

Meeting of the Great Lakes Panel on Aquatic Nuisance Species

December 4-5, 2012
Ann Arbor, Michigan

Meeting Summary

December 4, 2012

Welcoming Remarks and Call to Order

Luke Skinner, Great Lakes Panel Chair (GLP), Minnesota Dept. of Natural Resources

Skinner welcomed meeting participants and led a round of introductions.

Aquatic Nuisance Task Force (ANSTF) Report

Susan Mangin, ANSTF Executive Secretary, U.S. Fish and Wildlife Service

Mangin presented the highlights of the ANTSF meeting held in November in Virginia. At the meeting, ANTSF members identified topics that would require further attention by the task force, including marine invasive species and environmental DNA. The Western Regional ANS Panel expressed its concern over the proliferation of zebra mussels and stressed the need for defined federal rules and responsibilities for management of zebra mussels. A discussion about progress and knowledge gaps in environmental DNA as an early detection tool is scheduled for the next ANSTF spring meeting in Maryland.

An update to Ohio's *Comprehensive State Management for Aquatic Nuisance Species* was presented during the meeting and approved by the ANSTF. Task Force members also approved the *Recommended Voluntary Guidelines for Preventing the Spread of Aquatic Nuisance Species Associated with Recreational Activities* which presents guidelines for six groups of recreational activities stakeholders (anglers, motor boaters, non-motorized boaters, scuba divers and snorkelers, seaplane operators, and waterfowl hunters). An additional set of guidelines specific to water gardeners was also approved. Guidelines for classroom pets were developed and are undergoing some additional revision; these guidelines will be presented to the ANSTF a second time at the spring 2013 meeting. In addition, the ANTSF prevention committee will look at developing guidelines for the implementation of pathway-based management plans. The ANSTF also approved the addition of the U.S Forest Service as a member agency of the GLP.

Great Lakes Restoration Initiative Overview

Jamie Schardt, U.S. Environmental Protection Agency

Schardt presented the main accomplishments of Great Lakes Restoration Initiative (GLRI) over the past three years of funding, as well as the program's expected future directions. Prior to the implementation of GLRI, little progress was being made on invasive species early detection and monitoring programs. In addition, the GLRI has contributed to an increase in awareness of AIS issues among the general public while providing funding for projects implemented throughout the Great Lakes region. GLRI funding has contributed to a variety of efforts, including further development of NOAA's *Great Lakes Aquatic Nonindigenous Species Information System*, testing of ballast water treatment technologies, other cutting-edge technology advancements, significant progress towards the implementation of early detection networks and Asian carp control. Schardt also noted that funding was allocated to a wide variety of stakeholders at the local and state scale, notably tribal organizations, state agencies, local communities and universities. Schardt summarized main lessons learned from the program thus far. More work is needed to ensure ballast water management methods are working, risk assessments are completed, coordination with Canadian programs under the new Great Lakes Water Quality Agreement is occurring, and in other areas. Schardt also noted that invasive species management is occurring as part of habitat restoration efforts and that potential invaders (e.g. snakehead, grass carp) could influence how future funding is spent. Looking ahead, Schardt discussed the need to encourage universities, communities and state agencies to apply for more funding and to use GLP meetings as opportunity for information sharing, feedback (criticism), and refinement of U.S. implementation activities.

Great Lakes Restoration Initiative AIS Projects

- **Verification of ballast water treatment technologies**

Jeffrey Ram, Wayne State University

The Port of Toledo is a significant concern for introductions of invasive species through ballast water given its suitable habitat and propagule pressure. Ram presented on a project that is intended to develop an invasive early warning system for invasive species in Toledo Harbor. Under the project, Wayne State University teams conducting sampling of benthic and plankton communities to test the sensitivity and accuracy of current sampling methods (i.e. capacity to detect rare species). Outcomes of this effort are being used to design protocols and generate recommendations for federal and state agencies. Ram also discussed another project to develop molecular and microscopic methods to differentiate live from dead invasive and pathogenic species that would be applicable to a range of treatment systems and to test these systems on ships. The current tests are focused on bacteria and phytoplankton which will be expanded to a larger range of aquatic organisms. A primary outcome of the project is to demonstrate sample preservation and conservation techniques under shipboard conditions, as well as the molecular identification of the survivors of ballast water treatments for risk analysis. A third project Ram briefly discussed is to develop automated sample collection and analysis methods for ballast treatment verification. This project will include both land-based and shipboard testing in collaboration with ship-owners, federal and state regulators, and manufacturers.

- **Preventing the spread of VHS and harmful organisms in the Great Lakes**

Phyllis Green, National Park Service (NPS)

Green presented on efforts of the NPS to prevent AIS transfers to, or from, Isle Royale National Park via commercial vessels and the NPS vessel Ranger III. The first project installed a permanent, automated, more effective ballast treatment system aboard the Ranger III. This project led to the creation of a publicly released report and additional outreach on available treatment systems for small ballasted, freshwater vessels. The second project involved the installation and testing of a partial biocide based ballast treatment system aboard a 1000' Great Lakes freighter. The system has been successfully installed and preliminary results are promising. NPS is now addressing potential technology transfer to smaller boats. In parallel, NPS is also developing an emergency response guide for vessels.

- **Protecting the Great Lakes from Internet trade of AIS**

Erika Jensen, Great Lakes Commission (GLC)

Jensen explained that web-based commerce facilitates the trade of potentially invasive organisms. Through this project, the GLC aims to develop a new software-based technology to search the Internet and detect the availability and sources of invasive species. The outcomes of this project are to assess the overall risks linked with Internet sale of AIS and present information on the e-marketplace to stakeholders, federal and state agencies, as well as provide recommendations for future actions. Jensen invited the GLP members and audience to take the survey of stakeholders available on GLC website and participate in an informal webinar to learn more about the project.

- **AIS early detection monitoring program development**

Stephen Hensler, U.S. Fish and Wildlife Service (USFWS)

The USFWS is working to develop a new monitoring program to rapidly detect and report invasive species. The goal of this project is to identify new invaders quickly (i.e. by an assessment of propagule pressure and identification of potential vectors of invasion), to improve rapid response capacity and to inform policy-making decisions. The first step is an assessment of all activities conducted by state, federal and provincial agencies to identify and fill potential gaps. The next step is to assess sampling techniques. Hensler stated that collaboration amongst agencies is crucial to the success of early detection and monitoring programs and that new funding will be needed after GLRI ends.

- **Mounting a response to new aquatic invaders**

Matt Ankney, Michigan Dept. of Natural Resources (DNR)

The Michigan DNR has partnered with Michigan Natural Feature Inventory and Michigan State University to develop an early detection and rapid response (EDRR) system for AIS in Michigan and to eradicate/control several high threat aquatic plant species including European frogbit, water hyacinth, water lettuce, parrot feather, Brazilian elodea and flowering rush. EDRR is a high priority component of the recently updated state AIS management plan. Thus far, six high threat

invasive species have been targeted for a field study that includes surveillance, verification and assessment. Several rapid response actions have been taken and are planned based on the findings of the field work.

- **Behavior change- Are we making a difference?**

Bob Wakeman, Wisconsin Dept. of Natural Resources (DNR)

Wakeman presented an overview of the benefits of citizen monitoring of AIS. He explained that these programs can generate an increase in general AIS awareness and an increase in the number of AIS identified. In 2011, the Wisconsin DNR led the sampling of a randomly selected set of 200 lakes in 2011. This considerable sampling effort resulted in more than 1600 hours spent in the field. Amongst the 200 lakes sampled, 77% contained at least one AIS and 22% had at least one early detection of AIS. Wakeman demonstrated how the early detection of AIS is more cost-effective than control at a late stage of invasion and noted that further resources should be allocated to monitoring programs.

- **Training tournament anglers and organizers to prevent AIS**

Phil Moy, Wisconsin Sea Grant

Moy explained how fishing tournaments present an opportunity to increase awareness of AIS and contribute to prevention efforts. Wisconsin Sea Grant developed this project to work with fishing tournament organizers, tournament support groups and the anglers to prevent the spread of AIS through tournament activities. A survey of anglers and a series of publications and prompts were developed between 2010 and 2012. Results of this survey showed that a majority of anglers were aware of the Stop Aquatic Hitchhikers campaign and thought that AIS were a serious threat. Fishing clubs and youth education were also found to be the best ways of reaching out to anglers. For 2012-2014, Wisconsin Sea Grant will develop AIS prevention handbook for tournaments and train tournament logistical teams on how to prevent AIS.

- **Stop Aquatic Hitchhiker! Threat Campaign multimedia mass outreach**

Pat Conzemius, Wildlife Forever

Conzemius presented the collaborative efforts of Wildlife Forever and several partners to implement the Stop Aquatic Hitchhikers! campaign. The campaign reached 133 million impressions through a variety of communication strategies. Strategies including a 30 minute show about invasive species which is going into its third season, billboard marketing, ads in several magazines and on television and radio were all used with great success. The campaign has also worked with various sportsmen groups, businesses, lake associations and others. In 2013, Wildlife forever will develop a program specifically designed for waterfowl hunters.

- **A comprehensive regional public outreach campaign on AIS**

Doug Jensen, Minnesota Sea Grant

Jensen presented outcomes of the first regional comprehensive AIS outreach initiative by the Great Lakes Sea Grant Network led by Minnesota. It features *Stop Aquatic Hitchhikers!*TM, *Nab the Aquatic Invader* and *Habitattitude*TM. Over thirty communication and education strategies and media were used to achieve the promotion goal. Among others, Jensen mentioned mass communication including billboards news releases and media coverage, social media, combined with direct programs such as talks and booths at sports shows and events.. Evaluations show that AIS outreach can not only raise awareness, it can influence behavior. Based on statewide mail survey in Michigan and post event evaluations in Minnesota, reported actions dramatically increased over previous actions based on exposure to the campaign. To date, more than 1,050 government, academic, business and non-profit partners were involved in these efforts resulting in 913 million impressions.

Great Lakes Water Quality Agreement

James Schardt, U.S. Environmental Protection Agency

Schardt presented a brief overview of the renegotiated Great Lakes Water Quality Agreement (GLWQA) signed by the U.S. and Canadian governments on September 7, 2012. Schardt first reviewed the negotiation and governance structures of the GLWQA. He talked in more detail about Annex 5 of the Agreement covering vessel discharges. Transport Canada and U.S. Coast Guard are the two federal entities in charge of implementing Annex 5 proposed measures. Under Annex 5, the parties agreed to undertake scientific and economic analysis on the risks posed by ballast water discharge; ballast water management systems; and alternative technologies to protect the Great Lakes basin. Annex 6 was added to the GLWQA

covering prevention and control of AIS; lead entities are the Canadian Dept. of Fisheries and Oceans (DFO) and the USFWS. The Annex focuses on pathway risk assessments; regulatory and management coordination; education and outreach; and early detection and rapid response. Implementation will follow a three year cycle: the first year is dedicated to the development of work plans, the second year will be dedicated to the implementation of activities and the third year will be used to report on progress and list science priorities for the next management cycle. Todd Turner of the USFWS and co-chair of the Annex 6 subcommittee, along with Gavin Christie of DFO, participated in this discussion over the phone and recognized the need for coordination with existing forums such as the GLP in the implementation of Annex 6. It was suggested that GLP meetings be used as a mechanism for regular communication on the work of the Annex 6 subcommittee. The composition of the Annex 6 subcommittee has not yet been determined and will be discussed at a meeting of the Great Lakes Executive Committee occurring that week.

Asian carp updates

- **Asian carp eDNA monitoring and sampling effort in western Lake Erie**

John Navarro, Ohio Dept. of Natural Resources (ONDR) and Sarah LeSage, Michigan Dept. of Environmental Quality (MDEQ)

Navarro presented the results of a joint effort in the western portion of Lake Erie by the ODNR and MDEQ following positive eDNA samples of Asian carp in 2011. The source of the eDNA – e.g. an external agent (e.g. bird feces, stormwater runoff) or an actual Asian carp – is unknown. Ohio and Michigan state agencies first issued press releases in the summer 2012 to inform the public of the discovery and next steps. The agencies proceeded in a second round of sampling at 200 locations in the Sandusky Bay and River and the Maumee River and Bay. Of the 150 samples collected in the Sandusky Bay and River system, 20 tested positive; 3 of 300 samples were positive for the Maumee River and Bay basin. Positive samples were all for silver carp. Navarro pointed out that no bodies of Asian carp were found during the two sampling efforts. He also stressed that Asian carp pose a serious threat to Lake Erie's fish populations and that both agencies are working to identify potential population sources and vectors of introduction to prevent an infestation.

- **Control and monitoring efforts in Illinois**

Kevin Irons, Illinois Dept. of Natural Resources (IL DNR)

Irons summarized the recent work lead by the IL DNR and the Monitoring and Rapid Response Work Group of the Asian Carp Regional Coordinating Committee (ACRCC). Three consecutive sampling sessions conducted on the North Shore Channel of Chicago River in October 2012 lead to the discovery of positive eDNA. As a result, the U.S. Army Corp of Engineers, the U.S Fish and Wildlife Service and the IL DNR partnered to implement a response. Teams extensively sampled 7.5 miles of the North Shore Channel using electrofishing and netting, but could not find any bighead or silver carp. Additional positive eDNA samples on the Chicago River led to more electrofishing and netting with no actual fish discovered. Response actions were also carried out on Lake Calumet using large, newly developed surface-to-bottom nets to trap Asian carp. These nets were later deployed in deep water channels around the Lake Calumet. In addition to monitoring efforts, the IL DNR is working on management options for the Illinois River stock of carp, including the effectiveness of harvesting. A pilot program was conducted through a grant awarded to a group of fishers to transform 3 million pounds of Asian carp into fish meal. Irons also reported that 641 tons of Asian carp were removed from a section of the Illinois River, in the hope that this will decrease propagule pressure and reduce the likelihood for invasion in Lake Michigan. Monitoring is also occurring at urban fishing ponds where several bighead carp have been removed. Other IL DNR efforts include investigating humanitarian uses for carp (e.g., USAID, Target Hunger Now!); outreach and education focused on the bait trade; and reducing live Asian carp possession and transportation.

- **Asian Carp Regional Coordinating Committee**

Jim Bredin, White House Council on Environmental Quality

Bredin presented the major accomplishments of the ACRCC in 2012 and expectations for 2013. Accomplishments he noted included building partnerships with the Great Lakes states, Ontario and Canada; maintaining a redundant and effective system of electric barriers; developing new sampling technologies and techniques; and, ultimately, that Asian carp not have established in Chicago or the Great Lakes. Plans for 2013 include continuing and expanding eDNA and fish sampling efforts across the basin; continuing to develop new technologies; harvesting of carp below the barrier system and the identification of control options through the Great Lakes and Mississippi River Interbasin Study (GLMRIS). Bredin also reviewed the current known population front in the Illinois River system which has remained 55 miles from Lake

Michigan since 2007. He attributed this success to a variety of efforts to reduce the population as well as the electric barrier system. Since 2009, fourteen Asian carp response events have been carried out in the Chicago area, including using chemical treatments and traditional sampling gear. Bredin discussed efforts at the U.S. Geological Survey to develop and test control technologies and briefly introduced GLMRIS, which was the focus of the next presentation.

- **Great Lakes and Mississippi River Interbasin Study**

Nicole Roach, GLMRIS Focus Area 1 Project Manager, U.S. Army Corps of Engineers

Roach detailed the objectives, accomplishments and expected outcomes of GLMRIS, led by the U.S. Army Corp of Engineers (USACE). She first presented the various components of the USACE AIS strategy, which, in addition to GLMRIS, includes the operation and maintenance of the electric barrier system; eDNA monitoring for Asian carp; and an efficacy study for the barrier system. She provided an overview of GLMRIS which focuses on identifying aquatic pathways between the Great Lakes and Mississippi River basins, inventorying current and future potential AIS, and analyzing possible controls to prevent AIS transfer between basins via the aquatic pathways. The final GLMRIS report will be released in December 2013, as required by language included in the recently passed federal transportation bill. Roach explained that the final report will contain analysis and detail on conceptual design of alternatives for preventing AIS transfer; conceptual mitigation requirements for each of the alternatives; and a range of cost estimates commensurate with design details. She explained that there would still be a suite of things to address after the final report including a detailed presentation of alternative control methods, cost estimates, evaluation of impacts and a recommended plan. A series of interim reports providing information to stakeholders have and will be released in advance of final study documents. Changes in the overall timeline for GLMRIS as a result of the new legislation, was also reviewed. Roach discussed a “charrette” that was recently held to further evaluate and screen potential AIS controls. In conclusion, she provided a summary of next steps for GLMRIS leading up to the submission of the final report to Congress.

December 5, 2012

Committee reports

- **Information/Education Committee**

Doug Jensen, Chair Information/Education Committee

Jensen reported that the committee had good discussion about voluntary guidelines for recreational activities, water gardening and classrooms that were and are being considered by the national ANSTF. Members thought the water gardens guideline could be improved by differentiating the different type of water gardens (e.g. rain water garden, ornamental water garden) and identifying best management practices specific to these particular garden types. Committee members agreed to review the documents and provide comments through the Federal Register process (recreational guidelines and water garden) and to the ANSTF (classroom). Comments on the water garden guidelines will also address issues of intended audience, terminology and possible “mixed messages” with other guidance documents on the placement of water gardens. The committee was pleased with members’ participation in two webinars held in the past months on the invasive species mapping tools EDDMaps and iMapsInvasive. The *Great Lakes Aquatic Invasions* booklet was also the subject of discussions, and it was decided that GLP staff would be convene conference call with U.S. Forest Service and Wildlife Forever and other interested parties on moving forward with a updated edition of the booklet. Jensen also reported that the aquatic plants component of the USGS NAS database would not be updated anymore as a result of recent budget cuts. Information on freshwater animals and marine fish will continue to be maintained. Finally, members acknowledged the importance of GLRI funding and stressed the need for more “boots on the ground” and building volunteer programs.

- **Research Coordination Committee**

Lindsay Chadderton, Chair, Research Coordination Committee

Chadderton presented on a grass carp discussion paper intended to provide the basis for recommendations on grass carp management for the Great Lakes region. A subcommittee will be formed to review the discussion paper, the national Asian carp plan and other existing efforts to identify whether there are specific research questions for the Great Lakes basin that need to be addressed. Committee members also agreed to finalize the research priorities document distribute it to the ANSTF, funding agencies, NOAA Sea Grant, foundations, academic institutions and other potential funders and implementers. The committee will send a memo to the other committees regarding priorities with a strong policy or information/education focus. The committee also debated the future of the priority invasive species list. Committee

members agreed to form a subcommittee that will be convened to identify the purpose of the list and consider next steps on what to do with the list.

- **Policy Coordination Committee**

Bob Wakeman, Chair, Policy Coordination Committee

Wakeman reported on the committee priorities document. The document identifies priority needs related to invasive species policy in the region. Committee members were asked to provide comments on the document by January 1. The document will be finalized and then shared with the ExCom and submitted to the GLP by the spring 2013 meeting. Members of the committee will also be reviewing other committee priorities documents for potential synergies. The committee hopes this document will be used by federal and state agencies to influence implementation of the GLWQA, as well as state activities and legislation. The Committee stressed the need to update the 2008 list of Great Lakes Regulated Species, which includes regulated species in each of the 10 Great Lakes states and provinces. GLP staff will work with the committee to complete an update of the regulated species list which will be distributed to the GLP and interested parties.

Discussion session: Opportunities, Challenges and Moving Forward with Implementation of AIS Programs

Great Lakes Panel members and meeting participants were asked what the GLP should focus on for the next five years relating to the implementation of AIS programs. Several members discussed the need for GLP to engage in implementation of the GLWQA, as well as the need for a more unified legislation and surveillance of organisms in trade across the Great Lakes basin. The need to obtain and secure long term-funding, particularly after the end of the current GLRI program was also identified by participants. The issue of increased binational coordination for early detection and monitoring was also raised.

Great Lakes Panel business

Luke Skinner, GLP Chair

Erika Jensen, GLP Coordinator, Great Lakes Commission

Skinner presented the spring 2012 meeting summary, which was approved by the GLP with no changes. Jensen reviewed progress on the action items from the spring meeting. This included the addition of the U.S. Forest Service as a regular member agency of the GLP, which was approved by the ANSTF. In addition, proposed changes to the GLP Guidance for Operations were presented for a vote. These included changes allowing committee chairs to appoint a vice chair and that the immediate past chair be included in the GLP executive committee. These changes were approved. Jensen then initiated a discussion about the next Great Lakes Panel meeting which was being proposed to be held on May 7-9, 2013 in Duluth, Minnesota. This meeting will be held in conjunction with the ANS Task Force.¹ Several field trip opportunities were also shared, including a tour of the Great Ships Initiative, a watercraft decontamination demonstration, and Erie Pier.

Emerging issues and upcoming events

Participants were notified of a session on funding through the Great Lakes Restoration Initiative planned for the 2013 International Association for Great Lakes Research Conference in West Lafayette, Ind., from June 2 to 6. In addition, the 18th International Conference on Aquatic Invasive Species will be held in Niagara Falls Ont., from April 21 to 25, 2013.

¹ In February 2013, the ANSTF was forced to cancel its spring 2013 meeting due to constraints resulting from federal budget issues and sequestration.