

Meeting of the Great Lakes Panel on Aquatic Nuisance Species

June 26-27, 2018

Chicago, Illinois

Meeting Summary

Additional meeting information including a final agenda and presentations are available on the Great Lakes Panel website (<https://www.glc.org/work/glpans/meetings>).

Tuesday, June 26, 2018

Call to Order

Bob Wakeman, Wisconsin Department of Natural Resources (DNR), Outgoing Great Lakes Panel (GLP) Chair

- Bob Wakeman called the meeting to order.
- GLP members and observers introduced themselves and a quorum was confirmed.
- Wakeman reviewed the agenda and there were no changes.

GLP Business

Bob Wakeman, Wisconsin DNR, Outgoing GLP Chair

Sarah LeSage, Michigan Department of Environmental Quality, Incoming GLP Chair

Erika Jensen, Great Lakes Commission (GLC), GLP Coordinator

- GLP Nominating Committee report
 - John Navarro provided an elections report that outlined changes to GLP leadership and at large members. The election results were as follow:
 - Panel Chair
 - Sarah LeSage, Michigan DEQ
 - Panel Vice-Chair (Chair Elect)
 - Kelly Pennington, Minnesota DNR
 - Chair, Policy Committee
 - Francine MacDonald, Ontario Ministry of Natural Resources and Forestry
 - Did not change
 - Chair, Information and Education Committee
 - Doug Jensen, Minnesota Sea Grant
 - Did not change
 - Chair, Research Coordination Committee
 - Lindsay Chadderton, The Nature Conservancy
 - Did not change
 - At-Large Members
 - Lindsay Chadderton, The Nature Conservancy
 - Craig Middlebrook, Saint Lawrence Seaway Development Corporation
 - Sophie Monfette, Ontario Federation of Anglers and Hunters
 - Marc Smith, National Wildlife Federation
 - David Nisbet, Invasive Species Centre
 - New at-large member
 - Nick Phelps, Minnesota Aquatic Invasive Species Research Center
 - New at-large member

- Report on 2016-2018 GLP work plan
 - The GLP convened two ad hoc committees on issues that were important to the GLP at the time the work plan was drafted: grass carp and risk assessment
 - Ad hoc committees allowed for better focus and a more strategic approach to priority issues across all three standing committees
 - The Department of Interior's strategic pause impacted implementation as GLP was unable to meet formally in 2017 or meet work plan objectives during that year
 - During the strategic pause, binational forums were hosted to facilitate information sharing within the Great Lakes AIS community
 - Priority issues outlined in the work plan were addressed via ad hoc committees (risk assessment and grass carp) and plenary sessions (aquatic plants)
 - Meetings and executive committee objectives were met
 - Standing committee objectives were not met; the focus of the GLP shifted to ad hoc committees, and as such the standing committee priority documents were not updated
- Ad hoc and standing committee reports
 - Grass Carp Ad Hoc Committee
 - A letter has been drafted to urge states that currently allow stocking of diploid individuals to switch to triploid-only stocking
 - The letter will be delivered by the Mississippi Interstate Cooperative Resource Association, Council of Great Lakes Fisheries Agencies, and/or Great Lakes St. Lawrence Governors & Premiers as appropriate
 - The letters will be addressed to relevant state department fish chiefs, but may also be addressed to individuals higher in the organization as needed
 - Other groups/organizations (including GLP standing committees and outside agencies) who can complete remaining tasks on the grass carp worksheet will be identified in the near future
 - The ad hoc committee recommends continuation under the next workplan
 - Risk Assessment Ad Hoc Committee
 - The charge of this committee is to scope development of a risk assessment clearinghouse, then facilitate implementation
 - Two primary partners, the Invasive Species Centre (ISC) and NOAA-GLANSIS, provided updates on work to date
 - The ISC has developed a database of risk assessments organized around a species list that is not geographically or taxa limited
 - NOAA-GLANSIS has added risk assessment literature search feature to their library, as well as developed an online beta version of risk assessment methodology summaries. This online tool is based on input and guidance from committee members.
 - Other regional AND Panels are interested in the progress of work completed through this committee, and the GLP may have an opportunity to lead a regional collaboration on risk assessments by transferring the work of this committee to other Panels to implement
 - Ad hoc committee project ideas for the new work plan were discussed
 - Hiring a short-term staff person to populate the species matrix of risk assessment results was the leading project pitch
 - The ad hoc committee recommends continuation under the next workplan
- 2018-2020 GLP Work Plan Development

- Increasing industry participation in GLP membership may lead to an opportunity for meaningful dialogue with leaders in industry and cascading efforts in reducing risk
- The GLP should consider engaging with the CAWS AIS Stakeholder Group on some level
- Dedicating renewed focus to the outreach/education committee can help fill an impending gap in the region – no funding is earmarked for NOAA Sea Grant AIS outreach funding after FY2019
- Overlaps exist between the GLP and work of other regional initiatives (e.g. WQA Annex 6) and there may be a more formal/active role that the GLP can play in hosting/facilitating meetings of other AIS groups across the basin and coordinating efforts
 - Reduce collaborative fatigue
- What role can the GLP serve to bring together regional management of aquatic plants?
 - The GLP could host special sessions/symposia to collate ongoing work, key resources, research knowledge gaps, and regional needs
 - Regionally important species include European frogbit, water lettuce, water hyacinth, yellow floating heart, etc.
 - Water lettuce and water hyacinth are particularly troublesome due to water gardens
 - Any future work of GLP on aquatic plants should exclude species for which collaboratives exist (Phragmites, hydrilla, etc.) to avoid duplicating effort
 - The GLP can avoid duplicating work of aquatic plant conferences by bringing management agencies together and approaching discussions from a management perspective
 - Work led by the GLP may also begin moving toward harmonization of aquatic plant regulations
- Identification of GLP Project(s)
 - Cultural release of live organisms – collaboration with the Mississippi River Basin Panel
 - Funding has been secured for MRBP portion, could augment this project to expand into Great Lakes
 - Short-term employee to assist with species incorporation into the risk assessment clearinghouse
 - Outreach materials related to grass carp
 - Expand aquatic plant symposia to a major event
 - What is the outcome? What can we specifically target with this symposium to affect change? E.g. get industry more involved
 - Augment AIS video that GLANSIS plans to develop for outreach
 - CAWS economic analysis
 - Getting new data would be a very, very large-scale project
 - Survey of municipalities – cost of AIS
 - Determine what's being spent on AIS in municipalities with bighead/silver carp populations and project what an incursion would cost Great Lakes municipalities
- Plans for fall 2018 meeting
 - The fall meeting will be held in Ann Arbor, MI
 - Members are encouraged to send agenda topics to the GLP executive committee

ACTION ITEMS

- GLP staff and the executive committee will continue to scope development of the 2018-2020 GLP workplan

- GLP staff will compile GLP project ideas for review by the executive committee
- GLP executive committee will discuss the role of the GLP in coordination of regional AIS initiatives and intentional scheduling of a Great Lakes AIS meetings week

Illinois Law Enforcement

- Species in Illinois are regulated as approved species, injurious species, and restricted species (anything that is not approved or injurious) with an exemption for pet/aquarium trade
- Changes to lists or a species status must be approved by the Illinois Aquaculture Advisory Committee, comprised of the Departments of Agriculture and Natural Resources, Illinois Natural History Survey, and aquaculture staff from Southern Illinois University
- The AIS conservation law enforcement division is funded through GLRI and allows two officers to be dedicated to AIS crimes
- Regular inspections of aquaculture facilities also include paperwork inspections to ensure that approved species are imported and raised
- Covert and overt operations are utilized, including conservation officer details at state boat ramps and undercover operations at aquatic life dealers
- Support throughout the state's judicial process is critical to the success of AIS law enforcement activities; Illinois prosecutors understand the importance of preventing AIS due to the overwhelming state concern about Asian carp and are willing to prosecute violations of state AIS statutes.

GLMRIS/Brandon Road

- GLMRIS work other than CAWS:
 - USACE aims to award a contract for work on the Ohio Erie Canal this year
 - The current proposal to build a berm at Little Killbuck Creek cost estimate is \$15 million
- Barrier I will begin construction next year and be brought online in FY2021
 - Currently in the open bidding process for incorporating electrical equipment to Barrier I
- Implementation of the Brandon Road Tentatively Selected Plan (TSP) requires a non-federal sponsor, which the state of Illinois has offered and U.S. Army Corps of Engineers (USACE) has accepted
 - A previous regional offer of sponsorship could not be accepted because the state of Illinois was not a member of that offer
- The Brandon Road TSP represents a one-way solution blocking the movement of AIS from the Mississippi River to the Great Lakes, and USACE is seeking funding to investigate a two-way solution
 - During the public comment period on Brandon Road TSP, 9,200+ comments (61%) supported TSP or complete closure
- USACE is seeking authorization for construction by October 2020, with a projected start date of October 2022 and completion by Oct 2025
 - Seek to keep navigation open for as much as possible of the construction period
- The current transit time through the lock system is 2.1 hours; TSP transit time is projected to be 4.54 hours on average
 - Processing time is only increased by 15 min, but the delay time increases exponentially as barges continue to backup
- There was a comment that more context is necessary to understand the increase in average transit time under the TSP; seasonal changes, flow changes, traffic, etc.

Carp Tank Challenge

- \$1 million of Michigan DNR's general budget funding was earmarked to identify innovative methods of control with a goal of preventing movement of Asian carp
- External experts were brought in to inform development of a challenge bounded around movement through the CAWS, Michigan Carp Team looked through submissions
- 353 solutions submitted from 27 countries with 198 true submissions. The Michigan Carp Team reviewed submissions and narrowed them down to 22 submissions for an external judging board. An internal and external blind judging process selected 4 finalists and 6 runners-up
 - First place: Cavitation bubbles
 - Second place: Lock treatment
 - Third place: Velocity barriers – modify aspects of lock and creating velocities than fish can't swim upstream through
 - Fourth place: Select and destroy – imaging system to identify fish and shunt Asian carp to a different location in the lock for targeted treatment
- An O₂/CO₂ injections system that was submitted through the Carp Tank Challenge is going to be utilized for red swamp crayfish treatment

CAWS AIS Stakeholders Group

- Renamed to CAWS AIS Stakeholders Group
- The group is a forum to exchange information about Asian carp with no burden for members to be in 100% agreement
- If group majority agreed to a solution the CAWS AIS Stakeholders Group can still make a group statement

ANSTF Update

- The Department of Interior's strategic pause has concluded and the ANSTF charter is now valid through January 10, 2020
- Pam Fuller provided a USGS-NAS update at the recent ANSTF meeting about new species occurrences that ANSTF should be aware of
 - ACTION ITEM: Share Pam's presentation
- The development of the next ANSTF strategic plan revolved around in-depth discussions at its most recent meeting about the purpose and direction of ANSTF
 - Goal teams were organized to develop top priorities surrounding ANSTF goals based on past work
- A drafting committee will use the comments of the goals teams to develop the new strategic plan that will be presented and reviewed at the fall ANSTF meeting
 - Plan will go into federal register for public comment (including regional Panels) after ANSTF review and approval
 - The current proposed approach to ANSTF outreach priorities is to increase AIS knowledge in general public, which is difficult to do with the limited funds available to the ANSTF
 - There was a comment that GLP membership should further discuss this approach and possibly comment against this vague approach in favor of more targeted outreach to user groups
- U.S. Fish and Wildlife Service funding updates:
 - \$2 million for ANS state plans that will be split evenly between the states that apply for funding
 - \$40,000 for regional Panel operations

- \$5 million for the Great Lakes watershed for Asian carp in FY18
- \$3 million for Region 3 (Midwest Region) to support specific activities: targeted fishing, Asian carp deterrents, and grass carp management
- \$940,000 for Quagga-Zebra Mussel Action Plan for Western U.S. Waters, with an emphasis on preventing spread through trailered watercraft
- \$700,000 for prevention – specifics on how this will be spent are still being considered, with some potential options being boat inspections, HACCP training, outreach campaigns, increasing engagement with tribes

GLANSIS

- Substantial updates have been made to species profiles and fact sheets that need external review
 - Reviewers are needed for almost all taxonomic groups, but primarily crayfish
- The risk assessment beta site is available, including a link to the USGS-NAS literature database that automatically pulls any risk assessment references and a methodology comparison
 - Some species-specific results should be integrated by the fall meeting
- Ten species have been selected for the habitat suitability and control pilot project. The pilot project will identify the metrics that are most suitable to habitat modeling, which will be integrated into the map explorer feature to create potential habitat suitability maps
- GLRI funding will be used to develop an outreach video about AIS work in the Great Lakes region
- Needs Assessment for GLANSIS: https://umich.qualtrics.com/jfe/form/SV_0uguT0TrMly90s5
 - Initial results of the survey will be compiled by September, but the survey will remain open for at least a year
- GLANSIS hosting will also be hosting the Great Lakes Waterlife database of native species, including the Barcode of Life to assist with eDNA sampling

DFO

- Federal AIS regulations came into force in 2015 under the Fisheries Act, which provinces enforce
 - No process currently to add species to restricted/prohibited lists
 - Federal fisheries officers will be dedicated to enforcing AIS regulations in 2019
- \$43.8 million over five years has been allocated to a sea lamprey control program, an Asian carp program, and the National AIS Core Program
- The National AIS Core Program coordinates regional AIS core programs and develops policies, protocols, and processes. \$50,000 is allocated for regional core programs, which DFO decided to focus on the Prairie provinces in 2018
- The Great Lakes Asian Carp program will continue outreach and education with the Invasive Species Centre and Ontario Federation of Anglers and Hunters, and are looking to expand early detection capacity beyond the current 32-36 sites/year
 - DFO will be working with the province of Quebec on Asian carp response preparedness exercises
- Great Lakes AIS workshops will be held with key stakeholder groups to inform an action/implementation plan to be shared with partners

ISC Update

- Asian Carp Canada provides consistent branding and a voice for all partners doing work under the program
 - ISC leads outreach program under Asian Carp Canada

- Asian carp education and outreach is conducted through a webinar series, public information sessions, the Toronto Zoo Asian carp exhibit, and the Confused with Carp series showing differences between Asian carp and native species
- A log in section of the ISC website provides information about Canada's Asian carp response plan, including a response database to track what equipment is available in what areas and information about the incident command system
- ISC also conducted an economic impact analysis focused on Ontario municipalities and their annual expenditures on invasive species
 - 55% response rate
 - Data extrapolated for province-wide projections

MAISRC

- The MAISRC was formed in 2012 and is focused on AIS in Minnesota, including plants, invertebrates, fish, and pathogens
 - Invertebrates work: spiny water flea, seven projects studying zebra and quagga mussels testing chemical control options with USGS, including small-scale field testing
 - Fish work: genetic modification of common carp for biocontrol strategies and life history studies of Asian carp
 - Pathogen work: VHS surveillance
- MAISRC also distributes an outreach and education newsletter, maintains a website with information distilled in a user-friendly manner, and contributes to 100+ media stories and reports
- An annual threat assessment uses a technical committee to identify a list of 40 species and the highest priority research questions for those species. These are then narrowed to the 20 highest research priority needs for which an RFP is developed and ~5 projects are funded each year
 - Open to public comment, stakeholders
- Social science has been somewhat overlooked in past work, and MAISRC will be funding an AIS economic project that will begin in July
- Work is funded through Minnesota state funding

Wisconsin Climate Change AIS Spread

- The WICCI system predicts how target areas in Wisconsin will shift under various climate change scenarios, and uses each of those scenarios to identify an analogue state with similar current conditions
- Target species for analysis are identified based AIS species identified in analogue states
- The RAMP program is used for climate matching
 - GBIF records can be manually expanded with local and state records
- The RAMP system has some limitations: it's difficult to QA/QC records in GBIF, and if a species is under-surveilled, it can have a poor RAMP fitting. Further, RAMP scores are coarse and not useful for small scale planning
- RAMP also has a climate prediction tool that can be used to identify analogue states, and there may be literature identifying analogues for other Great Lakes states (e.g. Purdue analysis for Indiana)

Great Lakes Ship Monitoring Project

- The project was a collaboration between the Lake Superior Research Institute and the Great Waters Research Collaborative as part of a Minnesota VGP permit surveillance component requirement for lakers

- Bloody red shrimp (*Hemimysis anomala*) was selected as the primary non-indigenous species target, but researchers were also searching for any species not yet identified in Lake Superior
- Sampling ports were installed according to U.S Coast Guard requirements for representative sampling
- Laker companies reviewed the sampling test plan and approved it on onset of the project
- Uptake and discharge were sampled for *Hemimysis* DNA and specimens
 - Uptake source water was also sampled to determine the possible presence of an established *Hemimysis* population
- *Hemimysis* specimens were identified in 4 uptakes in southern Lake Michigan and 3 discharges to western Lake Superior

NY Boat Inspections

- New York State Department of Environmental Conservation (NYS DEC) funds the Adirondack Watershed Institute to place boat stewards at launch sites
 - PRISMs with high presence of AIS for are targeted for steward partnerships
 - Stewards are placed at locations with microscopic organisms or areas with high connectivity/risk of spread (e.g. Lake Champlain, Hudson River)
- Data collection is standardized between NYS DEC, NYS Parks, New York Natural Heritage, and New York Sea Grant using ESRI Survey123 for tablets (called WISPA in New York)
 - Each organization is trained in use of the software so they can troubleshoot individually
 - Questions are standardized, although each organization can create custom questions in addition to the standardized set
 - Data can be saved in an outbox to be uploaded when wifi is available
- The WISPA dashboard is viewable by all managers and provides real-time survey results
- NYS DEC is striving for message consistency and standardization in AIS management, and WISPA allows for consistency in managing recreational boating

Ontario Law Enforcement

- The Ontario Invasive Species Act (2015) came into force in 2016 and expanded AIS management beyond Asian carp to encompass the Conference of Great Lakes and St. Lawrence Governors and Premiers "Least Wanted Aquatic Invasive Species List" and all species in the family Channidae (snakeheads)
 - Prior to 2015, AIS enforcement centered around educating people about regulations around selling of live Asian carp and snakehead
 - Live food trade and border crossings were identified as primary pathways of introduction for both Asian carp and snakehead, leading to joint force operations between the enforcement branch of OMNRF and Canadian Border Services Agency
- Enforcement priorities for conservation officers have been restructured to provide specific tactics and targets for those priorities
 - AIS is one of the priorities
- Priorities for AIS enforcement center around pathways: baitfish, pet/aquarium, water garden, and food fish
- A three year biodiversity action plan for the bait pathway has been incorporated into the new enforcement action plan
 - Strategy 1: Self-directed learning to improve officer and staff awareness, second phase of training focuses on AIS identification using replica specimens
 - Strategy 2: understand the problem
 - Strategy 3: public awareness

- Strategy 4: increase compliance for live bait in all scenarios, on water, in transit, at border, in shops, etc.

Michigan Red Swamp Crayfish

- Several live trade vectors of red swamp crayfish have been identified, with the bait vector taking priority following the identification of a dead specimen at a boat launch in 2015
 - It was later learned that food markets were utilized to obtain live specimen for bait use
- While education and enforcement for out-of-state wholesalers and in-state retailers proved successful in 2015-16, live specimens were found in the wild in 2017
- Conservation officer training to identify prohibited species is working, as evidenced by an off-duty officer who identified red swamp crayfish in a retailer and alerted on-duty staff
- Several challenges to enforcement exist, including reaching out-of-state retailers who ship prohibited species to Michigan, small retail live food stores who are still importing/selling red swamp crayfish and may not be inspected/consistently carry specimens, and educating courts and prosecutors about the importance of enforcing AIS regulations
- Looking forward, there are plans to revise Michigan's AIS regulations to increase clarity

Ohio Grass Carp

- A risk assessment for grass carp was completed using the U.S. FWS Ecological Risk Screening Summary process
- The term "dead" has been defined in code to ensure clarity
- An undercover operation to sample grass carp retailers tested 600 specimens, all of which were triploid
- A "quick ID" tool was developed for bait stores in addition to a Trash Unused Bait campaign
- A field guide has also been developed to be used by field staff who are sampling Ohio waters and indicated high priority species that OH DNR should be notified of if found

Public Comment

- There was a comment that further consideration should be given to alternatives to regulatory action, including expanded and improved education and outreach efforts

Member Announcements

- U.S. Army Corps of Engineers (U.S. ACE) is offering funding for flowering rush in 2019. Project costs must be 70% federal and 30% nonfederal. Federal funds are available on a reimbursable basis, and does not require applicants provide funds to U.S. ACE
- The 2018 Upper Midwest Invasive Species Conference registration is open and the program is available
- A mutual aid agreement between Canadian federal agencies and U.S. federal agencies is being scoped
- 3 black carp were collected in the Illinois river in 2017 via commercial fisherman bounties
 - Triploid black carp are being moved through southern states for snail control as a result of the reduced enforcement capacity of Lacey Act