Michigan's Aquatic Invasive Species Program and Management Plan update

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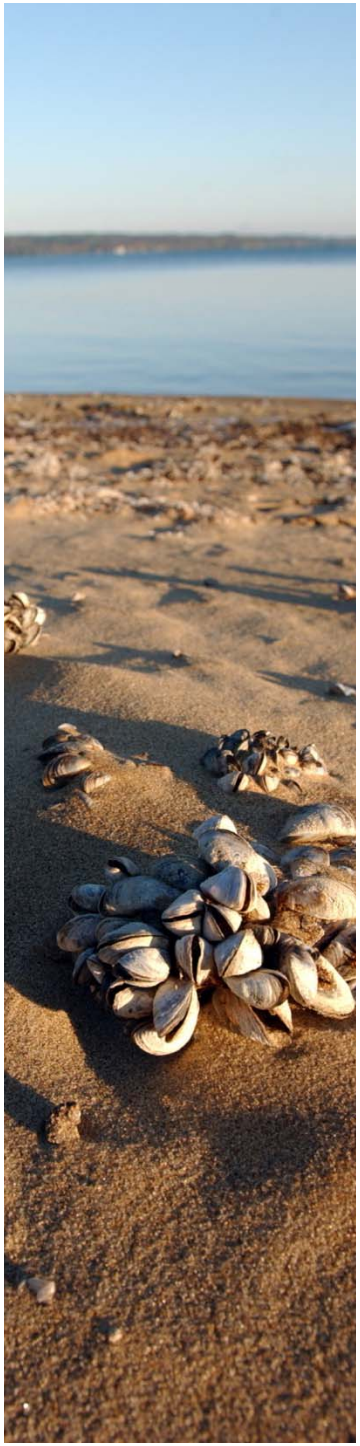
Photo credit: MI Sea Grant

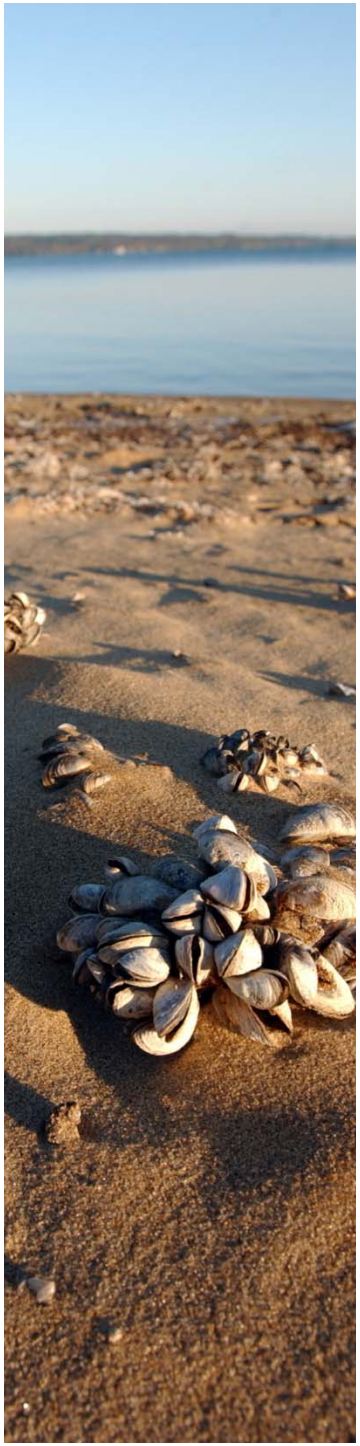
State of Michigan AIS team

- Department of Environmental Quality
  - Water Resources
- Department of Natural Resources
  - Fisheries
  - Wildlife
  - Recreation
  - Law Enforcement
- Department of Agriculture
  - Pesticide and Plant Pest Management
  - Animal Industry
- Office of the Great Lakes
- Others
  - Department of Transportation
  - Forestry
  - Attorney General



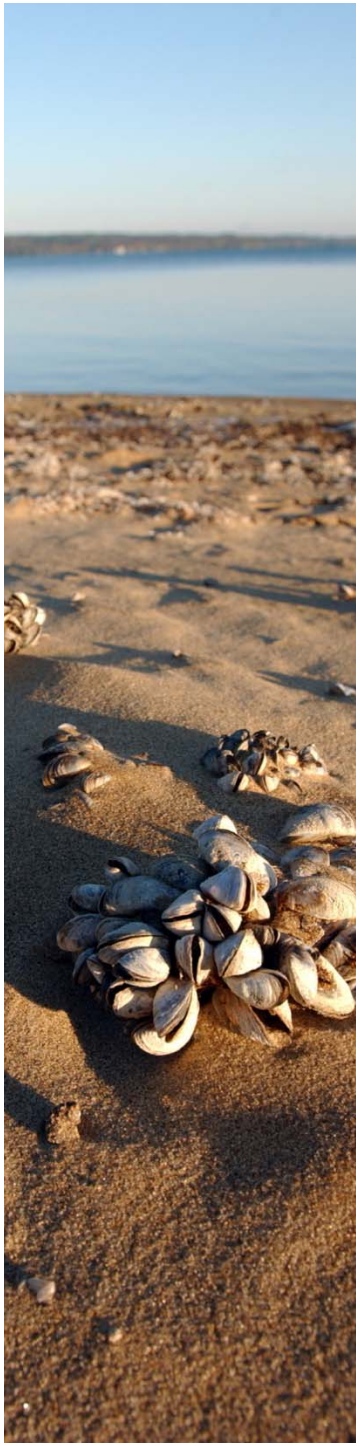
What Are Aquatic Invasive Species?

- A species that is **not native** and whose introduction causes, or is likely to cause, economic or environmental **harm** or harm to human health.



Why care about Aquatic Invasive Species?

- Compete with native species for food and habitat or directly harm native species.
  - Effect diversity and abundance of native species
  - Alter foodweb
- Economic effects
  - Decreased commercial and recreational fisheries
  - Decrease property values
  - Decreased tourism
  - Effects on utilities and other industries

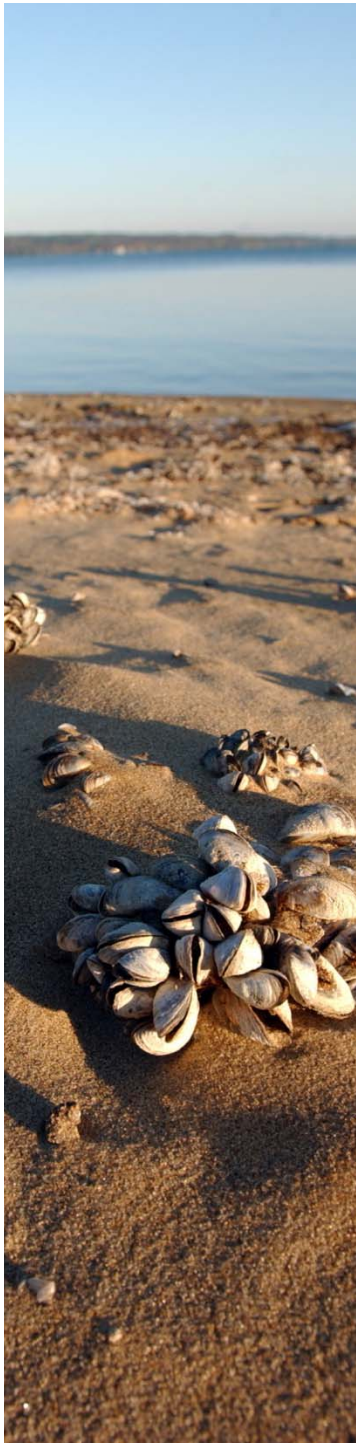


Total costs of AIS

- When economic losses due AIS caused ecological impacts are included, the total economic impact (damage and management/control costs) of AIS in the Great Lakes region is estimated to be **$5.7 billion per year.**

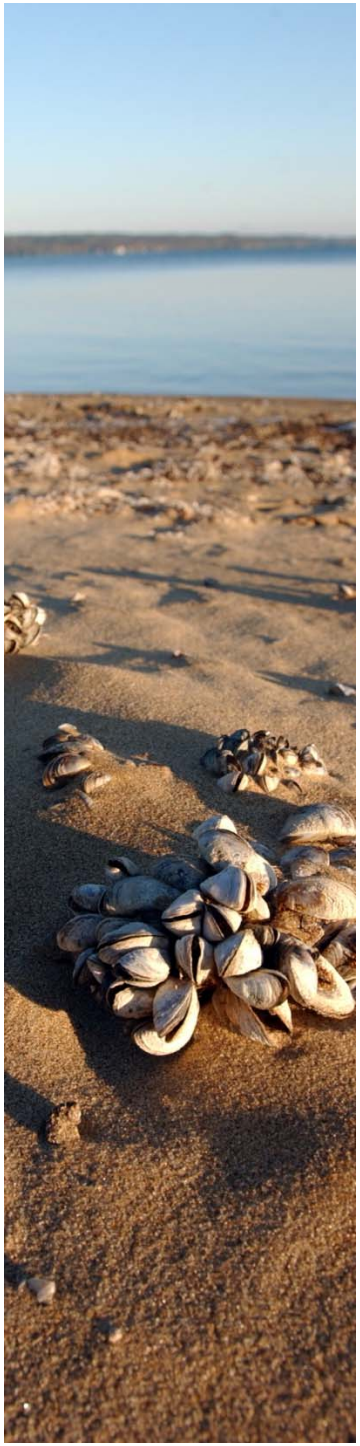
- The Great Lakes sport and commercial fishing are the most impacted industries with losses estimated at $4.5 billion per year.

- Economic costs of aquatic and terrestrial invasive species to the United States have been estimated at $137 billion per year.

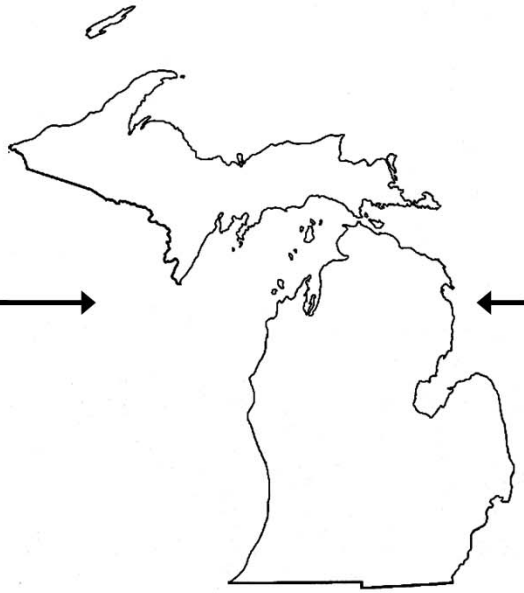


AIS State Management Update

- Goal I: Prevent new introductions of AIS into Michigan waters.
- Goal II: Limit the spread of established populations of AIS into uninfested waters of the state.
- Goal III: Develop an early detection and rapid response program to address new AIS invasions.
- Goal IV: Manage and control AIS to lessen the harmful ecological, economic, social and public health impacts resulting from infestation of AIS.



Prevention of Aquatic Invasive Species in Michigan Waters: Vectors and Pathways Concept Map (Adapted from Lake Superior AIS Complete Prevention Plan)



Shipping, Boating
- Maritime Commerce (ballast water and vessel fouling)
- Water Recreation (boating, fishing, etc.)
- Research and Monitoring Activities

Habitat Alteration
- Habitat Modification and Restoration
- Canals and Lift Locks
- Transportation Facilities

Biological
- Organisms in Trade
- Fishing (Live Bait)
- Fish Stocking and Hatchery Activities

Organisms in Trade (OIT)

- Refers to unwanted species sold or moved in trade
- May be the species itself or contaminants
- AIS OIT includes plants, fish, mammals, mollusks
- MDARD focus on standard industries regulated
- Includes nursery industry, aquaculture, pet shops

MDARD Objectives

- Prevent new introductions & spread of AIS through water garden & aquarium plant trade channels
- Prevent spread of AIS through aquaculture & fish stocking activities
- Work with DEQ & DNR to develop early detection & rapid response program for AIS

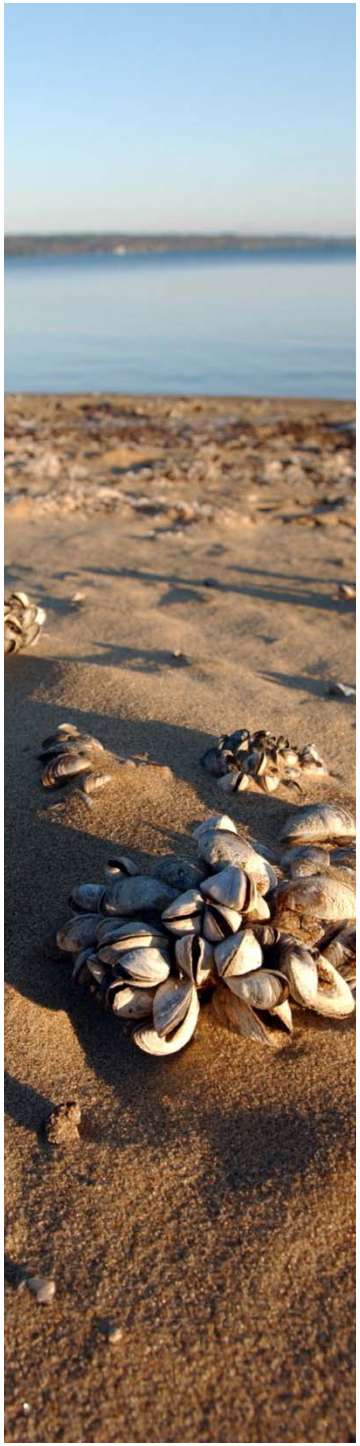
MDARD Action Plan

- Train staff in support of compliance inspections
- Identify firms that sell aquatic plants & fish
- Conduct education & outreach w/ industry
- Administer AIS permit program in support of research and educational activities

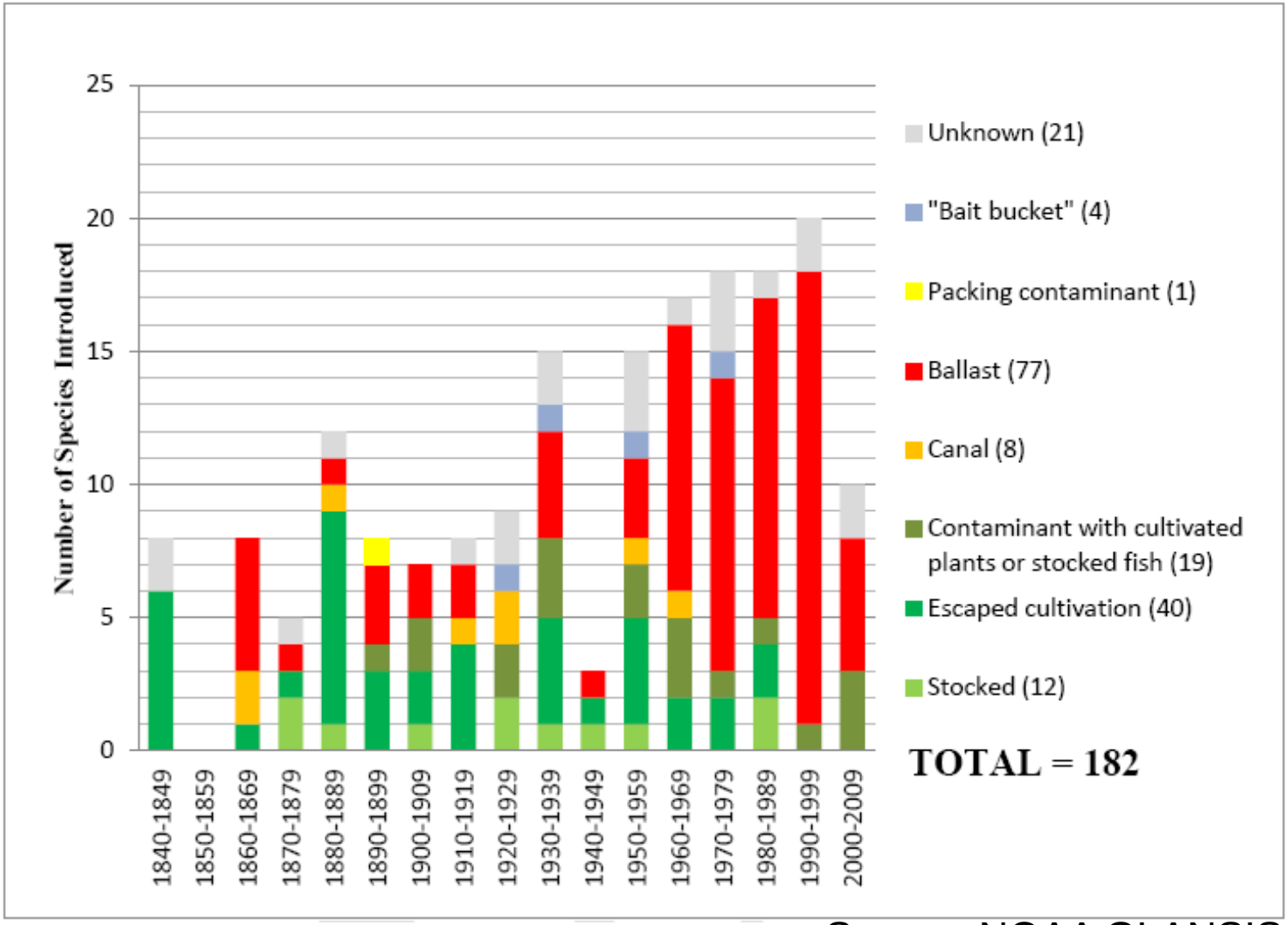
Questions?

Legal Authorities

- Natural Resources & Environmental Protection Act, Act 451 of 1994, Part 413
- Insect Pests and Plant Diseases, Act 189 of 1931
- Aquaculture Development Act, Act 199 of 1996
- Animal Industry Act, Act 466 of 1988



Introduction of AIS to the Great Lakes



Source: NOAA GLANSIS

Michigan NREPA regulated plants

- African oxygen weed (Lagarosiphon major)
- Brazilian elodea (Egeria densa)
- Cylindro (Cylindrospermopsis raciborskii)
- European frogbit (Hydrocharis morsus-ranae)
- Fanwort (Cabomba caroliniana)
- Giant hogweed (Heracleum mantegazzianum)
- Giant salvinia (Salvinia molesta, auriculata, biloba, or herzogii

Michigan NREPA regulated plants

- Hydrilla (Hydrilla verticillata)
- Japanese knotweed (Fallopia japonica)
- Parrot's feather (Myriophyllum aquaticum)
- Starry stonewort (Nitellopsis obtusa)
- Water chestnut (Trapa natans)
- Yellow floating heart (Nymphoides peltata)