

## Great Lakes Panel Member Updates Fall 2014

### Meeting of the Great Lakes Panel on Aquatic Nuisance Species

November 19-20, 2014 \* Ann Arbor, Michigan

#### Federal

##### U.S. Coast Guard

###### Ballast Water Regulation

The Coast Guard published its ballast water discharge standard regulation in the Spring of 2012. It adopts the IMO standard and will require the installation of type-approved BW management systems on "salties". The use of approved ballast water management methods are required on those new ships constructed after 1 DEC 2013 and will be implemented on existing ships during the vessel's first scheduled drydock after 2014 or 2016 depending on the vessel's BW tank capacity. Initially, these requirements will not apply to Lakers but after additional analysis and development of more capable BW treatment systems, the Coast Guard may include more stringent requirements in a future rulemaking.

###### CG Type Approval

The multi-faceted type approval process consists of land-based and shipboard-based testing (by independent labs) focused on the biological efficacy of the BWMS. For those systems whose performance could be affected by the cold and pure fresh water of the Great Lakes, additional testing may be necessary. Assessment of the BWMS' ability to properly operate in the harsh marine environment is also undertaken and all of the system's components are examined to ensure compliance with marine engineering, electrical, and mechanical standards. This testing and certification is usually conducted by vessel classification societies. For Independent Labs (IL) that will be involved in the type approval process, CGHQ approved NSF International in July '12. Duluth-Superior's Great Ship Initiative is part of the NSF team. Det Norske Veritas is the other approved IL. Several BWMS are in beginning stages of type approval testing at these two laboratories.

###### Alternate Management Systems (AMS)

Since it will take some time to certify all of the independent labs that will be completing this testing, the Coast Guard has developed an interim program to accept the use of some BWMS that have been type-approved by other flag states. AMS is intended as a bridging strategy to allow for the use of BWMS type-approved by foreign administrations in accordance with the IMO Convention. The AMS must be installed and approved and would be used in lieu of ballast water exchange until full type approval can be obtained, but for a period of no longer than 5 years after the ship was otherwise required to comply with the ballast water discharge standard. The Coast Guard has issued 46 AMS Determination Acceptance Letters to date including 5 for fresh water operations.

###### Ballast Water Working Group (BWVG)

The ballast water working group has completed the 2013 annual report and it is posted on the Ninth Coast Guard District website. In 2013, 100% of vessels bound for the Great Lakes Seaway from outside the EEZ received ballast management exams on each Seaway transit. All 6,803 ballast tanks, during 371 vessel transits, were assessed; (100% of the ballast tanks on inbound vessels were assessed in 2009-13).

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##### National Park Service

###### Ballast Water

NPS has moved forward with freshwater and saltwater ballast treatment technology. In August, both the U/V and contingency treatment systems were tested under ambient conditions in the Portage Canal. The Park employed an independent lab to document treatment efficacy in freshwater. Dr David Wright of Environmental Research Services and his team conducted shipboard status trials of both the U/V system and the emergency process using

bleach as the biocide. The Ranger III's tank mixing system was used rather than the prototype mobile treatment kit for the chlorine testing. Results from these trials indicated successful treatment of the ballast water using both systems. Although live residuals (mean) exceeded the U.S. Federal standard of <10live organisms/mL for this size group (which includes > phytoplanktons), very low photosynthetic yield (Fv/Fm) values in treated samples showed no growth potential for these organisms, indicating lack of viability for both systems. For the chlorine system additional Whole Effluent Toxicity testing was implemented and the results indicated no significant residual toxicity associated with treated discharge samples.

The State of California Lands Division will be running 6 out of 9 needed tests for documenting efficacy of the emergency system under conditions similar to IMO permanent treatment testing during the First week of December. Park Superintendent Phyllis Green will provide additional updates at the meeting. The remaining three tests which are critical for Great Lakes implementation need to be tested for freshwater. NPS appreciates the State and federal collaborative that has helped us reach this milestone.

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## **State/Provincial**

### **Michigan**

A new \$5 million state budget proposal was passed for fiscal year 2015 to support an interdepartmental aquatic and terrestrial invasive species program. The program is a joint effort between the Michigan Departments of Natural Resources (DNR), Environmental Quality (DEQ), and Agriculture and Rural Development (DARD) and will include a new grant program devoting at least \$3.6 million toward projects to detect, prevent, manage and eradicate invasive species in Michigan.

The 3 departments collaborated on an interdepartmental procedure, Invasive Species Decontamination for Field Operations in Michigan, which will be finalized this winter. The purpose of the policy and associated decontamination guidelines is to assist state employees in minimizing the risk of transferring invasive species while performing job activities in the field.

The DNR's Fisheries Division collaborated with the Ohio DNR and other agencies on a table top and field response exercise for Lake Erie in fall 2014. The field exercise involved netting and electrofishing and focused on the logistics for implementing an inter-jurisdictional response through the Mutual Aid Agreement. The DNR Wildlife Division continued to conduct early detection monitoring and response for aquatic plants as well as continue removal efforts for known infestations of European frog-bit, parrot feather, water lettuce and water hyacinth. An extensive infestation of water lettuce and water hyacinth was encountered in a tributary to Lake Erie in fall 2014; additional assessments will continue in 2015. The DEQ water resources Division continues to incorporate AIS monitoring into routine field work and evaluate methods for targeted AIS surveys in inland lakes and other waters. In addition, a pilot Zequanox treatment was conducted in cooperation with Marrone Bio Innovations, USGS, and PLM Lake and Land Management Corp. in the western basin of Lake Erie in fall 2014 to test application strategies.

The DARD and DNR's Law Enforcement Division continue inspections and education efforts for wholesale/retail bait dealers, plant nurseries, and the pet industry. Education and outreach efforts continue to increase with a collaborative public service announcement with Minnesota and Wisconsin, spots on Michigan Out of Doors TV, an AIS booth with prevention and management materials, and a mobile boat wash unit, and a "Landing Blitz" on June 6 and 7, 2014, to raise awareness about preventing the spread of AIS through recreational boating (based on Wisconsin's annual Blitz). Novel communications efforts aimed at broadening invasive species messaging to new audiences are planned for 2015.

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## **New York**

The New York Invasive Species Advisory Committee (25 NGOs) will meet on Nov. 24 and the Council (9 agencies) met on Sept. 26. An updated NY State Aquatic AIS Plan will be released for a 45 day public comment period beginning Oct. 29. The Department finalized invasive species regulations establishing a list of prohibited and regulated invasive species in early September. New DEC boat launch regulations were finalized in early June which require boaters utilizing DEC managed launches to clean their boats and equipment prior to launch and on retrieval. Two new laws passed, one requiring the development of regulations defining “reasonable precautions” boaters shall take before launching watercraft or floating docks into public waters, the other requiring standard AIS signage at public launch sites. A new white paper “The Actual and Potential Economic Impact of Invasive Species on the Adirondack Park” was released by the Adirondack Park Invasive Plant Program. During the 2014 boating season a mandatory trailered boat inspection and decontamination program was implemented on Lake George. Hydrilla management continued for the fourth season at the Cayuga Inlet and was implemented for the first time on Tonawanda Creek/Erie Canal. A statewide invasive species public awareness poll has been initiated and the second annual statewide invasive species awareness week will be held July 12-18, 2015.

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## **Ohio**

Continued control efforts of Phragmites and Hydrilla in the Lake Erie basin.

Continued to monitor for bighead and silver carp in Lake Erie and the Muskingum River using environmental DNA (eDNA) and routine sampling activities. Conducted a two-day intensive surveillance of the Muskingum River for bighead and silver carp using electrofishing in response to positive eDNA results. This was to determine the threat to Ohio’s two medium risk GLMRIS connections. No bighead or silver carp were captured but one triploid grass carp was collected.

Continue surveillance for grass carp to determine if diploid (fertile) fish were present in the wild. During this time period, four grass carp were collected (two in the Lake Erie watershed and two in the Ohio River watershed) and all but the one from Lake Erie was diploid.

Conducted a three-day multi-organization planned response to monitor grass carp in Michigan waters of the western basin of Lake Erie. The goal of the exercise was to use a collaborative multi-agency approach to increase staff preparedness on Asian carp sampling methodologies, while concurrently increasing the information base of grass carp population demographics in western Lake Erie. The exercise used both the Incident Command System and the recently developed Mutual Aid Agreement. There were 60 participants from ten organizations, including: Ohio, Michigan, Pennsylvania, New York, Illinois, USFWS, USGS, Province of Ontario, and commercial fisherman. Electrofishing, gill nets and seines were used in a coordinated approach. One grass carp was collected during the exercise.

Continued to investigate closure options for the four Great Lakes Mississippi River Interbasin Study connections in Ohio at Little Killbuck Creek, Ohio Erie Canal, Grand Lake St Marys, and Mosquito Creek Lake. The USACE has completed their initial assessment of the Ohio Erie Canal connection and will move towards final design for closure. We are in the process of hiring consultants to conduct preliminary closure designs at Little Killbuck Creek and Mosquito Creek. Tetra Tech engineering consulting firm completed their initial assessment of the closure options at Grand Lake St Marys.

Participated on: Council of Great Lakes Governors AIS Task Force, Mississippi River Basin Panel, Great Lakes Panel, Aquatic Nuisance Species Task Force, Ohio Aquatic Invasive Species Committee, Great Lakes Water Quality Agreement Annex Six, Grass Carp Binational Committee, Chicago Area Waterway System Advisory Committee, Asian Carp Regional Coordinating Committee, and the Ohio Aquatic Invasive Species Committee.

Finalized the Ohio AIS Rapid Response Plan which is now an appendix of Ohio’s State Management Plan.

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## **Pennsylvania**

The PA Invasive Species Council approved an AIS rapid response plan on September 18, 2014. The plan has already been used for responses to Water Chestnut, Asian carp (reported from a southwestern PA pay-to-fish lake, under investigation) and to Round Goby. Round Gobies were collected for the first time from an inland PA waterway in August 2014. Gobies were found in Lake LeBoeuf in Erie County during routine AIS monitoring. The outlet stream of this lake flows into biologically diverse French Creek in the Allegheny River watershed. A multi-organization rapid assessment effort has been initiated to better understand the full distribution of gobies in Northwestern PA. A response plan will be developed pending results of the assessment. Pennsylvania Sea Grant is developing an AIS field guide smart phone app to accompany the hard copy of the PA field guide.

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## **Regional/Binational**

### **Great Lakes Commission**

#### Asian Carp

The GLC is working in partnership with the Great Lakes and St. Lawrence Cities Initiative (Cities Initiative) to investigate solutions to the threat of Asian carp and other invasive species passing through the Chicago Area Waterways System (CAWS), while maintaining current uses of the system. The GLC and Cities Initiative are continuing to convene meetings of an Advisory Committee as the primary regional stakeholder forum seeking solutions to the problem of AIS transfer through the CAWS. The Committee recently developed and delivered a letter calling on Congress to direct the Army Corps of Engineers to design a new engineered channel to be constructed in the approach to the Brandon Road lock; evaluate, engineer, and design control technologies to deploy in the approach channel and the Brandon Road lock structure; conduct further research to evaluate reconfiguring locks as a means to control aquatic invasive species; and provide funding for those activities.

#### Internet Trade

Work is underway on a grant from the Great Lakes Restoration Initiative to develop software and tools to track, identify and monitor the sale of invasive species via the internet. The GLC hired the software development firm RightBrain Networks to develop the web-crawling software system. The final system is complete and in the initial stages of operation.

#### Ballast Water

The GLC convened a Ballast Water Task Force to assess current ballast water standards and develop a common platform among Great Lakes states and provinces from which to advance a future ballast water management regime. The GLC is tracking activity on U.S. legislation, S. 2094, the Vessel Incidental Discharge Act, that would preempt state authority to regulate ballast water. A GLC letter was sent to the Senate Committee on Commerce, Science and Transportation expressing concerns with some provisions of the legislation.

#### Phragmites

The GLC continues to expand a partnership with the USGS-Great Lakes Science Center to lead communications and research on the invasive plant Phragmites. The Great Lakes Phragmites Collaborative, established in 2012, continues to engage the resource management community, reduce redundancy, link science and management, facilitate adaptive management, and encourage a systems approach to management and conservation associated with this species. The GLC also supports the Collaborative for Microbial Symbiosis and Phragmites Management, established in partnership with the USGS to bring together researchers to explore the potential to use symbiotic relationships both to control invasive Phragmites and encourage native plant establishment.

#### Zebra and Quagga Mussels

The GLC is exploring a new invasive mussel collaborative in partnership with USGS, the Great Lakes Fishery Commission and NOAA. An informational webinar will be held on December 1, 2014. More information and webinar registration is available at [www.invasivemusselcollaborative.net](http://www.invasivemusselcollaborative.net).

### Sea lamprey

The GLC recently completed work in partnership with the Great Lakes Fishery Commission to develop a sea lamprey barrier mapping tool. The tool allows the user to search and select barriers in the Great Lakes region to see what tributaries and watersheds are being protected from sea lamprey movement by those barriers in order to inform future decision-making.

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### **At-Large**

#### **Chippewa Ottawa Resource Authority**

The Chippewa Ottawa Resource Authority (CORA) represents five tribes in Michigan with regard to the tribes' commercial and subsistence fisheries in the 1836 treaty-ceded waters of Lakes Huron, Michigan and Superior. The tribes which are party to the 1836 Treaty are the Bay Mills Indian Community, Grand Traverse Band of Ottawa and Chippewa Indians, Little River Band of Ottawa Indians, Little Traverse Bay Bands of Odawa Indians and Sault Ste. Marie Tribe of Chippewa Indians.

CORA, through the Inter-Tribal Fisheries and Assessment Program, participates on the Council of Lake Committees under the Great Lakes Fishery Commission and is helping to establish sea lamprey control plans for Lakes Huron, Michigan and Superior. CORA also participates, through ITFAP, on the Annex 6 (AIS) Subcommittee under the Great Lakes Water Quality Agreement. The CORA tribes also assisted the U.S. Fish and Wildlife Service and partners by providing a staging area for sea lamprey control efforts in the St. Marys River in the summer of 2014. Through participation in the Lake Michigan Committee's Native Planktivore Restoration Task Group, CORA is scoping the feasibility of enhancing native cisco populations in Lake Michigan. Cisco populations have been inhibited in the past due to competition from invasive alewife.

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#### **Minnesota Sea Grant**

##### Outreach

Minnesota Sea Grant continues to partner with the National Park Service to promote Stop Aquatic Hitchhikers!™ and Habitattitude™ awareness to empower communities, organizations and businesses to take action against the spread of AIS. Our recent partnership with USDA Forest Service enables Sea Grant to continue to focus public outreach aimed at protecting the Superior National Forest. Overall goals are to: 1) Communicate AIS issues to resource managers and users. 2) Increase awareness of AIS issues and actions the public can do to help prevent and control AIS spread. 3) Develop cost-effective partnerships to communicate AIS issues. To these ends, we are bringing groups together via organizing conferences, presenting at meetings and events, and co-hosting booths in communities.

Based on two Great Lakes Restoration Initiative grants, the Great Lakes Sea Grant Network (GLSGN) and our partners, led by Minnesota, continue to broaden the first comprehensive regional AIS outreach campaign across the Great Lakes. Based on one grant, the GLSGN and its partners generated 2,784,768 exposures (or 158% of the two-year goal). Over the summer, 62,909 exposures were generated. Based on a second grant that addresses organisms in trade (OIT), efforts over the summer generated 784,404 exposures for a total of 3,917,490 exposures (or 392% of the two-year goal). Dozens of Habitattitude and Stop Aquatic Hitchhikers! talks, workshops, and booths were offered at a wide variety of conferences, workshops, classes, outdoor shows, fairs, water festivals and other events where tens of thousands education tools were distributed. Thousands of exposures were generated by mass media pick-ups and through social media including Facebook, Twitter, YouTube and blogs. New partners joined both Habitattitude and Stop Aquatic Hitchhikers! campaigns.

##### Teacher and Youth Education

As a component of these regional efforts, several Nab the Aquatic Invader (NAI) teacher training workshops and youth events educated over 860 teachers and nearly 450 students. Model community stewardship projects serve as the framework and demonstrate new student understandings of the AIS problems, and how the community can

help be part of the solution. Messages from both campaigns serve as tools for use in classrooms to spread prevention messaging. Pennsylvania Sea Grant produced a flash drive loaded with AIS and climate change curriculum, which is being distributed to teachers and educators. Attack Packs produced by Wisconsin Sea Grant are being used in teacher training and youth events.

### Symposia and Conferences

The Great Lakes Briefs on Invasive Organisms Traded in Commerce (GL BIOTIC) was held in Milwaukee, WI, June 3-4, 2014. Nearly 70 attendees from across the Great Lakes region and the nation discussed OIT pathways and to learn about research and projects that may help inform management. Synthesis presentations on pathways, including live specimen release, aquaculture, live bait, pet release, and water garden escape, were presented in addition to a cross-cutting presentation on pathogens and diseases in OIT. Synthesis presentations summarized what is known about each pathway and what current research may improve management of pathways in the future. Panels featuring experts on industry perspectives, risk assessment, outreach, and regulations also provided attendees with information on current efforts that can inform management of pathways. A symposium proceedings and bibliography is in preparation and will be posted on the Univ. of Wisconsin Sea Grant website.

The 2014 Upper Midwest Invasive Species Conference was held in Duluth, MN, October 20-22, 2014 (<http://www.umisc2014.org/>). It featured 220 presentations, two dozen posters, and 30+ exhibitors of business products and services. Six field trips and workshops showcased local management and the latest research and outreach being conducted on invasive species at world-class facilities. Conference hosts are the [Invasive Plants Association of Wisconsin](#), [Midwest Invasive Plant Network](#), [Minnesota Invasive Species Advisory Council](#), and the [Wisconsin Invasive Species Council](#). Over 625 people attended.

### Ballast Water

Sea Grant continues to provide leadership and support in sharing the best available science improve ballast water policy and assist in timely and effective implementation of ballast water management and control systems on vessels. Staff continues to support AIS prevention through the Great Lakes Ballast Water Collaborative (GLBWC), SLSDC/SLSMC, Highway H2O Academic Advisory Committee, Green Marine Science Advisory Committee, and Advisory Committee to the Counsel on the Great Lakes Region.

Staff participated in the Toronto Marine Club and the Great Lakes Ports Association Winter Meeting. We continue to provide consultation and research for all groups seeking to understand the impacts of maritime trade and potential AIS movement in the Great Lakes, and work closely with the MN Pollution Control Agency and the Duluth Seaway Port Authority.

The GLBWC met in Washington D.C. on March 3-4, 2014. Approximately 50 industry, state and federal governments, and academia attended the seventh full meeting (for details visit: [http://www.greatlakes-seaway.com/en/environment/ballast\\_collaborative.html](http://www.greatlakes-seaway.com/en/environment/ballast_collaborative.html).) The Collaborative was formed to facilitate the exchange of information and cultivate relationships between state, provincial and federal regulators, the shipping industry, research scientists, NGOs, and other stakeholders. Goals of the meeting were to:

- Develop a better understanding of the U.S. Coast Guard's Type approval process.
- Discuss the enforcement of the Environmental Protection Agency's Vessel General Permit and state 401 certifications and permits.
- Discuss Canada's regulatory environment as signatories to the IMO Ballast Water Convention.
- Develop a better understanding of the status of the IMO Ballast Water Convention and recent issues associated with it.
- Continue discussions about ballast water management system technology, development, and testing.

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**North Central Regional Aquaculture Center**

GLP committee member Chris Weeks has presented with Ron Kinnunen, MI Sea Grant, two AIS HACCP workshops in fall of 2014. Participants included members from MI DNR, Tribal agencies, and aquaculture and baitfish industry sectors. Chris is also PI for a 2-yr project with the state of Michigan and University of Minnesota (Nicholas Phelps) to explore and case study expanding AIS HACCP towards a more recognized AIS control verification program.

In discussions with commercial aquaculture and baitfish industry members in the North Central Region US, there continues to be major concerns over the validity and use of eDNA as an AIS management tool, especially when industry sectors are being targeted and no presence of live animals are being found.

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**Saint Lawrence Seaway Development Corporation**

SLSDC presented a summary of the scientific principles associated with salinity shock at the 2014 GreenTech Conference. Salinity shock, which can occur in freshwater organisms during ballast water exchange, helps protect the Great Lakes from ballast-related invaders.

SLSDC attended the Notre Dame/The Nature Conservancy (ND/TNC) Management Transition Board (MTB) meeting in Chicago. MTB members received updates to a variety of scientific research activities associated with the ND/TNC Bioeconomics Forecasting Project.

The final March 2014 Ballast Water Collaborative meeting report was released in October 2014 and is available from the Seaway website, as are all Ballast Water Collaborative reports:

[http://www.greatlakes-seaway.com/en/environment/ballast\\_collaborative.html](http://www.greatlakes-seaway.com/en/environment/ballast_collaborative.html)

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