

GLP Member Updates - Fall 2011

The following updates were provided for the Nov. 30-Dec. 1, 2011 meeting of the Great Lakes Panel in Ann Arbor, MI.

Federal

[U.S. Fish and Wildlife Service](#)

[insert update here]

Contact:

[U.S. Geological Survey](#)

[insert update here]

Contact:

[U.S. Environmental Protection Agency](#)

[insert update here]

Contact:

[U.S. Coast Guard](#)

The Department of Homeland Security, through the U.S. Coast Guard, is authorized by Congress to develop a national regulatory program to prevent the introduction and spread of aquatic nonindigenous species (NIS) into U.S. waters via ballast water discharges from vessels. By direction of the Nonindigenous Aquatic Nuisance Prevention and Control Act of 1990 (NANPCA) and the National Invasive Species Act of 1996 (NISA), the Coast Guard has promulgated several regulations and continues to develop future regulations to address this issue.

The current ballast water management requirements in the Great Lakes and the St. Lawrence Seaway system are among the most stringent in the world. Mandatory ballast water regulations that include saltwater flushing, detailed documentation requirements, increased inspections, and civil

penalties provide a comprehensive regulatory enforcement regime to protect the Great Lakes. U.S. and Canadian regulations now require all ships destined for Seaway and Great Lakes ports from beyond the exclusive economic zone to exchange all their ballast tanks at sea or flush their residuals.

In 2010, 100% of vessels bound for the Great Lakes Seaway from outside the Exclusive Economic Zone (EEZ) received ballast tank exams on each Seaway transit. All 7754 ballast tanks, during 415 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 boarding 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. The BWWG anticipates continued high vessel compliance rates for the 2011 navigation season.

Independent research by the Fisheries and Oceans Canada (Science) indicates that the risk of a ballast water mediated introduction of aquatic invasive species into the Great Lakes has been mitigated to extremely low levels.

In addition to the current regulations and policies, the Coast Guard is engaged in a rulemaking that would set a performance standard for the quality of ballast water discharged in U.S. waters. This rulemaking is being carried out under NANPCA and NISA, which authorize the Coast Guard to approve alternative ballast water management systems (BWMS) that are found to be at least as effective as mid-ocean ballast water exchange (BWE) in preventing NIS introductions. The rulemaking is entitled "Standards for Living Organisms in Ships' Ballast Water Discharged in U.S. Waters," and documents and public comments relating to the rulemaking can be found at <http://dms.dot.gov> *under docket number USCG-2001-10486. The draft Rule was transmitted to the Office of Management and Budget's Office of Information and Regulatory Affairs (OIRA) on 11 NOV 2011. Normally, OIRA will take up to 90 days to approve the regulation for promulgation or return it to the originator for additional work.*Additional information on Coast Guard involvement with ballast water enforcement/regulation can be found at District Nine Public Affairs (<http://www.d9publicaffairs.com/go/doctype/443/31154/>) and the Coast Guard Headquarters Environmental Standards Division (<http://www.uscg.mil/hq/cg5/cg522/cg5224/>).

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U.S. Army Corps of Engineers

[insert update here]

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National Oceanic and Atmospheric Administration

GLANSIS - The [Great Lakes Aquatic Nonindigenous Species Information System|<http://www.glerl.noaa.gov/res/Programs/glansis/glansis.html>] enhancements supported by the Great Lakes Restoration Initiative continue to progress. This NOAA-funded project to compile and provide access to information on all established nonindigenous species in the Great Lakes functions as a Great Lakes specific node of the USGS NAS national database. In support of early detection and rapid response, funded improvements include:

- Addition of 'range expansion' species - those native to one portion of the Great Lakes but which are considered invasive to other portions of the basin.
- Addition of high priority 'watchlist' species - those which have been identified in the literature as high risk for invading and becoming established in the Great Lakes.
- Updated and consistent 'impact' information, especially potential impacts, better able to risk assessment
- Addition of management information — regulations, best management practices and control methodologies - for all the species in the database.
- Enhanced bibliographic information.
- Addition of non-technical fact sheets for priority species of public interest.

Following review earlier this year, the list of range expansion species has been condensed to 12 species, including two (alewife, margined madtom) from the main GLANSIS list that will be reclassified. Updated fact sheets and impact assessments have been drafted for seven of these species. In developing fact sheets for the compiled list of 53 watchlist species, the need for development of tools for assessing the probability of introduction, probability of establishment, and potential organism impact was recognized. These tools have been drafted, applied to a test set of species (northern snakehead, killer shrimp, parrot feather, parasitic flatworm *Leyogonimus*

polyoon), reviewed, revised, and recirculated for another round of review. Fact sheets for 15 watchlist species have been drafted. Impact assessments for GLANSIS fauna have all been reviewed and have started to be added to their online fact sheets. Revision of the NOAA technical report on this assessment is underway. Of the GLANSIS plants, algae, parasites, and pathogens, 11 plant assessments have been drafted and 94 additional assessments remain to be completed. Two new fact sheets (*Phragmites australis* introduced lineage and red swamp crayfish) have been drafted; as these and other new fact sheets are compiled, management information is now being included. Over 1860 bibliographic records from the former SGNIS database have been incorporated into NAS with the intent of being able to create more comprehensive ANS bibliographies through a future GLANSIS query function. In partnership with Illinois-Indiana Sea Grant, 50 non-technical species fact sheets are in development; 32% are complete at this time.

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National Park Service

[insert update here]

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State/Provincial

Illinois

[insert update here]

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Indiana

[insert update here]

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Michigan

Michigan has new laws pending in the legislature that will create an Aquatic Invasive Species Council, consisting of state agencies and appointees. The Council will have responsibilities for advice on actions pertaining to organisms in trade, ballast water, program funding, and the AIS state management plan, among other things. The legislation is expected to pass and become law in late 2011 or early 2012. Michigan's AIS state management plan is under revision this fall and will be released for public comment this winter following internal agency review. It is being prepared by the Michigan's AIS team, consisting of members from all the state agencies that have a stake in AIS prevention and control. The state has continued to actively engage in the work to keep Asian carp out of the Great Lakes. Michigan's Asian Carp Management and Control Plan is being finalized this fall by the DNR's Fisheries Division.

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Minnesota

[insert update here]

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New York

New York desires a strong national ballast water discharge standard that will be protective of New York's waters which will negate the need for states to attach additional requirements via CWA Section 401 Water Quality Certification. Minus such a standard, the revised VGP is a great opportunity to effect a ballast water discharge that will meet New York's needs. New York, along with Michigan and other states, is urging EPA to incorporate the following standards in the new VGP:

- 100x IMO discharge standard to be implemented by 2016
- An interim discharge standard of 10x IMO by 2014
- Grandfather vessels that install technology prior to 2016 for 10 years
- Require ballast water exchange and flush, and
- Require Best Management Practices to mitigate AIS in the interim period prior to 2016

The 10x IMO discharge standards coupled with ballast water exchange and flush and a set of BMP designed to mitigate AIS in the interim provides increased protection for New York's waters from AIS. This strategy is designed to promote the installation of the best technologies now with the long term goal of reaching the 100x IMO in a reasonable time, hopefully by 2016.

Herbicide treatment was applied to the inlet water of Cayuga Lake in mid-October to destroy Hydrilla biomass prior to the production and release of turions during the fall. This is the first detection of Hydrilla in upstate New York waters. Hydrilla grows aggressively, up to an inch per day, and creates a thick mat of vegetation when it reaches the water's surface. The risk of spreading to Cayuga Lake proper and other regional waterbodies is substantial. Hydrilla is a perennial plant that overwinters in northern climates by producing a storage structure, called tubers buried in the sediments. The tuber re-sprouts in the spring when conditions warm. Hydrilla can set seed, but primarily reproduces vegetatively. Fragments of the plant are capable of dispersing via wind and water currents and can sprout roots and establish new populations.

A three day symposium, Invasive Species Education: Our Strongest Tool for Invasive Species Prevention and Management, was held in conjunction with the Cornell Cooperative Extension Agriculture and Food Service Inservice.

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Ohio

Ohio will have a draft revision of Ohio's AIS State Management Plan completed in December of 2011. Ohio Sea Grant has been working on this revision over the past year and once the draft plan is complete, it will be sent out for comment. We will then work on getting this plan finalized and submitted for approval by the ANS Task Force. Ohio is focusing their GLRI efforts on the control of phragmites in the Western Lake Erie watershed. These efforts will concentrate on state, county and private properties. The Division has been working with the USACE on the Great Lakes and Mississippi River Inter-basin Study (GLMRIS). Our efforts have concentrated on the following priority connections (GLMRIS rank): 1) Ohio and Erie Canal at Long Lake (2), and 2) Little Killbuck Creek (4). The Division also continues to follow up on reported AIS sightings.

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Ontario

[insert update here]

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Pennsylvania

[insert update here]

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Quebec

- **Asian clam:** third monitoring campaign in the St. Lawrence River. The population densities reach up to 1000 ind./m², populations exposed to temperature below 2°C during most part of the year;
- **Strategy and Action plan on invasive wildlife:** in progress, should be published in 2012;
- New **regulation** adopted to forbid the possession of live invasive fish;
- **Bait fish:** regulation in development;
- **Rapid response plan** for marine invasive species in Magdalene Islands;
- **Control project** on green crab; tests for the use of green crabs as baits for lobsters;
- **Detection of aquatic invasive plants:** protocol and identification tools in development;
- **Web application** for exotic invasive species: funding approved, should start before the end of March 2011;
- **Water chestnut:** control program continued, important decrease in rosette abundance in 2011; new infestations sites detected in Ottawa River coming from the infestation in Voyageur Park, Ontario;
- **Creation of an alien invasive species council:** partnerships between NGO, government, industry to detect, prevent and control the spread of invasive species;
- **Didymo:** monitoring project for all the rivers in Bas-Saint-Laurent/Gaspésie;
- **Plan Saint-Laurent:** new projects for the St. Lawrence River, 1) rapid response plan; 2) mock exercises; 3) education and outreach documents; 4) sharing and connecting existing database

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Wisconsin

[insert update here]

Contact:

Regional/Binational

International Joint Commission

Ballast Water Collaborative

- The IJC's U.S. Co-Chair Lana Pollack gave some welcoming remarks and participated in the Great Lakes Ballast Water Collaborative (GLBWC) meeting held in Baltimore, MD on September 27, 2011. This was the latest in a series of GLBWC held over the past two years. Although there is agreement that consistent regulatory action needs to be taken to prevent the discharge of aquatic invasive species in the Great Lakes from untreated ballast water, differences between current and pending Canadian and U.S. federal requirements and U.S. state requirements persist. The IJC is pleased to partner with the SLSDC to facilitate and sustain this ongoing discussion between stakeholders, informed by the best scientific advice available, to assist all parties with resolving their differences and identifying an effective regulatory regime. GLBWC reports are available on the web along with copies of presentations at: http://www.greatlakes-seaway.com/en/environment/ballast_collaborative.html

Update on Binational Aquatic Invasive Species Rapid Response Work Group Activities

(2009-2011 IJC Biennial Cycle)

- For the IJC 2009-2011 priority reporting cycle, the Commission tasked the Binational Aquatic Invasive Species Rapid Response Work Group with building on their 2007-09 binational framework for AIS rapid response. The work group assessed current efforts and available tools with the goal of producing a pilot response plan for a portion of the Great Lakes boundary waters. The work group completed three out of

four projects and reported on their progress at the IJC's Biennial Meeting in Detroit on October 13, 2011. The work groups report, plus the three background reports are all available for review and comment at: [http://meeting.ijc.org/workgroups. ";](http://meeting.ijc.org/workgroups.) Panel members are encouraged to provide feedback to the IJC on the AIS report and other work group reports as well. Your input will be considered along with the advice of the work group and others who submit comments when the IJC formulates its advice to the governments.

[AIS Rapid Response and Production of a Pilot Response Plan](#)

- The IJC was awarded funding under the Great Lakes Restoration Initiative (GLRI) to conduct this priority work. The work group developed a request for proposals and using IJC protocols, carried out a competitive process to select a winning proposal. Four proposals were received and evaluated by the work group. The URS proposal was selected by the work group in spring, 2011. A one year no cost extension was granted by USEPA to offset time lost due to administrative delays and we anticipate completing the project and issuing a final report in 2012. The Panel's advice and guidance during the December 1 workshop in Ann Arbor will help the work group develop a pilot plan that is an adaptable, effective tool for evaluating and executing a binational response to the discovery of AIS and we expect it to be a model for other boundary waters regions. **Contact: Mark Burrows and Li Wang, IJC Great Lakes Regional Office, Windsor, Ontario**

[Great Lakes Fishery Commission](#)

[insert update here]

Contact:

[Great Lakes Commission](#)

- ***Envisioning a Chicago Area Waterway System for the 21st Century***: This collaborative project, led by the GLC and the Great Lakes and St. Lawrence Cities Initiative, is making progress in developing and evaluating options for separating the Mississippi River and the Great Lakes watersheds to prevent the migration of Asian carp and the interbasin exchange of other AIS. An Advisory Committee of stakeholder groups has been convened several times since late 2010 to provide input at critical points during the study. In addition, two peer review sessions have been held to review work completed to

date. A series of public meetings was held in October. The project is on track to be completed early in 2012.

- ***Phragmites Invasions in Michigan: A Symposium to Build Capacity for Management:*** The Commission, in partnership with the State of Michigan, organized, conducted and documented a regional symposium on phragmites management and control in March with more than 120 attendees from Michigan and other Great Lakes states/provinces. The symposium agenda and proceedings document are available on the project website (<http://www.glc.org/ans/phragmites/symposium2011-recap.html>). A post symposium session was also convened to focus on developing a strategic framework to facilitate coordination of phragmites management on a state level. Informed by the symposium outcomes, a revised version of the framework was developed and presented at a public stakeholder input meeting held in August to gather final comments and to further advance communication and collaboration on this initiative.
- **Organisms in trade:** GLC initiated an advocacy effort to advance legislative reform of the Lacey Act to strengthen our nation's regulatory policy to prevent importation of harmful non-native wildlife through the trade of live organisms.
- **National Invasive Species Awareness Week:** GLC participated in National Invasive Species Awareness Week in Washington, D.C. (February/March 2011), presenting on lessons that have been earned from the GLP's regional approach to AIS prevention and control. A presentation was also given on the status of renegotiation of the Great Lakes Water Quality Agreement, emphasizing the Great Lakes Panel's recommendation to the ANS Task Force on the need to integrate a component into the Agreement on AIS prevention and control.
- **Great Lakes Information Network (GLIN) Update:** The GLC is continuing work on updating and enhancing the Invasive Species section of the GLIN, <http://glin.net/envt/flora-fauna/invasive/invasive.html>. This page provides users with links to a variety of sites related to AIS issues, including sites for species-specific information, invasive species in the Great Lakes and recent publications related to aquatic invasions. Staff has continued work on an online information tool to support species-specific management planning on a regional scale for 15 priority AIS that will be featured on GLIN. This work includes a series of species specific fact sheets. The purpose of the fact sheets is to emphasize information with relevance to prevention and control of AIS targeting managers, outreach specialists and policy makers.

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Canadian Federal

Transport Canada / Fisheries and Oceans Canada

Ballast Water Activities:

Transport Canada (TC) and Fisheries and Oceans Canada (DFO) continue to collaborate on a number of ongoing AIS projects in relation to Ballast Water: Canada has completed an evaluation of the efficacy of the current ballast water management program (Journal of Environmental Science and Technology 45: 2554-2561). While results are very positive, Canadian regulations are consistent with the Ballast Water Convention at the International Maritime Organization (IMO), which will phase in requirements for treatment technologies. DFO is now examining if using ballast water treatment technologies in combination with ballast water exchange will provide a feasible means to enhance protection for Great Lakes' freshwater ports against AIS beyond the IMO D-2 discharge standard.

TC, the USCG, and both Seaway Corporations continue to cooperate in the joint enforcement program in Montreal. In 2010, 100% of vessels bound for the Great Lakes Seaway received administrative review, while 7347 ballast tanks (94.8%) were physically sampled. Vessel compliance rates remained high in 2010 (93.8% of all ballast tanks in compliance). 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 boarding during their outbound transit prior to exiting the Seaway.

Non-Ballast Water AIS Activities:

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. Sampling will also be conducted at a known lake trout spawning reef in Lake Ontario where goby predation on *Hemimysis* has been documented to evaluate patterns of seasonal and temporal variation of *Hemimysis* and to make estimates of 'emergent' *Hemimysis* at this reef. *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 remote hydroacoustic surveys of the lock chambers. Aquatic invertebrate movement is being examined by plankton net tows in and around lock chambers.

DFO is continuing its monitoring of the spread and impact of Round Goby in tributaries in southern Ontario.

Centre of Expertise for Aquatic Risk Assessment (CEARA):

DFO's CEARA plans to continue with several pathway risk assessments: aquarium, water garden, baitfish, live food, ballast water and recreational boating, pending funding. The ship-mediated risk assessments for the Great Lakes and Arctic were completed and peer reviewed this spring. Work continues on the next phase of the ship-mediated risk assessment, focussing on the Pacific and Atlantic coasts. The information from all four areas will feed into a national assessment of the ship-mediated pathway. We also plan to continue participating in a larger project (led by Oregon Sea Grant) to gather data on the biological supply house as a potential pathway for AIS; the Great Lakes is one of the focus areas of that project. Biological synopses were completed for Tench (*Tinca tinca*) and *Garra rufa* ("pedicure fish"). Work is underway to complete a national recreational boating pathway, including the Great Lakes. CEARA is leading a bi-national risk assessment for Asian carps which will target the Great Lakes to provide advice on key questions to inform prevention, monitoring and control actions. Work on this project is on schedule and will be completed before the end of 2011. All completed documents associated with CEARA are available at: <http://www.dfo-mpo.gc.ca/science/coe-cde/ceara/index-eng.htm>

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Tribal Authorities

[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. 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 2011. CORA is also assisting with a sea lamprey telemetry project in the St. Marys River in conjunction with the Department of Fisheries and Oceans Canada, U.S. Fish and Wildlife Service and University of Guelph. The results will be used to enhance the effectiveness of alternative control methods such as trapping and barriers by designing and placing structures that take advantage of sea lamprey movement patterns.

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Private Groups (Environmental, Commercial, User)

[Great Lakes United](#)

[insert update here]

Contact:

[Council of Great Lakes Industries](#)

[insert update here]

Contact:

[Great Lakes Sport Fishing Council](#)

[insert update here]

Contact:

University/Research

[Sea Grant Research](#)

[insert update here]

Contact:

[Sea Grant Advisory Services / Extension](#)

[insert update here]

Contact:

[Cooperative Institute for Limnology and Ecosystems Research](#)

[insert update here]

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At-Large

[The Nature Conservancy](#)

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[National Wildlife Federation](#)

[insert update here]

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[University of Minnesota Sea Grant Program](#)

Outreach: MNSG continues to partner with the National Park Service to promote *Stop Aquatic Hitchhikers!*TM awareness and empower communities along the North Shore based on a new two-year grant from the Grand Portage National Monument through GLRI. Over the last year, MNSG staff gave over a dozen talks at lake association meetings, workshops, conferences, and in classrooms that support community efforts to promote

awareness. MNSG also co-hosted 23 booths at sport shows, county fairs and special events. AIS youth programs educated 9 school groups. Communications efforts resulted in seven media pick-ups by newsletters, radio and television. Efforts reached over 11,000 thousand people with prevention messages.

The Great Lakes Sea Grant Network (GLSGN), led by Minnesota, continues to implement a comprehensive regional outreach initiative targeting 15 pathways aimed at preventing the spread of aquatic invasive species (AIS). Based on a current GLRI grant, efforts focus on *Stop Aquatic Hitchhikers!™*, *Nab the Aquatic Invader*, and social media communication. Currently, there are many on-going activities to promote SAH! campaign messages through talks, booths, social media, mass communication, and youth education programs. Over the last year, Sea Grant across the Great Lakes region delivered 136 talks featuring Stop Aquatic Hitchhikers! at meetings and other events, supported mass media communications efforts by Wildlife Forever and other partners, coordinated production of 12 new SAH! educational resources (which serve as models for use elsewhere across the nation), co-hosted 90 displays at boat, sports, and travel shows and other events, posted education messages via social media such as Tweets, podcasts, RSS feeds, and radio, and issued eight news releases that generated 61 story placements in newspapers, radio, television, and e-news. Sea Grant representatives handed out education materials along with key floats, angler fish towels, bumper stickers, and winchpost stickers - all reminding people to clean, drain and dry their watercraft. Our youth education component, *Nab the Aquatic Invader* featuring SAH!, taught 21,663 students and teachers through teacher education workshops, stewardship projects, and AIS service learning courses. *Together, AIS awareness through the Stop Aquatic Hitchhikers! campaign generated 5.1 million exposures, already exceeding the campaign's goal of 4.85 million.*

Building upon this successful effort, EPA awarded Minnesota Sea Grant, on behalf of the Great Lakes Sea Grant Network, a new two-year grant based on GLRI to strengthen and broaden regional AIS outreach efforts. *Habitattitude™* is a national campaign aimed at preventing the release of aquatic plants and pets into the environment by water gardeners and aquarium hobbyists. Working with partners in the pet and plant industries, including PETCO and PetSmart, the GLSGN will use a variety of marketing and education techniques to broaden the campaign's partnership, started in 2004, across the Great Lakes region. Work will also help federal, state, and tribal agencies, businesses, academia, and non-governmental organizations prevent the spread of both terrestrial and aquatic invasive species through training workshops and new materials based on the HACCP program. These entities could spread invasive species based on movement of field equipment

or products, if appropriate actions are not taken. SAH! and youth education with a focus on global climate change will be promoted.

The GLSGN, led by Wisconsin, continues to conduct outreach efforts in partnership with fishing tournament organizers and professional anglers. For the Minnesota component, MNSG supported four events: Cabela's Masters Walleye Circuit (Lake City, June), Sportsman's Club of Lake Vermilion Take a Kid Fishing Day, which was co-hosted by professional anglers (Tower, July), the North American Bass Circuit (Lake Minnetonka, August), and the Cabela's Masters Walleye Circuit World Championship (Prairie du Chien, WI, October).

Ballast Water: MNSG is actively engaged in the Great Lakes Ballast Water Collaborative (BWC) on a transfer risk mitigation project. The purpose of the project is to improve understanding of the risk for transfer of AIS, revise BWM management practices for domestic vessels, and recommend short-term risk mitigation measures that can be taken. In an advisory role, a working group consisting of members of the scientific, industry, environmental, and regulatory community, has identified its key tasks, and roles and function for sub-groups. An expert panel of AIS scientists will be convened to lead the risk assessment. A technology and practices panel will lead the evaluation of current and potential risk mitigation measures. Visit: www.greatlakes-seaway.com/en/environment/ballast_collaborative1101.htm.

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[Coastal Management](#)

[\[insert update here\]](#)

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Contact: