



# MPCA Citizens' Board Meeting

# Ballast Water

# Discharge

# General Permit

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Photos courtesy of US Army Corps of Engineers, by Bielicki

# Overview

- Concerns with aquatic invasive species brought by ballast water
- Permit development process
- Permit description/ key public comments
- Proposed resolution

# 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



**Spiney water flea**

*Photo courtesy of US Fish and Wildlife Service*



**Zebra mussels**

*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 vector for AIS  
introductions, but not only vector

## 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



# Vessel types and transit patterns

**Lakers** Transit only the Great Lakes System

**Oceangoing** Transoceanic transits to foreign ports

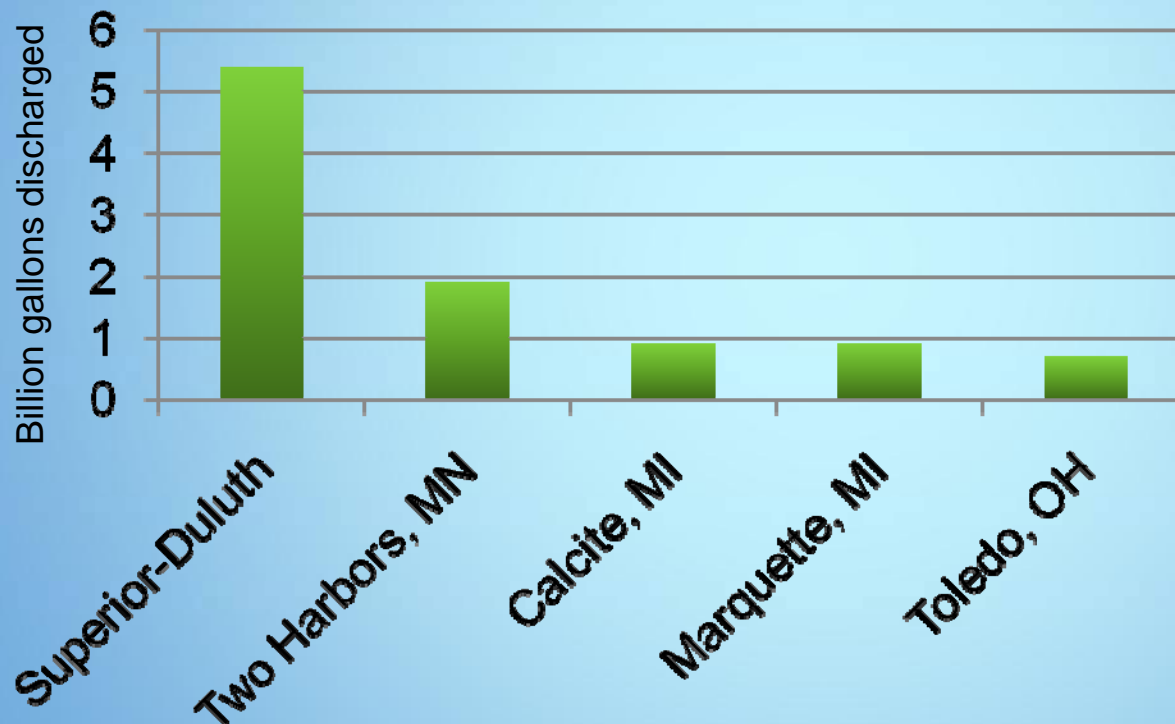


Map Source: U.S. Army Corps of Engineers



# Top ballast receivers in 2005

Lakers discharge about 95% of ballast water;  
Oceangoing vessels about 5% in Superior-Duluth

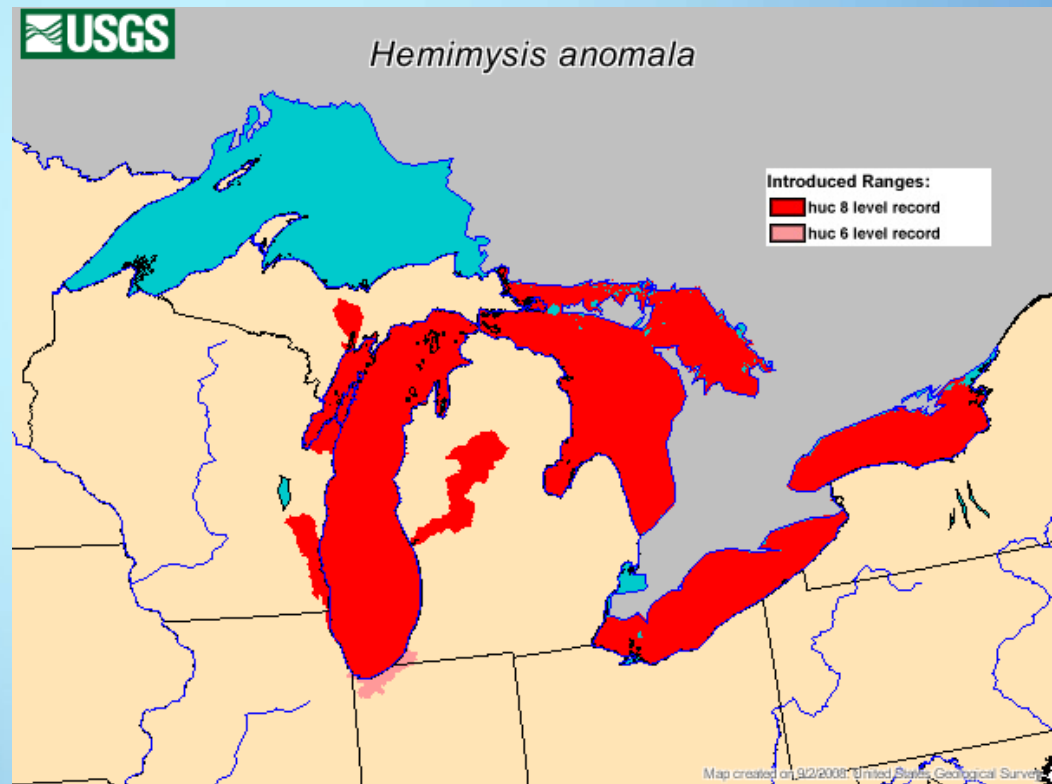


# Lake Superior is least invaded of the Great Lakes

>125 AIS in all Great Lakes, about 1/3 found in Lake Superior

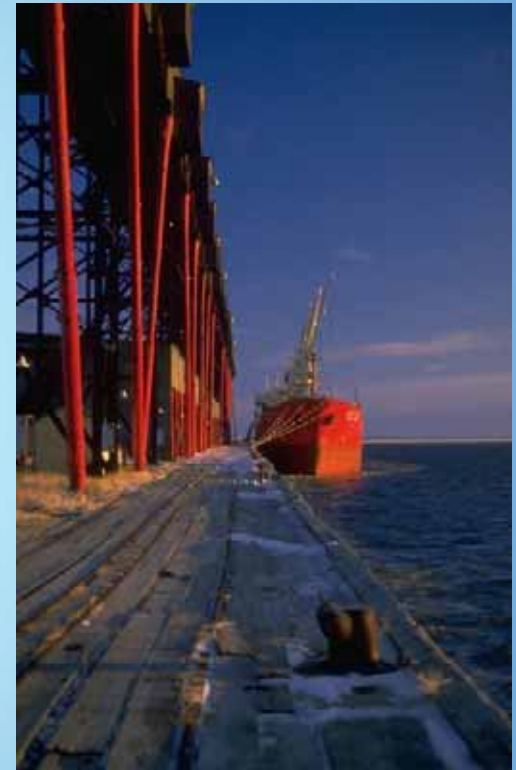


Bloody Red Shrimp  
*Hemimysis anomala*



# State permit is needed

- US EPA
  - Published proposed vessel discharge general permit in June 2008
  - Not as protective as Minnesota's permit
- Federal Legislation – timing uncertain
- MN Legislature
  - Ballast water legislation enacted in May 2008
  - General Permit is vehicle for implementation
- Other States
  - MI has state permit regulating oceangoing ships
  - Other GL states interested in coordinating with MN





# Actively solicited input

AIS in Lake Superior;  
role of ballast

MN DNR, MN Sea Grant, Great  
Ships Initiative, others

Shipping operations

Duluth Port Authority, Lake  
Carriers Assn, USCG, others

Entities with Great Lakes  
regulatory authority

USCG, USEPA, Transport  
Canada, State of MI, others

Other government/  
public concern

Tribes, citizens, conservation  
groups, other Great Lake states,  
Great Lake associations, others

# General permit schedule

[www.pca.state.mn.us/programs/ballastwater.html](http://www.pca.state.mn.us/programs/ballastwater.html)

Spring 2007    Initiated program development

March 2008    Initial stakeholder meetings

Mid April    Stakeholder input meetings on initial draft permit - St. Paul & Duluth

June 30    Start 30-day public notice

Sept. 23    Final permit issuance decision by MPCA Citizens' Board

# Goal: protect Minnesota waters

Develop a water quality permit that:

1. prevents ship-mediated spread of aquatic invasive species
2. is supportive of a viable shipping industry



# Permit supports goals

## Prevents ship-mediated spread of AIS through:

- Best Management Practices
- Ballast water treatment
- Biological Performance Standards
- MPCA staff review and approval

## Supports a viable shipping industry through:

- Timely and feasible implementation schedule
- Coordination with existing regulations where possible

# 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 capacity
- Permit coverage not needed
  - US armed forces vessels
  - Vessels with sealed tanks
  - Others





# Best Management Practices

## Ballast Water and Sediment Management Plan

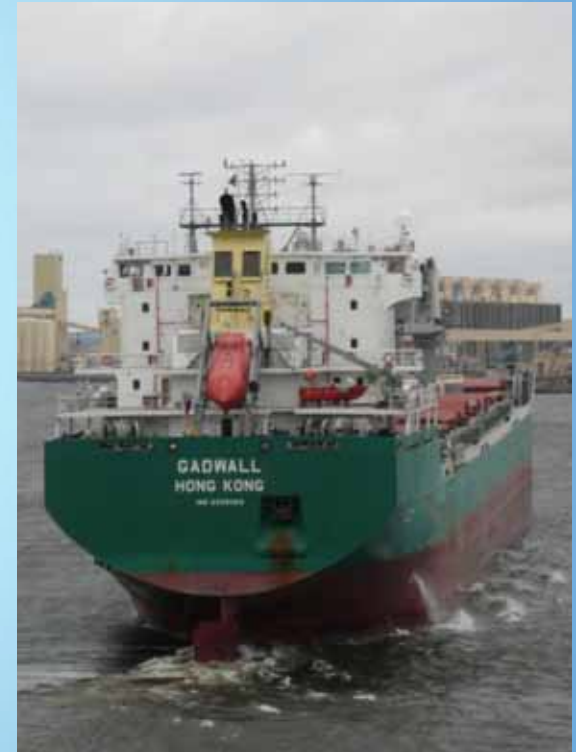
- Operating procedures and practices to control aquatic invasive species
- Must be approved by MPCA
- Implemented immediately
- Prohibits discharges to specific areas of Lake Superior
- Prohibits the discharge of non-suspended sediment
- Prohibits discharges from vessels fully ballasted with sea water

# Biological Performance 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

# Ballast water treatment

- Capable of meeting biological performance standards  
*(based on International Maritime Organization Standards)*
- Evaluated numerous treatment technologies
  - Assess status of technologies
  - Determine availability
  - Estimate potential costs
- Performance standards are achievable within timeframe of implementation schedule



# Implementation schedule

## Factors considered in schedule development:

- Status of ballast water treatment technology, specifically for freshwater applications
- Dry dock schedule and availability
- Maintenance and support system development

**MPCA staff believe schedule is timely and feasible**

# Implementation schedule

Ballast water treatment shall be installed to comply with the biological performance standards

For existing vessels

By January 1, 2016

For vessels constructed  
after January 1, 2012

Before operating vessel in  
Minnesota waters



# Implementation timeline

MPCA issues permit

- Vessels apply for coverage; submit ballast/sediment management plan
- MPCA approves ballast/sediment plans and issues Notices of Coverage

Comply with biological standards

New vessels

Existing vessels

Vessels install technology approved by MPCA

Sept  
2008

Oct 2008-  
Jan 2009

Jan  
2012

Jan  
2016

# Nondegradation

- Applies to new and expanded discharges
  - MPCA staff determined that most ballast water discharges are not new or expanded
  - If new or expanded, no prudent or feasible alternative to ballast water discharge
- Review completed consistent with all state rules, including those that apply to Lake Superior
- Permit will result in a decrease in the potential for discharge of aquatic invasive species
- Review satisfies nondegradation requirements

# Conclusions

- Permit supports goals:
  1. Prevent ship-mediated spread of aquatic invasive species
  2. Support a viable shipping industry
- MPCA staff have adequately addressed comments

MPCA staff requests authorization to issue  
SDS General Permit MN G300000

# Ballast Water General Permit Development Team



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*Nondegradation analysis*

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*Photo by Anne Moore*