



Protecting
Minnesota's lake
and river heritage
since 1994



Stop Starry Stonewort Program

Containment & Civic Organizing Approach to AIS Prevention

Overview



- Minnesota - Scope and Scale of Starry Stonewort
- Civic Organizing Outreach
- What steps we have taken
- Outcomes to Date
- Emerging Needs

Minnesota: Land of...Boats.



850,000 registered watercraft or, 1 of 5 Minnesotans have a boat

60% go to more than one lake

Starry Stonewort Damages Aquatic Ecosystems



Starry Stonewort reaches depths up to 25 feet.

Watercrafts can become entangled in thick mats of starry stonewort, even when it's not visible from the surface.

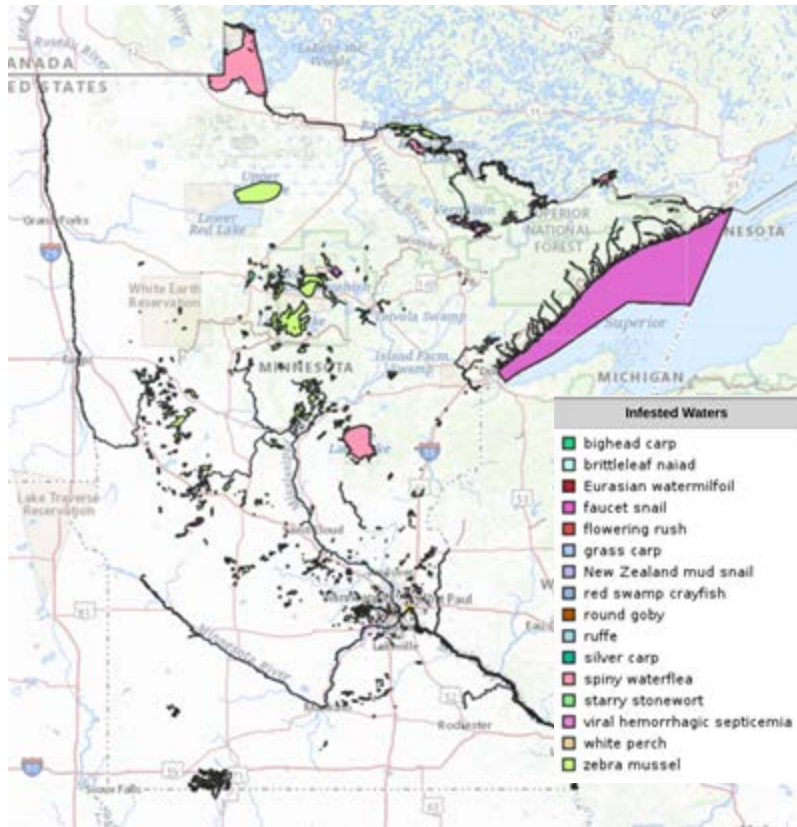
- Lake and river recreation declines,
- Native species are choked out by invasive species,
- Starry stonewort prefers bass/panfish spawning beds, depleting fish numbers,
- Lakeshore property values are impacted,
- Taxpayers dollars compensate management costs of AIS.

Minnesota's Boating Industry... AT RISK:

\$5.5 Billion
28,000 MN jobs
Future of lake ecology



In Minnesota, it is illegal to transport AIS



Research by Cornell University, Minnesota Aquatic Invasive Species Research Center (MAISRC), and the Minnesota Sea Grant has discovered:



90%

of boaters know the risks of transporting aquatic invasive species, believe it to be a problem and know the steps they need to take to fully Clean, Drain, and Dry; yet most do not take all of the steps necessary.

The reason they give is a lack of equipment where/when they need it.

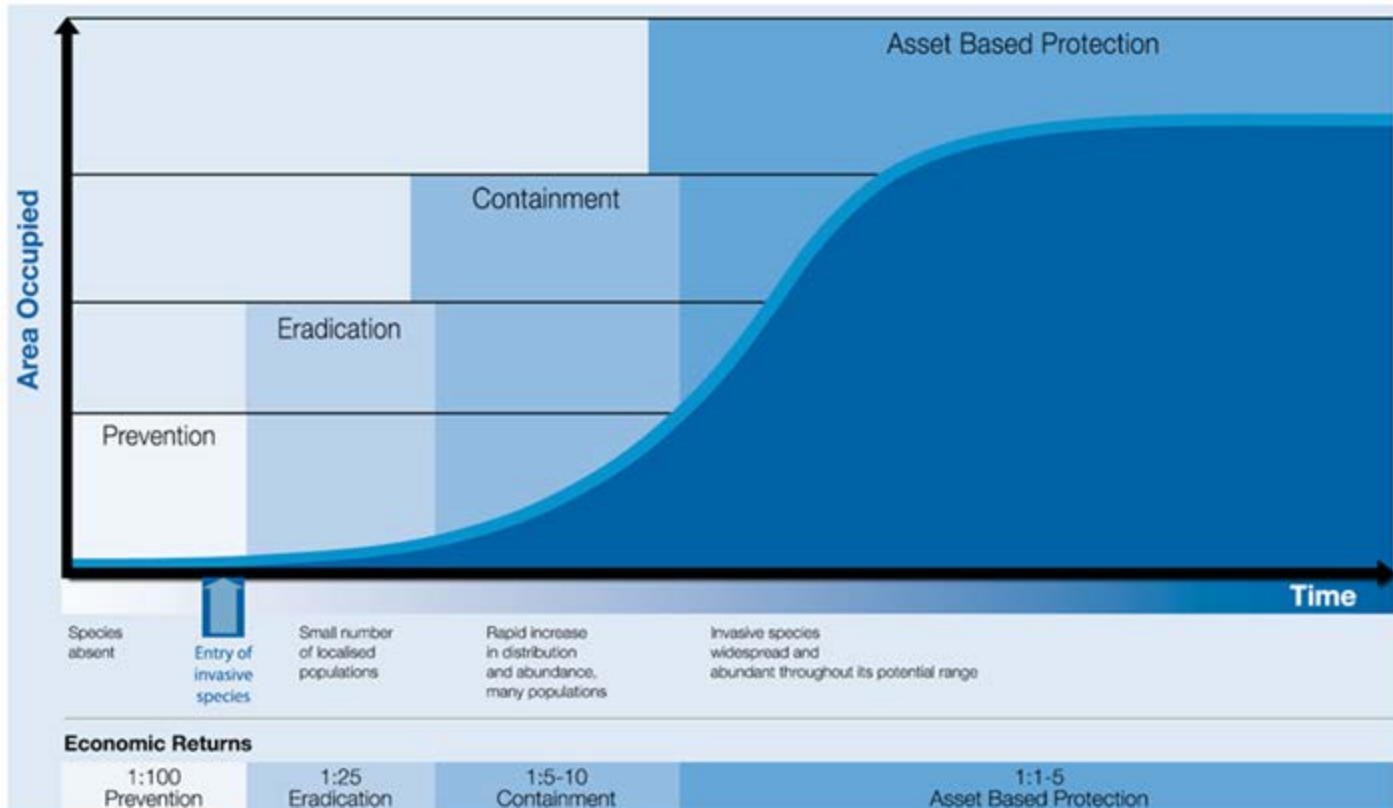
Costs of Management - Lake Koronis, MN

Starry stonewort was first discovered in Minnesota in 2015 at Lake Koronis.

Lake Koronis spends \$170,000 annually to control the devastating effects of this invasive species.

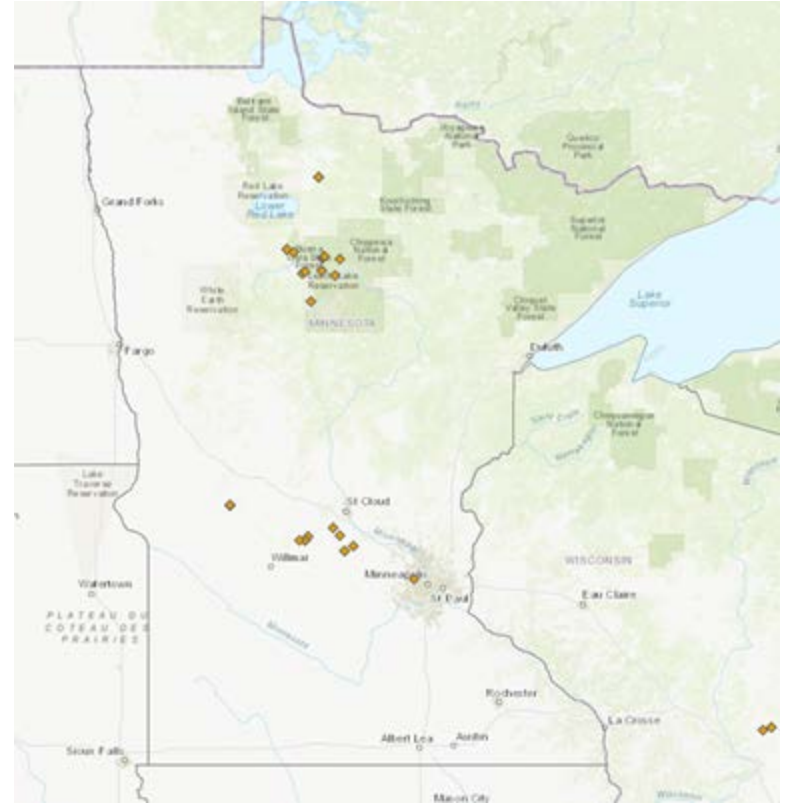


Prevention is Powerful - MN is just entering containment phase of starry stonewort management



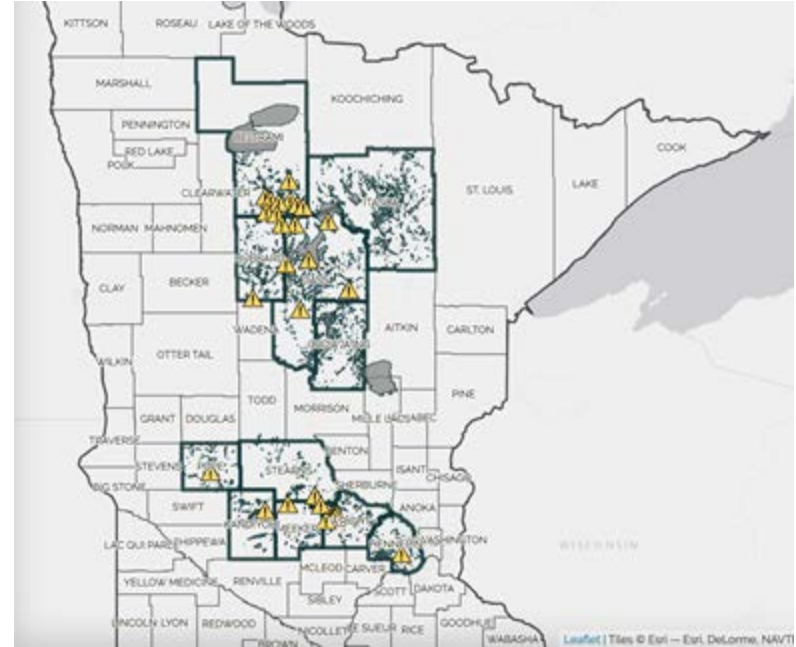
2021 - Extent of Spread

16 Water Bodies -

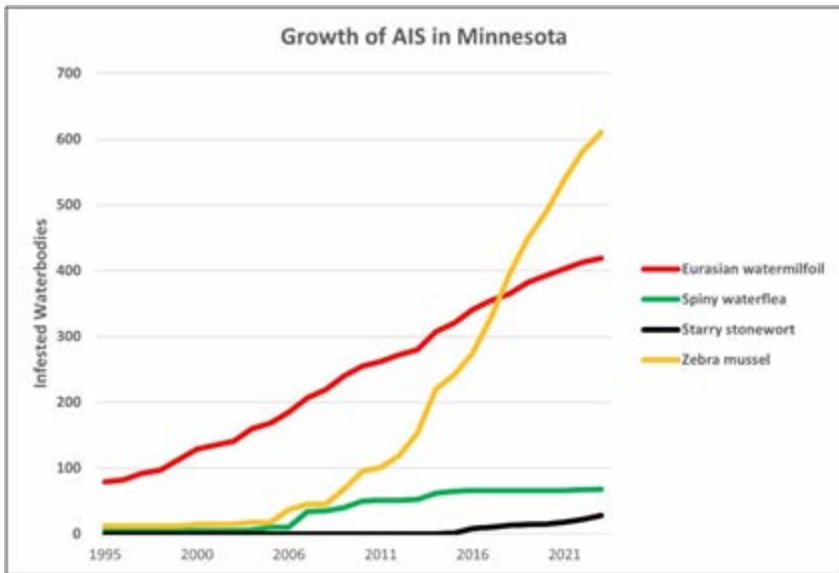


2024 - Extent of Spread

27 Water bodies



Can We Flatten the Curve?





10,000+ lakes. 800,000+ boats. One big problem.
How can we best protect Minnesota's waters from aquatic invasive species with limited resources?

Researchers at the Minnesota Aquatic Invasive Species Research Center have developed an online dashboard—AIS Explorer—that both forecasts the introduction risk of aquatic invasive species (AIS) to individual waterbodies and provides decision-making support for optimizing watercraft inspection efficacy.

After five years of development, the project team established a robust lake-connectivity network. With over 1.6 million data points of reported boater movements and a complex array of river connections, thousands of simulations were done to test the accuracy of the model and create the AIS Explorer.

AIS Explorer provides guidance on two key prevention methods:

- **Surveillance:** modeling the likelihood of new infestations
- **Watercraft inspections:** prioritization of physical intervention at the riskiest lakes

The AIS Explorer dashboard is free and open to the public. Users can focus on any lake in Minnesota, or view model results on a county level. To stay current, the underlying models update weekly to account for new infestations and changing risk dynamics.

Data Sources

 <p>Infested waters list</p> <p>A list of all Minnesota waters infested with aquatic invasive species, maintained and updated by the Minnesota Department of Natural Resources.</p>	 <p>Boater movement</p> <p>A predicted network of boater movement was created using more than 1.6 million reported lake-to-lake connections from inspection surveys. The connections between pairs of lakes were directional and weighted based on the estimated number of boats moving between them.</p>	 <p>Water connectivity</p> <p>Natural water connections that allow for downstream drift/migration of aquatic invasive species. The water connectivity network included directionality and is weighted based on the length of the river connecting each pair of lakes.</p>	 <p>"Risky" boats</p> <p>Using the predicted network of boater movement, boats moving from an infested waterbody to an uninfested waterbody.</p>
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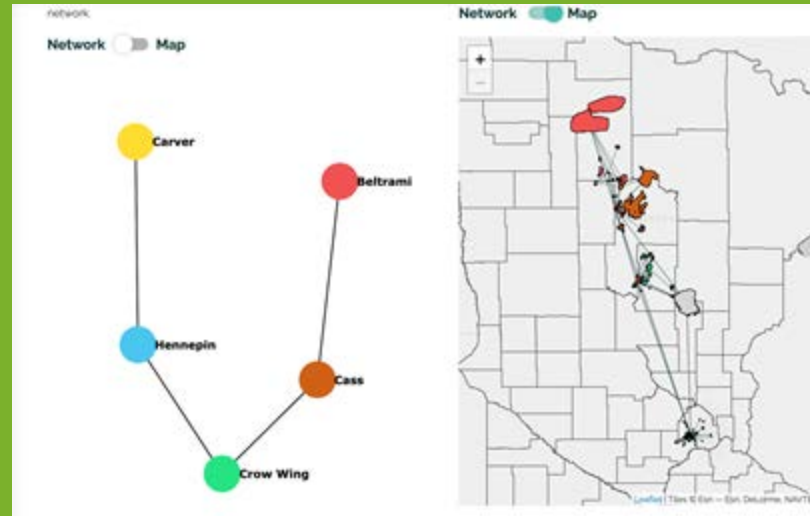
How Did We Make Up the Difference?

AIS Explorer is a Critical Tool for Stop Starry Program

- Risk Assessment to target limited resources to specific landings,
- “Collaborations,” and “Paired Planning” tools demonstrated efficacy of partnerships.

Civic Organizing based on Data to Build Cross Sector Base

Mapping by AIS Explorer Demonstrates Efficacy of Cross Sector Base





Stearns County
Minnesota



KORONIS LAKE
ASSOCIATION



Cass County Soil & Water
Conservation District

Established August 25, 1910



POPE MI
COUNTY



Civic Organizing - Government and Citizen Partnerships

Building a Local Civic Pride around Preserving Water Quality - Outcomes

Minnesota Lakes and Rivers Advocates is convening civic pilots around Aquatic Invasive Species (AIS) prevention and the Stop Starry Stonewort Program .

These groups:

- Increase local awareness of starry stonewort
- Ramp Improvements - signage updates
- Encourage boaters to use FREE Waterless Boat Cleaning Systems to Clean, Drain and Dry
- Ramp up lake monitoring for early detection - Starry Trek
- Promote DNR Community Based Social Marketing - Take the Pledge
- Develop new management strategies - Diver Assisted Suction Harvest - DASH, smothering, hand pulling protocols



Outcomes to Date

- 27 Waterless Cleaning Stations Installed,
- 22,244 individual tool uses to date,
- Over 50 public meetings,
- Over 25 Civic Organizing Meetings,
- Direct Email Communications (187 Lake Associations & 23,445 shoreline owners in areas impacted by SSW),
- Doubled Participation in MN DNR “Take the Pledge” to Clean, Drain, Dry,
- Dozens of articles about Stop Starry in lake association newsletters and local/state media,
- Association of Cass County Lakes installs 50 “boat cleaning tool bars & signage,”
- Promotion of “Starry Trek,” increased monitoring,
- Development & testing of management protocols



Emerging Issues

- 10 additional watercraft cleaning stations to cover both (3) unprotected accesses and (7) potential new discoveries of starry stonewort infestations over next 3 years.
- Expand and focus Civic Organizing efforts for an additional 3 years,
- Expand Civic Leadership Development for Sustainability of project



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Thank You - Questions?