

## Preventing Aquatic Invasive Species through Behavior Change

Community-Based Social Marketing (CBSM) is a social science approach to foster sustainable, environmentally beneficial behaviors over the long term. The Minnesota Department of Natural Resources (DNR) is using this approach, outlined by the following steps, to prevent the introduction and spread of aquatic invasive species (AIS).



**There is often a gap between awareness and action.** By building “community norms” around taking the right actions, everyone is more likely to adopt and consistently practice desirable AIS prevention behaviors such as “Clean, Drain, Dispose” while they are out enjoying Minnesota lakes, rivers and wetlands.

### Five major pathways for AIS movement in Minnesota today

**Recreational watercraft**



**Live bait**



**Gear and equipment**



**Retail aquatic plant trade**



**Retail aquarium trade**



A literature review identified these major AIS pathways in Minnesota. Desirable AIS prevention behaviors associated with these pathways were ranked by an expert panel. Top-ranked behaviors and associated audiences were selected for further research.

### Behaviors, Barriers and Motivators

An essential component of developing an effective behavior change program is to identify the barriers and motivators associated with the targeted behavior change.

#### **Aquarium and Aquatic Plant Trade Roundtable**

The DNR hosted a meeting with a dozen stakeholders involved in various aspects of the aquarium and aquatic plant trades including wholesalers, suppliers, retailers, hobbyists, societies, and associations. Stakeholders are aware, concerned and share the DNR’s goal of preventing the spread of AIS. However, there are few AIS prevention initiatives, and thus few resources, that focus on these pathways in Minnesota today.

#### **Barriers and Motivators:**

- For both sellers and customers, there is a lack of simple accessible information that (1) clearly defines regulations, and (2) clearly depicts AIS and non-invasive alternatives.
- Current regulations are or are perceived to be complex with multiple tiers and are therefore difficult to understand. A more simplified approach is desired.
- There is a lack of supply of desirable alternative species.
- It is challenging for suppliers that sell to customers in multiple states to be aware of and provide state-specific information regarding the regulation of the species they sell.
- Sellers do not always have the resources to create customer-facing materials that they need to educate their customers on these issues.
- Industry representatives are interested, engaged and willing to collaborate on this topic.

## Surveys of Anglers and Shoreline Residents

Two online surveys were conducted concerning (1) Anglers and their use of live bait and boats and (2) Shoreline property owners and their movement of previously-owned equipment (docks/lifts). The objectives were to: Establish a baseline of current behaviors; gauge attitudes and awareness; identify barriers and motivators to engaging in desired behaviors; and understand communication and engagement preferences.

	<b>Anglers (1,965 responses)</b>	<b>Shoreline residents (1,737 responses)</b>
<b>Awareness</b>	Over 80% reported being moderately to extremely knowledgeable/familiar with the laws and AIS prevention actions.	Over 85% reported being moderately to extremely knowledgeable/familiar with the laws and AIS prevention actions.
<b>Current Behaviors</b>	<b>92% use live bait</b> (worms, minnows, leeches) <b>82% use a boat while fishing</b> <b>Undesirable behavior:</b> 36% have released live bait	<b>96% own docks and 68% own boat lifts</b> <b>28% have previously owned water-related equipment</b> <b>Lack of knowledge:</b> <ul style="list-style-type: none"> <li>46% unaware of the 21-day dry law</li> <li>35% unaware of the lake service provider program</li> </ul>
<b>Barriers</b>	<b>Disposing of Bait:</b> <ul style="list-style-type: none"> <li>Concerns about odor (39%) or attracting animals (18%)</li> </ul> <b>Cleaning and Draining Boats:</b> <ul style="list-style-type: none"> <li>Don't have the equipment/tools (27%)</li> <li>Too much traffic (25%) or no place to pull off (22%)</li> </ul>	<b>Cleaning Equipment:</b> I don't have the <b>equipment</b> I need to: <ul style="list-style-type: none"> <li>Rinse with hot water (37%)</li> <li>Wash with high pressure (27%)</li> <li>Inspect &amp; remove visible debris (10%)</li> </ul> It is <b>difficult to maneuver or access</b> under the equipment in order to: <ul style="list-style-type: none"> <li>Rinse with hot water (14%)</li> <li>Inspect &amp; remove visible debris (13%)</li> <li>Wash with high pressure (8%)</li> </ul> <b>Drying Equipment for 21 Days:</b> Buyer wants it right away (15%) or I want it right away (8%)
<b>Motivators</b>	<b>Disposing of Bait:</b> <ul style="list-style-type: none"> <li>Knowing that I am <b>helping to prevent the spread</b> of invasive species (71%)</li> <li>Knowing that I am making a <b>positive impact</b> on my community and the environment (61%)</li> <li>Knowing that it is <b>illegal to release</b> live bait in Minnesota (54%)</li> </ul> <b>Cleaning and Draining Boats:</b> <ul style="list-style-type: none"> <li>Having access to <b>running water</b> (63%)</li> <li>Knowing that I am <b>helping to prevent the spread</b> of invasive species (60%)</li> <li>Having a <b>staffed decontamination unit</b> (high pressure, hot water) available (52%)</li> </ul>	<b>Cleaning and Drying Equipment:</b> <ul style="list-style-type: none"> <li>Knowing that I am <b>helping to prevent the spread</b> of invasive species (90%)</li> <li>Knowing that I am making a <b>positive impact</b> on my community and the environment (72%)</li> <li>Knowing that it is <b>illegal to transport or spread</b> aquatic invasive species in Minnesota (68%)</li> </ul>
<b>Preferred Ways to Receive AIS Information</b>	66% at boat launches 55% at bait shops 48% at fishing piers and fishing access points	79% from lake/homeowner associations or improvement districts 41% newsletters 39% television
<b>Trusted Sources of AIS Information</b>	92% Minnesota DNR 38% Local municipality 37% Environmental organizations 37% Fishing clubs or organizations	88% Lake associations 86% Minnesota DNR 57% Environmental organizations 52% Local municipality

### Next Steps

- The DNR and partners will pursue CBSM Steps 3, 4, and 5 as funds and capacity allow. Grants to conduct CBSM work will be available from DNR to tribal and local governments in 2020.
- Local organizations play a vital role in implementing and monitoring CBSM program elements by offering their on-the-ground insight into their communities and their own AIS knowledge and programmatic resources.
- The DNR will provide unifying leadership and direction for a statewide CBSM program, which will require a systems approach to designing, testing, and continuously improving behavior-change strategies to shift culture and create new social norms.

**Questions?** Contact DNR AIS Planner Tina Fitzgerald at [tina.fitzgerald@state.mn.us](mailto:tina.fitzgerald@state.mn.us) or 651-259-5146.

More information available at: <https://www.dnr.state.mn.us/invasives/ais/prevention/behavior-change.html>