Great Lakes Panel Member Updates Fall 2015

Meeting of the Great Lakes Panel on Aquatic Nuisance Species October 5-6, 2015 | Ann Arbor, Michigan

U.S. Federal

U.S. Fish and Wildlife Service

No update provided

Contact: Mike Hoff, U.S. Fish and Wildlife Service, 612-713-5114, michael_hoff@fws.gov

National Oceanic and Atmospheric Administration

No update provided

Contact: Felix Martinez, National Oceanic and Atmospheric Administration, 734-741-2254, felix.martinez@noaa.gov

National Park Service

No update provided

Contact: Phyllis Green, Isle Royale National Park 906-487-7140 Phyllis Green@nps.gov

U.S. Army Corps of Engineers

No update provided

Contact: Jim Galloway, U.S. Army Corps of Engineers, 313-226-6760, jim.e.galloway@usace.army.mil

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. The Coast Guard has certified five Independent Labs (IL) that will be involved in the type approval process. Duluth-Superior's Great Ship Initiative is part of a certified IL. There are several BWMS in the process of type approval testing at these laboratories and another 30 have sent a Letter of Intent stating they will begin testing soon. The Coast Guard has received three applications for type approval.

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 +50 AMS Determination Acceptance Letters to date including five for fresh water operations.

Ballast Water Working Group (BWWG)

The ballast water working group has completed the 2014 annual report and it is posted on the Ninth Coast Guard District website. In 2014, 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 8.497 ballast tanks, during 454 vessel transits, were assessed; (100% of the ballast tanks on inbound vessels were assessed in 2009-14).

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U.S. Forest Service

No update provided

Contact: Dan McKinley, U.S. Department of Agriculture-APHIS, 414-297-3431, dmckinley@fs.fed.us

U.S. Department of Agriculture-APHIS

No update provided

Contact: Vacant

U.S. Department of State

No update provided

Contact: Vacant

U.S. Environmental Protection Agency

No update provided.

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U.S. Geological Survey

As part of a two-year project to assess the spawning potential of Grass Carp in the Sandusky River, ichthyoplankton were sampled June through August of 2015. Two sampling approaches were taken: (1) bongo net tows to collect eggs and (2) larval light trapping to collect larval fish. The hypothesized spawning site was determined to be near Roger Young Park in Fremont, Ohio. Therefore, four sites were sampled along the predicted egg drift distance of approximately 10 km using bongo nets beginning north of Fremont, Ohio near Brady Island extending to the I-80 bridge. The sites were sampled once a week, except during flood events when sampling was increased to three times weekly. Larval fish were sampled once weekly using light traps deployed for one hour in a variety of habitat types. From June to July, light trap sites were clustered in backwater areas approximately 8 km downstream of the I-80 bridge. In August, light trap sites were extended downstream into backwater areas of Muddy Creek Bay. Currently, collected samples are being processed for the presence of Grass Carp eggs and larvae. Additionally, temperature loggers were placed in the river at 10 sites along a distance of 17 km. These data will be used to quantify conditions (e.g. temperature and flow) under which spawning is likely using a continuous Bayesian network modeling approach. Identical bongo and larval light trap sampling was also conducted in the River Raisin and sites near its mouth in collaboration with Michigan DNR. Sampling was extended to these sites because comparatively large numbers of Grass Carp have been captured near the mouth of the River Raisin.

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State/Provincial

Illinois

No update provided.

Contact: Kevin Irons, Illinois Department of Natural Resources, 217-557-0719, kevin.irons@illinois.gov

Indiana

No update provided.

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Michigan

Michigan is in the second year of administering a new grant program that was initiated in fiscal year 2015 by the Michigan Department of Natural Resources (MDNR) in collaboration with the Departments of Environmental Quality (MDEQ) and Agriculture

and Rural Development (MDARD) as part of a new \$5 million state budget appropriation to support an interdepartmental aquatic and terrestrial invasive species program. The 3 Departments continue to phase in implementation of the interdepartmental procedure, Invasive Species Decontamination for Field Operations in Michigan, that was finalized in 2014 to assist state employees in minimizing the risk of transferring invasive species while performing job activities in the field.

The MDARD and MDNR are implementing modifications to statute that became effective in April, 2015 regarding prohibited and restricted species. Specifically, the statute calls for the development of permitted species lists as well as the use of science-based risk assessments to evaluate plant and animals for prohibited and restricted listing.

Michigan is collaborating with the Great Lakes states, The Nature Conservancy, and other partners on developing an interstate Early Detection and Response Plan. A scoping meeting was held in June, 2015 to initiate work on surveillance plan development. A table top mock response exercise was conducted

In September, 2015 begin work on response planning. Two species of crayfish, Red Swamp Crayfish and Yabby, were used in the mock response scenario.

The Departments responded to new infestations of New Zealand mudsnails in the Pere Marquette River, Didymo (a nuisance algae) in the St. Marys River, yellow floating heart (an aquatic plant) in Wayne County, and reports of red swamp crayfish being used as bait at Lake Macatawa.

The MDNR Wildlife Division continued to conduct early detection monitoring and response for aquatic plants as well as continue removal efforts for known infestations of European water-clover, European frog-bit, parrot feather, water lettuce and water hyacinth. The MDEQ 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. The MDNR Fisheries Division continued to conduct a research project focused on distribution, reproductive capacity, and origin of grass carp in western Lake Erie as well as a separate project to evaluate crayfish distribution in the state.

The MDARD and MDNR's Law Enforcement Division are continuing inspections and education efforts for wholesale/retail bait dealers, plant nurseries, and the pet industry. A second AIS "Landing Blitz" was held in July 2015, to raise awareness about preventing the spread of AIS through recreational boating.

Contact: Sarah LeSage, Michigan DEQ, 517-284-5472, lesages@michigan.gov

Minnesota

Most people following aquatic invasive species laws: The Minnesota Department of Natural Resources held a "Think Zero" weekend this summer to raise awareness of aquatic invasive species prevention and to highlight our "Clean, Drain, Dispose" message. So far in 2015, about 88 percent of people in Minnesota are following aquatic invasive species laws. Fewer people are violating the laws this year than in past years: violation rates were 17 percent in 2014 and 23 percent in 2013.

Watercraft inspection program grows through partnerships: Since April 2015, DNR staff has trained more than 660 local government watercraft inspectors. These local inspectors have the same authority as DNR inspectors but are managed by local government units. The DNR has approximately 100 watercraft inspection staff.

Starry stonewort discovered in state: In August 2015, the Minnesota Department of Natural Resources confirmed starry stonewort (Nitellopsis obtusa) in Lake Koronis and Mud Lake, connected to Koronis, in Stearns and Meeker counties. This is the first confirmed case of this invasive species in Minnesota.

Projects to control zebra mussels: The Minnesota Department of Natural Resources, working with the University of Minnesota, has established a new process for permitting pilot projects to control zebra mussels - see mndnr.gov/zmpilotprojects for more information. The Minnesota Department of Natural Resources and partners are continuing to monitor for zebra mussels in two lakes where pesticides were applied in 2014 and 2015 to eradicate newly-discovered zebra mussel populations.

Aquatic invasive species training and trailer decal repealed; new affirmation required in 2016: The Minnesota Legislature repealed the aquatic invasive species training and trailer decal program, which was due to launch this year. In its place, the Legislature required that an aquatic invasive species "affirmation" will be added to new watercraft and nonresident fishing licenses beginning in 2016.

Applicants for these licenses will receive a summary of aquatic invasive species laws and will be required to affirm that they have read and understand the summary in order to receive their license. No fees are associated with the affirmation.

Work with county staff: Minnesota Department of Natural Resources aquatic invasive species prevention planners conducted ten workshops with county representatives in 2015. At these workshops, county staff shared ideas for using aquatic invasive species prevention funds.

Invasive carp status: On June 10, 2015, the Upper St. Anthony Falls lock closed to help prevent invasive carp from spreading into the Upper Mississippi River. In 2015, six bighead carp were caught in the St. Croix River near Stillwater, Minnesota; five of those were caught by anglers. This is the furthest upstream in the St. Croix River - a tributary of the Mississippi River - that we have detected invasive carp.

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New York

The New York Invasive Species Advisory Committee (25 NGOs) met on June 26 and the Council (9 agencies) met on May 7. The updated NY State Aquatic Invasive Species Management Plan was released on July 15 during Invasive Species Awareness Week. An expanded boat steward and decontamination pilot program in the Adirondack Park region was launched Memorial Day weekend and will soon be finishing its first season. We recently surveyed all existing boat stewardship and watercraft inspection sites in the state – this data will inform efforts to increase coverage across the state. Hydrilla management continues at the Cayuga Lake Inlet and Tonawanda Creek/Erie Canal. The hydrilla infestation in Croton River and Bay is being monitored as a follow up to last year's survey. In addition, we have contracted an aquatic plant survey of Hudson River locations north and south of Croton to better delineate the extent of the hydrilla infestation. A dye-study of Croton River flow dynamics will be conducted in late September – early October. The statewide invasive species public awareness poll conducted by the Cornell University Human Dimensions Unit found that respondents differed in perspectives and behaviors regionally (less awareness in New York City – Long Island areas). Boaters were particularly aware of how their behavior could contribute to invasions. The majority of respondents would be willing to change their behaviors depending upon cost, time, and difficulty involved.

Contact: Catherine McGlynn, NewYork DEC, 518-408-0436, catherine.mcglynn@dec.ny.gov

Ohio

- Continued control efforts of Phragmites and Hydrilla in the Lake Erie basin and Hydrilla in Pymatuning Lake on the Ohio and Pennsylvania boarder (within 10 miles of Lake Erie watershed).
- Continued to monitor for Bighead Carp and Silver Carp in Lake Erie and the Muskingum River using eDNA, routine sampling activities, and telemetry. Recent evidence of Snakehead eDNA in the Killbuck Creek (tributary to Muskingum River) prompted a follow-up survey where not live fish were observed. We will continue to monitor this situation.
- Continue surveillance for grass carp to determine if diploid (fertile) fish were present in the wild.
- Continue 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 is developing the final design for closure. Preliminary closure designs at Little Killbuck Creek and Mosquito Creek are complete and we are assessing this information to determine a path forward. The initial assessment for closure options at Grand Lake St Marys is complete and we are working on the final closure design.
- Completed the first year of inspection program to determine if AIS, including Bighead and Silver Carp, are being transported through the bait trade.
- Initiated an AIS outreach campaign through Wildlife Forever to target anglers moving bait. This outreach program includes billboards, print media, and items for distribution at events.
- Participated in the following groups: Council of Great Lakes Governors, 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.

Contact: John Navarro, Ohio DNR Division of Wildlife, 614-265-6346, john.navarro@dnr.state.oh.us

Ontario

No update provided.

Contact: Francine MacDonald, Ontario Ministry of Natural Resources, 705-755-5136, Francine.macdonald@ontario.ca

Pennsylvania

No update provided.

Contact: Jim Grazio, Pennsylvania DEP, 814-217-9636, jagrazio@pa.gov.

Quebec

No update provided.

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Wisconsin

This has been a particularly busy summer with the discovery of Faucet snails in an inland trout stream, Starry stonewort in five southeastern Wisconsin lakes and Round goby's up to the dam on Lake Winnebago. The Starry stonewort discovery highlighted the importance of states working together as we were dependent upon information gained from previous work done by both Michigan and Indiana and shared what we learned with Minnesota who discovered it in two of their lakes after our own discovery. It is a great help to be able to talk with someone that has experienced a new AIS to learn what has been done, what has worked and what has not.

Wisconsin continues to make significant progress on its GLRI grants and is very grateful to the USFWS for these grant dollars. Monitoring, outreach, and control are all important parts of Wisconsin's AIS program that is partially funded by federal dollars. Without this financial support AIS would be having a much greater impact on the Great Lakes ecosystem.

The Chicago Area Waterways Advisory Committee (GLMRIS) continues to meet. Wisconsin has participated during several of these meetings and continues to be engaged in discussions. Congress is waiting to hear from the committee so they may direct the Army Corps of Engineers to take actions to prevent the movement of AIS through the system.

Wisconsin is updating its strategic plan and is utilizing a core group of stakeholders to provide input. Pieces of the plan are being modeled after other state plans so a regional plan could be developed at some point in the future.

Contact: Bob Wakeman, Wisconsin DNR, 262-574-2149

Regional/Binational

International Joint Commission

No update provided.

Contact: Mark Burrows, International Joint Commission, 519-257-6709, burrowsm@windsor.ijc.org

Great Lakes Fishery Commission

Marc Gaden, Great Lakes Fishery Commission, 734-662-3209 x14, marc@glfc.org

Great Lakes Commission

Asian Carp

In July, the GLC, in conjunction with the Great Lakes Fishery Commission (GLFC), delivered a letter to President Obama urging funding for Asian carp prevention and control efforts in the FY 2017 federal budget. These efforts include actions currently being coordinated by the Asian Carp Regional Coordinating Committee as well as continued work under the Army Corps of Engineers' Great Lakes and Mississippi River Interbasin Study (GLMRIS), with a focus on control technologies that could be deployed at the Brandon Road Lock and Dam to prevent the one-way, upstream transfer of aquatic nuisance species.

The GLC continues to work in partnership with the Great Lakes and St. Lawrence Cities Initiative to investigate solutions to the threat of Asian carp and other aquatic invasive species (AIS) passing through the Chicago Area Waterways System (CAWS) while maintaining current uses of the system. Specifically, the GLC is supporting and serves on a 32-member advisory committee that is the primary regional stakeholder forum seeking solutions to the problem of AIS transfer through the CAWS. The committee entered a new consensus-seeking phase in 2014 with support from an experienced facilitation team (Gail Bingham, president emeritus of RESOLVE, and Tim Brown, founder and president of Wabashco LLC) and is developing consensus on short- and long-term recommendations. The committee has met eight times since beginning the current phase, most recently on August 26. The most promising areas of discussion and research are how to achieve the highest level of AIS risk reduction from modifying a navigation lock (e.g., the "GLMRIS lock") and the evaluation of a conceptual framework involving three control points in the CAWS (at Brandon Road, near Alsip on the Cal-Sag Channel, and near the Stickney wastewater plan on the Chicago Sanitary and Ship Canal) that would create an AIS-free buffer zone. This framework, including the technologies or structures that could be deployed at the control points, is currently a focus of discussion and is not a formal recommendation. It is being used as a basis to analyze impacts to water quality, flooding, and transportation. Substantial research has been conducted in these areas by the committee's technical consultant, HDR Inc. In addition, the committee continues to support the evaluation of the Brandon Road Lock and Dam as a control point to prevent

Asian carp and other species moving from the Mississippi River into the Great Lakes basin. The committee recently wrote to Congress and the President urging adequate funding in FY 2017 for the Corps of Engineers' Brandon Rd. feasibility study, similar to the GLC-GLFC letter discussed above. The committee is aiming to finalize its recommendations by December 2015. Options for maintaining the Advisory Committee or developing other approaches to continue work in this area will be considered in coming months.

Internet Trade

Work is wrapping up on a Great Lakes Restoration Initiative-funded project to develop software and tools to track, identify and monitor the sale of invasive species via the internet. The web-crawling software system – the Great Lakes Detector of Invasive Aquatics in Trade (GLDIATR) – is complete and in the initial stages of operation. A stakeholder workshop was held in March to share findings, provide participants an opportunity to use GLDIATR, and gather input on next steps. In July the GLC conducted outreach to 160 online retailers identified using the software in an effort to limit the availability of AIS for sale online. Staff are evaluating responses and behavior changes as a result of this outreach. Staff also continues to provide informational presentations on the project to interested stakeholder groups.

Legislation

The GLC continues to support federal efforts to prevent the importation of potentially harmful non-native species. The GLC supports U.S. Fish and Wildlife Service plans to list eleven new species as "injurious" under title 18 of the Lacey Act. The GLC is previously on record calling for more effective pre-import screening efforts and passed a new resolution at the Annual Meeting in September.

Ballast Water

The GLC is working with a Ballast Water Task Force of the states and provinces to assess current ballast water standards and develop a common platform for the region from which to advance a future ballast water management regime. The Task Force met via conference call in February 2015. The task force has identified research topics that will be addressed through one or more white papers to its work. The GLC is coordinating with the Great Ships Initiative, the Great Lakes Ballast Water Collaborative and the Council of Great Lakes Governor's AIS Task Force in this effort.

Phragmites

The GLC continues to expand a partnership with the USGS-Great Lakes Science Center to lead communications and research on the non-native plant *Phragmites*. The Great Lakes *Phragmites* Collaborative, established in 2012, engages the resource management community, reduces redundancy, links science and management, facilitates adaptive management, and encourages a systems approach to management and conservation associated with this species. The Collaborative supports an interactive web hub (www.greatlakesphragmites.net), webinar series, social media presence 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 symbiotic relationships to both control non-native *Phragmites* and encourage establishment of native plants. These collaboratives use the principles of Collective Impact to address this natural resource challenge and staff are developing a manuscript to showcase this approach as a novel strategy to align priorities and resources for complex issues. Several products have been completed or are being developed, including an herbicide quick guide reference, best practices case studies and adaptive management decision tool. Staff also gave presentations at the Society of Wetlands Scientists conference and the Midwest Invasive Species Conference.

Zebra and Quagga Mussels

Working in partnership with USGS, the Great Lakes Fishery Commission and NOAA, the GLC is supporting the Invasive Mussel Collaborative, which is providing a framework for communication and coordination among scientists, managers and others to share information and lessons learned, guide supporting research, and inform management actions related to control of zebra and quagga mussels. A steering committee for the Collaborative has been convened and has met twice via conference call since its first inperson meeting in February 2015. The first in a series of webinars on issues of interest to the steering committee was held July 22, focused on lessons learned from recent open-water applications and field trials of Zequanox®, a newly approved biocontrol for zebra and quagga mussels (a recording and more information is available at www.invasivemusselcollaborative.net). Staff is also developing a more comprehensive web "hub" (modeled after greatlakesphragmites.net) of invasive mussel information, to be released later this fall.

Sea Lamprey

The GLC, in collaboration with the GLFC, released a new mapping application that allows users to visualize the geographic impact of adding or removing sea lamprey barriers on rivers and streams in the Great Lakes region. The application is available at http://data.glfc.org. Enhancements are being added to further improve the search, inset map and user interface. Staff are also working to integrate information that will show how far up a given waterway sea lamprey larvae have been found historically to add context to barrier removal options, and to develop fact sheets for individual barriers. Building on this work, the GLC has secured a

new grant from the Great Lakes Fishery Trust to build a barrier removal collaboration tool that will allow stakeholders to collaborate on barrier removal decisions.

Data Integration

The GLC's GIS and data management teams are collaborating with the Michigan departments of Environmental Quality and Natural Resources under a U.S. EPA Exchange Network challenge grant to develop a data integration tool for citizen-scientist observations of invasive species. The project is a test case for a larger regional data integration tool that will allow data from multiple species identification and tracking programs to be consolidated into a central database. The programs will maintain information specific to their needs, but species, location, observation date and other general information will be searchable and viewable for use as a regional reference. Currently, data transformation protocols are being finalized to allow incorporation of data from multiple monitoring programs. The database will be housed at Michigan State University. A user interface and online map to view the data will be housed on GLIN when the project is complete.

Contact: Tim Eder, Great Lakes Commission, 734-971-9135, teder@glc.org

Canadian Federal

Fisheries and Oceans Canada

No update provided

Contact: Becky Cudmore, Fisheries and Oceans Canada, 905-336-4474, becky.cudmore@dfo-mpo.gc.ca

Transport Canada

No update provided

Contact: Chris Wiley, Transport Canada, 519-464-5092, chris.wiley@tc.gc.ca

LOCAL COMMUNITIES

United States

No update provided

Contact: Vacant

Canada

No update provided

Contact: Vacant

Private Environmental/User Groups

Great Lakes Sport Fishing Council

No update provided

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Tribal Authorities

Great Lakes Indian Fish & Wildlife Commission

No update provided

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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 2015. 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.

Contact: Mike Ripley, Chippewa Ottawa Resource Authority, 906 632-0072, mripley@sault.com

PRIVATE/COMMERCIAL

Council of Great Lakes Industries

No update provided

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Lake Carriers' Association

No update provided

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University/Research

Great Lakes Sea Grant Network-Research and Extension

2015 Michigan AIS and Boating Survey Final Report is now available at: http://www.miseagrant.umich.edu/wp-content/blogs.dir/1/files/2012/03/2015-AIS-Final-Report.pdf

Contact: Rochelle Sturtevant, NOAA Great Lakes Sea Grant Network, 734-741-2287, Rochelle.Sturtevant@noaa.gov

Cooperative Research Unit

No update provided

Contact: Tom Johengen, Cooperative Institute for Limnology and Ecosystems Research, 734-741-2203, johengen@umich.edu

At-Large

Invading Species Awareness Program, Ontario Federation of Anglers and Hunters

No update provided

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The Nature Conservancy

No update provided

Contact: Lindsay Chadderton, The Nature Conservancy, 574-217-0262, lchadderton@tnc.org

Wildlife Forever

No update provided

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Minnesota Sea Grant

The Great Lakes Sea Grant Network (GLSGN) led by Minnesota is wrapping up the region's first multi-media campaign funded through GLRI. Since 2010, GLSGN and its partners exposed nearly 18.5 M people to Stop Aquatic Hitchhikers! prevention messages. Highlights include: 420 talks educated nearly 28,800 people; 325 booths taught nearly 250,000 people; 300+ mass media pickups (e.g., television, radio, newspapers, newsletters, magazines, e-news) resulting in nearly 14.7 people exposed. Social media created over 1.4 million exposures. GLSGN partnered with 380 entities to promote the campaign. For Habitattitude, 3.7 M impressions were generated. GLSGN and its partners gave 150+ talks and booths which educated nearly 64,000 consumers, nearly 40 communication and education products created nearly 360,000 exposures. Social and mass media generated 3.3 M exposures. Evaluations showed raised awareness and behavior change following exposure to both campaigns. Nab the Aquatic Invader! efforts educated over 122,000 teachers and students through 250+ workshops and other events, and its website (http://www.iiseagrant.org/NabInvader/). Staff gave presentations and mentored teachers who guided student-developed AIS stewardship projects. Thousands of education tools were distributed to teachers at events including thumb drives containing new AIS and climate change curriculum.

Contact: Doug Jensen, Minnesota Sea Grant, 218-726-8712, djensen1@umn.edu

Saint Lawrence Seaway Development Corporation

The Saint Lawrence Seaway Development Corporation (SLSDC) remains very interested in the issue of aquatic invasive species in the Great Lakes and St. Lawrence Seaway and continues to work with the ship industry and regulators on associated issues and solutions. SLSDC participates on the Great Lakes Ballast Water Working Group (BWWG) with the U.S. Coast Guard, Transport Canada – Marine Safety and Security, and the St. Lawrence Seaway Management Corporation. The BWWG is a joint effort to enforce harmonized ballast water management procedures and regulations and assure ships entering the Great Lakes pose minimal risk of introducing any new species. Since 2006 no new ballast-attributed species have been identified in the Great Lakes.

Contact: David Reid, Saint Lawrence Seaway Development Corporation, 734-663-0198, dfrBWR@gmail.com

National Wildlife Federation

No update provided.

Contact: Marc Smith, 734-887-7116, msmith@nwf.org

North Central Regional Aquaculture Center, Department of Fisheries and Wildlife No update provided.

Contact: Chris Weeks, Department of Fisheries and Wildlife, 517-353-2298, weekschr@msu.edu