

# But Really, How Do We Protect Wisconsin's Water Resources into the Future?

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Healthy Waters Coordinator



# Overview & Acknowledgements

- Assessment tools
- Conservation planning tools
- Next steps towards a statewide Healthy Waters strategy

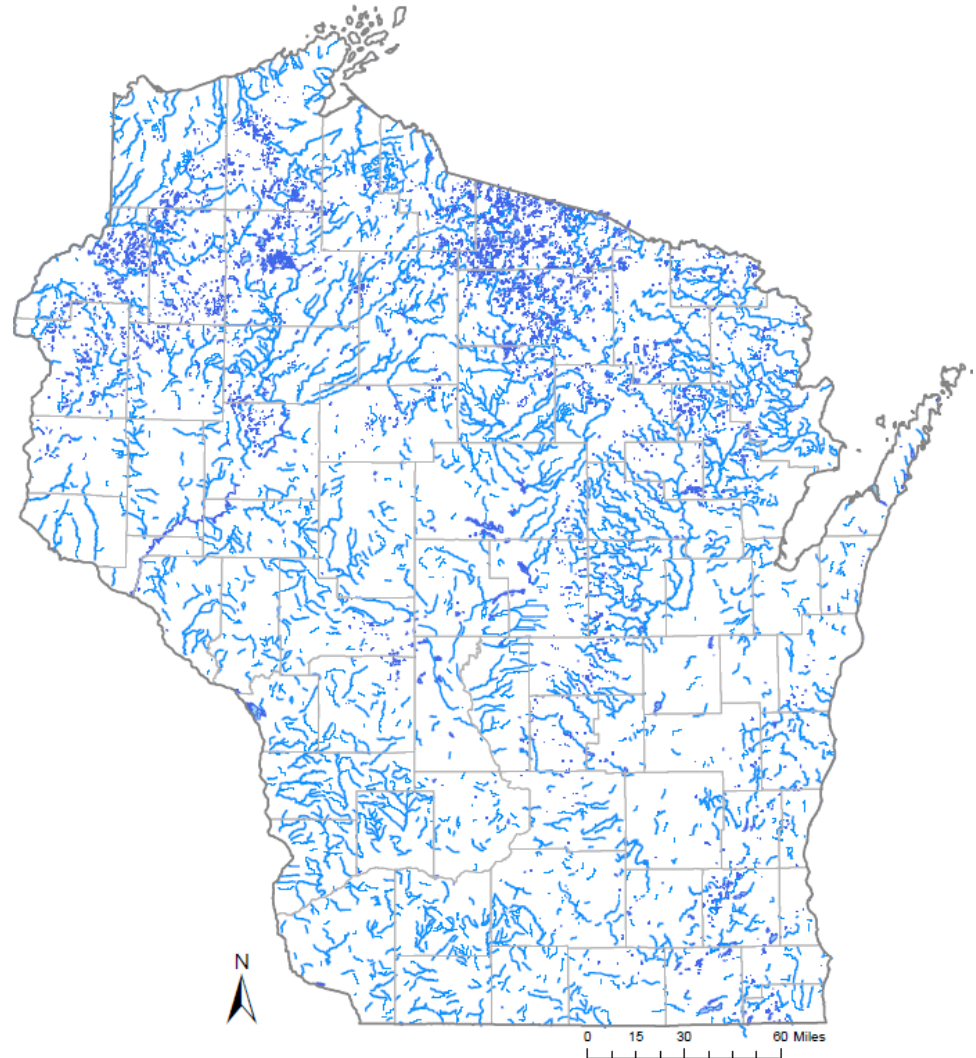
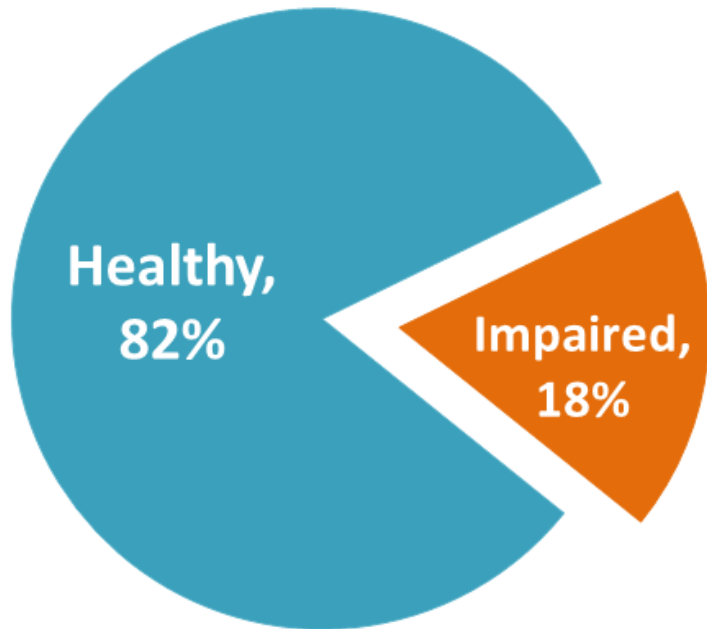
**Midwest Glacial Lakes Fish Habitat Partnership Science and Data Committee:** Kevin Wehrly, James Breck, Lyn Berquist, Arthur Cooper, Tim Cross, Gretchen Hansen, Peter Jacobson, Joe Nohner, Andrew Rypel, David Staples

**WDNR:** Ashley Beranek, Tom Bernthal, Katie Hein, Aaron Marti, Ali Mikulyuk, Mike Miller, Kristi Minahan

**The Nature Conservancy:** Nick Miller



82% of assessed\* lakes and streams are healthy!



**Legend**  
— Stream/River    Lake/Reservoir    County Boundary





# Clean Water Act (WisCALM) vs. National Lakes Assessment

## Clean Water Act

- 6 samples over 2 years
- All lakes sampled for any reason
- Wisconsin water quality criteria

## National Lakes Assessment

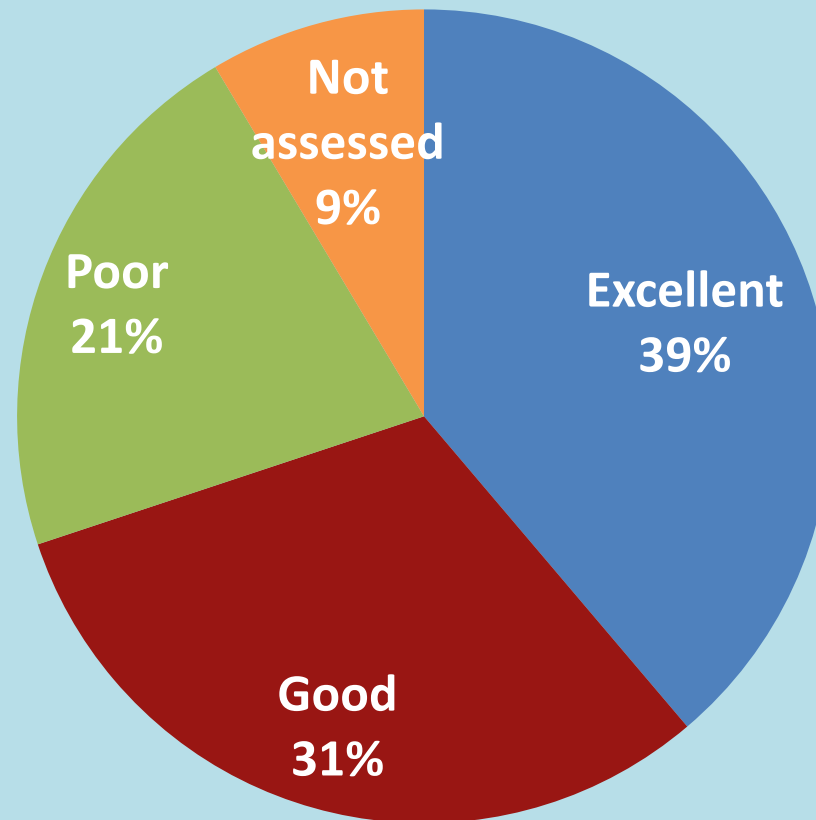
- Random sample
- 1 time sample
- Reference lakes in Upper Midwest

## Summary of Lake Health Indicators

Indicator	Moderate/Healthy Lakes
Phosphorus	79%
Nitrogen	91%
Chlorophyll <i>a</i>	52%
Algal Toxins	88 - 100%
Plants: Phosphorus	66%
Plants: Disturbance	79%
Atrazine	100%

Most Wisconsin aquatic plant communities are in excellent or good condition.

General condition assessment

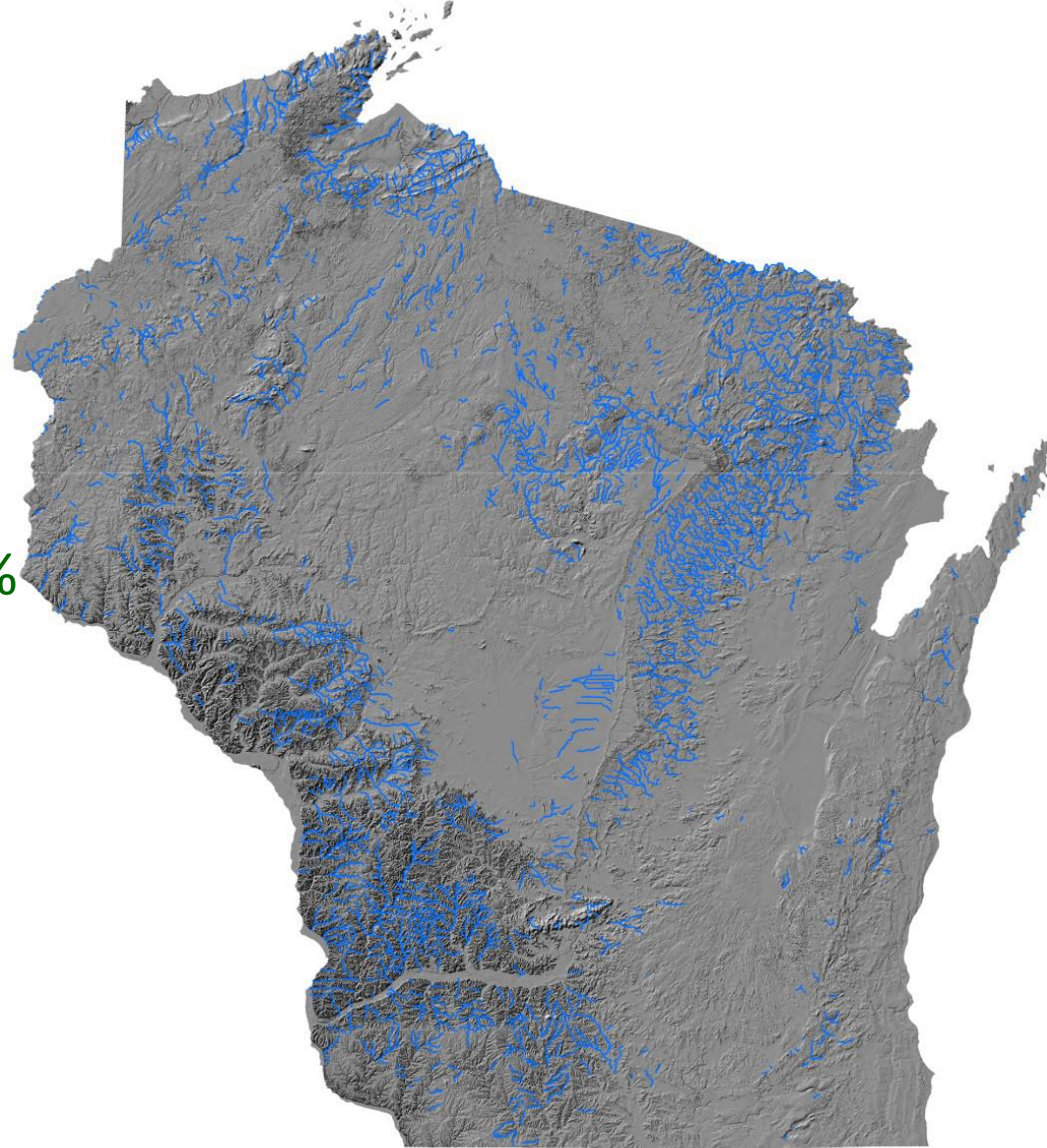




**Half of Wisconsin river and stream miles have “good” biological assemblages compared to 26% nationally.**

**24% “good” phosphorus concentrations in state vs. 18% nationally.**

**42% of riparian vegetation is “good” condition vs. 59% nationally.**





**50%**

of Wisconsin's wetlands have been lost since the late 1800s.

**~15%**

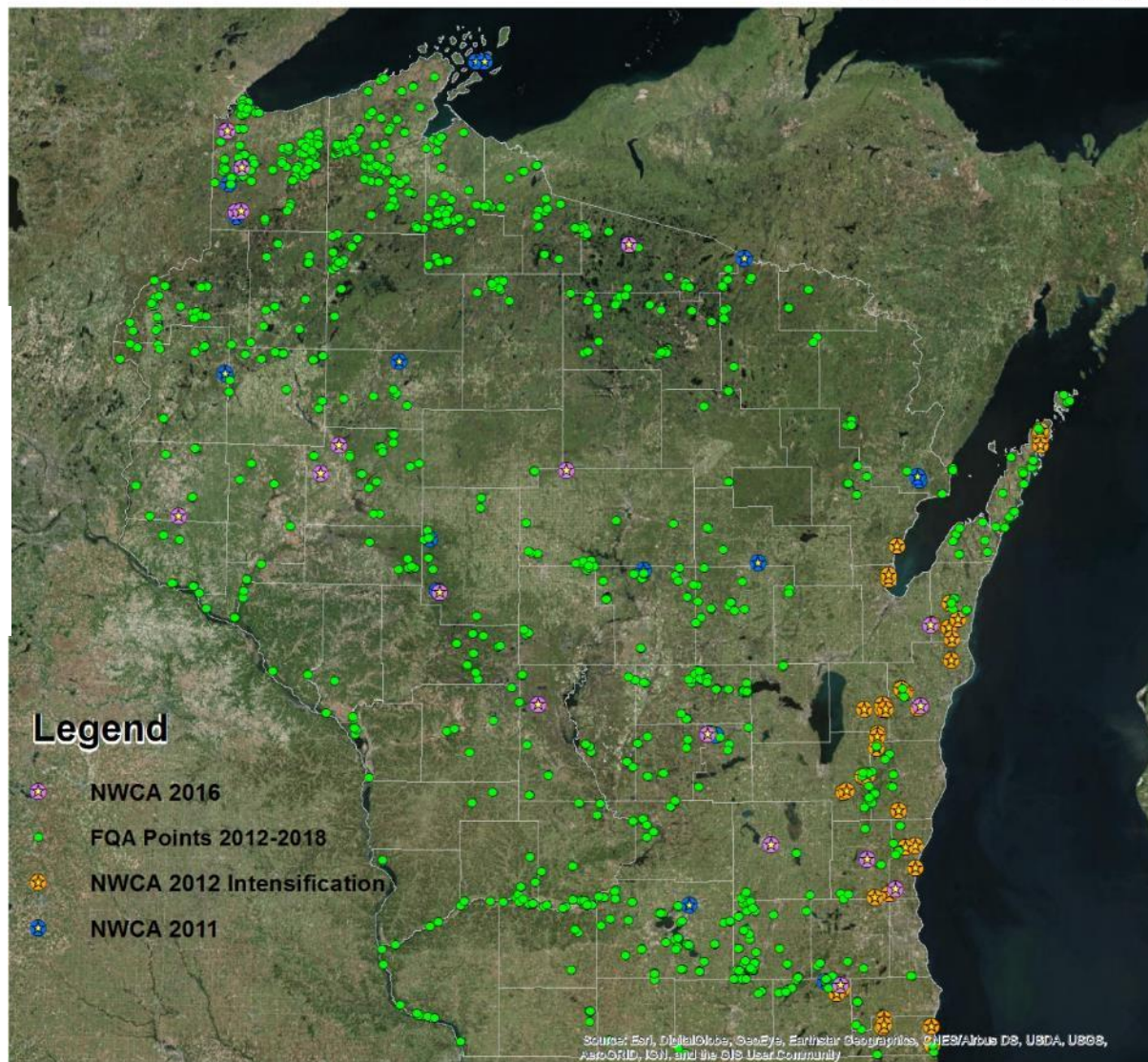
of Wisconsin is currently wetlands.

**3/4**

of Wisconsin's wildlife species depend on wetlands.

## DNR WQ Assessed Wetlands 2011 - 2018

1090 FQA Surveys  
96 NARS NWCA Surveys



# Assessment Take-Homes

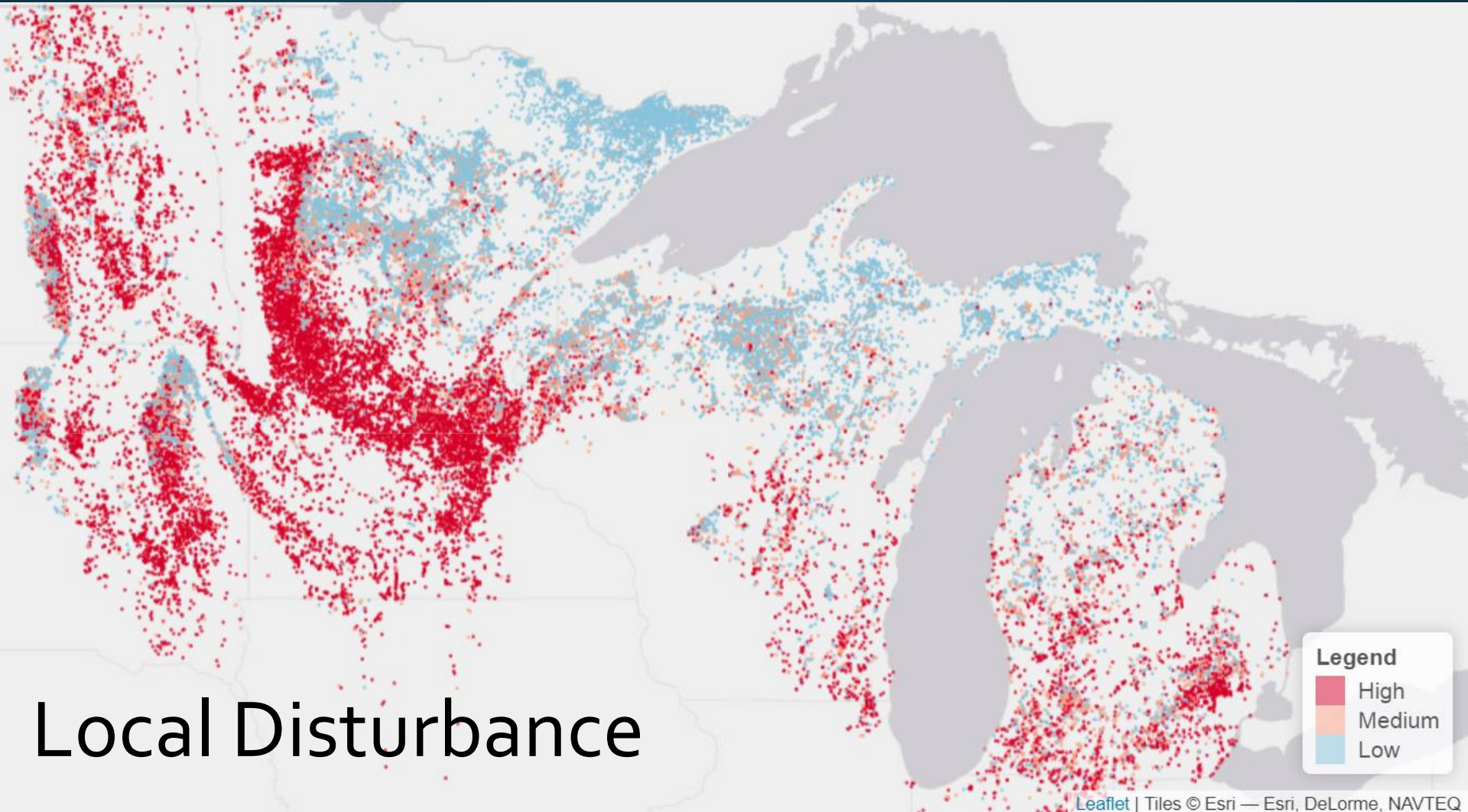
- Majority of lakes are healthy for nutrient and habitat measurements.
- Minority of streams are healthy for nutrients (TP + N) and habitat.
- The gradient of health declines by resource type: Lakes > Rivers + Streams > Wetlands.
- The current condition of Wisconsin waters is rich and variable.





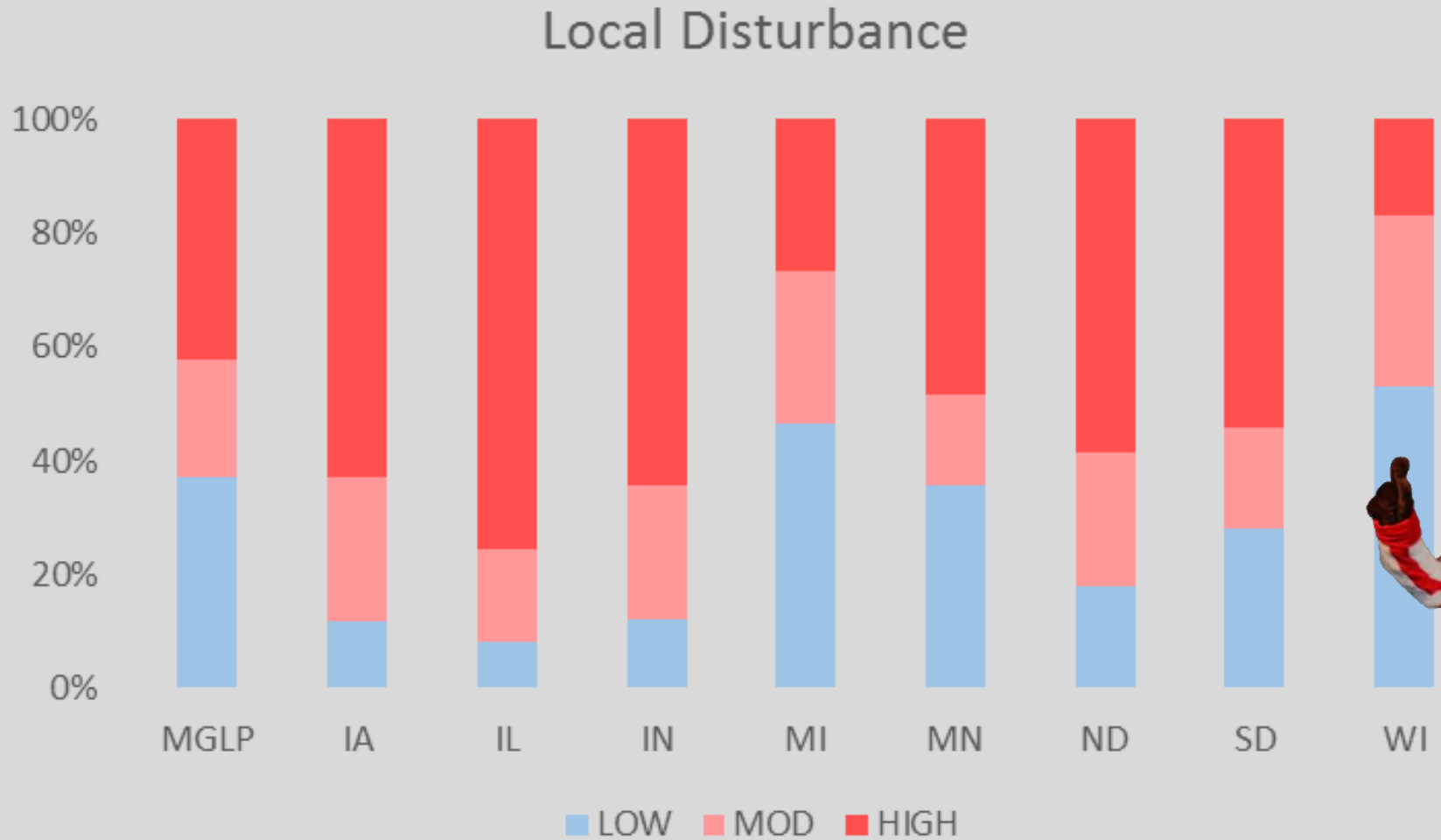
# Conservation Planning Tools

Midwest Glacial Lakes Fish Habitat Partnership



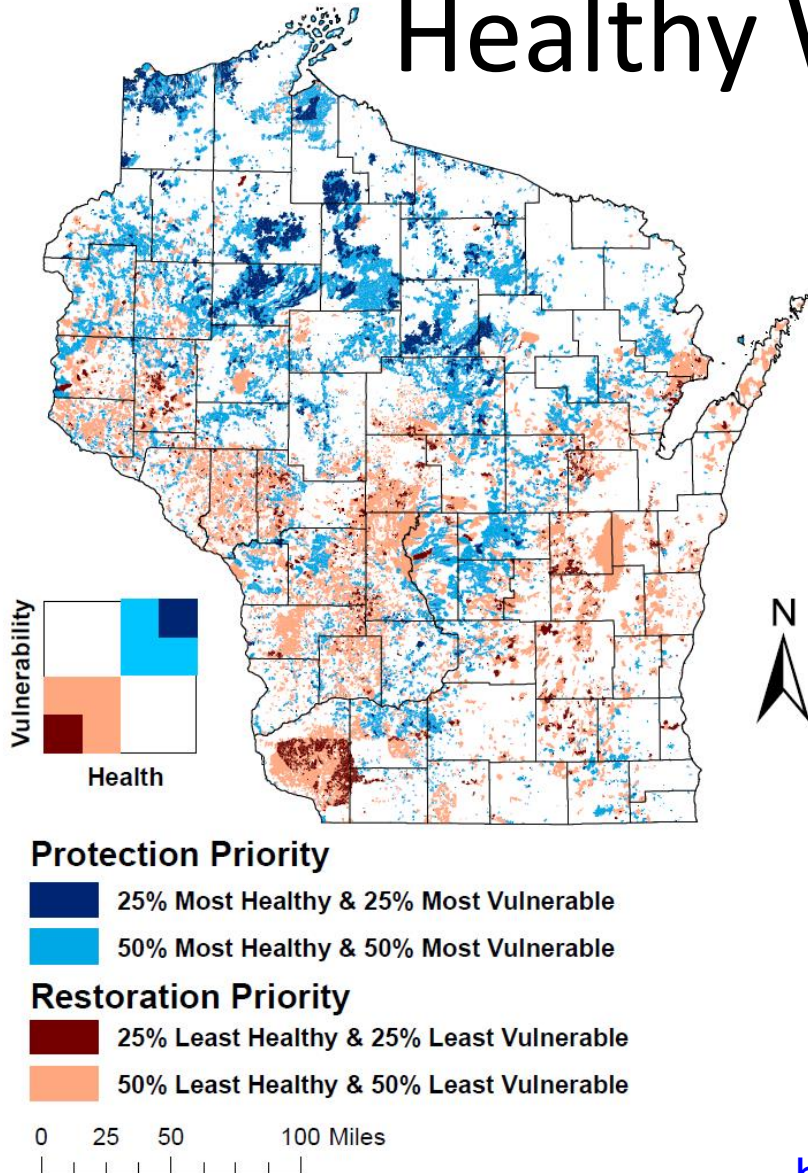


# Conservation Planning Tools



# Conservation Planning Tools

## Healthy Watersheds



- Renewed emphasis on collecting baseline data in “healthy but vulnerable” watersheds
- Priority for DNR monitoring projects
- Weight given to areas with active capacity for implementing protection activities

<https://dnr.wi.gov/topic/watersheds/hwa.html>



*Wetlands & Watersheds Explorer*

Mukwonago River 12-digit Sub-Watershed has the most loss, where are some large Potentially Restorable Wetlands areas to examine?



*Protection Opportunities*

*Restoration Opportunities*

**Wetlands by Design: A Watershed Approach** Wisconsin's Waters, Wetlands and Watersheds

**Wetlands and Watersheds Explorer**

What would you like to do?

[Explain Each Section](#) [View Report](#)

**Selected Watersheds:**  
 Full Extent - *Hover over names to see HU code*  
 HUC 6 Watershed: Upper Illinois  
 HUC 8 Watershed: Upper Fox  
 HUC 10 Watershed: Mukwonago River  
 HUC 12 Watershed: Mukwonago River

**Choose Service to Compare Sites:**

- Count of Services ≥ High
- Nitrogen Reduction
- Flood Abatement
- Surface Water Supply
- Fish and Aquatic Habitat
- Shoreline Protection
- Phosphorus Retention
- Carbon Storage
- Sediment Retention
- Floristic Integrity

Opaque  Transparent

**View Wetland Wildlife Habitat:**

- All Guilds
- Shallow Marsh Guild
- Forest Interior Guild
- Open Waters Guild
- Shrub Swamp Guild
- All-Guild Restoration Opportunities

Opaque  Transparent

Click on individual wetland sites to see how they compare to others in this watershed.

**Map Legend**

- HUC - 12 - Boundary
- Current Wetlands - Count of Services ≥ High
  - 7-9
  - 4-6
  - 1-3
  - 0
- Potentially Restorable Wetlands - Count of Services ≥ High
  - 7-8
  - 4-6
  - 1-3
  - 0

Esri, HERE, Garmin, NGA, USGS, NPS

[www.wetlandsbydesign.com](http://www.wetlandsbydesign.com)







# How do we define “healthy”?

Surrounded by permanently protected public lands

Rare biodiversity, including animal communities and habitat

High quality or exceptional based on defined water quality criteria

Not impaired

No known impact/Unmonitored

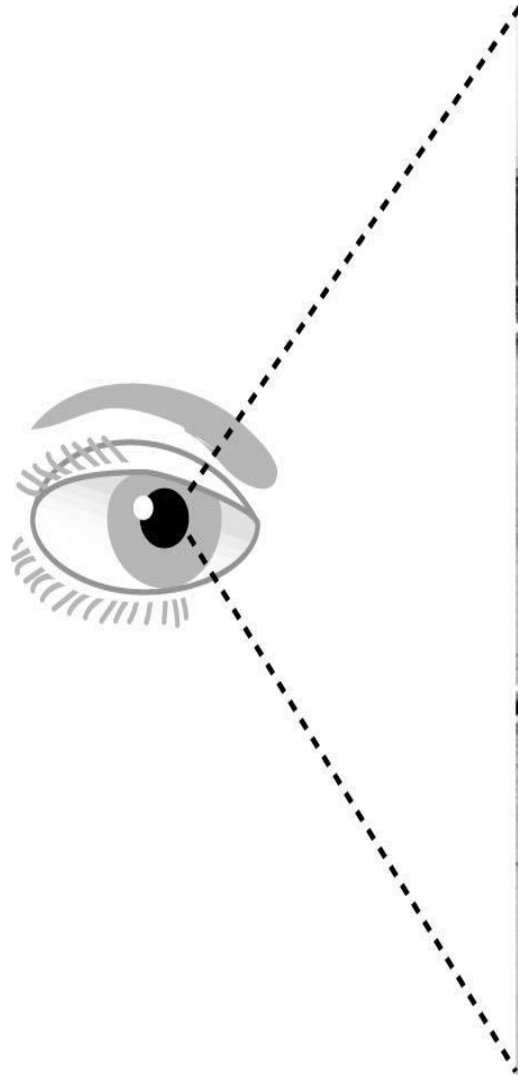


# How do we protect healthy waters?





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# Questions & Discussion

WISCONSIN  
DEPT. OF NATURAL RESOURCES