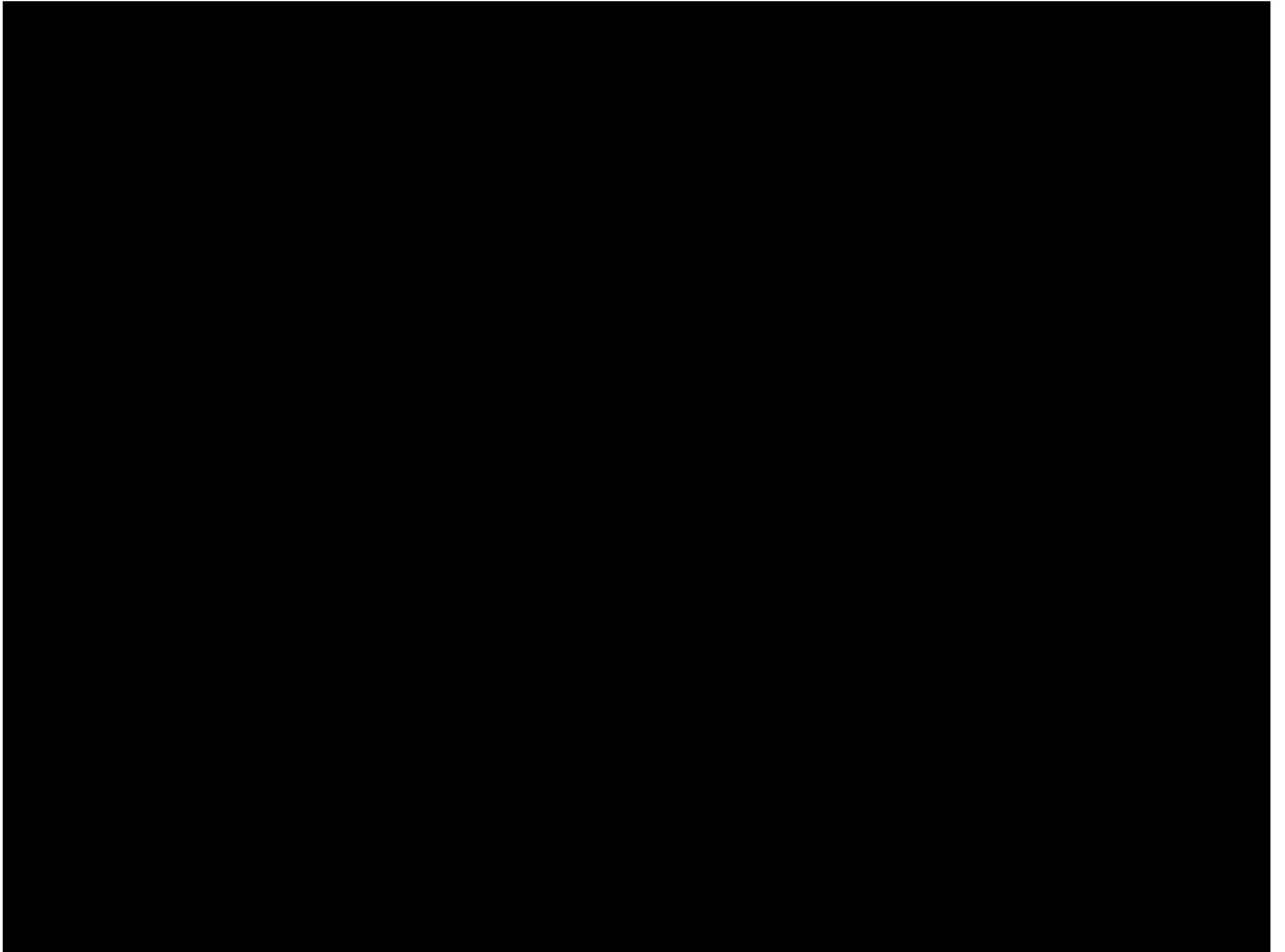


# *Lessons from the long view: Long-term research in Wisconsin lakes*

Jessica Corman  
UW-Madison  
jcorman@wisc.edu  
 limnojess







Lake Mendota  
January 18<sup>th</sup>, 2016



Lake Mendota  
January 18<sup>th</sup>, 2016

Lake froze = Jan. 11<sup>th</sup>  
Lake opened = March 13<sup>th</sup>





Lake Mendota  
January 18<sup>th</sup>, 2016

Lake froze = Jan. 11<sup>th</sup>  
Lake opened = March 13<sup>th</sup>

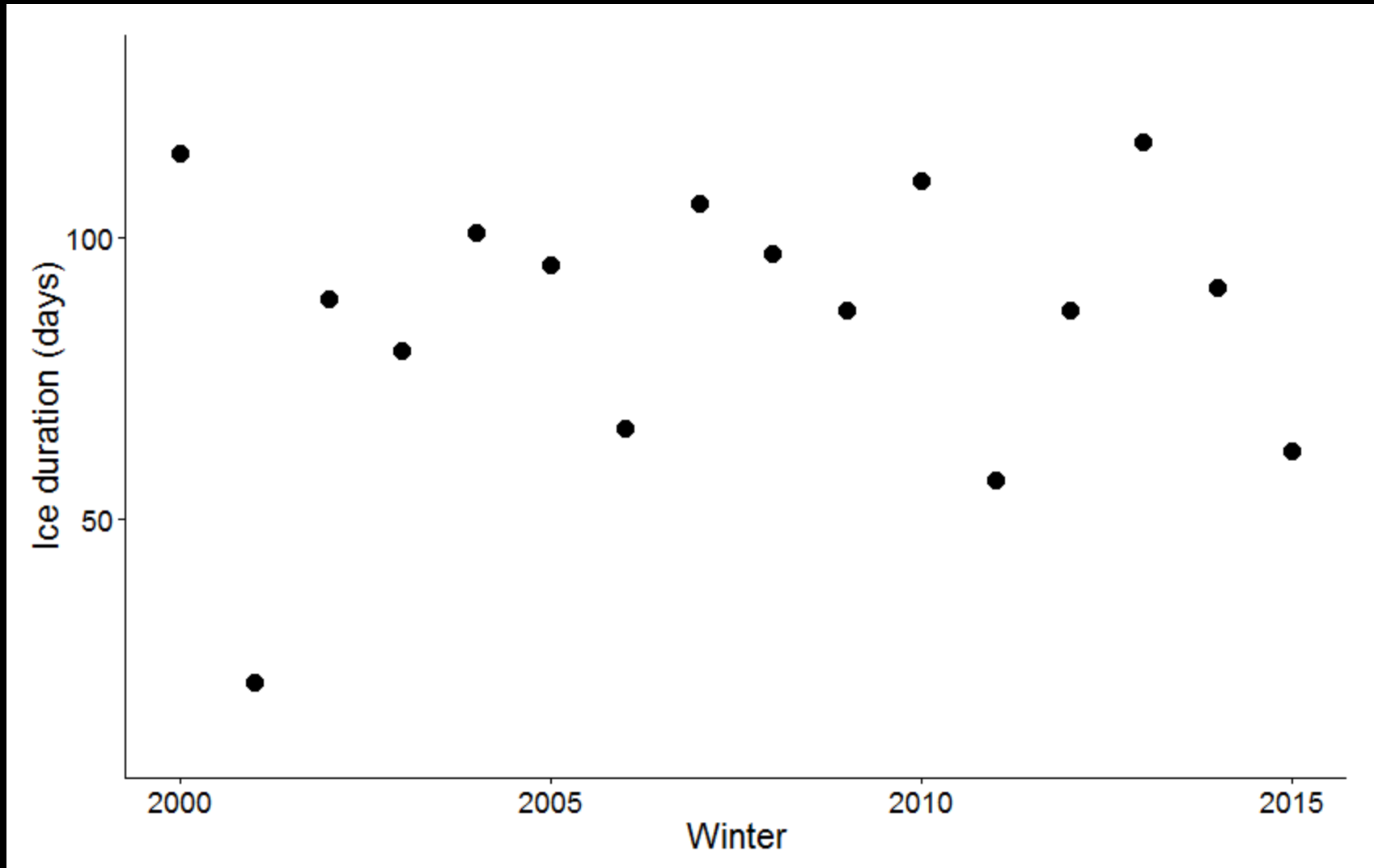


62 days of ice



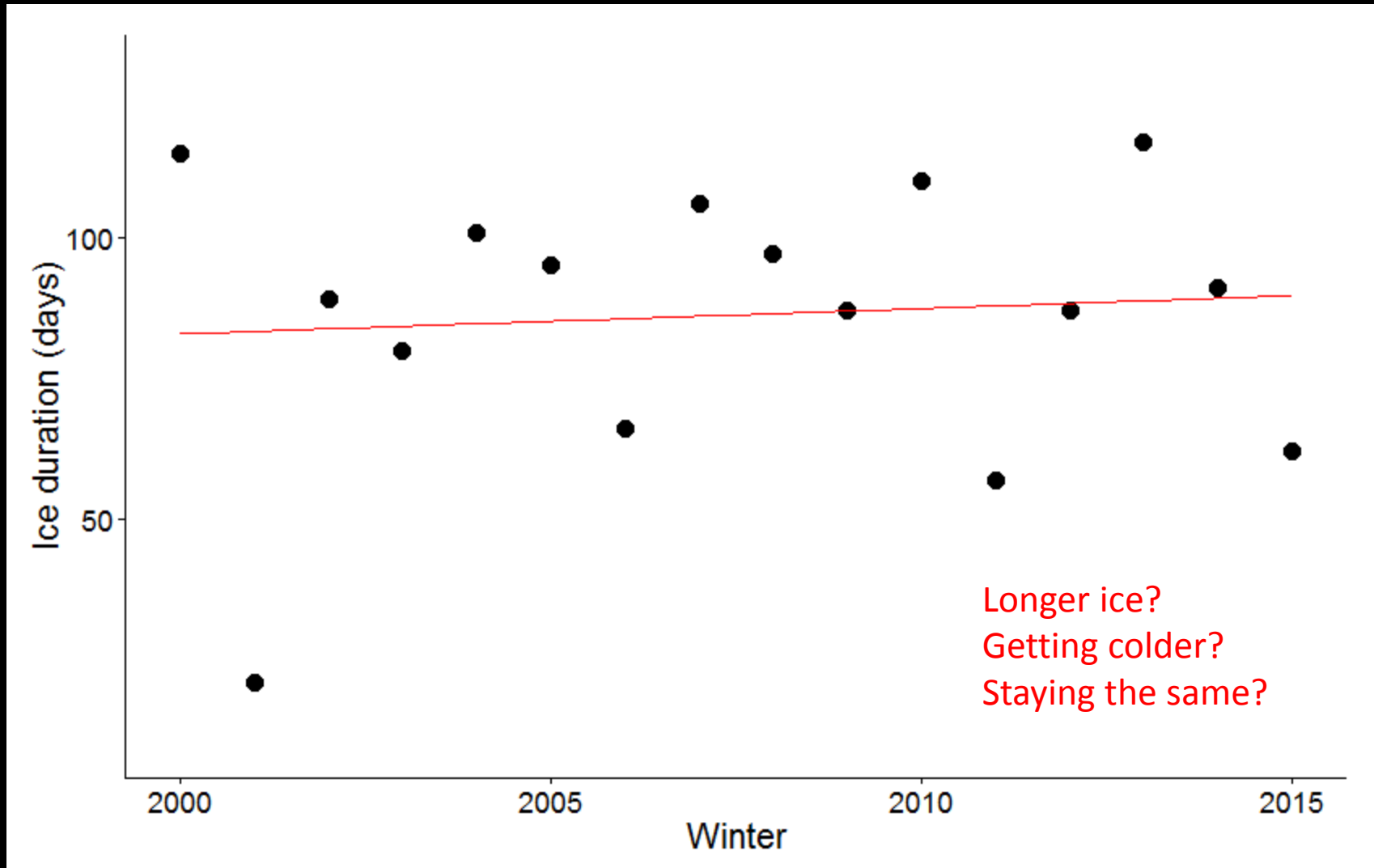


# 15-year record of lake ice on Lake Mendota



*Data from WI State Climatology Office*

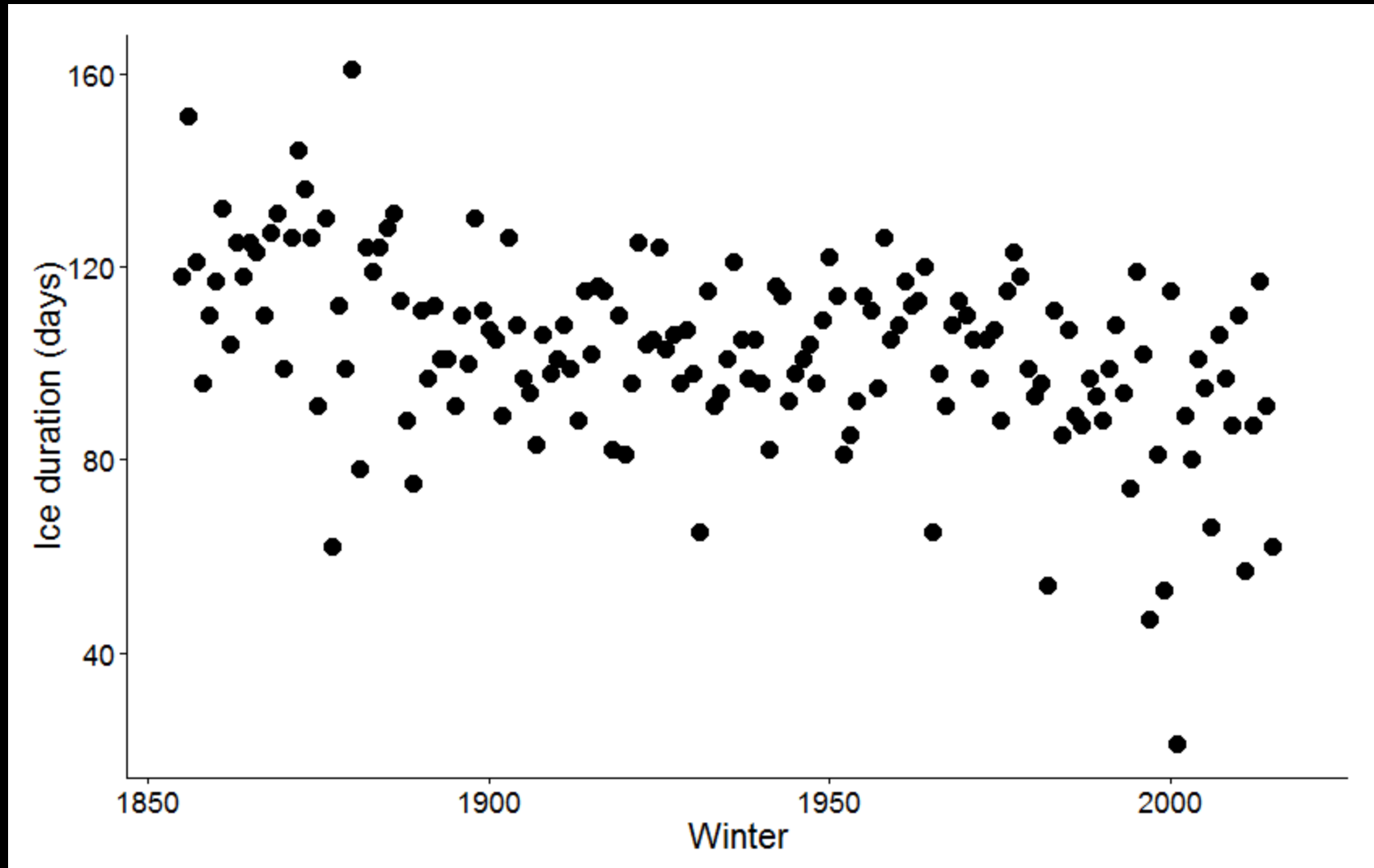
# 15-year record of lake ice on Lake Mendota



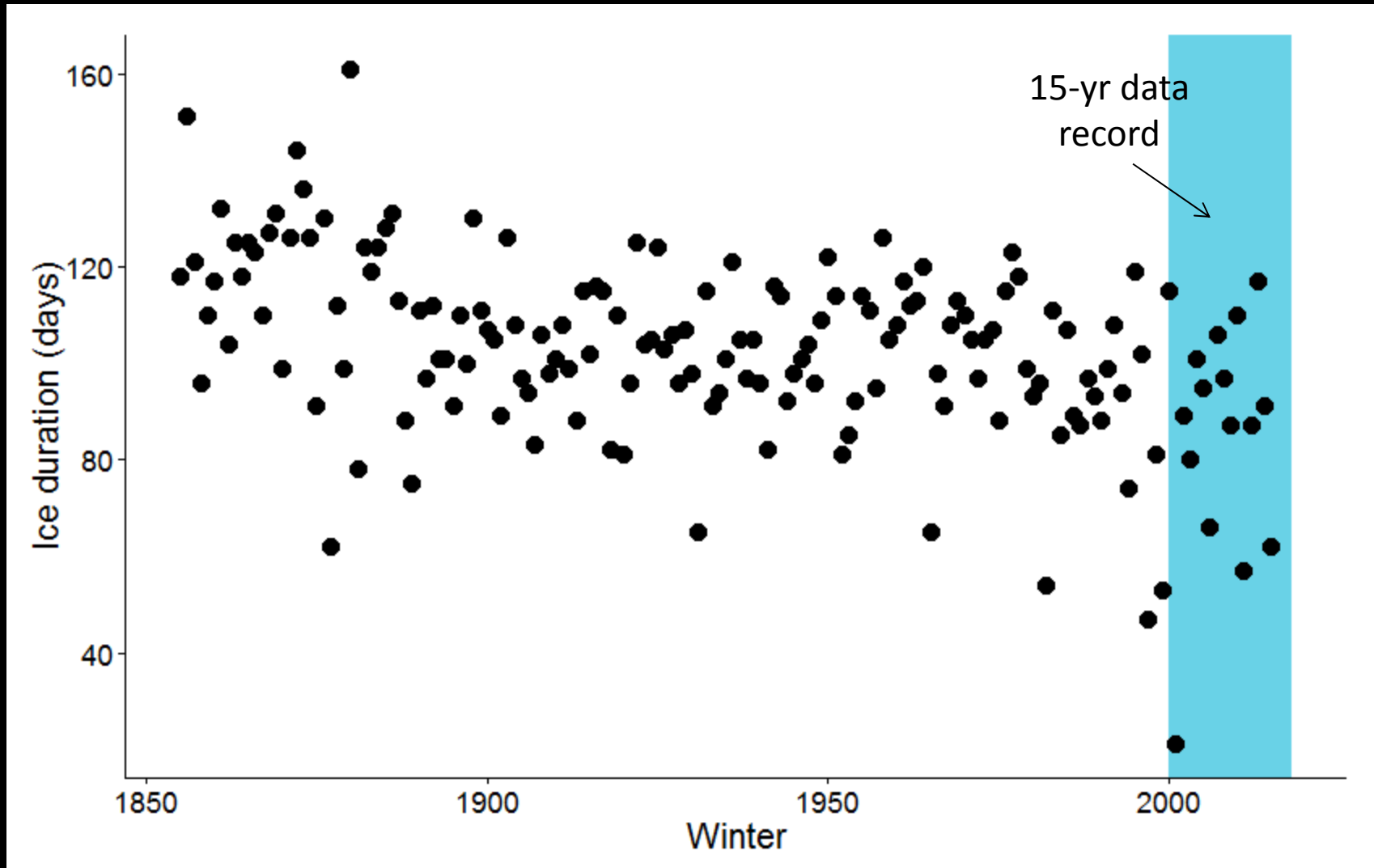
*Data from WI State Climatology Office*



# 130-year record of lake ice on Lake Mendota

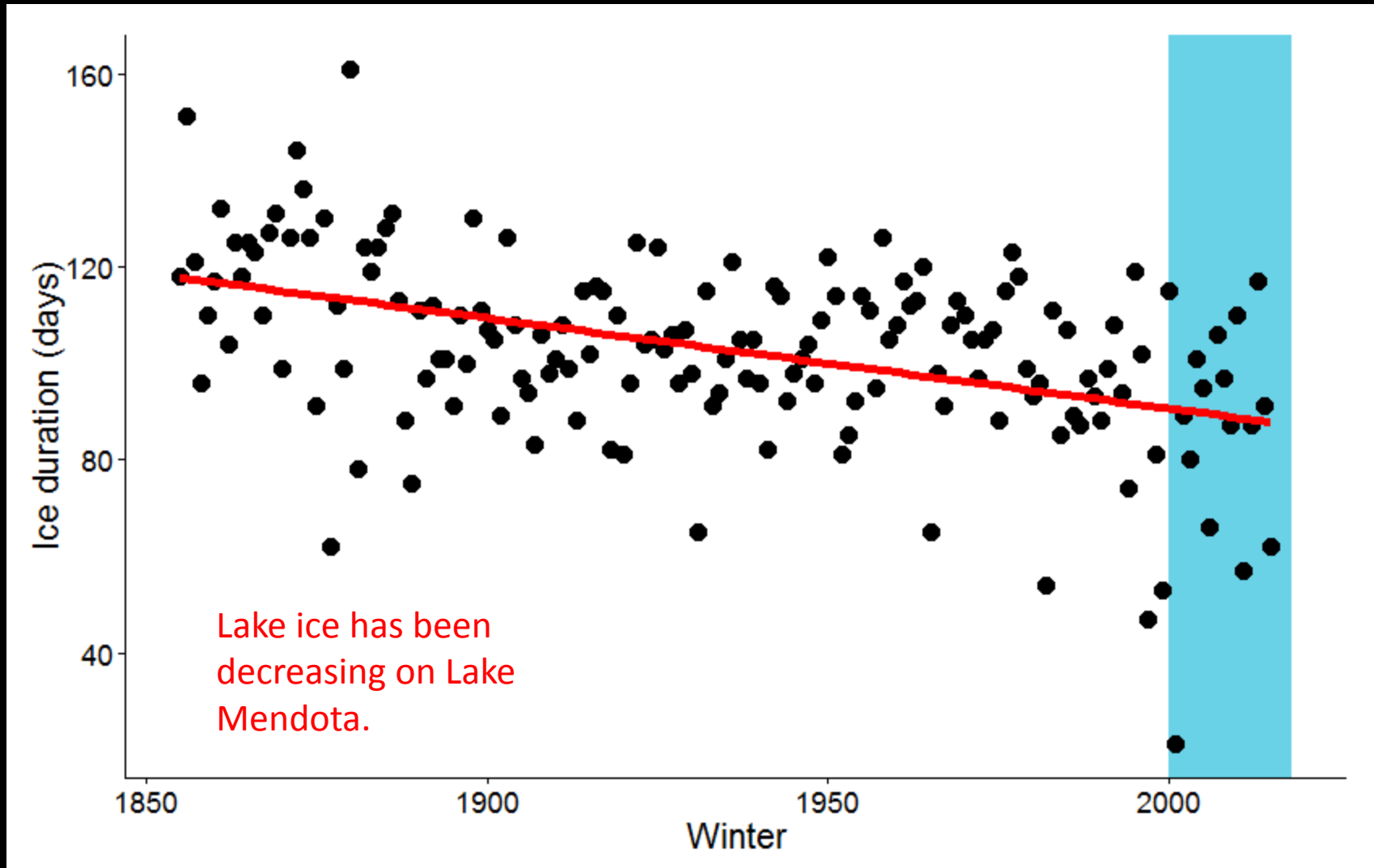


# 130-year record of lake ice on Lake Mendota



*Data from WI State Climatology Office*

# 130-year record of lake ice on Lake Mendota



*Data from WI State Climatology Office*

# “The Invisible Present”

- Difficult to study processes on scales from years to decades
- Most ecological processes occur on time scales of years to decades
- Ecology (and limnology!) needs long-term data!



John Magnuson,  
University of Wisconsin-Madison

*“In the absence of long term research, serious misjudgments can occur in attempts to manage the environment.”*

Limnology = the study of inland waters



Welcome to  
**North Temperate Lakes  
Long Term Ecological Research**



<http://lter.limnology.wisc.edu>



# Reasons for long-term research

National Science Foundation 1980

- Capture phenomena at scales  $>3$  yrs
- Detect LT trends/changes that may be under way (cycles vs. directional change)
- Providing a context for short-term work
- Be more comprehensive in variables being measured
- Ongoing habitat degradation

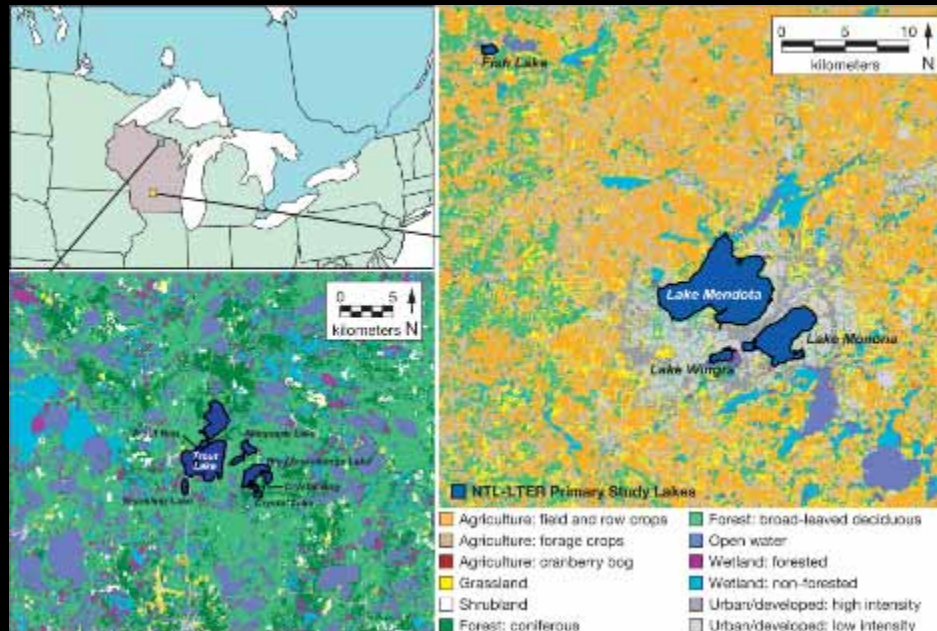
LTER



# North Temperate Lakes LTER

How do climate, social-ecological interactions, land use and cover, and ecological processes act in concert to shape the past, present, and future of lake districts?

Northern Highlands  
Lakes District  
(NHLD)



Yahara  
Lakes District  
(YLD)



- Long-term research
  - 7 NHLD lakes since 1986
  - 4 YLD lakes since 2000
  - And some historic data
  - Physical, chemical, biological, social variables
- Comparative studies
- Modeling and synthesis
- Whole-ecosystem experiments



*Photos from [limnology.wisc.edu/blog](http://limnology.wisc.edu/blog)*



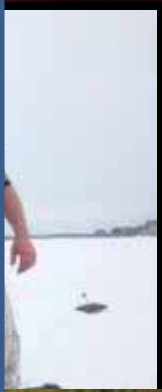
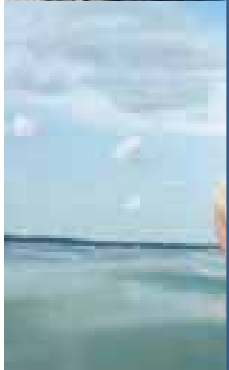


...and many more!



Emily Stanley  
UW-Madison  
Center for Limnology

LTER Lead PI  
(2009 – present)





How can you be involved?





When a scientist comes knocking on your door...

*Photo from [limnology.wisc.edu/blog](http://limnology.wisc.edu/blog)*

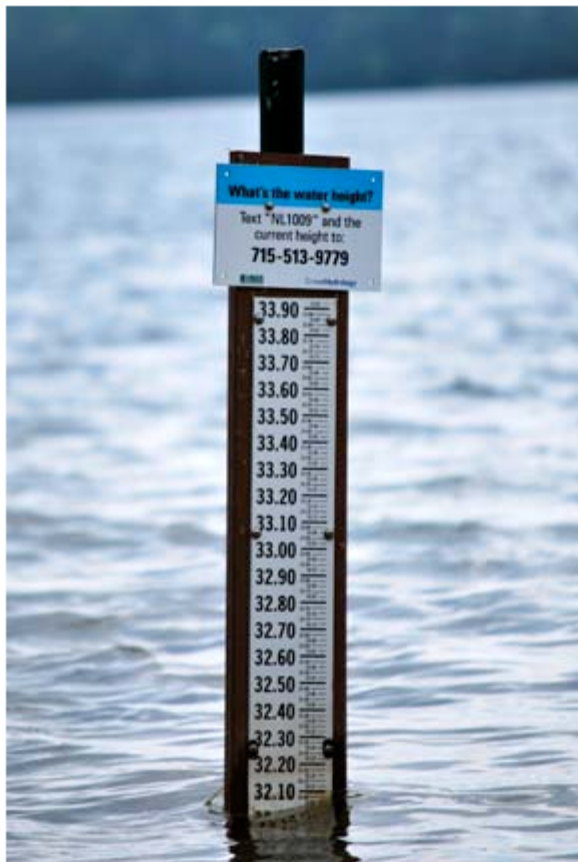


# Citizen scientist monitoring efforts: Lake Level Change

Wisconsin lakes: [www.lakechange.org](http://www.lakechange.org)

Other Northeast lakes: <http://crowdhydrology.geology.buffalo.edu/>

## Here is how you can help:



The North Temperate Lake Long-Term Ecological Research project has placed these lake gauges in the Trout Lake area north of Minoqua, WI. Specifically, they are in [Allequash Lake](#), [Big Muskellunge Lake](#), [Crystal Lake](#), [Escanaba Lake](#), [Nebish Lake](#), [Palette Lake](#), and [Sparkling Lake](#).

Each gauge has a sign like this on the right. There is a phone number and a gauge number. You can text the gauge number and the gauge height to that phone number:



If you would like to install a gauge and monitor your own lake, please consider contributing to our effort and contact us at [webmaster@ter.limnology.wisc.edu](mailto:webmaster@ter.limnology.wisc.edu)

# Real-time data



**North Temperate Lakes** Long Term Ecological Research

Member of the US LTER Network

About Data Res

Search this site:

- Lake Information System
- [Wisconsin Lake Levels](#)
  - [NTL Lake Map](#)
  - [NTL Lakes](#)

[Home](#) » [Wisconsin Lake Levels](#)

## Lake Water Levels, Wisconsin

Current lake levels above or below their long term median



Blue = lake level high | Red = lake level low

### Historic Lake Levels

- [Allequash Lake](#) (NTL Data)
- [Allequash Lake](#) (Volunteer Data)
- [Anvil Lake](#) (USGS Data)
- [Berry Lake](#) (USGS Data)
- [Big Muskellunge Lake](#) (NTL Data)
- [Big Muskellunge Lake](#) (Volunteer Data)
- [Crystal Bog](#) (NTL Data)
- [Crystal Lake](#) (NTL Data)
- [Devils Lake](#) (USGS Data)
- [Escanaba Lake](#) (Volunteer Data)
- [Geneva Lake](#) (USGS Data)
- [Lac Vieux](#) (USGS Data)
- [Lake Huron Plainfield](#) (USGS Data)
- [Lake Kegonsa](#) (USGS Data)
- [Lake Koshkonong](#) (USGS Data)
- [Lake Mendota](#) (USGS Data)
- [Lake Monona](#) (USGS Data)
- [Lake Waubesa](#) (USGS Data)



Thank you!

