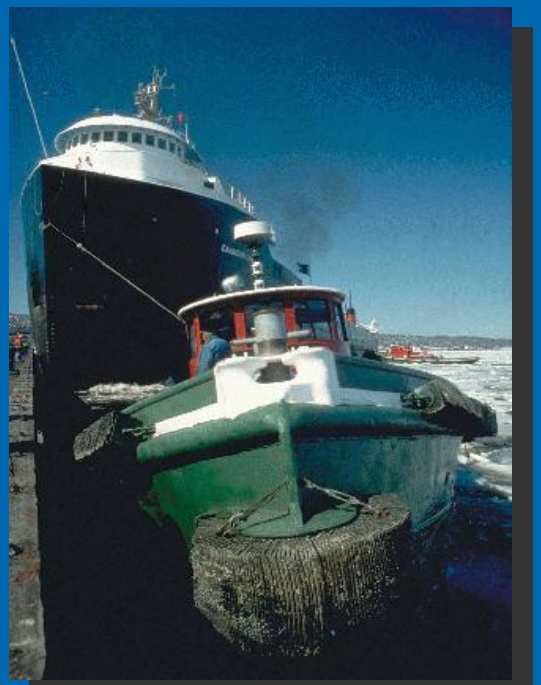
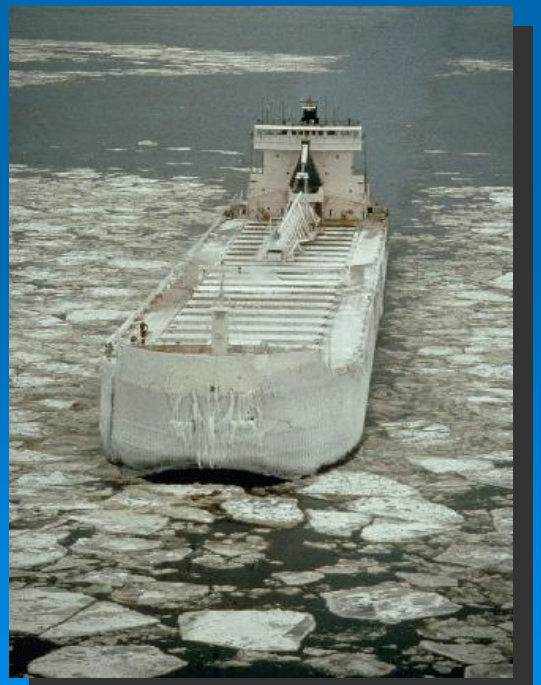




Protecting Minnesota's Waters:
Controlling Ballast Water Discharges

Minnesota Environmental Institute

Mary Jean Fenske
Minnesota Pollution Control Agency

April 23, 2009

Photos courtesy of US Army Corps of Engineers, by Bielickii

Aquatic Invasive Species (AIS)

- Alter existing aquatic ecosystems
- Costly to deal with impacts
- Move from Lake Superior to inland lakes and rivers
- Once established, virtually impossible to remove

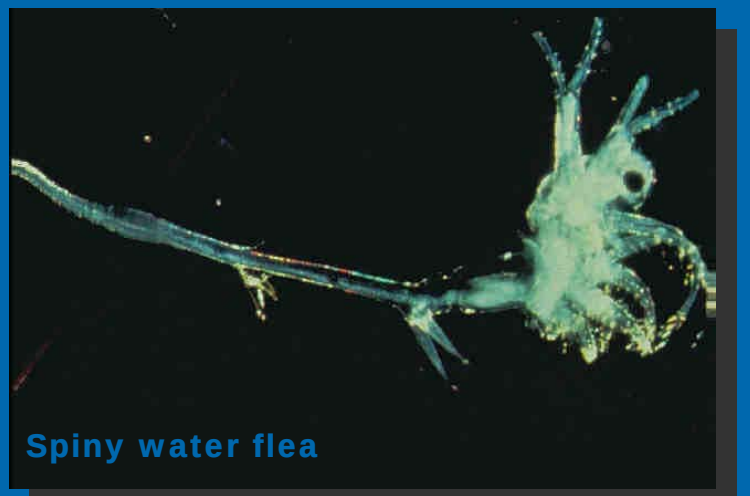


Photo courtesy of US Fish and Wildlife Service

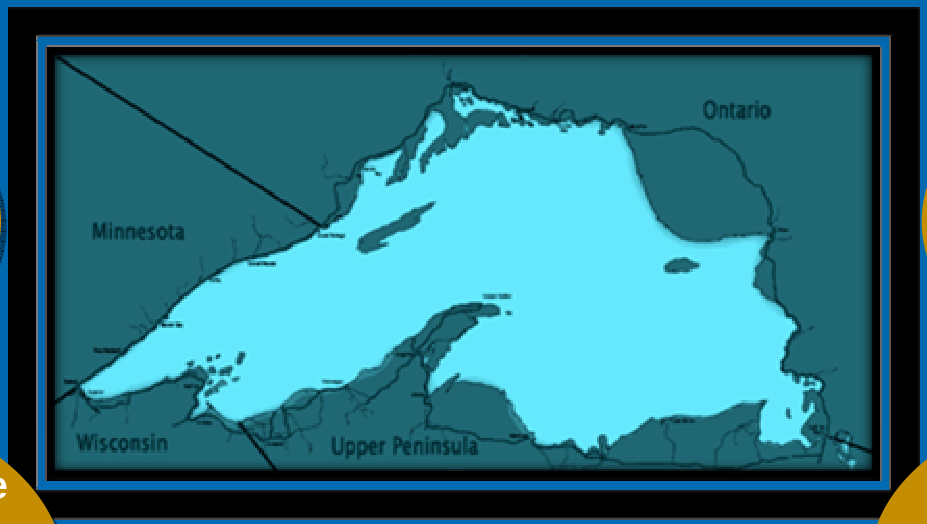
Photo courtesy of Center for Great Lakes and Aquatic Sciences

Pathways for AIS to Enter Lake Superior

Maritime Commerce
Ballast Water
Hull/Anchor fouling

Ballast Water
leading — but not only — vector for AIS introductions

Water Recreation
Boating equipment
Livewells
Fishing equipment
Bait



Agency Activities
Stocking/hatcheries
Assessment
Harbor maintenance
Navigation
Homeland security
Research

Tourism
Charter fishing
Ecotours
Float planes
Diving

Organisms in Trade
Pets/Aquariums
Aquatic plants
Shoreline restoration
Bait
Live food fish
On-line sales

Canals and Diversions
Locks
Power canals
Compensating works
Diversions

Illegal Activities
Plants
Fish stocking
On-line sales

Commercial Fishing
Fishing equipment/vessels
Bait
Fish Aquaculture

Reasons for Action

- Aquatic Invasive Species can live in ballast water of ships traveling within Great Lakes Region and around the world
- These organisms are a serious threat to Minnesota's natural resources and economy
- Minnesota moving ahead with a state program while calling for federal action protective of State waters

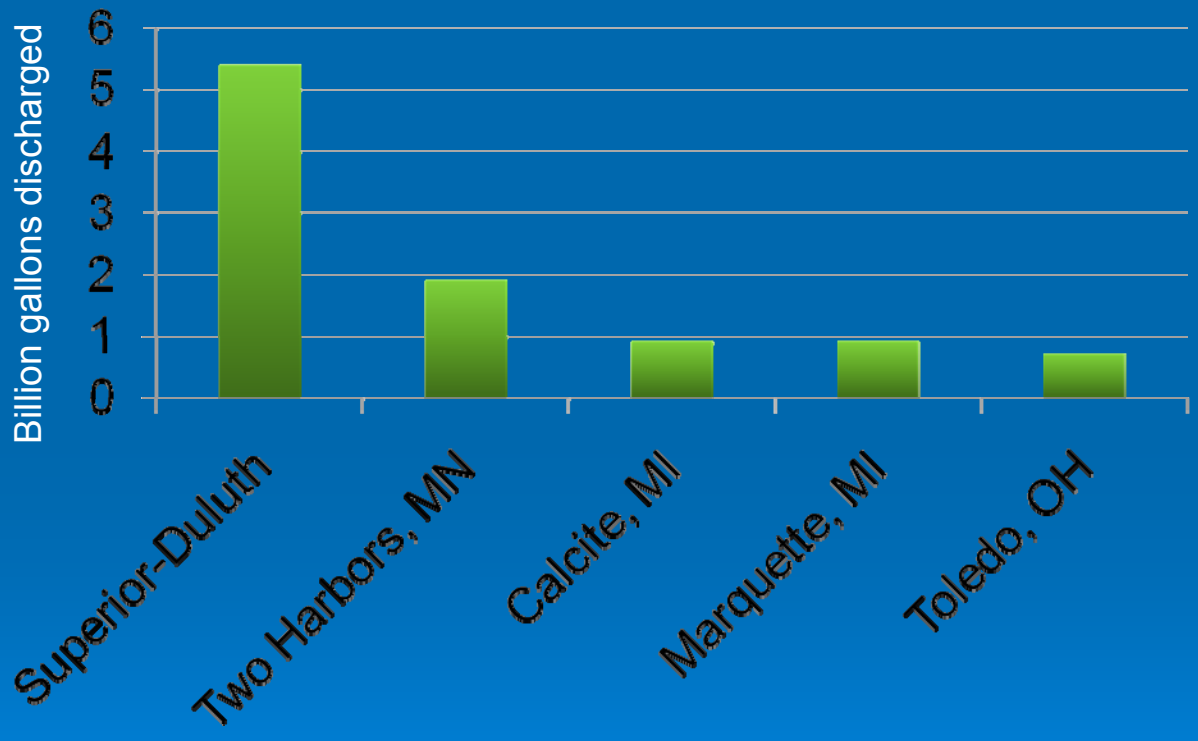
Vessel Types and Transit Patterns

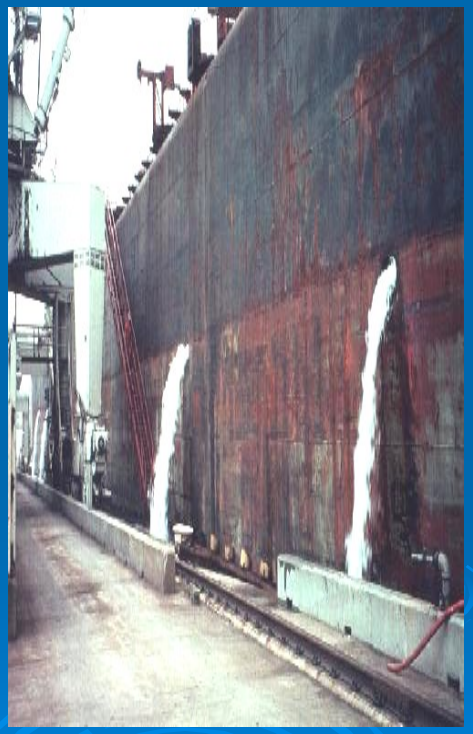
Lakers Transit only the Great Lakes System

Oceangoing Transoceanic transits to foreign ports

Top Ballast Receivers in 2005

Lakers discharge over 95% of ballast water;
Oceangoing vessels less than 5% in Superior-Duluth





Source: Preliminary Fisheries and Oceans Canada study data from 6-18-08 presentation by Chris Wiley, Transport Canada

Court Actions Affecting EPA/ States

Federal exemption successfully challenged

- 1973: EPA excluded vessel discharges from NPDES permitting
- September 2006: U.S. District Court decision in CA eliminates the vessel discharge exemption effective September 30, 2008
- EPA appealed decision and los

Necessity of the Permit

- US EPA
  - Issued vessel discharge general permit in Dec. 2008
  - Not as protective as Minnesota's permit
- Federal legislation timing uncertain
- MN Legislature
  - General Permit: implementation vehicle
- Other states
  - MI has state permit regulating oceangoing ships
  - 401 certifications of US EPA's vessel

State Implementation of the Clean Water Act

- Designated Uses
  - Drinking (domestic consumption)
  - Fishing / Swimming
  - Industrial Processes, others
- WQ Standards (pollutant limits for each designated use)
- NPDES Permits to regulate discharges
- EPA: States do not have authority to issue NPDES permits for vessel discharges (April, 2008)

Goal: Protect Minnesota waters

Permit must:

1. Prevent ship-mediated spread of aquatic invasive species

2. Support a viable shipping industry

State Disposal System Permit

Permit Applicability

- Applies to both oceangoing and lakes-only vessels transiting Minnesota waters of Lake Superior and its harbors
  - > 50 meters in length
  - > 8 cubic meters ballast
- Coverage not Required
  - US armed forces vessels
  - Vessels with sealed tanks
  - Others

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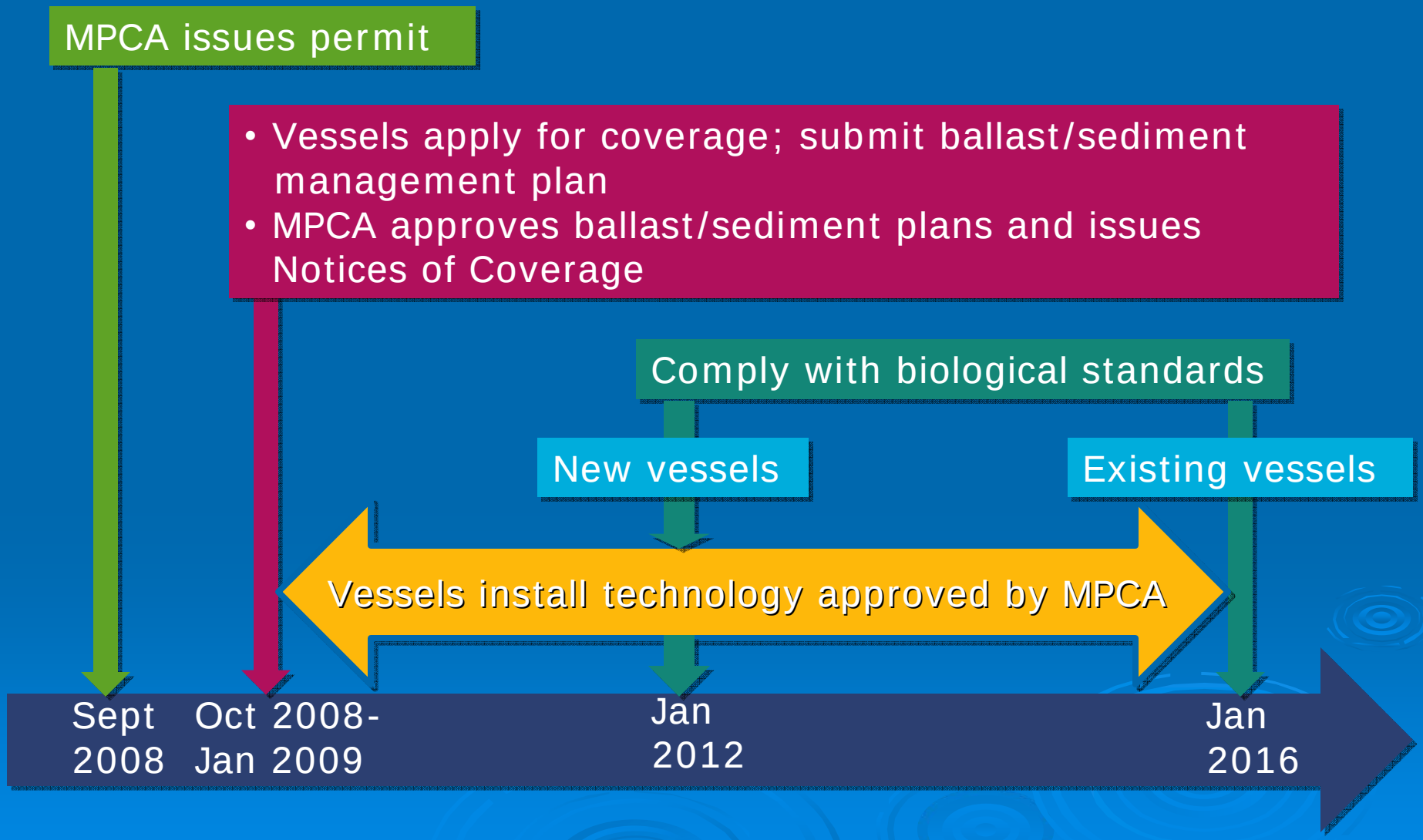
Biological Performance Standards

International Maritime Organization (IMO) D-2 Standards

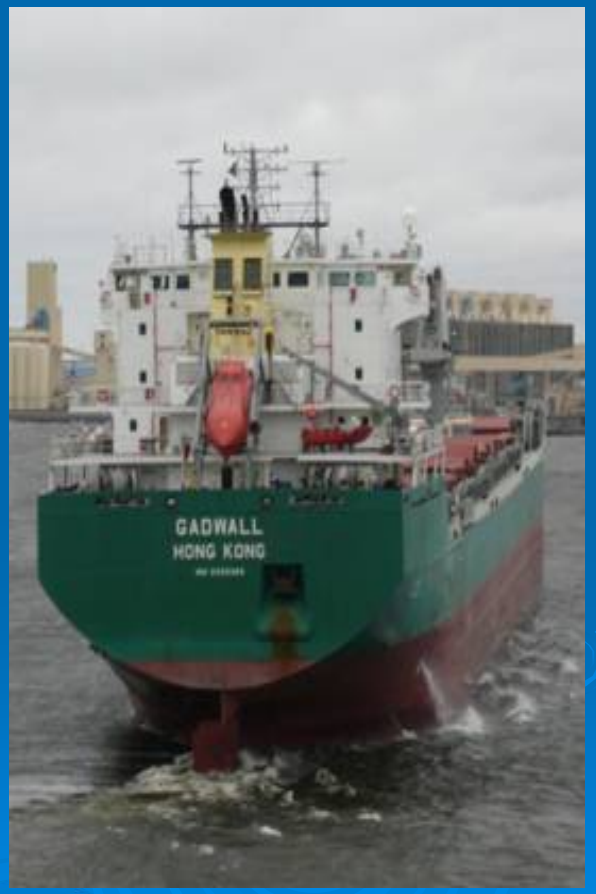
Parameter	Limit
Organisms > 50 micrometers	Less than 10 viable organisms per cubic meter
Organisms 10 to 50 micrometers	Less than 10 viable organisms per milliliter
Escherichia coli	Less than 250 colony forming units per 100 milliliters
Intestinal enterococci	Less than 100 colony forming units per 100 milliliters

Implementation Timeline



Next Steps

- Implement MPCA's permit
- Call for federal action
- Work with other states/ Canada for regional approach
- Promote early action



http://www.pca.state.mn.us/programs/ballastwater.html

QUESTIONS?