

Project Proposal: Rapid Response Plan for Great Lakes Aquatic Invasions

Applicant (Organization): Great Lakes Commission
Type of Organization: Interstate Agency or Commission
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Project Title: A Rapid Response Plan for Great Lakes Aquatic Invasions
Project Category: Invasive Species
Project Duration: 2 Years

Abstract:

The introduction and spread of Great Lakes nonindigenous aquatic invasive species (NIS) in the Great Lakes-St. Lawrence system continues to threaten the economic and ecological health of the region. A “rapid response” capability for newly discovered NIS in the system will significantly enhance mitigation prospects and slow the spread of such species. Currently, no format protocol exists to allow for the immediate implementation of appropriate eradication/control measures when a new NIS is discovered. The absence of such has been problematic in the Great Lakes-St. Lawrence system, as evidenced by the ruffe (*Gymnocephalus cernuus*) and round goby (*Neogobius melanostomus*) that have advanced without intervention, and caused extensive infestations. To advance a proactive approach to the prevention and control of NIS in the Great Lakes-St. Lawrence system, the development, promotion and implementation of a rapid response plan is proposed. Such a plan will provide the region with increased ability to anticipate, prevent and respond to NIS invasions, and, in so doing, provide a model for prospective application in other regions.

Geographic Areas Affected by the Project:

States: All States

Lakes: All Lakes

Primary Affected Areas of Concern: All AOCs

Problem Statement:

A documented 145 nonindigenous aquatic nuisance species have become established in the Great Lakes system since the middle of the 19th century. The rate of introductions has increased significantly in the last 50 years due largely to the opening of the St. Lawrence Seaway system and attendant waterborne commercial traffic. The ballast water of commercial vessels has been identified as a leading vector for the introduction and spread of such species and, once established, controlling the spread of these species is both technically difficult and expensive. Control efforts for purple loosestrife, zebra mussels and sea lamprey alone have been assessed at \$365 million per year on a national scale. Currently, the infrastructure for rapid response has not been established to control NIS introduction and spread. Eradication/control of NIS populations has a higher likelihood of success if nuisance species are detected soon after introduction, at which point the number of individuals in the NIS population is low and eradication/control measures can be applied quickly and in a targeted manner.

Local, state, provincial and federal agencies have developed rapid response plans for a variety of natural

resource and human health emergencies such as wildfire, hazardous substance release and petroleum spills. Most notable in the NIS arena is the action plan to prevent the introduction and dispersal of the Mediterranean strain of *Caulerpa taxifolia* in U.S. waters, as developed and implemented by the *Caulerpa taxifolia* prevention committee of the national ANS Task Force. The rapid response project that is being proposed for the Great Lakes-St. Lawrence region will use these (and other) plans as models in developing a rapid response protocol for the eradication/control of NIS. The following questions must be answered in order to develop an effective rapid response plan: How should rapid response plans be structured to respond to NIS introductions and spread in a time frame that can maximize the possibility for eradication/control? How can rapid response plans be structured to avoid institutional/jurisdictional obstacles that might impede action within a reasonable timeframe? Where will funding come from for these eradication/control efforts? What type of institutional arrangement will most effectively advance such efforts? These are all pressing public policy issues that will be addressed within the scope of this project.

The problem of NIS is second only to habitat loss as a factor causing significant declines in biodiversity. By developing the tools for early detection and rapid response, this project will help prevent NIS introduction and spread, and therefore help diminish future losses in the biodiversity of the Great Lakes-St. Lawrence ecosystem.

Proposed Work/Outcomes:

This project will yield a regional NIS rapid response plan available for use within the Great Lakes-St. Lawrence region that, in the event of a NIS introduction, will facilitate the timely implementation of measures to maximize the probability of eradication or control.

A rapid response plan will provide the framework and process for the early detection of NIS and the selection and implementation of measures for eradication or control. In developing such a plan, models from the areas of resource management will have relevance (e.g., local, state/provincial, regional, tribal and federal emergency response plans for pollution events). The Region 5 Oil and Hazardous Substances Integrated Contingency Plan shows particular promise as a model, and members of federal/state Regional Response Team have expressed a willingness to provide input and contribute their expertise to the project.

Existing species-specific NIS rapid response models will also be assessed over the course of the project. For example, this assessment will include an action plan established under the auspices of the U.S. Fish and Wildlife Service to prevent the introduction and dispersal of the Mediterranean strain of *Caulerpa taxifolia* in U.S. waters. The action plan recognizes that implementation of effective prevention and control programs requires centralized coordination and leadership, along with the support and participation of federal, state and local agencies as well as nongovernmental user groups and other interests. The plan features a primary point of contact that facilitates and coordinates federal responsibilities to control potential introduction and pathways for dispersal. Other components of the action plan include pathways and dispersal analyses; surveillance and detection mechanisms; control strategies (including research and monitoring); regulation and inspection options; legislation; and education/outreach strategies. Models developed by the Animal and Plant Health Inspection Service of the U.S. Department of Agriculture for noxious weed control will also be assessed.

The NIS rapid response plan must be developed and structured to ensure that timely implementation is technically, economically and politically feasible. Response mechanisms and management options delineated in the plan should be activated and designed for use by local, state/provincial, tribal and federal response personnel as well as by aquatic scientists, managers, policymakers and other resource management personnel. The plan should be coordinated with existing comprehensive state ANS

management plans and related procedures/protocols. Plan development must also be coordinated with the national ANS Task Force and the National Invasive Species Council in conjunction with their work on NIS rapid response. As part of this effort, the other ANS regional panels in the country will be encouraged to participate in this initiative, to facilitate information sharing and strategic coordination and to maximize the value of the Great Lakes-St. Lawrence system plan as a model for use elsewhere.

This project has six tasks that will be accomplished over a two year period:

Task 1: Project Scoping: Scoping activities will occur over the first two quarters of the project period. The proposed project will be conducted by the staff of the Great Lakes Commission in partnership with the Great Lakes Panel on Aquatic Nuisance Species (Panel) and representatives from the Regions 2, 3 and 5 Regional Response Teams (RRTs) which cover the eight Great Lakes states. The Panel was established under the Nonindigenous Aquatic Nuisance Species Prevention and Control Act of 1990 and consists of managers, scientists and policy makers involved in the research, prevention and control of NIS. The RRTs are planning, policy and coordinating bodies for the 13 U.S. federal regions. Established by the National Response Team, the RRTs are responsible for planning and coordinating regional preparedness and response actions involving oil and hazardous materials and coordinating assistance and advice given to the federal on-scene coordinators in the event of major or substantial discharges or releases. Most of the input from the RRTs to this project will be provided by the Region 5 RRT. The Region 5 RRT consists of representatives from 15 federal agencies and the states of Illinois, Indiana, Michigan, Minnesota, Ohio and Wisconsin. Other partners that will be engaged in this initiative include representatives from the national ANS Task Force and regional panel leadership from across the country.

The Commission staff will work with the Great Lakes Panel membership to scope project elements, develop a detailed workplan and establish a process for reporting project results to the project partners on a regular basis. The Panel will provide direction and oversight to the staff during the project period. Technical sub-committees will also be convened, as needed, to provide technical advice and input for the project tasks presented below. The subcommittee(s) will be comprised of Panel members and other individuals with the requisite expertise.

Task 2: Literature Review/Analysis: The Great Lakes Commission staff, in concert with the Panel, will design and conduct a methodical review of historical and current NIS data and information regarding early detection programs, existing rapid response models and rapid response options. This will entail reviewing both Great Lakes NIS related literature as well as relevant literature from different parts of North America and around the world. This research will be augmented by personal interviews and information gathering via the Internet. A second part of this task will involve research/review of materials related to traditional emergency response programs related to oil and chemical spills in the Great Lakes region. Participating in this effort with the Great Lakes Commission staff will be an RRT workgroup together with federal representatives from the national ANS Task Force (e.g., APHIS and the U.S. Fish and Wildlife Service) that will review existing response plans at the state and regional level and help analyze how emergency response plans for oil and hazardous materials (i.e., Region 5 Oil and Hazardous Substances Integrated Contingency Plan) might be applied to an NIS plan. Based on the results of this analysis, an inventory of proven response options that might have application for NIS will be compiled. As part of this task, a clearinghouse will be established to post the latest documented listing of aquatic invasive species that have become established as a reproducing population in the Great Lakes-St. Lawrence system. The clearinghouse will also include a listing of species that have been sighted, but have not been confirmed as a reproducing

population. Results from this work will be included in the final report to GLNPO, accompanied by a narrative presenting preliminary findings and unmet needs.

Task 3: Model Rapid Response Plan Development: The Great Lakes Commission staff, working with the Great Lakes Panel, has a wealth of experience in developing regional models to assist the Great Lakes jurisdictions (states/provinces) in the implementation of a particular aspect of NIS research, prevention, management or control. Two recent examples of successful regional models are: *A Model Comprehensive State Management Plan for the Prevention and Control of Nonindigenous Aquatic Nuisance Species* and *Legislation, Regulation and Policy for the Prevention and Control of Nonindigenous Aquatic Nuisance Species: Model Guidance for Great Lakes Jurisdictions*. The approach for the model rapid response plan will be similar to the approach used in these earlier efforts. Utilizing the research conducted under Task Two as a foundation, the approach for a model rapid response plan to NIS invasions will be developed through the conduct of a mid-project workshop that convenes Great Lakes Panel membership with selected response authorities in the region, and other officials with expertise in this area.

Task 4: Mid-Project Workshop Design and Conduct: As mentioned above, the framework for a NIS rapid response plan will be developed through a mid-project workshop. This workshop will be designed to facilitate information sharing and consensus building in the process of model development. Workshop outcomes will include a model plan outline and recommendations for plan structure and implementation. The workshop will be designed to facilitate sharing of information and consensus building in the process of model development. The model plan outline and recommendations will be fully developed into a *Rapid Response Plan for NIS Discoveries the Great Lakes-St. Lawrence Region*. This workshop will be a “by invitation only” event and will involve the full range of interests that represent the Panel and the Region 5 RRT. This will include representatives from state/provincial agencies, federal agencies, regional agencies, tribal authorities/First Nations, industry and other user groups, citizen groups and conservation interests. Pre-workshop materials will be developed and distributed by the Great Lakes Commission staff in consultation with the Great Lakes Panel. This workshop may be held in conjunction with one of the regularly scheduled meetings of the Region 5 RRT which normally meets three times per year (January; May-June; September-October).

Task 5: End-of-Project Workshop/Case Study Development: An end-of-project workshop will be held to bring together response personnel, local, state, regional and national level policy makers, resource managers and aquatic scientists in a two-day event that will lead participants through the process of NIS discovery, response resource mobilization, NIS eradication/control efforts, and follow up. This workshop will feature one or more case study examples, in the form of rapid response exercises, that will be used to provide emergency managers, aquatic scientists, resource managers, policymakers and other agency officials an opportunity to test the options developed in the NIS rapid response model. The federal and state response agencies have a wealth of experience in “exercising” response plans through the national Preparedness for Response Exercise Program (PREP) and other programs. In preparation for the workshop, scenarios will be written using exercise guidelines which are readily available. The case study exercises will be conducted during the seventh quarter of the project and will allow the project partners to “test” and “evaluate” the response options. Additional facilitated discussion will occur in a “lessons learned” format that will allow the participants to critique the response options and plan and make recommendations for improvement. “Fine-tuning” of the plan will be accomplished in the final project quarter.

Task 6: Outreach/Dissemination: The Great Lakes Panel on Aquatic Nuisance Species will lead

efforts for the adoption and implementation of a system-wide rapid response plan. Outreach efforts will identify and target appropriate groups through round table discussions, conference presentations, conventional print materials and Internet communication, and continued interactions with the scientific/technical, user, and public policy communities. In addition, results will be shared with the national ANS Task Force and the Invasive Species Council.

Project Addresses Environmental Justice

If so, Description of How:

Advancing NIS prevention and control efforts will yield basinwide benefits in terms of habitat preservation/improvement; protection of the sport and commercial fishery; and the more efficient and cost-effective targeting of public funds. This will benefit all sectors of society including those that have been historically underserved and disproportionately impacted.

Project Addresses Education/Outreach

If so, Description of How:

Education and outreach is a major component of this project, as evidenced by the proposed methodology. The Great Lakes Panel, which includes 35 members drawn from all sectors of the community involved in/affected by ANS, will have a major role in all project tasks. Several aspects of this project will feature an open and inclusive process to ensure that all relevant interests are invited to participate. The Great Lakes Commission's dissemination capability, via conventional and electronic means, will ensure that the larger community is apprized of project outcomes and opportunities to apply them.

Fund by Other Organizations (Names, Amounts, Description of Commitments):

Funding for the project is not being solicited from any other sources. However, the project will benefit substantially from existing and anticipated support for the Great Lakes Panel on Aquatic Nuisance Species as well as project-specific ANS activities managed by the Commission with the Panel's oversight.

Description of Collaboration/Community Based Support:

The Great Lakes Commission staff has extensive experience in NIS prevention and control. The staff has coordinated the Great Lakes Panel on Aquatic Nuisance Species since 1990, and has successfully completed more than a dozen projects addressing legislative, policy, outreach, planning and scientific aspects of ANS prevention and control. These projects have included the development of a model ANS management plan for states, a model legislative guidance for states, the Great Lakes Action Plan, and a regional ballast water policy statement.

Building on relationships established via its coordination of the Great Lakes Panel and project-specific ANS activities, the Commission will solicit collaboration from key stakeholders, including but not limited to, U.S. EPA, U.S. FWS, APHIS, the U.S. Coast Guard, U.S. Army Corps of Engineers, Fisheries and Oceans Canada, St. Lawrence Seaway Development Corp., Sea Grant research programs, the Northeast-Midwest Institute, International Joint Commission, the Great Lakes Fishery Commission, emergency response agencies addressing oil and hazardous substances, Lake Michigan Monitoring Coordination Council, Great Lakes Coastal Wetlands Consortium and state and provincial natural resource/environmental protection agencies. Drawing from these and other collaborators, technical subcommittees will be formed, as needed, to ensure broad representation from the maritime, scientific/technical and policy/regulatory communities.