Using CSLAP Data to Guide Lake Management on an Adirondack Lake

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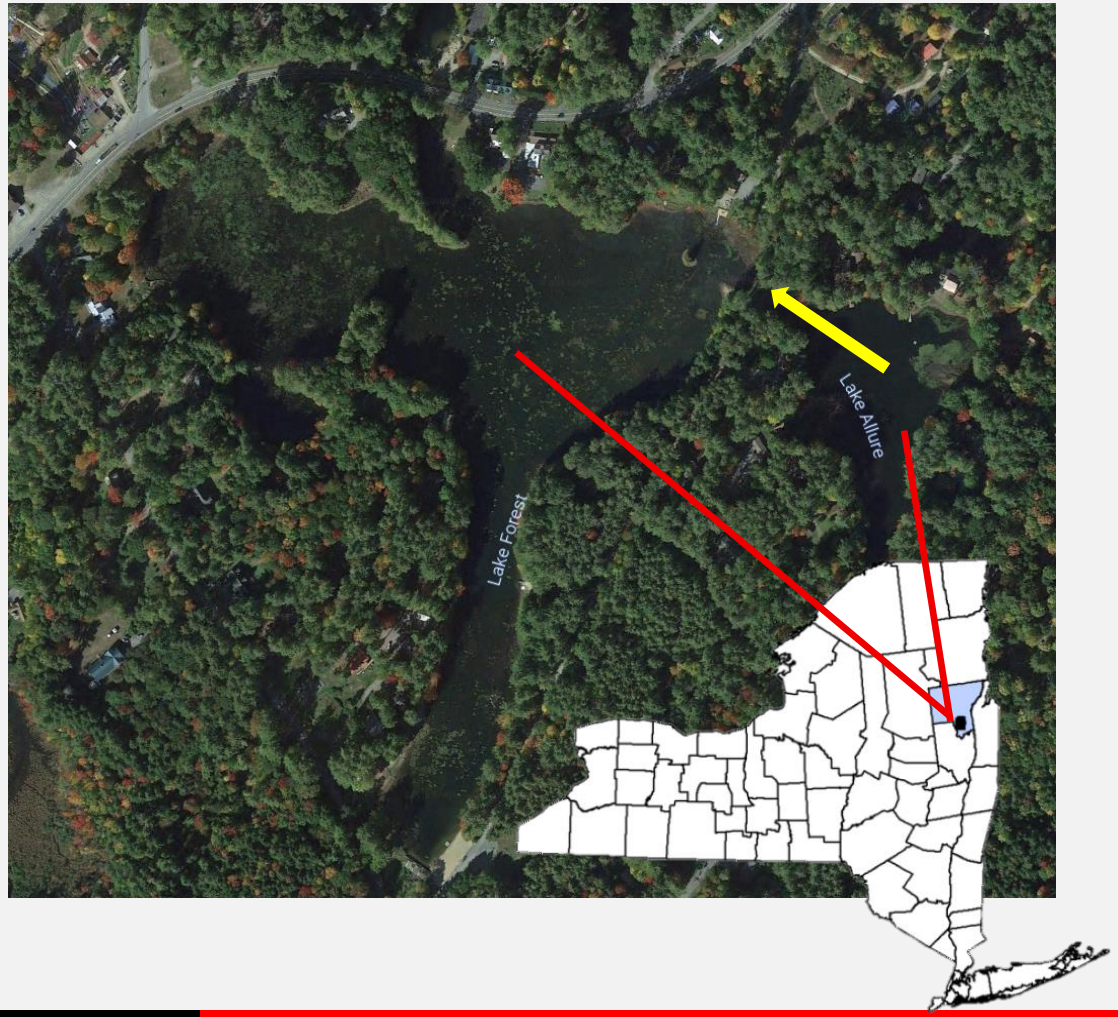
Lake Forest and Allure

Study Site

- Lake Forest and Lake Allure
- Northwoods Lake Association
- Private Lakes
- Citizens Statewide Lake Assessment Program (CSLAP) Data on Lake Forest

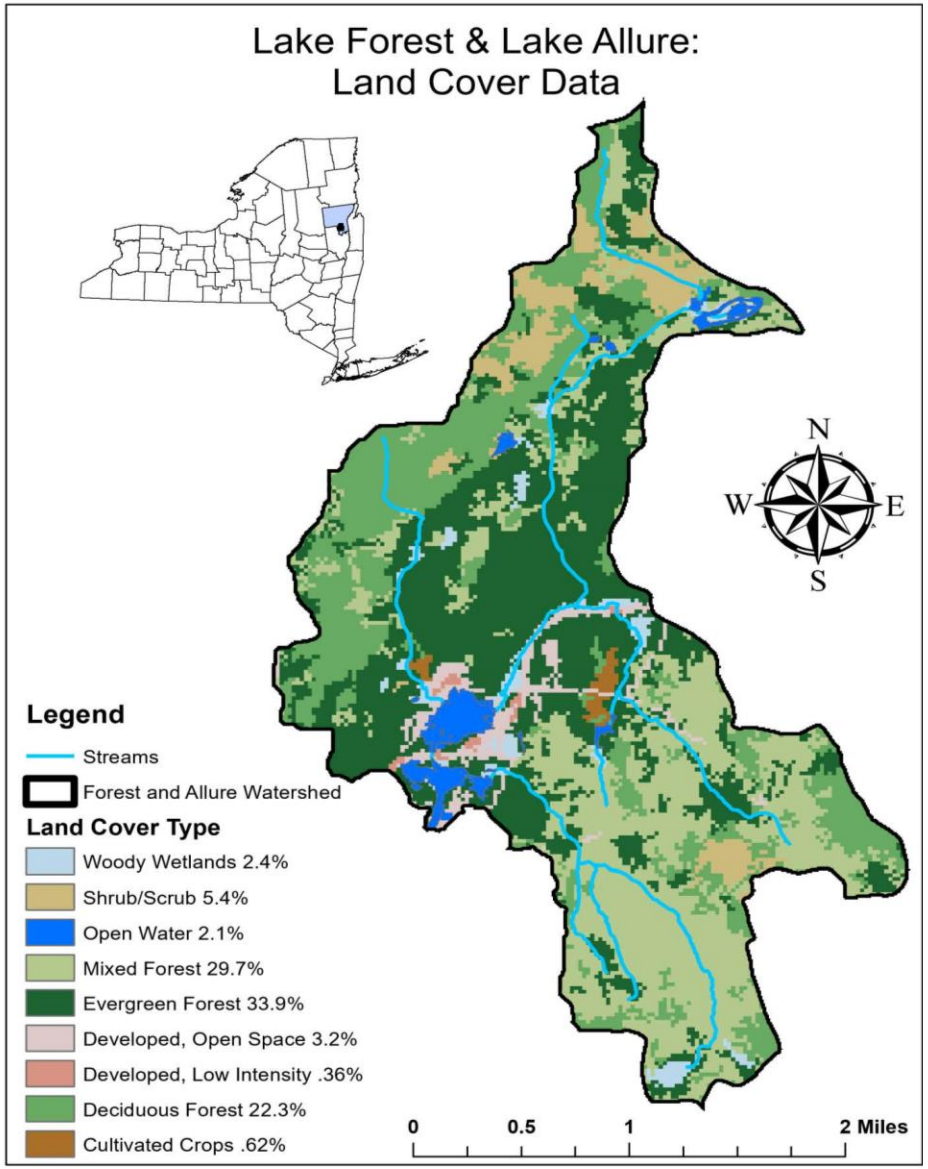


Lake Characteristics

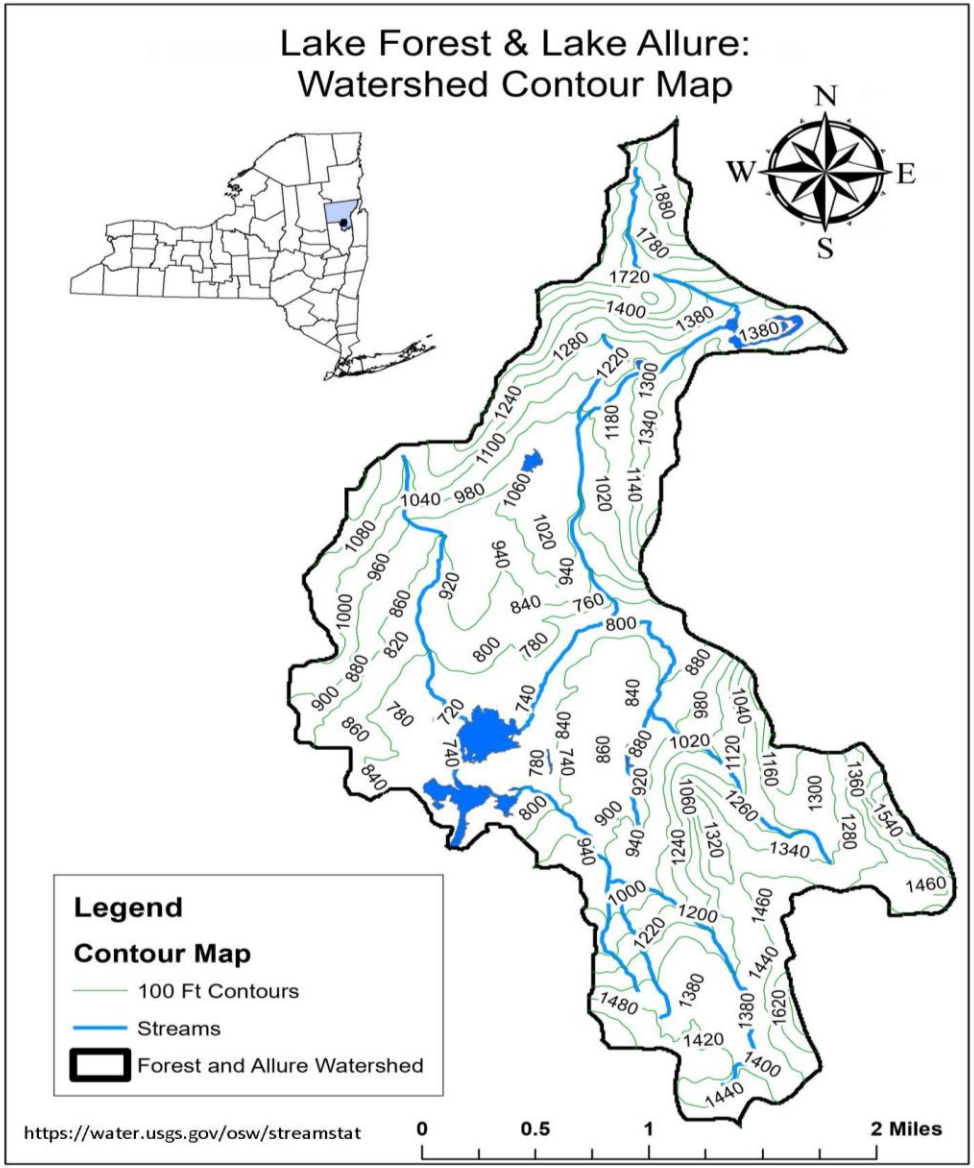
Background

- Lake Forest
  - 45 acres
  - 2.5 meters
  - .2 year retention rate
  - Class A lake
- Lake Allure
  - 5 acres
  - 2 meters

Watershed Characteristics



https://www.mrlc.gov/finddata.php

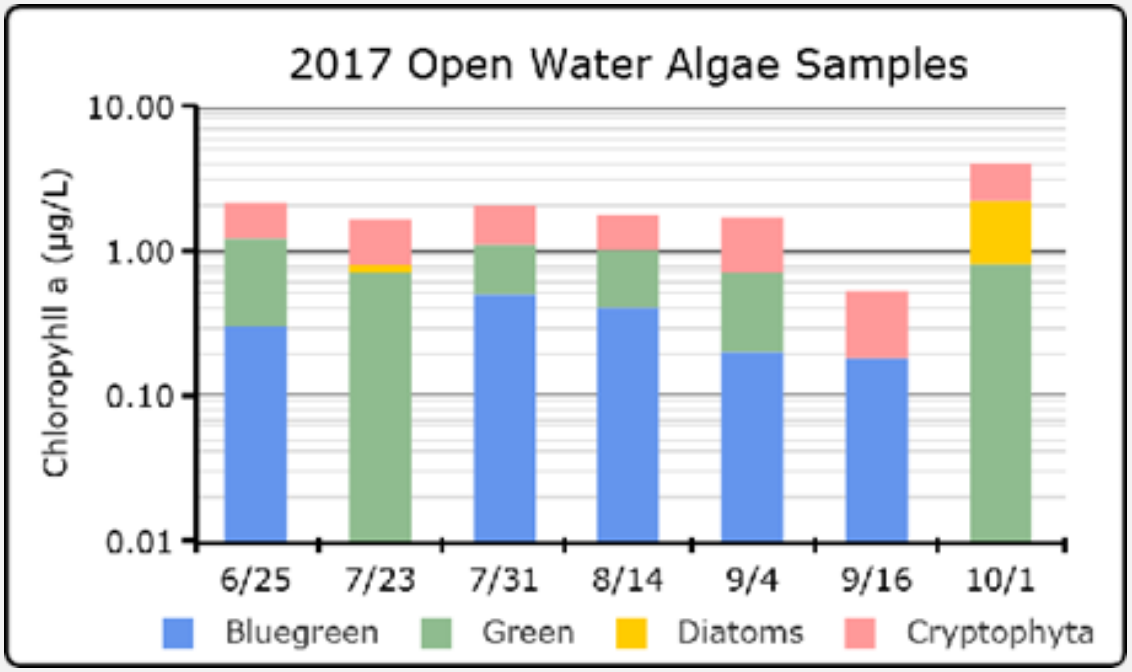


https://water.usgs.gov/osw/streamstat

Lake Forest

HABS and Invasives

- Mesotrophic
  - Clarity, phosphorus and chlorophyll *a*
- No HABs or invasive species



CSLAP Data

What is it?

- Began 1985
- Volunteer program
- DEC and Stakeholders
- Residents collect data

Use of CSLAP data

Challenges

- Only data = 15 years
- Clean slate
- Looking at trends throughout the years
- Opportunity to create a solid LM plan

Data Collection

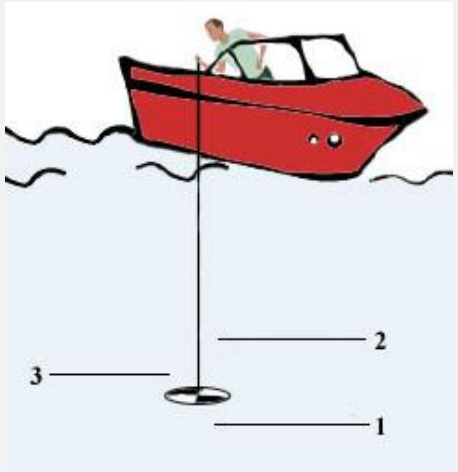
Important metrics

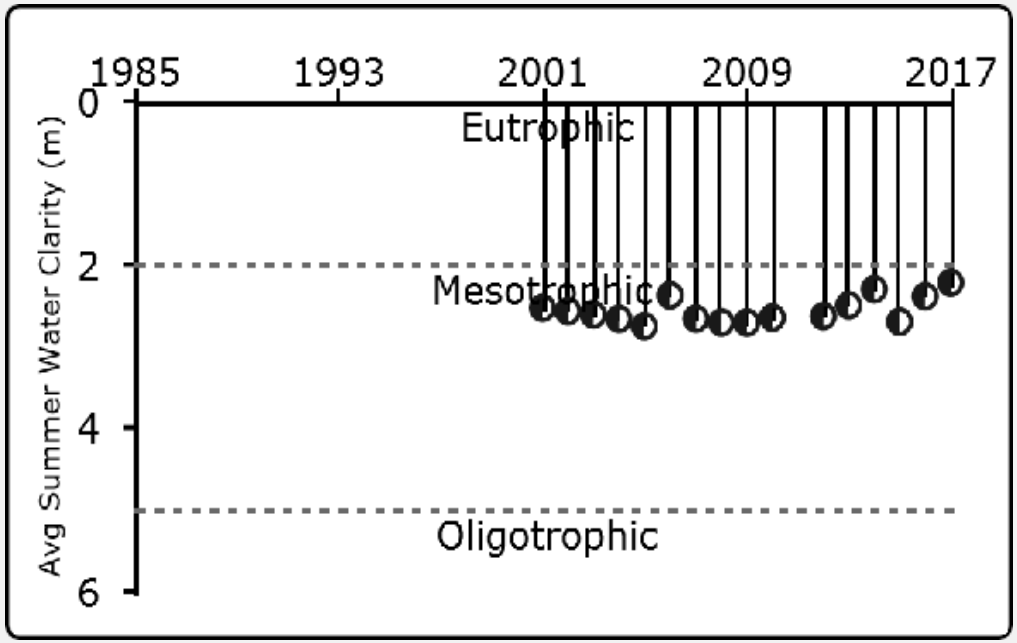
- Main focus
  - Fish, plants and water quality
- CSLAP monitoring
  - June-October

Water Clarity

Long Term Trend Analysis

- Secchi Disk readings
- Influenced by
  - phytoplankton, suspended inorganic materials & dissolved organic substances

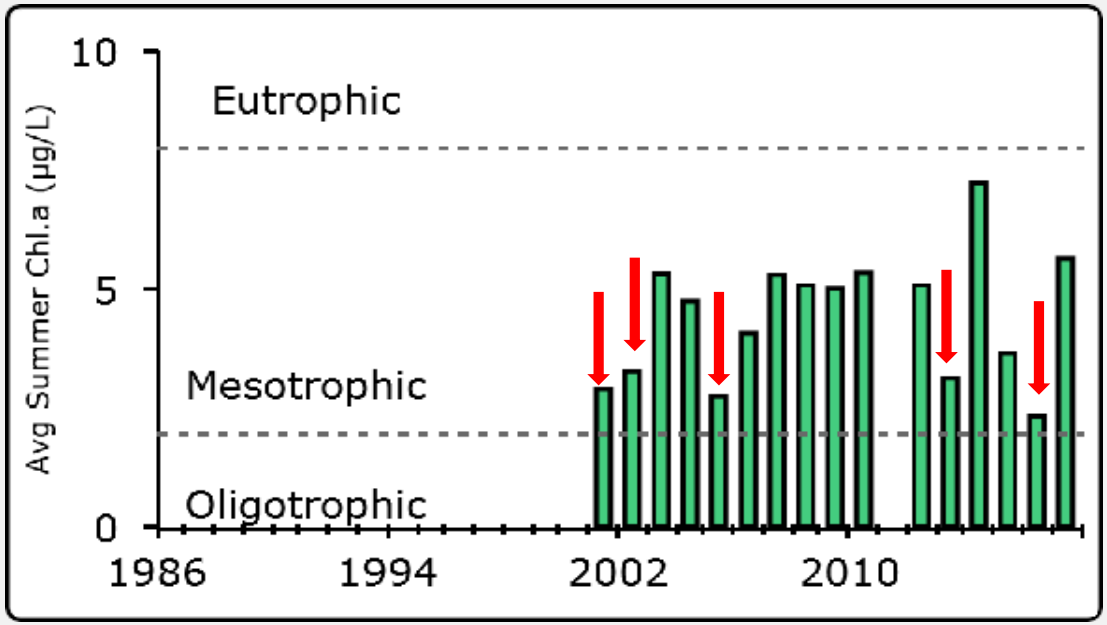




Chlorophyll *a*

Long Term Trend Analysis

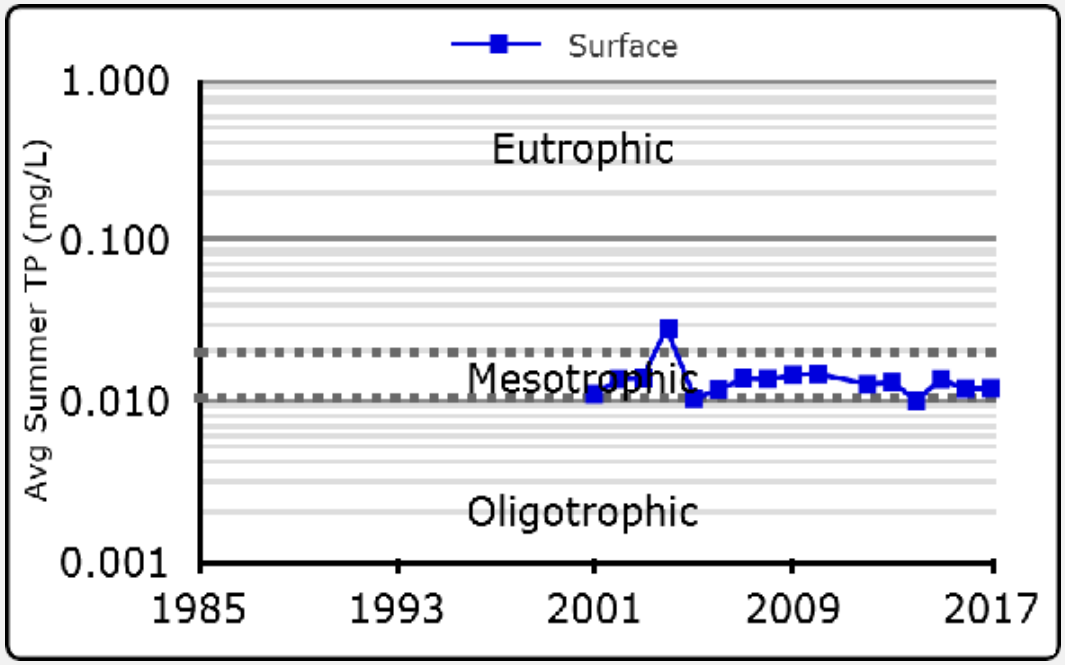
- Indicator of trophic status
- Chlorophyll *a*
  - photosynthetic pigment
- 2001, 02, 05, 13, 15, & 16 have lower levels of production



Total Phosphorus

Long Term Trend Analysis

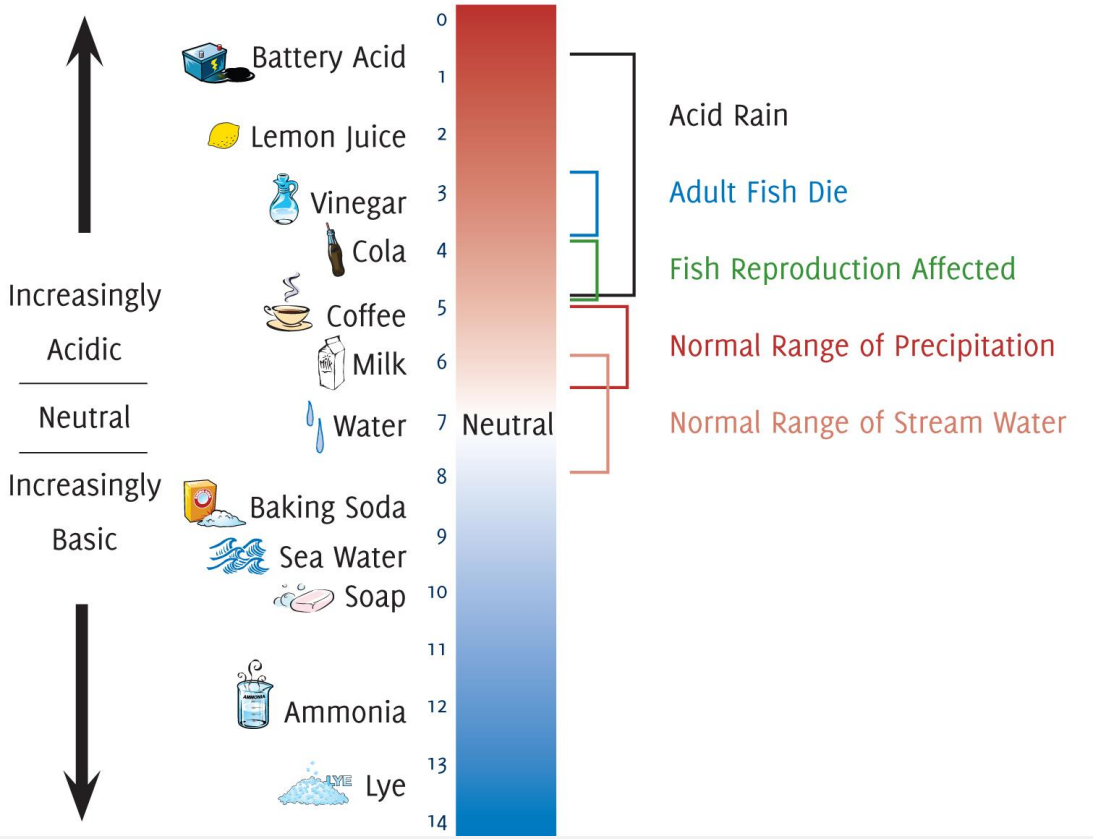
- Limiting nutrients in many of NYS lakes
- Lawn fertilizers or agricultural runoff
- Watershed management plans can help lower phosphorus levels



pH Levels

Long Term Trend Analysis

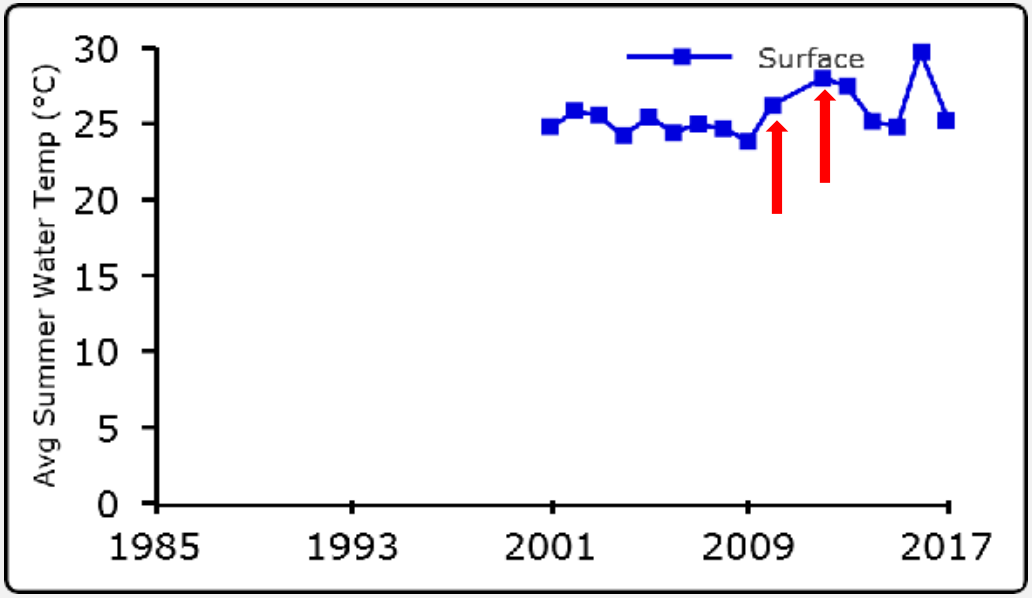
- ADKs are known to have acidic water bodies
- Hydrogen ion concentration
- Double edge sword.. No distinct answer



Water Temperature

Long Term Trend Analysis

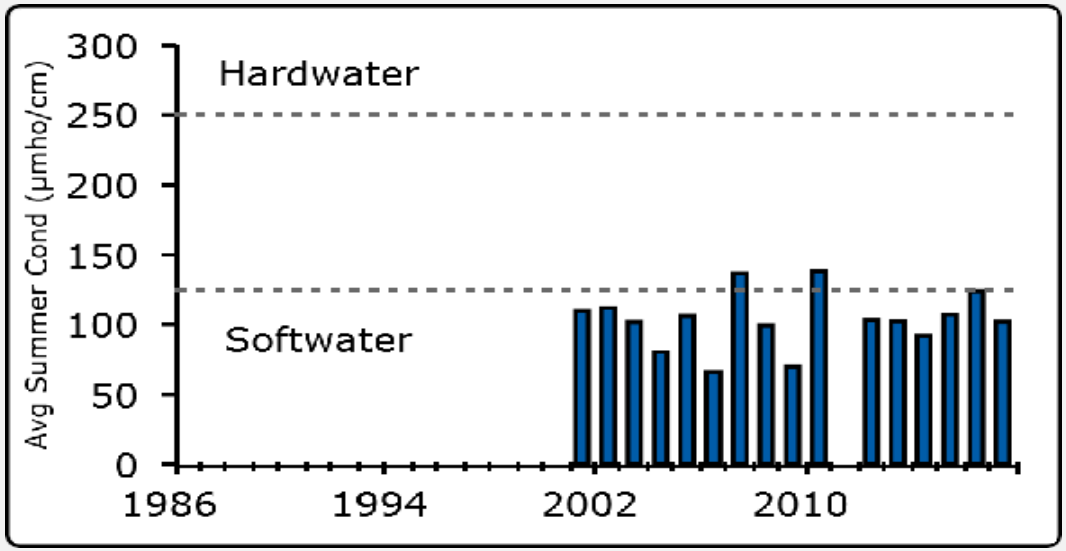
- Increase at 2010
- Warm water fishery
  - LMB, YP, BG
- Aquatic macrophytes management



Conductivity

Long Term Trend Analysis

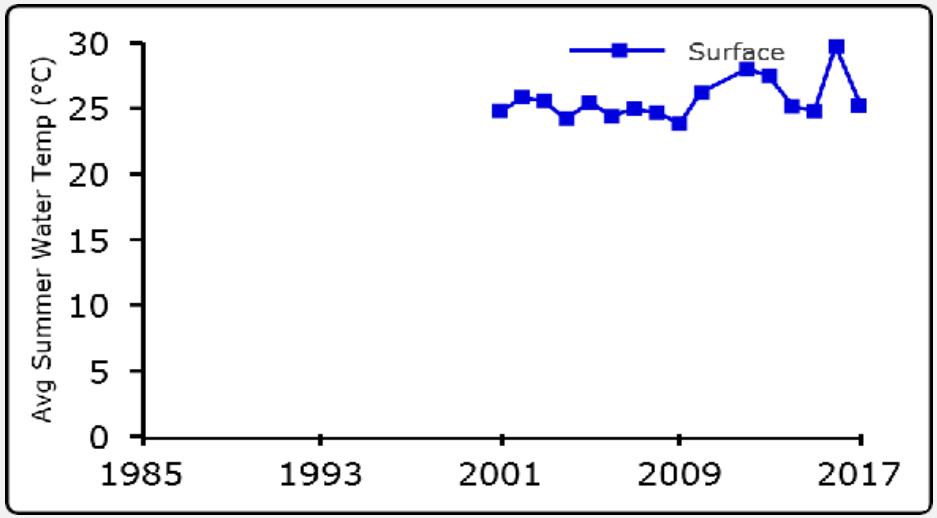
- How electricity is conducted through water
- Crude measure
  - dissolved solids
  - nutrient level
- Effects electrofishing surveys

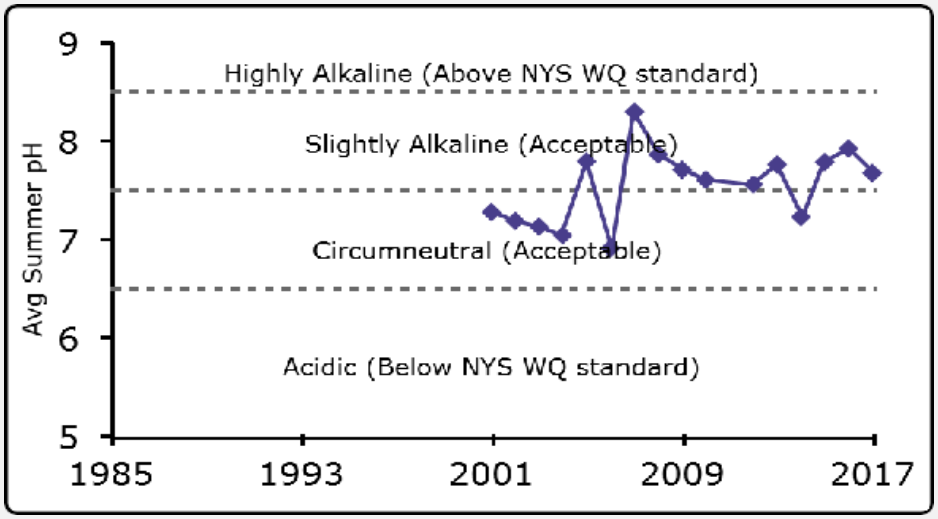


Conclusions

The End Result

- No major changes have been observed
- Lake temperature
  - ↑Plant and ↓depth
- pH levels
  - ↑ to slightly alkaline





Will this work?

Useful Tool

- Can or do not want to answer using data
- Consistency, samples and volunteers
- Looking at CSLAP data can be a guide to guiding long term lake management

Forest L-W	7/8/2003	3.0	2.75
Forest L-W	8/18/2003	3.3	3.25
Forest L-W	8/25/2003	2.8	1.80
Forest L-W	8/31/2003	3.1	2.65
Forest L-W	9/16/2003	2.5	2.50
Forest L-W	6/7/2004	3.4	2.55
Forest L-W	6/28/2004	3.5	2.75
Forest L-W	7/19/2004	3.3	2.38
Forest L-W	8/3/2004	3.3	2.25
Forest L-W	8/17/2004	3.3	2.95
Forest L-W	9/6/2004	3.2	3.00

Acknowledgments

Thank you!

- SUNY Oneonta
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- Dr. Dan Stich
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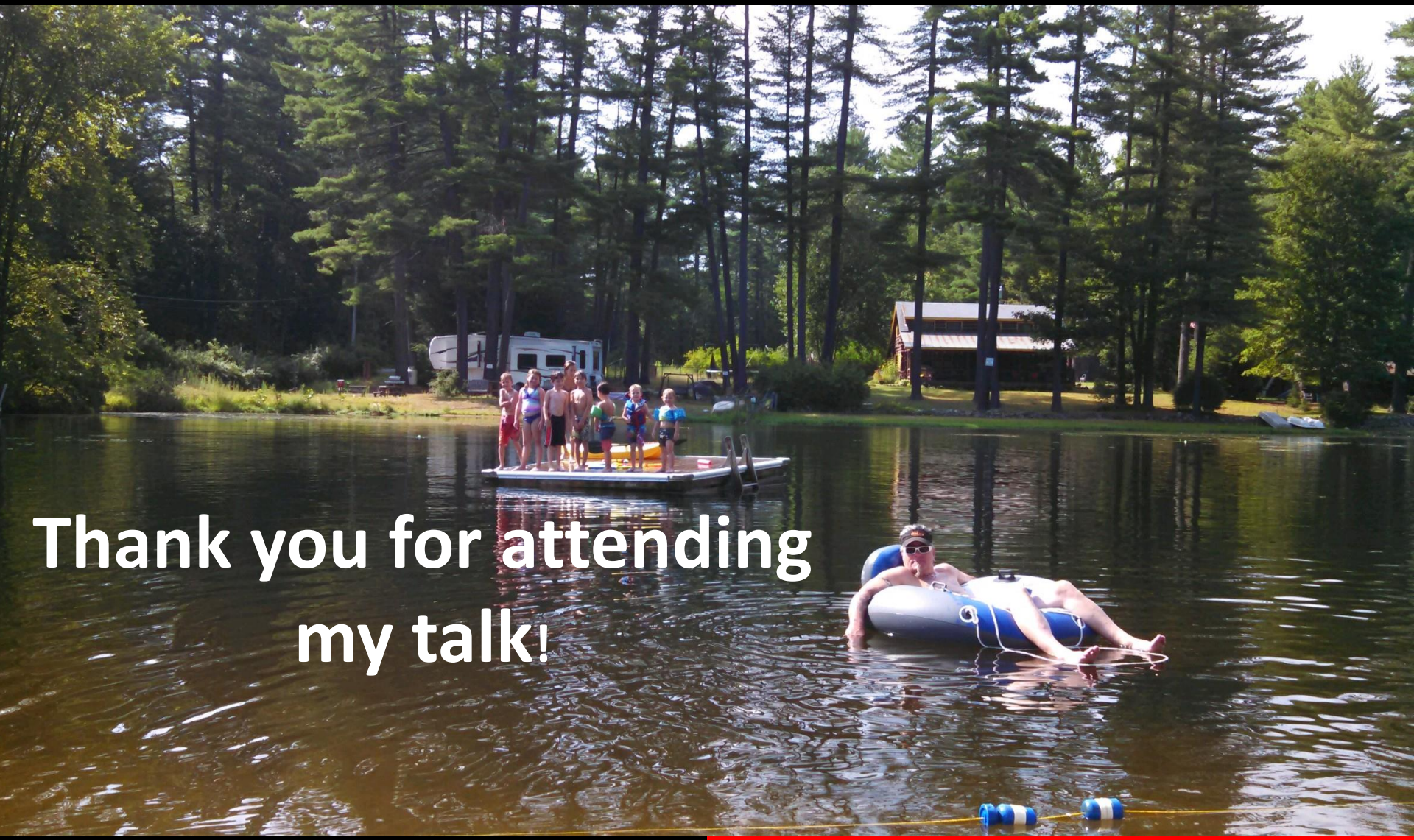
- Rose O'Boyle and the Northwoods Lake Association

Questions?