Minnesota DNR AIS Advisory Committee

December 4th, 2025 Meeting Minutes

Online via Teams

Members Present: Shelly Binsfeld, Andrew Dickhart, Beto Garcia, Jared Langer, Spencer McGrew, Carrie Ohly-Cusack, Patrick Selter, Amanda Weberg, M. Mahmood Tajbakhsh, Raining White

Members Absent: Nick Bluhm, Stephanie Hadler, Liz Kaltenhauser

Ex-officio Members Absent: Maddie Hayden, Nicole Lalum, Amy McGovern

DNR Staff Present: Rafael Contreras-Rangel, Doug Jensen, Kelly Pennington

Guest Speakers: Jeff Marr and Andy Reisgraf, St. Anthony Falls Laboratory, Jeff Forester and Sami Selter, Minnesota Lakes and Rivers Advocates, Nick Phelps, MAISRC

Chair **S. McGrew** called meeting to order at 10:04am

Motion to approve Agenda: P. Selter, motion, **A. Weberg**, seconded, agenda approved

Motion to approve September Minutes: B. Garcia, motion**, C. Ohly-Cusack**, seconded, minutes approved

Meeting Summary

- Committee discussed the following:
  - Finalized the Committee's charter and submitted to DNR (following meeting)
  - St. Anthony Falls Lab research on wakeboard boats which show impacts on lake bottoms
  - Local AIS prevention aid advocacy and strategy
  - MAISRC research quantifying impacts of AIS Prevent Aid
  - Use of Decontamination Units vs CD3s
  - Topics of concern for Committee meetings in 2026
  - Aquatic Invaders Summit III, April 2027, St. Paul

Action Items

- **Action Item: DNR** will present proposed Charter changes to DNR Commissioner
- **Action Item: J. Langer** volunteers to lead to update letter to DNR Commissioner regarding AIS Prevention Aid response and discuss at January meeting
- **Action Item: A. Dickhart** volunteers to lead a committee to develop a county survey to measure how they plan to respond to potential cuts and present at January meeting
- **Action Item: A. Dickhart** will continue to work on topics of concern for committee meetings and present at January meeting

Charter Update and Adoption

Shelly Binsfeld and Amanda Weberg, Charter Committee

Language to Approve/Change

- Members may be removed from the committee for inactivity or for not following the charter's guidelines.

    - **A. Weberg** recommends no change.
    - **B. Garcia** supports the updated language.
    - The committee accepts the wording as presented.
- Terms are three years in length, with a maximum of two consecutive terms.
    - No change.
- Memberships can be terminated due to inactivity and removed by a majority vote.
    - This section will be deleted due to redundancy.
- Active members will be determined by committee leadership.
    - No change.
- Members who are absent for more than three consecutive meetings may be categorized as inactive.
    - **B. Garcia** notes that multiple sections address "active" vs. "inactive" members and suggests possible consolidation.
    - After discussion, no changes are made.
- A quorum is defined as a majority of current active members**.**
    - No change.

Other Discussion

- **R. White** asks whether the DNR is engaging in efforts to recruit additional members and ex-officio tribal representatives.
    - **A. Weberg** is unsure but agrees that increased engagement would be beneficial.
    - **R. White** offers assistance with any future recruitment efforts.
- It is noted that the Natural Heritage Committee is the only other DNR committee that is fully advisory in its role.

Motion

A. Weberg moves to adopt the charter as presented, including the proposed changes, and to forward it to the Commissioner. **A. Dickhart** seconds the motion. Motion carries.

Phase Two Wake Study

Jeff Marr and Andy Reisgraf, St. Anthony Falls Laboratory

Phase 1

Chat Questions During Presentation

- **D. Jensen:** Were the non-wakesurf boats aluminum hulls?
  A: All boats tested were fiberglass-hull boats designed for higher speeds.
- **D. Jensen:** How do these results compare to natural waves? Some may argue that waves occur naturally, so what's the concern?
  A: These boats can generate storm-sized waves anywhere on a lake, far beyond typical natural conditions.
- **B. Garcia:** Have you related wave power to boat displacement and horsepower?
  A: The yacht had the greatest displacement (14,000 lbs). It was tested in non-wake mode, and its results were like other non-wake boats, suggesting that the operating mode is the key factor.
- **D. Jensen:** I'm also thinking about aluminum vs. fiberglass. Fiberglass watercrafts are heavier, with greater displacement and horsepower needs.
  A: (No response provided during the session.)

Resources: Links to reports and studies are included in the PowerPoint presentation.

Phase 2

Chat Questions During Presentation

- **D. Jensen:** Did you work with Tonka Marine to access the various types of watercrafts used in the experiments?
  A: (No response provided during the session.)
- **A. Dickhart:** AIS managers may be interested in the following research questions:
  1. Does wave-generated sediment resuspension shrink or expand suitable habitat for aquatic invasive plant species?
  2. Do disturbed littoral zones favor invasive species?
  3. Does increased erosion expose more hard surfaces for zebra mussels?
  These questions could inform lake vulnerability assessments and treatment planning.
- **D. Jensen:** Conditions were calm during the experiment. Would this be considered a best-case scenario? Would rougher conditions exacerbate sediment suspension?
  A: Calm conditions were necessary to isolate boat-generated wakes. Future research may explore rougher conditions, but equipment deployment becomes difficult with wind.

Resources: Links to reports and studies are included in the PowerPoint presentation.
Phase 2 Videos: https://www.youtube.com/@umnSAFL/featured

Additional Questions

- **B. Garcia**: Did any naval architects work with you on this project?
  A: Not formally, but naval architects in Australia reviewed the work and conducted related research.
- **B. Garcia**: Were samples taken of the displaced material?
  A: Attempts were made, but sampling was largely unsuccessful. Material visible in aerial photos could not be reliably collected.
- **S. McGrew**: Wakeboats often use smaller, narrow areas to avoid wind.
  A: Yes, those areas are very popular for wakeboats.
- **S. McGrew**: Do wakeboats have equipment to measure depth?
  A: Yes.
- **J. Langer**: Your study includes a lot of variation between models. Is this level of variation needed in future studies?
  A: Ideally yes, though there are limits. Pontoons were not tested and may behave differently. Semi-displacement mode appears to have the greatest impact. Research is underway to explore generating wakes without entering semi-displacement mode. Continued testing across boat sizes is important.
- **B. Garcia**: Are these issues addressed in new boater training?
  A: Distance from other boats and from shore are included.
- **A. Dickhart:** How does this relate to AIS concerns?
  A: Like carp, wakeboats disturb lakebeds. While the current focus is fluid dynamics, the data could support environmental impact studies. Guidance from AIS managers would help direct future research to protect Minnesota waters.
- **B. Garcia:** Did you test displacement differences when wakeboats were full vs. not full of ballast water?
  A: Phase 1 included tests with and without ballast. Differences were small overall, though wave height may differ within the first 50–100 feet. More data is needed.

- **S. McGrew:** Disturbing lakebeds is illegal in Minnesota; legislators may need to be engaged. The "Own Your Wake" slogan is effective.
  A: Several states are developing legislation based on available data, including these studies, particularly regarding distance from shore and depth of operation. These efforts are contributing to the creation of wake-safe zones. Modern boats are sophisticated enough that integrating wake-safe zones into onboard mapping systems would be straightforward.

Local AIS Prevention Aid Advocacy and Strategy Update

Amanda Weberg, Spencer McGrew and Shelly Binsfeld

Prevention Aid Advocacy would have to go through the Tax Committee, various groups were reached out to, but it seems this would not be one of their priorities going forward for now.

DNR Updates

Kelly Pennington, DNR Invasive Species Program Supervisor

- AIS Surcharge increased invasive aquatic plant management grant funding to $1M+. Most recently was $400,000. Small scale grants available for curly-leaf pondweed, Eurasian watermilfoil, flowering rush and starry stonewort. Population scale grants added for EWM. For more on grants: 2026 Invasive Aquatic Plant Management Grant Program | Minnesota DNR
- To increase capacity within the Program, AIS specialist assistants will be hired for each region along with a statewide communications staff, which was formerly support by Conservation Corps. Along with supporting statewide social media efforts, comms position will be able to increase capacity to reach underserved audiences and address pathways. SAISAC played a role in securing the statewide communication position. She will share job posting when ready. SAISAC is interested in knowing and having input on what the priorities this position will cover.
- **D. Jensen** presented two talks at the North American Invasive Species Management Association (NAISMA) conference in South Lake Tahoe on fact and fallacies of how AIS spread and a model program on how to conduct development of outreach materials.
- AIS Prevention Planners are receiving county submissions (resolution, guide, plan, and/or metrics), responding and compiling them. Submissions are required by state statute due December 31 of each year.
- AIS Prevention Planners and Watercraft Inspection staff are planning off-season workshops for counties for this winter 2026.

Member and Ex-Officio Updates

- **Dickhart** and **S. Binsfeld** worked on topics list for committee meetings for 2026. As a snapshot 2021-2025, there have been 125+ topics discussed in 15 categories each year. Generally, 15-16 topics are covered per year. Ex: 16 on managing new threats/AIS of concern, 11 understanding impacts, community based social marking, and IAPM. Lacking is control and management and only three on tribal perspectives, integrating AIS and water quality. In the next couple of weeks, they plan to survey members to get their top 5-10 topics which would help inform the committee regarding advise to DNR. It may take a meeting or two to rank topics. It was suggested that we could review our top topics, set up a framework with goals or minimal expectations to choose topics

- **D. Jensen** via chat: Reminder that we have 8 meetings per year with generally 2+ topics discussed per meeting. 16 topics could be our minimum

No other updates given due to time constraints

Preventing the Spread of AIS

Nick Phelps, MAISRC Director

- Emphasis of talk on prevention of AIS
- MAISRC has many publications, newsletters and interactive decision support tools available
- Created formats concerning surveillance planning, watercraft inspection planning and cost-benefit planning that anyone can use
- Discussed history and evolution of AIS Prevention Aid funding past to present, over $100 M invested to create innovative local AIS prevention programs since 2014
- In response to the Governor's AIS funding cut, Senate Tax Committee heard testimonials that supported full funding, opposed to 50% reduction.
- MAISRC recognized that cuts to funding would be problematic, and that evaluation of the AIS Prevention Aid benefits needed evaluation asking the question:
    - How will funding cut impact our local partners who have informed, helped, and translated MAISRC research into action recognizing that contributions of local managers have become an integral and essential piece of MN's AIS management strategy?

FAQ1: AIS have already infested all the lakes – there is nothing left to protect. Why are we doing this?

- Many lakes are not infested resulting in a misguided doom and gloom attitude; instead, there are a lot to protect; must get this issue out of opinion space and into data space
- As an index of saturation, there are MANY uninvaded lakes that are still at risk, how many could be infested can be based on a set of assumptions
- Two levers to pull:
    - Percentage of lakes that may be suitable for infestation, from 10-90% are suitable
    - Current infestation status: Argues that there are many unknown infestations exist
        - Results: If 10% of lakes are still suitable, 80% of lakes remain at threat
        - Conclusion: There are many lakes the deserve AIS protection

FAQ2: We spend a lot of money to slow the spread of AIS…but how effective are the strategies?

- We assume that strategies used have been, but there has been no robust assessment
- MAISRC study staged watercraft with plausible amounts of AIS at 6 locations to replicate real-world scenarios using recreational boaters, inspectors and decontaminators
- In this best-case scenario, researchers observed, measured and compared effectiveness for removal of AIS
- Results: Recreational boaters success rate = 56%; Inspectors = 80%, statistically significantly better than recreational boaters; Decontaminators = 84%, not statistically better than Inspectors (note: actions taken by Inspectors and Decontaminators were not different, however, Decontaminators inspected slower and had a slightly better removal rate; if recreational boaters slowed down and took more time, their inspection/removal rate would be better)
- Conclusion: Efforts by DNR and LGU's conducting watercraft inspections is preventing AIS, more than recreational watercraft users taking action on their own, AIS prevention works!

FAQ3: Ok…so AIS prevention CAN work, but I still hear about lakes becoming infested. Have we really slowed the spread across Minnesota? Do the data show evidence that AIS prevention investments are slowing the rate of new infestations?

- Given a 4-5 week deadline, MAISRC quantitative researchers conducted three studies
- #1 Results: Over 30 years of data, there is a clear breakpoint beginning in 2015 showing a correlation in the rate of new infestations for 11 AIS, a statistically significant change in the slope of infestations before and after 2015; rate for individual species varied but collectively there is a decline which is indicative of a response from external (intervention) factors
- #2 Results: Rate of new AIS infestations has slowed down. From 1985-2003, rate of spread was steady, from 2003 to the time of the AIS Prevention Aid there was a rapid increase which was statistically significant compared to years previously, and since 2015 the rate of spread has significantly slowed for new infestations over time, evidence that investment in intervention over time works (note: there can be a lag time before effects are observed)
- #3 Results: Using an epidemiological approach, rate of new AIS infestations has also slowed down. Approach assumes that for each new infestation, it will result in another infestation so over time there is an exponential growth. If over time, numbers of contacts is reduced, it will result in less than 1:1 ratio of new infestations (slowed spread). Over the past 40 years, initially there was a lot noise, then stable for about 20 years, but over the last 10 years, rate slowed, significantly deviating from that baseline, aka, meaningfully intervention slowed the rate

FAQ4: Great, we bent the curve…but prevention is expensive. Can you prove that there has been a return on the investment? Can this be quantified?

- Hardest part of prevention is proving that it worked, aka, to prove a negative
- To test this theory, a real-world simulation model was used comparing interventions: retained vs removed interventions based on the number of simulations and number of new infestations (simulated) for two AIS, zebra mussels and starry stonewort
- Results: Baseline models from AIS Explorer assume present day management strategies forecast 5 years into the future. In status quo, there would be 300 lakes infested within 5 years. With interventions removed, 50 more lakes would become infested. For zebra mussels, 354 lakes were infested. If go back in time and remove the benefits of Prevention Aid, 70 more lakes would have become infested with ZMs. For starry stonewort, 16 more lakes would have become infested (from 30 to 46)

FAQ5: AIS are bad and prevention is working…but we have more important priorities.

- It comes down to trade-offs, policy decisions, it's a values proposition, complex decision
- While advocacy can/will force the issue, research can/will help inform the conversation
- More research needed, especially based on presence/absence data (where folks looked and not found) and how they are monitoring; need more research on economic cost of management
- **K. Pennington** via chat re: reporting: Zebra Mussel Monitoring Program | Minnesota DNR and zebra mussel (Dreissena polymorpha (Pallas, 1771)) - EDDMapS State Distribution - EDDMapS
- As heard at 2024 UMISC, storytelling is an important aspect for legislators to hear
- Fact sheets on studies attached

AIS can have environmental and economic impacts that can be quantified. Infestations have downstream impacts on property values. Ex: People around Lake Mendota (Madison, WI) were willing to invest $800,000 annually to mitigate spiny waterflea impacts. **D. Jensen** via chat: Leung et al (2002) showed that cost for zebra mussel control on a lake with a drinking water facility was $324,000 per year.

So, economic impacts can be quantified over time. A past WI study estimated that Eurasian watermilfoil infestations could reduce property value by 17%, however, the study was based on flawed assumptions. **J. Forester** via chat: Quantifying the cost of NOT preventing AIS spread would be VERY useful

N. Phelps via chat: Effectiveness of decontamination if considering alternatives is an area that deserves attention. In study mentioned earlier, not a single decon fully met the UMPS standards for full hot water decon effectiveness. It is assumed there is some benefit with any hot water spray, even if it doesn't reach the recommended thresholds. Interesting observation for those using the Landa systems (~76% of systems in our study): "...A sinuating temperature pattern was observed with the Landa ECOS-7000 and Hydrotek SS Series Mobile Wash Skid wherein water temperatures would peak to sufficient temperatures and then fell below lethal thresholds in a cyclical pattern. This sinuating pattern was not observed with the stationary hot water boiler system, which stayed at a relatively constant temperature throughout a decontamination." More at: https://www.reabic.net/journals/mbi/2024/3/MBI_2024_Angell_etal.pdf

SAISAC Policy Advisory Letter

Jared Langer, Lead Committee Member

- Draft letter recommends that DNR produce a report on how the reduction in Local AIS Prevention Aid funding would impact 1) how it manages its AIS program and 2) relationship with partners (e.g., outreach, watercraft inspections, data coordination) through budget scenarios
- Discussion focused on improved framing: How can the committee support and make recommendations based on the proposed reductions in funding; what's the plan?
- Without an assessment the committee does not have the data or tools to help advise DNR in meeting its prevention goals, express urgent concern; flying blind without it, it would also help counties with planning budgets, valuable to MAISRC and policy makers too
- Over the years, AIS prevention has evolved to be the three-legged stool based on funding and efforts by DNR, LGUs and lake associations – kick out one leg and the stool falls over; funding cuts to counties will impact their tax base
- Committee could offer support to review report
- Letter will be revised and discussed at the January meeting.

Use of Decontamination Units vs CD3s by DNR and LGUs Discussion

Sami Selter and Jeff Forester, Stop Starry Stonewort Program, Minnesota Lakes and Rivers Advocates

- In 2024, 450,000+ watercraft were inspected in MN with 22,000 violations and 400+ decontaminations resulting in 18,000 watercraft not decontaminated
- MLRA proposes that CD3 stations be part of the model to fill that gap
- Inspectors say CD3 stations make their jobs easier, help teach boaters how to clean their watercraft by having stations present 24/7, provides an added layer of prevention when watercraft inspectors are not present, and helps them with confidence that they are providing the coverage needed
- Discussed fact sheet, *Watercraft Inspection at a Glance* (attached). Data collected via CD3s provide insights for watercraft inspection programs, insights into boater behavior and what tools they use (when, where, how long)
- CD3 stations provide an opportunity for volunteering by lake associations; they also do not require the level of training as watercraft inspectors

- MAISRC study showed that compliance improved when inspectors were present with CD3 stations, boaters were better at cleaning their watercraft, especially residual water removal (vacuum and air hose) to remove spiny waterfleas and zebra mussel veligers
- In 2024, there were 29 units on 21 waterbodies, 17,000+ tool uses; session algorithm provides a good estimation at the number of watercraft cleaned (6,000), this helps cover the gap between the number of inspections and decontaminations
- Using Wayside Solar CD3 stat Tool Counts, variety of types of tools increased - overall use increased from 2022 to 2024, an indication that use is becoming a social norm; vacuum is the most used tool over time which is reducing AIS risk
- Stop Starry Program emphasizes: Collaboration, Prevention Tools and Outreach and Impacts focused on pocket areas of AIS infestations
- CD3 stations allow lake associations to partner with their LGUs
- Yearly costs vary from $200 to $1,000 per year
- If funding is cut to watercraft inspection program, what is the value of having a CD3 station present to provide a layer of protection? What will education look like? A: Provides a point of contact and point of entry (e.g., stary stonewort monitoring)
- In conclusion, CD3 stations are meant to fill the gap between and decontamination. CD3 stations provide value in many ways. **J. Forester** via chat: Some counties like being able to have stations as a practical way to extend inspector budgets – i.e., the station is there when there is no inspector present. Seeing another boater use the stations can influence others to use them. **D. Jensen** via chat: Agreed, folks want to follow the social norms expressed by others. A piece of the value is recognizing that entities are investing resources into CD3 stations to help boaters clean their watercraft, it helps to emphasize the seriousness of the AIS problems
- Aquatic Invaders Summit, April 2027, St. Paul

Discussion Time for Committee

Committee thanked **S. McGrew** for his effective leadership as chair over the past year. **A. Weberg** expressed interest being chair next year. Members encouraged to consider being vice chair.

Next Meeting

- Advocacy and prevention aid
- Policy advocacy letter
- Topics for meetings in 2026 - discuss past meeting topics and ranking with implementation in February

Adjourned 2:58 pm
Next meeting is Thursday, January 22nd, 10 am – 3 pm via Teams