

# *"Protecting in Partnership... the Legacy of WI Lakes"*

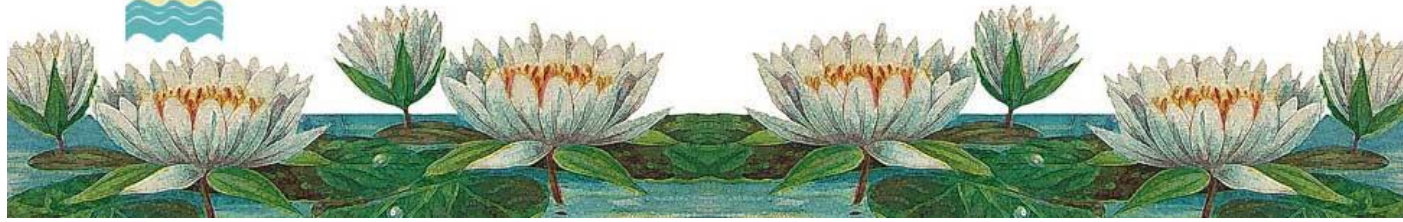
Created by: WI Lakes Partnership

- Jeff Bode
- Jennifer Filbert





# Wisconsin Association of Lakes



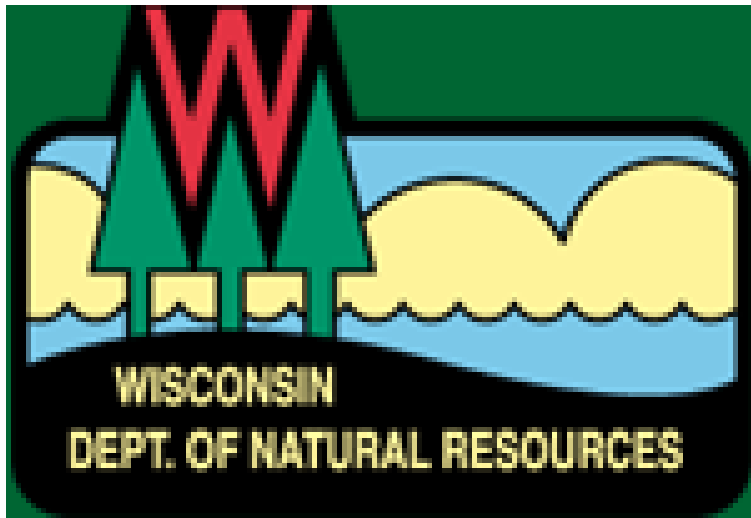
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## University of Wisconsin **Stevens Point**



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## Water Resources Programs



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# The Wisconsin Lakes Partnership

*Working together for the citizens and lakes of WI*

## The Wisconsin Association of Lakes

- Citizens, Lake Organizations & Professional Service Providers Network
- Political Will

## The UW-Extension

- Organization and Education Assistance

## The Department of Natural Resources

- Technical and Financial Assistance
- Regulatory Authority



# *Pressuring Wisconsin Lakes...*

Climate seems to be changing

Global species exchange increasing

Population is growing and moving to lake country

Lake and shoreline pressures increasing  
larger houses, larger piers, more boats

Watershed land use intensifying  
industrial farms, excess fertilizer in soil  
rural highways and commercial areas  
increasing



# WI Lakes Strategy 2000 to 2010

## The Water Way...

*Engaging People, Politics & Partnerships*

*Sustaining Healthy Lake  
Ecosystems & Quality  
Outdoor Recreation and  
Living*



*Wisely Investing Time & Money*

*...Protecting in partnership*





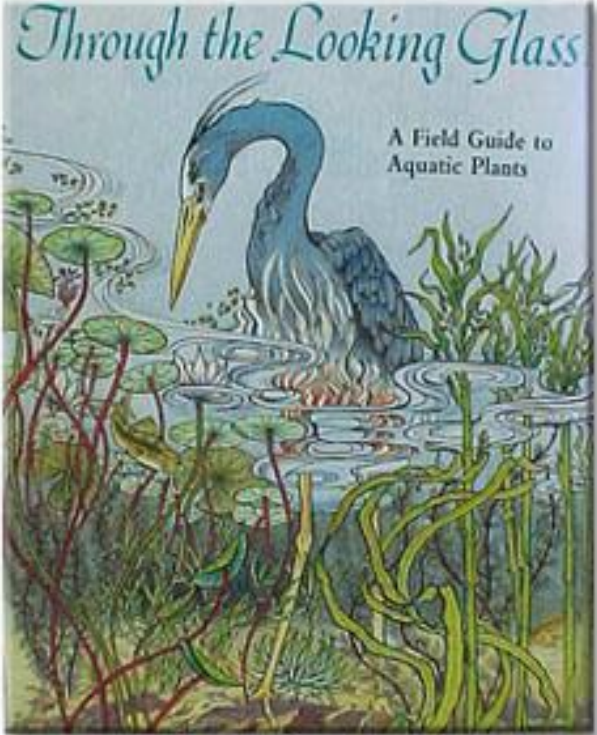
# Making Lake Education Easy... and a lot of fun!



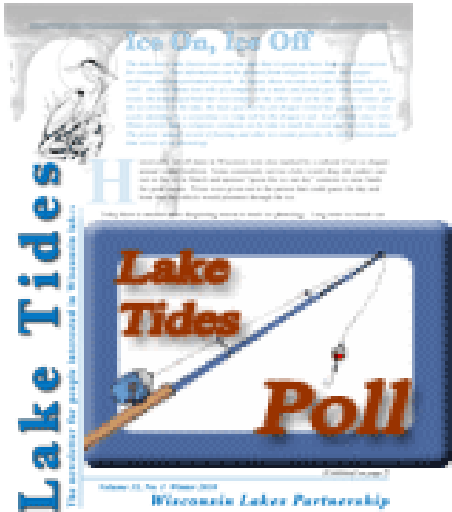
Story Hour



RESTORING WISCONSIN SHORELANDS & SHALLOWS



Action Alerts

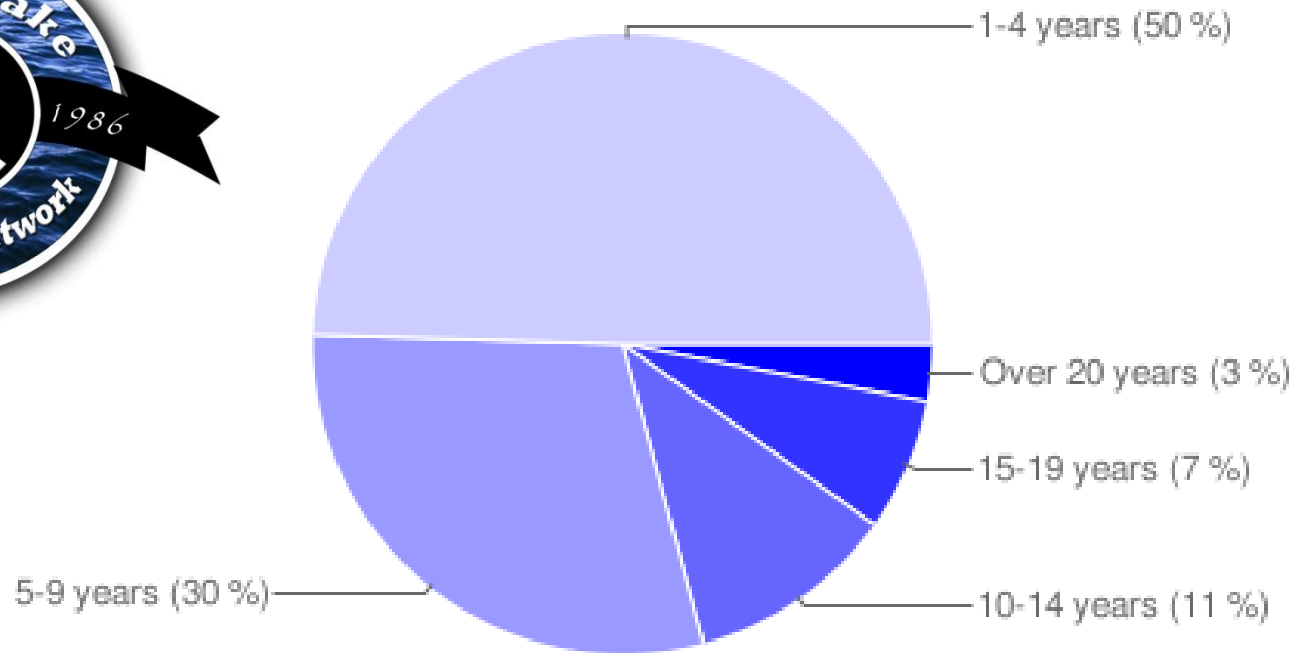


# *Building Citizen Partnerships...*

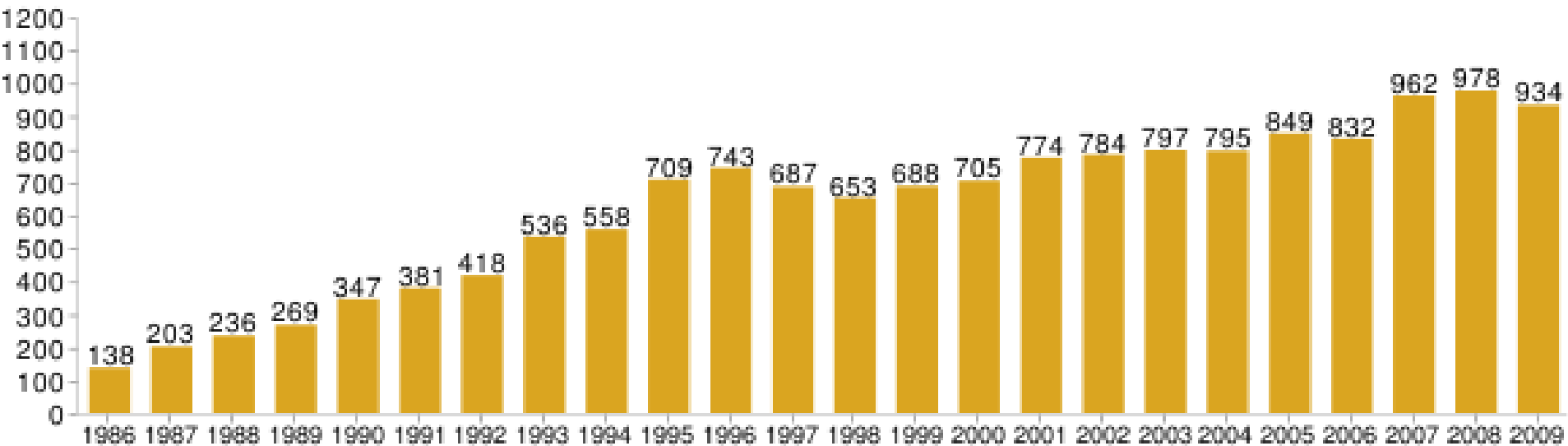




## Years Of Participation Among Volunteers



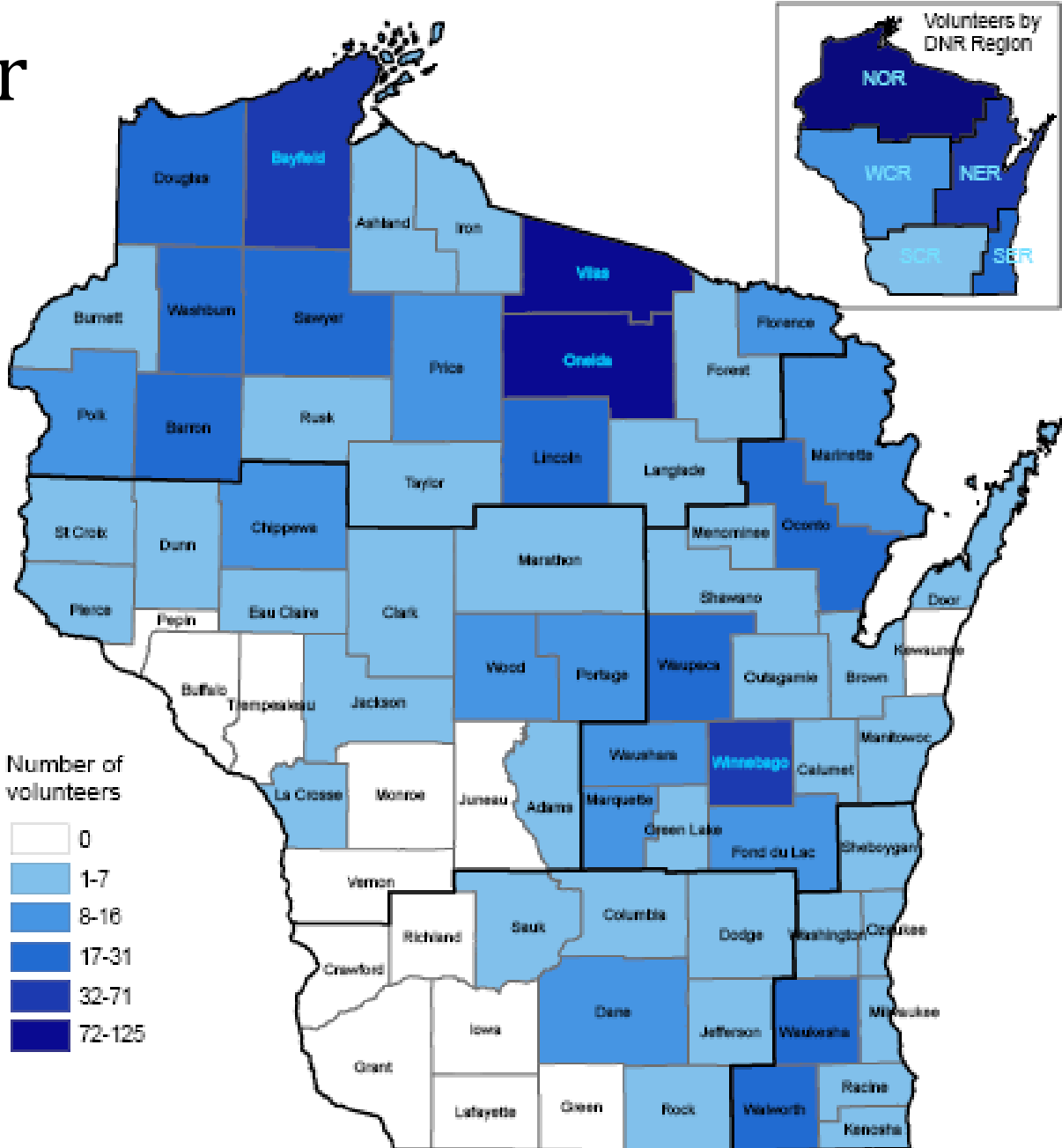
## Citizen Lake Monitoring Network - Volunteer Participation as of 2009



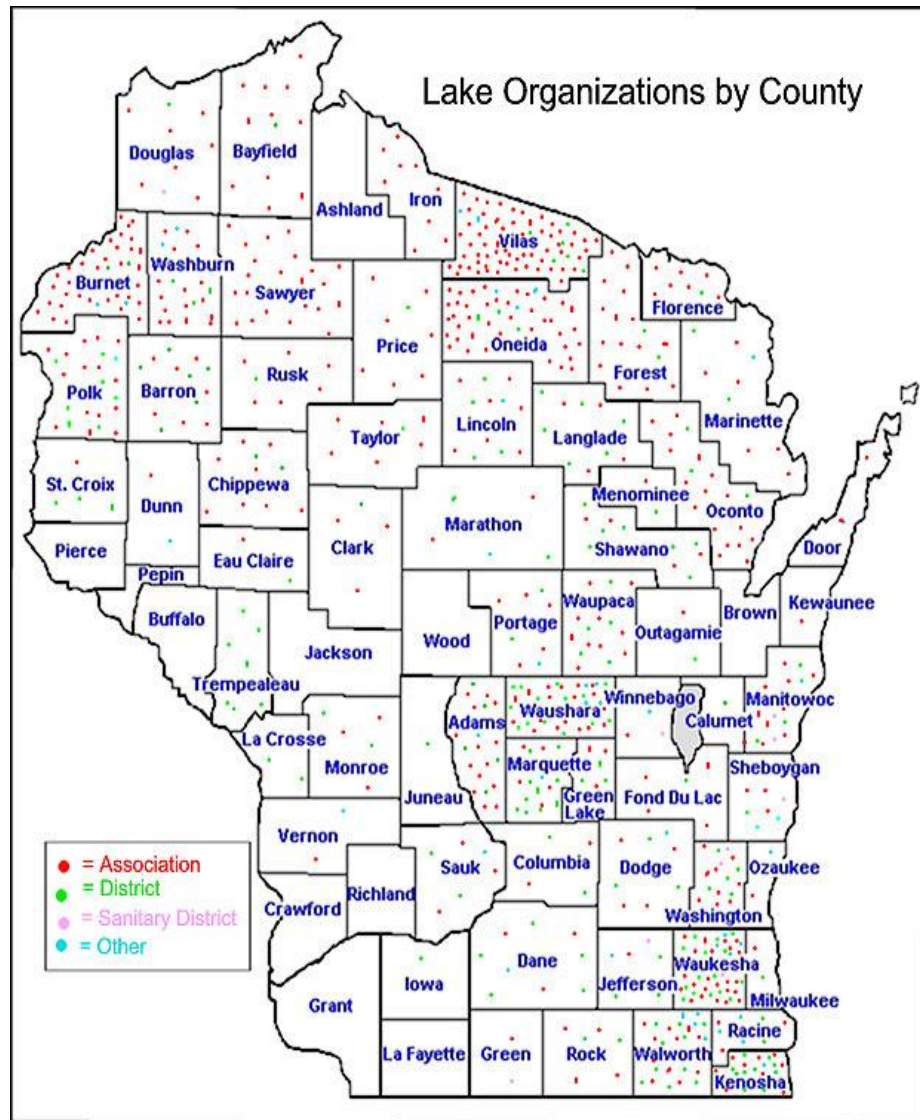


# CBCW Volunteer Distribution by DNR Region

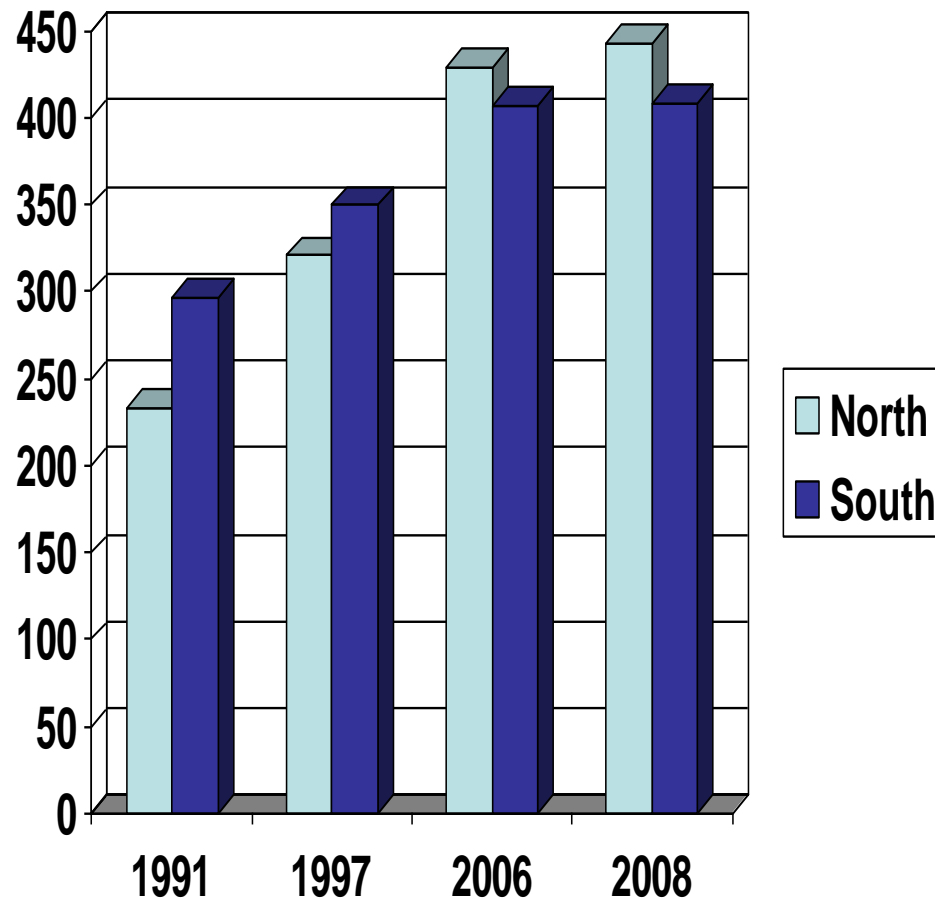
Volunteers Trained Since 2004



# Building Community Partnerships...



## Lake Organizations









# *Building Political Influence...*

- WI Lake Governance Laws
- Water Resources Account
- Lake Protection Grant Laws
- Waterway and Wetland Laws
- Boating Safety Laws
- Aquatic Plant Protection Law
- Invasive Species Laws



**ATER AND LAW**



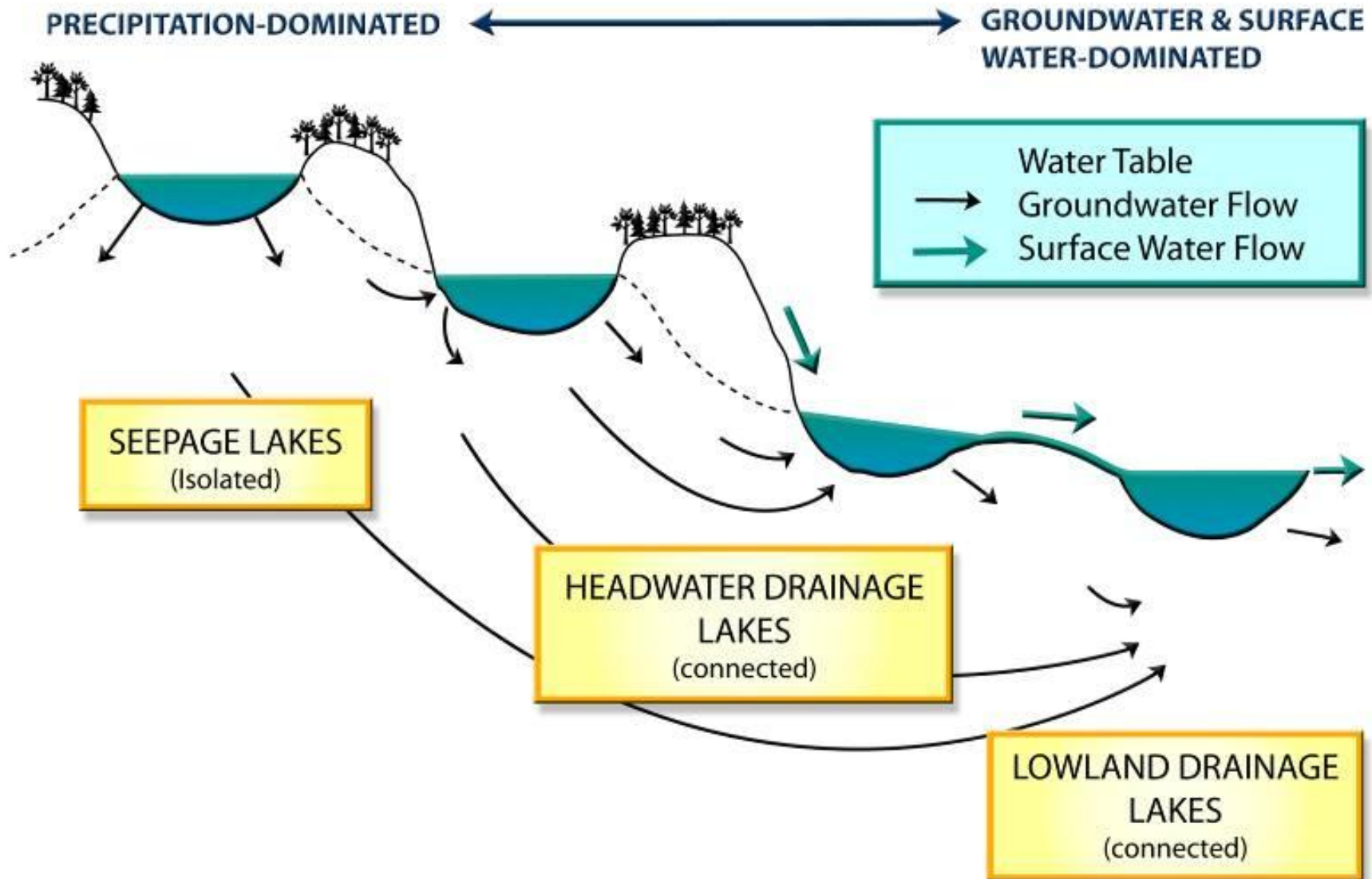
# Funding Lake Protection...



- Motorboat Gas Tax
- Federal Funds
- WAL Membership and Support
- General Purpose Revenue
- Fish and Boat License Check-off
- APM Fees
- Other Sources?



# Traditional Approaches



# What's Changing WI lakes?

Climate change may impact species, water level/use

Phosphorus and dirt pollution causing algae blooms

Domestication of shorelines robbing habitat  
Declines in native plants, frogs and fishery

Invasive species displacing native plants and animals  
sapping lake funds, energy and fun

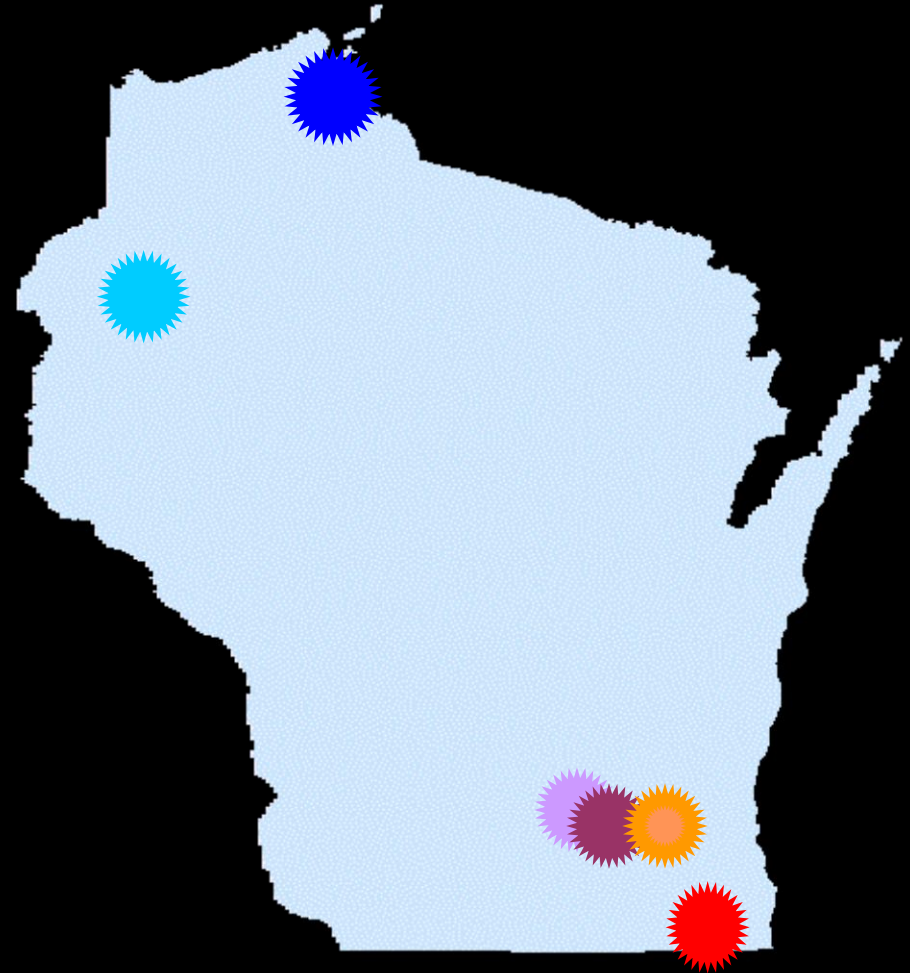
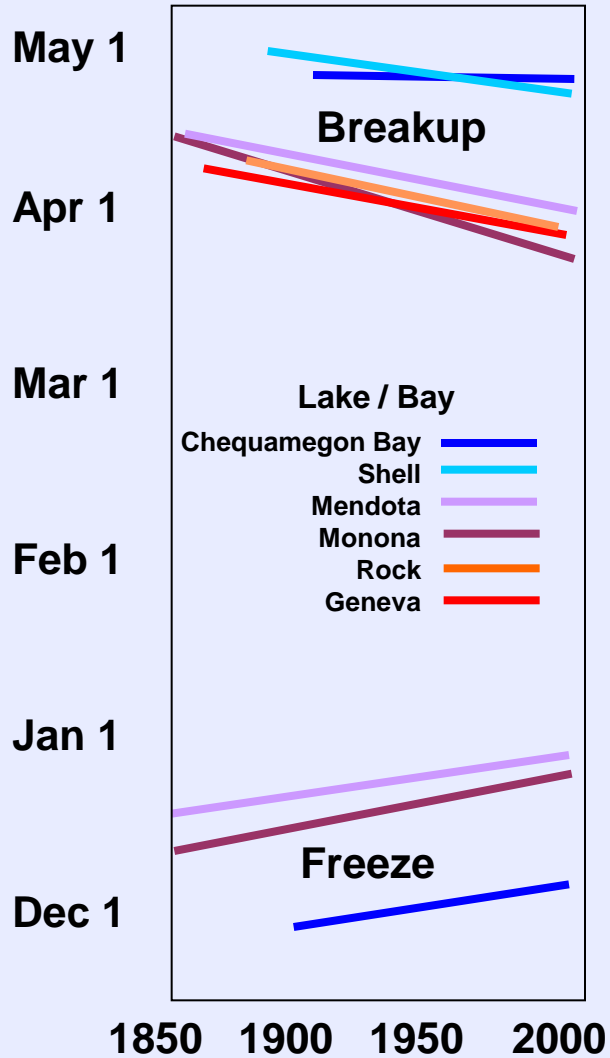
Others:

- Accumulating toxics and fish consumption advisory
- Over-harvest by anglers
- Motorboat impacts
- Water use conflicts
- Groundwater conflicts





# Changes in Ice Around Wisconsin



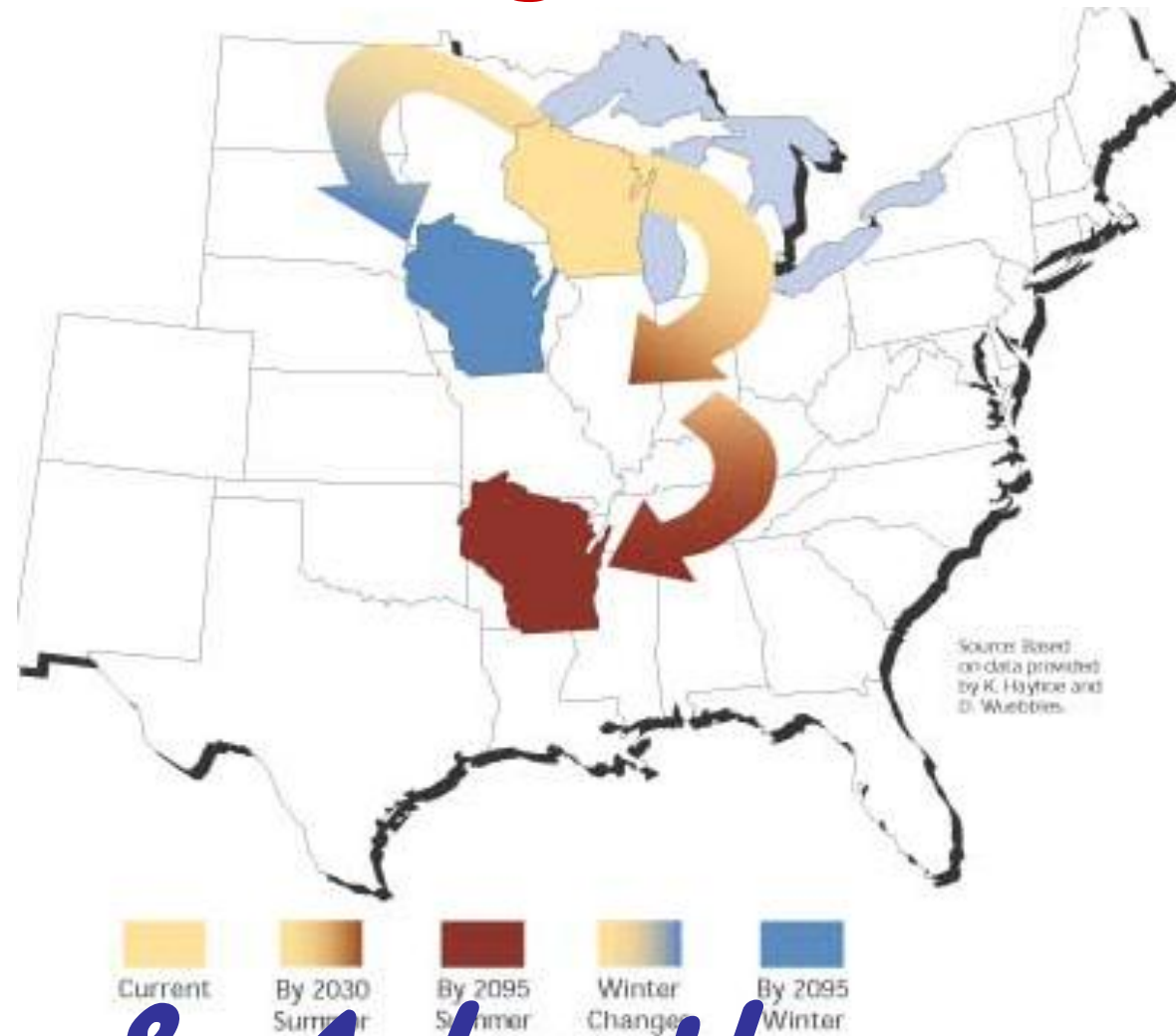
# Global Climate change

Ice cover

Species range

Water level

Water use



***Conserve & Adapt!***

Source: John Magnuson

# Phosphorus & Sediment Pollution

Algae blooms

Murky water

Toxic algae

Fish kills

Yucky muck!

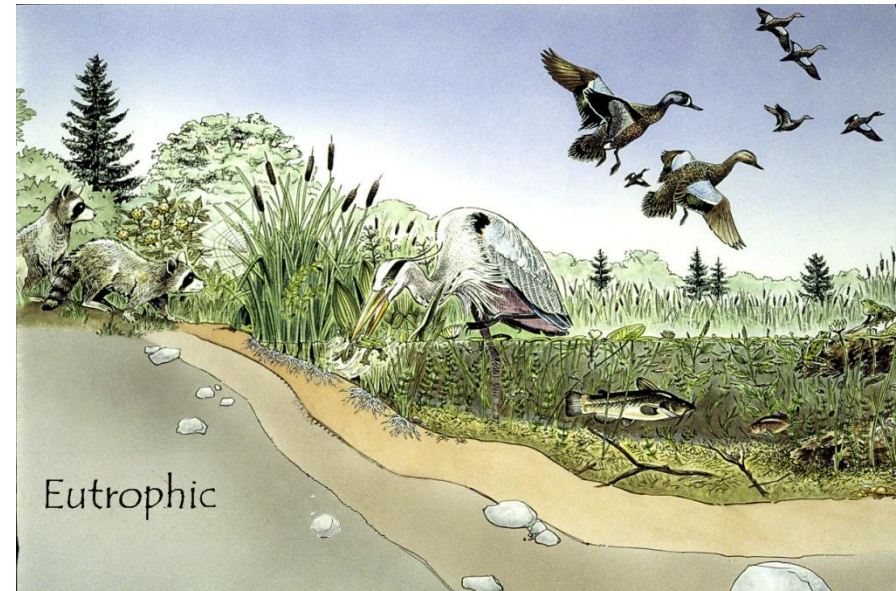
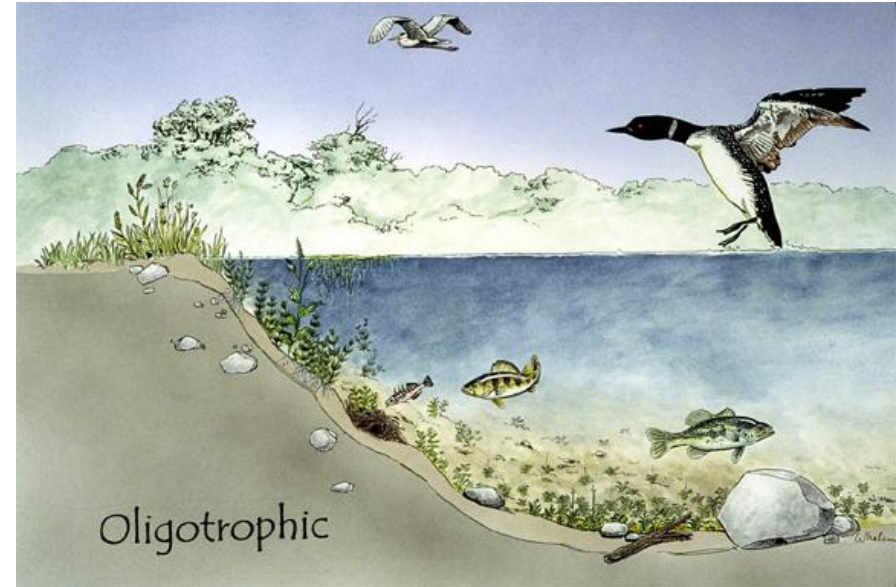
Blue-Green Scum





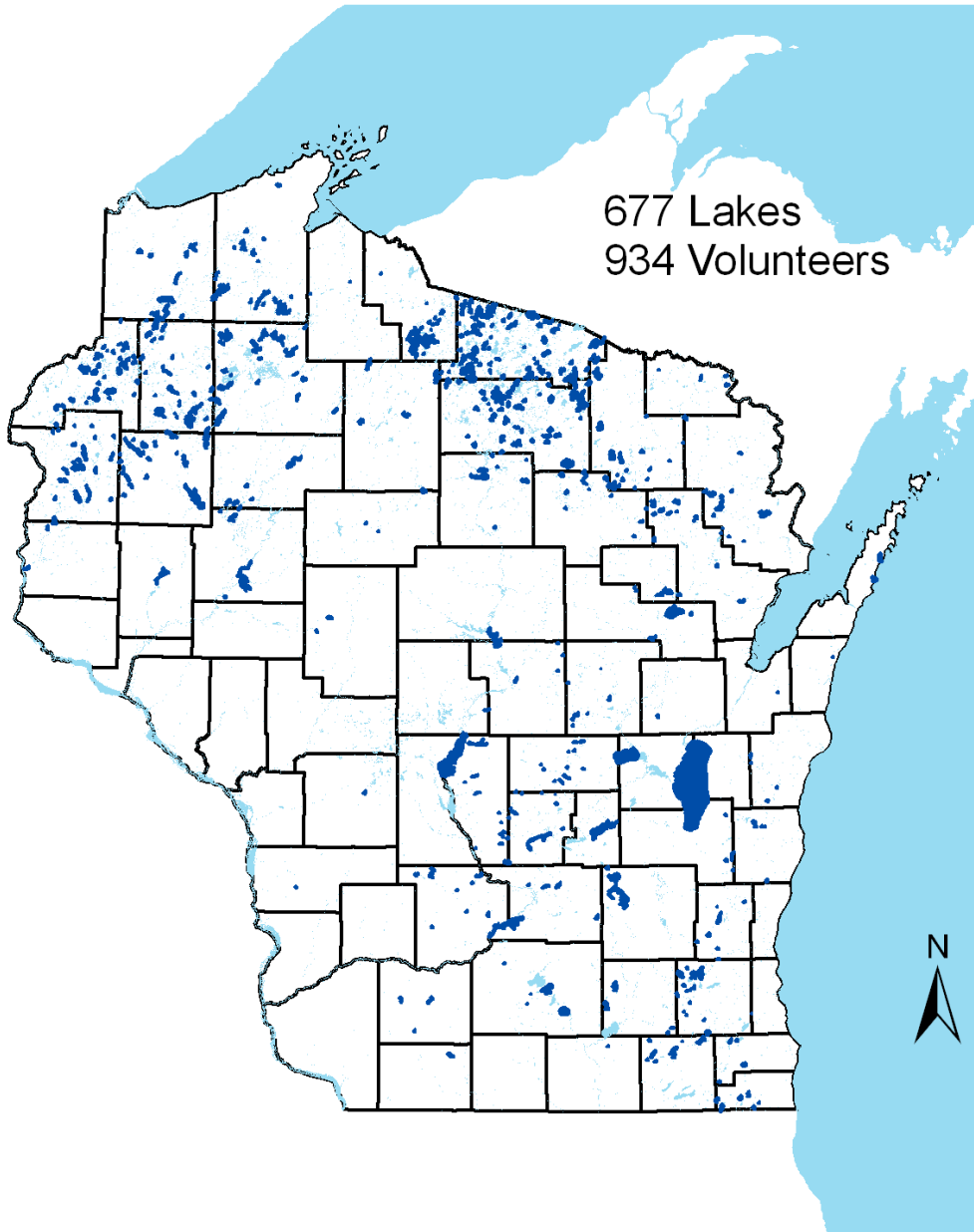
# TROPHIC STATE

- Nutrients & Productivity
- Sediment & Accumulation
- Species Shifts
- Species Richness

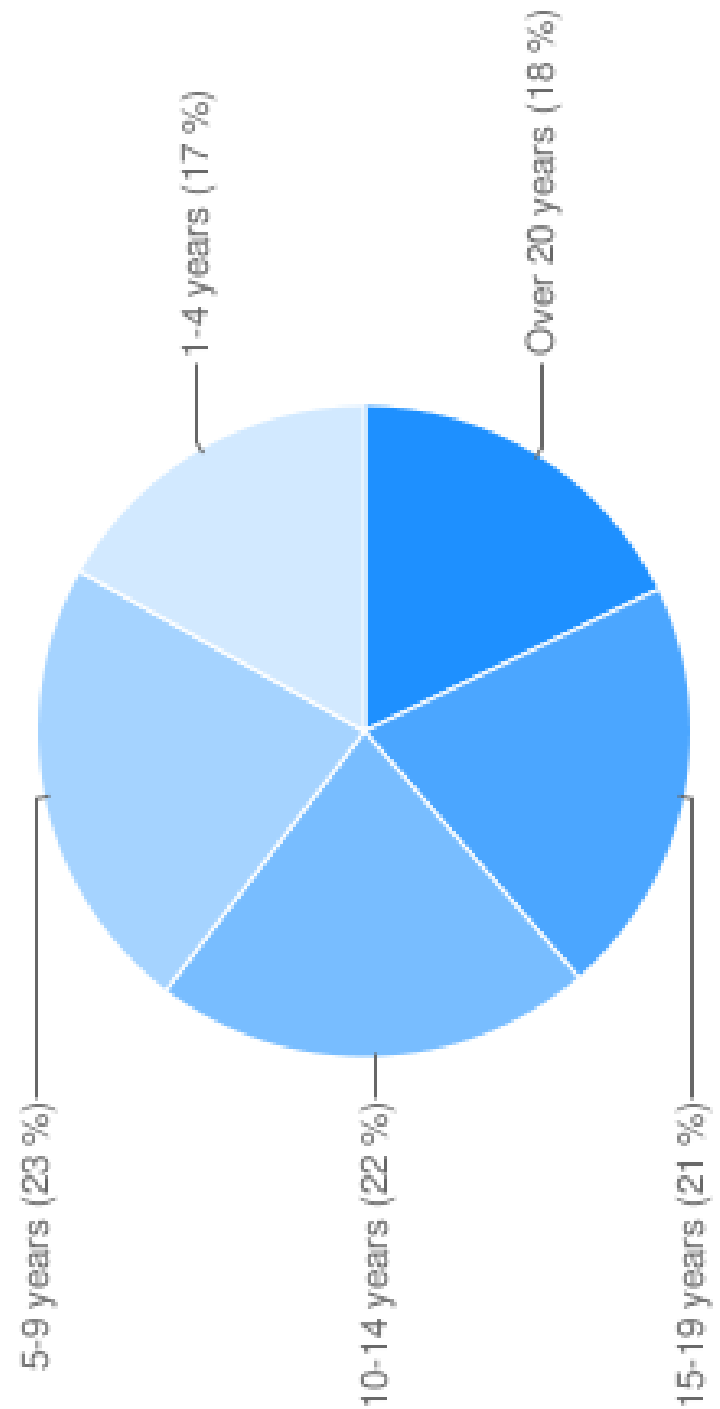




# Lakes Monitored By Volunteers 2009



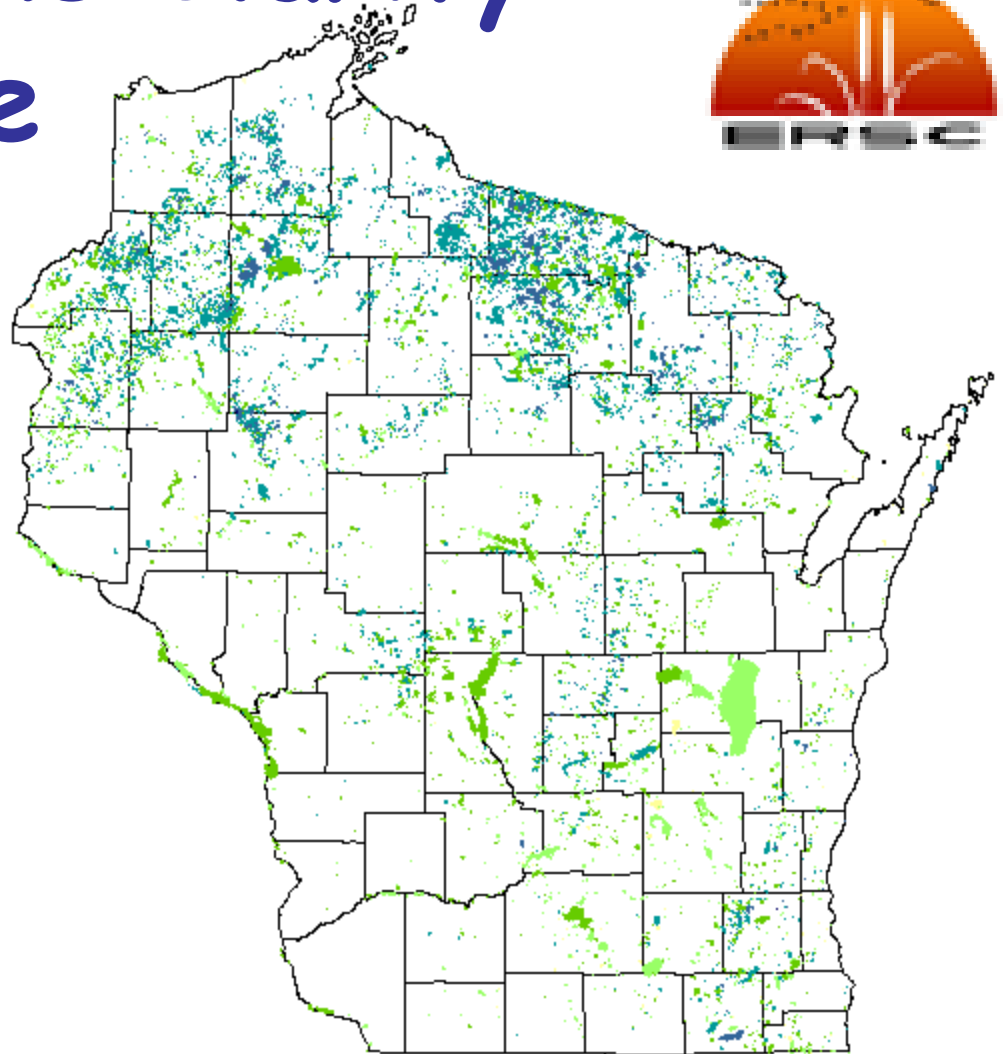
## Years Of Participation Among Lakes



# Wisconsin Lake Clarity - Trophic State From Space

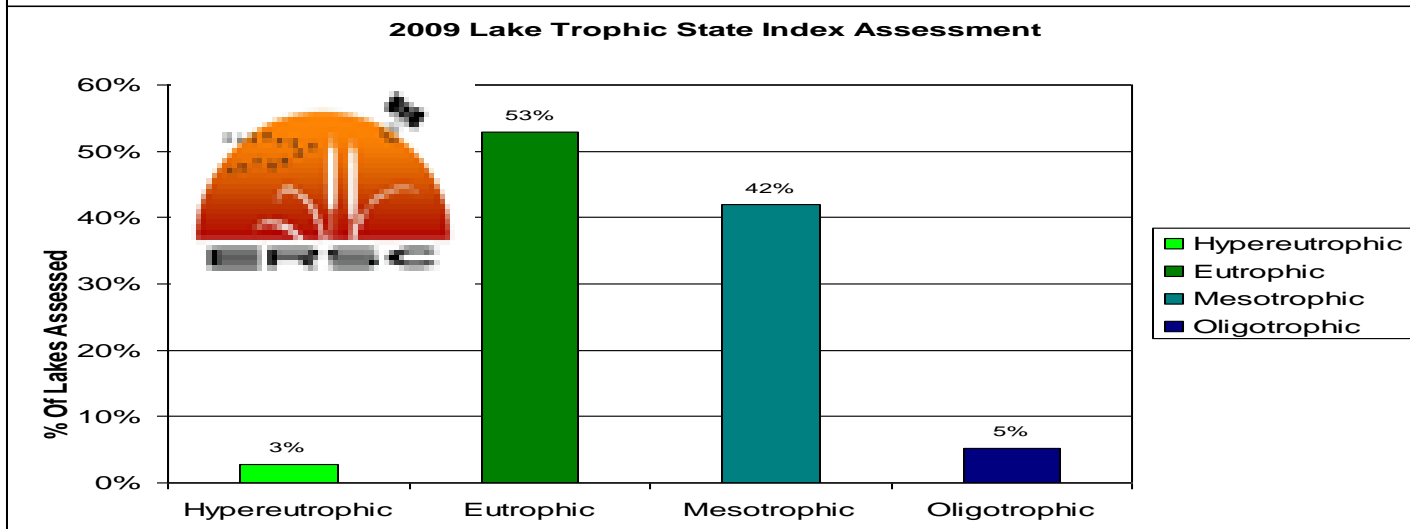
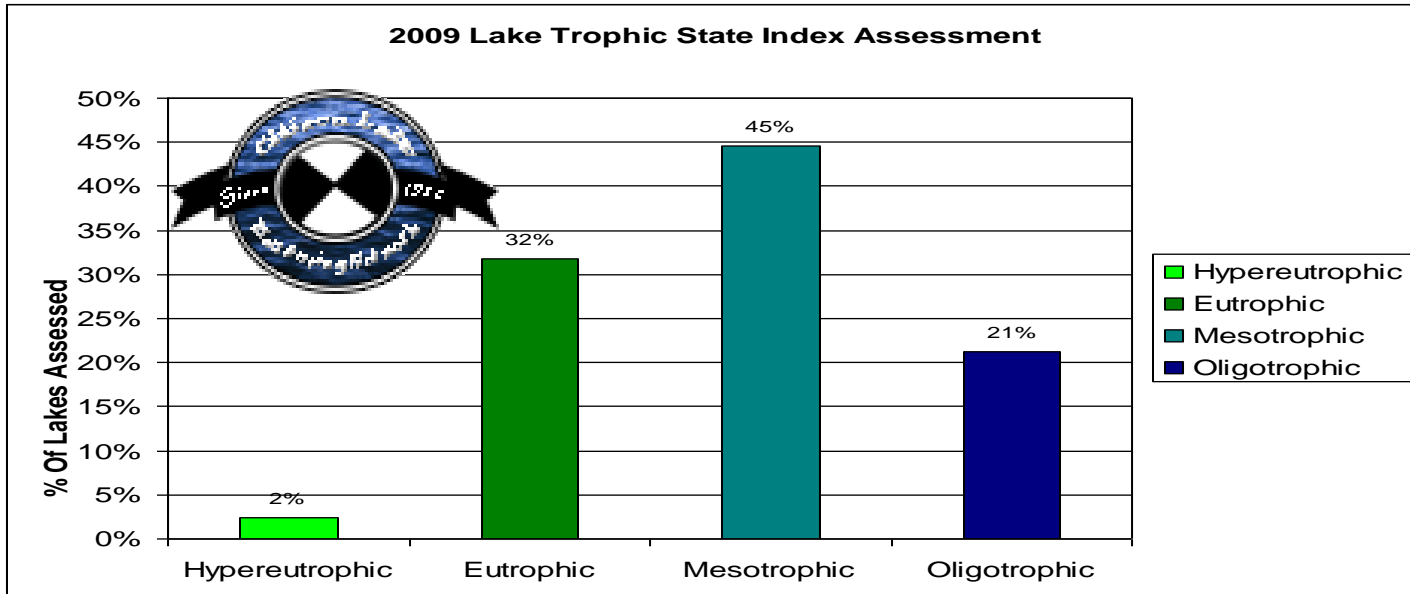


Trophic State Index	Estimated Secchi Depth
> 80	< 0.25 m (< 0.8 ft)
70 to 80	0.25 - 0.5 m (0.8 - 1.6 ft)
60 to 70	0.5 - 1 m (1.6 - 3.3 ft)
50 to 60	1 - 2 m (3.3 - 6.6 ft)
40 to 50	2 - 4 m (6.6 - 13.1 ft)
30 to 40	4 - 8 m (13.1 - 26.2 ft)
< 30	> 8 m (> 26.2 ft)

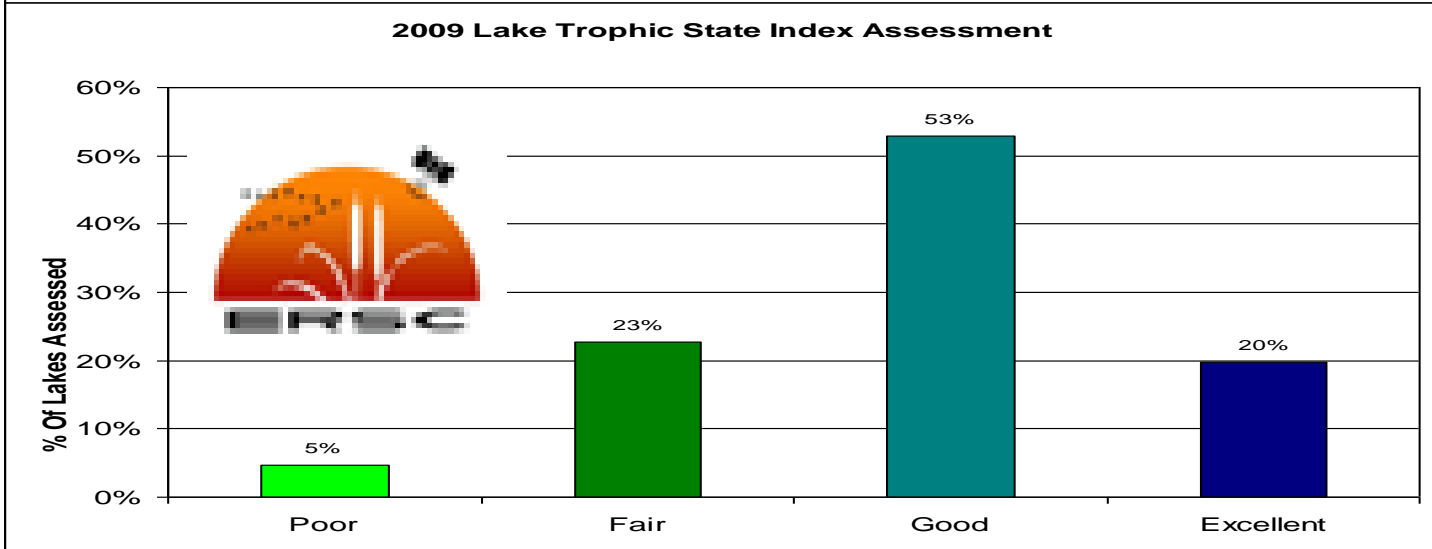
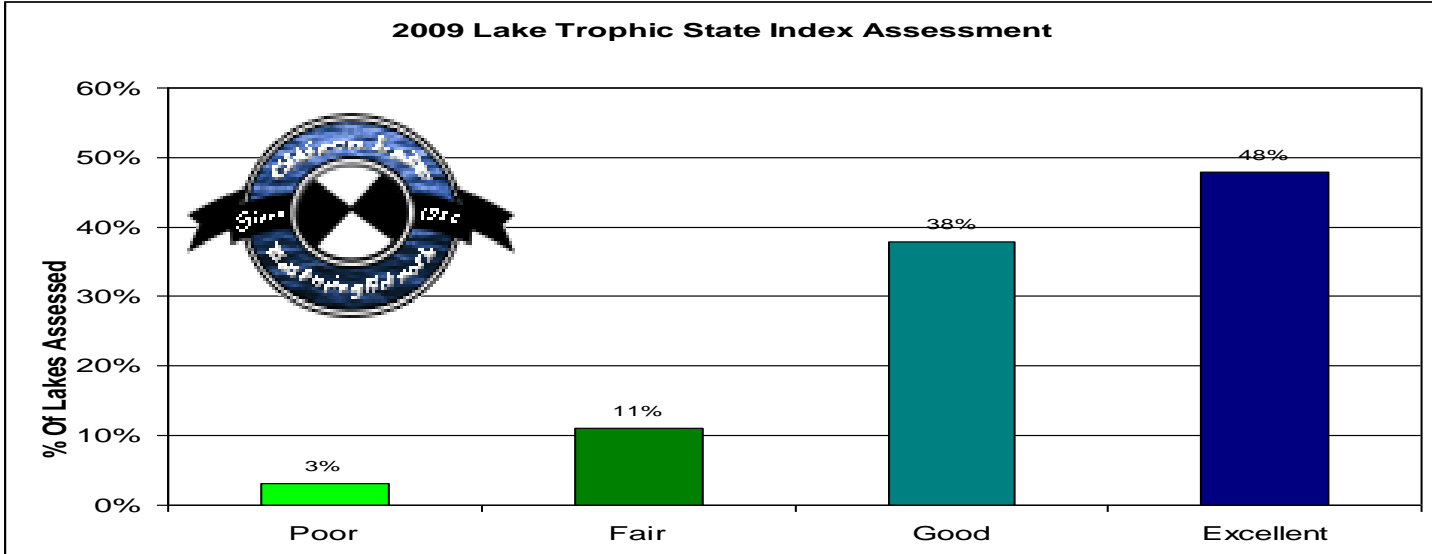


Assisted by hundreds of volunteers, University of Wisconsin-Madison researchers assess water quality of Wisconsin's lakes from space (1999-2001).

# Trophic State

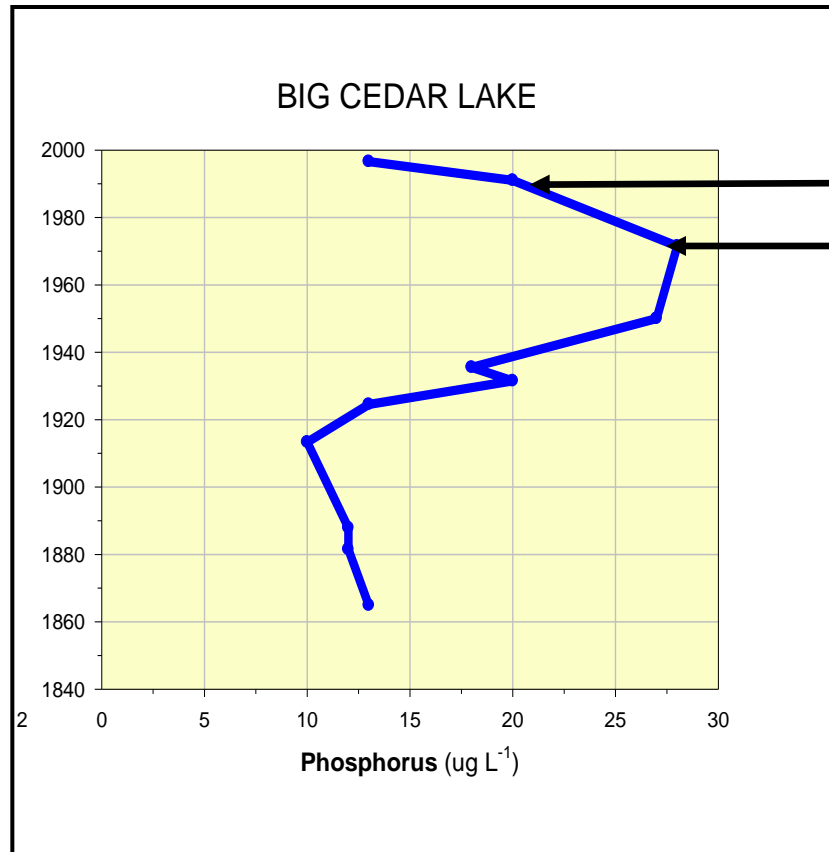


# 2009 Water Quality Assessment





# Big Cedar Lake Washington County



**Additional land acquisition grants**

**First land acquisition grant and best management practices installed**

Lake district formed in 1975. Received lake planning grants in 1977-78. In 1979 received first land acquisition grant. More received in late 1980s. Currently over 150 acres of former agricultural land preserved as a nature conservancy.

Source: Paul Garrison

# Domestication of shoreline habitat



Photo: Michele Woodford



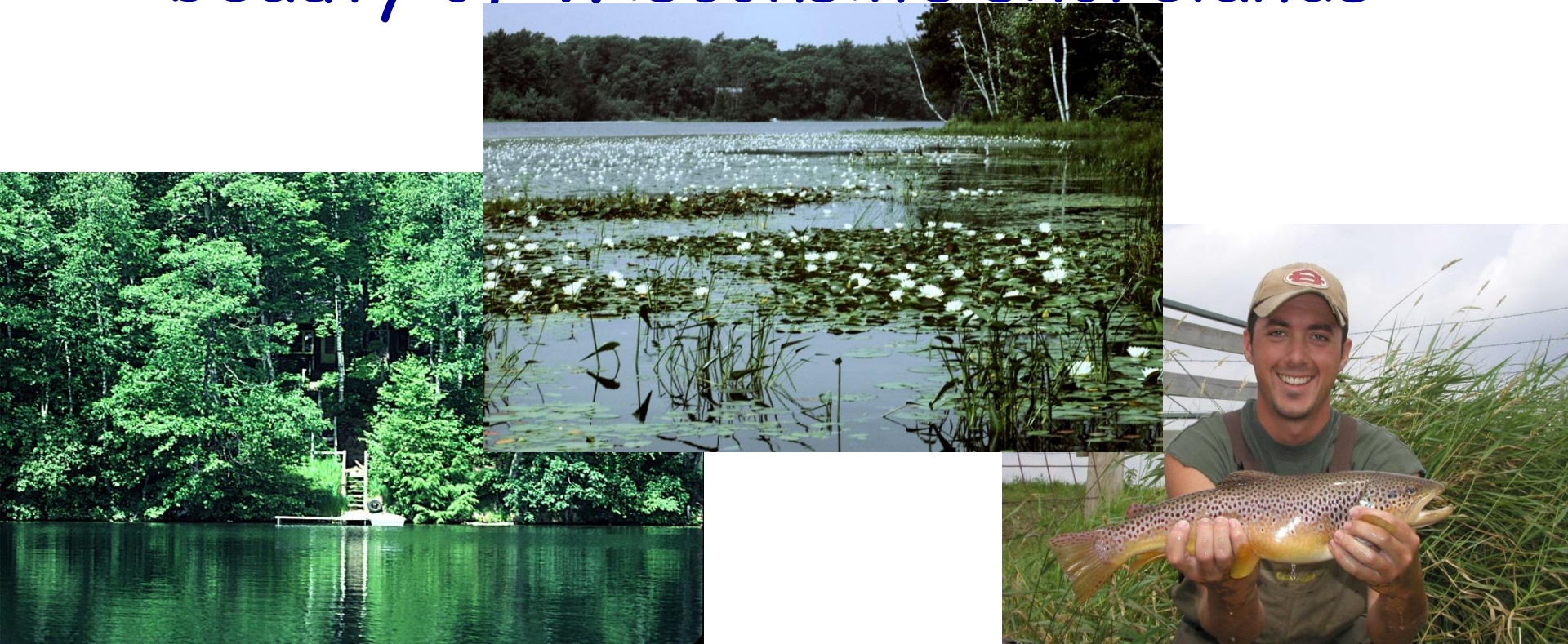
# Neighborhood Fish & Frog Friendly?





# ***Wisconsin's Shorelands and Shallows Strategy...***

To protect and enhance the habitat, water quality and natural scenic beauty of Wisconsin's shorelands





# Comprehensive approach...

Effective management requires:

- Many people - federal, state and local governments, advocacy groups, lakefront owners, lake users
- Many tools and approaches...



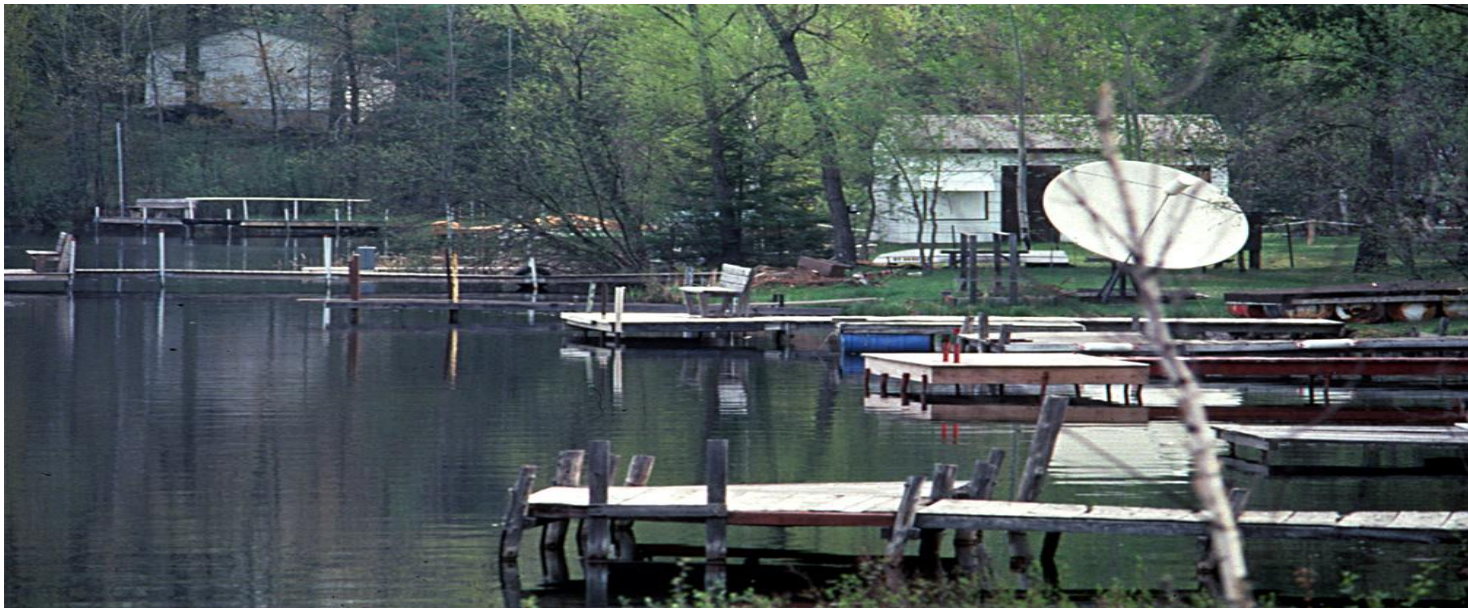
# Traditional Approaches



- **Direct Management**
  - owning the resources (Wild Lakes)
- **Regulation**
  - permits and approvals
- **Financial Incentives**
  - paying others for conservation
- **Technical Assistance and Education**
  - staff and tools to guide conservation

# Regulation

- Shoreland Zoning Ordinances
- Waterway and Wetland Permits
- County Lake Classification
- Zero Phosphorus Lawn Fertilizer

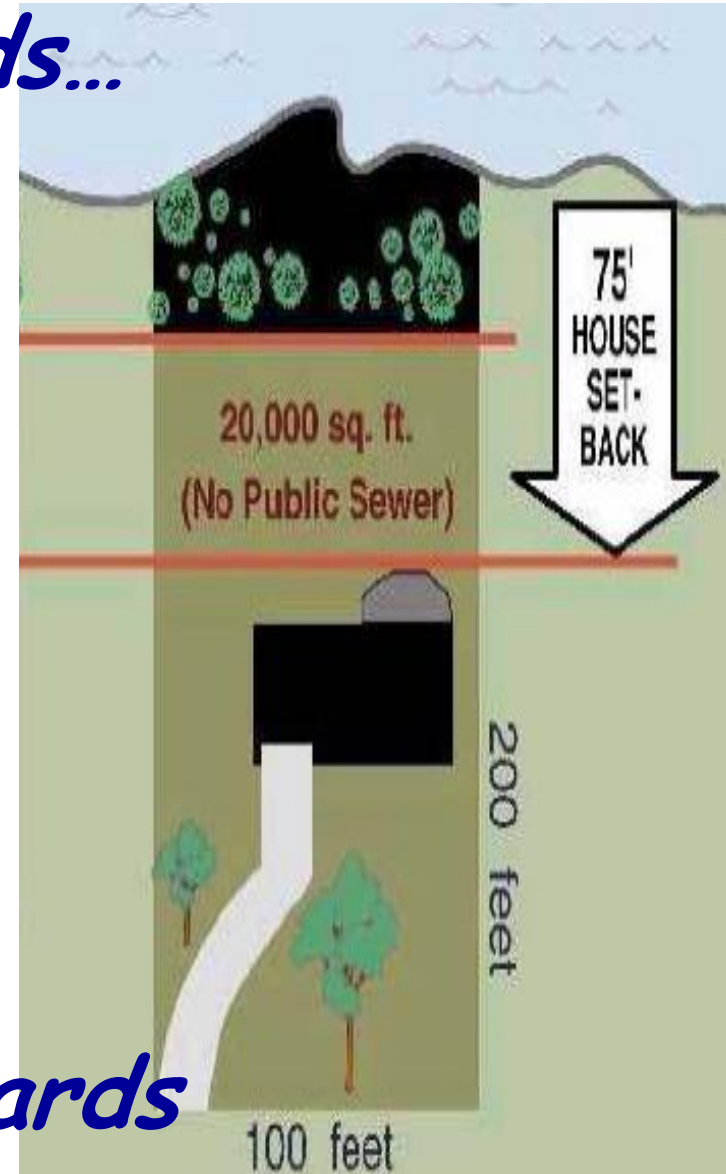


# Shoreland Zoning (1968 to 2009)

## *Minimum social standards...*

- Lot sizes
- Building Setbacks
- 35' no clear cut
- Structure limits
  - Piers, boathouses
- Nonconforming structures
  - 50% rule
- No Mitigation

*...Not ecosystem standards*





# Shoreland Zoning *NR 115 for 2010 and beyond*

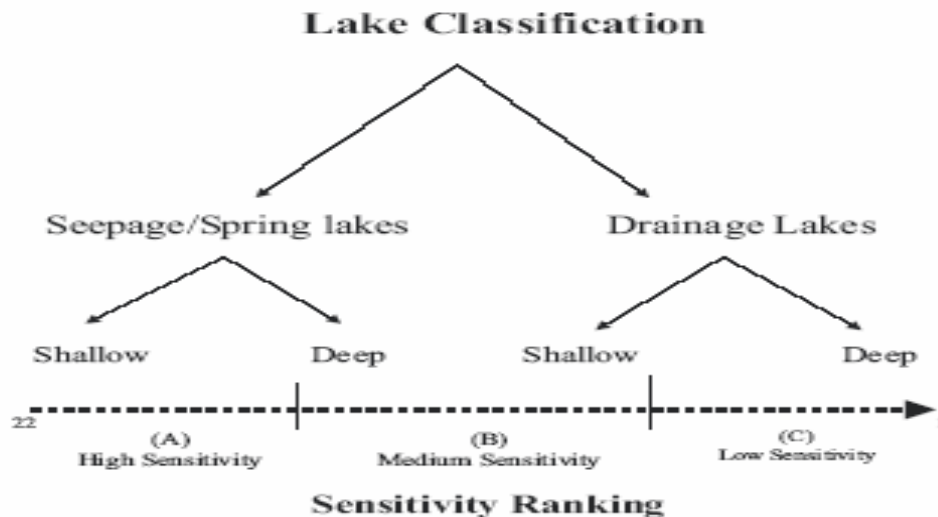
## *Minimum social standards...*

- Kept the good
    - Lot sizes
    - Building Setbacks
    - Structure limits
  - Fixed some things
    - Vegetation, Nonconforming structures
  - Added some new
    - Mitigation, Impervious surface limits
- ...Not ecosystem standards!*



# County Lake Classification

1. Classifying lakes according to sensitivity to development
2. Crafting lot size, setback, and other dimensional shoreland zoning standards for classes of lakes
3. Produce colorful, graphic, plain-language guides for shoreland property owners



# Financial incentives

## Wisconsin Lake Protection grants (DNR)

Acquisition, planning, restoration and education

## Wisconsin County Conservation grants (DATCP)

Plans, site preparation and planting

## Burnett County tax credits for property owners who register protected lake shore

## Local lake organization and citizen contributions



# Technical Assistance & Education

UW-Extension

Basin educators

Lake specialist

Land use specialist



Wisconsin Association of Lakes

County Staff

Land and water conservation

Natural resource and economic development

Private service providers

Friends from other states





# Better Shoreline and Shallows Stewardship:

Landscape for  
water quality &  
natural beauty

Leave the logs in  
the lake

Maintain native beds  
of aquatic plants

Maintain or restore  
shoreline vegetation

Reasonable pier  
and boat use



# Revitalization of Shoreland Vegetation Project (RSVP)



**Dedicated to the  
preservation/restoration  
of native vegetation on  
Green Lake's shores**



Source: C Marks, GLSD



# Aquatic Invasive Species



Curly-leaf Pondweed



Spiny water flea



Zebra Mussels



Rusty Crayfish



VHS

Purple Loosestrife



Rainbow Smelt



# Invasive Species Strategy

- Prevention
  - Heighten Awareness
  - Change Behavior
- Rapid Response
  - Early Detection
  - Advanced Planning
- Containment and Control



# *Wisconsin's Strategic Goals*

- 1. Stop invasive species before it gets into our lakes and streams*
- 2. Find new invasions quickly and respond to eliminate pioneers*
- 3. Manage AIS populations effectively in an environmentally sound manner*



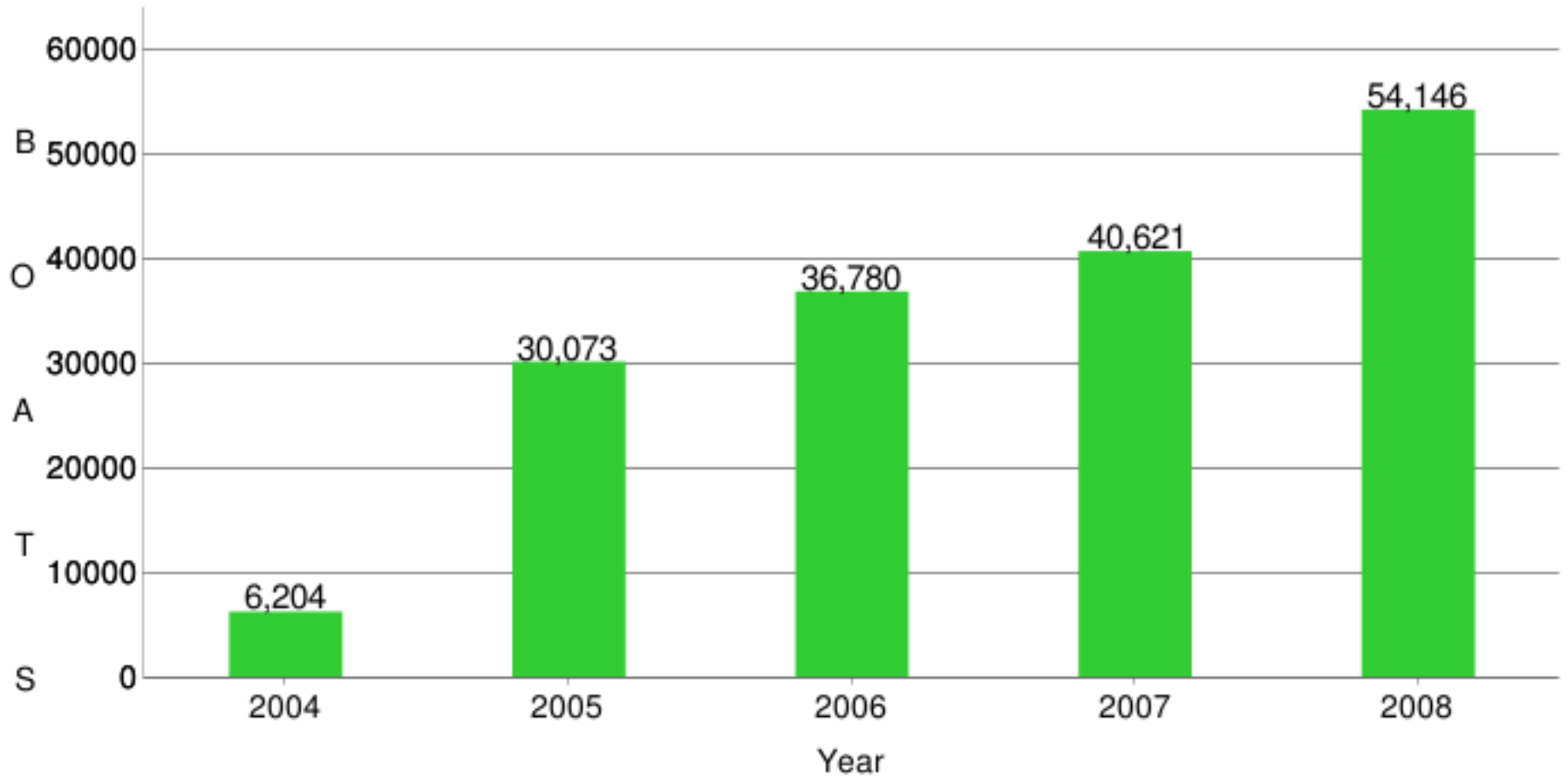


# Watercraft Inspection Data Trends in Boater Behaviors 2004-2008

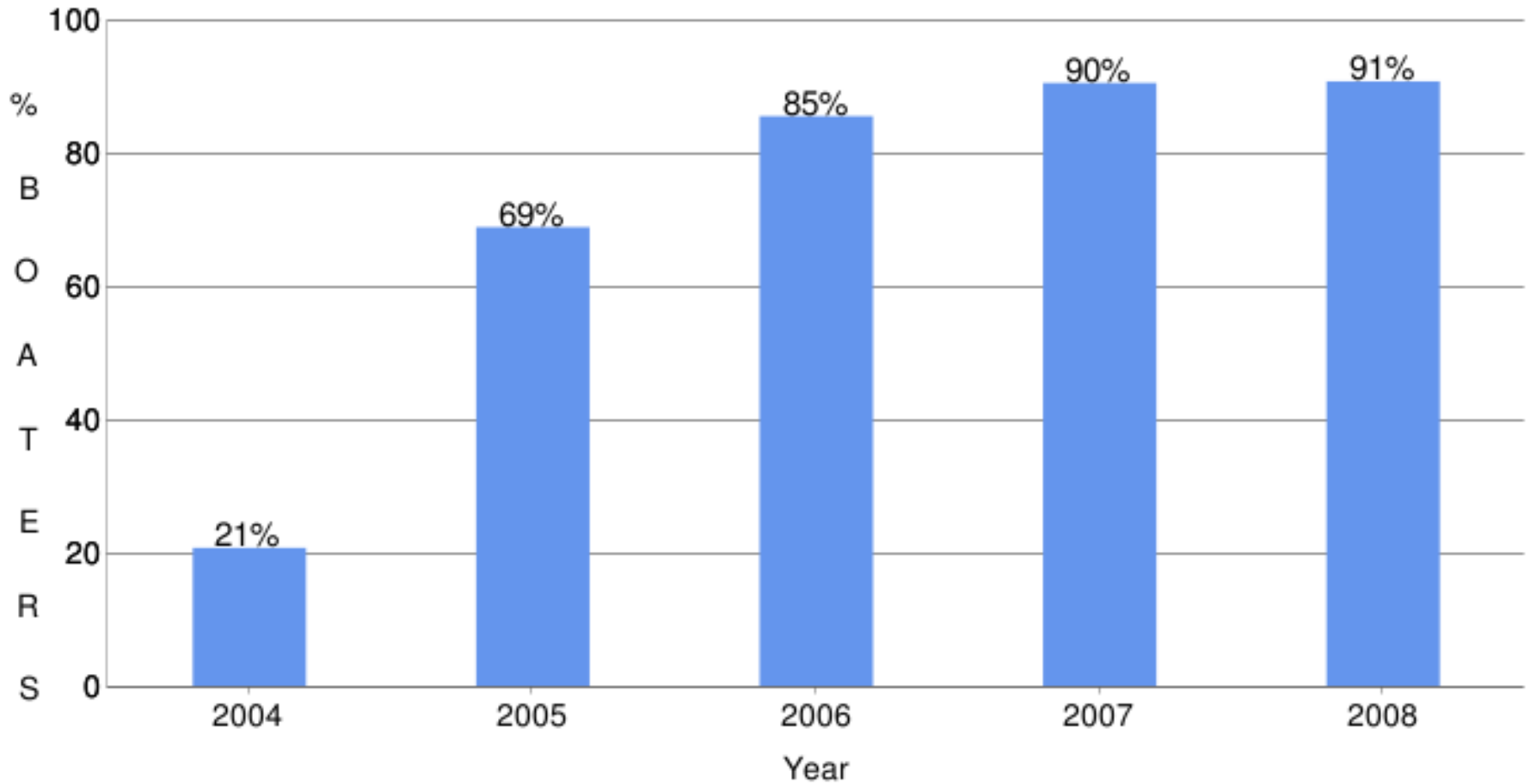
<http://www.dnr.state.wi.us/lakes/aisreport2008>



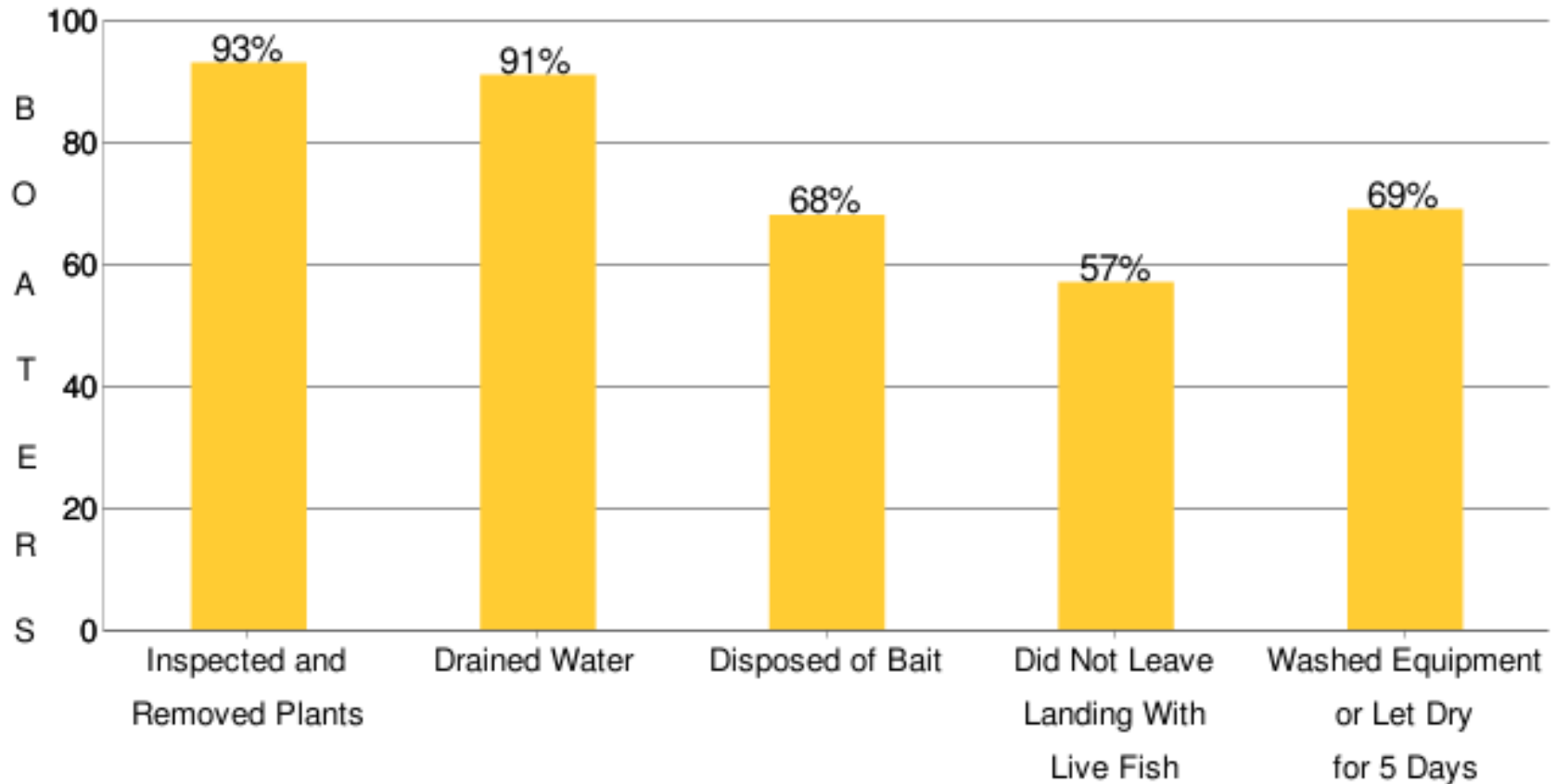
# Boats Inspected 2004-2008



# Boaters Aware of WI Stat. 30.715(2)(3) 2004-2008



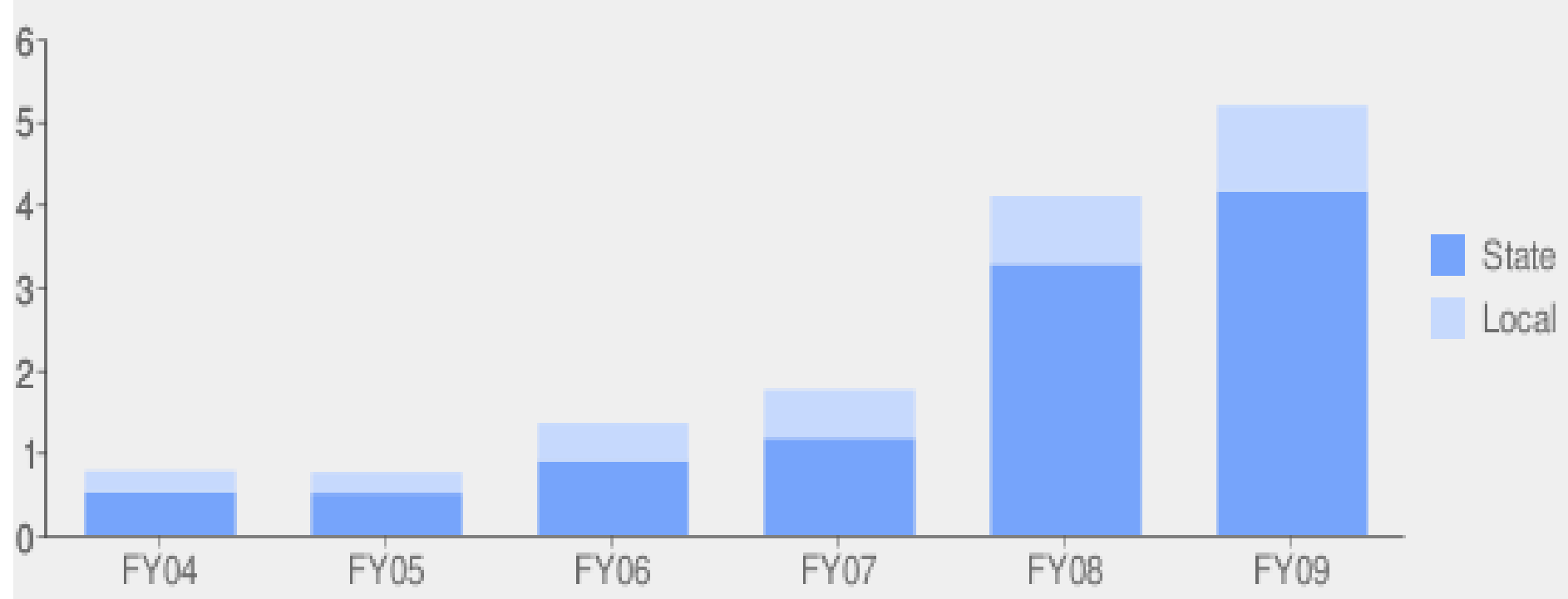
# Prevention Steps Taken By Boaters in 2008 (After Their Last Boating Trip)





# AIS Control Grant Awards

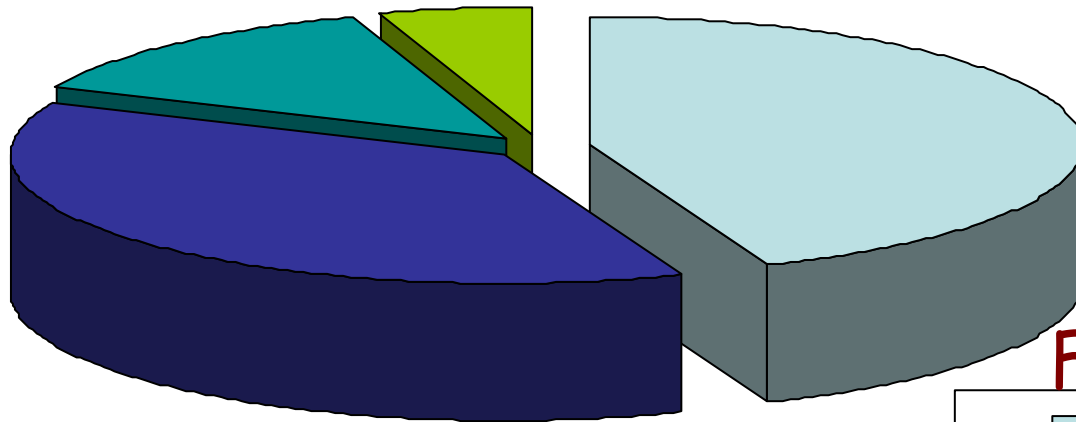
Grants Awarded by Fiscal Year (Millions of Dollars)



**Over \$20 Million Invested**



# Investment Distribution



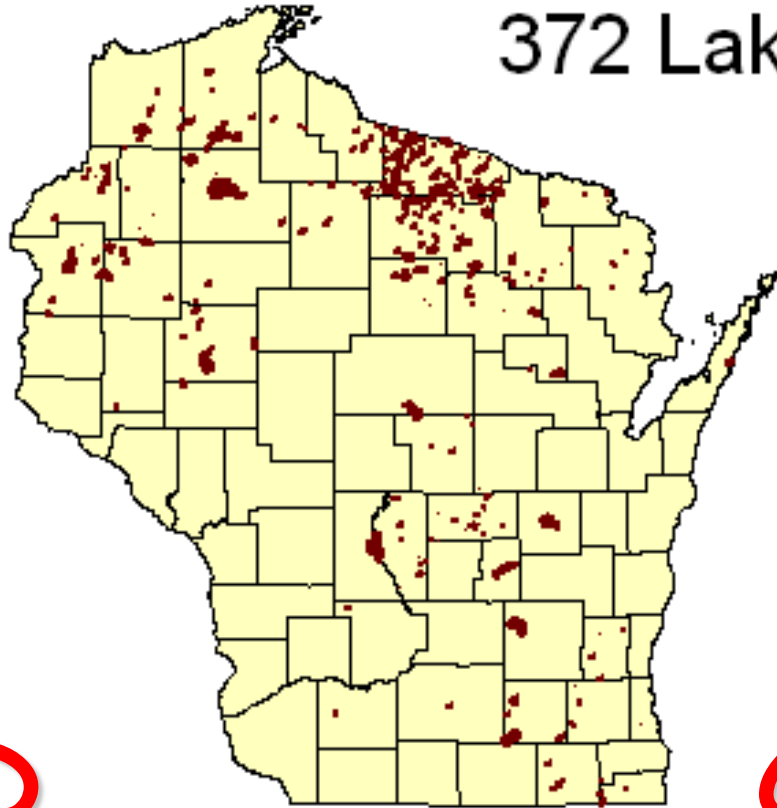
Fiscal Year 09

- Prevention
- Control Infestation
- Research & Demonstration
- Early Detection & Response

# Citizen AIS Monitoring Network



Lakes with Volunteers Monitoring for Aquatic Invasives

372 Lakes Total

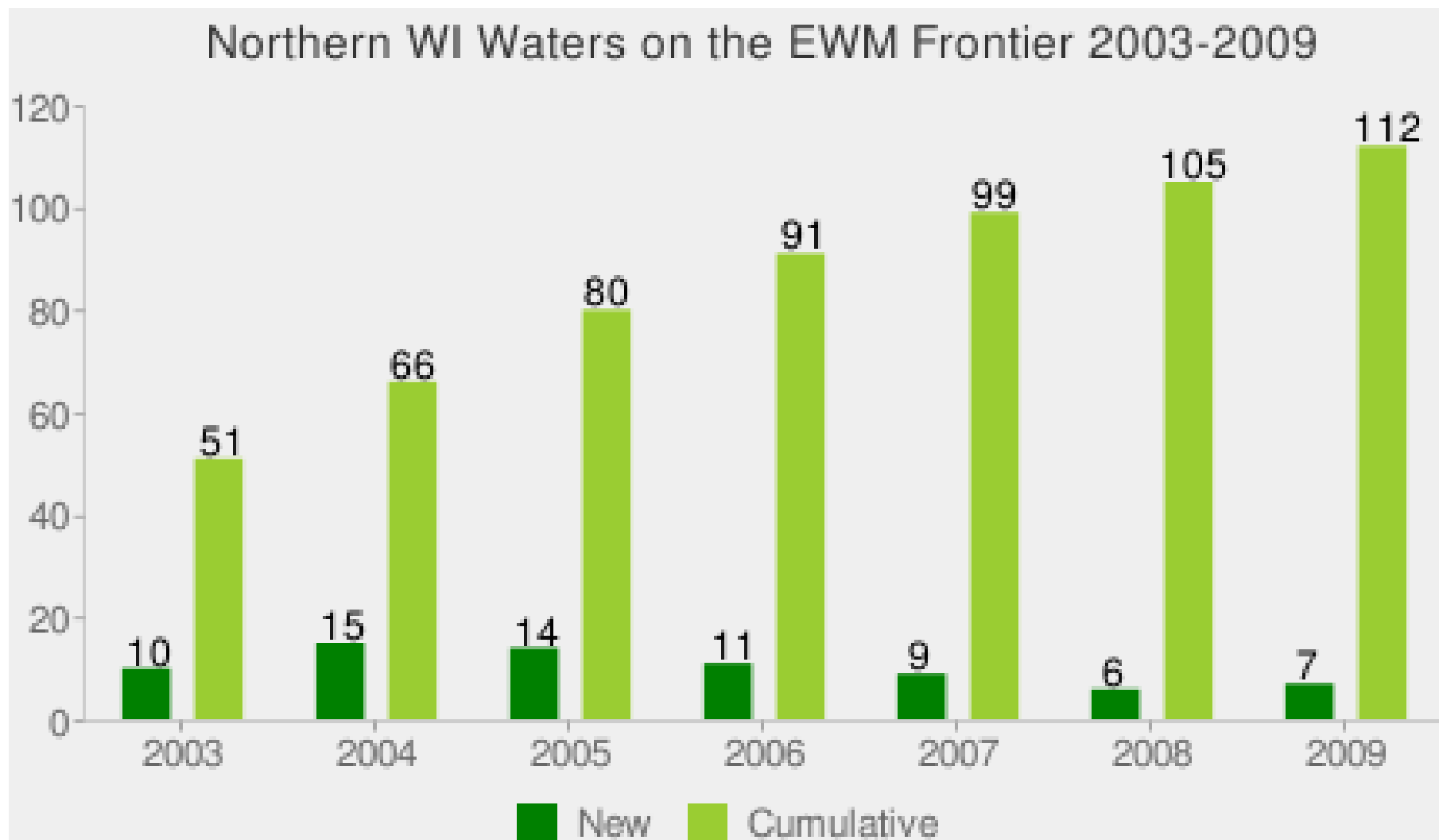


**Project RED**

**CLakeMN**

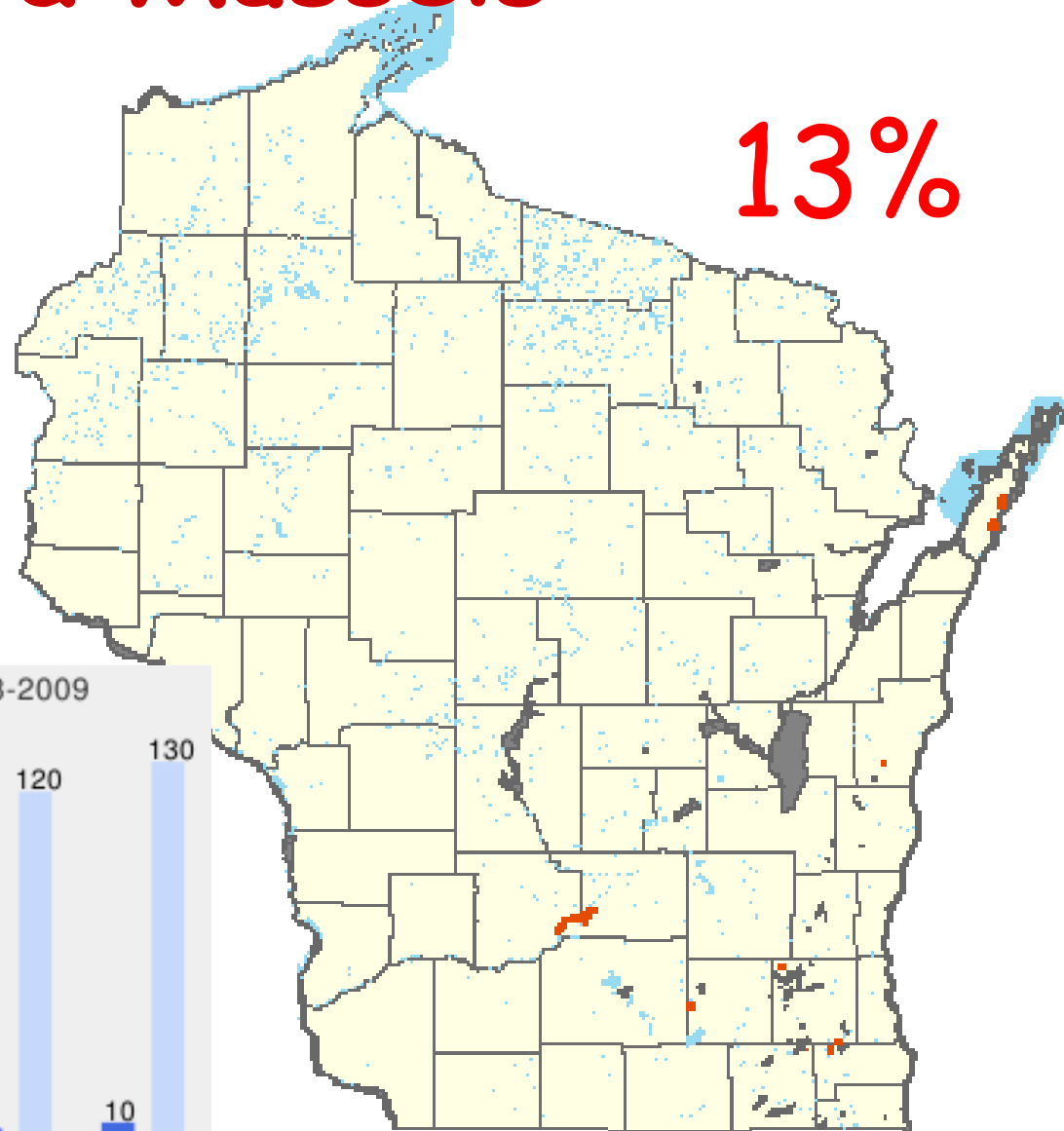
-  Lakes with Volunteers Monitoring Aquatic Invasives
-  Counties

# Eurasian Water Milfoil Trends Northern Region

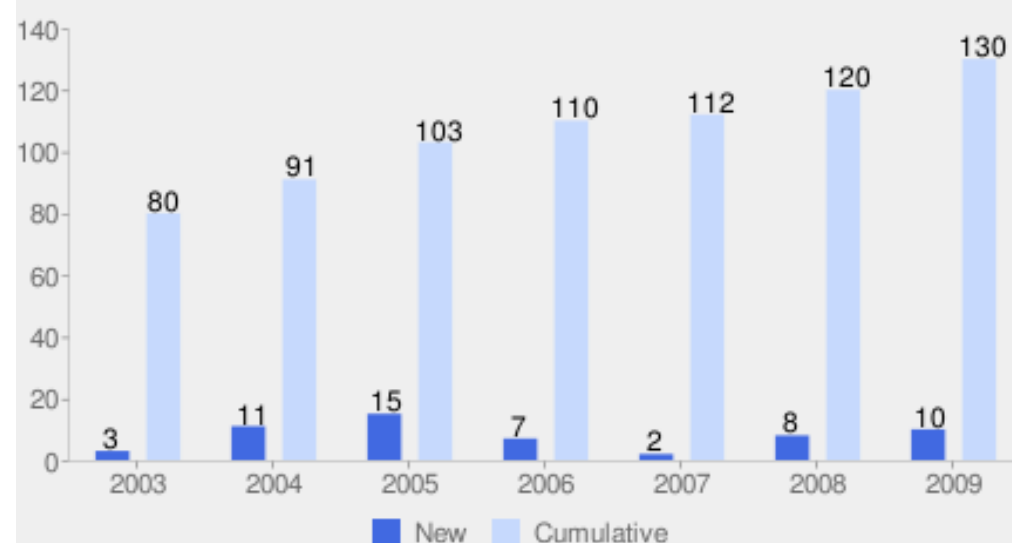




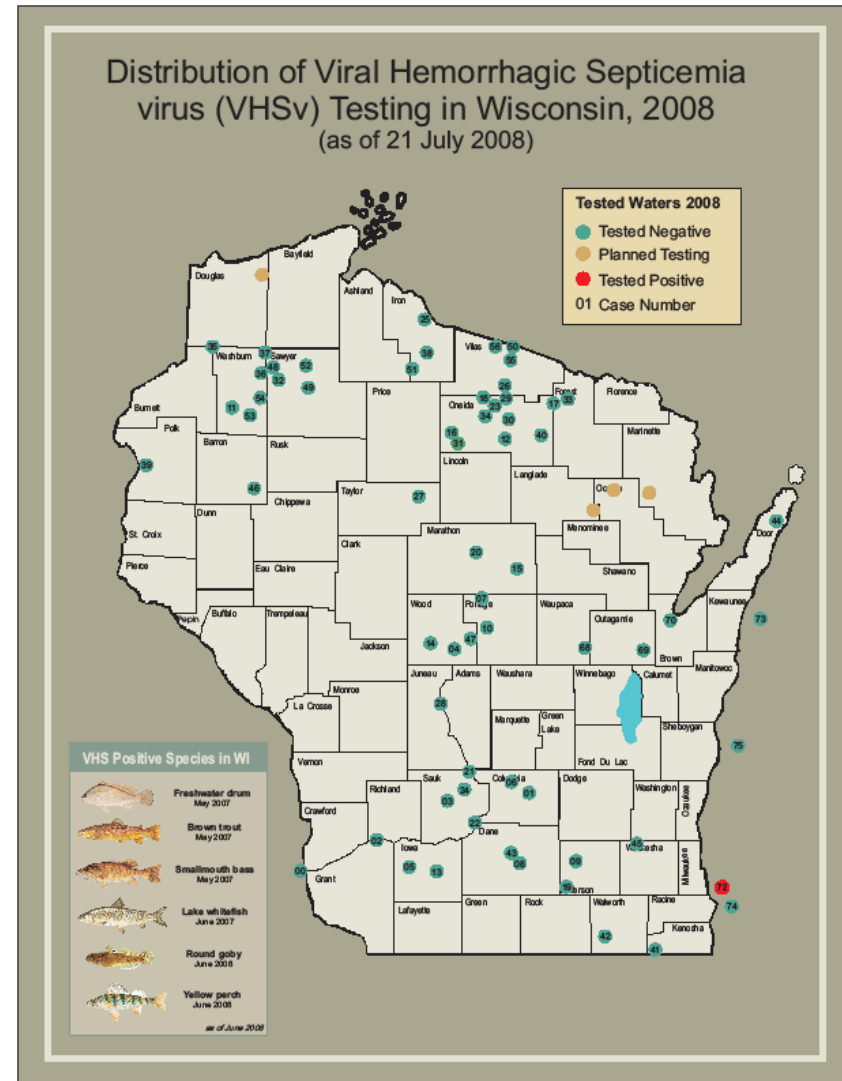
# Zebra Mussels



Statewide Zebra Mussel Infestations 2003-2009

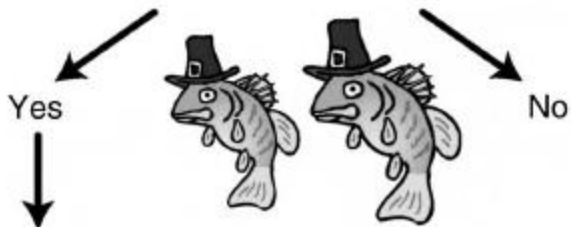


# VHS Distribution 2010



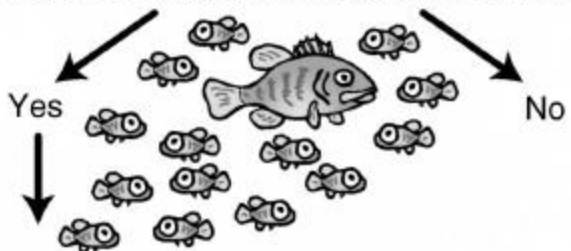
Colonization

Filter no. 1: Can invader colonists reach the new ecosystem?



Establishment

Filter no. 2: Can a self-sustaining population of the invader become established?



Impact

Filter no. 3: Will there be adverse impacts on native biota?



Not vulnerable;  
low priority lake

Vulnerable;  
high priority lake

# **Bolder Goals for 2010...**



- *Strengthen local, county and state partnership*
- *Create campaign to change behavior*
- *Enhance watercraft inspection*
- *Increase AIS monitoring/research*
- *Reduce new EWM, ZM, SWF invasions*
- *Contain VHS*
- *Assertive response to control EWM and Purple Loosestrife*
- *No new invasive species inland!*





# *Thank you for...*

Taking individual responsibility and leadership

To get informed, engaged and advocate for WI lakes

Strengthening your lake organization and  
Wisconsin Association of Lakes

Partnering with the State of Wisconsin

Lake protection grants

Aquatic invasive species control grants



## *...Protecting in Partnership!*