

Great Lakes Panel on Aquatic Nuisance Species Meeting Summary

Virtual Meeting | June 16-18, 2020

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

Tuesday, June 16, 2020

Call to order, introductions, and agenda review

Sarah LeSage, Outgoing Great Lakes Panel (GLP) Chair, Michigan Department of Environment, Great Lakes, and Energy (EGLE)

- LeSage called the meeting to order
- GLP members and observers introduced themselves and a quorum was confirmed
- LeSage reviewed the agenda and there were no changes
- Standing committees will continue to work through a revision process to update the shared GLP priorities, continuing work that was initiated at the November 2019 GLP meeting

GLP Business Items

Sarah LeSage, GLP Chair

Erika Jensen, GLP Coordinator

John Navarro, GLP Nominating Committee, Ohio Department of Natural Resources (DNR)

Approval of Nov. 2019 meeting summary

- The Nov. 2019 meeting summary was approved pending minor revisions to clarify acronym usage in the document

GLP Nominating Committee Report

- Navarro reviewed open positions, term limits, and elections process
- The slate presented to GLP members following the November 2019 GLP meeting was formally approved and presented based on unanimous approval from voting GLP members:
 - Vice Chair position: Eric Fischer, Indiana DNR
 - Research Coordination Committee Chair: Lindsay Chadderton, The Nature Conservancy
 - Policy Coordination Committee Chair: David Nisbet, Invasive Species Centre
 - Information/Education Committee Chair: Doug Jensen, University of Minnesota Sea Grant College Program
 - Two at-large members:
 - Dane Huinker, Wildlife Forever
 - Doug Jensen, University of Minnesota Sea Grant College Program
- Kelly Pennington, incoming GLP chair, will be moving to a temporary position outside of the Minnesota DNR AIS program and will be unable to fulfill her role as GLP chair during that period. Eric Fischer, as vice-chair, will handle the responsibilities of chair and has chosen to delegate those responsibilities to the immediate past GLP chair, Sarah LeSage
- This temporary delegation would last through this meeting and the fall 2020 meeting, with Kelly returning as GLP chair in early 2021

Report on Nov. 2019 action items

- E. Jensen summarized progress on completed November 2019 meeting action items
- Two outstanding action items will be shared with members following this meeting: the summary of 2019 GL AIS Landing Blitz, and risk assessment clearinghouse summary documents
- Action items in progress were reviewed, with specific status updates:

- The Aquatic Nuisance Species Task Force will be distributing updated bylaws to the regional panels for review. Those bylaws have not yet been shared by ANSTF but members will have the opportunity to participate in the review when they are
- Members have submitted comments regarding further work for genetic biocontrol, and the next step is for the ExCom to meet to discuss those comments
- Members have submitted comments regarding management of the used boat hauler pathway between Great Lakes and Western states, and the next step is for the ExCom to meet to discuss those comments
- The follow-up to the USGS-NAS webinar has not been scheduled yet
- Conversations about common AIS and law enforcement priorities are ongoing with the Great Lakes Fishery Commission and the LAW Committee. Some of this work is already being addressed through the OIT ad hoc committee and in planning for the OIT symposium

Plans for fall 2020 meeting

- The fall GLP meetings are typically held in Ann Arbor, MI, in November. However, with ongoing uncertainty surrounding members' ability to travel and meet in-person due to COVID-19 restrictions, the ExCom is considering feasible options
- The ExCom will send out survey to GLP members in late July/early August to understand travel restrictions and preference for a virtual or in-person meeting, and the ExCom will make a decision about the fall meeting format by August 15
- Following the conclusion of this meeting, staff will distribute a survey for feedback on the virtual format of the GLP meeting to assist in planning any future virtual meetings

Open floor for GLP member announcements and updates

- The Upper Midwest Invasive Species Conference has been moved to a virtual format and will include virtual presentations in addition to trainings and sessions. Options for sponsoring the event are also available
- USGS is working on a eDNA project and may benefit from GLP member input; the project will be discussed in greater detail with the research coordination committee meeting
- The 2020 Great Lakes AIS Landing Blitz is moving forward for June 28-July 5 as a combination of in-person and virtual events
 - Sara Stahlman will share a request for review of the video script for the Landing Blitz
- The GLP membership recognized Dave Hamilton's retirement and contributions to AIS management

Informational Session: Organisms in Trade

Welcome and introductory remarks

Sarah LeSage, Immediate Past GLP Chair

- LeSage provided participants with general information about the GLP, which was established in 1991 with Congressional authorization through the 1990 Nonindigenous Aquatic Nuisance Prevention and Control Act (NANPCA)
- The organisms in trade (OIT) pathway for AIS introduction and spread is a current priority for the GLP to coordinate activities and advance management solutions; the GLP established an ad hoc committee to address the pathway

Spatially explicit estimates of propagule pressure for the aquarium pathway

Farah Chan, Andrew Drake and Tom Therriault, Fisheries and Oceans Canada

- A typical OIT supply chain the movement of organisms from native habitat, culture facility, distributor/wholesaler, retailer, and end user
 - In some cases, species are transported directly from habitat to distributors; this is common for marine aquarium species
- There are many opportunities where OIT may leave the supply chain and are introduced into the environment (e.g. accidental escapes from culture facilities and intentional release of unwanted pets);

once introduced into the environment, organisms may survive and form reproducing population, and subsequently spread to other suitable habitats

- The objectives of the study are to 1) characterize OIT distribution networks and 2) develop spatially explicit estimates of propagule pressure
- The study used species import records, web searches, literature Review/census data
 - Import records included records from Canada Border Services Agencies (July-October 2018) and Canada Food Inspection Agency (2008-2018)
- Modeled propagule pressure using estimated number of Canadian households owning aquaria, and through literature review on behavior of aquaria owners
- The study found the top three sources supplying aquarium organisms (fishes, invertebrates, and plants): USA, Indonesia, Sri Lanka
 - Canada was connected to all continents (except Antarctica) via the aquarium trade
 - Top three ports of entry with highest propagule pressure: Windsor, ON; Mirabel, QC; and Calgary, AB. Top three distribution hubs: Innisfil, ON; LaSalle, QC; Calgary, AB
- Spatial distribution of retailers (> 1,200) and aquaria owners (~750,000-2.2 million) in Canada are aggregated around the Canada-U.S. border
 - More aquaria owners are aggregated in urban areas and patchy across landscape
- The study estimated a potential 58,000 households release organisms (estimated 29,000-87,000 households)
- The resulting assembled species distribution network may be used to backcast and forecast invasions and direct enforcement and surveillance efforts to key control points (major nodes in the network)
- Understanding how end user's behavior contributes to propagule release helps the development of strategies to communicate risk
- Statistical estimates of propagule pressure (the number of organisms introduced) allow comparisons of invasion risk among key invasion pathways

Interjurisdictional movement of baitfish

Brenda Koenig, Ontario Ministry of Natural Resources and Forestry

- Koenig provided the regulatory context, and bait movement restrictions as a result of VHS detection in Ontario, considerations and lessons and resulting impacts
- Ontario requires a commercial bait license to harvest, buy or sell leeches or baitfish for commercial purposes
 - Cannot possess more than 120 leeches at any one time or take more than 120 leeches in one day except under the authority of a commercial bait license (Ontario Regulation 664/98 Fish Licensing)
 - Cannot possess more than 120 baitfish except under the authority of a commercial bait license or aquaculture license (Ontario Fishery Regulations, 2007)
 - Baitfish consist of 48 native Ontario shiner, minnow and similar species
- Commercial bait Licenses can have co-licensees listed (in addition to the primary licensee), and must list locations for retail business (where leeches and baitfish are sold to anglers)
 - Two types of licenses: 1) Harvesting (and selling, and retail), 2) Dealers (Only for selling bait for wholesale or retail), both allow for buying bait
 - There are also tourist harvester and dealer licenses which have restrictions that enable only the sale of bait to registered guests of the tourist outfitters, lodges, resorts, etc.
- Commercial Bait License Conditions: Restrict bait movement, require operators to inspect and remove (euthanize) non-target fish species (other than the 48 baitfish species), establish measures preventing potential spread of invasive species, identify operator sales to specific buyers (e.g. registered guests of tourist outfitter, etc.), identify logbooks issued to operator to identify where bait may be coming from
- Logbooks: All license holders of both harvesting or dealing licenses are issued Dealers Logbooks
 - Information that must be recorded in these logbooks includes date, type of bait received, amount, license number, and contact/name of supplier
 - License holders of harvesting licenses are issued Harvesters Logbooks; information that must be recorded in them includes date, amount and type of bait harvested, bait harvest area

- Viral Hemorrhagic Septicemia (VHS) Case Study: Ontario's response was to restrict movement of bait in 2007 when the VHS Management was established, and in 2012 when VHS was detected outside the VHS Management Zone and lead to the establishment of the Lake Simcoe Management Zone
- On three separate occasions one harvester transported Emerald shiners from Lake Simcoe-Barry marina region out of the VHS Management Zone
 - On the third occasion in Nov. 2018, the load was detained, inspected, and bait operators were charged, and did not possess valid baitfish license
 - Estimated value of the emerald shiners that were seized and disposed of was \$11,000 USD
- Considerations and Lessons
 - License conditions only apply to those with valid license
 - Good enforcement staff communication/relationships between jurisdictions
 - Highlighted complexity of rules across jurisdictions
 - There is commercial value for baitfish; costs to defendants, to enforcement staff and disposal, and ecosystem costs by spread of pathogens to species
- If the load of baitfish had been directly transported through Michigan to reach another state (was destined for a state in the Midwest), interstate commerce laws apply and may not need to have VHS certification, even though Michigan has prohibitions against bringing in baitfish (because not stopping, simply transporting through the state)
 - Through conversations with law enforcement colleagues in the states, the laws are complicated and there is a need to have a clear understanding of what exceptions exist

Invasive Crayfish Enforcement Case Study

Bob Stroess, Wisconsin Department of Natural Resources Law Enforcement

- Stroess covered three topics: 1) an ongoing crayfish investigation, 2) the Wisconsin response to red swamp crayfish infestation, and 3) what is being done by the Great Lakes Fishery Commission - Law Enforcement Committee (LAW Committee) to curb invasive crayfish introductions
- Wisconsin DNR received call about orange lobster from an aquarium store
 - DNR staff educated the seller and informed them about the law and obtained a list of species for sale, which included many non-native species.
 - Wisconsin only allows native crayfish species
- Communication and program work priorities resulted in difficulties in coordination between law enforcement, invasive species staff, and other personnel resources.
- DNR also contacted the wholesaler that provided the crayfish to the store to buy species for identification training
 - DNR found that retail staff did not properly label species, had to get them labelled for enforcement training, and even then the numbers of products were mismatched and identification was mixed requiring additional contact with wholesaler
- During the investigation, 23 stores were visited in Wisconsin and found 841 crayfish sold to stores
 - Some stores could track purchases through rewards programs, identifying 135 crayfish to individual customers
 - Some owners denied invoices and denied possession of prohibited crayfish in tanks, despite store possession and paperwork indicating otherwise
- Hurdles encountered and takeaways:
 - Identification and training for native and non-native, many species under various overlapping trade names
 - No inspection authority for pet stores in Wisconsin, must rely on retailer consent under inspection authority
 - No requirement for pet stores to retain specific and detailed records from buyers
- Wisconsin is undergoing a multiyear response to red swamp crayfish (RSC) infestations
- The response includes implementing silt fences as barriers for burrowing, blocking barriers, and chemical treatment of ponds
 - One infested retention pond was connected to a stream and was resistant to eradication efforts, so after several eradication attempts, the pond was filled in

- In January 2020, the LAW Committee identified and contacted 39 RSC suppliers in mostly in southeastern states with a letter to educate sellers about laws for state and provincial, including contact information
- The LAW Committee is also developing a centralized repository for educational resources to prevent duplicative efforts and to assist in enforcement actions (e.g., records of where retailers will have reasonably known about laws from previously sent letters)

Great Lakes AIS Regulatory Analysis Project Update

Jill Wingfield, Great Lakes Fishery Commission

- Wingfield provided a brief history of AIS related regulatory analysis efforts for the Great Lakes region, beginning with a contract in 2000 to analyze gaps in commerce of live Asian carp and leading up to a current project with the National Sea Grant Law Center (NSGLC)
- The objectives of these analysis are to provide information that will lead to more consistent regulations and provide a comprehensive buffer for the Great Lakes region
- A recent Governors and Premiers resolution to enhance regional protections against AIS commits to harmonizing objectives of AIS regulations across the states and provinces to strengthen basin-wide prevention and enforcement, including
 - a commensurate approach in fines and penalties for possession, transportation, selling, purchasing, and introducing AIS
 - consistent approaches for AIS prevention and enforcement
- Preliminary work with NSGLC complete this spring includes the comparison of existing regulations, including each jurisdictions' lists of prohibited and regulatory aquatic species, resulting in a list of 89 species for 12 jurisdictions and evaluated
 - Deliverables are in development including graphic representation of regulatory consistency, including activities prohibited
- These analyses are designed to provide the foundation for a discussion around which activities are the most important from an enforcement perspective, e.g., transportation prohibited between jurisdictions is important since the species can subsequently be regulated under the Lacey Act
- Next steps are conduct a comparative analysis for specific priority pathway (e.g., fish hauling) and identify gaps and variabilities in authorities, building toward a workshop focused on collaborative learning and priority setting, and potentially the development of a model framework and draft language to achieve the harmonization objective

Questions and Discussion

- Minnesota DNR could use high-quality photos of the following species for outreach: Crucian carp (*Carassius carassius*), Tench (*Tinca tinca*), Eurasian minnow (*Phoxinus phoxinus*), stone moroko (*Pseudorasbora parva*) and wels catfish (*Silurus glanis*); send photos to Chelsey Blanke
- There was discussion around Michigan's experience establishing new OIT related policies and regulations and lessons that could be learned from that effort, noting that industry consultation was important to the process
- This paper describes the USFWS LEMIS database and also links to an R package to help interested stakeholders explore the data: <https://www.nature.com/articles/s41597-020-0354-5>

Great Lakes Panel on Aquatic Nuisance Species
Organisms in Trade ad hoc Committee Meeting Summary
June 16, 2020, 2:00 p.m. – 4:00 p.m. Eastern

Attendees

Committee Members

Greg Hitzroth, Illinois-Indiana Sea Grant (*Committee Co-Chair*)
Francine MacDonald, Ministry of Natural Resources and Forestry (*Committee Co-Chair*)
Jill Wingfield, Great Lakes Fishery Commission
Catherine McGlynn, New York Dept. of Environmental Conservation
Kate Wyman-Grothem, U.S. Fish and Wildlife Service
Chelsey Blanke, Minnesota Dept. of Natural Resources
Doug Jensen, Minnesota Sea Grant
Sara Stahlman, Pennsylvania Sea Grant
Sarah LeSage, Michigan Dept. of Environment, Great Lakes and Energy
Sophie Monfette, Ontario Federation of Anglers and Hunters
Eric Fischer, Indiana Dept. of Natural Resources
Tim Campbell, Wisconsin Sea Grant
Lindsay Chadderton, The Nature Conservancy
Gavin Christie, Fisheries and Oceans Canada
John Navarro, Ohio Dept. of Natural Resources

Observers

Andrew Tucker, The Nature Conservancy
Austin Bartos, Michigan Sea Grant
El Lower, Michigan Sea Grant
Rochelle Sturtevant, Michigan Sea Grant
Sara Eddy, Fisheries and Oceans Canada

GLP Staff

Erika Jensen, Ceci Weibert, Patrick Canniff, Great Lakes Commission

Draft Summary

1. Reflections from GLP OIT information session

- It was noted that Michigan and other states have struggled with local prosecutors moving forward with aquatic invasive species cases and put forward that it would be interesting to package aquatic invasive species violation potential case stories, which would show that these instances are happening across the basin. How aware are prosecutors about aquatic invasive species?
- Members highlighted scope of session and regulatory work was fascinating and interesting to see cases, the intricacies involved working with several organizations and across jurisdictions. It was important to highlight the regulatory work presented through the sessions, and how policies are implemented in real life.

2. Committee member updates

- Doug Jensen made an inquiry on funding for the OIT symposium and has not heard back yet. Has been working with Chelsey Blanke on MN-DNR OIT project and other projects.
 - UMISC prospectus ready at end of week
- Chelsey Blanke has been working on a suite of educational materials in five sub-pathways, including website materials, a letter and survey for businesses, and other print materials.
- Gavin Christies has manuscript for peer review under Canadian secretariat – for group in June, input for science advice for evaluation on targeting trade. Paper soon to be out from publisher.

- Francine has been working on the “Don’t let it loose” campaign focusing on pathways for organism release, as a nation-wide program.

3. Planning for OIT symposium

Symposium length

- Proposed agenda is currently one day, starting with plenary sessions in the morning, afternoon working sessions and a closing session

Plenary sessions

- LeSage offered to contribute to the session about the process to engage industry and develop whitelist, and for seller registration and recording program which is now one year old. A 20-30-minute timeslot for the process and could contribute challenges and results and some time for discussion with industry present.
- Focus on “How do we engage these organizations when they are not organized in a way that makes this easy” in the sessions and find out industry preferences and where they get their AIS/OIT information.
- Potential to include the industry contact from Bob Stroess (since Segrest Farms is large and already vocal), but also include a local wholesale with cooperative law enforcement history
- There may have time for only 1 or 2 wholesale presentations, and potential lightning round for law enforcement experiences. LE lightning round could ask for LE to answer these three questions 1) What is the current capacity for managing/regulating the pathway/sub-pathways? 2) What approaches have worked well? 3) What approaches have not worked well and what can be learned?
 - May have preset prework and a round table for discussion where details are put up in a single presentation
- Responsibilities for regulatory AIS OIT is divided by taxa. Invertebrates and fish, snail, etc. But there is not much beyond that and only for a few taxa. There is a need for identification skillsets for multiple taxa for LE, and the session can focus on finding challenges for enforcement
- Members can invite similar two national level agencies to answer the same set of questions, unless they have a specific relevant case study
- For industry representatives, organizations like PIJAC may be good to include, but don’t represent smaller pet shops. Small shops don’t necessarily know these larger organizations very well and may have some confusion attending the meeting.
 - Maybe some of the working sessions, can focus on how to can elicit feedback from smaller shops/wholesale. Can send out an online survey for smaller retailer feedback. Additionally, PIJAC may be able to get big box store and or regional entity to be engaged.
 - Potential to reach out to landscape and horticultural research group in Ontario to get industry involvement, well organized in getting feedback from their members, and contribute organizations that could be engaged instead of just working with a national group through PIJAC, or in conjunction with working group in PIJAC
 - Often smaller retailers are often not interested unless there is a direct benefit to their business. Potential for Segrest Farms, which was supporter for Habitattitude.
- The Landscape Ontario horticultural working group would be good to work with based in their past work. There is also a PIJAC Canada, and there is some coordination between US and CAN PIJAC. Though, their director has changed, it may be a bit before they are engaged again.
- Could get feedback from small-scale industry and develop educational products useful to retailer and clientele, and point out invasive species and release prevention related education

Next Steps

- Chairs, staff Doug Jensen, and Sophie Monfette will get together, and figure out what to ask industry prior to reaching out for their interest and participation
 - This prompt will be circulated with committee members to review prior to reaching out to industry

- Develop list of contacts, who will be contacted, and a set of questions for outreach to industry representatives and potential local businesses. Focusing on: their experience in regulation, what has worked well and not, and interest by industry for harmonization across great lakes region jurisdiction
- Members agreed on development of 1-2 wholesale industry presentations and lightning round for Law Enforcement for symposium session

Working Sessions

- Potential participants in sessions includes AIS coordinators as well as additional participants of interest as highlighted in each of the working sessions of the “GLP OIT proposed symposium framework agenda” draft document.
- There are a lot of risk assessments available for OIT, but there people in trade looking for exotic and unknown species and importing them to cultivate and create market. The species are high risk since they are not assessed and appear suddenly.
- FWS has authority, and USDA APHIS does inspections for OIT
- Additional needs for risk assessments, there is a lot of information for fish, but not much for invertebrates
- Create a list based on knowledge and risk assessment of those species to decide what to put on the list where the GLP can refine and ask to be taken up by the Great Lakes and St. Lawrence Governors and Premiers.
- Identifying how to close the gaps, for regulation and enforcement. There is a watchlist in the Great Lakes. Additional information that could be folded in, where there are multiple risk assessments for species across different risk assessment methods
 - Members agreed for the approach for presentations earlier in the day and a session working group to identify commonalities and determine species for regulation, and to then hand these species to those that can regulate.

Next steps

- Get an AIS list together
- Starting point for amalgamating lists, survey for registration in advance and input, and provide starting point for session work group
 - Participant survey can ask for barriers to listing species
- For the development of the Governors and Premiers least wanted list ultimately pathways involved some negotiation for species with higher risk but were also controversial.
 - Several lists were compiled for the Governor’s and Premier’s Least Wanted Species List, Sarah LeSage will share compiled list/process. First list was to make sure that multiple risk pathways were included in the species list, and to open additional discussions of pathways. OIT has business implications, but industry was not well represented for the Governor’s and Premier’s Least Wanted Species List, this group can start these discussions. Governors and Premiers wanted nothing controversial, in the species listing with pathway representation in the listing.
- Additional information on the OIT landscape is important, where we can find information about how and where we can get trade patterns and species information.

4. Other committee work

- The GLP executive committee would like the OIT Committee to review and revised GLP OIT priorities as part of the broader GLP priority review and update effort

5. Wrap-up and adjourn

- Schedule next call in 4 – 6 weeks
- Staff will post symposium materials on collaborative workspace for members to weigh in on working session format, and for continued comments on their own
- Chairs and staff will outline draft questions and objectives for industry involvement, working with Doug Jensen and Sophie Monfette
- Chairs and staff will outline draft questions and objectives for agencies and LE officers to address as part of a plenary session

**Great Lakes Panel on Aquatic Nuisance Species
Information/Education Committee Meeting Summary**
June 17, 2020, 10:00 a.m. – 12:00 p.m. Eastern

Desired Outcomes:

- Updated list of GLP priorities for the assigned sections
- List of actions the GLP can take to advance specific priorities and/or address other needs
- Informed membership aware of new and ongoing work related to committee and GLP priorities

Attendees

Committee members

Doug Jensen, Minnesota Sea Grant Program (*Committee Chair*)
Cathy McGlynn, New York State Department of Environmental Conservation
Sara Stahlman, Pennsylvania Sea Grant
Sophie Monfette, Ontario Federation of Anglers and Hunters
Nadia Sbeih, U.S. Department of State
Tory Gabriel, Ohio Sea Grant
Jill Wingfield, Great Lakes Fishery Commission
Pat Charlebois, Illinois-Indiana Sea Grant
Tim Campbell, Wisconsin Sea Grant
El Lower, Michigan Sea Grant
Dane Huinker, Wildlife Forever

GLP Staff

Erika Jensen, Ceci Weibert, Patrick Canniff, *Great Lakes Commission*

Draft Summary

1. Meeting start-up

- One of the mandates of the Great Lakes Panel (GLP) is to establish AIS priorities for the Great Lakes. Historically, those priorities have been separately established by standing committees, with several iterations and updates
- The move to focus on ad hoc committees means that standing committees haven't convened as frequently as is typical, so the individual priority documents are not currently up-to-date
- A compiled list of all priorities was presented at the fall 2018 GLP meeting to initiate an iterative review process to review the list as a whole panel, rather than continue with separate committee priority documents
 - The goal is to revise the existing priorities to a targeted and comprehensive list that integrates priorities across issues

2. GLP priorities review and discussion

Prevention 1.3: Recreational Activities Pathway

- Members suggested drafting a policy statement in support of the priorities regarding consistency and reciprocity between jurisdictions conducting watercraft inspections (*redundant priorities 1, 2, and 3*). Once completed, this priority may be removed from the list
 - This statement can also include support for boater movement monitoring and include voluntary boater education component to inspection-based programs
 - A key factor in designing effective voluntary inspection programs is to understand what activities/outreach boaters expect when they arrive at a launch, and their motivations to take action
- Feasibility and effectiveness priorities (*redundant priorities 6 and 7*) address barriers to implementation and understanding the cost/benefit of additional prevention measures beyond what is already in place.

These two concepts can be combined into a GLP statement that identifies realistic best practices for the Great Lakes. Once completed, this priority may be removed from the list

- This statement should include specific case studies to illustrate the experience behind the documented best practices
- Understanding the science behind propagule pressure and invasion risk (*redundant priority 8*) helps us to understand “how good is good enough” regarding AIS prevention, but may be too much effort as a GLP priority
 - With effort, researchers could model different spread scenarios for certain species based on movement and biological traits of those species
 - It would be useful to know how widely used the MAISRC model and if it can be applied outside of Minnesota before dedicating resources to developing more models
- An action to address *redundant priority 9* would be for the GLP to prioritize user groups outside of recreational boating, as a lot of resources and focus is on boaters. This may be as simple as conducting a survey to identify to what level different user groups are being addressed through outreach. Once completed, this priority may be removed from the list
- An action to address *redundant priority 10* would be to develop guidance for user groups that don’t already have relevant protocols. Once completed, this priority may be removed from the list
 - This action may be best suited to the ANSTF to work through as an addition to their existing recreational user guidelines
- *Outdated priorities 1 and 2* should be combined into a single priority and remain on the list
- Since information from New York already exists on treating livewell and bilge water, *outdated priority 3* may not be a priority anymore. This depends on the extent of research in New York and how closely it addresses the intent of this priority
- There is significant ongoing work to address *outdated priorities 4 and 5* and thus they should both be removed from this list
- *Outdated priority 6* should be updated to go beyond these resources existing and focus on research testing of messaging, community-based social change, etc.
 - It is important to evolve outreach approaches to focus on meaningful messages and understanding how different user groups want to be communicated with
 - As a priority action, it would be good to collate all of the PSAs/ads that exist relevant to this priority
- *Outdated priority 7* is addressed through the regular activities/responsibilities of the GLP and should be removed from this list

3. Committee member updates and discussion on next steps for GLP

- Ontario Federation of Anglers and Hunters: organization audiences have been surveyed to understand why they do or don’t take actions to prevent AIS and their communications preferences to inform a communications strategy to specifically target gaps. OFAH also received a grant to work with local organizations to set up boat inspection programs and are targeting lake/cottage associations
- Ohio Sea Grant: none at the moment
- Pennsylvania Sea Grant: the PA Fish and Boat Commission is moving forward with hiring an AIS coordinator, part of whose work will include developing new regulations and providing more capacity for AIS work. PA Sea Grant is supporting virtual events for the Great Lakes AIS Landing Blitz, is working with a local television station to film a promotional video about the event, and has developed a boat steward manual to inform boat inspections in PA. The PA ANS management plan includes funding for boat ramp decontamination stations and AIS decals, pet amnesty events in the summer, and interactive videos to make AIS presentations more engaging than a live lecture
- Wildlife Forever: currently in the process of coordinate paid media campaigns for states on the Clean, Drain, Dry campaign and will be undertaking a new project to improve national consistency for outreach education. Wildlife Forever is also working with U.S. Fish and Wildlife Service to evaluate existing AIS prevention resources and tools at wildlife refuge accesses put together cohesive guidance for all wildlife refuges to follow. A new CD3 decontamination model is now available that is smaller and could be installed on a steel post or mobile station

- Wisconsin Sea Grant/DNR/Extension: comments have been received on the Buddhist life release manuscript and authors hope to publish in MBI for ICAIS edition. Staff are also submitting a manuscript on research into the effectiveness of various AIS prevention metaphors in use in outreach campaigns
- NOAA GLANSIS: continuing to develop online species profiles and working on a video tracking the history of AIS in the Great Lakes region
- New York State Department of Environmental Conservation: finished development of a pet trade “tip strip” to be handed out at pet shops detailing AIS prevention tips, and starting a dedicated aquarium/prayer release outreach effort
- Great Lakes Fishery Commission: working to increase social media presence in absence of in-person outreach events
- Minnesota Sea Grant: the Upper Midwest Invasive Species Conference has been moved online, MN Sea Grant will be going forward with in-person events for the Great Lakes AIS Landing Blitz, a student intern will be developing a project to assess Fond du Lac tribe perceptions of AIS, and another student intern will be evaluating if AIS signage needs to be replaced at any public access ramps

4. Wrap-up and adjourn

- Committee members are asked to provide comments on the Education priorities
- GLP staff will summarize notes and revise the recreational activities priorities based on discussion
- GLP staff will coordinate a conference call for the committee in late August to continue discussion of GLP priorities and report out on the Great Lakes AIS Landing Blitz
 - Committee members are encouraged to send other specific agenda topic suggestions to Doug Jensen or Erika Jensen

**Great Lakes Panel on Aquatic Nuisance Species
Policy Coordination Committee Meeting
June 17, 2020, 2:00 – 4:00 p.m. Eastern**

Desired Outcomes:

- Updated list of GLP priorities for the assigned sections
- List of actions the GLP can take to advance specific priorities and/or address other needs
- Informed membership aware of new and ongoing work related to committee and GLP priorities

Attendees

Committee Members

David Nisbet, Invasive Species Centre (*Committee Chair*)
Charles Uhlarik, U.S. Army Corps of Engineers
Kevin Irons, Illinois Department of Natural Resources
Eric Fischer, Indiana Department of Natural Resources
Sarah LeSage, Michigan Environment, Great Lakes and Energy
David Reid, U.S. Saint Lawrence Seaway Development Corporation
Lorne Thomas, U.S. Coast Guard
Mike Ripley, Chippewa Ottawa Resource Authority
Nadia Sbeih, U.S. Department of State
Dave Hamilton, The Nature Conservancy
John Navarro, Ohio Department of Natural Resources
Tom Rayburn, Lake Carrier's Association
Felix Martinez, National Oceanic and Atmospheric Administration
Francine MacDonald, Ontario Ministry of Natural Resources and Forestry
Amy McGovern, U.S. Fish and Wildlife Service
Mike Weimer, U.S. Fish and Wildlife Service

GLP Staff

Erika Jensen, Ceci Weibert, Patrick Canniff, *Great Lakes Commission*

Draft Summary

1. Meeting start-up

- D. Nisbet led a round of introductions and reviewed the agenda

2. GLP priorities review and discussion

- Economic impacts
 - C – should be modified to be more specific
 - Are there top priorities among potential vectors?
 - This is hard to narrow down without baseline data
 - A cost/benefit analysis is needed to determine priority
 - Suggested alternate language:
 - “conduct [risk assessment/economic studies] to determine priorities for targeted future work”
 - “cost/benefit on mitigation strategies on priority vectors”
 - “conduct cost/benefit on hydrologic and ecologic separation of canals and waterways”
 - Consider merging A & E
 - These represent a two-step process; (1) develop tools and (2) compile the tools that are proven effective
 - Second sentence of A should be part of C
 - Consider merging F & G

- Also represent step one and two (marketing strategy first, then materials)
 - Public doesn't know enough about costs/impacts of AIS
 - Uncertain if this is because we don't have the information or because we're not communicating the information
 - These ideas should be included in our work planning; importance of sustained effort, communicating with policy-makers and funders
 - May need to be reconciled with other sections
 - B – GLP could “compile” instead of evaluate
 - D – GLP could “compile” instead of clarify
 - Others could work on developing “better estimates”
 - Use the value of sectors
- Funding
 - Committee members will be asked for written feedback on this section
- Shipping
 - Dave Reid developed a revised list of priorities for this section for consideration; this will be provided to the committee members for review
 - A – Still needed
 - E – Not a high priority; possibly esoteric and may not gain much by having this
 - Numeric thresholds may not be as relevant for ballast water anymore, but applies to other vectors
 - B – Recent policy has made this less needed for the Great Lakes; however, the second part on screening methods is needed
 - Screening methods could be combined with F
 - D – Not needed for GL
 - Primary issue should be focusing on treatment:
 - How well is it working and how do we determine compliance (research questions that inform policy development)
 - Don't want to lose site of understanding the pathway to target management efforts, e.g., source ports
 - Section feels a little dated and needs to be reworked
 - Need to consider concepts of emergency treatment or interrupting pathways

3. Committee member updates and discussion on next steps for GLP

- No updates

4. Wrap-up and adjourn

- Committee will convene to have a follow-up discussion on these priorities sections once written feedback is received and updates are made
- Interested committee members may contact Dave Reid for specific follow-up discussion on shipping priorities

**Great Lakes Panel on Aquatic Nuisance Species
Research Coordination Committee Meeting Summary**
June 18, 2020, 10:00 a.m. – 12:00 p.m. Eastern

Desired Outcomes:

- Updated list of GLP priorities for the assigned sections
- List of actions the GLP can take to advance specific priorities and/or address other needs
- Informed membership aware of new and ongoing work related to committee and GLP priorities

Attendees

Committee members

Lindsay Chadderton, The Nature Conservancy (*Committee Chair*)
David Reid, Saint Lawrence Seaway Development Corporation
Michael Greer, U.S. Army Corps of Engineers
Doug Jensen, Minnesota Sea Grant
Nick Phelps, Minnesota AIS Research Center
Eric Fischer, Indiana Dept. of Natural Resources
Rochelle Sturtevant, Michigan Sea Grant
Kate Wyman-Grothem, U.S. Fish and Wildlife Service
Sarah LeSage, Michigan Dept. of Environment, Great Lakes and Energy
Kevin Irons, Illinois Dept. of Natural Resources
Seth Herbst, Michigan Dept. of Natural Resources
Patrick Kocovsky, U.S. Geological Survey
Lindsay Chadderton, The Nature Conservancy
Kurt Kowalski, U.S. Geological Survey

GLP Staff

Erika Jensen, Ceci Weibert, Patrick Canniff, *Great Lakes Commission*

Draft Summary

1. GLP priorities review and discussion

Management and Control

- Members agreed to combine *priority c and priority f*.
- Members highlighted a need for the Panel to identify partners and collaboratives, ensuring the right people are in the right rooms. Where there is not an existing collaborative the Panel role for bringing groups together, and identify process for collaborative/partners
 - Product document identifying what the panel considers a “priority species”. Define at the start of the document, the need for species to be defined. Sub-bullets to cover the process to define species. Decades ago, the GLP developed a priority species list, this priority may be referencing this list from many years ago.
- *Priority m*, is a subset of *priority l*, biological control agents fit within *priority l* “behaviors, life history traits or physiologies”. *Priority l*, is a research bullet, (change “conduct” to “review”) to clarify the section or send to Research and Coordination
 - Research that is relevant to control, if this was review then NOAA GLANSIS has already reviewed control relevant studies for species, more studies are unnecessary
 - Both priorities can be combined, for priority species 1) identify life history, biology, etc. traits that lend to enhancing control and management, and 2) develop tools. The first step toward this would be a review,
 - Identify the needs of the basin, and differentiate between panel or a region need/priority.
 - Panel membership can conduct this review or develop request for proposal for others with funders

- Remove *Priority m* (contained within I), and refine using priority species language similar to *Priorities c* and *f*.
- *Priorities (n, o)*. These two can be combined, one focuses on tools, and the other on measures. Difficult to impossible to conduct unless there is a collaborative behind the species of interest (due to the level of information needed)
- Could list both since *Priority n*: decision support tools using existing information, and sensitivity analysis, is different than the development and evaluation of new tools for decision support tools
 - Anything new/novel or innovative tools, then I think that falls under O, ex: RNA innovation tools, and other tools that haven't been tried or evaluated. N; existing tools, O: new tools and methods for what is already established
 - Identify need for new tools and encourage investment in development and effectiveness evaluation. Include example of which tools would help (revise priority with example) ex: RNA.
 - Potential for a decision support tool
 - Revise to include points about tracking progress, looking at spatial, time, data to
 - 1) Track current progress, 2) Evaluate individual and combinations of actions
- *Priority h*, NOAA addressed this in technical memo 168, but there may be a lot of changes since it was published for permitting and chemical control for existing species, but likely covers taxonomic range of species likely to invade GL, can be used as the baseline review. Remove wording "taxonomic" since no new taxa groups are likely. *Priority h*, fits into gap analysis for tools for priority species that are already here. Species pages for GLANSIS, include existing controls for individual species and has literature review for legal listing when available, but the gap analysis part of the priority has not occurred. Start with a review of current available information then develop a gap analysis. Change language in this priority to "maintain and update availability of control tools" for established species and invaders, and the other gap is policy and legal, there is still a gap for availability of policy tools
 - Members agree to refer to both the legal and physical availability in these priorities (i.e., agency, regulation, and location of tools)
- Looking at control tools, we are looking at how to manage species, and jurisdictionally to establish dialogue and communications pathway to clear these hurdles
 - What tools are capable, and are we legally allowed to use them?
 - Control and toolbox perspective, and define the limitations for application of these tools
- Members agree that *priority (g)* is duplicative with the other priority and should remove it
- *Priorities (e),(i),(j),(k)*. For *Priority (e)* every species profile in GLANSIS there is a summary for control methodologies, with link for USGS NAS database and for papers that are available in the NAS clearinghouse. Grey literature is rough, but clearinghouse structure is there if additional resources are sent to Rochelle Sturtevant they can be easily added. Rephrase: "continue to improve control methodology", collating information may be some work. For individual species in GLANSIS it is easy to include control strategies but to aggregate all control species information on all species, is a large lift. Get rid of "developing a clearinghouse" instead use the one we have (i.e., GLANSIS/NAS)
- *Priorities (i,j)*. *Priority i*, fits in with response priorities and with *Priority h*, for gap of control tools, once compete then identify gaps for *Priority j*. Members agree for *Priorities i* and *j*, to include genetic control methods, and revise wording to include "socially acceptable" phrasing, members agree. Since, socially acceptability is often left out in context for genetic controls.
- Add as new priority, for control and management (possibly response) available resources should have an inventory of physical location of tools, may also be important
 - In addition of a physical plot is there also a need for registry of expertise
 - ex: "fish slicer"/rotenone
- Move *Priority i* to response priority section
- *Priorities (k)*, could be moved to response also, often we need to buy time, containment is often about buying time for effective tool development
 - Number of ANS TF plans, ex: ruffe control plan (partial success) for spread in superior and GL
- *New priority*: Add as new priority; for control and management (possibly response) available resources should have an inventory of physical location of tools,

Prevention 4.1: Research

- Discussing duplicative *Priority (a, b, e)*. For *Priority (a)*, the current list of high-risk invasion sites can be provided by the surveillance framework for U.S. side, Canadian side is in development of high-risk site through the framework. Baseline data exists for high risk species for some high-risk sites, ex: Duluth Harbor. Fish and Wildlife Service has fish high risk invasion sites, but it is not complete for any other taxa. For some sites The Nature Conservancy has species lists for fish and some invertebrate data.
- *Priorities (b,e)* research data for publishing data, for source studies of lab study of impact in other places – lots anecdotal and expert opinion
 - Evaluate each location for direct or indirect impacts, reliant on (2-3) multiple lines of evidence to evaluate control and management.
 - Not enough baseline biological information available, typically have to work out traits simultaneous with response and control. Often funders want information on ecological impact but there's critical site information missing. Baseline site information is useful for restoration after control.
 - Potential to include standardized biological monitoring into invasive species monitoring
 - Environmental monitoring can also apply to sport fish management folks
 - Can have a standardized monitoring program, with main channel fish communities, and another program for reef specific management. IL used reef program in upper IL river for common ground data collection with sport fish and invasive species management
 - Clarify language and wordsmithing for *Priorities (a, b, e)*
- For *priority e*, pathogens and parasites may be underserved group. GLANSIS includes these groups for fish health, but don't list parasites besides fish. There is not enough information out there, even with fish the native pathogen/parasites listing is not complete/known.
 - Include and rephrase for “novel or existing” pathogens/parasites exacerbated by invasive species
- *Priorities (c,d)*, make a distinction for species like sea lamprey and carp. The research committee has the role to identify next potential invasive species
 - GLANSIS has data for species lacking sufficient information for completed assessments profiles, committee can make a list but what is priority with high uncertainty, with unknown risk and impact
 - Points in *Priority d* could be combined with *priority a*. Potential for a gap analysis for which species we have information, and review of food disruption studies and gap analysis

2. Committee member updates

- This agenda item was postponed due to lack of time

3. Wrap-up and adjourn

- L. Chadderton and staff will convene a subgroup of committee members will convene to discuss a process for developing a priority species list
- The committee will reconvene in the fall to review the priority species list development process