

# VESSEL INCIDENTAL DISCHARGE ACT AND AQUATIC INVASIVE SPECIES

Great Lakes – St. Lawrence Legislative Caucus  
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Aquatic Invasive Species Program Coordinator

## Ballast water regulation is:

Influenced by economic growth and global trade

Influenced by the irreversible harm caused by aquatic invasive species

Complicated

Evolving

# The 2018 Vessel Incidental Discharge Act (VIDA)

Overhauled vessel discharge and ballast water regulation in the US

Established a new part of the Clean Water Act

Preempts state authority to have state specific regulations

Established USEPA as Federal lead in establishing new standards for ballast water

Established the USCG as Federal lead on monitoring, inspection, and enforcement of standards

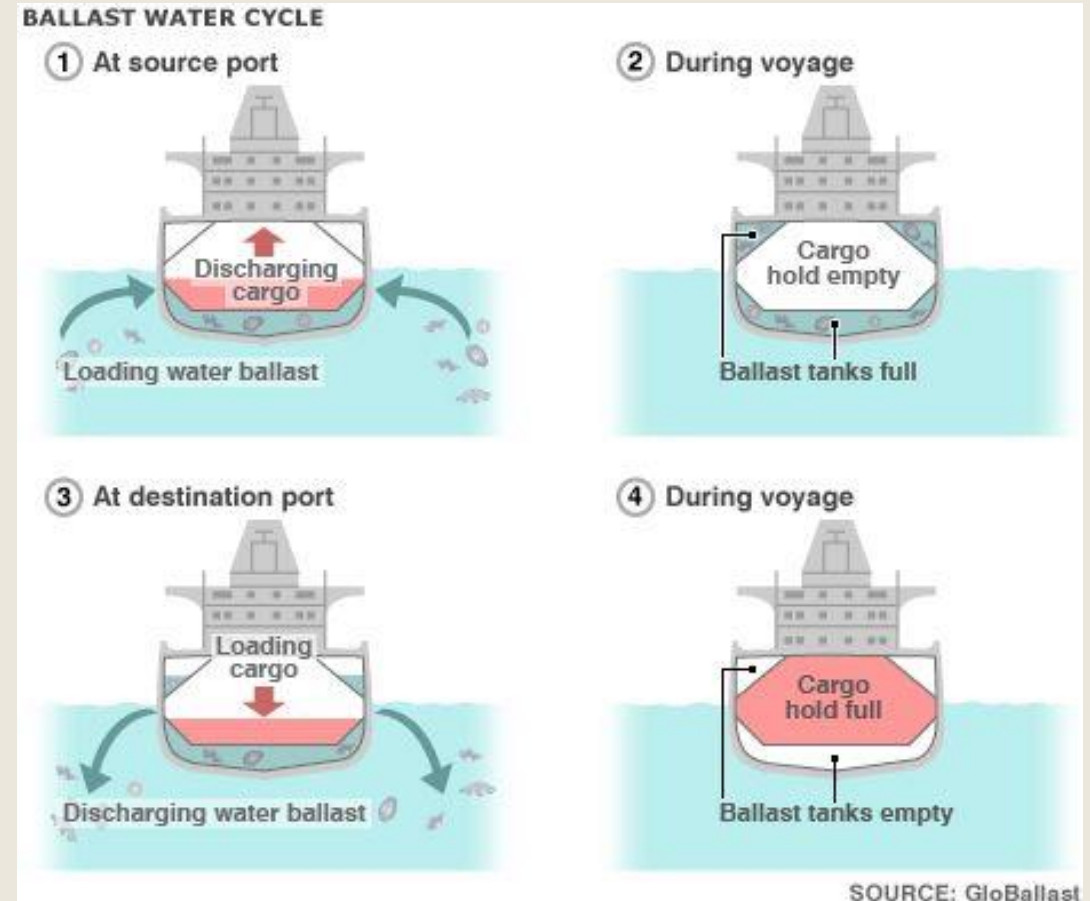
Authorizes \$50M for a Great Lakes and Lake Champlain Invasive Species Program

# Ballast water pathway

## Definition of ballast water

*“Any water, suspended matter, and other materials taken on board a vessel*

- *to control or maintain trim, draught, stability, or stresses of the vessel, regardless of the means by which any such water or suspended matter is carried or*
- *during cleaning maintenance or other operation of a ballast tank or ballast water management system of the vessel”*



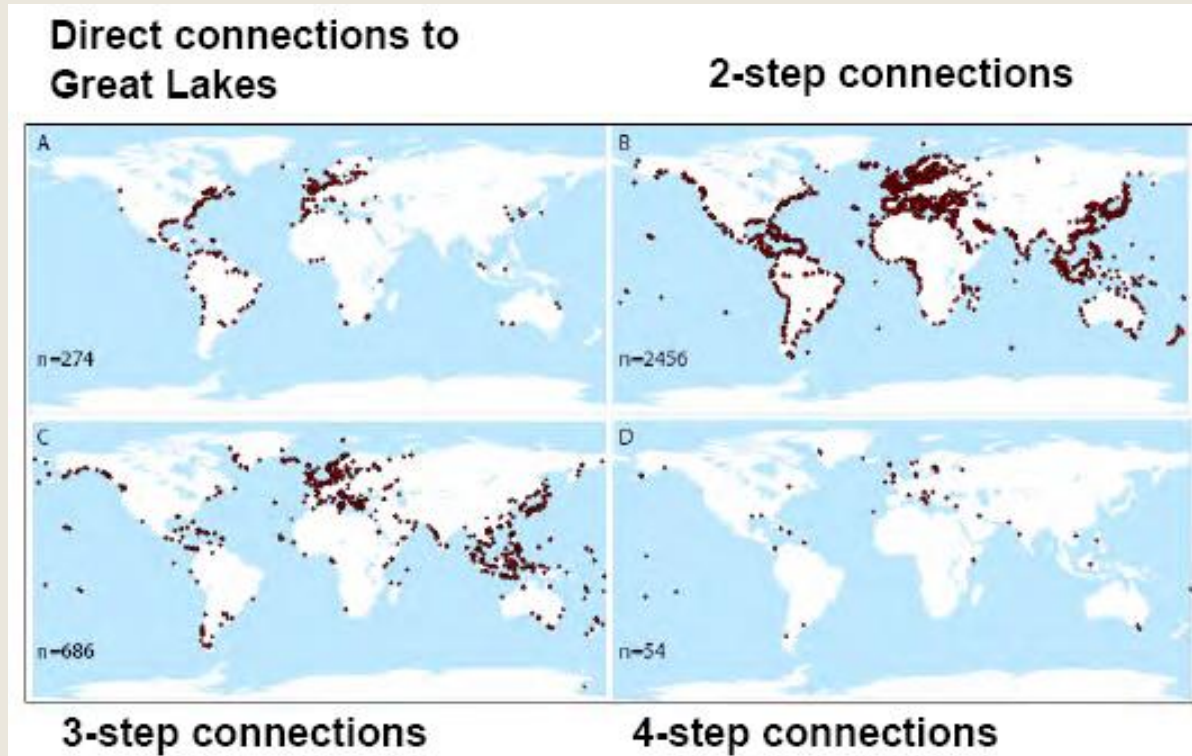


## Cougar Ace: How improper ballast water exchange can prove costly

*“This, together with additional water ballast being pumped out for the adjustment of list, and the consumption of fuel from the ship’s double bottom tanks, resulted in the ship becoming unstable and developing an angle of loll to the port side of about 80°”*

- 13 years, since the RoRo ‘Cougar Ace’, one of the biggest car carriers at its time was involved in an incident
- Entire cargo of almost 5,000 brand new Mazdas were scrapped.
- At the time of the incident, the ship was undergoing a ballast water exchange in compliance with the Canadian Shipping Act on a voyage from Singapore to Vancouver.
- Sequential exchange resulted in 4 of 9 ballast tanks empty.
- The incident highlighted issues related to the assignment of duties in a ship’s Safety Management System, within the context of ballast water exchange operations.
- No crew fatalities, one fatality member of the salvage team. No pollution events.

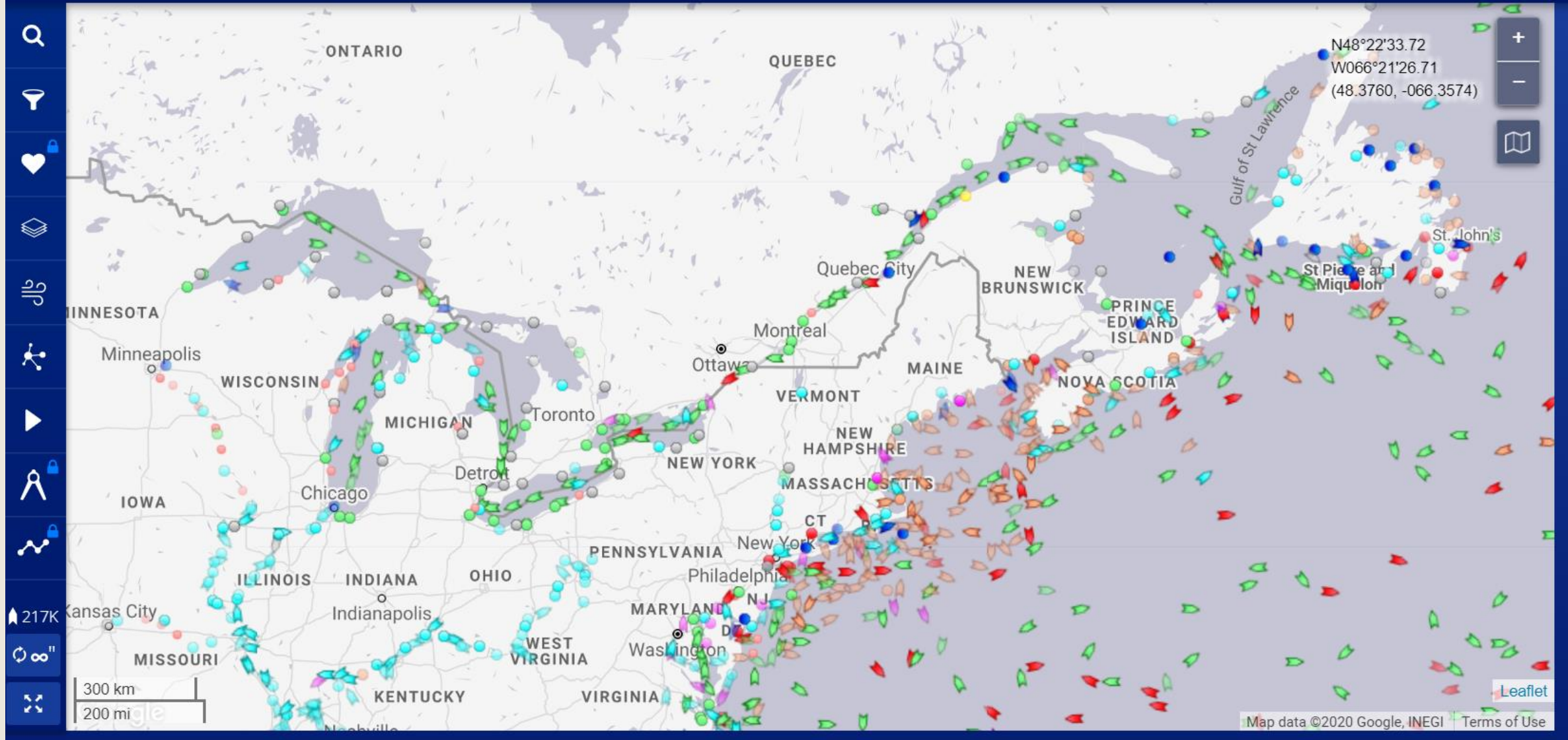
# Ballast water regulation is influenced by economic growth and global trade



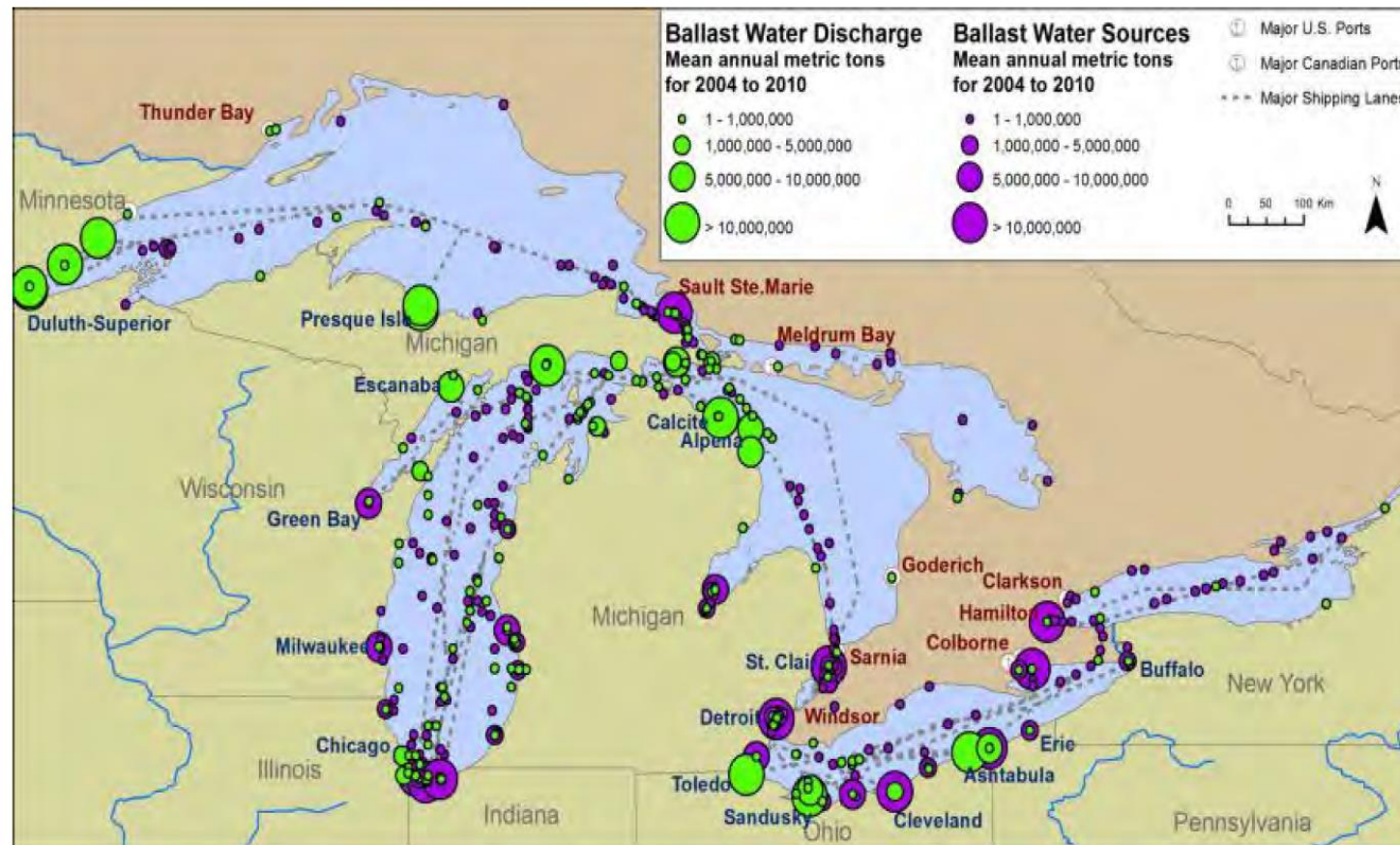
*(Keller, Drake, Drew, Lodge 2010 Div & Dist)*



Cargo- Bulk Carrier- Flag Marshall Islands  
Owner- Fednav  
Dave Kenyon, MI DNR



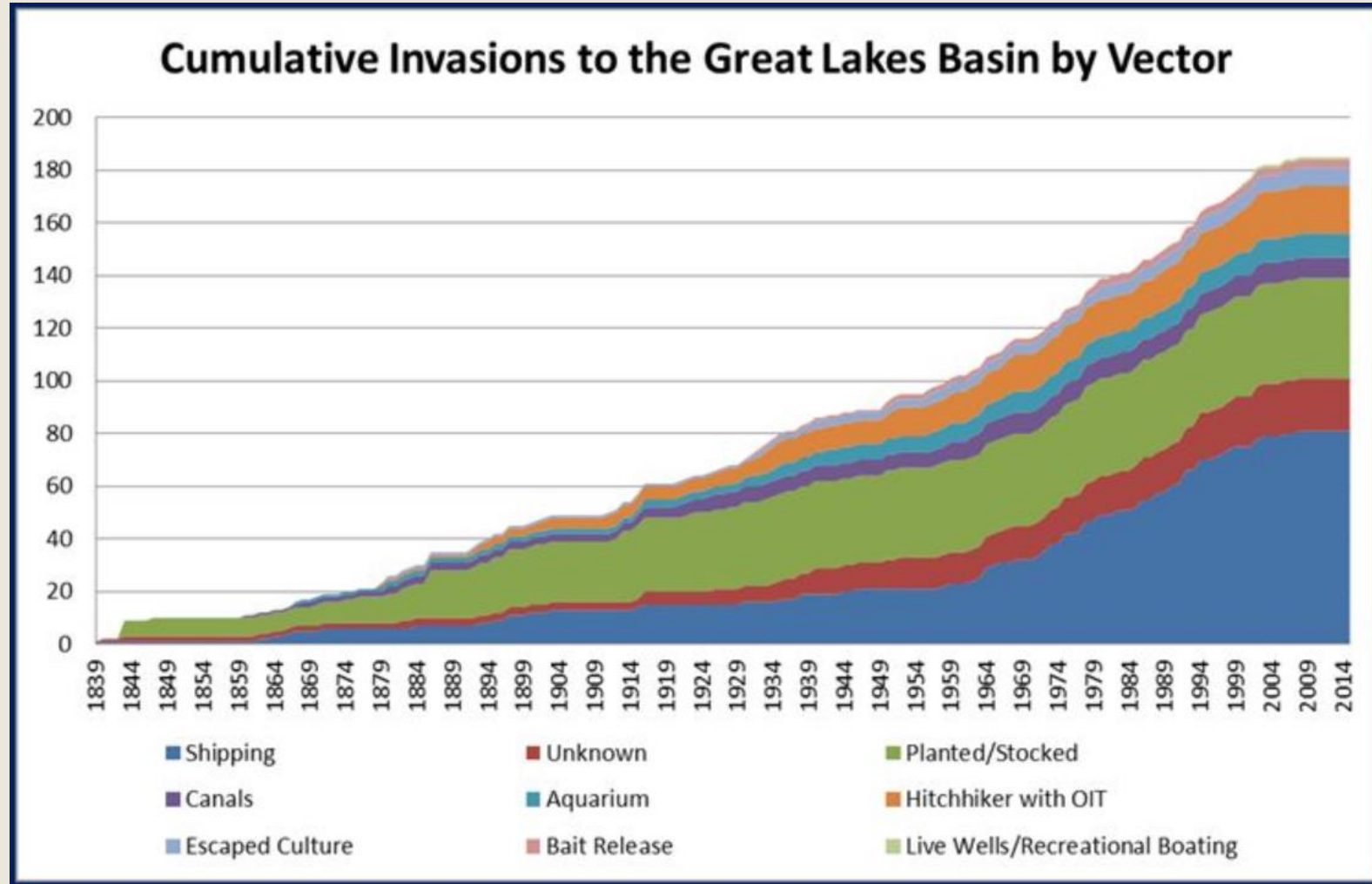
# Ballast water sources and discharges



Sieracki, J. L., J. M. Bossenbroek, and M. Faisal. 2013. Modeling the secondary spread of viral hemorrhagic septicemia virus (VHSV) by commercial shipping in the Laurentian Great Lakes. *Biological Invasions*.



# Rate of Non-native species established in the Great Lakes



2018 *Mesocyclops pehpeiensis*

2018 *Diaphanosoma fluviatile*



2017 *Brachionus leydigii*

2016 *Thermocyclops crassus*

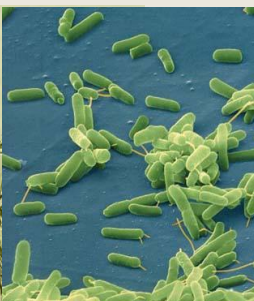
2006 *Hemimysis anomala*



# Ballast water regulation is influenced by the irreversible harm caused by aquatic invasive species



An invasive species is one that is *not native* and whose introduction *causes harm*, or is likely to cause harm to Michigan's economy, environment, or human health



# Environmental effects

- Compete with native species for food and habitat or indirectly harm natives
- Effect diversity and abundance of native species
- Effect water quality
- Decrease diversity of habitat
- Alter foodweb and ecosystem processes



# Economic effects

- Direct cost for control and management
- Cost for economic losses
- Reduced property values
- Lost aesthetic value
- Impacts on recreation
- Impacts on tourism and other industries like commercial and recreational fishing

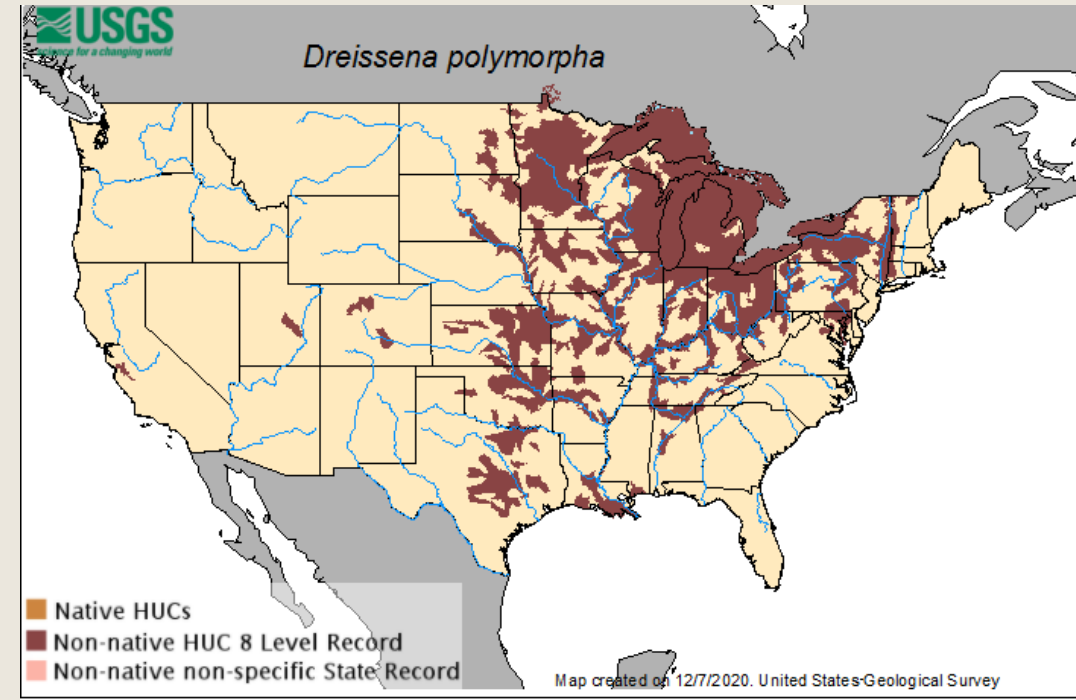


Eurasian Watermilfoil has a significant negative effect on property sales price, corresponding to a 19% decline in mean property values.

(Olden Tamayo, 2014)

- Ballast mediated AIS cost ~\$200 million in damages and control in GL region per year
- Total cost of AIS in GL region (control and losses) ~ \$5.7 billion per year
- Sea lamprey control ~\$20 million per year
- Chemical control of aquatic plants ~\$24 million per year
- Zebra mussel cost to US ~\$1 billion per year

# Ballast water regulation is influenced by the irreversible harm caused by aquatic invasive species



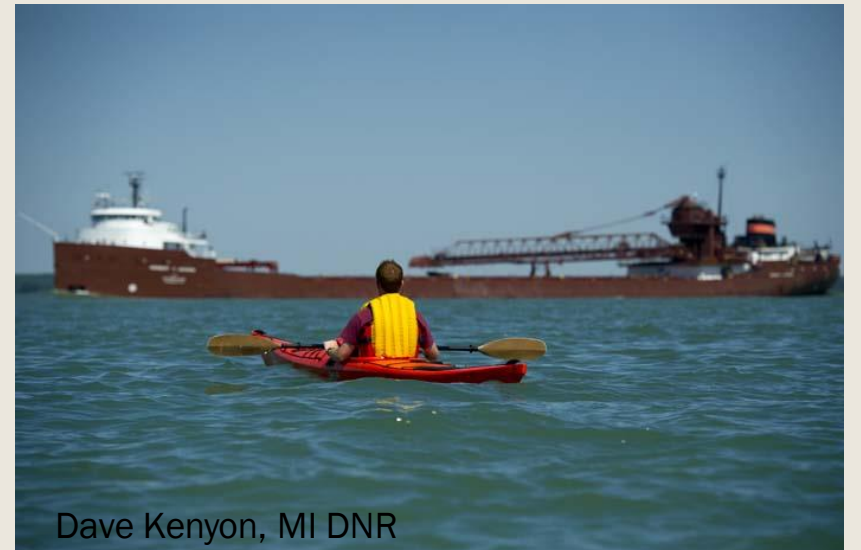
Dreissenid  
invasion 1988

Nonindigenous  
Aquatic Nuisance  
Prevention and  
Control Act of  
1990

Authority for the  
US Coast Guard to  
regulate ballast  
water

# Michigan's ballast water permit

- Authority: Michigan legislation in 2005 amended the Natural Resources and Environmental Protection Act
- “...prevent the introduction of and minimize the spread of aquatic nuisance species...”
- State general permit for oceangoing vessels conducting port operations effective 2007
  - *Requires treatment of ballast water discharges using one of four approved treatments methods, certify no discharge, or request use of an alternative treatment (effectiveness demonstration) Hypochlorite, Chlorine Dioxide, Ultra Violet radiation, Deoxygenation*
- Meanwhile, Federal requirements rely on ballast water exchange and saltwater flushing
- Since last reissuance in 2017 >200 New use certificates
  - *>25 vessels have treatment installed*



Dave Kenyon, MI DNR

# Ballast water policy framework Pre-VIDA

- Great Lakes-St. Lawrence Seaway
  - *Best management practices 2006*
- International Maritime Organization
  - *Ballast water convention adopted 2004, enter into force 2017*
- Transport Canada
  - *Signatory to the IMO convention*
- U.S. Coast Guard
  - *Rules established in 2012*
- U.S. Environmental Protection Agency
  - *Vessel General Permit 2008*
- Illinois Environmental Protection Agency  
(Clean Water Act 401 Certification)
- Indiana Dept. of Environmental Management  
(Clean Water Act 401 Certification)
- **Michigan Dept. of Environment, Great Lakes, and Energy**  
(Clean Water Act 401 Certification & State Permit)
- **Minnesota Pollution Control Agency**  
(Clean Water Act 401 Certification & State Permit)
- New York Dept. of Environmental Conservation  
(Clean Water Act 401 Certification)
- Ohio Environmental Protection Agency  
(Clean Water Act 401 Certification)
- **Wisconsin Dept. of Natural Resources**  
(Clean Water Act 401 Certification & State Permit)

# Ballast water regulation is complicated



- “Too many layers- like an onion”
- “A patchwork of regulation”
- “Need to level the economic playing field”
- VIDA- purpose to establish a uniform national discharge standard for the US



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Authorizes \$50M for a Great Lakes and Lake Champlain Invasive Species Program

# VIDA: Key Provisions

## ■ State Authorities:

- *Ability to enforce federal standards/requirements*
- *Key regional provisions*
- *Ability to collect management fees (with new cap)*
- *Regulation of small commercial (<79ft) and fishing vessels (except by NPDES permit)*
- *Consultation* required during EPA and USCG establishment of standards/requirements
- *Governor petition* for more stringent federal standards/requirements
- *Improved dissemination of NBIC ballast water reporting data and annual reports*
- *Working group formed to develop real-time ballast water data sharing*

# VIDA: Great Lakes Provisions

((10) Additional Regional Requirements)

- **Ballast water exchange/saltwater flushing** for vessels entering the Seaway
- “(B) ENHANCED GREAT LAKES SYSTEM REQUIREMENTS.—
  - “(i) **PETITIONS BY GOVERNORS FOR PROPOSED ENHANCED STANDARDS AND REQUIREMENTS.**—
    - “(I) IN GENERAL.—The Governor of a Great Lakes State (or a State employee designee) may submit a petition in accordance with subclause (II) to propose that other Governors of Great Lakes States endorse an enhanced standard of performance or other requirement with respect to any discharge that—
      - “(aa) is subject to regulation under this subsection; and “(bb) occurs within the Great Lakes System.”

# VIDA: Great Lakes Provisions

((10) Additional Regional Requirements)

- Petitions submitted to: GLC, other GL Governors, GLNPO
- Preliminary assessment by GLC “acting through the **Great Lakes Panel on Aquatic Nuisance Species**, to the maximum extent practicable”
- Petition, assessment published in FR for public comment
- **Development of proposed standard or requirement**
  - *“any interested Governor of a Great Lakes State may work in coordination with the Great Lakes Commission to develop a proposed standard of performance or other requirement applicable to a discharge referred to in the petition.”*
  - *In consultation with Canada (Federal and provincial)*
  - *Endorsed in writing by*
    - **Each Great Lakes Governor if requires additional equipment on vessels**
    - **minimum 5 Great Lakes Governors if no additional equipment on vessel is required**
- Submit proposed standard/requirement to EPA and USCG for review and approval
  - *Provides for withdraw of endorsement or dissenting opinions from GL Governors*
- \$5M authorization for GLC

# VIDA: Great Lakes Provisions Great Lakes and Lake Champlain Invasive Species Program:

- *Administration – EPA GLNPO in collaboration/consultation with:*
  - USFWS, NOAA, USGS, USCG, GLANSIS, GLERL
  - Federal, State, local and Tribal agencies; and other “research entities or stakeholders” as appropriate
- *\$50M authorization*
- *Purpose:*
  - to **monitor** for the introduction and spread of AIS
  - to **detect** newly introduced AIS
  - to inform, and assist with, **management and response actions** to prevent or stop the establishment or spread;
  - to establish a watch list of candidate AIS that may be introduced or spread, and that may survive and establish
  - to **monitor vectors** likely to be contributing to the introduction or spread of AIS, including ballast water operations;
  - to **work collaboratively** with the Federal, State, local, and Tribal agencies to develop criteria for prioritizing and distributing monitoring efforts;
  - to develop, achieve type approval for, and pilot shipboard or land-based ballast water management systems installed on, or available for use by, commercial **vessels operating solely within the Great Lakes** and Lake Champlain Systems to prevent the spread of AIS; and
  - to facilitate meaningful Federal and State implementation of the regulatory framework in this subsection, including monitoring, shipboard education, inspection, and compliance conducted by States.

# Status

- Conference calls with USEPA, USCG, and others while USEPA was developing draft standards
- Formal comments submitted prior to draft standard publication
- Draft standards published October 26, 2020 with 30 comment period
  - *State comments: inadequate comment period, inadequate consultation, less stringent than current USEPA requirements, retain best management practices, do not exempt lakers, inadequate technology analysis, also need to work with Canada on binational approach to laker regulation*
- USEPA is working to finalize standards
- Two years thereafter (~2022), the U.S. Coast Guard (USCG) is required to develop corresponding implementation, compliance, and enforcement regulations.
- No specific authorization for Great Lakes and Lake Champlain Invasive Species Program
  - *Program mentioned in FY2020 appropriation for GLRI that increased for \$300M to \$320M*

# Michigan's Aquatic Invasive Species Priorities



Ballast  
water



Invasive  
Carp



Organisms  
in Trade



Hitchhikers



Detection  
and  
Response



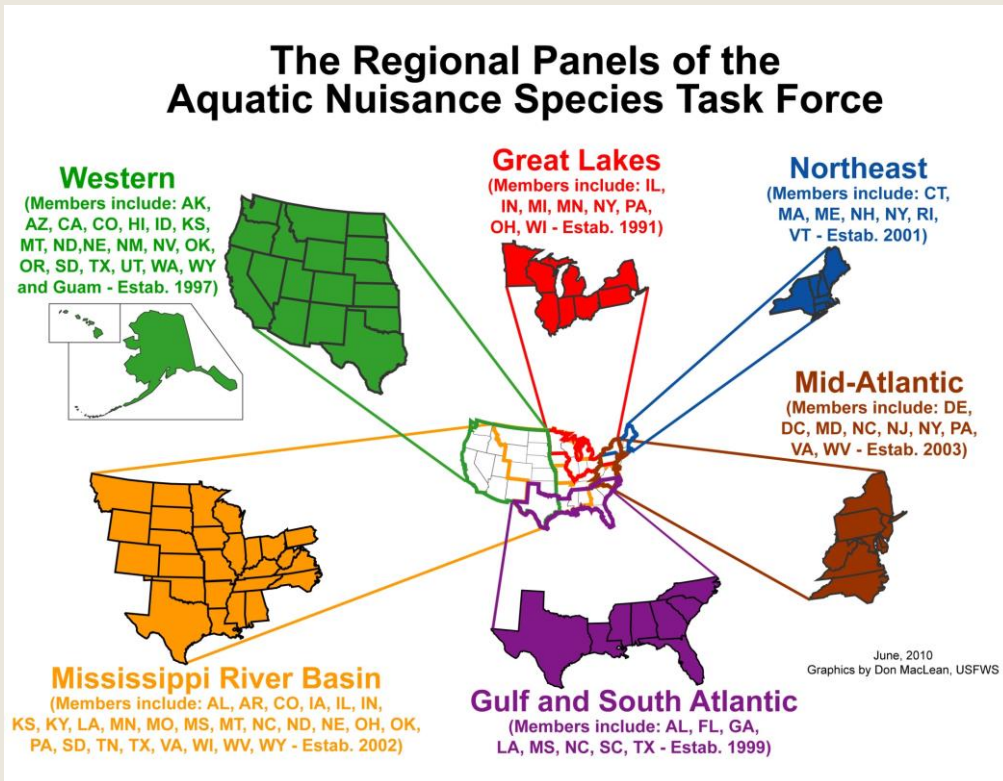
Control

# GREAT LAKES AQUATIC INVASIVE SPECIES COORDINATION



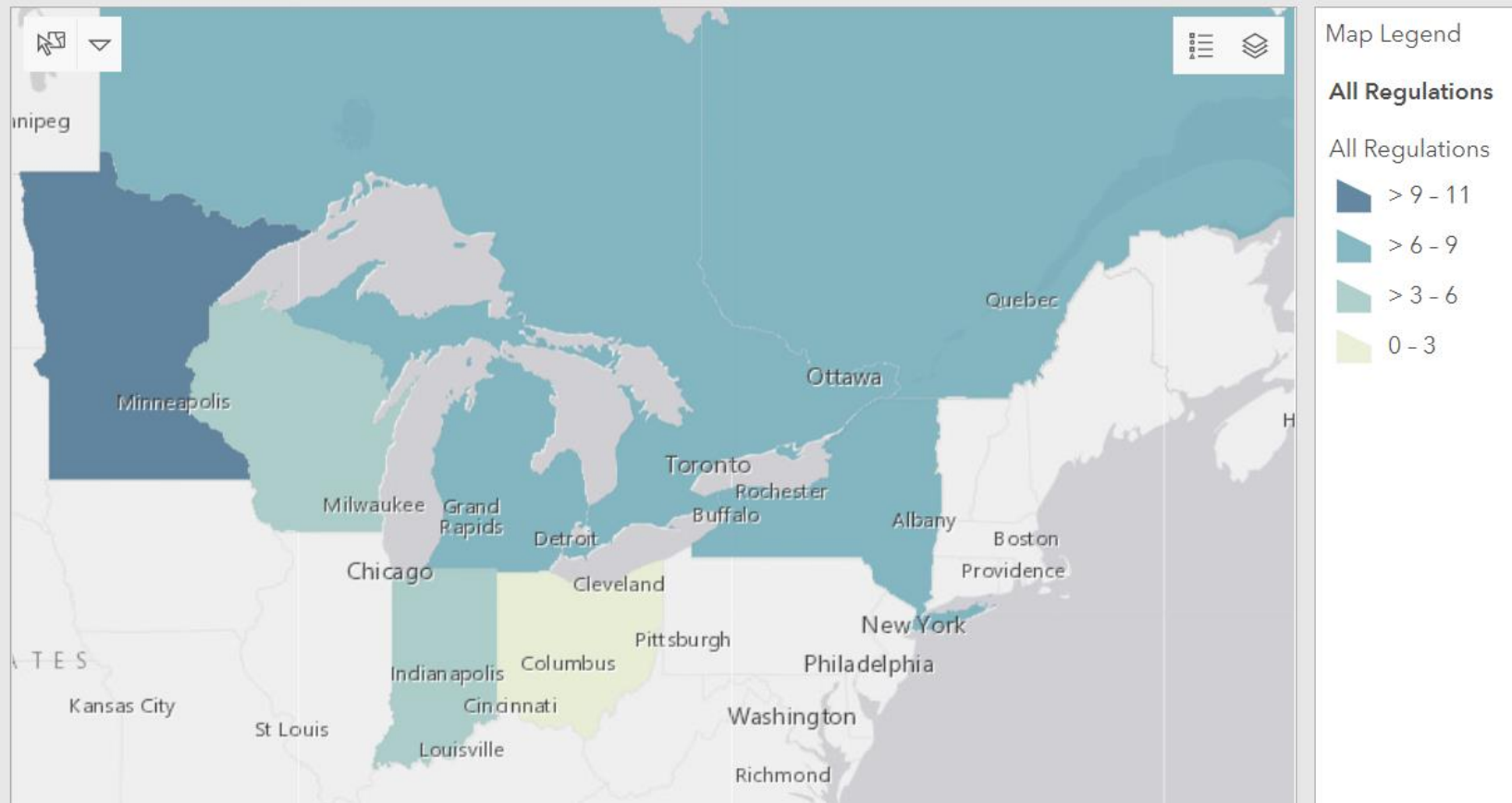


# Great Lakes Panel on Aquatic Nuisance Species

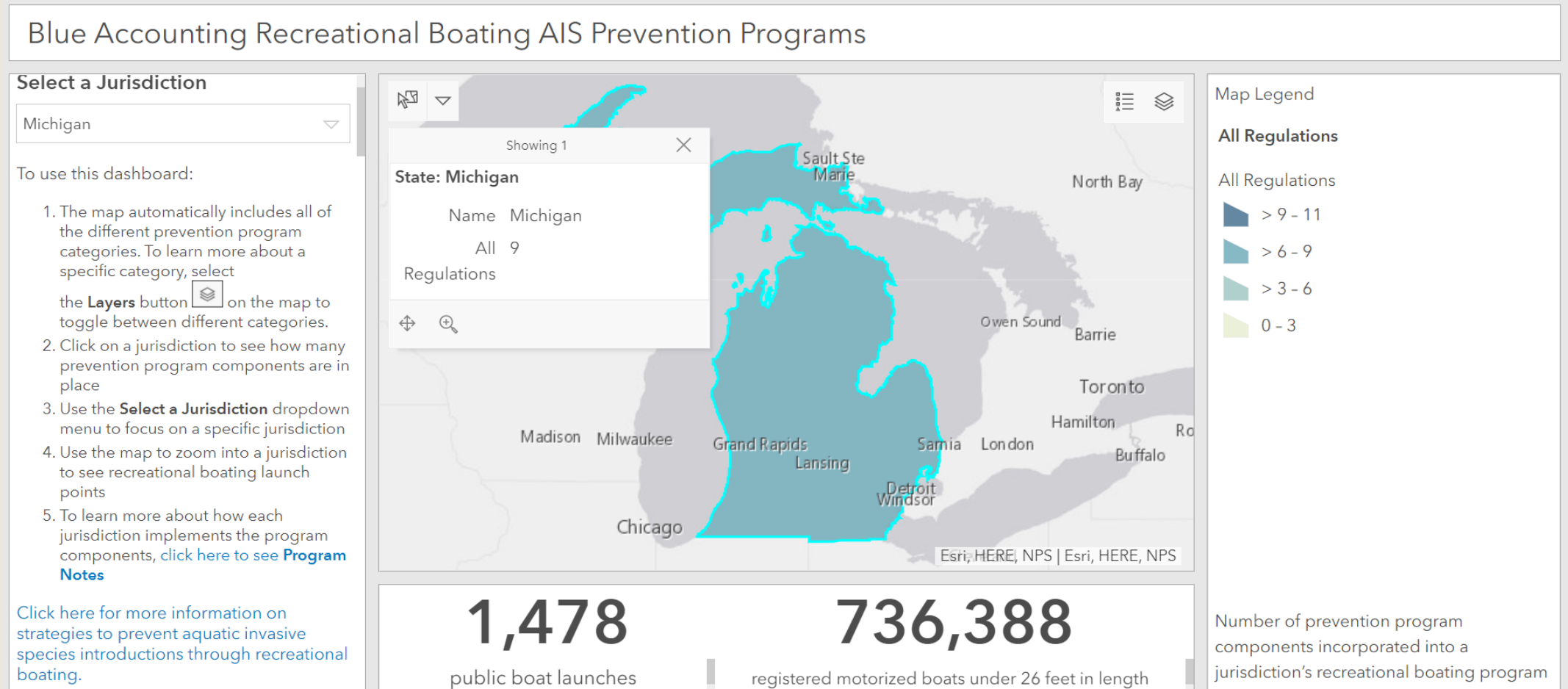


- Great Lakes Panel tasks
  - Identify priorities for the Great Lakes region
  - Make recommendations to the ANSTF to carry out its program
  - Assist the ANSTF in coordinating Federal activities in the Great Lakes region
  - Coordinate AIS activities in the Great Lakes region
  - Provide advice to public and private individuals and entities on controlling AIS
  - Report annually to the ANSTF

# Blue Accounting - Visualizing recreational boating legislative provisions



# Jurisdictional perspective



# Spreadsheet of supporting data

Agency Capacity	<i>FUNDING</i> A dedicated fund to support implementation and/or maintenance of a watercraft inspection/decontamination program is established through legal provisions	No; there is no dedicated fund for inspections and decontamination. Most of the outreach and decon work in MI implemented by agencies is done via grant funding
	<i>CLOSURE OF WATERS</i> State-/province-managed boating access points can be closed and boating activities restricted if necessary to respond to an aquatic invasive species threat in that body of water	Yes; depending on the severity of the situation, steps could be taken to request a closure
	<i>PENALTIES</i> Penalties for violations of all relevant AIS prevention regulations are established	Yes; these are identified in MI NREPA Part 413
Partnerships	<i>LOCAL GOVERNMENT AUTHORITY</i> The relevant state/provincial agency has legal authority over local watercraft inspection/decontamination programs, and local programs may not be more stringent than state/provincial programs	Yes; when pertaining to public access sites and waterways. Such programs could be more stringent on private bodies of water
Reporting and Evaluation	<i>REPORTING</i> Watercraft inspection/decontamination staff are required to report levels of compliance to the relevant state/provincial agency	No; inspections and boat washing are not mandatory or legally required in Michigan, so compliance is not reported formally. However, some boat washing programs do collect compliance data but it is not complete or consistent
	<i>LEGISLATIVE FINDINGS</i> A watercraft inspection and decontamination program (or elements thereof) is authorized	No; MI state agencies do not have this authority
	<i>PROHIBIT POSSESSION AND TRANSPORT</i> The possession, movement, or transport of aquatic invasive species is prohibited	Yes; Section 41303 states: "a person shall not knowingly possess a live organism if the organism is a prohibited species or restricted species." Furthermore, "A person shall not introduce a prohibited species, a restricted species, a genetically engineered or nonnative bird, crustacean, fish, insect, mammal, mollusk, or aquatic plant."
	<i>AUTHORITY TO INSPECT CONVEYANCES</i> The relevant state/provincial agency has authority to stop, detain, and/or inspect boats and/or establish inspection stations	Yes; Section 324.41325 allows a law enforcement officer to order removal of aquatic plants; therefore, the officer would most likely have the authority to stop and inspect the boat as well
	<i>DECONTAMINATION</i> Designated personnel of the relevant state/provincial agency have authority to decontaminate a boat based on the presence or suspected presence of AIS, as determined during an inspection	Yes; Expressly provided for in Section 324.41325

<https://www.blueaccounting.org/>

Contact Erika Jensen [ejensen@glc.org](mailto:ejensen@glc.org)

# Building Consensus to Identify and Address Priority AIS and Vectors in the Great Lakes

## Project partners:

- National Sea Grant Law Center
- Great Lakes Commission
- Great Lakes ANS Panel
- *Governors and Premiers AIS Task Force*
- Great Lakes Fishery Commission
  - **Law Enforcement Committee\***
  - Council of Lake Committees (managers)
  - Council of GL Fishery Agencies (chiefs)

**Purpose:** Provide a **legal assessment** of variability in **regulated species lists** and related **authorities**, and identify **priority actions** to address identified **gaps** and **vectors of concern**.

Contact:

Great Lakes Fishery Commission

Jill Wingfield [jwingfield@glfc.org](mailto:jwingfield@glfc.org)

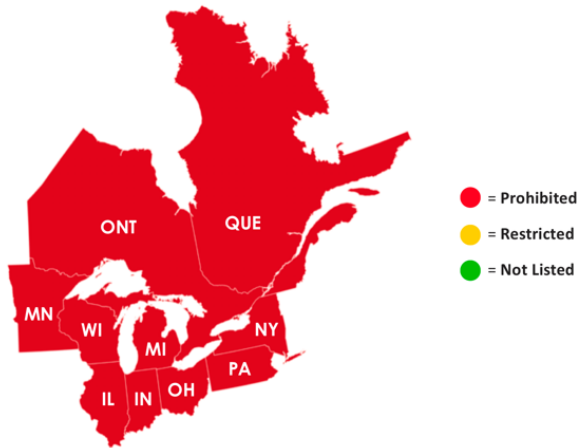
# Classification: Regulated Activities

Comparative Analysis of "Least Wanted" AIS in the Great Lakes

## Bighead Carp

*Hypophthalmichthys nobilis*

### Classification

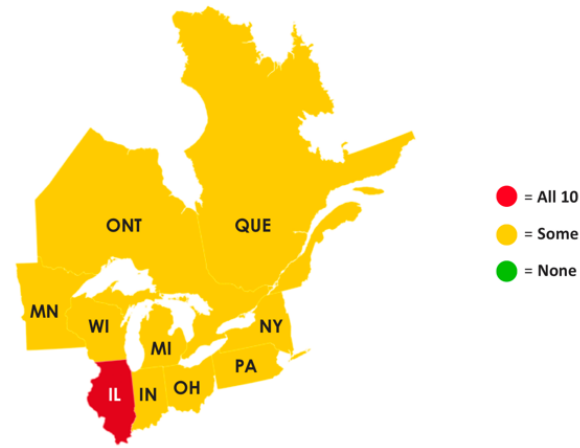


Comparative Analysis of "Least Wanted" AIS in the Great Lakes

## Bighead Carp

*Hypophthalmichthys nobilis*

### Activities Prohibited



### Classifications:

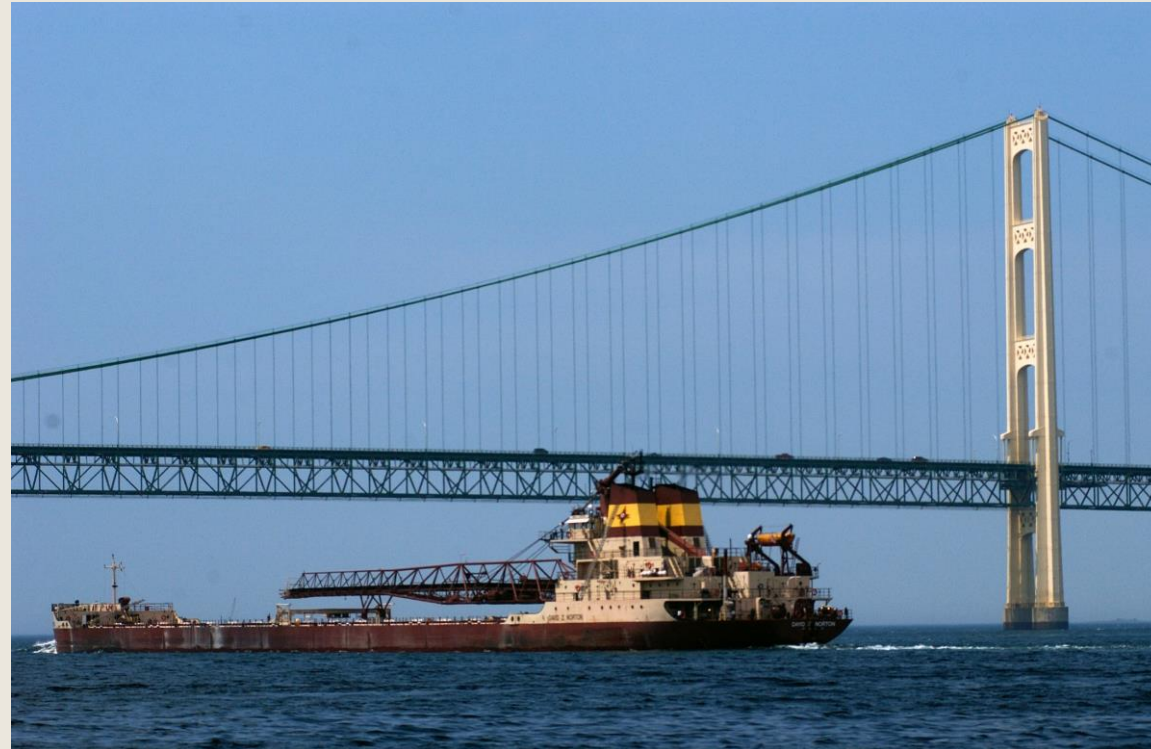
- All 10
- Some
- None

Sell	Offer for Sale	Purchase	Transport	Import	Barter, Gift, Trade, Transfer	Possession	Release	Propagation	Lease, Loan
IL, IN, MI, MN, NY, OH, ONT, QUE, PA, WI	IL, MI, PA, WI, ONT	IL, IN, MN, NY, ONT, QUE, PA, WI	IL, MN, NY, ONT, QUE, PA, WI	IL, IN, MN, NY, OH, ONT, PA, WI	IL, IN, ONT, PA, WI	IL, IN, MI, MN, NY, OH, ONT, QUE, PA, WI	IL, IN, MI, MN, NY, OH, ONT, QUE, PA, WI	IL, IN, MN, NY, ONT, QUE	IL, IN, ONT
10	5	8	7	8	5	10	10	6	3

“While possession, sale, and release is expressly illegal in all states and provinces where bighead carp is listed as prohibited, jurisdictions may be silent on other activities such as transport, purchase, or import.”

# Acknowledgements

- *A. Pleus, Washington State Department of Fish and Wildlife and N. Dobroski, California State Lands Commission, presentation to ANS Task Force, May 8, 2019*
- *E. Jensen, Great Lakes Commission, presentation to Great Lakes Panel on ANS, May 15, 2019*



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# Questions?

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Michigan Department of Environment, Great Lakes, and Energy



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