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
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Lake Forest

HABS and Invasives

- Mesotrophic
  - Clarity, phosphorus and chlorophyll a

- No HABs or invasive species

![2017 Open Water Algae Samples](image_url)
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

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Water Clarity

Long Term Trend Analysis

• Secchi Disk readings

• Influenced by
  • phytoplankton, suspended inorganic materials & dissolved organic substances
Chlorophyll $\alpha$

Long Term Trend Analysis

• Indicator of trophic status

• Chlorophyll $\alpha$
  • photosynthetic pigment

• 2001, 02, 05, 13, 15, & 16 have lower levels of production
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Long Term Trend Analysis

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

![Graph showing long-term trend in water temperature with notable increase at 2010.](image)
Conductivity

Long Term Trend Analysis

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

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Conclusions

The End Result

• No major changes have been observed
• Lake temperature
  • $\uparrow$ Plant and $\downarrow$ depth
• pH levels
  • $\uparrow$ to slightly alkaline
Will this work?

- 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

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Acknowledgments

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- SUNY Oneonta Biological Field Station
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