

# Clean Boats, Clean Waters



## Watercraft Inspection Program



# Wisconsin Lakes Partnership



Science



Citizens



Education

CLASS, TODAY WE'RE GOING TO STUDY WHY IT'S BAD TO INTRODUCE INVASIVE SPECIES...



# Wisconsin: A Gathering of Waters

- 11,190 square miles of water
- 15,081 lakes
- 43,000 miles of rivers and streams
- 5.3 million acres of wetlands
- 6.4 million acres of Great Lakes
- Estimated 1 million boats on waters each year!

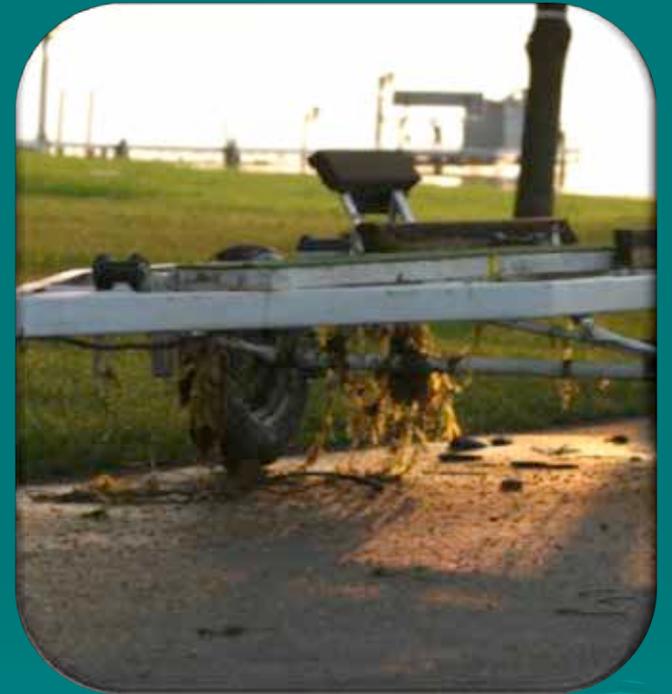




**Welcome to the Challenge!**

# 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

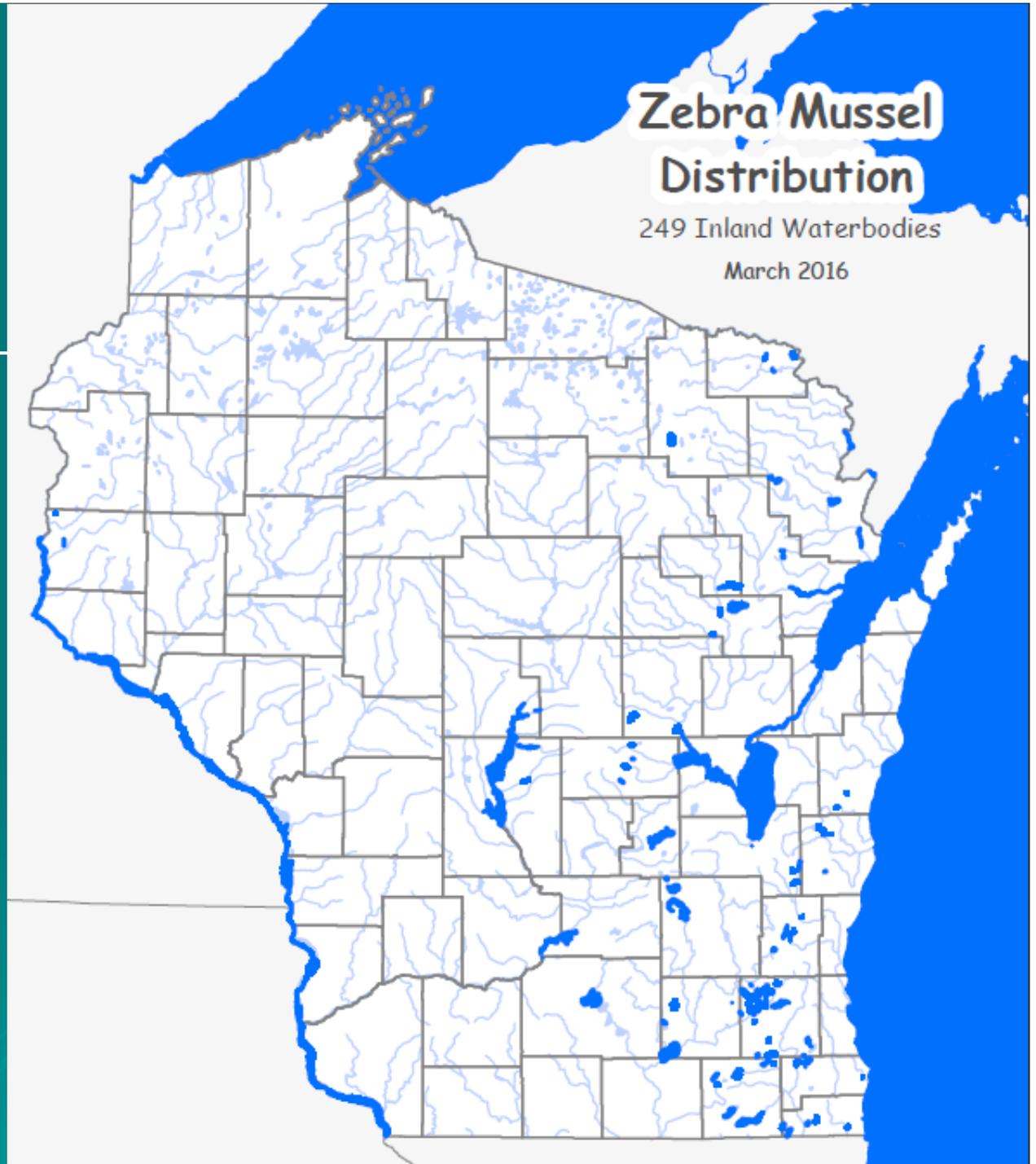


# Zebra Mussels



- Ballast water introduction to the Great Lakes in 1980's
- Present in 183 waterbodies (April 2015)
- 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 →

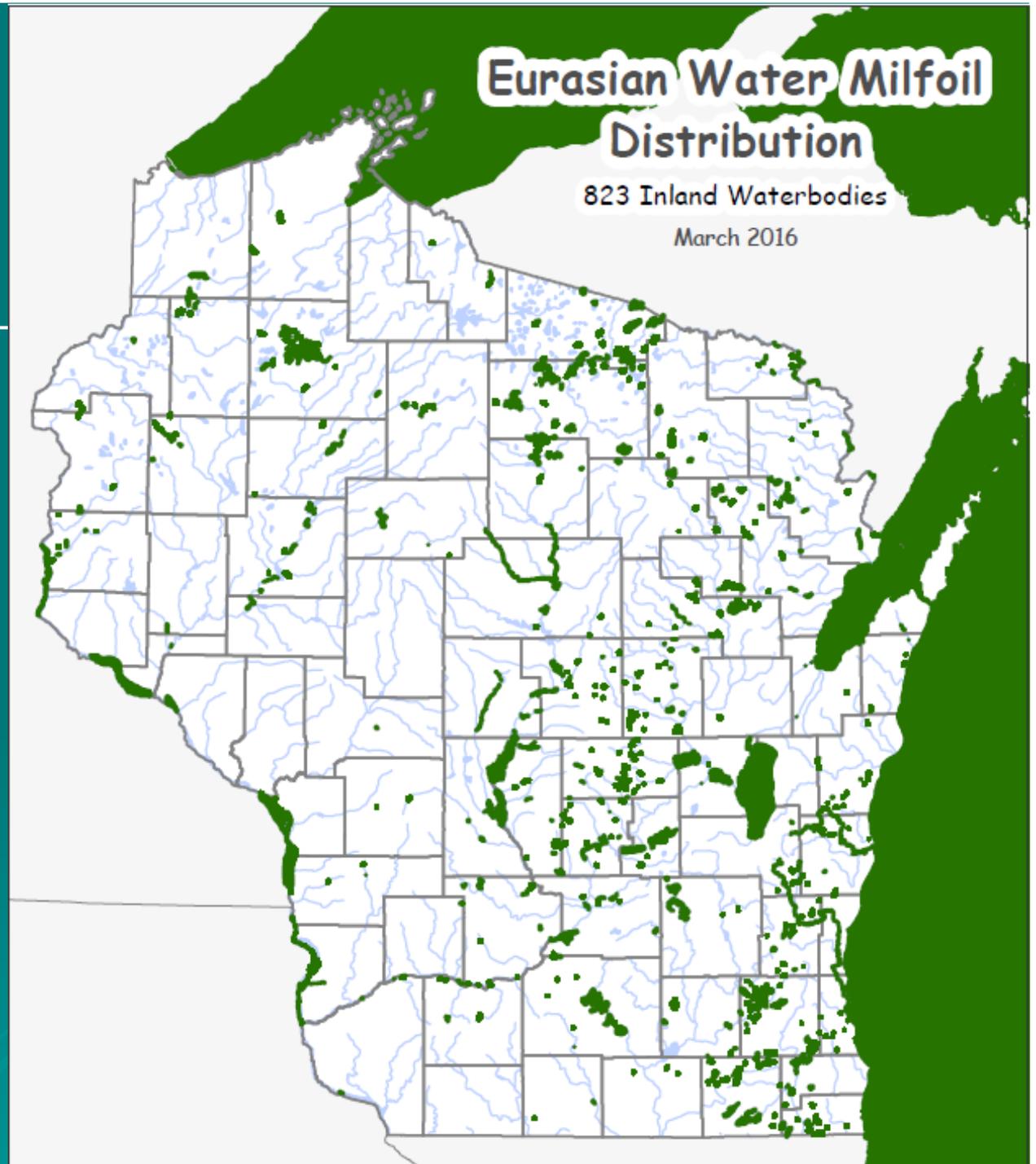


# Eurasian Water-milfoil



- First found in WI in 1960s
- Currently found in 714 waterbodies (April 2015)
- Forms dense mats - interferes with water recreation
- Can spread from small fragments

# Eurasian Water-milfoil Distribution



# Purple Loosestrife

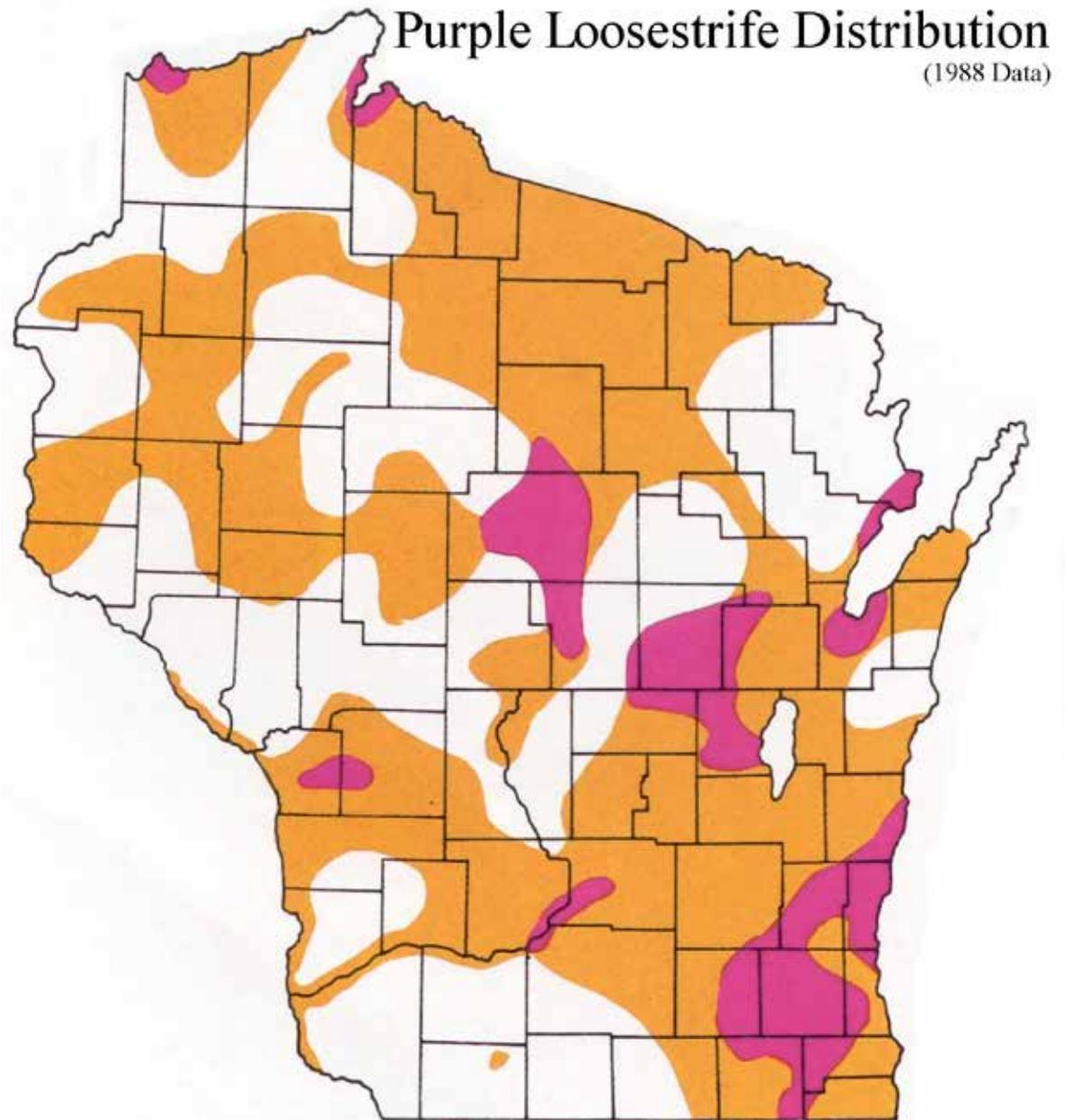


Linda Wilson, University of Idaho, Bugwood.org

- 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

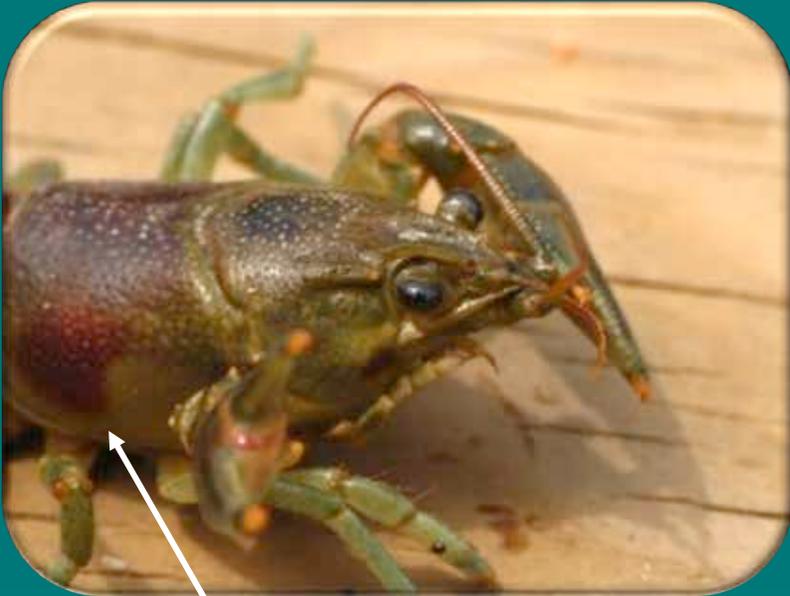
# Purple Loosestrife Distribution

Purple loosestrife is now found in every county in WI.



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

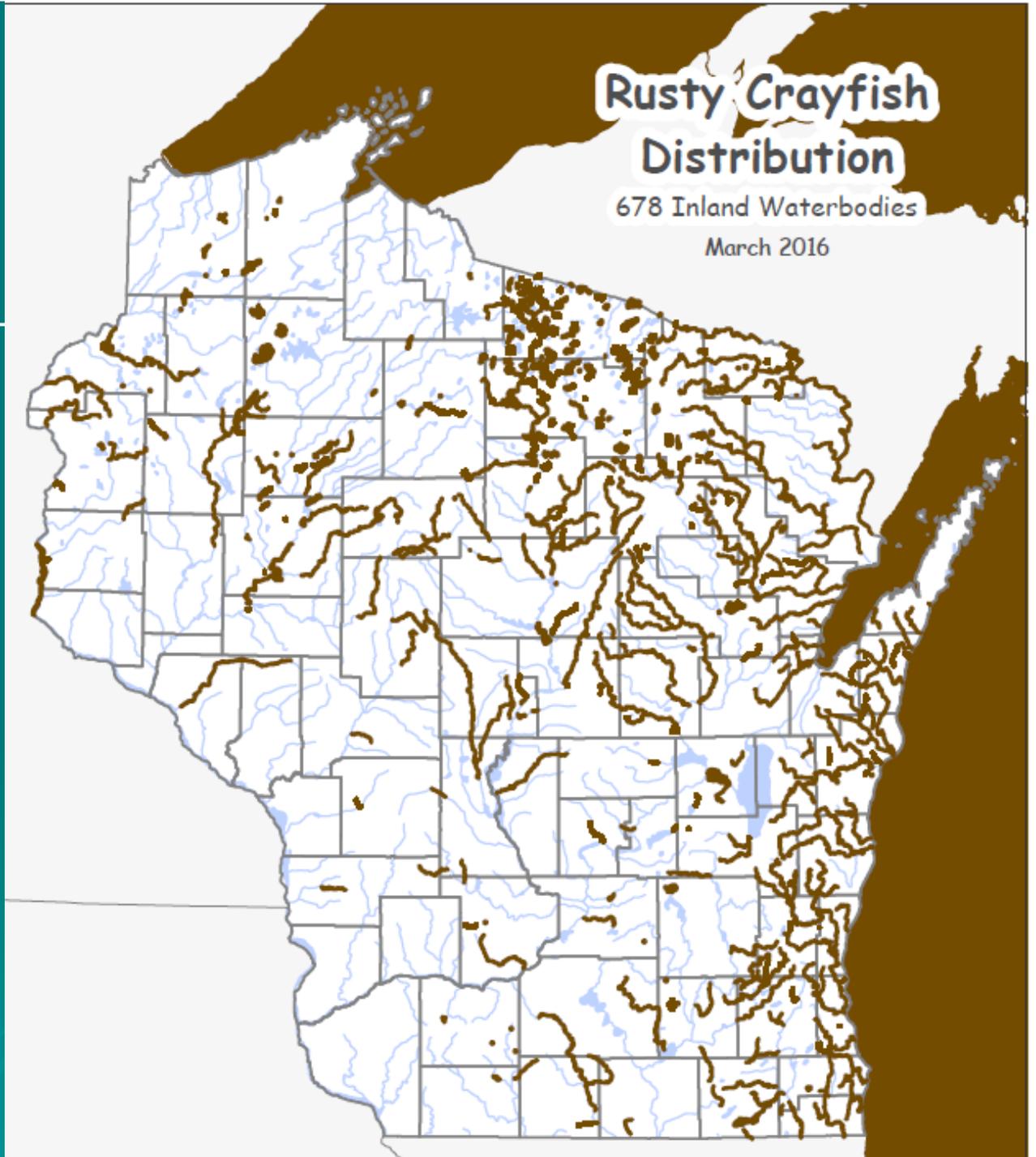
# Rusty Crayfish



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

- Brought to WI as bait 1960's
- In 542 waterbodies (April 2015)
- Severely reduce aquatic vegetation, impacting spawning
- Aggressive; compete with native crayfish and fish for cover and food

# Rusty Crayfish Distribution



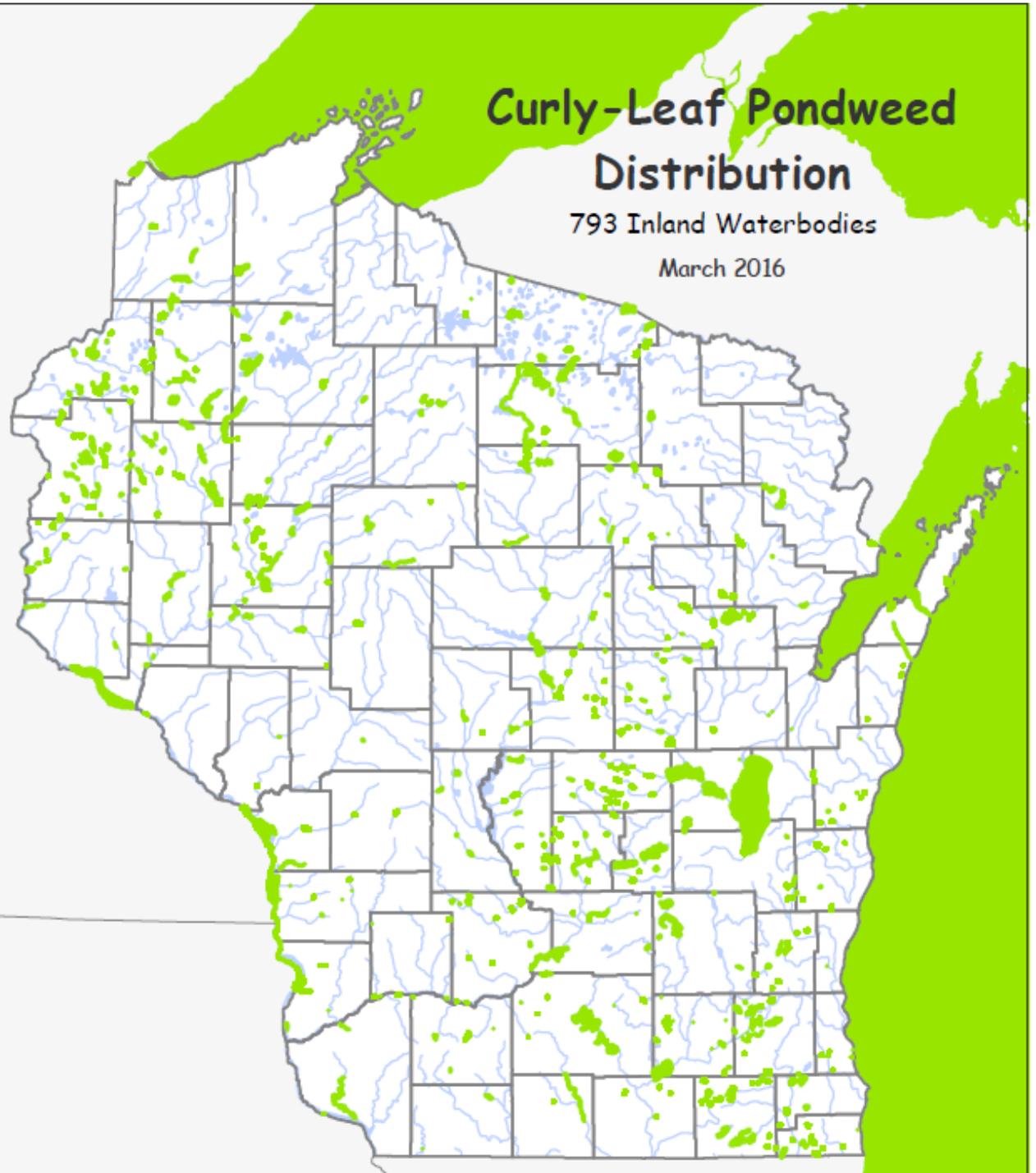
# Curly-leaf Pondweed



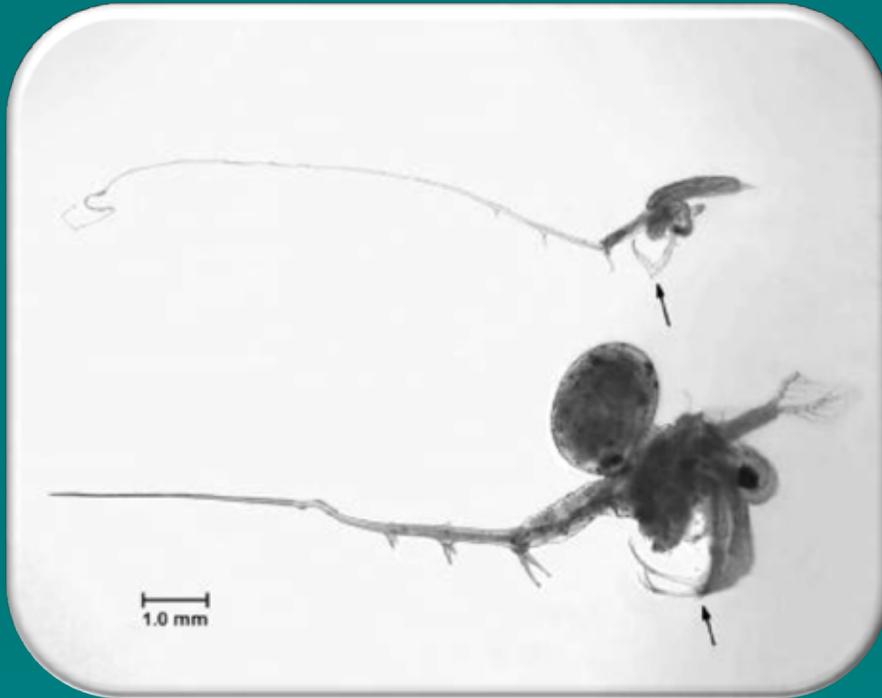
Chris Evans, River to River CWMA, Bugwood.org

- Accidentally introduced as aquarium plant (1880s)
- Fairly widespread – in 538 waterbodies (April 2015)
- Active very early in growing season – even under ice
- Can form dense mats, interfering with recreation and native plants

# Curly-leaf Pondweed Distribution

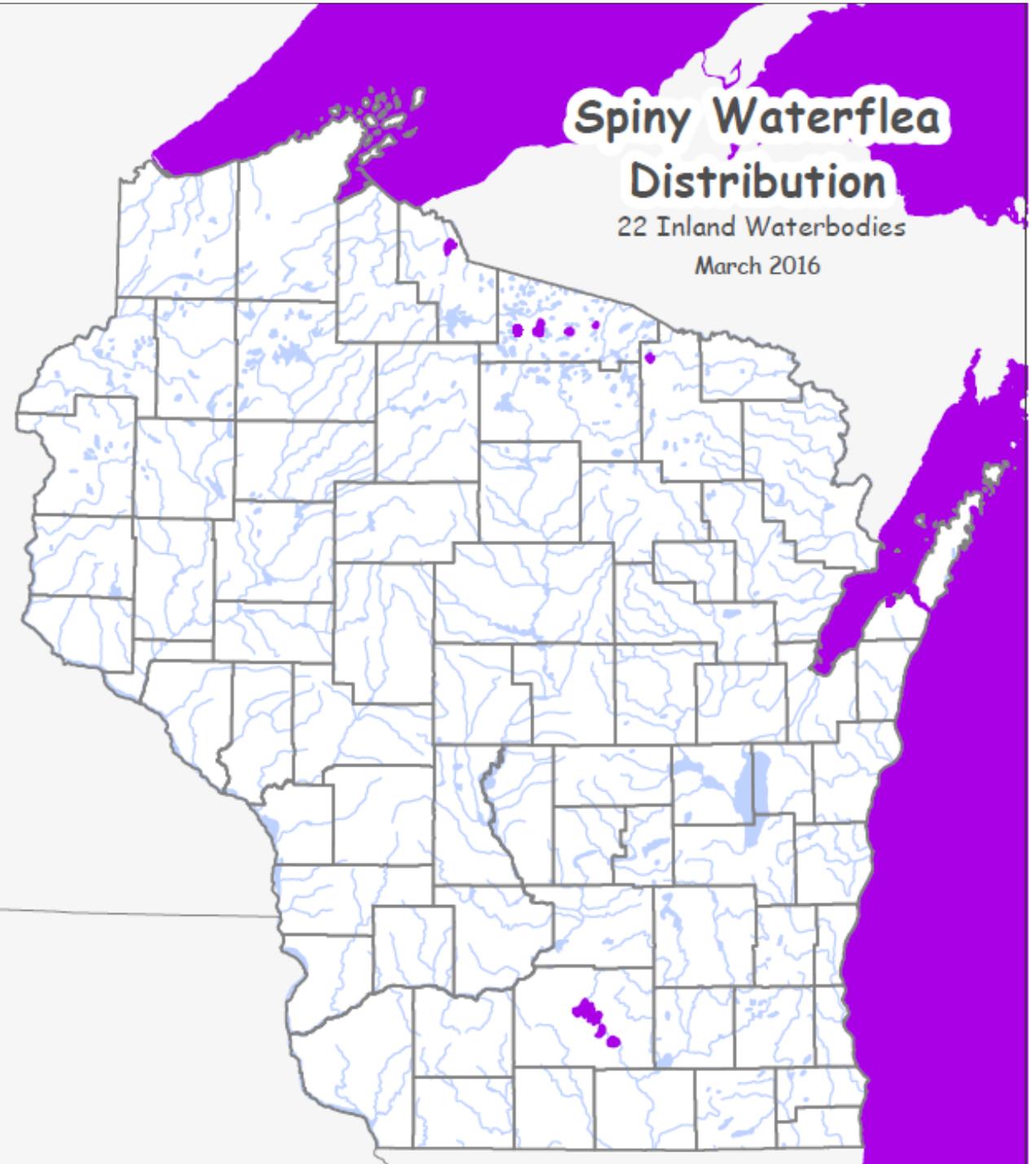


# Spiny Waterfleas



- Ballast water introduction to Great Lakes in 1980s
- Found in 16 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 - ?

# New Zealand Mudsnail

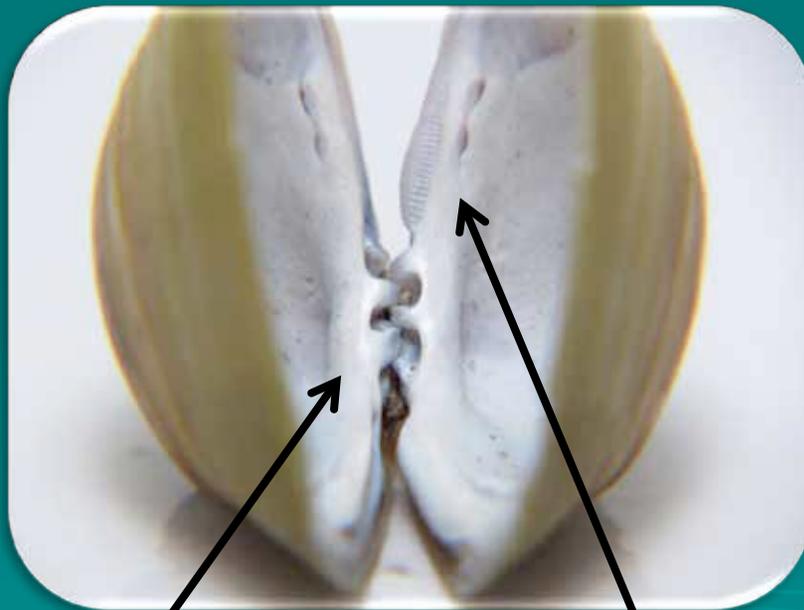


- Native to New Zealand
- Discovered in 2012 in Black Earth Creek, Dane Co.
- Can be found in extremely high densities - up to 800,000/sq meter!
- Asexual reproduction = 1 starts entire new population
- Steal food from natives & displace natives as wildlife food source
- Can pass through fish digestive system unharmed

# Asian Clam



← Ridges pronounced & evenly spaced

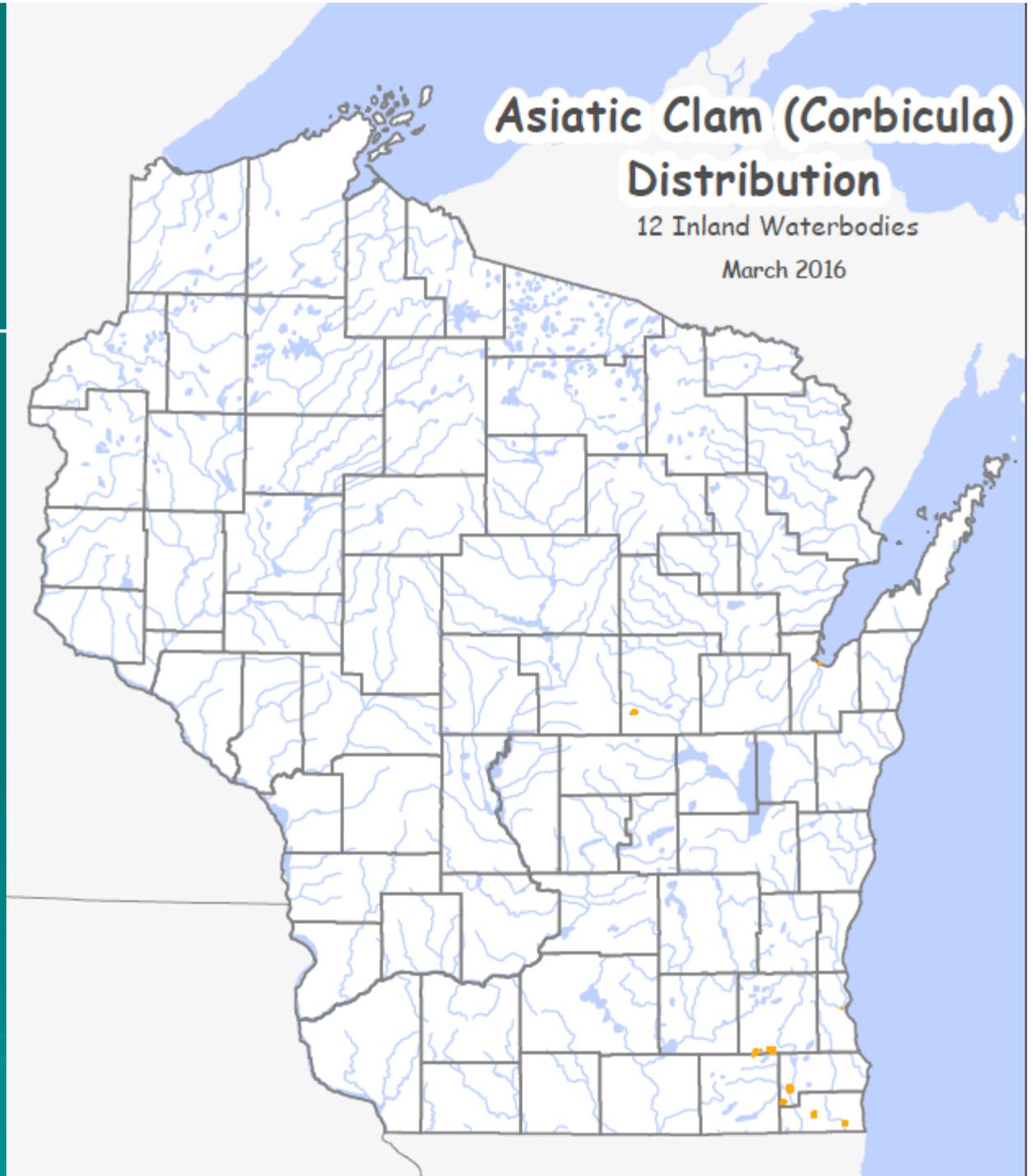


3 large hinge teeth

serrated lateral tooth

- Native to China, Korea, & southeastern Russia
- Likely introduced in ballast water or as food import
- Limited inland locations – in 8 waterbodies (April 2015)
- Microscopic in early life stages – can self-fertilize
- Clog water intake pipes & displace native species

# Asian Clam Distribution



# Wisconsin's AIS Program

Prevent introduction and limit the spread of aquatic invasive species

# Program Goals

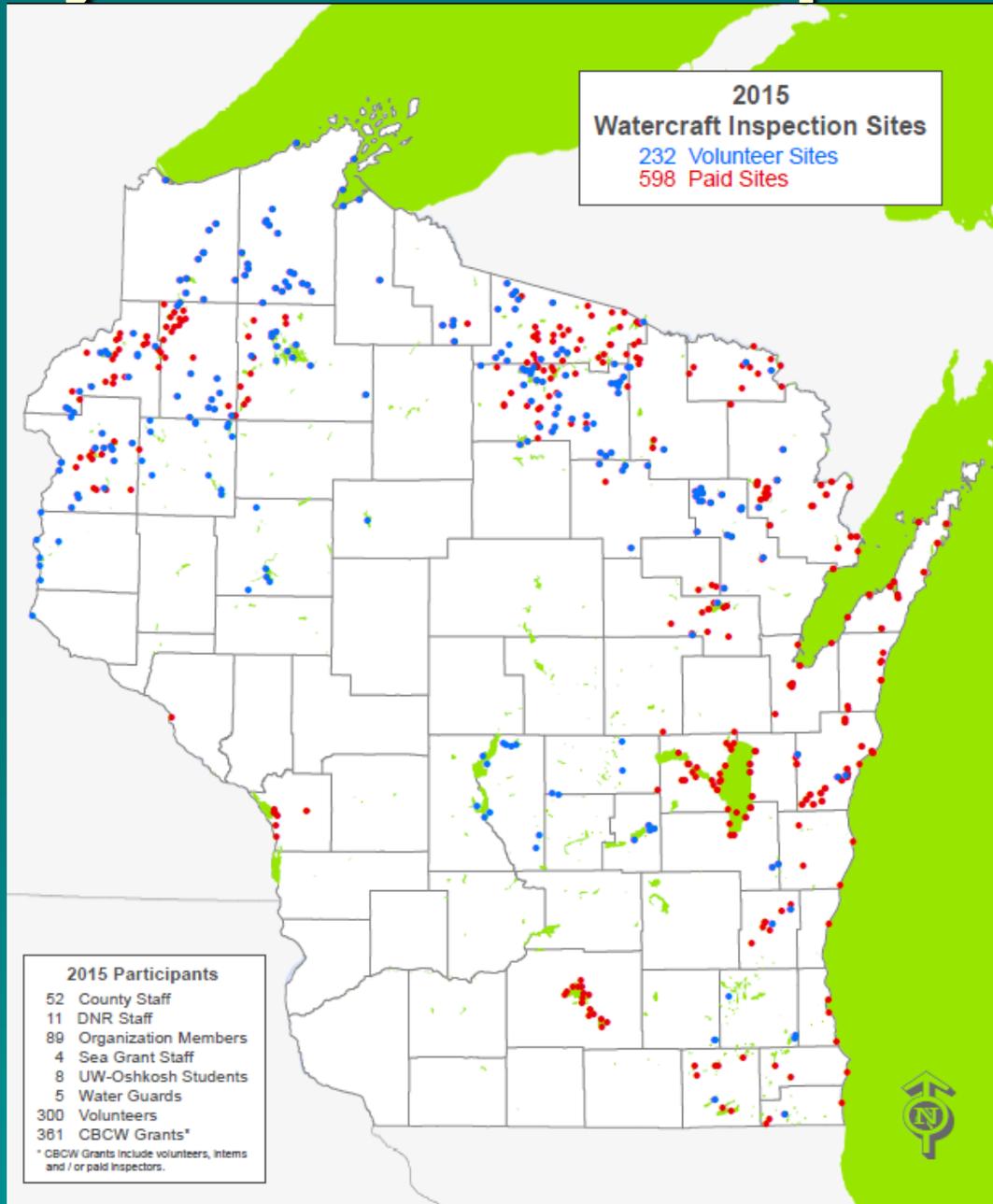
- Focus on containment
- Increase AIS awareness & responsible behaviors
- Strengthen partnerships



# AIS Program Elements

- Education & Outreach
- Watercraft Inspection
- Citizen Lake Monitoring
- Purple Loosestrife Biological Control
- Aquatic Invasive Species Grants
- Research
- Rules to Prevent Spread

# Why watercraft inspection?



As of March 2016



**same prevention methods**



# AIS Prevention Message

- **INSPECT** boats, trailers, and equipment.
- **REMOVE** all attached aquatic plants and animals.
- **DRAIN** all water from boats, vehicles, and equipment.
- **NEVER MOVE** plants or live fish away from a waterbody.
- **BUY** minnows from a WI bait dealer. Use leftover minnows only under certain conditions.

# Current AIS Regulations

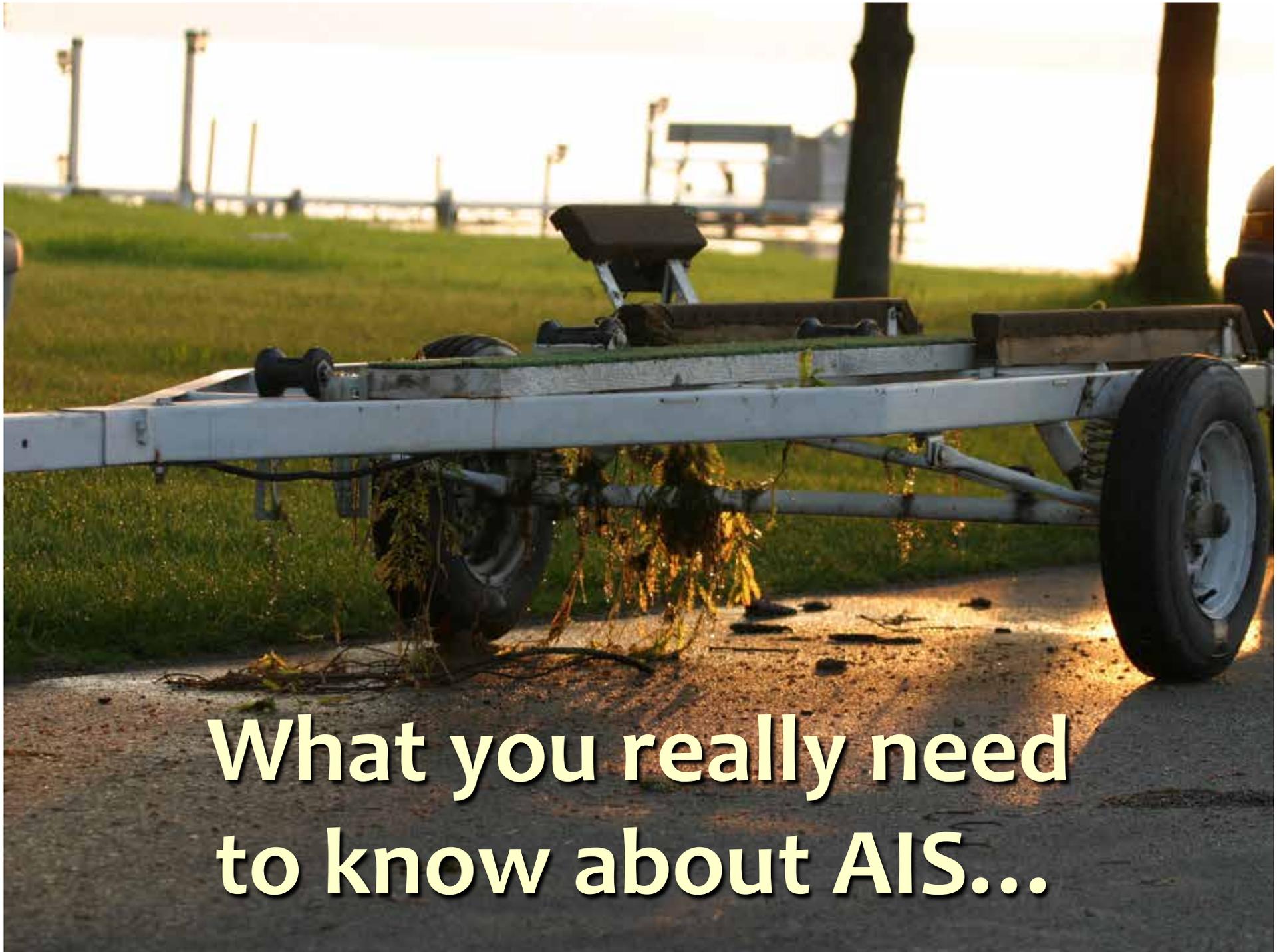
- **NR 40**
  - Classification of invasives into two categories: Prohibited or Restricted
  - Preventive measures required
    - INSPECT
    - REMOVE
    - DRAIN
    - NEVER MOVE

# Current AIS Regulations (cont'd)

- **VHS regulations**
  - All water must be drained from boats and equipment – up to 2 gal may be used for minnows.
  - You may take leftover minnows away from any state water and use them again on that same water, or on other waters, but only if no lake or river water, or other fish were added to their container.
  - You may not transport any live fish or fish eggs away from any state waters.



DAVE GRANLUND © [www.davegranlund.com](http://www.davegranlund.com)



**What you really need  
to know about AIS...**



**Inspectors DO make a difference!**

# How it all began...



# Clean Boats, Clean Waters

- Trains volunteers, citizens, and staff to conduct boater education campaigns in their communities
- Over 2,500 people trained since 2004





**Citizen Volunteers**



**DNR Staff**



**Student Interns**



**DWD Young Adults**

# Recruiting Volunteers

- Commit volunteers with: newsletters, phone call, personal visits
- Develop a recruiting/training packet
- Appoint a coordinator to schedule and organize volunteer hours
- Select optimum days and high use landing sites



Manitowoc Co. Lakes Council

# Retaining Volunteers

- Generous thank-you!
- Offer supplies
  - T-shirt & hat
  - Water
  - Sun tan lotion
  - Bug spray
- Publish volunteer names
- Advertise accomplishments
- Awards and certificates
- Celebrate!



Waupaca Chain Of Lakes

# Materials Needed

- ✓ CBCW T-shirt or sticker
- ✓ Clipboard & pencil
- ✓ Boat landing script
- ✓ Watercraft Inspection form & Check Point List
- ✓ Tool kit
- ✓ List of lakes identified with AIS
- ✓ Plastic bags & marker
- ✓ Cell phone & local contacts
- ✓ Camera and Violation form



# Getting Started: Inspector Duties

- Inform and educate boaters
- Perform watercraft inspections
- Collect and report watercraft data



# Boat Landing Message

- Discuss prevention steps
  - **INSPECT** boats, trailers, and equipment.
  - **REMOVE** all attached aquatic plants and animals.
  - **DRAIN** all water from boat, vehicles, and equipment.
  - **NEVER MOVE** plants or live fish away from a waterbody.

# Boat Landing Message

- Discuss the AIS preventive actions (which are now law)
- Perform a watercraft check – Involve boater!
- Offer a SAH sticker - commitment and prompt





# Prompts Handout

- Resource for inspector
  - Reminder of why steps important
  - Leads to discussion rather than just information
  - Local concerns addressed
- Diagram layout simple & easy to read
- Quick visual reminder for live bait

## AIS Prevention Step Prompts to Assist Inspector

If boaters are not familiar with the prevention steps or have questions, help them understand the reasons for taking these actions. You can use the prompts below to assist you in your explanation and discussions at the boat landing. **Remember the goal is to make this as relevant as possible to the boater by localizing the issue through the conversation.**

Steps 1 & 2 – INSPECT AND REMOVE

### Why this is important:

Plants and animals can easily attach to boat/equipment or become entangled in boat motors and fishing lines and then be moved to another lake. This is a concern in this area because- **(ADD LOCAL CONCERNS HERE)**

Step 3 – DRAIN BOAT AND EQUIPMENT

### Why this is important:

Many organisms such as spiny water flea, juvenile zebra mussels, or plant fragments (use organisms that are of concern in your area) are microscopic and invisible to the naked eye and easily transported in water from one waterbody to the next. We know that many of the boaters that frequent our lake also spend time at- **(ADD LOCAL CONCERNS HERE)**

Step 4 – DRAIN LIVEWELLS & CONTAINERS HOLDING CATCH

LIVE BAIT MESSAGE

### For Live Bait specific questions -

If bait comes in contact with water that contains AIS, the bait or water within the container can carry AIS and might be transported to another waterbody.

### Types of Live Bait:



Earthworms



minnows



leeches



TRASH



# Collecting Data



- Determine traveling patterns of recreational users
- Useful data for lake planning grants, local ordinance reviews

## Efforts for 2015:

**133,279 boat inspections**

**280,626 people contacted**

**80,813 hours spent (3/28/16)**



# Watercraft Inspection Results

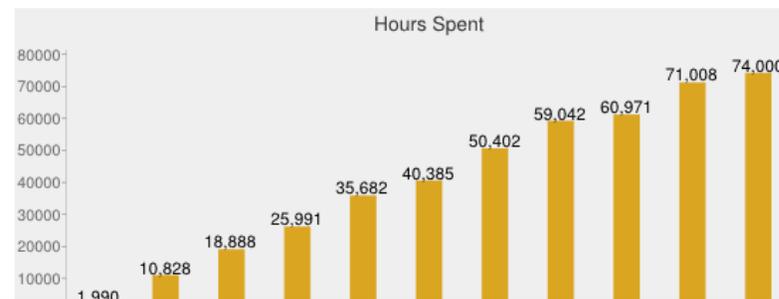
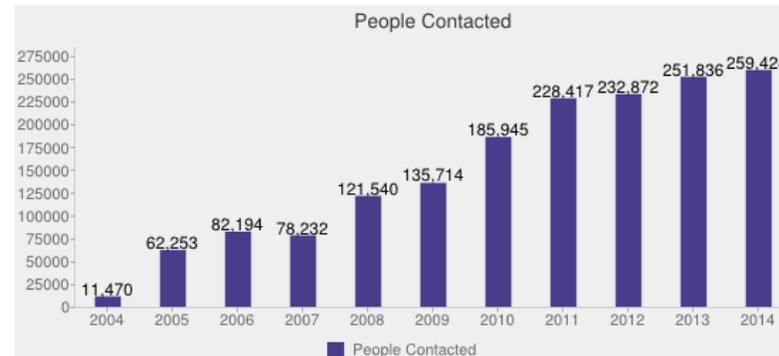
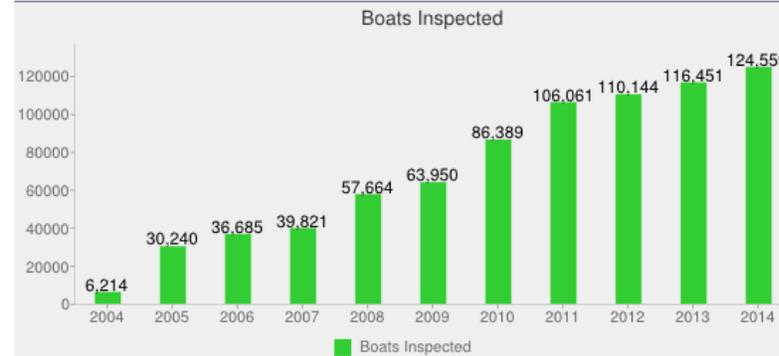
Location:

## Watercraft Inspection Efforts

## Boater Statistics

## Projects

## Landings



## Aquatic Invasive Species

### Contact information

For information on Lakes in Wisconsin, contact:

[Wisconsin DNR Lakes](#)

Division of Water

Bureau of Water Quality

[Clean Boats, Clean Waters](#)

[Contacts](#)

# Handling a Violation

Do your homework beforehand...



THE BUFFALO NEWS  
CARICATURES.COM  
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ADAM  
ZYGUS

AS AN INVASIVE SPECIES WITH AN ENDLESS APPETITE, THEY CAN DECIMATE ECOSYSTEMS AND SEND SPECIES EXTINCT...

ASIAN CARP??



HUMANS.



# How to Change Boater Behavior

- Educational materials
- Prompts (decals, stickers)
- Personal contacts
- Modeling behavior
- Social diffusion



# Steps for an Effective Watercraft Inspection Program

- Determine boat landing ownership & have up-to-date AIS signage!
- Maintain effective inspection hours
- Develop a plan to recruit, train, and retain inspectors
- Wear Clean Boats, Clean Waters t-shirts or stickers
- Develop an accurate and concise message



# Steps for an Effective Watercraft Inspection Program

- Know what educational materials are available and who to contact
- Keep and report watercraft inspection records
- Report any suspect specimens
- Encourage others!



An underwater photograph of a pond with lily pads and stems. The water is clear and greenish, with sunlight filtering through. The lily pads are large and green, with some showing signs of being eaten. The stems are thin and green, extending from the bottom of the frame towards the top. The overall scene is peaceful and natural.

**The major influence on our attitudes  
and behavior is not the media, but  
rather our contact with other people.**

**“Fostering Sustainable Behavior” Doug McKenzie-Mohr, William Smith**

# CBCW Resources & Gear

- **Resources**

- Watercraft Inspection Manual
- Tool kit
- DVDs
- Web site: [www.uwsp.edu/cnr/uwexplakes/CBCW](http://www.uwsp.edu/cnr/uwexplakes/CBCW)

- **Gear**

- T-shirts
- Aprons
- Hats
- Stickers



# Please Contact Us!

- For more information contact:

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[erin.mcfarlane@uwsp.edu](mailto:erin.mcfarlane@uwsp.edu)



- To order t-shirts, kits, handbooks, aprons, or hats, contact Erin.
- To download materials & presentations, visit our web site:

[www.uwsp.edu/cnr/uwexplakes/CBCW](http://www.uwsp.edu/cnr/uwexplakes/CBCW)



**Thank you!**