

# Great Lakes Panel Member Updates

## Fall 2018

Meeting of the Great Lakes Panel on Aquatic Nuisance Species  
November 7-8, 2018 | Ann Arbor, Michigan

### U.S. Federal

#### U.S. Fish and Wildlife Service

No update provided.

Contact: Amy McGovern, U.S. Fish and Wildlife Service, 612-713-5109, amy\_mcgovern@fws.gov

#### National Oceanic and Atmospheric Administration

##### Habitat Restoration

(POC: Terry Heatlie)

We inventoried and planned treatment of sweet clover on habitat shoals in the Detroit River at Stony Island. The timing of herbicidal treatment is not known at this time but it could happen as early as this fall. If not then, the treatment will take place during spring 2019. Treatments are planned to occur for all invasives over the next two seasons.

(POC: Cassie Lovall)

The Clinton River Spillway was given one final treatment along its length (same total as the previous report -- 67 acres) for invasive vegetation. Phragmites is the dominant species; less abundant species treated include: purple loosestrife, reed canary grass, autumn olive, honeysuckle, common buckthorn, privet, multiflora rose, glossy buckthorn, box elder, Russian Olive, crabapple, white mulberry and black locust.

##### Research

(POC: Steve Pothoven)

During the last 6 months we continued work on:

- 1) Our long-term research program on Lake Michigan off Muskegon, MI, to assess lower food web components along a nearshore to offshore gradient. Collections include invasive species, including quagga mussels and spiny water fleas. Work will continue over the next 6 months.
- 2) The long-term assessment of consumption requirements of spiny water flea *Bythotrephes* relative to zooplankton production in Lake Michigan. Manuscript to be submitted.
- 3) Our assessment of alewife and round goby energy density in Lake Michigan. This work is done in collaboration with the USGS Great Lakes Science Center. Manuscript to be submitted.
- 4) The assessment of rainbow smelt energy dynamics in Lake Huron and Erie, also in collaboration with the USGS Great Lakes Science Center. Manuscript to be submitted within 6 months.
- 5) Our assessment of dreissenid veliger dynamics in Lake Michigan. Manuscript submitted.

(POC: Ashley Elgin)

During the last 6 months we also:

- 6) Conducted the annual southern Lake Michigan benthic survey in August and tracked Lake Michigan quagga mussel body condition and reproductive status throughout the season. We also participated in the Lake Ontario CSMI whole-lake benthic survey.
- 7) Wrapped up our Lake Erie quagga field growth experiment and are monitoring an ongoing complementary year-long experiment in Lake Ontario.

-We conducted biweekly/monthly time points for a Mussel Watch Temporal study of mussel condition and metabolomics. The study will include the end of November.

##### Outreach

- 8) We continued improvements on and adding new content to the GLANSIS website. Specific updates to be given separately in person during the actual meeting.

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

#### National Park Service

- 1) Parks report annually on their terrestrial and aquatic species of concern work. The Midwest Regional office AIS team is working on QA/QC for this information.
- 2) The NPS Midwest Region AIS team is working to enhance HACCP coverage for parks in the region.
- 3) Working with the Invasive Mussel Collaborative and other partners, NPS-Brenda Lafrancois is leading some experimental removal at Good Harbor Reef off of Sleeping Bear Dunes of dreissenid mussels. Contact Brenda\_lafrancois@nps.gov for more information.
- 4) Asian carp: Indiana Dunes has created educational traveling trunks for educators with GLRI/Asian Carp support. Educators can Contact Kim Swift (Kimberly\_swift@nps.gov) for more information.
- 5) Many park units continue to implement their education and control work of invasive species, supported by GLRI. Contact Marcus Key (marcus\_key@nps.gov) for more information.

Contact: Erin Williams, National Park Service, 612-624-7286, erin\_williams@nps.gov

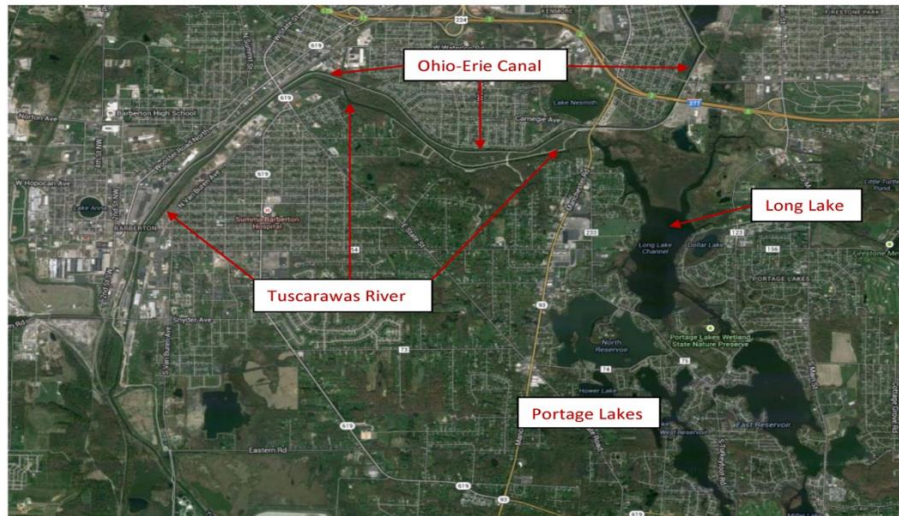
### **U.S. Army Corps of Engineers**

#### Water Resource Development Act (WRDA) 2018 Highlights related to invasive species:

- Aquatic Plant Control authorization increased to \$110M annually. Appropriations must come in a separate bill.
- Water craft inspection stations expanded to upper Missouri river, upper Colorado, and upper Platte.
- Aquatic Nuisance Species Research Program authorized to \$3M/year for 5 years to work on HABs control, prevention, and early detection

#### Ohio and Erie Canal Aquatic Nuisance Species Barrier (GLMRIS – Other Pathways)

- Design and construct structural measures to prevent or reduce the probability of aquatic nuisance species (e.g. Asian Carp) moving from the Tuscarawas River Watershed into the Cuyahoga River Watershed via the Ohio-Erie Canal
- Construction contract recently awarded



#### CSSC Dispersal Barriers

- On 29 Sep, LRC awarded a contract for installation of electrical equipment at Permanent Barrier I (PB1). This is the last significant contract for the construction phase of the project, and the first that does not involve the sole source contractor responsible for the construction and O&M of existing barriers. Construction and safety testing are scheduled for completion in FY2020. Full time operation of PB1 is expected to begin in FY21.

#### GLMRIS

- The Chief's Report for the Brandon Road feasibility study is scheduled for completion in February 2019.

#### Barkley Lock and Dam

- LRN is providing technical support to the US Fish and Wildlife Service as they prepare to deploy an acoustic deterrent system (BioAcoustic Fish Fence - BAFF) at Barkley L&D in early 2019.

#### Hydrilla – Erie Canal/Tonawanda Creek, NY

- Completed the 5th year of the demonstration project using a combination of endothall for larger treatment blocks and chelated copper for smaller targeted patches of hydrilla (0.5 – 3 acres)
- Evaluated the use of a bubble curtain to isolate 1 treatment area; preliminary results are mixed

- Hydrilla frequency remains very low and the largest challenge is gaining control over small patches using targeted methods



Pre-deployment (above); post deployment (below) reveals tangle around brackets that may have interfered with performance.



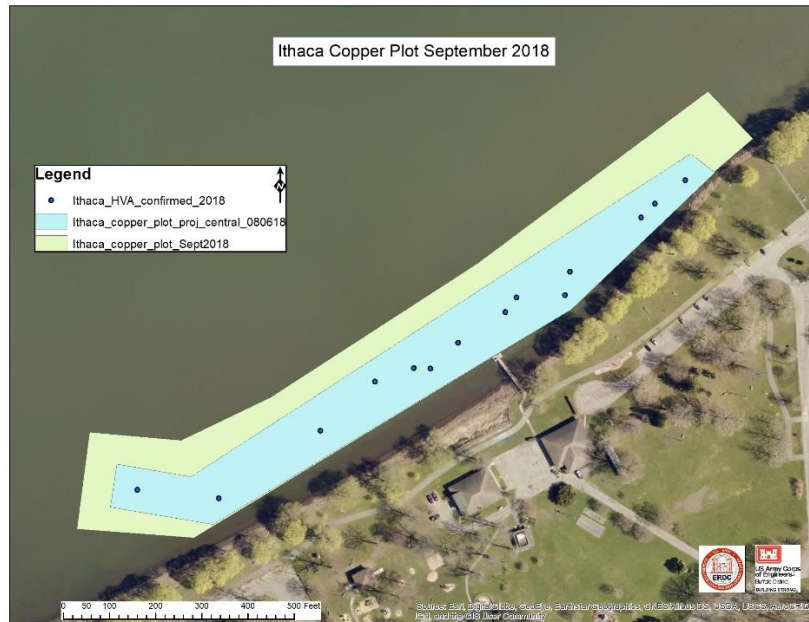
#### Hydrilla – Cayuga Lake, Aurora, NY

- Completed the 2nd year of the demonstration project using a combination of fluridone for larger treatment blocks and chelated copper for smaller targeted patches of hydrilla (0.5 – 5 acres)
- Hydrilla frequency remains very low and the largest challenge is gaining control over small patches using targeted methods
- Although hydrilla frequency is very low we observed several small new patches of hydrilla adjacent to primary treatment areas



#### Hydrilla – support for others

- Completed a survey of Pymatuning Lake in PA/OH located on the state line and in very close proximity to Lake Erie; the lake is in the Pittsburg District and is located upstream of the Shenango River Reservoir, a Corps lake.
- Completed a survey/training at Raystown Lake with NAB staff and Juniata College
- Completed 2 treatments at Cayuga Lake, Ithaca, NY using chelated copper to further evaluate efficacy in small plots



### Sea Lamprey Control – multiple locations

- Manistique River, Schoolcraft County, Michigan: The USACE is conducting a feasibility study for the construction of a sea lamprey barrier/trap project. The proposed plan is to construct a fixed crest steel sheet pile (SSP) lamprey barrier anchored in concrete containing four sea lamprey traps. The barrier will prevent lamprey from reaching spawning and nursery habitat.
- Little Manistee River, Manistee County, Michigan: The USACE is conducting a feasibility study for the construction of a permanent attractant water trap (AWT) sea lamprey trap in one bay of the existing Michigan Department of Natural Resources fish weir, which acts as a sea lamprey barrier.
- Harpersfield Dam, Grand River, OH: A construction contract was awarded for the removal of an obsolete dam and construction of a modern sea lamprey barrier with trap.
- Bi-directional Fish Passage Project, Union Street Dam, Traverse City, Michigan: The USACE is participating in a study for a bi-directional fish passage project at the Union Street dam, located on the Boardman River in Grand Traverse County, Michigan. The proposed project is the reconstruction of the Union Street Dam for the development of a selective bi-directional fish passage project. The design consists primarily of two fish sorting artificial channels on the north bank and a nature-like rock armored bypass channel on the south bank of the Boardman River. The purpose of the project is to test multiple fish sorting technologies and techniques to provide up and downstream passage of native fishes while simultaneously blocking or removing undesirable fish species trying to pass, specifically sea lamprey.
- The Grand River Revitalization Project, Grand Rapids, Michigan: The proposed project will improve the function of the Grand River within and along the channel as it flows through downtown Grand Rapids, Michigan. The proposed project includes the removal of four low-head dams and the 6th Street Dam and the installation of a proposed adjustable hydraulic structure. Additional activities include adding substrate to the channel to increase channel complexity and provide for the ecological needs of the endangered Snuffbox mussel, Lake Sturgeon, Michigan State-listed sensitive species, and other aquatic species found in the Grand River. The project will improve diversity and complexity throughout more than 75 acres of regionally rare, river rapid habitat; and restore connectivity of more than 65 miles of the Grand River upstream of Grand Rapids, Michigan for native aquatic species while impeding upstream migration of sea lamprey. Other benefits expected include increased recreational and economic opportunities through increased access, boating, and angling along the restored reach of the river. Initiate the environmental compliance phase of the project in 1st quarter FY19.

Contact: Mike Greer, U.S. Army Corps of Engineers Buffalo District, 716-879-4229, michael.j.greer@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. The standard aligns with the IMO D-2 standard and will require the installation of type-approved ballast water management systems (BWMS) on "salties". The use of type 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 and availability of type approved systems.

The Coast Guard anticipates that more than 3,000 United States domestic vessels in various classes will be required to install an approved ballast water management system (BWMS). In addition, about 9,000 foreign vessels that enter U.S. waters each year will be subject to the rule. The IMO estimates that more than 60,000 vessels worldwide will need to comply with the Ballast Water Management Convention when it enters into force.

#### 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 are involved in the type approval process. Duluth-Superior's Great Ship Initiative is part of a certified IL.

Since 2013, the Coast Guard Marine Safety Center has received dozens of Letters of Intent from BW treatment system manufacturers stating they intend to pursue type approval for their ballast water treatment system. The Coast Guard has received 20 applications for type approval and the Coast Guard Marine Safety Center has type approved 11 BW treatment systems.

#### Alternate Management Systems (AMS)

The Coast Guard anticipated that some time would pass from the effective date of the rule to its acceptance of independent laboratories and its subsequent type approvals of BWMS. Therefore, the Coast Guard 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 111 AMS Determination Acceptance Letters to date including several for fresh water operations.

#### Extensions

Many vessel owners are hesitant to install a BWMS accepted as an AMS because there is no guarantee that the BWMS will be granted U.S. type approval. If vessel owners would prefer to wait until Coast Guard type approved systems are commercially available, they may apply for an extension to their respective original compliance date listed in the regulations only if they can document that despite all efforts compliance with the regulations is not possible.

Because the Coast Guard has only recently type-approved BWMSs, the Coast Guard has been granting extensions to the compliance schedule for ships with scheduled drydock dates through 2018. Currently, over 12,000 extensions have been granted to qualifying vessels.

Now that type approved systems are becoming commercially available, the Coast Guard will continue to balance the need to ensure timely compliance with the regulations and the practical realities associated with the availability of type approved systems, manufacturing, and shipyard capacity. Whether a type-approved system is "available" will be based on evidence submitted by the vessel owner/operator with the application for extension.

The length of compliance date extensions, when granted, will be based on the availability of Coast Guard type-approved systems and detailed installation plans. Vessel owners and operators should anticipate that this would not typically align with scheduled drydocking.

Contact: Lorne Thomas, U.S. Coast Guard Ninth District, 216-902-6022, Lorne.w.thomas@uscg.mil

#### **U.S. Forest Service**

No update provided.

Contact: Amanda Kunzmann, USDA Forest Service, 414-297-3431, akunzmann@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.

Contact: Kevin O'Donnell, U.S. EPA- Great Lakes National Program Office, 312-353-0813, [ODonnell.Thomas@epa.gov](mailto:ODonnell.Thomas@epa.gov)

### **U.S. Geological Survey**

#### USGS and University of Toledo Grass Carp update

The US Geological Survey (USGS) funds a Cooperative Agreement with the University of Toledo to assess Grass Carp reproduction in Lake Erie tributaries and its effects on vegetation throughout western Lake Erie. Our work includes sampling for direct evidence of reproduction in the Sandusky and Maumee Rivers from Mid-May through the end of August and using both hydroacoustics and physical samples of vegetation in nearshore areas, embayments, harbors, and river mouths throughout western Lake Erie to assess Grass Carp habitat and their effects on it.

Egg sampling in 2018 identified two spawning events each in the Maumee and Sandusky Rivers. On the Maumee River, eggs were collected during high-flow events that occurred between 11 and 14 June and between 23 and 27 June. On the Sandusky River, eggs were collected between 23 and 26 May and between 11 and 14 June. As of this update egg counts were not complete.

The first estimate of the number of individuals that spawned during the 2017 sampling events from genetic microsatellite analysis was ~250 individuals from two spawning events in the Sandusky River. No estimate was available for eggs captured in the Maumee River. As of this update additional analyses using RAD-Seq analyses were underway.

Egg collections during the 11-14 June spawning event on the Sandusky River coincided with a pre-scribed management action led by Ohio DNR to capture adults. Capture effort focused primarily in Fremont, Ohio, in a region identified by past USGS-University of Toledo research as the likely spawning area. Several adults were captured, which coupled with collection of eggs verifies the model-projected spawning area and validates the modeling method used to project the spawning area. Analyses are underway and will be presented at the upcoming meeting of the Midwest Association of Fish and Wildlife Agencies, and a peer-reviewed publication is in preparation. Additional research papers validating the FluEgg model used to model egg transport are also in preparation.

#### USGS Phragmites research update

The USGS Great Lakes Science Center is conducting research into innovative control measures for non-native *Phragmites australis* (common reed), a highly invasive species with wide-ranging social, economic, and ecological impacts, based on the bacteria, fungi, and other microbes that it supports. A USGS-led group developed a science agenda (Kowalski et al 2015, <https://bit.ly/2KHRpS>) that is guiding a nation-wide effort to develop new management approaches that promote the microbes that are harmful to this invasive plant and inhibit those that help it outcompete native plants.

Close partnerships with the University of Michigan, Rutgers University, Tulane University, Indiana University, and other organizations are identifying the key microbes to target for manipulation as a form of plant control. Field and greenhouse studies during the summer of 2018 tested the virulence of harmful microbes on Phragmites plants and evaluated how specific pathogens affect plant growth. These studies also explored how non-toxic organic acids may impede Phragmites growth by inhibiting microbes helpful to the plant. These and other studies are helping identify the mechanisms associated with plant-microbe mutualisms and leading to the development of new management tools for managers of Phragmites and other non-native plant species.

Several recently published papers offer insight into how microbes may be helping Phragmites and other invasive plants take over the landscape. Verma et al. (<https://bit.ly/2NMrjL0>) reported that certain bacteria found on Phragmites seeds (e.g., *Pseudomonas* spp.) promote plant growth and offer protection from the fungus *Fusarium oxysporum*, a common fungal pathogen that causes disease in crops and other plants. Similarly, bacteria found on Phragmites seeds were found to carry nutrients from soil into plant roots during a process called the "rhizophagy cycle" (White et al., <https://bit.ly/2QUlwnp>). This process may be an important trait that helps Phragmites outcompete native plants, therefore it is a target as a possible new way to control the plant.

Contact: Patrick M. Kočovský, U.S. Geological Survey, 419-625-1976, [pkocovsky@usgs.gov](mailto:pkocovsky@usgs.gov)

### **State/Provincial**

#### **Illinois**

No update provided.

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

## **Indiana**

No update provided.

Contact: Eric Fisher, Indiana DNR, 317-234-3883, efisher@dnr.in.gov

## **Michigan**

The MDEQ is working on responses to three new aquatic invasive plant reports in 2018, including parrot feather, European water clover, and European frog-bit. The MDEQ is also leading and coordinating ongoing aquatic invasive plant response activities at 12 locations across Michigan. The MDEQ is partnering with Central Michigan University to develop and build consensus around strategies for three priority aquatic invasive plants. The MDEQ has also initiated work to develop a coordinated adaptive management framework for European frog-bit. The MDARD continues to monitor the sale of aquatic invasive plants through nursery inspections. In 2018 MDARD inspectors continue to encounter mislabeled prohibited aquatic plants.

The MDNR is partnering with Michigan State University to implement monitoring and response actions for red swamp crayfish in southern Michigan. Active control efforts were conducted at numerous infested locations and over 14,000 invasive crayfish have been removed since 2017. Response actions this summer also included implementing and evaluating the use of CO<sub>2</sub> control methods in partnership with U.S. Geological Survey. In 2018, the MDNR seized over 2,000 pounds of live red swamp crayfish, a prohibited species. Conservation officers were notified by U.S. Customs and the U.S. Fish and Wildlife Service when a commercial hauler transporting red swamp crayfish was denied entry into Sarnia, Canada.

The Michigan DNR is partnering with other regional state and federal natural resource agencies to develop and implement coordinated response actions in Lake Erie in attempts to eradicate grass carp. The regional grass carp response team used a Structured Decision Making process to use available science to inform which response actions would ensure resources were being used most effectively to remove grass carp. The response actions currently being implemented include employing a dedicated grass carp response crew, partnering with and providing a bounty (\$75/fish removed) to commercial fishers for grass carp removals, using acoustic telemetry to track fish to inform when and where agency response actions should occur, determining the feasibility of seasonal weirs in Lake Erie tributaries where spawning is occurring, and conducting monitoring and targeted response efforts to determine the distribution of grass carp in Lake Erie.

The MDEQ partnered with the MDNR, MDARD, and local volunteers to implement AIS awareness week in July. The week was highlighted by the fifth annual Landing Blitz held at 82 boat landings around the state to assist boaters in learning how to prevent the spread of harmful species and comply with current aquatic invasive species-related laws.

Contact: Sarah LeSage, Michigan DEQ, 517-243-4735, lesages@michigan.gov

## **Minnesota**

No update provided.

Contact: Kelly Pennington, Minnesota DNR, 651-259-5131, kelly.pennington@state.mn.us

## **New York**

- First full season using Watercraft Inspection Steward Program app (WISPA) yielded 150k records from stewards.
- Second full season of treatment at the Croton River Hydrilla Control Project will be completed on November 15th. Second season of hydrilla treatment at Aurora (Cayuga Lake) and Spencer Pond (Tioga County) completed.
- Behavioral change workshop will be hosted at the IS in-service this year.
- Currently working on education and outreach strategy for aquaria owners, expanding WISP along the Hudson and Mohawk Rivers and in the Catskill region.
- Continuing aquatic plant monitoring along the Hudson River (21+ locations).
- Working to create an aquatic plant monitoring plan for the Mohawk River.

Contact: Catherine McGlynn, New York State Department of Environmental Conservation, 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.
- Conducted a three-day Grass Carp Planned Action on the Sandusky and Maumee Rivers from June 12 – 14. This action built on what we learned in 2017. There was a high effort (64 hours trap-net time and 70 hours of electrofishing time) and participation (71 people). Tandem electrofishing most effective and collected 30 Grass Carp (27 Sandusky River and 3 Maumee River). Seventy five percent of the Grass Carp were removed, and the remaining fish were tagged with transmitters for tracking movement. We are moving towards targeted removal in the future.
- Finalized the Lake Erie Grass Carp Response Strategy to provide a road map for the next five years.
- Continue to investigate closure options for the three of the four Great Lakes Mississippi River Interbasin Study connections in Ohio at the Ohio Erie Canal, Little Killbuck Creek, and Grand Lake St Marys. The USACE awarded a contract for closing the Ohio Erie Canal connection with work to be completed in the fall of 2019. NTH completed the 25% closure designs (Study and Report) at Little Killbuck Creek and peer review of this document by USACE should be completed by March 2019. A design for the final phase for closing the connection at Grand Lake St Marys will be initiated soon.
- Continue the surveillance of Ohio's bait and Grass Carp supply chain to determine if AIS, including Bighead and Silver Carp, are being transported through the bait trade.
- Continue 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 with the slogan "Trash Unused Bait".
- In partnership with Ohio Sea Grant and The Ohio State University, completed the Ohio Field Guide to Aquatic Invasive Species. This guide will be distributed to individuals in the field as an early detection tool.
- Participated in the following groups: Great Lakes Panel, Ohio Aquatic Invasive Species Committee, and Asian Carp Regional Coordinating Committee.
- Developed a risk assessment policy to screen potential new aquatic invasive species.

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.

Contact: Olivier Morissette, Quebec Ministère des Forêts, de la Faune et des Parcs, 418-627-8694 x7519  
olivier.morissette@mffp.gouv.qc.ca

#### **Wisconsin**

No update provided.

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**

No update provided.

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

##### **Great Lakes Commission**

##### Invasive Mussel Collaborative

The Invasive Mussel Collaborative (IMC) is working to advance scientifically sound technology for invasive mussel control to produce measurable ecological and economic benefits. The IMC provides a framework for communication and coordination and is identifying the needs and objectives of resource managers; prioritizing the supporting science; implementing communication strategies; and aligning science and management goals into a common agenda for invasive mussel control.

- Convened a meeting in March 2018 to work on developing a Strategy to Advance Management of Invasive Zebra and Quagga Mussels (the Strategy) and discuss ongoing and future IMC activities.
- Finalizing the Strategy for release in fall 2018.
- Developing a control method demonstration and evaluation project in Sleeping Bear Dunes National Lakeshore to begin implementation of the Strategy.
- Developing a summary document of available control methods and associated literature, case studies and permitting information.
- Hosted three webinars in 2018 to showcase and discuss management strategies.
- Developing communications video highlighting the work of the IMC and the Strategy in late 2018.
- Completing an overhaul of the IMC website ([www.invasivemusselcollaborative.net](http://www.invasivemusselcollaborative.net)) to improve usability, functionality, and appearance.
- Regularly convening the IMC Core Team, Steering Committee, and Science Team to provide guidance and input on IMC activities

Lead Staff: Erika Jensen, [ejensen@glc.org](mailto:ejensen@glc.org)

#### Great Lakes Phragmites Collaborative

The GLC and USGS are jointly leading a regional partnership – the Great Lakes Phragmites Collaborative (GLPC) – to improve communication and collaboration leading to more coordinated, efficient and strategic approaches to non-native Phragmites across the Great Lakes basin. The GLPC provides educational resources tailored to diverse interest groups, connects invasive species managers with the latest research and technology, encourages the use of adaptive management, and facilitates alignment of partner efforts across jurisdictional barriers.

- Developed a Common Agenda to guide the work of the GLPC based on the principles of collective impact.
- Drafted a measurement system to evaluate the progress of the GLPC on the Common Agenda.
- Sharing the work of the GLPC as a novel application of collective impact to the natural resources field at prominent events including the Wildlife Society, the North American Invasive Species Association, and Upper Midwest Invasive Species conferences.
- Regularly convening Advisory and Steering Committees to guide the work of the GLPC and foster interjurisdictional partnerships.
- Hosting an ongoing webinar series where guest speakers shared successful models for Phragmites management, public outreach, and collaborative governance.
- Re-structured the GLPC website ([www.greatlakesphragmites.net](http://www.greatlakesphragmites.net)) to better direct visitors to resources specific to their needs.
- Developing audience-specific outreach materials across various multi-media formats.

Lead Staff: Erika Jensen, [ejensen@glc.org](mailto:ejensen@glc.org)

#### Phragmites Adaptive Management Framework (PAMF)

The GLC and USGS are working to promote effective Phragmites management across the Great Lakes basin and track the effectiveness and resource efficiency of those management activities through the PAMF model. PAMF requires working with a variety of Phragmites managers across the basin, from state and federal employees to private citizens, in a strategic attempt to engage, learn from, and assist all levels of Phragmites managers.

- Conducted training sessions across the Great Lakes basin to educate Phragmites managers about PAMF and encourage their participation.
- Traveled to new management units and worked with managers to enroll their units into PAMF and assist with the initial monitoring.
- Provided management guidance for over 90 enrolled management units.
- Working daily with partners to effectively coordinate efforts.
- Presenting and hosting an exhibitor booth at the Upper Midwest Invasive Species Conference.
- Drafting a formal plan for outreach activities for the 2019/20 PAMF cycle and executing that plan

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#### Interstate Aquatic Invasive Species Prevention, Early Detection, and Response

The GLC is supporting the eight Great Lakes states in their efforts to plan and coordinate interstate aquatic invasive species (AIS) prevention, early detection, and response activities. The GLC is conducting a pathway risk assessment focused on high priority

aquatic invasive plants. Aquatic plants are introduced into the Great Lakes Basin via a number of pathways and the results of this effort will help the states and regional partners understand pathway activity for invasive aquatic plants; determine which pathways are associated with high-risk plant species; and identify gaps in management, compliance and law enforcement, and education for each pathway.

- Developed pathway descriptions for eight priority pathways for aquatic plant introduction and spread in the Great Lakes region.
- Finalized and distributed an aquatic plant pathway risk analysis questionnaire to nearly 200 experts.
- Analyzed quantitative and qualitative responses to the questionnaire to identify risk points, gaps in management, and opportunities to reduce risk.
- Convened two meetings to plan distribution and guide analysis of the questionnaire.
- Developing a comprehensive risk assessment report with in-depth findings for eight priority pathways

Lead Staff: Erika Jensen, ejensen@glc.org

#### Great Lakes Detector of Invasive Aquatics in Trade

The GLC developed the web-based software tool Great Lakes Detector of Invasive Aquatics in Trade (GLDIATR), which collects, analyzes and allows users to access information about how many and what types of Great Lakes AIS are available for sale on the Internet. This information is being used by invasive species managers to inform and help target a variety of activities, including outreach and education, risk assessment, monitoring and surveillance, and enforcement.

- Working with a multi-stakeholder advisory board to oversee implementation of GLDIATR.
- Working with a contractor to complete upgrades to the GLDIATR system, including a case management system to facilitate coordination and cooperation in enforcement between state agencies.
- Providing information and user accounts to managers and other interested parties.
- Between October 2018 and April 2019, the GLC will be working with the advisory board and other partners to implement regionally coordinated outreach to Internet-based retailers.
- Presented to the Great Lakes Fishery Commission's Great Lakes Law Enforcement Committee in March 2018.
- Participated in the Great Lakes BIOTIC Symposium as part of the Upper Midwest Invasive Species Conference in October 2018

Lead Staff: Erika Jensen, ejensen@glc.org

#### Blue Accounting Aquatic Invasive Species Pilot

The GLC is working with The Nature Conservancy to develop and implement an AIS pilot project under the Blue Accounting program. The AIS pilot is focused on surveillance and rapid response to new species introductions; the organisms in trade pathway of spread; and control and management of invasive species. The GLC and TNC are working with a group of regional AIS experts and managers to provide input and guide implementation of the AIS pilot.

- Developing content for the AIS pilot webpage
- Convened a workshop for the AIS pilot working group in May 2018 to agree to a terms of reference document and develop a plan of work.
- Participating in quarterly Issue Lead meetings to share information and lessons learned across the different pilots.
- Planning a fall webinar and meeting of the AIS pilot working group to continue web content development and pilot implementation.

Lead Staff: Erika Jensen, ejensen@glc.org

#### Invasive Species and the Chicago Area Waterway System

The GLC continues to convene a 30-member Chicago Area Waterway System Aquatic Invasive Species Stakeholder Group (formerly referred to as the advisory committee) that is the primary regional stakeholder forum seeking solutions to the threat of Asian carp and other AIS passing through the Chicago Area Waterways System (CAWS) while maintaining current uses of the system.

- Convened the group's Steering Committee to guide its operations.
- Developed and approved new operating procedures for the group.
- Convened the group in July to discuss new operating procedures, the draft Brandon Road plan, and other matters.
- Coordinated with the Steering Committee to identify a new administrative support organization and transition the GLC out of this role.
- Planned a fall meeting.

Lead Staff: Matt Doss, mdoss@glc.org

#### Additional Program Activities

- Participating as a member of the Great Water Research Collaborative (GWRC) Advisory Committee. The committee provides input on GWRC program direction and activities. The University of Wisconsin Superior holds management and fiduciary responsibility for the GWRC. The committee most recently met in July 2018 in Erie, PA. Lead staff: Erika Jensen

- Produced an updated paper summarizing the status of ballast water discharge regulations in the Great Lakes region. The paper summarizes requirements and conditions in ballast water rules and permits, including limits on the concentration of residual biocides (e.g., chlorine), as well as discharge monitoring requirements. Lead staff: Erika Jensen.
- Participated on the Asian Carp Regional Coordinating Committee and the Executive Steering Committee for the Great Lakes and Mississippi River Interbasin Study. Lead staff: Matt Doss.

Contact: Tom Crane, Great Lakes Commission, 734-971-9135, [tcrane@glc.org](mailto:tcrane@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](mailto:becky.cudmore@dfo-mpo.gc.ca)

**Transport Canada**

No update provided.

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

Contact: Dan Thomas, Great Lakes Sport Fishing Council, 630-941-1351, [dan@great-lakes.org](mailto:dan@great-lakes.org)

**Tribal Authorities**

**Great Lakes Indian Fish & Wildlife Commission**

No update provided.

Contact: Miles Falck, Great Lakes Indian Fish & Wildlife Commission, 715-682-2124, [miles@glifwc.org](mailto:miles@glifwc.org)

**Chippewa Ottawa Resource Authority**

No update provided.

Contact: Mike Ripley, Chippewa Ottawa Resource Authority, 906-632-0043, [mripley1@chippewaottawa.org](mailto:mripley1@chippewaottawa.org)

**PRIVATE/COMMERCIAL**

**Council of Great Lakes Industries**

No update provided.

Contact: Kathryn Buckner, Council of Great Lakes Industries, 734-663-1944, [kabuckner@cgli.org](mailto:kabuckner@cgli.org)

**Lake Carriers' Association**

No update provided.

Contact: Tom Rayburn, Lake Carriers' Association, 440-333-9994, [rayburn@lcaships.com](mailto:rayburn@lcaships.com)

## University/Research

### Great Lakes Sea Grant Network-Research and Extension

No update provided.

Contact: Rochelle Sturtevant, NOAA Great Lakes Sea Grant Network, 734-741-2287, [Rochelle.Sturtevant@noaa.gov](mailto: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](mailto:johengen@umich.edu)

## At-Large

### Invasive Species Centre

Since the last GLP meeting, the ISC has finalized a 4-year agreement with Fisheries and Oceans Canada to continue our work on the Asian Carp Canada program. Some of the projects we will complete this year include 3 new webpages on [www.asiancarp.ca](http://www.asiancarp.ca), various targeted social media campaigns, webinars, public information sessions, and the development of a media kit. In addition, the ISC is working on AIS initiatives with the OMNRF, including literature review for socio-economic impacts of various AIS, analysis of the recreational boating pathway in Ontario, and a review of control methods and efficacy for invasive mussels in the Great Lakes Basin. Finally, the ISC is the conference secretariat for the International Conference on Aquatic Invasive Species (ICAIS), and is currently planning for ICAIS 2019, to be hosted October 27-31, 2019 in Montreal, Quebec. The conference theme will be: Aquatic Invasions in the Anthropocene, and an excellent technical program is being developed in collaboration with Dr. Anthony Ricciardi, conference Co-Chair technical program committee Chair. The Call-for-Abstracts is currently open at [www.icaeis.org](http://www.icaeis.org), and we encourage submissions from all GLP members and observers.

Contact: David Nisbet, Invasive Species Centre, 705-541-5752, [DNisbet@invasivespeciescentre.ca](mailto:DNisbet@invasivespeciescentre.ca)

### Minnesota Aquatic Invasive Species Research Center

No update provided.

Contact: Nick Phelps Minnesota Aquatic Invasive Species Research Center, 612-624-7450 [phelp083@umn.edu](mailto:phelp083@umn.edu)

### Invading Species Awareness Program, Ontario Federation of Anglers and Hunters

#### Education & Outreach

A total of 28 summer students were hired to deliver community-based invasive species education, outreach, monitoring, and control initiatives in Ontario. The Invading Species Awareness Program (ISAP) attended numerous events, including the Upper Midwest Invasive Species Council/North American Invasive Species Management Association Conference in Rochester, MN, the Owen Sound Salmon Spectacular, Canadian National Exhibition, Orillia Waterfront Festival, Barrie Sportsmen and Outdoor Show, and co-presented the screening of an invasive species focused documentary, Rodents of Unusual Size, at the Planet in Focus film festival in Toronto, ON. In September, the ISAP hired a new Education Liaison to deliver programming in classrooms. To date, programming has been delivered to 31 classrooms in 5 school boards, reaching 746 students. Staff continued to work with villagePR to develop a communications strategy for the program. Throughout the summer, a survey was distributed to four target audiences: anglers, hunters, boaters, and trail users. The objective of the survey was to better understand target audience attitudes and communication preferences in order to select the best communication methods and messages that will reach target audiences and motivate them to take action. A total of 3,885 people responded to the survey and the results will be used to inform communications recommendations for ISAP moving forward.

#### Control & Management

Efforts to respond to water soldier continued. All monitoring and surveillance activities were completed in August. Water Soldier Watch Day was held on August 3; a total of 21 volunteers attended and over 22km of shoreline was surveyed with three new water soldier populations detected. An open house was held on August 30 at the Campbellford Community Resource Centre to inform the public of the monitoring/surveillance efforts completed in the summer and the control efforts planned for October, 2018; a total of 29 members of the community attended the event. A second open house was held at the Trenton Library to engage the community south of Campbellford. The goal of this open house was to inform local residents of the herbicide treatment occurring in the newly infested area between Glen Ross and Frankford; 16 members of the community attended this event. The water soldier infestation was treated with herbicide the week of October 1, 2018. Staff also coordinated the treatment of 10 private ponds that contain water soldier.

Contact: Sophie Monfette, Ontario Federation of Anglers and Hunters, 705-748-6324 ext. 274, [sophie\\_monfette@ofah.org](mailto:sophie_monfette@ofah.org)

## **The Nature Conservancy**

No update provided.

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

## **Wildlife Forever**

Over the past year Wildlife Forever's Clean Drain Dry Initiative has continued to coordinate AIS outreach and marketing throughout the Great Lake States and country. Through expanding traditional and non-traditional media, targeted marketing and educational resources, messaging remains BMP driven to provide consistency while appealing to user groups and stakeholders.

New this year, we and our coalition of partners, are developing WIFI educational platforms called "Lake WiFi" to provide localized information on AIS identification, reporting, lake maps and other valuable tools for recreational users. This platform will enhance access based, site specific, outreach and education. Connecting to Lake WiFi, users will receive real-time information for lake specific AIS awareness and prevention. Pilot efforts will focus use within the CD3 Watercraft Cleaning Station, however possibilities also include rest stops, visitor centers, gas stations, and boat ramps. Once this platform is developed, our goal will be to pursue partnership opportunities with federal, state, county, LGU and lake association groups as a low cost option for enhanced AIS awareness but also leveraging the opportunity for this platform to be customized by location also incorporating additional services such as decon station mapping, downloadable lake maps, and lake specific fishing information. Check out our beta version at: <http://invasive-wi-fi.s3-website-us-east-1.amazonaws.com/#/>

Wildlife Forever also recently released our Clean Drain Dry product catalog for outreach materials. In it you'll find an expanding array of tools and services we leverage to help states, agencies and partners facilitate their AIS Prevention Plans. Looking forward, we aim to continue networking and providing coordinated media, marketing, education and outreach services. By pooling resources, we can better leverage dollars, helping to improve efficiency and spread the word as farther.

Contact: Pat Conzemius, Wildlife Forever, 763-253-0222, pconzemius@wildlifeever.org

## **Minnesota Sea Grant**

The Great Lakes Sea Grant Network, led by Minnesota, continues to support Habitattitude, Stop Aquatic Hitchhikers! and Nab the Aquatic Invader outreach and education aimed at changing behaviors to prevent and slow the spread of harmful AIS across the GLs region. From Mar – Aug 2018, GLSGN & its partners generated nearly 275,000 exposures through multi-media efforts, including mass (TV, radio, newspaper, e-news) & social media (FB and Twitter). Twenty-four presentations on Stop Aquatic Hitchhikers! and Habitattitude educated nearly 1,200 people & 13+ booths educated over 6,200 visitors. Teacher trainings & events educated nearly 1,600 teachers & youth. MN & WI Sea Grant continue to support new and existing Habitattitude Collaborative Networks, which host Surrender events serving as models in communities where owners of unwanted reptiles, fish, aquatic invertebrates & aquatic plants can re-home their pets. As an alternative to release, well over 500 pets have been rehomed! Funded by EPA through GLRI.

Use of CD3 Cleaning Stations expanded across MN. To reduce AIS spread, over 15 new CD3 stations were made available 24/7 at public water accesses in MN with more in other states. CD3 (or Clean-Drain-Dry-Dispose) provides free tools empowering boaters to take actions to prevent AIS spread. <https://www.cd3station.com/>

In summer and fall 2018, two studies identified bloody red shrimp (*Hemimysis anomola*) in samples collected from the Duluth-Superior Harbor. Findings confirm presence based on single specimen found in a 2017 USFWS sample announced in Feb 2018. Not surprisingly, a few other non-native zooplankton, likely non-invasive, were also found in common in both studies.

State of Lake Superior Conference held Oct 9-12, Houghton, MI, provided highlights on various aspects of protection, research & management from fisheries, lake levels to contaminants. A session on AIS was co-chaired by Minnesota Sea Grant and EPA-Duluth. <http://iaglr.org/sol/sols18>

Minnesota Sea Grant & UW Extension co-chaired the Upper Midwest Invasive Species - North American Invasive Species Management Association 2018 Joint Conference, October 15-18 in Rochester, MN. As the 6th biennial conference for UMISC, it was the largest invasive species conference in the world with over 715 attendees coming from coast to coast - 32 states, 5 Canadian provinces & 3 other countries including Belarus, Russia & Switzerland. Int'l & national plenary experts shared their fresh perspectives on key issues. Over 300 presentations, 8 field trips, 6 workshops & nearly 50 exhibitors showcased advancement, success stories, services & products for invasive species management. The conference continues to grow like weeds! Experts advanced knowledge on nearly 170 terrestrial & aquatic invasive species. "Celebrating Milestones: Building a Legacy for the Future" was the conference theme as UMISC celebrated its 10th & NAISMA celebrated its 25th anniversary. Next conference planned for 2020. See <https://www.umisc.net/> #invasiveSpeciesConference @UMSIC @MAISMorg

Contact: Doug Jensen, Minnesota Sea Grant, 218-590-7164, djensen1@umn.edu

**Saint Lawrence Seaway Development Corporation**

No update provided.

Contact: Craig Middlebrook, Saint Lawrence Seaway Development Corporation, 202-266-0091, craig.middlebrook@dot.gov

**National Wildlife Federation**

NWF has focused on two areas of invasive species policy and education work since our last Panel meeting:

- 1) Asian carp: NWF is partnering with several conservation organizations (Ducks Unlimited, Trout Unlimited, Michigan United Conservation Clubs, Indiana Wildlife Federation, Ohio Conservation Federation, Wisconsin Wildlife Federation, Minnesota Conservation Federation) in developing and disseminating communication materials to support the Brandon Road Lock and Dam plan to help reduce the risk that Asian carp enter the Great Lakes. We are educating key decision makers at the federal, regional and state level information and working with the outdoor media and traditional media to advance the Brandon Road plan. In addition, we are working with Prairie Rivers Network and other Ohio and Mississippi River Basin conservation organizations to raise awareness and urgency for control and eradication efforts of Asian carp populations outside of the Great Lakes Basin.
- 2) Ballast Water: NWF is working with Senate EPW staff on language (VIDA) inserted into the Coast Guard Reauthorization bill that would undermine Clean Water Act protections for regulation of ballast water and preempt state authority. NWF opposes the current VIDA language in the bill. Negotiations are underway that would retain EPA authority over setting standards for all vessels; retain Coast Guard authority over technology and enforcement; protect state authority to manage their waters by creating a Great Lakes Discharge petition Commission; and enhance monitoring and research funding. NWF is waiting to see the final language before making a formal position.

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