) coordinate monitoring and information management, (m) support environmental education and outreach, and to work towards (n) climate change adaptation and mitigation.

Projects from new faculty members at the GLRC member campuses, cooperative efforts with other funding programs, and projects in support of understanding the potential risks of emerging contaminants in the environment, coastal resiliency/adaptation and climate change impacts, water balance and hydrologic dynamics within sub-watersheds, and benefits/avoidance of impacts from alternative energy development are especially encouraged. Applicants should look at the respective websites for the NYGLPF (http://www.dec.ny.gov/lands/25582.html) and the interim GLAA report (http://www.dec.ny.gov /docs/regions_pdf/glaai.pdf) for guidance on appropriate actions and desired outcomes. Projects should not duplicate existing programs or be used for base program support.

Table 1. Examples of eligible projects and potential outcomes under the GLAA include, but are not limited to, the following:

Goal #1. Virtually eliminate discharges of persistent toxic substances to protect biological and human health.

Research Need:	Outcome:
Research on the sources and effects of emerging chemicals and other substances of concern (e.g., pharmaceuticals, microplastics) on NY's Great Lakes people, fish and wildlife.	Understand the potential risks or effects of emerging chemicals of concern on people, fish and wildlife.
Characterization of WWTP effluent to assess levels of legacy (PCBs) and emerging contaminants (PBDEs, pharmaceuticals, microplastics) that are discharged.	Quantify contaminant levels discharged from WWTPs.
Evaluate innovative or alternative waste/potable water treatment processes for effectiveness, cost-benefits and applicability to municipal systems.	Identify feasibility of alternative water treatment processes/systems.

Goal #2. Control sediment, nutrient and pathogen loadings so that water quality is protected, desired aquatic biotic communities flourish, humans and wildlife are protected from coastline health hazards, and natural processes are sustained.

Research Need:	Outcome:
Determine the impact of point and non-point sources of pathogens and nutrients on the closure of town, county, and state park beaches.	Identification and understanding of contaminant sources causing beach closures, economic impacts and options for remediation.
Develop a coordinated research program to understand, analyze and forecast harmful algal blooms.	Better understanding of causes, impacts, and solutions to proactively address HABs and the occurrence toxic blue-green algae.
Measure the impact on the statutory bans of phosphorous in detergents and fertilizers.	Increased public support for nutrient regulations and benefits of product alternatives.
Measure the impact of land-based sources of nutrients and correlative parameters to the near shore zone of the Great Lakes.	Allow for the prioritization of watersheds with nutrient issues.

Goal #3. Accelerate the Delisting of New York's Areas of Concern (AOCs) by implementing actions focused on restoring beneficial uses impaired by pollutants.

Research Need:	Outcome:
Develop biological indicators to assess contaminant trends in water, fish, wildlife, and vulnerable human populations.	Enhanced tracking abilities in support of delisting of AOCs.
Assess adaptive management practices and indicators that can be used to document delisting of the AOCs.	Enhanced tracking abilities in support of delisting of AOCs.

Goal #4. Combat invasive species to sustain a healthy Great Lakes ecosystem and to maintain diverse economic and recreational opportunities.

Research Need:	Outcome:
Evaluate technical alternatives (i.e., *in-situ* barriers, boat lifts, etc.) and their potential legal/social/economic implications to ensure the region's canals and waterways are not vectors for spreading invasive species.	Development of enhanced management alternatives for Erie Barge Canal system and connecting waterways.
Measure the environmental, social and economic impact of invasive species and potential control strategies in New York State.	Understanding of impacts informs prioritization of sustainable control efforts.

Improve early detection and management protocols for invasive species (e.g., identification of likely pathways of invasion, seed-source trackdown, development of innovative control tools).	Improved detection and management capabilities.
Development of early detection, monitoring and control strategies for high-priority species such as hydrilla, European frog-bit, water chestnut, and phragmites.	Achieve near real time rapid-monitoring capability.

Goal #5. Conserve and restore native fish and wildlife biodiversity and habitats to achieve and sustain resilient ecosystems and vibrant economies.

Research Need:	**Outcome:**
Determine how epilimnetic zooplankton declines and changes in zooplankton community structure/distribution are affecting prey fish.	Increased understanding of lower food web dynamics.
Develop a rapid, sensitive, and inexpensive assay for the quantification of botulism toxin and define the toxin's transmission pathway through the aquatic food web.	Development of management practices to prevent and/or predict botulism outbreaks.
Determine the occurrence and ecological effects of endocrine disruptors in the Great Lakes ecosystem.	Understanding of impacts of endocrine disruptors on fish populations.

Goal #6. Conserve Great Lakes water supplies in a manner that recognizes the renewable but finite supply of the waters of the Great Lakes basin for the long-term sustainable use and enjoyment of the public.

Research Need:	**Outcome:**
Identify novel strategies to protect and sustain source waters, aquifers and critical water supplies.	Protection of water quality and quantity.
Evaluate the impact of climate change on the water resources of New York State.	Maintain hydrologic flows in tributary streams and groundwater systems that are consistent with ecological and human needs.
Develop tools that could be used to identify critical watersheds and aquifers in the Great Lakes basin.	Understand aquifer hydrology and implications for local water supplies.

Goal #7. Enhance community resiliency and ecosystem integrity through restoration, protection, and improved resource management.

Research Need:	**Outcome:**
Develop citizen science-based environmental monitoring practices to track and forecast hydrologic, climatic, biological and meteorological changes in the Great Lakes ecosystem.	Support adaptive management of St. Lawrence River/Lake Ontario aquatic resources.
Evaluate "soft" shoreline protection techniques, and the economic and ecological costs/benefits associated with their implementation.	Understand which soft shoreline techniques are suitable for implementation at various types of locations within NY's GL system.

Goal #8. Promote smart growth, redevelopment and adaptive reuse to create a sustainable and vibrant economy in the Great Lakes ecosystem.

Research Need:	**Outcome:**
Identify and determine the benefit of novel strategies to reclaim or restore underused areas consistent with smart-growth principles (e.g., greenways, floodplain preservation, wildlife corridors and riparian buffers, etc.).	Urban green spaces benefit water quality, habitat, and community revitalization.
Identify those factors limiting the implementation of integrated local and regional plans and smart-growth principles in the Great Lakes region.	Reduce GHG emissions, enhance climate resiliency, and support sustainable economic growth.

Goal #9. Enhance recreation and tourism opportunities that capitalize on the rivers and lakes and the natural, cultural and visual resources that define the character of the Great Lakes – St. Lawrence River region.

Research Need:	Outcome:
Assess quantitative and qualitative trends in emerging eco-tourism opportunities.	Information used by communities to support sustainable economic development.
Determine those factors limiting the recreational opportunities and tourism use of the Great Lakes Basin.	Determine priorities leading to increased recreational use.
Provide a better understanding of how the public perceives the value of Great Lakes resources.	Increase public appreciation and stewardship of GL natural resources.

Goal #10. Plan for energy development consistent with natural resource conservation and supportive of the state's energy and climate change goals.

Research Need:	Outcome:
Determine the impact that may result from alternative energy developments, including solar, wind energy, etc.	Identify least impactful and most feasible alternate energy development options to support renewable energy goals.
Develop mitigation practices to minimize the impacts from the siting, extraction, transmission, and efficient use of renewable and non-renewable energy resources.	BMPs reduce impacts to natural resources and maximize energy efficiency.
Develop tools to aid in the evaluation of the costs and benefits to shoreline communities, impacts on habitats and biota, visual aesthetics, recreational and submerged cultural resources by new energy developments.	Identification of least impactful energy development sites and/or corridors.

Proposal Review: The Great Lakes Research Consortium will establish a review panel to evaluate proposals based on technical merit. This technical review, with input from the Department of Environmental Conservation and the GLBAC, will evaluate how well each proposal furthers the goals and objectives of the GLAA. Based on this review and technical ranking a list will be forwarded for funding to the Department of Environmental Conservation for final approval.

Proposal Format:

A. Cover Sheet:

1. Project Title
2. Principal Investigator (Name, Affiliation, Address, City, State, Zip, Phone, Fax, Email)
3. Collaborator(s) (Name, Affiliation, Address, City, State, Zip, Phone, Fax, Email)
4. Amount Requested
5. Priority Category(s) (Identify the NYGLPF and GLAA categories addressed)
6. Institutional Signatures

B. Proposal: The text of the proposal should be no more than 5 pages, excluding Cover Sheet, Personnel and Collaboration Materials, Data Assurance Plan, Objectives and Outcomes Table, Key Personnel, Budget and Budget Justification, References, and other supporting documents. It must include the following elements:

1. **Nontechnical Abstract:** Briefly (no more than ***one*** paragraph, <300 words) summarize the project's focus and goal, scope of work, nature of collaboration, and significance to the priorities of the GLAA. This abstract will be used for distribution on the GLRC website.

2. **Statement of the project's focus**: State the issues that are to be addressed by the project and in a clear and concise manner how the project relates to the objectives and priorities identified in the GLAA or this RFP.
3. **Scope of Work**: Describe the purpose and scope of work to be accomplished. Include the following: purpose of the project and specific objectives to be achieved; scientific methodology employed; public benefits and implications for ecosystem-based decision-making or policy development; end-products of the project including how these products will be used to further promote the project and goals of the GLAA; and an Outreach Plan to share the project's outputs/outcomes with appropriate stakeholders or the general public.
4. **Timeframe:** Provide a time-frame for completion of objectives and major milestones of the work. Please note that the time-frame must be consistent with the funding period.

C. Expected Objectives, Activities, Outputs, Outcomes, and Deliverables: This needs to be done in Table format (see template) with the first column being the objectives, column 2 being activities and outputs for that objective, column 3 being the deliverables or tangible products, and column 4 being the outcomes (impacts) for that objective. **This table is not included within the 5-page limit** but you may want to identify two or three objectives that highlight what you expect to accomplish with this funding (i.e., leveraging $50,000 in additional funds) and benefits as part of your the Outreach Plan that is included within your five pages.

D. Personnel and Collaboration: Describe the nature and degree of collaboration between those involved. Describe the personnel to be assigned to this project. **Include 1-2 page resumes of all lead personnel**. Additionally, include a separate page that clearly identifies, and describes in detail, the role of your collaborators. If an intern is involved in the project, list their major advisor or agency and describe how the intern will be recruited. This information is not included in the 5-page proposal total.

E. Data Assurance Plan: The intent of the Great Lakes Research Consortium small grants program is to support basic or applied research projects that meet the research needs as identified in Table 1. It is not intended to support projects whose end goal is for regulatory use. New in 2018, all Water Quality Assessment and Monitoring projects, as defined in NYS Public Health Law Section 502 (http://codes.findlaw.com/ny/public-health-law/pbh-sect-502.html) and funded by NYS DEC, must have a Data Assurance Plan. Those examinations conducted in the field or laboratory for the purposes of public or personal health protection or the protection of the environment or natural resources need to be:

1. Performed in accordance with an effective quality control system for the planning and assessing of environmental measurements, and for conducting required quality assurance and quality control procedures to promote and maintain the accuracy and reliability of environmental measurements and test results;
2. Performed by a laboratory certified by the New York State Department of Health (NYSDOH) under the Environmental Laboratory Approval Program (ELAP) if ELAP has issued a certificate for the specific parameter;
3. Performed in a manner that ensures all requisite quality control and calibration requirements of the method are met including field testing, sample collection, preservation, and record keeping. When the method does not detail requirements for any

or all of these items, the basic quality assurance and quality control requirements defined in 40 CFR Part 136.7 shall be followed.

If your project involves the assessment or monitoring of water quality, you must include a separate data assurance plan (no more than 2 pages) that details how you will meet these requirements. If your project does NOT involve the assessment or monitoring of water quality, you must include a statement that indicates that your project does not fall under these requirements and indicate why. Failure to address these concerns may result in the project being disqualified without review.

F. Budget and Budget Justification: The detailed budget and budget justification should start on a separate page entitled "Budget and Budget Justification" and is not included in the 5-page proposal total. A budget template is attached and all expenses must be described in detail in the justification.

1. Total funds requested.
2. Salary for all personnel being paid by the grant in terms of person-months.
3. Fringe benefits. Appropriate Fringe benefits must be budgeted for all personnel paid through this project.
4. Permanent equipment. This is defined as items having a life of two or more years and/or a cost of $2,000 or more. For items fitting this description, you should explain why this equipment cannot be obtained through loan or rental and detail what will happen with this equipment after the end of the project.
5. Supplies and non-permanent equipment. Indicate what consumable supplies will be required to complete this work.
6. Travel. Indicate all travel required for the project. If travel to a scientific meeting is required – you must explain why that meeting is essential for the completion of the project. All travel must comply with NYS allowable per diem allocations.
7. Indirect costs. Indirect costs are not allowed.

G. Notification and Reporting requirements: Successful projects will receive written notification and a separate list of reporting requirements. These requirements include both mid-way and end-of-project reports. Send correspondence to:

Great Lakes Research Consortium
253 Baker Lab
SUNY College of Environmental Science and Forestry
1 Forestry Drive
Syracuse, New York 13210
Email: glrc@esf.edu

Objectives, Activities, Outputs, Outcomes, and Deliverables Template

Objectives (actions taken towards your goal(s))	**Activities and Outputs (what you will do)**	**Deliverables (actual, tangible products and results)**	**Outcomes (knowledge transferred, impacts, and importance)**
Example: **Objective 1.** Determine the phosphorus loading by the Oswego River into Lake Ontario	a. Collect weekly samples at the Port of Oswego for determination of total phosphorus and soluble reactive phosphorus b. Obtain the weekly flow data from the USGS gauging station in Oswego NY.	Prepare a time series of phosphorus concentration with time. This information along with the USGS flow data will be used to calculate the seasonal loading of total phosphorus to Lake Ontario from the Oswego River.	Loadings from the Oswego River will enable water quality managers to better estimate the impact of best management practices in the Oswego River water on primary productivity in the nearshore region of lake Ontario. These loadings are also an important driver in the near shore nutrient models currently being developed for Lake Ontario and an important consideration in the IJC reconsideration of the nutrient targets for Lake Ontario.
Objective 2……. **Repeat for each objective.**			

Proposed Budget Submitted to
Great Lakes Research Consortium Small Grants Program 2018

TITLE:
April 1, 2018 - December 31, 2019

CATEGORY	4/1/18 - 3/31/19	4/1/19 - 12/31/19	Total
A. Senior Personnel:			
PI:	0	0	0
Summer Salary	0	0	0
CoPI:	0	0	0
CoPI:	0	0	0
CoPI:	0	0	0
Total Senior Personnel	0	0	0
Other Personnel:			
Graduate Student	0	0	0
Undergraduate Student, hourly	0	0	0
Total Salaries and Wages	0	0	0
B. Benefits (@ insert fringe benefit rate)	0	0	0
Regular Employees @	0	0	0
Summer Salary @	0	0	0
Graduate Student @	0	0	0
Undergraduate Student @	0	0	0
Total Benefits	0	0	0
Total S, W and B	0	0	0
C. Permanent Equipment (please list):	0	0	0
	0	0	0
Total Equipment	0	0	0
D. Materials and Supplies	0	0	0
E. Travel:			
1. Domestic	0	0	0
2. Foreign	0	0	0
Total Travel	0	0	0
F. Other Direct Costs (please list):			
	0	0	0
	0	0	0
	0	0	0
Total Other Direct Costs	0	0	0
G. Total Direct Costs	0	0	0

note: Indirect costs are not allowed on these projects.