



# Aquatic Invasive Species in Wisconsin

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Wisconsin Lakes Convention

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# Wisconsin Lakes Partnership



Science



Citizens



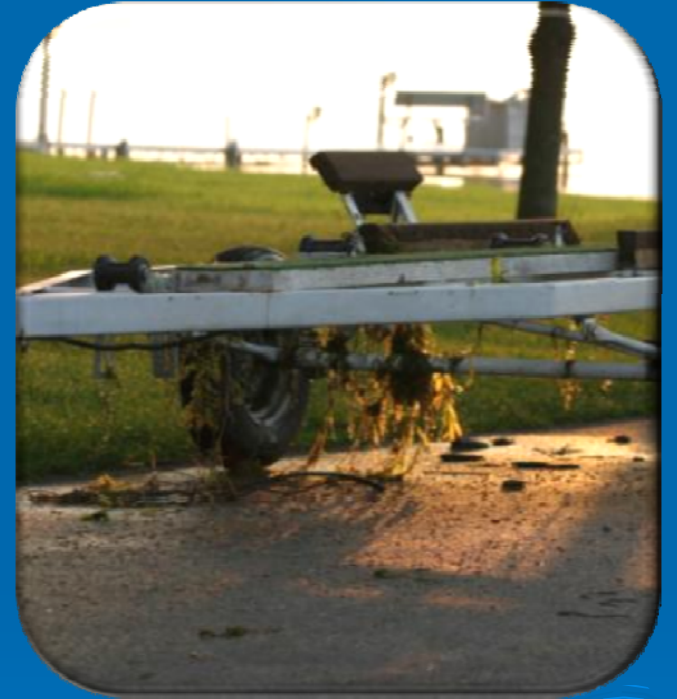
Education

# Main Topics

- **Our problem** - aquatic invasive hitchhikers
- **Species Profiles** - more info on a few species causing the problem
- **What Wisconsin is doing** about the problem
- **AIS Grants**
- **Laws & Regulations** on AIS
- **Resources**—where to go for more information

# 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



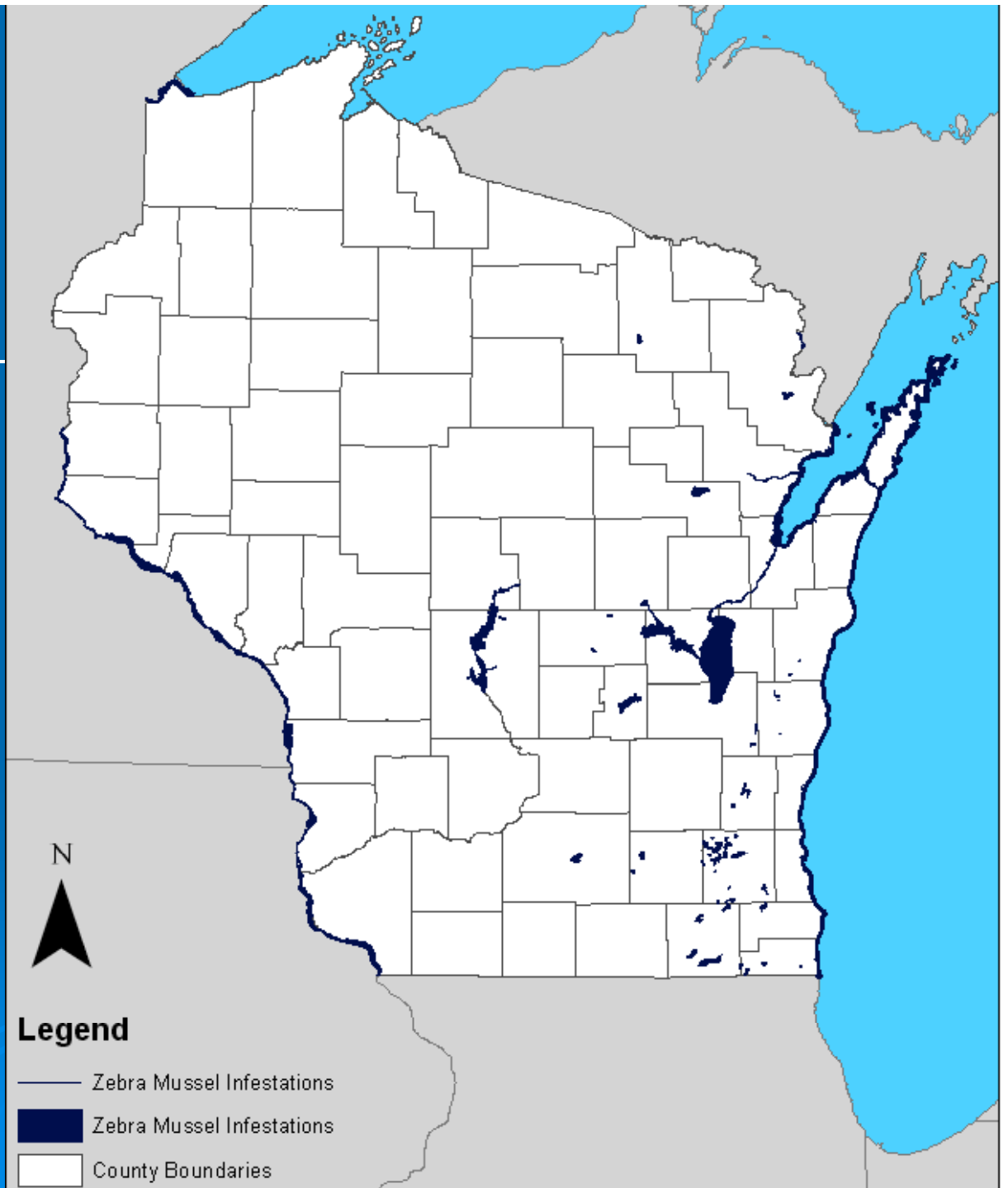
# Zebra Mussels



- Ballast water introduction to the Great Lakes in 1980's
- Present in 118 WI inland lakes (Dec 2008)
- 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



# 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

Zebra →



Quagga →

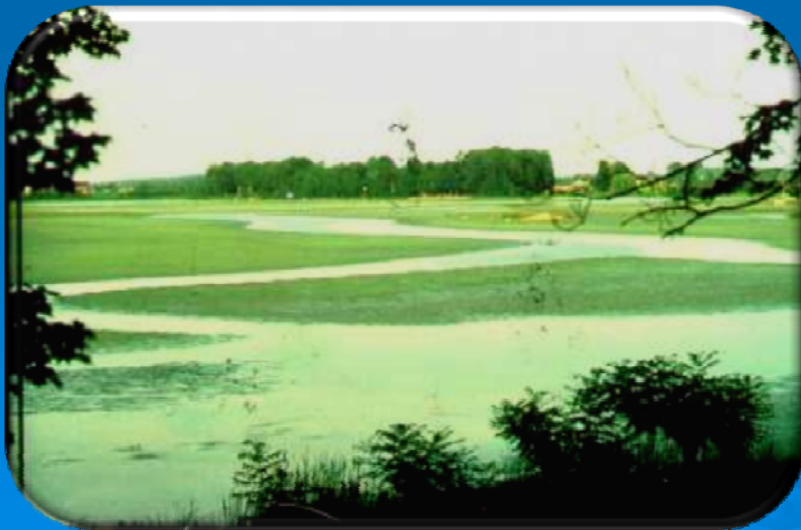
- More effective filter feeders
- Thrive at greater depth and cooler temps
- May out-compete ZM

➤ Quagga - rounder sides & convex underside →

➤ ZM - triangular shape & flat underside →

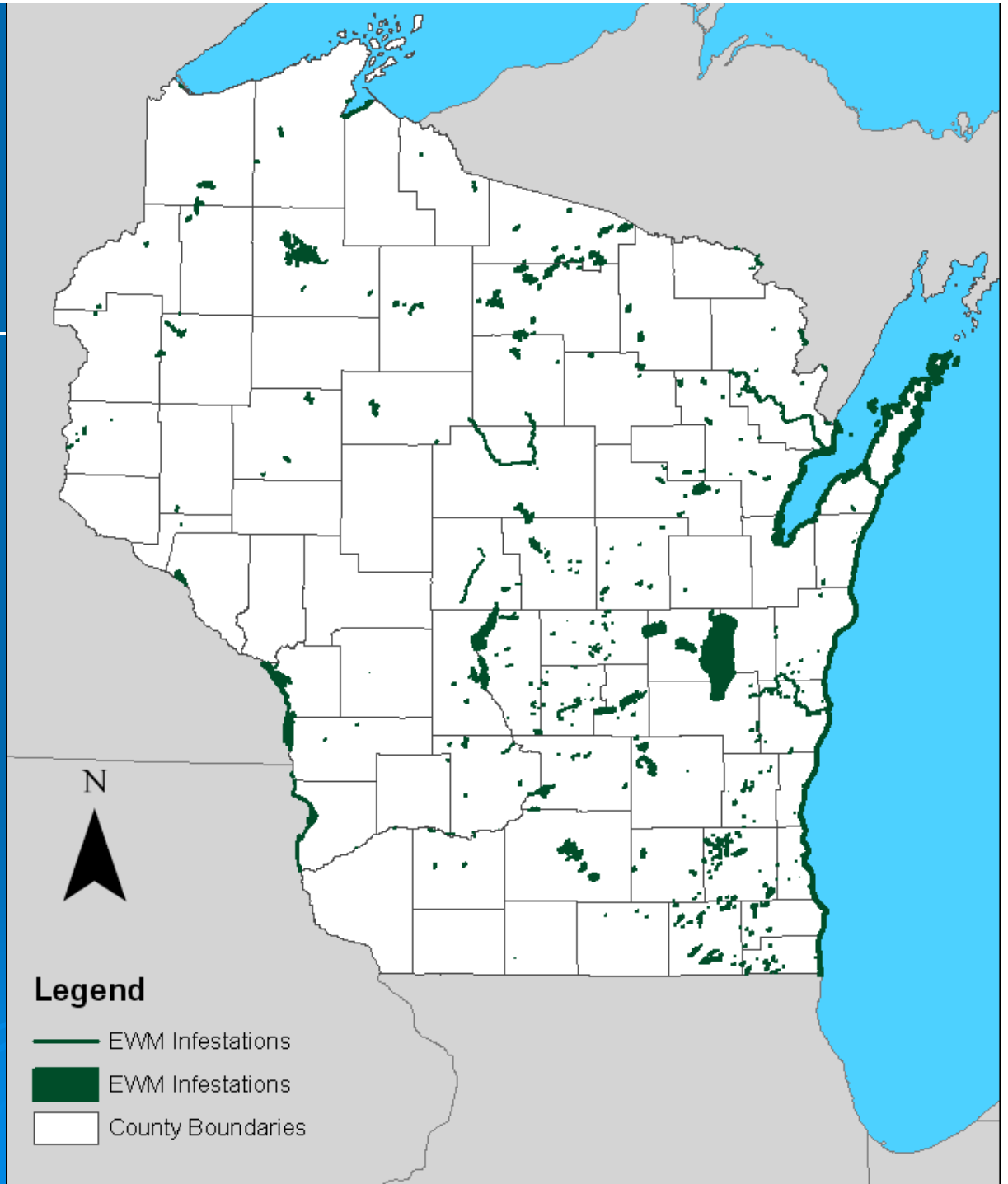


# Eurasian Water-milfoil



- First found in WI in 1960s
- Currently found in 467 WI lakes (Dec. 2008)
- Forms dense mats - interferes with water recreation
- Can spread from small fragments

# Eurasian Water-milfoil Distribution



# Purple Loosestrife

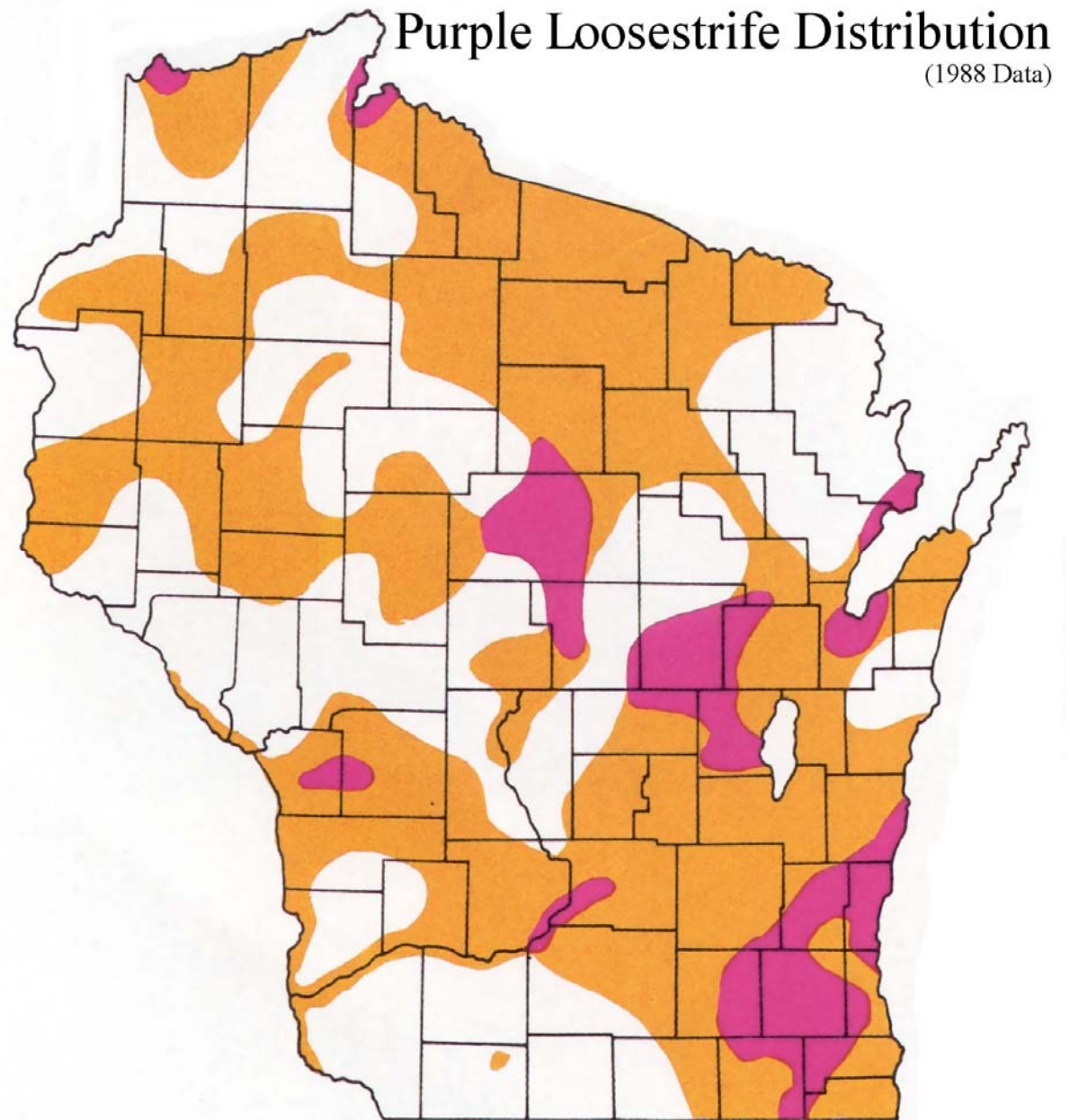


Linda Wilson, University of Idaho, Bugwood.org

- 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

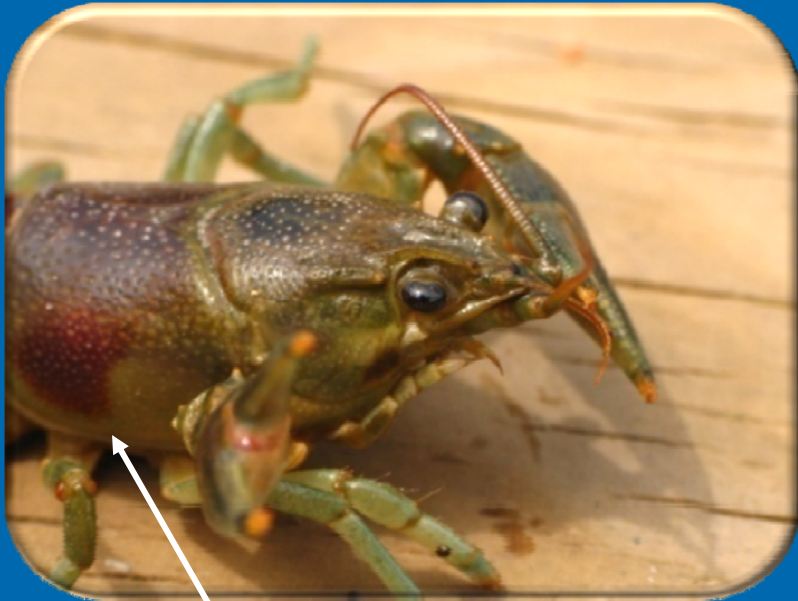
# Purple Loosestrife Distribution

Purple loosestrife is now found in every county in WI.



- — little or no infestation
- — lightly/moderately infested
- — heavily infested

# Rusty Crayfish



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

- Brought to WI as bait 1960's
- In 445 inland lakes and streams (Dec. 2008)
- Severely reduce aquatic vegetation, impacting spawning
- Aggressive; compete with native crayfish and fish for cover and food

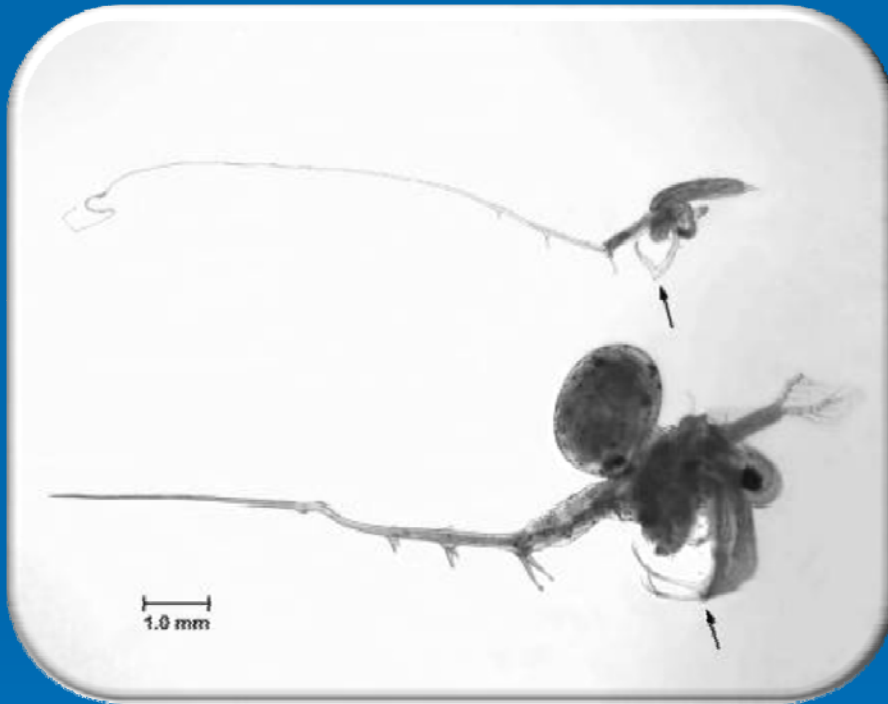


# Curly-leaf Pondweed



- Accidentally introduced as aquarium plant (1880s)
- Fairly widespread – in 277 water bodies (Dec. 2008)
- Active very early in growing season – even under ice
- Can form dense mats, interfering with recreation and native plants

# Spiny & Fishhook Waterfleas



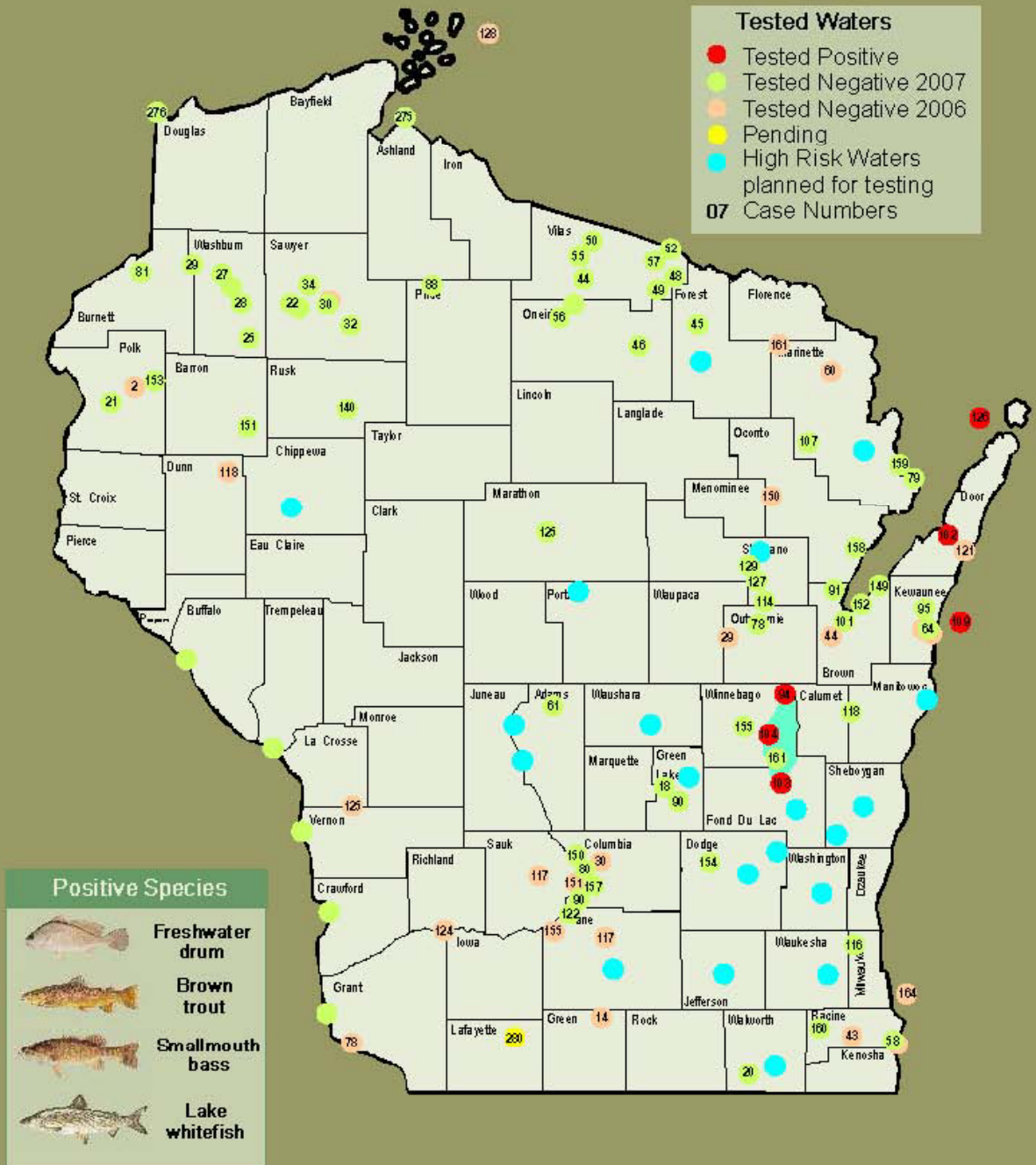
- Ballast water introduction to Great Lakes in 1980s
- Found in two inland WI lakes—Gile Flowage (Iron Co.) & Stormy Lake (Vilas Co.)
- Disrupt food chain & harm native fish
- Foul fishing gear—form gummy clumps

# Viral Hemorrhagic Septicemia



- Documented in Lake Winnebago, Lake Michigan, & Green Bay
- Can kill more than 25 fish species
- Shed in urine & reproductive fluids
- Introduced by ballast water or migrating fish - ?

# VHS Distribution (as of Oct. 2007)



# Rules and Regulations: Viral Hemorrhagic Septicemia

- May not move live fish or fish eggs from affected waters EXCEPT for minnows purchased from WI bait dealer
- Must drain all water from boats and equipment; can transport live minnows in 2 gal. water
- May use dead fish or fish eggs for bait in some instances



# Many More in Wisconsin...



**Round Goby**



**Rainbow Smelt**

**Mystery  
Snails**



**Ruffe**

# And Many More on the Way...

A few future threats:



# Wisconsin's Aquatic Invasive Species Program

## ➤ Education & Outreach

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

➤ **Contact:** *Julia Solomon*  
608-267-3531

*Christal Campbell*  
608-266-0061





# Wisconsin's Aquatic Invasive Species Program

## ➤ Watercraft Inspection

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



➤ **Contact:** *Erin Henegar*  
715-346-4978



# Wisconsin's Aquatic Invasive Species Program

## ➤ Volunteer 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



J.E. Marden

# Wisconsin's Aquatic Invasive Species Program

## ➤ Purple Loosestrife Biological Control

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

➤ **Contact:** *Brock Woods*  
*608-221-6349*



Paul Skawinski

*Galerucella californiensis*



# Wisconsin's Aquatic Invasive Species Program

## ➤ AIS Grants

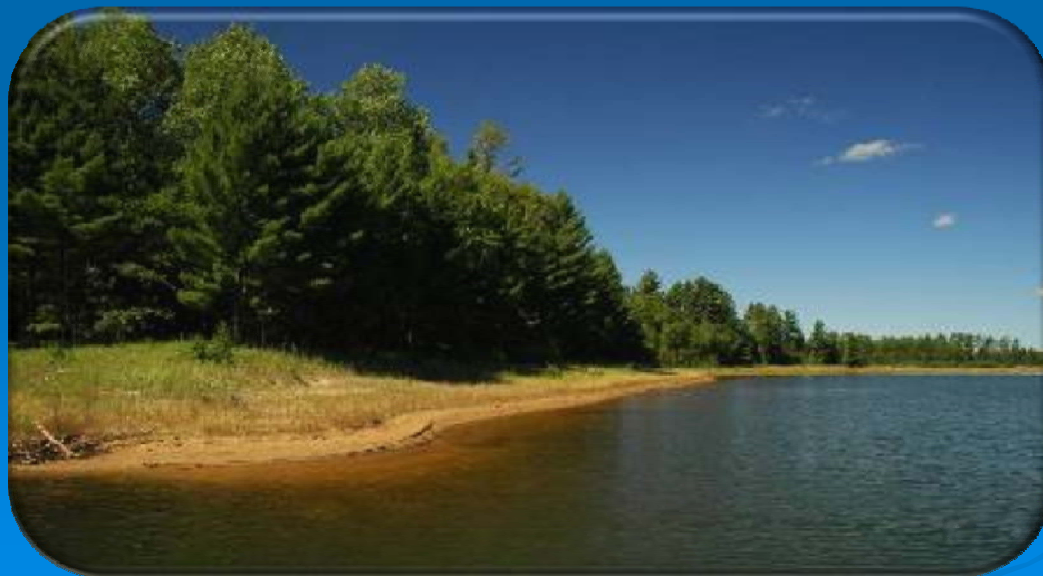
- \$4.3 million available each year
- State funds up to 75% of project
- Local governments no longer given priority
- Match includes cash, volunteer time, services, etc.
- Funds provided as reimbursement

➤ **Contact:** *Regional Lake Coordinator*

# Aquatic Invasive Species Grants

## ➤ Three grant categories

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



# Education, Prevention & Planning

➤ **Deadlines February 1 & August 1**

➤ **Up to \$200,000**

➤ **Example projects:**

- Watercraft inspections
- Surveys and monitoring
- Prevention and control plans
- Outreach efforts
- Studies and assessments

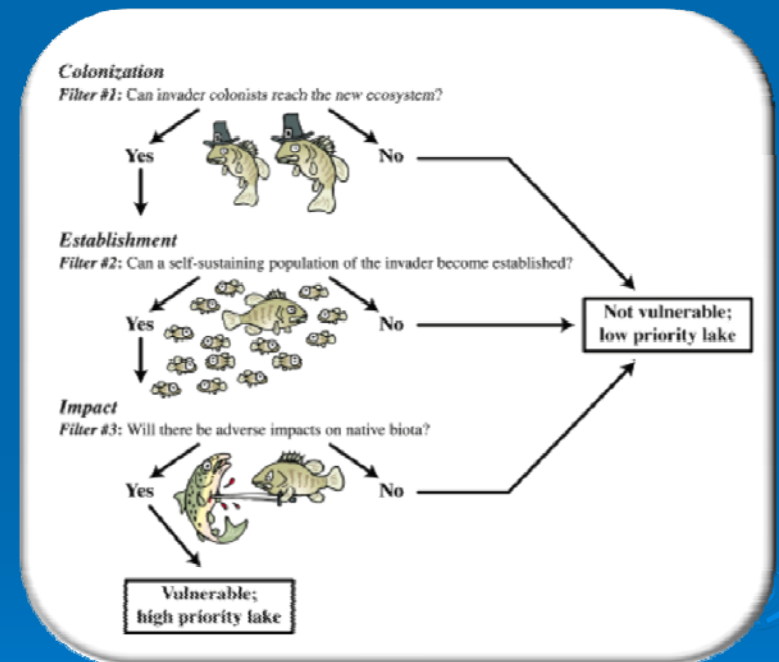
➤ **Goal is to prevent spread of AIS**



# Wisconsin's Aquatic Invasive Species Program

## ➤ 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

- Illegal to launch a boat known to have aquatic plants or animals attached
- Restrictions on use and transport of some AIS species





# 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

### ➤ 2001 Wisconsin Act 109

- Established Invasive Species Council
- Illegal to launch laws – WI Statute 30.715

### ➤ VHS Regulations 2008

- Restrictions on bait use & fish & water transport

## ➤ Local

### ➤ Noxious Weed Ordinances

### ➤ County AIS Transport Ordinances '07-'08

A scenic sunset over a large body of water, likely a lake or bay. The sky is filled with vibrant orange and red clouds, with the sun low on the horizon. In the foreground, the dark silhouettes of pine branches frame the top and sides of the image. The water is calm, reflecting the colors of the sky. Several dark, silhouetted islands or peninsulas are visible in the distance. The overall mood is peaceful and serene.

**Any other questions?**