

Minnesota Statewide AIS Advisory Committee (SAISAC)

January 28, 2021 Meeting Minutes

Virtual Meeting via WebEx from 10:00 a.m. – 1:40 p.m.

Members Present: Justine Dauphinais, James Johnson, Kate Hagsten, Holly Kalbus, Ryan Wersal, Isiah Tolo, Michaela Kofoed, Roger Imdieke, Kelsey Taylor, Eric Johnson

Members Absent: Chris DuBose, Pat Brown

Ex-officio Members Present: Nick Phelps, Doug Jensen

Ex-officio Members Absent: Amy McGovern, Nicole Lalum

DNR Staff Present: Heidi Wolf, Phil Hunsicker, Tina Fitzgerald, Shane Kirlin

Guests: Aly Brewer (Community Action Duluth)

Meeting began at 10:04 a.m.

Motion to approve agenda. Motion made by K. Hagsten and second by E. Johnson. Motion approved unanimously.

Motion to approve Meeting Minutes of December 3, 2020. Motion made by K. Hagsten and second by I. Tolo. Motion approved unanimously.

Meeting Summary:

- Committee members learned about the recruitment process to fill three vacant seats on the Committee.
- Committee members learned about an initiative to improve diversity, equity, and inclusion (DEI) on all DNR advisory committees.
- Committee members discussed their priorities for 2021. These include educational topics, potential speakers to address those topics, and what the Committee would like to accomplish.
- Dr. Nick Phelps (MAISRC Director and ex-officio member of the Statewide AIS Advisory Committee) educated his fellow Committee members about the online AIS Explorer Tool, a decision support tool created by MAISRC to help counties prioritize their AIS prevention activities.

Committee Member Updates

- **B. Gross:** Continuing to work on new technology for the boating world: quick drain systems and smart live well systems. Can talk more about this ongoing research in about a year.

- **E. Johnson:** Working with Meg Duhr of MAISRC on the design of spiny waterflea awareness towels. Working with Voyageurs National Park and Koochiching County to remove invasive cattails. Finding that natural seed banks under the invasives are still viable.
- **H. Kalbus:** Talking with the county board about outreach. Have been using CLIMB Theater for 5th graders. Expanding to elementary and high school classes with both virtual and live lessons. Looking at having CLIMB work with fishing leagues. Have done successful live sessions at the accesses. Creating radio ads. Increasing watercraft inspection presence in the county, and will be using MAISRC's AIS Explorer Tool in 2021. Plan on adding 6 additional lakes, which are also waterfowl hunting lakes, so this will give us an opportunity to educate waterfowl hunters at the accesses.
- **I. Tolo:** Published one paper and have submitted another for publication about two carp viruses. One of the bigger findings from research was that these viruses do not appear to infect native fishes.
- **J. Johnson:** Getting many questions from clients about the DNR's new system for control grants. **H. Wolf** says that an announcement is coming out in a couple of weeks. DNR leadership is currently reviewing the proposed new system for doling out control grant dollars. We may also be able to supplement the grant dollars with leftover money originally designated for zebra mussel control.
- **J. Dauphinais:** **Coon Creek** Watershed District also serves as ditch authority. Dealing with a complaint about new vegetation clogging a ditch. An emergent plant that looks like Flowering Rush. Shared samples with experts, but difficult to positively identify. Covers one mile of ditch. A rapid response fund is available if it is Flowering Rush. Waiting for carp to congregate for capture by contractor. **J. Johnson** asks if it is a ditch or a public water. It is not a mapped public water. The MPCA regulates discharge of pesticides into all waters, so if they need to treat the plants, they will need an MPCA permit. It is a "complicated regulatory landscape."
- **K. Hagsten:** Getting her office back up and running. Working with Donna Perleberg (DNR) on purple bladderwort found in Leech Lake. Did some starry stonewort surveys this past year, which is a precursor to an LCCMR grant request. Establishing starry stonewort boundaries in Cass Lake. The Leech Lake Natural Resources Advisory Committee is meeting this week. Intern from Bemidji State University is presenting on an aquatic plant management plan for the Division of Resource Management. Using One Watershed One Plan template. Asked if the intern could be a guest at the next Advisory Committee meeting in February. **T. Fitzgerald** and **P. Hunsicker** can help arrange it. Biocontrol education for youths. Challenges to creating videos for youth that can be incorporated in schools. Acquiring funding for two watercraft inspectors in 2021.
- **K. Taylor:** St. Louis River estuary nonnative *Phragmites* control. 90% contained. Some spots owned by railroad are difficult to gain access. DNR helped with access issues.
- **M. Kofoed:** Waiting for the ice to melt to return to fishing open water. Working on getting Aqua weed stick tools at the public access ramps to be more affordable and mobile.
- **R. Imdieke:** No updates.
- **R. Wersal:** Classes started last week. Some face-to-face, some virtual, some hybrid. Organizing research for 2021.
- **N. Phelps:** In early May, will be launching a campaign to prevent the spread of spiny waterflea and break the pathway. Promotional materials (towels) will be available through MAISRC. Finished report on surveillance and early detection. Sent to legislature. Could be a possible future presentation for this Committee. Want to talk with **J. Dauphinais** or **J. Johnson** about a letter of support from the Advisory Committee for MAISRC funding, which comes via LCCMR funding and a direct appropriation from the legislature. **J. Johnson** asks if the letter would be similar to the one that was written last time. Yes, last year LCCMR was not funded. **J. Johnson** will pull up the old letter and send it out to everyone on the Committee. **J. Dauphinais** will sign it. **N. Phelps** can help identify who should receive copies of the letter. This is not urgent. Have until March. **J. Dauphinais**

says we can schedule time at next month's meeting (February 25) to discuss or use Basecamp for discussions prior to that meeting.

- **D. Jensen:** Securing funding for two interns. Received some assistance from St. Louis County. Developing a Sea Grant RFP for research on Chinese and banded mystery snails. Working on end-of-year reports. Gave a presentation to the Pine County COLA. Not a lot of AIS there. Presentation was on how local efforts coordinate with state and national efforts. Working with River Quest. 20,000 sixth-graders educated since 1993. Planning for this year – how to make it work virtually with some hands-on aspects. Virtual meetings on organisms in trade (OIT) with the Great Lakes Commission. Focusing on law enforcement jurisdiction. Received glowing reviews on virtual UMISC conference.
- **A. Brewer:** As a VISTA/Americorps hire, working on environmental and social justice with Community Action Duluth.

DNR Updates

- **S. Kirlin:** No updates.
- **H. Wolf:** Governor's budget came out on Tuesday. Proposing to raise AIS surcharge from current \$10.60 on a boat registration to \$11.00 based on complaints from those handling payments from citizens. Rounded up to the nearest dollar amount would make their jobs easier and it would create another \$109,000 for AIS work by DNR. There will be a new budget forecast coming in February, which might change things. Can discuss at the February 25 meeting. **J. Johnson** asks about the Index of Biological Integrity (IBI). Is it just for fish or can it include plants? **H. Wolf** will ask. **T. Fitzgerald** adds that the Governor's budget also requests required permits for youth angling tournaments. AIS Prevention Aid (\$10 million) was also included in the Governor's budget.
- **H. Wolf** says the DNR's Invasive Species Annual Report is close to being completed and submitted to the legislature. HF228 is an attempt to modify the language about state management plans. Asking that they be updated every five years and include connections with climate change. Potential problem for this change is that federal review is required to update the plan, and that can take up to two years. **D. Jensen** adds that there are no federal requirements for revision of the plan. Things have changed since 2009 concerning AIS in the state, which is why the state recently updated the plan. Climate change language is included in the most recent update. **N. Phelps** asks about MISAC's role in the state plan. **H. Wolf** says that MISAC is the author and the DNR uses the plan to obtain federal funding, so we have skin in the game. **D. Jensen** says that in 1993, President Clinton asked states to create an AIS management plan. The first Minnesota plan was approved in 2009. **N. Phelps** asks what the Advisory Committee's role is in this process? **D. Jensen** says the plan is written at a high level. **K. Taylor** asks if the Advisory Committee can review the plan. **D. Jensen** says that is a good idea. The Committee should ask MISAC, and not the DNR, to review the plan and make recommendations on behalf of the Committee. MISAC welcomes comments. However, the deadline for internal comment is tomorrow. **K. Taylor** says MISAC has meetings in February. We should ask Chelsey Blanke (DNR) about commenting on the plan. **J. Dauphinais** asks **K. Taylor** and **D. Jensen** to make contact with MISAC for a future presentation on the state's management plan.
- **T. Fitzgerald:** There were 115 applications to fill three vacant spots on the Committee. There was also greater ethnic/cultural diversity in the applicants than last time, due to significant efforts by the DNR to recruit for diverse representation on advisory committees.
- **P. Hunsicker:** There is an initiative within the DNR to make all DNR advisory committees achieve better diversity, equity and inclusion (DEI) that more accurately reflects the changing population of Minnesota. He shared with the group a copy of the draft initiative and asked for comments from the Committee that we can take forward to our DNR colleagues.

- **H. Kalbus:** Attended the recent DNR Roundtable and this (DEI) is an important topic. Lessons she learned are that we should use stories from those not white or male, and we should make it a point to reach out and talk to groups where more diversity is present.
- **D. Jensen:** The draft document on DEI looks like a good start. It should be shared with Native Americans for their tribal perspectives.
- **K. Taylor:** For starters, never refer to people as “invasive.” And it works both ways. Native Americans should never refer to whites as “invasive.”
- **T. Fitzgerald:** Asks when the UMISC presentations on DEI topics will be made available to the public. **D. Jensen** says soon.
- The Committee was asked to make their comments on Basecamp over the next week or so. Those comments will be shared with DNR leadership involved in promoting DEI in all of DNR’s advisory committees.

2021 Priorities

- **J. Johnson** suggests pursuing options for citizens to make voluntary contributions to statewide AIS work through a voluntary donation, either through a tax check-off like the loon fund that supports the DNR’s Nongame Program, or by making an extra contribution when registering your boat. Could get a DNR person to discuss potential impediments and what a process might look like. He shared the Committee’s previous spreadsheet of priorities, which included the following:
 - Communicating up the DNR chain of leadership through **H. Wolf**. That process seems to be working fine.
 - Legislative updates from DNR or thorough Jeff Forester with Minnesota Lakes and Rivers Advocates
 - Updates from **N. Phelps** on research. Can also get research updates from **R. Wersal**.
 - Events, conferences, meetings, etc.
 - Wendy Crowell (DNR) on invasive aquatic plant management (IAPM) and case studies to use as examples.
 - Carp management.
 - *Phragmites* management.
 - Maximizing efficiency, for example, encouraging inspectors to rake up vegetation at public accesses
 - Starry stonewort updates from **R. Wersal**, **N. Phelps**, and DNR staff.
 - Implementing a boat operator’s permit with mandatory AIS training – has not yet gained a foothold at the legislature. **J. Johnson** wonders if a simple financial incentive might work. For example, you can take a dollar or two off the cost of your license fee if you do a short AIS training.
 - The risk of private boat accesses. The DNR has no jurisdiction over private accesses. Potential speakers could be from counties working closely with local resorts.
 - Tournament anglers.
 - Enforcement of AIS laws at the local level.
 - Updates on Community-Based Social Marketing.
 - Case studies of successful AIS management. Could be a presentation by a DNR Specialist, contractor, surveyor, consultant, etc.
 - Committee supports research at MAISRC.
 - Addressing misconceptions and biases (between anglers and lakeshore property owners), which led to the open space meetings convened by the DNR.

- **J. Johnson** suggests spiny waterflea and fish pathogens as topics of discussion for 2021.
- **J. Dauphinais:** The start of a good list. How about a presentation on the legislative report by Amy Kinsley from MAISRC? How about how AIS are incorporated into the Indices of Biological Integrity (IBI) from the Governor's budget? How about AIS and the water quality connection? Would like to hear more on the statewide AIS plan and MISAC's role.
- **R. Wersal:** Flowering rush. MN is uniquely positioned for both the triploid and diploid types.
- **J. Johnson:** Make sure we have a formal discussion about the role of the Committee with new information – what does it mean to DNR and to the Committee and what actions can be taken.
- **J. Dauphinais:** The DNR's approach to emerging species.
- **D. Jensen:** Organisms in Trade (OIT). He can give a BIOTIC symposiums summary to the Committee.
- **K. Hagsten:** Knowledge gap and public accesses. Paying attention to signage. Boaters are in a hurry. Information at public accesses should stay with people when they are in their boats. Enforcement on private accesses. Need more training for local law enforcement to diffuse tense situations.
 - **D. Jensen:** BWCA group is looking at the effectiveness of signs. They are coming up with improved signage going into the Boundary Waters. He could give a presentation to the Committee.
 - **T. Fitzgerald:** Our survey with anglers showed that they get their AIS information from signs.
 - **D. Jensen:** A sign inventory was done in northeast MN. Improvements are still needed when it comes to consistency and effectiveness of message.
- **J. Johnson:** How about a tribal day for the Committee? We can hear tribal perspectives, their different approaches, the importance of wild ricing to their culture, etc.
- **M. Kofoed:** Chemical treatment and the angling community. Anglers generally don't like the loss of "fish habitat."
- **T. Fitzgerald:** University Extension has an AIS Management 101 course online. About eight hours long and there is a cost. We could have DNR APM staff talk with the Committee about aquatic plant management.
- **I. Tolo:** Fish pathogens. **J. Dauphinais** adds specifically keeping up with the research – using pathogens as a control strategy and understanding the role of the SAISAC. **H. Wolf** says that it is similar to genetic biocontrol. Starts with EPA approval as a pesticide/control. The State does environmental review and cost/benefits analysis. It is a very long review process. **R. Wersal** says there is a precedent with pathogens in terrestrial weed control. Fungal pathogens in milfoils. There is confusion about who reviews pathogens – pesticides or biocontrol? **J. Johnson** wants to look at fish pathogens like VHS, and if control would affect accepted fishing behaviors.
- **T. Fitzgerald:** Mentions manufacturing of boats and equipment to prevent the movement of AIS. The Committee could have Adam Doll (DNR) or **B. Gross** as presenters.
- **J. Dauphinais:** The Committee should use this month to analyze individual priorities and come together to prioritize as a group. Remembered one of her first meetings on the Committee was doing an activity to rank our individual priorities. It was impactful. Can we use Mural to do that virtually? **T. Fitzgerald** says we no longer have access to Mural, but we could use some kind of survey or another method to gather individual priorities and then rank them as a group. **J. Johnson** suggests asking each person for their top three choices. **J. Dauphinais** suggests individuals choose their top three broad topics and their top three specific topics.
- **T. Fitzgerald** and **P. Hunsicker** will organize with **J. Dauphinais** and **H. Kalbus** to move forward with this discussion. The list was posted on Basecamp. Committee members can add new ideas to the list over the next week or so.

AIS Explorer – A Decision Support Tool to Prioritize AIS Prevention Activities

Presentation by Dr. Nick Phelps, Director of the Minnesota AIS Research Center (MAISRC) at the University of Minnesota

- **Background:** There are predictable patterns of where invasive species are located – lakes are not equally likely to be infested with AIS. Goal of the project was to quantify risk. There is a lot of lakes, boats, water movement, etc. in Minnesota. The research team was made up of epidemiologists, modelers, programmers, and DNR inspection data.
- **Objective:** Develop an eco-epidemiological model to inform risk-based management activities that will prevent the spread of AIS.
- **Data sources:** The Minnesota DNR infested waters list (now updated weekly into the model); water connectivity (no existing database on how waters are connected – had to put it together and verification/ground truthing; directional and distance of connection); boater movement (MN DNR’s watercraft inspection data from 2014-2017). As with all models, there are assumptions and limitations. By explaining the data, hopes to build confidence of how it was built, so then managers have confidence in using it.
 - **Inspection data:** A very robust dataset. Inspectors ask boaters “where were you” and “where are you going” – this data shows the connection between lakes through boater movement. Challenges: lake-county pairs are independent choices (mismatches needed to be corrected); missing data; accuracy (recall bias, planned activity, potentially false information); and excluded out of state boats. Additionally they needed to fill in gaps of lakes that were not included in the inspection data. Steps in building the model included (1) predicted incoming boater traffic for each lake; (2) predicted connection between lakes; (3) predicted number of boats moving between lakes. This led to highly accurate estimated network: 97.4% true predictive power. The model focuses on “at risk” boats – those moving from infested to uninfested.
- **Creating two models to inform decisions.**
 - Introduction risk for surveillance (where to prioritize early detection searches). This used a Bayesian modeling approach – learns from past data to predict future scenarios. They did 10,000 simulations with a prediction period of 8 years. The model continues to get better (weekly updates). The model predicted the number of lakes to be infested well. There is much more uncertainty with starry stonewort compared to zebra mussels, much less “past” data on starry stonewort. The same people that built this model are the same people building the COVID models. Starry stonewort spread is similar to the initial COVID models. Now more data = less uncertainty.
 - Prioritization for watercraft inspections (where to station inspectors to intercept the most risky boats). The model was built primarily for county programs – decision optimization models. Select lakes for inspection stations to maximize the number of risky boats that are inspected. Researchers heard the request from managers a lot to make the models usable. Therefore the AIS Explorer Tool was created.
- **AIS Explorer Tool:** Hosts both models (surveillance and inspection). There are a variety of things to toggle (county, risk score, species. etc.) and users can download data. The inspection model operates at the county level and users can choose a threshold (percent of risky boats to inspect), species (zebra mussels, starry stonewort, Eurasian watermilfoil, spiny waterflea). The output shows a rank of lakes and shows percent of risky boats covered.

- **Outreach on the AIS Explorer Tool:** Hosted four webinars since November 2020. Held online workshops for local managers. Met with DNR AIS staff and regional DNR watercraft inspection supervisors. Shared with other states and countries. Now sharing with this Committee.
- **Future directions:** This is a decision support tool, not decision replacement tool – it helps inform the process. Would like to add complexity with existing data. Would like to create multi-state networks. Would like to create multi-county cooperation option for watercraft inspections (e.g. sharing coverage actually protects more for both). Could incorporate prevention activities to reduce risk (e.g. quarantine, decontamination, etc.). Could incorporate environmental suitability. Could consider risk-based allocation of local/state funds.

Discussion

- **I. Tolo** asks, does the environmental suitability data include climate change? **N. Phelps:** Have it for starry stonewort, not zebra mussels yet. Also working on Eurasian watermilfoil.
- **J. Johnson** says since the inspection model is based on risk, is there thoughts of counties putting signage at high at-risk lakes? **N. Phelps** says he hasn't heard about using it for education outreach yet, but it could be. **D. Jensen** asks, how to incorporate public outreach? Some counties have been very active for many years. **N. Phelps** suggests they use the watercraft inspection tool, those locations could be education priority too. **N. Phelps** mentions a proposed LCCMR "stop starry" project to put CD3 at high-infested lakes – they used this model to determine locations depending on how many units they can purchase. Outreach efforts are broader than just at-risk boats. Could consider with activity of all boats, not just high-risk boats.
- **D. Jensen** is curious about type of boat. **N. Phelps** says we have that data from inspection surveys – challenge for modeling is for different boat types, you have to assign different types of risk. Don't have that data, it's still an outstanding question. **D. Jensen** suggests to use Adam Doll's data. **N. Phelps** says that didn't account for plants.
- **D. Jensen** asks if they are adding any species. **N. Phelps** says yes and they will focus on boat-spread AIS and what is tracked by the DNR's infested waters list.
- **E. Johnson** asks, what about large lakes with multiple access points? **N. Phelps** says if a lake has multiple access points, that data is aggregated. An inspection "station" is the entire lake. Have to rely on the local managers to determine where on the lake inspections should occur. We don't have that data by access, just by lake.
- **P. Hunsicker** says at a recent Crow Wing County meeting, they are using it for inspection. They really like it because it gives them scientific justification to explain to lake associations that ask why inspectors aren't at their lake. They also use local knowledge about high-use accesses, so will be inspecting there as well. **N. Phelps** says that's great! Forgot to mention, the managers can pull out lakes if it is covered by someone else. **N. Phelps** says has published a lot about this, but it didn't get traction until it was put in this usable format. Hearing great things now.
- **H. Kalbus** says she will be using this tool. It could be helpful for grant planning and one watershed, one plan activities too. **N. Phelps** mentions the caveat that the models only address a limited in number of species at the moment.
- **J. Dauphinais** plans to use it similarly. She writes lake management plans, so this is helpful for those as well. Data is helpful to show and support implementation planning (e.g. rapid response fund). She also see its use for one watershed, one plan too.
- **J. Dauphinais** asks, how can this committee help? **N. Phelps** says continue to be supportive of MAISRC work, but no immediate ask. Take a look and let us know what you think. For instance some have already provided helpful feedback such as **J. Johnson** suggested not using red/green due to colorblindness and **K.**

Hagsten suggested adding more boundaries such as tribal and watersheds. This tool is featured in the legislative surveillance report mentioned earlier. How it may help decision-making for DNR.

- **M. Kofoed** was just looking at it and it shows to cover the three infested lakes in the county. **N. Phelps** says the model puts an inspector at infested or uninfested lakes. In this case, putting them at the infested lakes is the most effective to catch the most risky boats.
- **J. Johnson** asks, what if we found hydrilla? Is that just designated as infested? Or is it ranked a higher priority? **N. Phelps** says the inspection model accounts for 4 species, but they could run a scenario with that. **J. Johnson** assumes managers are going to make that decision, they are not going to be hung up on the models. **N. Phelps** right, it is a decision support tool. He is concerned about the static plans submitted in March to a board, but plans should change if new infestations change. There should always be an option to adjust.
- **P. Hunsicker** mentions that Meg Duhr with MAISRC is presenting about the tool at all the online off-season watercraft inspection meetings as well as an online county workshop.
- **J. Dauphinais** says an action item could be to reach out to your county AIS coordinator and ask if they are going to use it. There is a recording available from an AIS Detectors webinar about the AIS Explorer.

Wrap-Up

- Next virtual meeting is scheduled for **Thursday February 25, 2021**. AIS Planners will work with the Chair and Vice-Chair to develop an agenda based on expressed 2021 priorities.

Adjournment at 1:40 p.m.