Aquatic Invasive Species in Wisconsin

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Wisconsin Lakes Convention, Green Bay
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Wisconsin Lakes Partnership

Science

Citizens

Education
What are Invasive Species?

- Non-native species that can “take over”
- Not all non-native species are invasive
- Successful because:
  - No natural predators, parasites, etc.
  - Native species can’t hide, compete, or fight back
  - Often aggressive, prolific, and mature early
How do they get here?

- Shipping - ballast water
- Intentional introduction - stocking
- Canals - migration from the ocean
- Nursery industry
- Anglers/Bait industry
- Aquaculture
- Aquarium trade
How do they spread?

- Boaters
- Anglers
- Other water users (sea planes, SCUBA, etc)
- Water garden & aquarium owners
- Natural dispersal
Why do we care?

- Economic impacts
  - Sport and commercial fishing
  - Tourism
  - Water users & property owners
- Ecological
  - Native fish, invertebrates, plants impacted
- Recreational impacts
  - Boating
  - Angling
Zebra Mussels

- Ballast water introduction to the Great Lakes in 1980’s
- Present in 135 waterbodies & 45 counties (March 2011)
- Attach to any hard surface - may reach tens of thousands per square meter!
- Are microscopic in early life stages
- Female can produce 1 million eggs/season
Zebra Mussel Distribution

Brown County
Fox River
Green Bay

http://dnr.wi.gov/lakes/invasives/
Quagga Mussels

- Found in all Great Lakes but Superior
- Ballast water introduction
- Can survive wide range of temp. & oxygen levels
- Can live directly on mud and sand
- Commonly found at 100 feet and deeper
Quagga vs. Zebra Mussels

- More effective filter feeders
- Thrive at greater depth and cooler temps
- May out-compete ZM

Quagga - rounder sides & convex underside

ZM - triangular shape & flat underside
Eurasian Water-milfoil

- First found in WI in 1960s
- Currently found in 539 waterbodies & 68 counties (March 2011)
- Forms dense mats - interferes with water recreation
- Can spread from small fragments
Eurasian Water-milfoil Distribution

Brown County
Green Bay
Purple Loosestrife

- Imported from Europe for gardens (late 1800s), also seeds in ballast water
- Crowds out native wetland species
- Spreads rapidly: >1 million seeds annually, plus vegetative spread

Linda Wilson, University of Idaho, Bugwood.org
Purple Loosestrife Distribution

Purple loosestrife is now found in every county in WI.
Rusty Crayfish

- Brought to WI as bait 1960’s
- In 465 waterbodies & 66 counties (March 2011)
- Severely reduce aquatic vegetation, impacting spawning
- Aggressive; compete with native crayfish and fish for cover and food

ID tip: Dark, rusty spot on each side of carapace.
Rusty Crayfish Distribution

Brown County
Fox River
and 12 other rivers and streams
Curly-leaf Pondweed

- Accidentally introduced as aquarium plant (1880s)
- Fairly widespread – in 382 waterbodies & 62 counties (March 2011)
- Active very early in growing season – even under ice
- Can form dense mats, interfering with recreation and native plants

Chris Evans, River to River CWMA, Bugwood.org
Curly-leaf Pondweed Distribution
Spiny & Fishhook Waterfleas

- Ballast water introduction to Great Lakes in 1980s
- Found in 11 lakes & rivers
- Disrupt food chain & harm native fish
- Foul fishing gear—form gummy clumps
Spiny Waterflea Distribution
Viral Hemorrhagic Septicemia

- Documented in Lake Michigan, Lake Superior, & Winnebago System
- Can kill more than 25 fish species
- No danger to humans
- Introduced by ballast water or migrating fish - ?
Viral Hemorrhagic Septicemia

Transmission:
- Virus shed in urine & reproductive fluids

The Disease:
- Start shedding virus 2 days after infected
- Antibodies can be developed by fish
- Fish may or may not show clinical signs of virus
- Stress is important

Signs of virus:
- Pop-eye
- Anemia
- Swollen organs
Many More in Wisconsin...

- Round Goby
- Mystery Snails
- Rainbow Smelt
- Ruffe
And Many More on the Way...

A few future threats:

- Water hyacinth
- New Zealand mud snail
- Asian carp
- Northern Snakehead

Photo: John Lyons
Wisconsin’s Aquatic Invasive Species Program

Education & Outreach

- Statewide coordination
- Publications & boat launch signs
- Displays & presentations
- Media

Contact: Christal Campbell
608-266-0061
Watercraft Inspection

- DNR inspection program places staff at high-traffic boat landings
- ‘Clean Boats, Clean Waters’ trains inspectors to monitor landings and educate boaters

Contact: Erin McFarlane
715-346-4978
Wisconsin’s Aquatic Invasive Species Program

Lake Monitoring

• Volunteers collect data on lake health including aquatic invasives

• Data used to map extent of spread for species

Contact: Laura Herman
715-365-8998
Purple Loosestrife

Biological Control

- Volunteers help raise & release beetles
- Beetles available for free—great school or family project

Contact: Brock Woods
608-221-6349
Wisconsin’s Aquatic Invasive Species Program

AIS Grants

• $4.3 million available each year
• State funds up to 75% of project
• Local governments no longer given priority
• Match includes cash, volunteer time, services, etc.
• Funds provided as reimbursement

Contact: Brenda Nordin, 920-662-5435
Aquatic Invasive Species Grants

Three grant categories

- Education, Prevention & Planning
- Early Detection & Rapid Response
- Control of Established Infestations
Research

• UW Madison Center for Limnology developing “Smart Prevention” model

• Model helps DNR make strategic management decisions

Contact: Jake Vander Zanden
       608-262-9464
Wisconsin’s Aquatic Invasive Species Program

Rules to Prevent Spread

• Laws for boaters & anglers
  • **INSPECT** your boat, trailer, and equipment AND

  • **REMOVE** any attached aquatic plants or animals (before launching, after loading & before transporting on a public highway).

  • **DRAIN** all water from boats, motors and all equipment.
Wisconsin’s Aquatic Invasive Species Program

• Laws for boaters & anglers (cont’d)
  • **NEVER MOVE** live fish away from a waterbody.
  • **BUY** minnows from a Wisconsin bait dealer. Use leftover minnows only under certain conditions.*

*Can take leftover minnows away from any state water & use them again on that same water. May use leftover minnows on other waters only if no water or other fish were added to their container.
Laws and Regulations

- **Federal**
  - National Invasive Species Act
    - Coast Guard is responsible for regulating ballast water management NOBOB
  - Federal Noxious Weed Regulations
    - Defines noxious weeds and restricts their movement
- **State**
  - VHS Regulations, 2008
    - Restrictions on bait use & fish & water transport
  - NR 40, 2009
    - Classification of invasives & preventive measures
- **Local**
  - Noxious Weed Ordinances
  - County AIS Transport Ordinances ‘07–’08
Any other questions?