Aquatic Invasive Species in Wisconsin

Name
Location
Date

Wisconsin Lakes Partnership

Science

Citizens

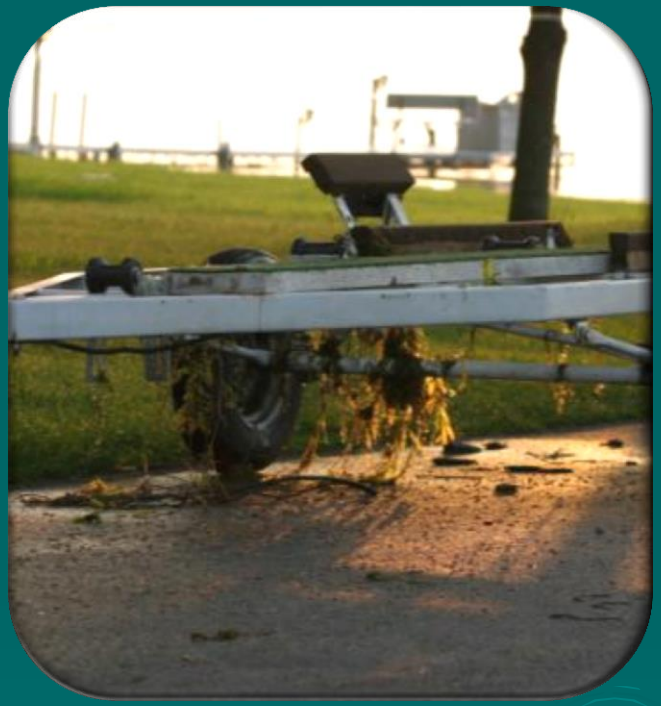
Education

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

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?

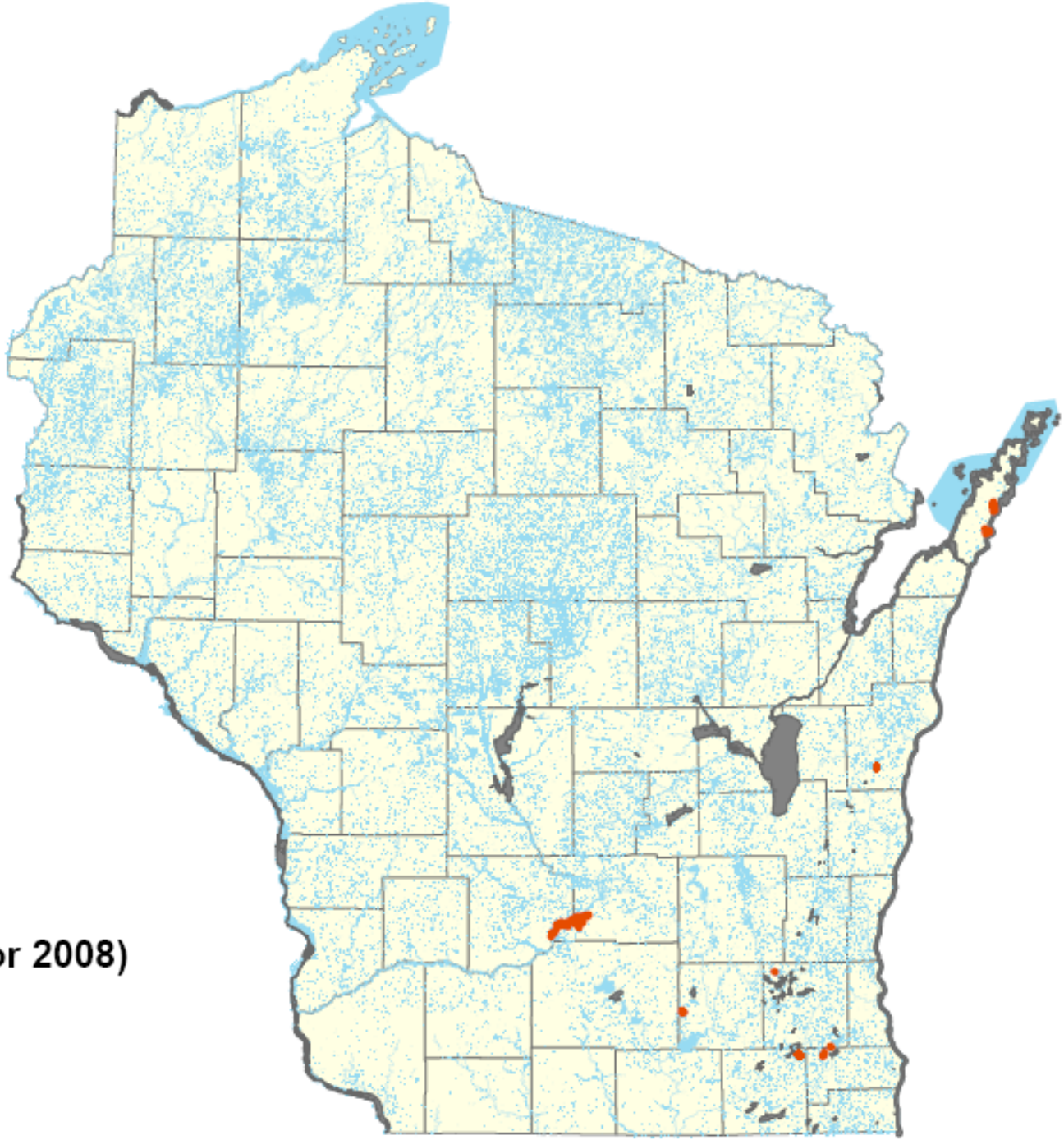
- Economic impacts
  - Sport and commercial fishing
  - Tourism
  - Water users & property owners
- Ecological
  - Native fish, invertebrates, plants impacted
- Recreational impacts
  - Boating
  - Angling

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

[Insert specific numbers for county here.]



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

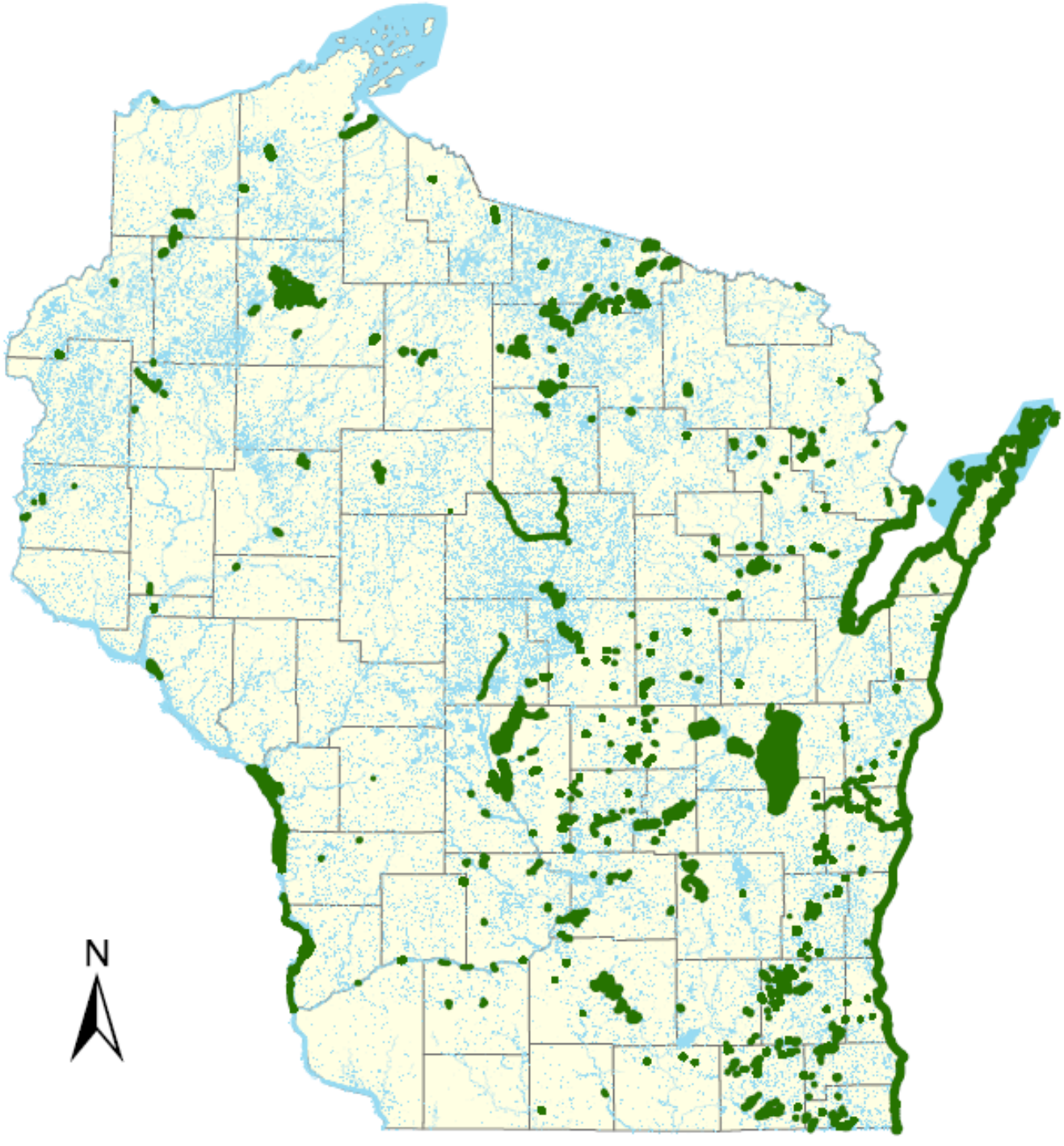
- Quagga - rounder sides & convex underside →
- ZM - triangular shape & flat underside →

Eurasian Water-milfoil

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

Eurasian Water-milfoil Distribution

[Insert specific numbers for county here.]



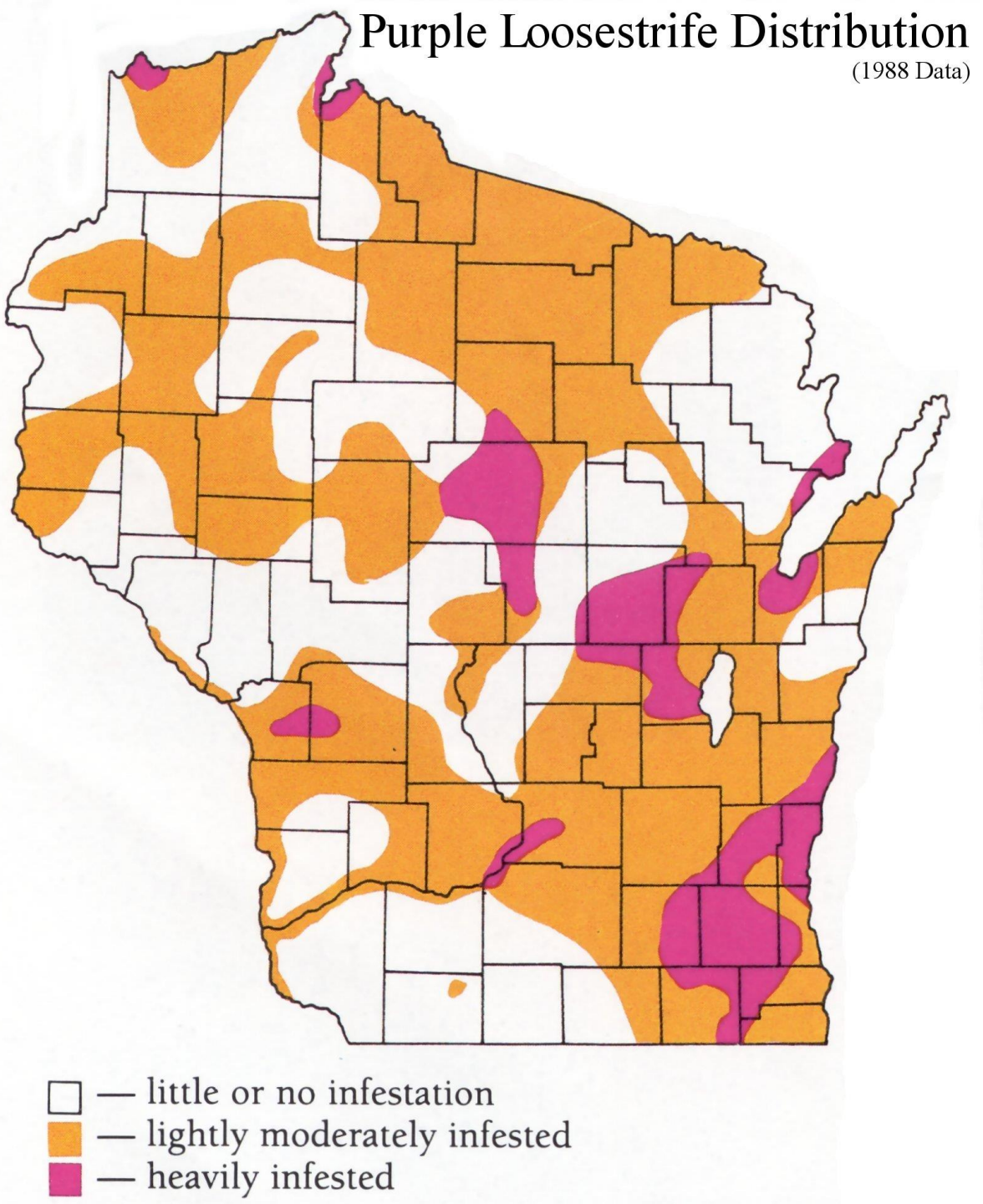
Purple Loosestrife


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.



Rusty Crayfish

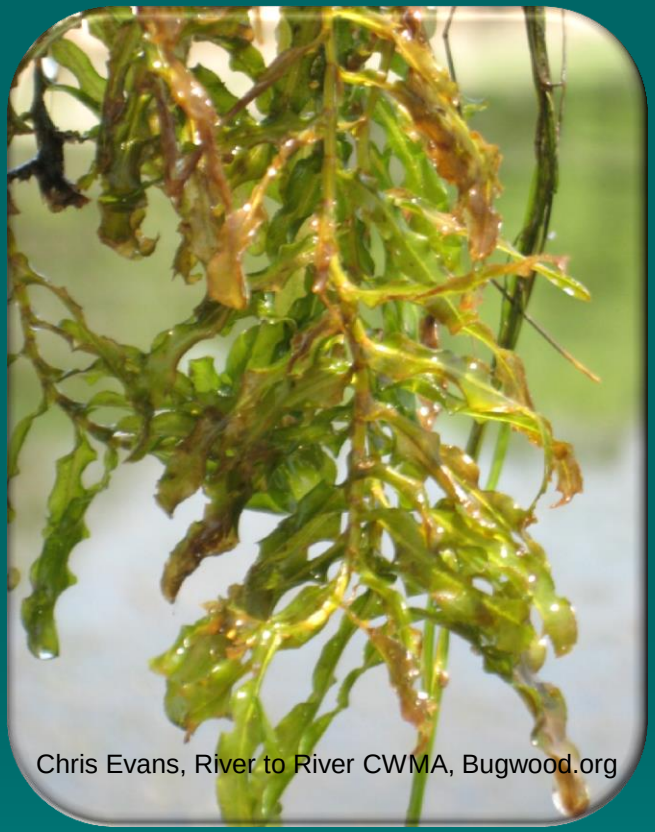
ID tip: Dark, rusty spot on each side of carapace.

- 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

Rusty Crayfish Distribution

[Insert specific numbers for county here.]

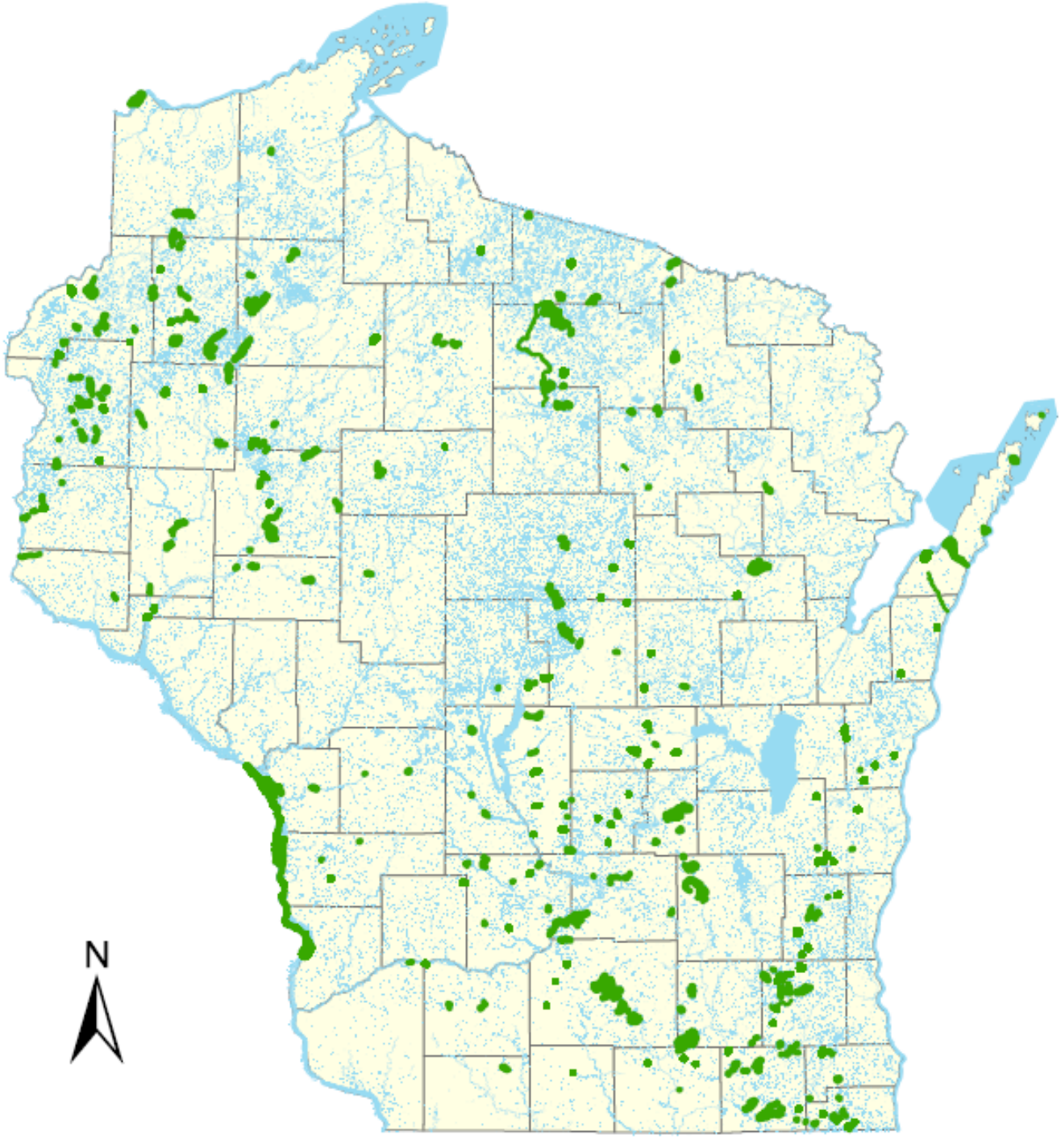
Curly-leaf Pondweed


Chris Evans, River to River CWMA, Bugwood.org

- 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

Curly-leaf Pondweed Distribution

[Insert specific numbers for county here.]



Spiny & Fishhook Waterfleas

- Ballast water introduction to Great Lakes in 1980s
- Found in 6 inland WI lakes in Dane, Vilas, & Iron Co.
- Disrupt food chain & harm native fish
- Foul fishing gear—form gummy clumps

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…

Mystery Snails

And Many More on the Way…

A few future threats:

Water hyacinth

New Zealand mud snail

Asian carp

Photo: John Lyons

Northern Snakehead

Wisconsin's Aquatic Invasive Species Program

Education & Outreach

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

Contact: *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 McFarlane*
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

Wisconsin's Aquatic Invasive Species Program

Purple Loosestrife Biological Control


Paul Skawinski

- 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: *Regional Lake Coordinator [insert name & phone number]*

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 $50,000 and $150,000 (two categories)**
- Example projects:
  - Watercraft inspections
  - Surveys and monitoring
  - Prevention and control plans
  - Outreach efforts
  - Studies and assessments

- Goal is to prevent spread of AIS

Early Detection & Rapid Response

- **Rolling applications—no deadline**
- **Up to $20,000**
- New pioneer stands
- Coordination with DNR required—permits needed for chemical treatment
- Goal is containment

Controlling Established Infestations

- **Deadlines February 1 and August 1**
- **Up to $200,000**
- Management of non-pioneer populations
- Must be part of DNR-approved plan
- Goal is long-term population reduction

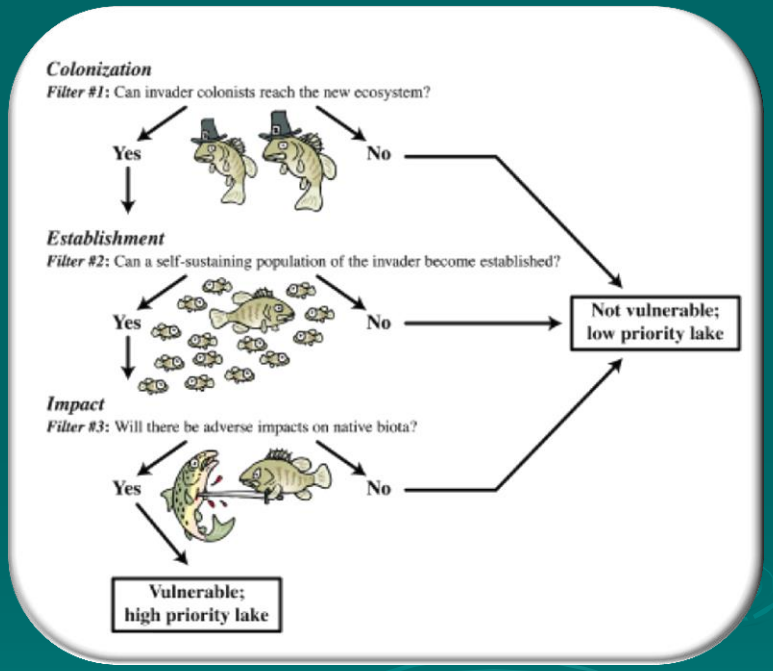
AIS Grant Tips

- ***Good…***
  - Multiple-lake benefit
  - Ecological improvement
  - Long-term focus
  - Community support
- ***Bad…***
  - Short-term nuisance control
  - Routine maintenance
  - Dredging

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

- 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)
  - **DON'T MOVE** live fish away from a waterbody.
  - **DISPOSE** of unwanted bait in the trash.
  - **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?