



# REQUEST FOR PROPOSALS FOR RESEARCH PROJECTS IN THE LAKE CHAMPLAIN BASIN 2024-2026

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## TIMELINE

- Letters of intent due Friday, February 17, 2023
- Full proposals due Friday, May 26, 2023
- Optional principal investigator (PI—project leader) response to technical reviews: August 7–21, 2023
- PIs informed of recommendations for funding: September 2023
- Anticipated project start date: February 1, 2024
- Anticipated project duration: 12-24 months

## SUMMARY

The Lake Champlain Sea Grant Institute (LCSG) requests proposals for research in the Lake Champlain basin in the areas of:

- Environmental literacy and workforce development
- Healthy coastal ecosystems
- Sustainable fisheries and aquaculture
- Resilient communities and economies

Researchers may request up to \$100,000 in federal Sea Grant funds for one-year projects or \$200,000 for two-year projects to cover direct and indirect costs. Federal support must be matched with non-federal funds at the rate of \$1 in non-federal matching funds for every \$2 requested of federal Sea Grant funds (i.e., a 50% match). We expect to allocate approximately \$700,000 in federal Sea Grant funds to support research projects selected from this research competition.

LCSG strives to fund scientists from diverse backgrounds and achieve outcomes for diverse and underserved communities. Institutions of higher education, state and local government agencies, non-governmental organizations, and businesses that conduct research in the Lake Champlain basin in New York and Vermont are eligible to respond to this request for proposals (RFP).

## ABOUT LAKE CHAMPLAIN SEA GRANT

LCSG develops and shares science-based knowledge to benefit the environment and economies of the Lake Champlain basin. LCSG envisions a future of long-term ecosystem health and sustainable economic development in Lake Champlain basin communities.

LCSG is a collaborative effort between the University of Vermont and the State University of New York (SUNY) Plattsburgh. LCSG is supported by the U.S. Department of Commerce National Oceanic and Atmospheric Administration (NOAA) [National Sea Grant College Program](#).

Several principles guide our work, including partnerships, diversity, inclusion, equity, justice, and accessibility. We develop meaningful partnerships through thoughtful integration of expertise, assets, and capabilities of collaborators within the Lake Champlain basin, across the nation, and beyond. We seek and welcome diversity, inclusion, equity, justice, and accessibility among people and perspectives on our teams and in our research, and we work diligently to support participation by and extend knowledge and resources to multiple audiences. Research project proposals should describe how the research project will cultivate partnerships and enhance diversity.

Referencing these principles, applicants should clearly identify if and how the proposed research will have societal impacts in the Lake Champlain basin environment and/or economies, including how people from underrepresented or underserved communities will be impacted. Research projects that aim to improve economic or environmental justice, to disqualify biases, and to dismantle racism are welcome.

PIs are encouraged to engage potential research-users, including with underrepresented and underserved communities, prior to submitting a proposal. The goal of initial conversations should not be to inform users of proposed project goals; it is to engage research-users and communities in discussion to determine what questions, content, and form of end products would be most useful for them. These conversations should inform the outreach plan for the research project. PIs should allocate effort (direct or matching) to outreach, including to extend research results to the public. In some cases, it may be appropriate for Sea Grant staff to participate directly in communications and outreach efforts at no extra cost to the funded project. Investigators may contact LCSG at [seagrant@uvm.edu](mailto:seagrant@uvm.edu) to discuss potential outreach approaches and audiences.

## TECHNICAL FOCUS

Proposed research projects must link to at least one of the following LCSG goals. It is anticipated that priority will be given to proposals that address one or more research topics listed in this section. Projects may employ a range of research strategies, including field and lab experiments, modeling, and data synthesis within the domains of natural or social sciences. Proposals must describe communications and engagement strategies that will or could clearly lead to policy, management, or community outcomes. Researchers are encouraged to consider alternative ways of knowing (e.g., Indigenous knowledge, traditional knowledge) and should describe how the research may affect underrepresented and underserved communities.

## GOALS

Proposals must support one or more of the LCSG Strategic Plan (2024–2028) goals listed below.

### **Focus Area: Environmental Literacy and Workforce Development**

Goal 1: A diverse and environmentally literate public participates in lifelong formal, non-formal, and informal learning opportunities and implements innovative solutions to improve community well-being in the face of a changing Lake Champlain basin.

Goal 2: A diverse, skilled, and environmentally literate workforce is engaged and able to build prosperous lives and livelihoods in a changing world through traditional and innovative careers.

### **Focus Area: Healthy Coastal Ecosystems**

Goal 3: Habitat, ecosystems, and the services they provide are protected and/or restored in the Lake Champlain basin.

Goal 4: Land, water, and living resources are managed by applying sound science, tools, and services to sustain resilient ecosystems in the Lake Champlain basin.

### **Focus Area: Sustainable Fisheries and Aquaculture**

Goal 5: Domestic fisheries, aquaculture, aquaponics, and other living freshwater resources supply food, jobs, economic and cultural benefits in the Lake Champlain basin.

Goal 6: Natural resources are sustainably managed to support coastal communities and working waterfronts, including industrial, recreational, subsistence fisheries, aquaculture, and aquaponics in the Lake Champlain basin.

**Focus Area: Resilient Communities and Economies**

Goal 7: Lake Champlain basin communities and economies have resilient capability and the resources to prepare for and adapt to changing environmental conditions, climate change, extreme weather, coastal hazards, economic disruptions, and other threats to community health and well-being.

Goal 8: Aquatic resources are sustained and protected to meet emerging needs of the communities, economies, and ecosystems of the Lake Champlain basin.

LCSG goals are further described in the LCSG Strategic Plan (2024-2028), which was developed with engagement from a wide variety of people in the Lake Champlain basin, consultation with the National Sea Grant Office and [LCSG Program Advisory Committee](#), and approval from [the LCSG Steering Committee](#).

## RESEARCH TOPICS

Proposals are strongly encouraged to address at least one of the research topics listed in this section.

Partners, advisors, and the general public discussed LCSG’s research program and research needs during three meetings in 2022. The following priority research topics emerged.

- Forecasting climate change, extreme weather, and flooding, including real-time data, modeling, and potential environmental, health, and economic impacts
- Increasing resilience to climate change, including individual and community actions in the areas of emergency preparedness; environmental protection, restoration, and management; human health; and implications and opportunities related to environmental justice
- Reducing runoff that may contain pollutants entering surface and ground waters, including dynamics, influences of climate change, and cost-effective solutions

These research topics, which may relate to the topics mentioned above, also align with LCSG’s programmatic foci.

- Socio-economic influences on watershed and lake use and management, especially those with an environmental justice component
- Use of traditional knowledge for watershed and lake use and management, especially Indigenous knowledge
- Community hazard resiliency, climate change adaptation, emergency preparedness
- Opportunities and barriers for aquaculture and fisheries to contribute to local food production and food security in the Lake Champlain basin, including assessments of sustainability, best management practices, local and regional regulations, business models, and potential contaminants
- Shoreline habitat protection, restoration, and management, including riparian forests
- Green infrastructure and clean water initiatives
- Lake food webs, including aquatic non-native species and biosecurity
- Nutrients and pollutants that affect watershed health and lake ecosystems, including cyanobacteria
- Microplastics (marine debris) in the Lake Champlain and its tributaries

The LCSG Program Advisory Committee noted that actions related to agriculture are addressed by other organizations, so it recommended that this RFP not fund agriculture-focused proposals.

## RESEARCH-TO-APPLICATION

PIs must provide a strong rationale for how their proposed research will inform policies, management practices, businesses, recreational organizations, or other types of communities in the Lake Champlain basin, including underrepresented or underserved communities. PIs are strongly encouraged to engage potential end users of their research prior to submitting a proposal. It is insufficient to simply inform end users of project goals; research leaders are expected to engage research-users in discussion in the development of proposals to determine what questions, content, and form of end products would be most useful for them. Proposals should also describe how individuals from groups that are underrepresented or underserved—including, but not limited to, Black or African American, American Indian, or Alaska Native, Hispanic or Latino, female, first-generation college students, veterans, LGBTQ+, and individuals with disabilities—will be engaged or impacted.

Projects must include a plan to disseminate key findings to clearly identified audiences outside of academia. Outreach and communications activities should be budgeted. Investigators may contact LCSG at [seagrant@uvm.edu](mailto:seagrant@uvm.edu) to discuss application, outreach, and communications approaches and budgets.

## ELIGIBILITY

The National Sea Grant College Program champions diversity, equity, and inclusion (DEI) by recruiting, retaining, and preparing a diverse workforce and proactively engaging and serving the diverse populations of coastal communities. Sea Grant is committed to building inclusive research, extension, communication, and education programs that serve people with unique backgrounds, circumstances, needs, perspectives, and ways of thinking. We encourage applicants of all ages, races, ethnicities, national origins, colors, gender identities, sexual orientations, disabilities, cultures, religions, citizenship types, marital statuses, educational levels, job classifications, veteran status types, and income and socioeconomic status types to apply for this competitive research opportunity.

PIs must be from an institution of higher education, government agency, non-profit organization, or private for-profit company. Researchers from outside the Lake Champlain basin are eligible to submit a proposal, but the research being proposed must be conducted, at least in part, in the Lake Champlain basin. Both single investigators and multiple investigator research teams from different institutions are encouraged to apply. LCSG encourages participation from both the natural science and social science research communities and applications from early-career researchers.

### IMPORTANT NOTES FOR PIS

- PIs may not submit more than one full proposal. Co-PIs may be included in more than one proposal.
- Funding is contingent upon FY2024 and FY2025 federal budget allocations from NOAA to LCSG.
- All proposals must offer 50% of the requested federal budget in non-federal matching funds. This means that for every \$1 of federal budget requested, \$0.50 in non-federal match must be contributed. Please contact [seagrant@uvm.edu](mailto:seagrant@uvm.edu) for more information or concerns about meeting match requirements.
- PIs should consider communications, outreach, and data management funding needs in budgets.
- All research projects must follow LCSG's data management and sharing plan and policy in Appendix A.
- PIs of proposals recommended for funding should ensure that they have or can secure all necessary permits to conduct the research and will be required to conform to federal research award policies including, but not limited to, the National Environmental Policy Act.

## COMPETITION PROCESS

Step 1: To be considered for funding, a letter of intent must be submitted by February 17, 2023. A PI may submit more than one letter of intent, but PIs are discouraged from submitting more than one full proposal, as we endeavor to distribute limited funds as broadly as possible. The letters of intent help us plan our technical and final panel reviews. You must submit a letter of intent to be eligible to submit a full proposal.

Step 2: Full proposals are due May 26, 2023.

Step 3: Full proposals will be reviewed for technical merit, reviewed for relevance in the Lake Champlain basin, and discussed, recommended or not, and ranked by a panel. PIs will have an opportunity to read technical reviewers' comments and provide a rebuttal that will be shared with the panel. The LCSG Director will use this information to recommend a group of proposals for funding to the National Sea Grant Office (NSGO). The NSGO will review and make a final determination. Decisions regarding funding recommendations will be shared with PIs in September 2023. Projects recommended for funding will need to provide additional information (e.g., data management plan, environmental compliance form, approvals), and adjustments to the project or budget may be needed.

## LETTERS OF INTENT

LCSG does not require letters of intent to be vetted through the PI's institutional office; however, PIs should follow their institutions' policies. The letter of intent is due Friday, February 17, 2023, via email to [seagrant@uvm.edu](mailto:seagrant@uvm.edu) with "LCSG letter of intent: PI name" in the subject line. LCSG will confirm receipt by email. If transferring documents via email or in these file formats poses difficulties, please email or call LCSG (802-777-7017) before the due date, and we will find a solution.

The letter of intent should be no longer than two pages, single-spaced, with one-inch margins, and 11-pt font, and shall contain the following information:

1. Project title, PI, PI title, affiliation, and contact information. Project titles may be shared with NOAA and/or Congress, so should use professional, clear, concise, and informative language and avoid acronyms or shorthand language.
2. Goal. Describe in one sentence the specific problem the proposed project will address.
3. Justification. Clearly state why this project is important and who needs the information that will be created by the proposed project.
4. Testable hypotheses or key questions. State clearly the testable hypotheses or key questions to be answered by the proposed project.
5. Approach, Methods. Describe the approach and methods in detail sufficient for readers to understand how the approach or methods will address the testable hypotheses or key questions. Clearly identify research-users and partners, including communities, involved with the development of the research idea, or actively involved in the research results and how the project will engage with them. Outline the communications and outreach plan.
6. Anticipated Benefits. Explain who would use the research results and how and describe expected outcomes and impact. Investigators may email [seagrant@uvm.edu](mailto:seagrant@uvm.edu) to discuss potential communication and outreach approaches and audiences.
7. Federal and Match Budget Estimates. All applicants must offer 50% non-federal match (\$1 match for \$2 federal), a requirement from NOAA. Include estimated direct and indirect totals for both federal and match budgets.
8. **Note: It is required that this information be requested, but your response is voluntary.** Please answer this question for the PI and any PIs of the proposal. *Do you, your organization, or a program*

*recipient/grantee/beneficiary identify with any of the following groups that the federal government, in Executive Order 13985, has identified as underserved? Include all that apply.*

*Black*

*Latino, Latina, Latinx*

*Asian American*

*Indigenous and Native American*

*Pacific Islander*

*Other person of color*

*Members of religious minorities*

*Lesbian, gay, bisexual, transgender, and queer (LGBTQ+) persons*

*Persons with disabilities*

*Persons who live in rural areas*

*Persons otherwise adversely affected by persistent poverty or inequality*

*No, I do not identify with any of these groups*

Responses to this question will be anonymized and confidential and not considered in the review process.

## FULL PROPOSALS

Any PI who submits a letter of intent may submit a full proposal. Full proposals are due Friday, May 26, 2023, via email to [seagrant@uvm.edu](mailto:seagrant@uvm.edu). Please state "LCSG proposal: PI name" in the subject line and attach components in a Microsoft Office application in the order listed above (can be several or one document). Large files can be sent to [seagrant@uvm.edu](mailto:seagrant@uvm.edu) through [UVM's File Transfer Service](#). LCSG will confirm receipt by email. If transferring documents via email or in these file formats poses difficulties, please email or call LCSG (802-777-7017) before the due date, and we will find a solution.

The full proposal shall consist of the following content.

**Project narrative.** (10-page max, numbered, single-spaced, one-inch margins, 11-point font)

1. Project Title, PI Name, Title, Affiliation, Contact Information. Project titles are shared with agency leadership and/or Congress, so should use professional, clear, concise, and informative language and avoid acronyms or shorthand language.
2. Goal: Describe in one sentence the specific problem the proposed project will address.
3. Background and Justification. Clearly describe why this project is important and who needs the information that will be created by the proposed project. Describe the state of the science and relevance to the environment and/or economies of the Lake Champlain basin and to LCSG principles, goals, and research topics described in this RFP and LCSG's strategic plan.
4. Project Objectives. State clearly the testable hypotheses or key questions to be answered by the proposed project. For each objective, provide a concise statement explaining how it is aligned with the goals and priorities of the program.
5. Technical Plan. Outline the approach/methods, techniques, or actions that will achieve each of the project objectives. Describe the experimental designs, techniques, and analyses to be used. Briefly summarize the data to be collected and how the data will be managed and analyzed, including appropriate statistical procedures. Describe expected technical products (e.g., publications, presentations, graduate students supported, data, models). Please note that some deliverables contribute to LCSG and NOAA performance measures. (The [LCSG Strategic Plan](#) lists performance measures.)

6. Outreach and Technology Transfer Plan. Describe how the project will engage with partners and target communities. Describe outreach products (e.g., public presentations, news stories related to the work, websites, fact sheets, maps, workshops, tools), who they will reach, and the goals for outreach. Investigators may email [seagrant@uvm.edu](mailto:seagrant@uvm.edu) to discuss communication and outreach approaches and audiences.
7. Anticipated Outcomes, Results, Impact. Describe expected outcomes and results related to the creation of scientific knowledge to the creation of data products, tools, technologies, and management practices. Describe the intended impact of the research project (e.g., policy and management changes, resulting skills or actions), including the strategy for achieving impact and who will use the research and how.
8. Timeline. Indicate the approximate timing of key project milestones, including technical and outreach products, release of results, and anticipated outcomes. Consider using a Gantt chart format.

**Works Cited.** (No page limit, single-spaced, one-inch margins, 11-point font)

**Statements of Qualifications.** Provide a two-page statement of qualifications or curriculum vitae for the PI and all Co-PIs.

**Letters of support.** Letters may be provided by partners, people or groups who would benefit from the research, or others related to the research topic. No letters of support should be submitted by parties who have a conflict of interest, based on the policy described in Appendix B. There is no limit to the number of letters of support that may be submitted.

**Budget form 90-4 and budget narrative.** The 90-4 fillable budget form and a budget justification based on the 90-4 are required. The 90-4 form should include a separate sheet (budget) for each subaward. The budget justification should be based on the 90-4s and should explain budget items for each year of the project in sufficient detail to enable review of the appropriateness of the funding requested. (90-2 forms are not required with proposal submission.) PIs should include budget items for communications, outreach, and data management if needed. All match sources must be quantifiable and verifiable and explained in the budget justification. The budget must be fully vetted by the PI's institution.

Budget forms and budget narrative guidance are available at: <https://www.uvm.edu/seagrant/request-proposals>. Budget narrative guidance provided by NOAA Grants Management Division can be found at [NOAA Grants Management Division's Budget Narrative Guidance](#). Questions are welcome via email at [seagrant@uvm.edu](mailto:seagrant@uvm.edu).

**Endorsement from PI's Institution.** Endorsement of support for the project from the PI's institution is required using the information in Appendix C.

**Potential Technical Reviewers.** Please provide the name, title, institution, email, and phone number of five individuals who are knowledgeable and competent in your field of inquiry and with whom you have no known conflict of interest. (See Appendix B for the LCSG policy on conflict of interest.)

## FULL PROPOSAL REVIEW

Full proposals will undergo the following review steps:

1. Technical review
2. PI rebuttal (optional)
3. Relevance review
4. Panel discussion and ranking



## 5. LCSG and NSGO recommendation

Each step is described below.

### TECHNICAL REVIEW

Each proposal will be reviewed for technical merit by up to three external, disciplinary experts. External reviewers will abide by the LCSG confidentiality and conflict of interest policies (Appendix B) and will be encouraged to watch a bias awareness video and review other anti-discrimination resources prior to conducting the review. External technical experts will score and comment on strengths and weaknesses of the proposals using the following criteria:

- Project objectives: The proposed hypotheses/research questions are important to the state of science or management.
- Technical plan: The proposed approach/methods are scientifically valid and likely to produce answers to the research questions.
- Technical plan, Outreach plan: Technical and outreach products are appropriate, ambitious, and likely to lead to application of research.
- Overall: The proposed project has a high probability of success and should be recommended for funding.

The scale used for scoring will be Excellent, Very Good, Acceptable, Poor. If technical reviewers conclude that they have insufficient information to reliably score a criterion, they will be instructed to score it as Poor. Technical reviews will be provided unedited to the panel reviewers.

### PI REBUTTAL

LCSG will send verbatim comments from reviewers to PIs on August 7, 2023. PIs may choose to submit a rebuttal letter through the research coordinator. Rebuttals are completely optional. Rebuttal letters must be limited to 500 words and submitted by August 21, 2023, via email to [seagrant@uvm.edu](mailto:seagrant@uvm.edu). Please state "LCSG proposal rebuttal: PI name" in the subject line and attach the file. LCSG will confirm receipt by email. If email poses difficulties, please email or call LCSG (802-777-7017) before the due date, and we will find a solution.

### RELEVANCE REVIEW

All proposals will be reviewed for relevance by two regional experts identified by LCSG program staff. Relevance reviewers will abide by the LCSG confidentiality and conflict of interest policies (Appendix B) and will be encouraged to watch a bias awareness video and review other anti-discrimination resources prior to conducting the review. Relevance reviewers will score and comment on strengths and weaknesses of proposals using the following criteria:

- Justification: The proposal aligns with RFP and LCSG strategic plan.
- Justification: Addresses critical information or analysis gap or a social, environmental, or economic stressor in the Lake Champlain basin.
- Outreach plan: The proposal has an effective means for communicating with communities outside of academia, especially communities that will be affected by this research.
- Expected impact: The research is likely to benefit the environment and/or economies of the Lake Champlain basin.
- Cross-cutting: Opportunities to promote diversity, inclusion, equity, justice, and accessibility are addressed.
- Cross-cutting: The Technical and Outreach plans include partnerships are well chosen and well planned, including involvement of policymakers, natural resource managers, and/or people in the basin.

- Overall: Recommendation for funding

The scale used for scoring will be Excellent, Very Good, Acceptable, Poor. Insufficient Information will be given a score of Poor.

## PANEL DISCUSSION AND RANKING

The purpose of a panel is to evaluate proposals on overall quality based on the published criteria and individually advise the Sea Grant program on which proposal should be considered eligible for funding. Panelists will be expected to be familiar with all proposals and will consider the accuracy of the technical and relevance reviews. For each proposal, the two panelists who completed relevance reviews will summarize the proposed project, technical review findings, and relevance review findings. The panelists will discuss each proposal in turn, determining whether the project has sufficient merit to warrant funding. Any project deemed not fundable cannot be recommended for funding by the program, even if future funds are made available. The panel will be instructed to provide a ranked list of meritorious proposals for consideration by the LCSG Director and the NSGO. The panel may recommend limited modifications of proposals to achieve clarity or improve the likelihood of success. Panel members will confirm that they have no conflicts of interest and will abide by the LCSG confidentiality and conflict of interest policies (Appendix B).

## LCSG AND NSGO RECOMMENDATION

The panel ranking is advisory to the LCSG Director, who will conduct a final review of the proposals and has discretion to select projects based on availability of funding; balance of proposals in terms of research topics, geography, and diversity; and other programmatic objectives, needs, and priorities. While unusual, the director may choose not to accept some recommendations from the panel review for the reasons described above; any such deviation will be justified by the director based on the reasons described above. LCSG will seek concurrence of the program's intended decisions and corresponding rationale by submitting a Letter of Intent (LOI) to the NSGO Program Officer. Once NSGO and LCSG have agreed on the prioritized recommendations for funding, LCSG will notify all applicants of the recommendations regarding their proposals and provide anonymized reviews. LCSG will inform applicants that the proposal is being recommended, as selection decisions are not finalized until signed by the NOAA Grants Management Division. Projects may not be announced publicly until the award action has been accepted by the University of Vermont, the administrative home of Lake Champlain Sea Grant.

## RECOMMENDED PROJECTS

Within a week of notification of recommendation, PIs must confirm intention to implement the project to the LCSG Research Coordinator and confirm with their host institutions that all proposal documents are in order. Through accepting funding, PIs accept the obligation to abide by LCSG's Data Management and Sharing Policy and Plan (Appendix A). It is a federal mandate that data collected by the project will be freely available for public use within two years, and LCSG provides a few options for doing so. Toward end of the project, LCSG will request that PIs share metadata and a publicly accessible location of data, recognizing that PIs may choose to embargo the data for up to two years.

Within two weeks of notification of recommendation, PIs must submit:

- **National Environmental Protection Act (NEPA) Abbreviated Environmental Questionnaire, Associated Permits.** Sea Grant-funded research projects are subject to local, state, and/or federal environmental permitting requirements associated with the work being proposed. Examples of such projects include but are not limited

to aquaculture projects; projects that will conduct any sampling in sensitive areas or private property and/or deploy equipment long-term; projects on or in the area of threatened or endangered species, or any vertebrate species. The NEPA Questionnaire form is available from: <https://www.uvm.edu/seagrant/request-proposals>. Please refer to guidance in Appendix D.

- **Institutional Review Board (IRB) approval (if applicable).** Projects intending to use human test subjects for research purposes should be identified and include an anticipated timeline for when Institutional Review Board approval will be obtained and when the activities involving human test subjects are expected to occur. No work involving human subjects may be undertaken, conducted, or costs incurred and/or charged for human subjects research, until appropriate documentation is approved in writing by IRB and acknowledged by NOAA.
- **90-2 budget form.** Instructions will be provided.

A deficient NEPA questionnaire, IRB approval (if applicable), or 90-2 budget form will jeopardize funding for the project.

## CONDITIONS OF ACCEPTANCE

All award terms from the Department of Commerce, NOAA, and the NSGO flow down to PIs. In addition to these award terms, PIs are responsible for following LCSG and University of Vermont policies, as well as the policies of PIs' own institutions. These policies include the following conditions of acceptance.

- **Respect.** LCSG embraces respect as a core value. We embrace diversity across cultures, races, religions, and personal choices, and cultivate an atmosphere of respect for people and the environment. We abide by the [discrimination, harassment, and sexual misconduct policy](#) of the University of Vermont, which strictly prohibits discrimination and harassment on the basis of an individual's membership in a legally protected category. Any act that falls within the definition of sexual misconduct constitutes discrimination or harassment and is a violation of this policy. LCSG fully expects our partners to abide by applicable national, state, and tribal laws and relevant institutional policies regarding discrimination and sexual harassment, including disclosure of incidents. By not tolerating discrimination and harassment and conducting our work with respect, we move closer to realizing our vision of long-term ecosystem health and sustainable economic development in the Lake Champlain basin.
- **Budget management and financial reporting.** Funded projects must follow budget management principles and policies for federal funding, including allowable costs, budget changes, and reporting. Changes must be communicated with the LCSG Research Coordinator in a timely manner in case approval by the NSGO or NOAA is required.
- **Technical reporting.** PIs are expected to submit annual progress reports which include information about publications, presentations, graduate students supported, news stories related to the work, and accomplishments made throughout the year, including progress toward Sea Grant performance measures. Complete details will be made available at least one month in advance of reporting deadlines. Additional information on project progress may be requested on an ad hoc basis.
- **Communications and outreach.** All external documents, including peer-reviewed publications, must acknowledge the source of funding in language required by the Department of Commerce Financial Assistance Terms and Agreement. Project teams should coordinate with LCSG staff to communicate the results of their research in a way that is most useful to our partners and the public. PIs or project staff should plan to provide one research seminar per year to LCSG and the public.
- **Changes.** Funded project must propose anticipated changes to plans or activities with LCSG before implementation. Examples include, but are not limited to, a change in PI or substantive changes to project objectives, technical methods, research locations, or research focus.

## APPENDIX A: LCSG DATA SHARING AND MANAGEMENT POLICY AND PLAN

All Lake Champlain Sea Grant (LCSG)-funded research projects and efforts that produce environmental data will adhere to this Data Management and Sharing Plan. The lead researcher for each research project or effort involving environmental data collection is responsible for providing the project data and associated metadata to the LCSG Research Coordinator within two years of data collection. In rare instances researchers may need to withhold some types of data for intellectual property and/or privacy reasons. In such cases, researchers should discuss these needs with the LCSG Research Coordinator prior to accepting funding.

### BACKGROUND

This plan was developed in accordance with the NOAA Data Sharing Directive for Grants, Cooperative Agreements, and Contracts, available from the following permanent URL: <https://nosc.noaa.gov/EDMC/PD.DSP.php>. This directive states that data and information collected and/or created under NOAA grants and cooperative agreements must be made visible, accessible, and independently understandable to general users, free of charge or at minimal cost, in a timely manner (typically no later than two years after the data are collected or created), except where limited by law, regulation, or policy or by security requirements. The requirement has two basic parts: (1) environmental data generated by a grant project must be made available after a reasonable period of exclusive use (usually two years or less), and (2) the grant application must describe the plan to make the data available.

Environmental data are defined by NOAA in Administrative Order (NAO) 212-15: Management of Environmental Data and Information as recorded and derived observations and measurements of the physical, chemical, biological, geological, and geophysical properties and conditions of the oceans, atmosphere, space environment, sun, and solid earth, as well as correlative data such as socio-economic data, related documentation, and metadata. Digital audio or video recordings of environmental phenomena (such as animal sounds or undersea video) are included in this definition. Numerical model outputs are included in this definition, particularly if they are used to support the conclusion of a peer-reviewed publication. Data collected in a laboratory or other controlled environment, such as measurements of animals and chemical processes, are included in this definition.

### LCSG DATA HUB

LCSG data is organized as a Collection on the Forest Ecosystem Monitoring Cooperative (FEMC) cyberinfrastructure and website (<https://www.uvm.edu/femc/>) so that LCSG projects or activities that collect environmental data can be found in one place. Researchers may choose different hosts for environmental data (see below), but LCSG aims to publish metadata and contact information for data through the LCSG Collection on the FEMC database.

### ARCHIVE OPTIONS FOR RESEARCH PROJECTS

There are two options from which lead researchers may choose to archive environmental data for public accessibility.

**Option 1:** Data from projects may be archived and organized into previously established cyberinfrastructure currently maintained by FEMC and hosted by the University of Vermont (UVM; Burlington, Vermont). The FEMC data archive, via the associated website (<https://www.uvm.edu/femc/>), provides searchable and linked information for over 200 research projects, including document archive, data display and visualization, search and download features, and metadata summaries (e.g. procedural methods, attribute information, related documents and citation and access specifications). The website allows users to browse and search, and information about projects, datasets and associated publications are indexed by search engines such as Google.

The FEMC has extended the Ecological Metadata Language (EML) standard (<https://knb.ecoinformatics.org/#external/emlparser/docs/index.html>) to document data in its system. This standard provides a flexible set of modules for documenting and sharing metadata, and because of the wide-ranging and diverse data associated with ecological investigations, this flexibility is its biggest asset. For this reason, EML is the preferred standard for the Long-Term Ecological Research Network and data in EML is easily federated to other data cataloging systems through the work of DataOne (<http://dataone.org/>), in which FEMC is a member node.

Following standard policies set by federal and state funding agencies, all data associated with LCSG projects curated in the FEMC repository will be made publicly available for download through the FEMC archive two years after their collection to allow time for publication. Data sharing will be open and in the public domain as governed by the Creative Commons license (<http://creativecommons.org/licenses>) that specifies that after the two-year embargo period for purposes of publication, the data will be available for download through the FEMC website.

**Option 2:** Researchers may choose to curate project data in an existing public or agency data repository that has been established for the specific purpose of storing data of the type generated by the project. Examples of public repositories can be found here: <http://researchguides.uvm.edu/datamanagement/access>. Researchers who choose this option take full responsibility to upload their metadata and data with the content and in the formats required by the repository and that the chosen repository has established procedures for providing access, data, and security that meet federal and NOAA requirements.

Researchers who choose this option should provide the LCSG Research Coordinator with the metadata to be shared through the LCSG Collection. Researchers should also share the data management and sharing plan for the repository they use to assure it meets NOAA's standards. When the metadata or data are published, the researcher should send links to the project data stored in this repository.

## ENVIRONMENTAL DATA FROM EDUCATION AND EXTENSION PROGRAMS

Lake Champlain Sea Grant extension and education programs also produce environmental data, including Program.

- The Interactive Map and Database located on the Watershed Alliance website (<http://www.uvm.edu/watershed/map>) is a user-friendly and filterable database of stream assessment data collected by schools participating in UVM Watershed Alliance's Stream Monitoring and Stewardship Program. The students in this program collect physical, biological, and chemical data on a local stream located in a sub-basin of Lake Champlain.
- Lay Monitoring Program participants collect data about lake health. These data and summary reports about all participating lakes are available online at: <https://dec.vermont.gov/watershed/lakes-ponds/monitor/lay-monitoring>.

Environmental data to be collected by students and members of the public may also include precipitation and stream water levels.

- If collected, precipitation data are anticipated to be collected following Community Collaborative Rain, Hail and Snow Network (CoCoRaHS) protocols and data would be reported to that program's online database (<https://www.cocorahs.org/>).
- Water level data are anticipated to be collected as part of the CrowdHydrology project (or another similar project). These data are also available online (<http://www.crowdhydrology.com/>).

Both websites display results immediately in an easily accessible manner by any member of the public who has access to the internet (e.g., at home, work, a public library).

Other data or materials (e.g., brochures, pamphlets, fact sheets) produced directly by the LCSG extension programs will be stored directly on the LCSG website. The LCSG website is backed up routinely by the University of Vermont IT. This content is backed up regularly by UVM IT services (<https://www.uvm.edu/it/about/services/?Page=services-files.php>)

## POINT OF CONTACT

Julianna White, Research Coordinator  
[Julianna.m.white@uvm.edu](mailto:Julianna.m.white@uvm.edu)  
802-777-7017

## APPENDIX B: CONFLICT OF INTEREST AND CONFIDENTIALITY POLICIES

Thank you for your time as reviewer or panelist for Lake Champlain Sea Grant.

You are being asked to review or evaluate a proposal or proposals for federal and/or matching funding. Your designation requires that you be aware of potential conflicts of interest and requirements for confidentiality.

### CONFLICT OF INTEREST

Please read the examples of potentially biasing affiliations or relationships listed below. You may have a conflict if you have any of the following affiliations or relationships:

1. Your affiliations with applicant institution(s).
2. Current employment at the institution as professor adjunct professor, visiting professor, or similar position. (This includes other campuses of a multi-campus institution, but a waiver may be available. If you are in a multi-campus institution, inform the program director who solicited your review.)
3. Other current employment with the institution such as consulting or an advisory arrangement, or you are being considered for employment with the institution.
4. Formal or informal re-employment arrangement with the institution.
5. Ownership of the institution's securities or other evidence of debt.
6. Current membership on a visiting committee or similar body at the institution. (This is a conflict only for proposals or applications that originate from the department, school, or facility that the visiting committee or similar body advises.)
7. Any office, governing board membership, or relevant committee chairperson in the institution. (Ordinary membership in a professional society or association is not considered an office.)
8. Current enrollment as a student. (Only a conflict for proposals or applications that originate from the department or school in which one is a student.)
9. Received and retained an honorarium or award from the institution within the last 12 months.

Your relationships with an investigator, project director, or other person who has a personal interest in the proposal or other application.

1. Known family or marriage relationship. (Conflict only if the relationship is with a PI or project director.)
2. Business or professional partnership.
3. Employment at same institution within the last 12 months.
4. Past or present association as thesis advisory or thesis student.
5. Your collaboration on a project or on a book, article, report, or paper within the last 48 months.

Your other affiliations or relationships. Interests of the following persons are to be treated as if they were yours:

1. Any affiliation or relationship of your spouse, minor child, or relative living in your immediate household or of anyone who is legally your partner that you are aware of, that would be covered by items 1 or 2 above (except for receipt by your spouse or relative or an honorarium or award.)
2. Other relationship, such as close personal friendship, that might tend to affect your judgments or be seen as doing so by a reasonable person familiar with the relationship.

## CONFIDENTIALITY

This review gives you access to information not generally available to the public, so you must not use that information for your personal benefit or make it available for the personal benefit of any other individual or organization. This is to be distinguished from the entirely appropriate general benefit of learning more about Sea Grant or becoming better acquainted with the state of a given discipline.

Following federal policy and guidance, LCSG receives proposals in confidence and protects the confidentiality of their contents. For this reason, you must not copy, quote, or otherwise disclose or use material from any proposal you review.

Likewise, Sea Grant policy is that reviews and reviewer identities will not be disclosed except that verbatim copies of reviews (without the name and affiliation of the reviewer) and a short summary of the panel discussion will be sent to PIs. Sea Grant considers reviews and reviewer identities to be exempt from public disclosure but cannot guarantee that it will not be forced to release them under terms of the Freedom of Information Act, or other laws. We may release a listing of all reviewers used within a specified period as a matter of acknowledgement but will not reveal in what ways individuals interacted with LCSG.

## CERTIFICATION

I have read the list of affiliations and relationships that could prevent my participation in matters involving such individuals or institutions. To the best of my knowledge, I have no affiliation or relationships that would prevent my objectively executing the responsibilities of peer review. I also will not divulge any confidential information I may become aware of during my review.

Name:

Signature:

Date:

Title of Proposal(s):

## APPENDIX C: ENDORSEMENT BY THE PRINCIPAL INVESTIGATOR'S INSTITUTION

A signed letter from an Authorized Organizational Representative (AOR) denoting that the enclosed application is accurate and approved for submission based on relevant institutional rules is required for all full proposal submissions to Lake Champlain Sea Grant.

Please paste the following information on institution letterhead and have it completed and signed and dated by an Authorized Organizational Representative (AOR) and include it in your submission packet.

### ENDORSEMENT BY THE PRINCIPAL INVESTIGATOR'S INSTITUTION

Proposal for research funding to Lake Champlain Sea Grant for implementation February 1, 2024, through January 31 of 2025 or 2026 (depending on one-year or two-year proposal).

Project title

Principal investigator name, title, and contact information

Total direct costs on federally funded budget

Total indirect costs (F&A) on federally funded budget

Total federally funded budget

Total direct costs on matching (cost share) budget

Total indirect costs (F&A) on matching (cost share) budget

Total matching (cost share) budget

Names of sub-awardees and corresponding total federally funded and matching budgets

Name and contact information for transmittal of research project funding

Name and contact information of Authorized Organization Representative

Signature and date by Authorized Organization Representative



## APPENDIX D: NEPA ABBREVIATED ENVIRONMENTAL QUESTIONNAIRE, PERMITS, IRB APPROVAL

Principal Investigators (PIs) of proposals recommended for funding by Lake Champlain Sea Grant (LCSG) must complete the National Environmental Protection Act (NEPA) Abbreviated Environmental Questionnaire and list or submit all state and federal permits required to complete the project, including whether these permits have already been acquired, within two weeks of being notified of recommendation.

If a partner institution will be responsible for acquiring permits, this should be stated in the application. The responsibility for acquiring permits lies with the funded PI, and failure to secure permits may result in delayed receipt of funds or changes to the scope of work proposed.

PIs are required to share with the Sea Grant program proof that all required permits and permissions have been granted prior to expending funds on the work covered by the permit. Funds may be expended on portions of the project that do not require permitting, such as student support, statistical work, and project planning. This is typically accomplished by providing copies of the permits. Absence of required permits will result in the NSGO placing restrictions on the award until those permits are provided, and host institutions may have additional restrictions on such funds, per their own policies.

Sea Grant-funded research projects are subject to local, state, and/or federal environmental permitting requirements associated with the work being proposed. Examples of such projects include but are not limited to aquaculture projects; projects that will conduct any sampling in sensitive areas, including state or national parks, or private property and/or deploy equipment long-term; projects on or in the area of threatened or endangered species, or any vertebrate species.

PIs who plan to conduct human subjects research must state whether the proposed research is subject to Institutional Review Board (IRB). No work involving human subjects may be undertaken, conducted, or costs incurred and/or charged for human subjects research, until appropriate documentation is approved in writing by IRB. Potential PIs should provide a copy of IRB approval if completed prior to full proposal submission. If the PI intends to seek IRB approval after selection, a copy of IRB approval must be provided prior to commencing human subjects research. Absence of IRB approval at the time of submission will result in the NSGO placing restrictions on the award until those permits are provided.

Likewise, PIs who are involved with the care, use and treatment of animals are subject to Institutional Animal Care and Use Committee (IACUC) review. If the PI intends to seek IACUC approval after selection, a copy of IACUC approval must be provided prior to commencing research.