

# GLP MEMBER UPDATES

## SPRING 2014

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

April 29-30, 2014 \* South Bend, Indiana

## 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. Two BWMS are in beginning stages of type approval at NSF International.

#### 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 28 AMS Determination Acceptance Letters to date.

#### Ballast Water Working Group (BWWG)

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 Exclusive Economic Zone (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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### **U.S. Forest Service**

Six National Forests are completely or partially located within the Great Lakes basin (Map: <http://go.usa.gov/kZxe>). These Forests continue to work with partners to prevent, locate, control, and eradicate aquatic and terrestrial

invasive species. Participation in Cooperative Weed Management Areas (CWMAs) is an important way that Forest Service units work with other agencies and organizations to manage invasive species across landscapes in an integrated fashion. Follow the links below for brief reports (with pictures!) from National Forests about their 2013 invasive species management activities. Among the highlights are the opening of a new self-service boat cleaning facility on the Ottawa National Forest, the creation and posting of informative signs about aquatic invasive species on the Hiawatha National Forest (<http://go.usa.gov/kZcm>), and rusty crayfish control on the Superior National Forest. The Eastern Region of the Forest Service also remains an active partner with Shedd Aquarium in Chicago, Discovery World in Milwaukee, the National Professional Anglers Association, and Wildlife Forever on aquatic invasive species outreach and education.

#### Michigan

Hiawatha National Forest - <http://go.usa.gov/kZrC>

Huron-Manistee National Forest - <http://go.usa.gov/kZrW>

Ottawa National Forest - <http://go.usa.gov/kZrR>

#### Minnesota

Superior National Forest - <http://go.usa.gov/kZrF>

#### New York

Finger Lakes National Forest - <http://go.usa.gov/kZY3>

#### Wisconsin

Chequamegon-Nicolet National Forest - <http://go.usa.gov/kZY9>

Contact: John Rothlisberger, Aquatic Ecologist, [jrothlisberger@fs.fed.us](mailto:jrothlisberger@fs.fed.us), 414-297-1749

## **National Oceanic and Atmospheric Administration**

### Asian carp

- Work continues on development of biophysical model (Atlantis, IBM) simulations of Asian Carp in near shore and off shore food webs of Lake Michigan, Erie and Huron. Ecopath with Ecosim models of Asian carp impacts on food webs are near completion. Ecosystems targeted are: Lake Erie; Muskegon Lake, and main basin of Lake Michigan; Saginaw Bay and the main basin of Lake Huron; and Lake Ontario (in collaboration with Tom Stewart of OMNR).
- Work continues on bioeconomic analysis of Asian carp impacts for the Lake Erie and Lake Michigan food webs.

### Non-Asian Carp

- Work continues on Ecopath with Ecosim modeling of ruffe, golden mussel, snakehead and killer shrimp impacts on Lake Erie and Lake Michigan food webs.
- Work is also ongoing to model natural dispersal (via currents) of golden mussel and ruffe larvae in Lake Michigan, Lake Huron and Lake Erie.
- No updates for GLANSIS.

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## **STATE/PROVINCIAL**

### **Michigan**

The Michigan Departments of Environmental Quality (DEQ), Natural Resources (DNR), and Agriculture and Rural Development (DARD) collaborated on an interdepartmental procedure, Response Plan for Aquatic Invasive Species in Michigan, which was finalized on February 3, 2014. The response plan will be tested during mock exercises

planned for 2014 and any actual responses, as necessary. The DNR's Fisheries Division is working with Ohio on a response exercise for Lake Erie. The three Departments are also collaborating on a new I procedure, Invasive Species Decontamination for Field Operations in Michigan.

In 2014, AIS monitoring will be incorporated into all routine rapid biological surveys of rivers and streams conducted by the DEQ Water Resources Division. Development and planning for state-wide AIS monitoring efforts for multiple water body types and species was initiated in October, 2013. Michigan is testing methods for inland lake AIS sampling based on Wisconsin's snorkeling and shoreline survey protocols. The DNR Wildlife Division will continue to conduct early detection monitoring and response for aquatic plants as well as continue removal efforts for known infestations of European frog-bit and parrot feather.

The DARD and DNR's Law Enforcement will 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).

Governor Rick Snyder announced a state budget proposal in February, 2014 that included a \$6M proposal for FY15 and \$8M in FY16 to support and interdepartmental aquatic and terrestrial invasive species program. The budget proposal is currently with the state legislature.

Contact Sarah LeSage, Michigan DEQ, 517-284-5472

## **Minnesota**

### Asian carp

- Work continues on the design of an electrical barrier at Lock and Dam #1 on the Mississippi River. The design utilizes new "sweeping" electric technology which is activated prior to lockage and deactivated after traffic has left the lock and the gates have been closed. The design has gone through multiple reviews and a final product is expected in early June. The contractor (Smith-Root Inc.) will be conducting a validation study at Jake Wolf Memorial Hatchery, IL in mid-May.
- The DNR continues to support language in the federal Water Resources and Redevelopment Act that would close upper St. Anthony Falls Lock.
- Projects continue in southwest Minnesota to prevent Asian carp moving from Missouri River watersheds into Mississippi River watersheds.
- The MN DNR is working with the USFWS, USGS, and the Minnesota Aquatic Invasive Species Research Center (MAISRC) for Asian carp monitoring in Minnesota waters for 2014.
- The MN DNR is working with MAISRC on a project to quantify adult Asian carp swim speeds, model flow velocities through tainter gates in Lock and Dams 2, 5, & 8, and install deterrent acoustic systems in Locks 2, 5, & 8.
- The MN DNR released a map depicting areas at risk of Asian carp expansion via their natural swimming ability: [http://files.dnr.state.mn.us/natural\\_resources/invasives/aquaticanimals/asiancarp/risk-carp-movement-map.pdf](http://files.dnr.state.mn.us/natural_resources/invasives/aquaticanimals/asiancarp/risk-carp-movement-map.pdf)

For more details, contact: Nick Frohnauer, MN DNR, (651) 259-5670, [nick.frohnauer@state.mn.us](mailto:nick.frohnauer@state.mn.us)

## **New York**

The New York Invasive Species Advisory Committee (25 NGOs) met on March 17 and the Council (9 agencies) met on March 27. Work continues on updating the State's 1993 ANS Plan, led by the Bureau of Fisheries. The Department is working on finalizing invasive species regulations and boat launch regulations which were both

released in draft form for public comment this past fall/winter. A new white paper has been produced by the Adirondack Partnership for Regional Invasive Species Management titled "Boat Inspection and Decontamination for Aquatic Invasive Species Prevention: Recommendations for the Adirondack Region". The Lake George Park Commission finalized their "Lake George Aquatic Invasive Species Prevention Plan and Generic Environmental Impact Statement". A mandatory trailered boat inspection program will be implemented during the 2014 boating season. An experimental boat wash station will be constructed by the Department at Cranberry Lake. Initial findings for Northern Snakehead surveillance in Catlin Creek using eDNA technology were negative. Boot camp for the newly funded Partnerships for Regional Invasive Species Management was held to update the 4 new coordinators. A hydrilla RR workshop was held in the Adirondack region. Hydrilla management in Cayuga Inlet continues for the fourth season. The Army Corps of Engineers held a public meeting in preparation for hydrilla management in Tonawanda Creek. The 2014 annual ANS small grant from FWS will support a boat steward for the Erie Canal and Tonawanda Creek. Staff worked with Finger Lakes Lake Ontario Watershed Protection Alliance to develop the State's FFY 2014 FWS ANS GLRI proposal consisting of 5 projects. A Statewide invasive species awareness week will be held July 6-12, 2014.

Contact: David Adams, NY DEC, 518-402-9149, [djadams@gw.dec.state.ny.us](mailto:djadams@gw.dec.state.ny.us)

## Ohio

Continue monitoring for Asian carp in the Ohio River and Lake Erie watersheds, including an assessment of the recent collection of naturally produced grass carp in Lake Erie. Work with the USACE, NRCS and Tetra Tech to develop closure options the Ohio-Erie Canal, Little Killbuck Creek, and Grand Lake St Mary's. We will also revisit the low risk connection at Mosquito Lake. Continue to work with several partners to combat Phragmites and Hydrilla in the Lake Erie Basin. Ohio finalized the Asian Carp Tactical Plan and is working to develop an Ohio River Asian Carp Action Plan and a Rapid Response Plan.

Contact: John Navarro, OH DNR Division of Wildlife, 614-265-6346, [john.navarro@dnr.state.oh.us](mailto:john.navarro@dnr.state.oh.us)

## Ontario

In February, Ontario introduced Bill 167 (*Invasive Species Act*) to support the prevention, early detection, rapid response and eradication of invasive species in the province. If passed, the legislation will position Ontario as the first jurisdiction in Canada to introduce stand-alone invasive species legislation. The proposed legislation would:

- Give Ontario the tools to ban activities such as possessing and transporting certain invasive species;
- Allow the government to intervene earlier and enable rapid response actions, including working with partners to stop an invasive species from spreading; and
- Help ensure compliance through modernized inspection and enforcement measures.

The full text of Bill 167 can be accessed at [http://www.ontla.on.ca/web/bills/bills\\_detail.do?locale=en&Intranet&BillID=2946](http://www.ontla.on.ca/web/bills/bills_detail.do?locale=en&Intranet&BillID=2946). The public comment period for the Act closed on April 14th.

MNR worked with the U.S. Aquatic Ecosystem Restoration Foundation, and the Invasive Species Centre, to host a workshop on aquatic invasive plants prevention and management. The workshop included experts from the U.S. Army ERDC, Minnesota DNR, Florida Fish and Wildlife Conservation Commission, New York, and the Quebec Ministère du Développement durable, de l'Environnement, de la Faune et des Parcs. The objective of the workshop was to provide recommendations on improving provincial approaches to addressing aquatic invasive plants. A summary report from the workshop along with a technical report will be distributed in May.

Over the past year, the Council of Great Lakes Governors (CGLG) has developed a draft mutual aid agreement amongst the Premiers of Ontario and Quebec and the Great Lakes Governors to help facilitate coordination and sharing of staff/resources in the event of detection of an aquatic invasive species. It is anticipated that the agreement

will be announced at the CGLG executive meeting at the end of April.

On April 24th, a Policy Proposal Notice on the 8th Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health (COA) was posted to Ontario's Environmental Registry (ER # 011-9290). COA is the principle mechanism through which Ontario and Canada coordinate their work to address their respective and shared commitments to the Great Lakes. The new draft COA includes a specific Annex on Aquatic Invasive Species to ensure cooperative and coordinated efforts to reduce the threat of AIS to Great Lakes water quality and ecosystem health. The public review and comment period for the draft 8th COA is open until July 3rd, 2014. The posting can be found at <http://www.ebr.gov.on.ca/ERS-WEB-External/>.

In March, MNR worked with the Ontario Federation of Anglers and Hunters to launch a smart phone app, for the Early Detection and Distribution Mapping System for Ontario. It can be accessed at [www.eddmaps.org/ontario](http://www.eddmaps.org/ontario). Work is also in progress in partnership with the Ontario Invasive Plant Council to develop an aquatic invasive plants best management practices manual.

On March 27th, a Canadian stakeholder workshop on GLMRIS and Canadian efforts to address Asian Carp was held.

Control projects for Water Chestnut will continue in 2014, at Voyageur Provincial Park, and in Lake Ontario (Bayfield Bay, Lake Ontario) in collaboration with Ducks Unlimited Canada and the OFAH. Work on Water Soldier is also planned to continue at the Trent Severn Waterway.

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## **Wisconsin**

Major accomplishments include completion of a tri-state public service announcement with neighboring states of Minnesota and Michigan. The PSA will be shown on cable and broadcast TV prior to opening of the fishing season. The message reminds boaters to take the necessary steps to prevent the spread of AIS. New budget initiatives are being requested at the state level, offering an opportunity to strengthen our states efforts to prevent, contain and control AIS. At the federal level the ACOE's GLMRIS report was released on January 6th, 2014. Wisconsin met with ACOE representatives to discuss the report and attended several meeting to further discuss the reports contents and next steps. Multiple governor associations (Council of Great Lake Governors, Midwest Governors Associations) have been active at this time and have taken an interest in advancing an AIS agenda. The CGLG intends to announce the signing of a mutual aid agreement between the Great Lake States and the Provinces of Quebec and Ontario. The Midwest Governors Association sponsored a Washington D.C briefing on AIS issues. Great Lake Restoration Initiative funds are again available through federal partners. Applications are being prepared to address priorities identified in the RFP. The GLRI RFP identified a specific funding allotment for the completion of a interstate early detection rapid response plan. Wisconsin coordinated a discussion among the Great Lake states to asses the interest in applying collaboratively for these funds. It has been agreed that the effort is worth pursuing and a proposal has been initiated. The great state of Michigan has agreed to be the sole sponsor of the proposal showing great leadership, they have our appreciation.

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## **REGIONAL/BINATIONAL**

### **Great Lakes Commission**

#### Chicago Area Waterway System

The GLC is working in partnership with the Great Lakes and St. Lawrence 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 Great Lakes and Mississippi River Interbasin Study (GLMRIS) was released in January and there is now an intense desire among decisionmakers to move forward with specific measures; however, GLMRIS does not recommend a preferred solution. Immediately following its release, the GLC directed its technical consultants to carefully review the GLMRIS report and appendices and assess its assumptions and methodologies in key areas (included in Tab Four: Speaker Topics). The GLC also convened meetings of its multistakeholder Advisory Committee in October 2013 and January 2014. The committee has expressed a strong desire to continue meeting and help identify and advance solutions to the threat of invasive species passing through the CAWS. At its last meeting, following release of the GLMRIS report, the committee agreed to a goal and a six-part strategy for seeking consensus on both near-term control measures and a long-term solution. A series of principles and priorities is being developed to guide the committee's work and subgroups are being formed to work on specific items. Given the divergent views within the group and the challenge of reaching consensus on long-term solutions, the GLC is hiring a professional facilitator/mediator to assist its work with the committee. The committee's next meeting is scheduled for May 25 in Chicago. The Advisory Committee is the primary regional stakeholder forum seeking solutions to the problem of AIS transfer through the CAWS. A resolution on this issue was passed at the GLC's Semiannual Meeting March 4-5, 2014 in Washington, DC.

#### Organisms in Trade & Internet Sales of AIS

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 has hired the software development firm RightBrain Networks to develop the web-crawling software system. The final system is expected to be released in March 2014. Stakeholders are being engaged to develop a plan for outreach to sellers identified through the project. A workshop was held in November 2013 to share progress and gather feedback from stakeholders. The GLC continues to engage in activities to support legislation or executive action that would strengthen federal programs to prevent the importation of potentially harmful non-native species. A resolution on this issue was passed at the GLC's Semiannual Meeting March 4-5, 2014 in Washington, DC.

#### Ballast Water

The GLC is convening a Ballast Water Task Force of state and provincial agency delegates 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. This effort does not presume that current standards or programs are inadequate, nor is the intent to slow the implementation of existing regulations. The GLC will be coordinating with the AIS task force convened through the Council of Great Lakes Governors.

#### 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 GLC established the Great Lakes Phragmites Collaborative in 2012 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 invasive plant. The Collaborative supports an interactive web-hub ([www.greatlakesphragmites.net](http://www.greatlakesphragmites.net)), webinar series and email list, and is guided by a regional advisory committee. 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.

Contact: Erika Jensen, GLC, 734-971-9135, [ejensen@glc.org](mailto:ejensen@glc.org)

## CANADIAN FEDERAL

### **Transport Canada / Fisheries and Oceans Canada**

#### GLRI projects:

- DFO collaborates as a principle investigator and on the Management Transition Board on the University of Notre Dame GLRI projects.

#### Fisheries and Oceans Canada (DFO) AIS projects:

- DFO, in collaboration with the Ontario Ministry of Natural Resources, McGill University, University of Waterloo, St. Lawrence River Institute and Environment Canada, is conducting research activities in the nearshore of Lake Ontario and the St. Lawrence River to better understand the distribution, abundance, predators, and impacts of the bloody red shrimp (*Hemimysis anomala*) a recent invader of the Great Lakes. *Hemimysis* has had significant impacts in invaded ecosystems in Europe; however, these are very different ecosystems from the Great Lakes. Current research is aimed at determining if ecological processes in the Great Lakes will moderate previously observed impacts.
- DFO is undertaking a preliminary assessment of the movement of fishes and aquatic invertebrates through the Welland Canal. Fish movement is being studied using acoustic telemetry and also occurs in the St. Marys River.
- Fisheries and Oceans Canada's CEARA plans to continue with several pathway risk assessments: aquarium, water garden, baitfish, live food, ballast water and recreational boating, pending funding. A national ballast water risk assessment, which includes all Great Lakes ports, was completed and published online in January 2014. Recently completed reports include one for the Biological Supply House project led by Oregon Sea Grant (the Great Lakes is one of the focus areas of that project). The report characterizes this pathway for BC. A biological synopsis has been completed for the lacy crust (or coffin box) bryozoan (*Membranipora membranacea*) and for dark false mussel (or Conrad's false mussel) (*Mytilopsis leucophaeata*). A report summarizing the results of an angler use of live bait survey was also completed. A report summarizing some monitoring work on the recreational boating pathway in Northwestern Ontario is in peer review. Work is continues to complete a national recreational boating pathway, including the Great Lakes, with an aim to have a peer review in 2013, pending funding. Results of the bi-national risk assessment for Bighead and Silver carps for the Great Lakes were released in July 2012 and provides advice on key questions to inform prevention, monitoring and control actions. Note: All completed documents associated with CEARA are available at: <http://www.dfo-mpo.gc.ca/science/coe-cde/ceara/index-eng.htm> .
  - CEARA Contact: Becky Cudmore, [becky.cudmore@dfo-mpo.gc.ca](mailto:becky.cudmore@dfo-mpo.gc.ca)
- Development of early detection and rapid response strategies, evaluation of ANS as part of multiple stressors, and reducing uncertainty in prediction and management of ANS, as part of the renewed NSERC Canadian Aquatic Invasive Species Network; <http://caisn.ca>
- Evaluation of a combination ballast water management strategy (exchange + treatment) for protection of freshwaters.
- Evaluation of the biological efficacy and environmental safety of ballast water management systems operated at cold temperatures.
- Evaluation of new tools (such as FlowCAM, and molecular methods) for rapid screening of target species in ballast water samples.
- National Aquatic Invasive Species regulations are being drafted and should be available for public consultation in Spring 2014.

#### Asian Carp Program (DFO):

- In 2013, 22 early detection sites were established in lakes Huron and Erie.
- 2 Grass Carp were captured and immediately responded to and removed from the system.
- A new science laboratory was constructed in Burlington Ontario from which the science activities (surveillance, response, and research) of the program are implemented.
- Canadian-specific outreach and public education programs specifically on Asian carps are underway with partners. Follow 'Asian Carp Canada' on Twitter and Facebook.
- A binational risk assessment, coordinated by Great Lakes Fishery Commission is underway for Grass Carp in the Great Lakes basin.
- Control and containment studies are being conducted in an outdoor mesocosm using surrogate species.
  - Program Contact: Becky Cudmore, [becky.cudmore@dfo-mpo.gc.ca](mailto:becky.cudmore@dfo-mpo.gc.ca)

#### From Transport Canada:

- Transport Canada, the US Coast Guard, and both Seaway Corporations continue to cooperate in the joint enforcement program in Montreal. In 2013, 100% of vessels bound for the Great Lakes Seaway from outside the Exclusive Economic Zone (EEZ) received ballast management exams on each Seaway transit.

No ballast management exams were impacted by the temporary U.S. government shutdown of 2013. In total, all 6803 ballast tanks, during the 371 vessel transits, were assessed. Vessels that did not exchange their ballast water or flush their ballast tanks were required to either retain the ballast water and residuals on board, treat the ballast water in an environmentally sound and approved manner, or return to sea to conduct a ballast water exchange. Vessels that were unable to exchange their ballast water/residuals and that were required to retain them onboard received a verification exam during their outbound transit prior to exiting the Seaway. In addition, 100% of ballast water reporting forms were screened to assess ballast water history, compliance, voyage information and proposed discharge location. BWVG verification efforts indicated that there was no non-compliant ballast water discharged in the Great Lakes Seaway system. The BWVG anticipates continued high vessel compliance rates for the 2014 navigation season. In 2013, no vessels equipped with a Ballast Water Management System (BWMS) entered the Great Lakes Seaway system.

## AT-LARGE

### Minnesota Sea Grant Program

#### Outreach

Minnesota Sea Grant continues to partner with the National Park Service to promote *Stop Aquatic Hitchhikers!*<sup>TM</sup> and *Habitattitude*<sup>TM</sup> awareness and empower communities, organizations and businesses to take action against the spread of AIS in the Great Lakes region. The partnership with USDA Forest Service continues to focus public outreach aimed at preventing AIS spread in and around 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 between the Forest Service, Minnesota Sea Grant and other organizations to communicate AIS issues. Goals are being met by conducting meetings and outreach, organizing large cost-savings product runs, and through social media. Based on Great Lakes Restoration Initiative funding, the Great Lakes Sea Grant Network (GLSGN), led by Minnesota, engaged partners from across the region to complete a collaborative regional campaign. It featured *Stop Aquatic Hitchhikers!*, *Nab the Aquatic Invader*, *Habitattitude*, *AIS-Hazard Analysis and Critical Control Point* program. Overall, GLSGN and its partners generated **14,538,497 exposures (or 300% of our goal)**.

A 2<sup>nd</sup> GLRI grant continues to extend and broaden those regional AIS outreach efforts. So far, the GLSGN and its partners generated **2,491,537 exposures (or 121% of the two-year goal)**. Over the last four months, 85,790 exposures were generated. A 3<sup>rd</sup> GLRI grant addresses Organisms in Trade (OIT). Overall efforts generated 622,126 exposures for a total of **2,626,325 exposures (or 263% of the two-year goal)**. Since January, over two dozen *Habitattitude* and *Stop Aquatic Hitchhikers!* talks were offered at a wide variety of conferences, workshops, classes, outdoor shows, fishing group meetings and other events. Another two dozen booths were hosted at various sport shows and recreation events with partners across the region where new education tools distributed. Thousands of exposures were generated by mass media pick-ups and through social media including Facebook, Twitter, and blogs. New partners joined both *Habitattitude* and *Stop Aquatic Hitchhikers!* campaigns.

As components of both efforts above, several *Nab the Aquatic Invader (NAI)* training workshops and events educated nearly 200 teachers and students. IL-IN Sea Grant updated the *NAI* Website's *Top Desk Administrator* and *Kids' Secret Headquarters* pages (<http://www.iiseagrant.org/nabinvader/>), which had 3,025 visitors. 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 is producing a flash drive loaded with AIS and climate change curriculum.

#### Symposia and Conferences

Registration is open for the ***Great Lakes Briefs on Invasive Organisms Traded in Commerce (GLBIOTIC) Symposium***, June 3-4, 2014, Milwaukee, WI. The symposium aims to advance knowledge and understanding of the organisms in trade (OIT) invasion pathway. The symposium will identify research gaps to improve management of OIT, and will facilitate the efficient transfer of information between researchers, managers, educators, OIT



industries/associations and the public. Presentations will focus on specific OIT invasion pathways, and highlight work being done on topics relating to risk assessment, regulations, outreach and industry efforts. Through this exchange, Great Lakes stakeholders will be better prepared to address issues related to the OIT invasion pathway. More information, including a list of speakers and registration information, is available at [www.seagrant.wisc.edu/oit](http://www.seagrant.wisc.edu/oit).

The **2014 Upper Midwest Invasive Species** Conference will be held in scenic Duluth, MN, October 20-22, 2014 (<http://www.umisc2014.org/>). Building upon three previous conferences, it provides the most comprehensive up-to-date information on all invasive aquatic and terrestrial plant, animal, insect and pathogen species intended to strengthen management, especially prevention, control, and containment. Over 500 researchers, land and water natural resource managers, university researchers, landscape and nursery professionals, agriculture and forestry employees, environmental specialists, lake association members, land owners, government and non-government agency representatives, and educators are expected to attend. Registration for sponsorship and exhibitor opportunities is available. Conference registration will be available soon. Conference hosts are the Invasive Plants Association of Wisconsin, Midwest Invasive Plant Network, Minnesota Invasive Species Advisory Council, and the Wisconsin Invasive Species Council.

### Ballast Water

Sea Grant continues to provide leadership and support in sharing the best available science to promote improvements to ballast water policy and assist in timely and effective implementation of ballast water management and control systems on vessels. Staff continue to support AIS prevention through the Great Lakes Ballast Water Collaborative, SLSDC/SLSMC, Highway H2O Academic Advisory Committee, and Green Marine Science Advisory Committee. 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 seventh full meeting of the Great Lakes Ballast Water Collaborative (~70 participants, Feb. 3-4, 2014, Washington D.C.) focused on facilitation of ballast water treatment standard implementation and the opportunities to align EPA and US Coast Guard regulatory regimes. By April 2014, substantial progress was made resulting in revised regulatory requirements and increased focus on issues unique to protecting the Great Lakes. For details see: [http://www.greatlakes-seaway.com/en/environment/ballast\\_collaborative.html](http://www.greatlakes-seaway.com/en/environment/ballast_collaborative.html).

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### **Saint Lawrence Seaway Development Corporation**

In conjunction with the International Joint Commission, SLSDC hosted the 7th meeting of the Great Lakes Ballast Water Collaborative ([http://www.greatlakes-seaway.com/en/environment/ballast\\_collaborative.html](http://www.greatlakes-seaway.com/en/environment/ballast_collaborative.html)) on March 3rd and 4th at NOAA headquarters in Silver Spring, Maryland. The BWC provides a forum for representatives of industry, state and federal regulators, NGOs, and other interested parties to foster better communication and collaboration in the effort to reduce the risk of introduction and spread of aquatic nuisance species via ship operations. This was the first meeting of the BWC since August 2012. The key focus areas for the meeting were: (1) The implementation of the current regulatory structure, and (2) how to get reliable and effective Ballast Water Management Systems (BWMS) in place in the Great Lakes Seaway System as quickly as possible. The group heard updates and presentations from scientific, regulatory, and industry experts.

Since the last meeting of the Collaborative, there have been several key developments: the publication of the U.S. Environmental Protection Agency's (EPA) Vessel General Permit (VGP2) in March 2013 and the subsequent Enforcement Response Policy in December 2013; the publication of the Transport Canada discussion paper: "Canadian Implementation of the Ballast Water Convention" in October 2012 (<http://goo.gl/dI8APW>); and the Fisheries and Oceans Canada publication of a "National Risk Assessment" in January 2014 (<http://goo.gl/QBw9nx>)

). The March BWC meeting was not only an opportunity to discuss these latest developments; it was also a chance to focus on what lies ahead.

SLSDC is a key member of the binational Great Lakes Seaway Ballast Water Working Group (BWWG), which also includes the U.S. Coast Guard, Transport Canada, and the Canadian St. Lawrence Seaway Management Corporation. The BWWG administers the Great Lakes Joint Ballast Management Exam Program, a comprehensive approach to vessel inspections to assure that satisfactory ballast management practices were carried out on ships bound for the Great Lakes. The exam includes a detailed review of ballast water reports, logs, records, and management plans, as well as sampling of ballast tanks for adequate salinity and to look for evidence of mud (which would suggest unsatisfactory management).

During the 2013 shipping season 100% of vessels entering the Great Lakes Seaway from outside the Exclusive Economic Zone (371 inbound transits) received ballast management exams. No ballast management exams were missed or impacted by the temporary U.S. government shutdown of 2013.

100 percent of ballast tanks (6803 in total) were assessed via sampling or administrative review (an evaluation of a tank where sampling could not be performed or the tank was not being used as a ballast tank at the time of the review. This review includes an examination of vessel documents and interviews with vessel officers):

- Total tanks capable of carrying ballast water - 6803.
- Total tanks physically sampled - 6777 (99.6%)
- Total tanks evaluated by administrative review - 26 (0.4%)
- Total tanks meeting ballast water regulations - 6712 (98.7%)
- Total tanks issued a Letter of Retention - 91 (1.3%)

Vessels with tanks not meeting regulations were required to retain the ballast contents onboard and received a verification exam during their outbound transit prior to exiting the Seaway. In addition, 100% of ballast water reporting forms were screened to assess ballast water history, compliance, voyage information and proposed discharge location.

These efforts assured that no non-compliant ballast water was discharged in the Great Lakes Seaway system during 2013. The BWWG anticipates continued high vessel compliance rates for the 2014 navigation season. In 2013, no vessels equipped with a Ballast Water Management System (BWMS) entered the Great Lakes Seaway system.

The complete 2013 report is available at([http://www.greatlakes-seaway.com/en/pdf/2013\\_BW\\_Rpt\\_EN.pdf](http://www.greatlakes-seaway.com/en/pdf/2013_BW_Rpt_EN.pdf)).

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