

Updates from the Water Resources Division

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Great Lakes Invaders

We admit it. Most of us around here are probably considered nerds in certain circles. Water nerds. So you can imagine our delight when Michigan's "tough nerd," Governor Rick Snyder, gave his special message on energy and the environment and spoke about water. A lot. We are so pleased to see our work being considered within the Governor's broad Water Strategy for our state and thought we'd take the opportunity this week to focus on one of the key components of that strategy: Aquatic Invasive Species or "AIS."

The WRD considers the introduction of AIS into our Great Lakes, inland waters, and wetlands a biological pollutant that harms not only the ecology of our state's water resources (and truly, those of the entire region), but also our economy and public health. Michigan has long been involved in [preventing and managing AIS](#) through legislation and policy development, public education and outreach, and early detection/rapid response activities, including research and monitoring. Michigan is a leader in protecting the Great Lakes from new AIS that may arrive via ballast water and Asian Carp through the Chicago Area Waterway System. Other recent efforts include updating [Michigan's AIS State Management Plan](#) and convening an [AIS Advisory Council](#) - chaired by our own Division Chief, Bill Creal - to tackle issues involving ballast water discharges, organisms in trade, and invasive Phragmites. But despite all that, we're still worried.

The ecological effects caused by AIS on the Great Lakes and inland waters are profound and increasing. AIS directly outcompete native species for resources like food and habitat causing displacement or reduced populations of native species, indirectly affect aquatic communities by causing cascading changes throughout foodwebs, and degrade habitat and water quality which in turn negatively impacts wildlife. These changes affect entire aquatic communities including commercially valuable and threatened and endangered species.



Eurasian watermilfoil and other invasive plants clog inland lakes and restrict recreation.

AIS degrade shorelines and wetlands for human use by fouling beaches and impacting hunting and fishing. AIS also decrease property values, alter wildfire frequency and intensity, and negatively affect human and wildlife health.

The cost of AIS to households and industries - like power plants and drinking water treatment facilities - in the Great Lakes region easily amounts to over \$100 million annually, according to a [2012 study by the Anderson Economic Group, LLC](#). For example, just one power plant in Michigan spends nearly \$2 million per year to monitor and control zebra mussels. Lake associations and individual property owners often pay the bill to manage AIS in inland waters and on our Great Lakes coasts. There are additional costs to research the potential impacts of new invaders and solutions to manage species already here. Michigan's valuable sport fishing, commercial fishing, and tourism industries are negatively affected in terms of lost business caused by the unintended consequences of AIS.

Rather than sitting around wringing our hands from these worries, WRD staff are partnering with colleagues in other Great Lakes states, the federal government, academia, and the business and conservation community to buckle down and attack this grave problem. In general, our strategy is to protect the threats to our waters posed by AIS on three fronts:

1. Prevent the arrival of new AIS by addressing priority pathways: ballast water, trade of live organisms, and connecting waterways.
2. Detect new invaders and respond quickly.
3. Develop new ways to manage and control AIS already here.

This effort is truly a battle that we must win and it is heartening to have the Governor's support; however, this is an issue where we really need all Michigander's hands on deck. Are you with us?



Zebra mussels, which arrived in the Great Lakes via ballast water discharge, clog power plant water intakes. Photo courtesy of DTE.



Dense stands of invasive Phragmites block views and degrade habitat for wildlife and human use.

What do you do in the WRD?

Meet Sarah LeSage

Sarah LeSage has been an aquatic biologist with the WRD for almost 13 years. Sarah coordinates Michigan's Aquatic Invasive Species Program by organizing state agency efforts to prevent and control AIS. She is currently coordinating a team of experts from the Departments of Environmental Quality, Natural Resources, Agriculture and Rural Development, and Transportation to update and implement Michigan's AIS State Management Plan. Issues with AIS include a wide variety of potential species and pathways ranging from plankton arriving with ballast water, diseases spreading with contaminated bait, plants hitching a ride on recreational boats, fish moving through canals, and the sale of all types of live species -- so there's never a dull moment in the AIS Program.



Sarah with a koi (a non-native fish likely escaped or released from a water garden) from the St. Joseph River.