

A topographic map of the Gregg Lake Watershed. The map shows contour lines indicating elevation, with labels such as 1000, 1100, 1200, 1300, 1400, 1500, and 1600. Gregg Lake is a large blue feature on the right side, and Willard Pond is a smaller blue feature at the bottom left. A road labeled "Clinton Rd" is visible in the upper right. The text "Gregg Lake Watershed Management Plan" is overlaid in the center in a large, bold, green font.

# Gregg Lake Watershed Management Plan

Water Quality Advisory Meeting

July 12, 2019



# Gregg Lake: What's the Problem?

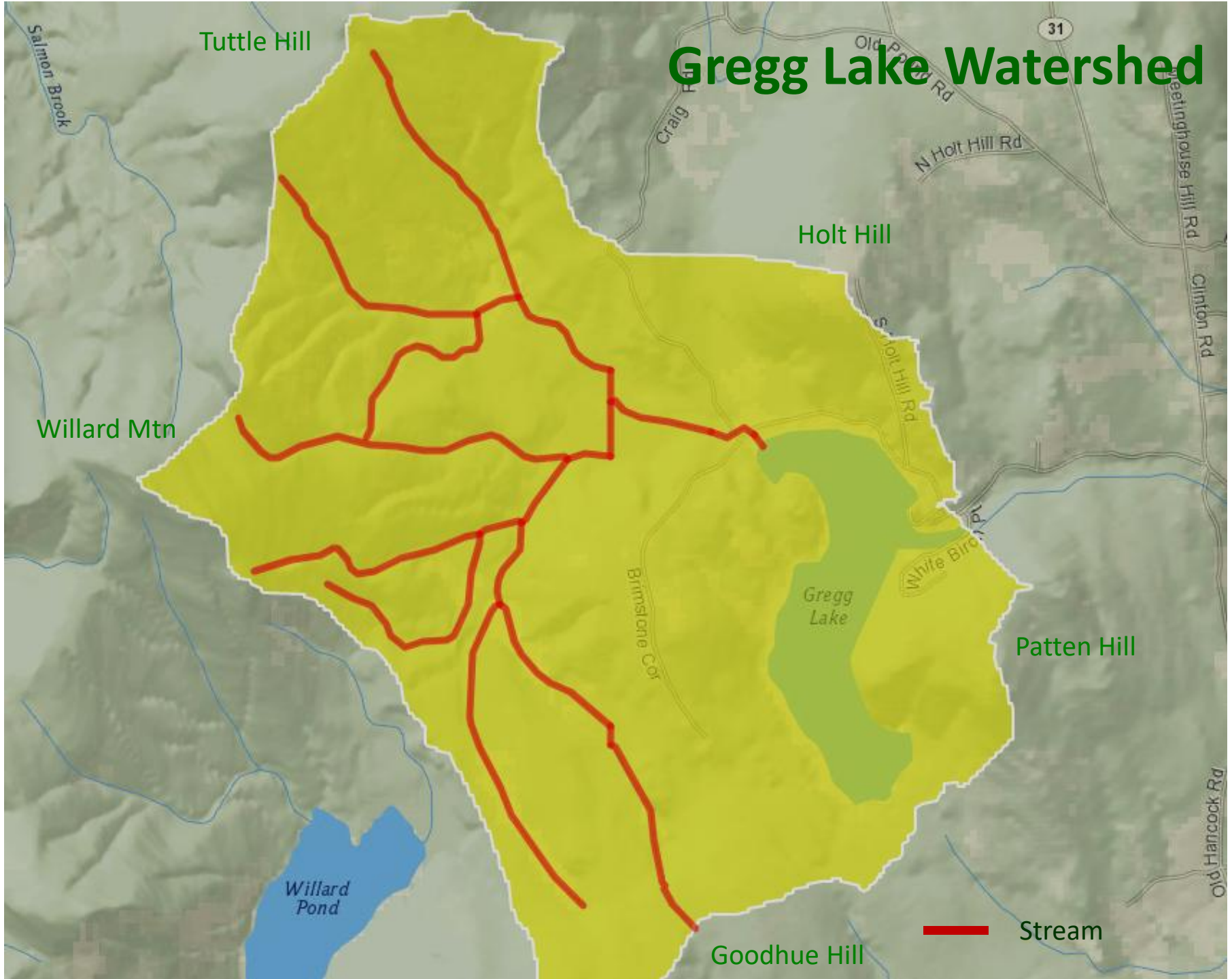
- Meets standards for Primary and Secondary Contact Recreation
- Fish consumption advisories
- “Impaired” for supporting Aquatic Life since 2004
  - High phosphorus (limiting plant nutrient)
  - High chlorophyll-*a* (algae)
  - Low dissolved oxygen
  - Low pH (acidic)
- Algal blooms 2015
- Cyanobacteria 2018

A photograph of two people in a silver canoe on a river. The river is surrounded by large rocks and trees, with snow visible in the background. The text is overlaid on the image.

# Gregg Lake: What's the Solution?

- **Assess water quality**
  - NHDES
  - VLAP
- **Assess watershed**
  - Land use
  - Development
  - Sources of pollution
- **Set water quality goal**
- **Develop Watershed Management Plan**

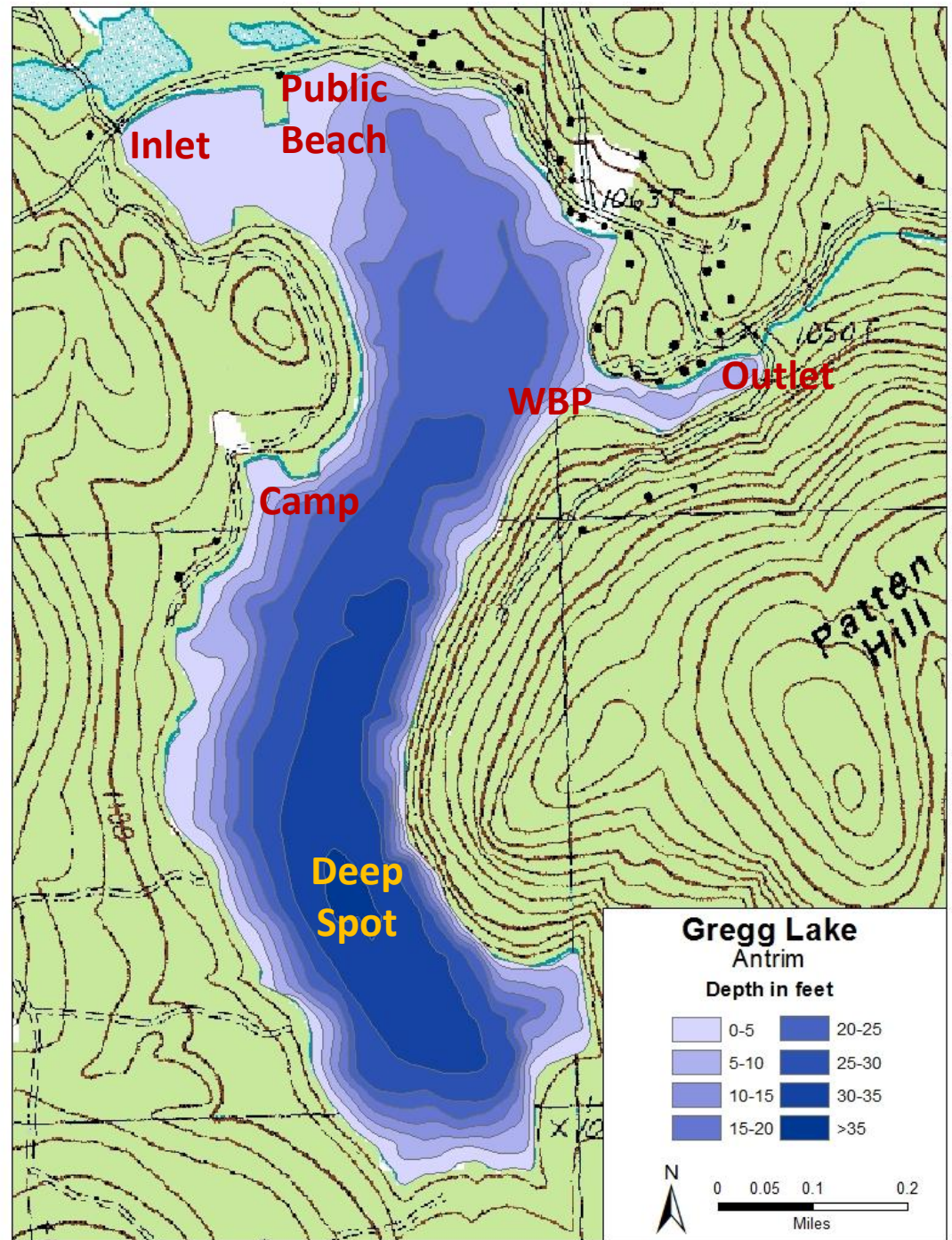
# Gregg Lake Watershed



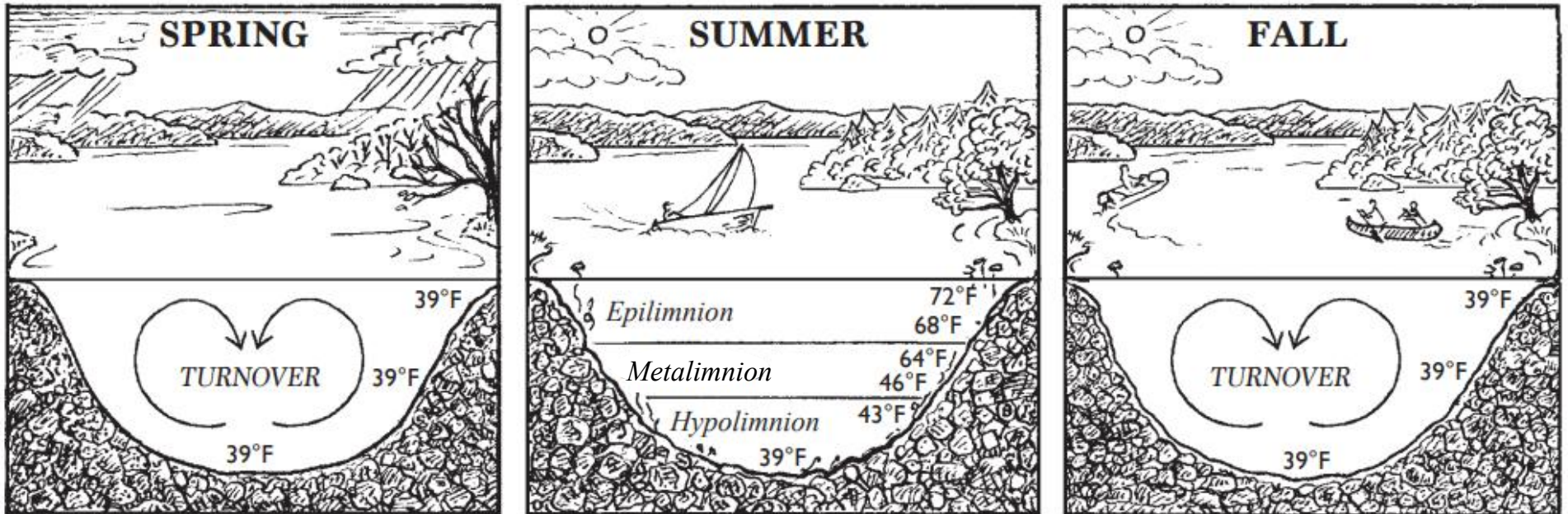
# Water Sampling Stations

Since 1978:

Added 2018:

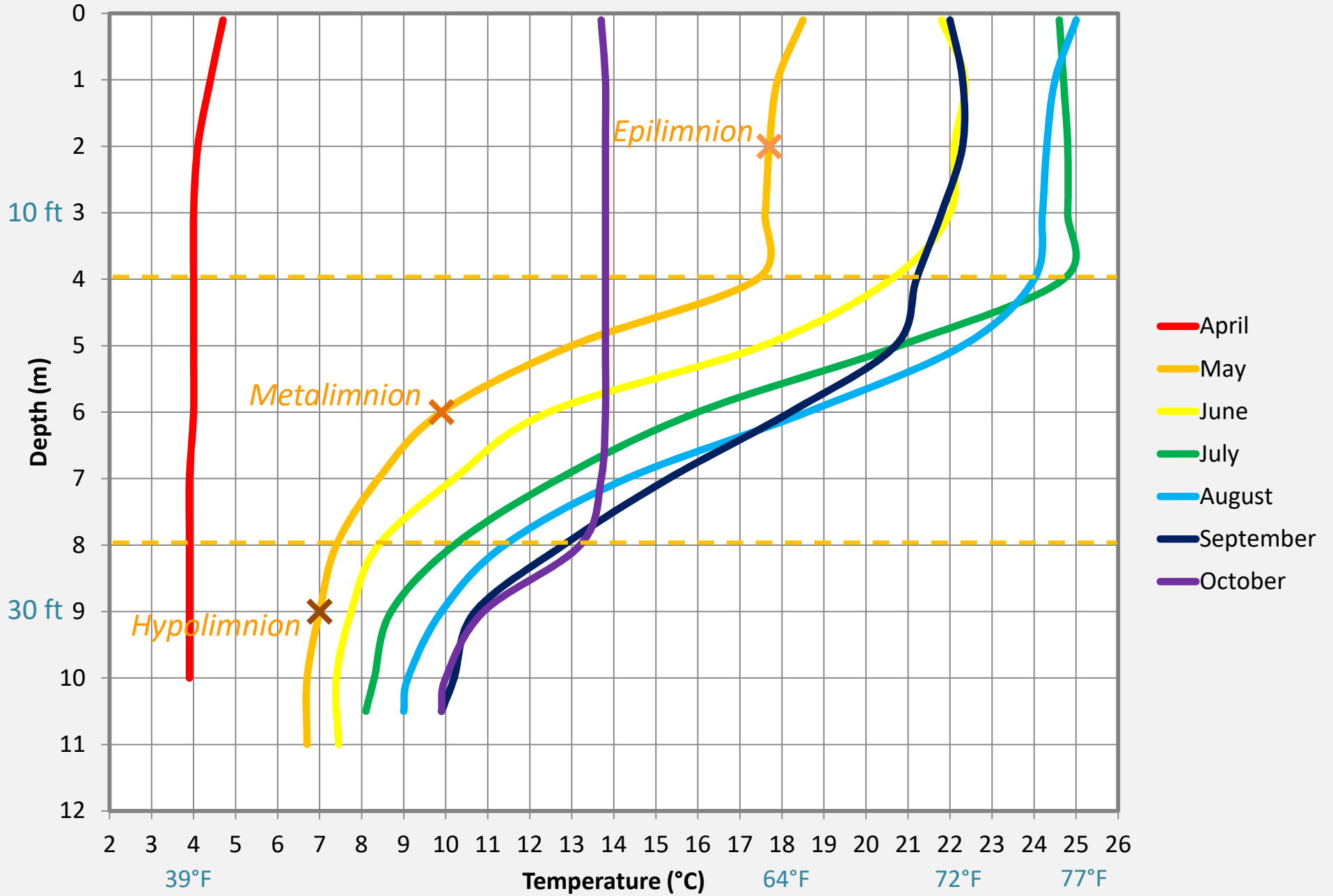


# Gregg Lake Stratification

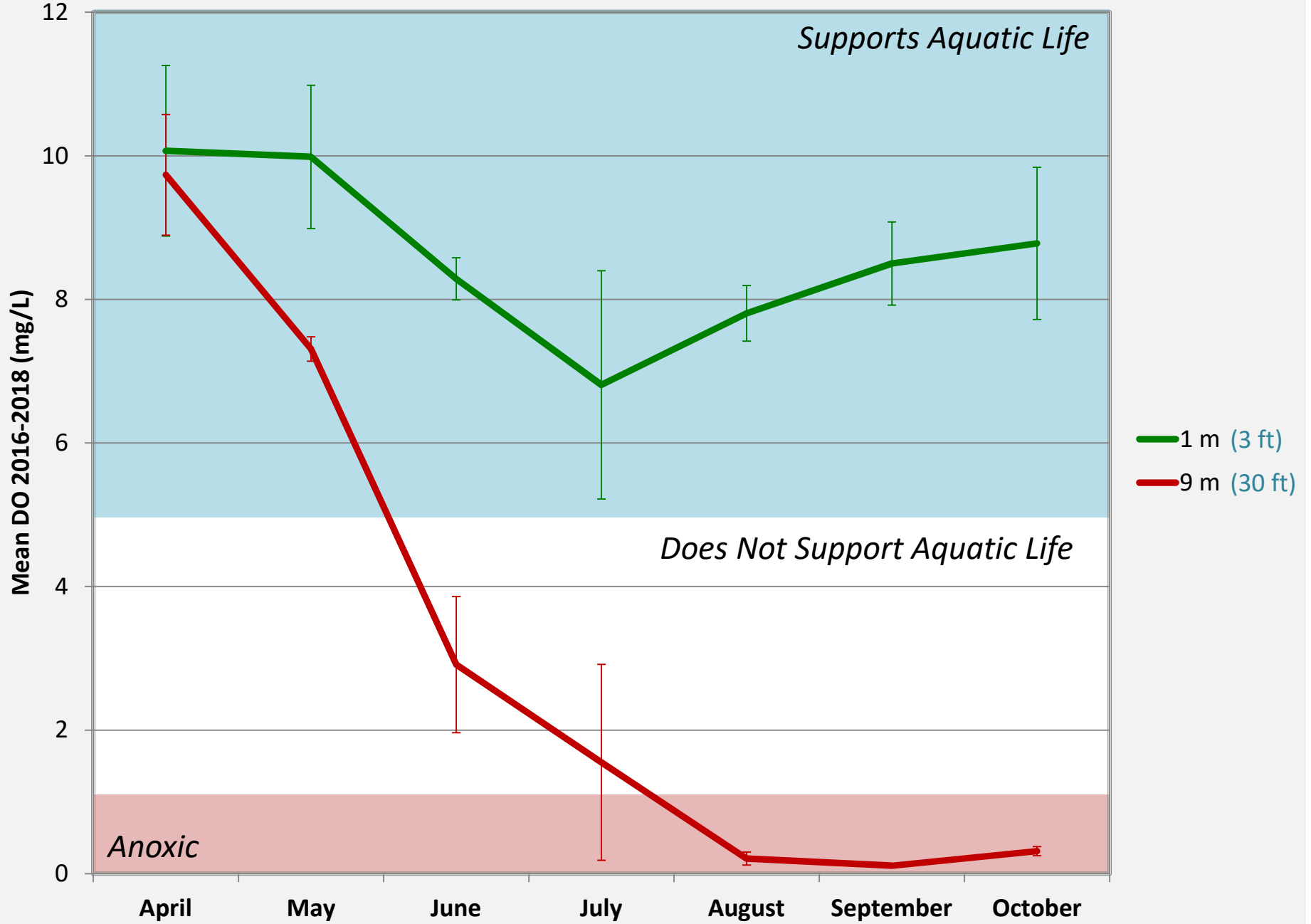


Virginia Dickinson, *Limrik* Vol 26 #2, 2017

# Deep Spot Temperature Profile

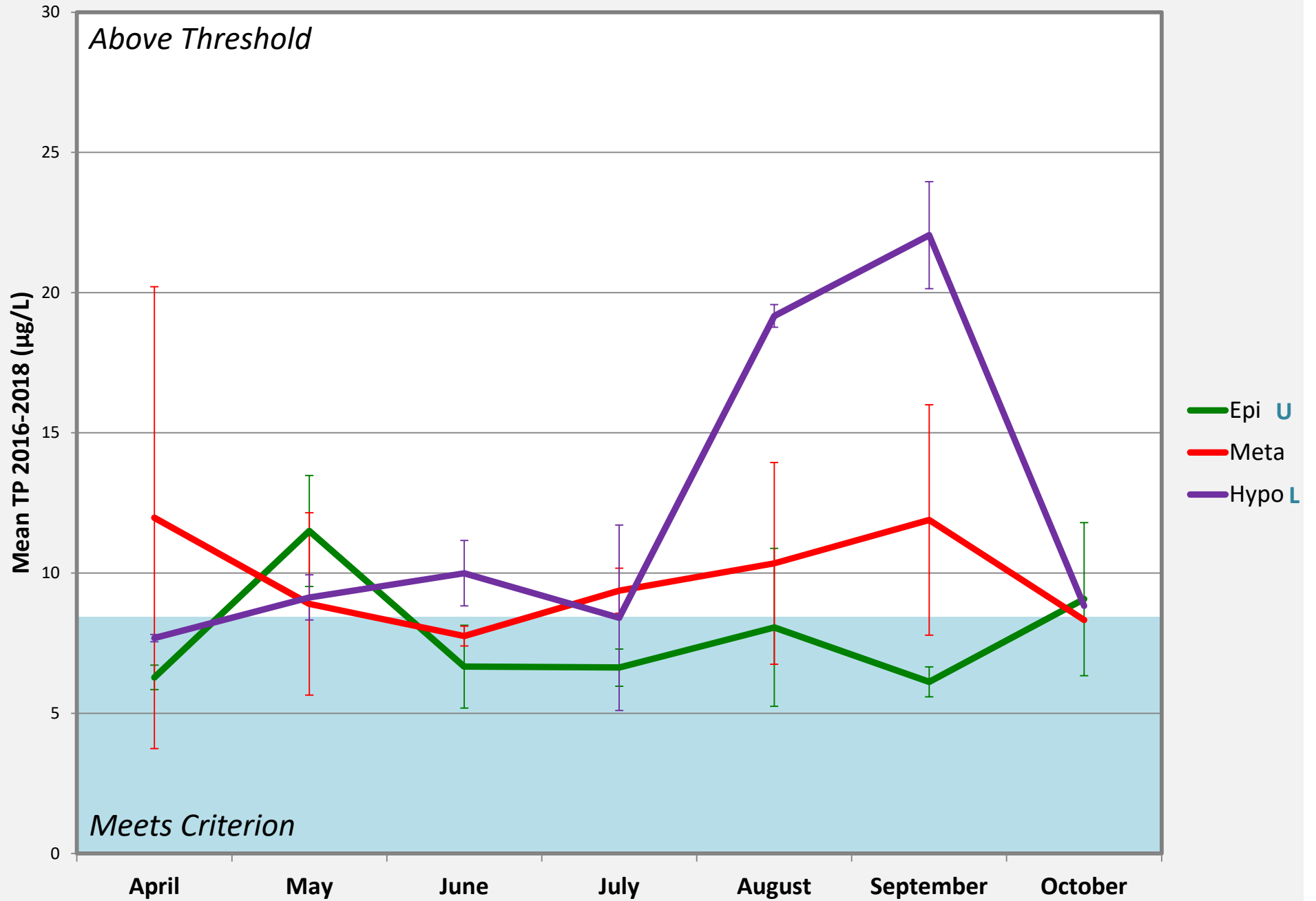


# Deep Spot Dissolved Oxygen

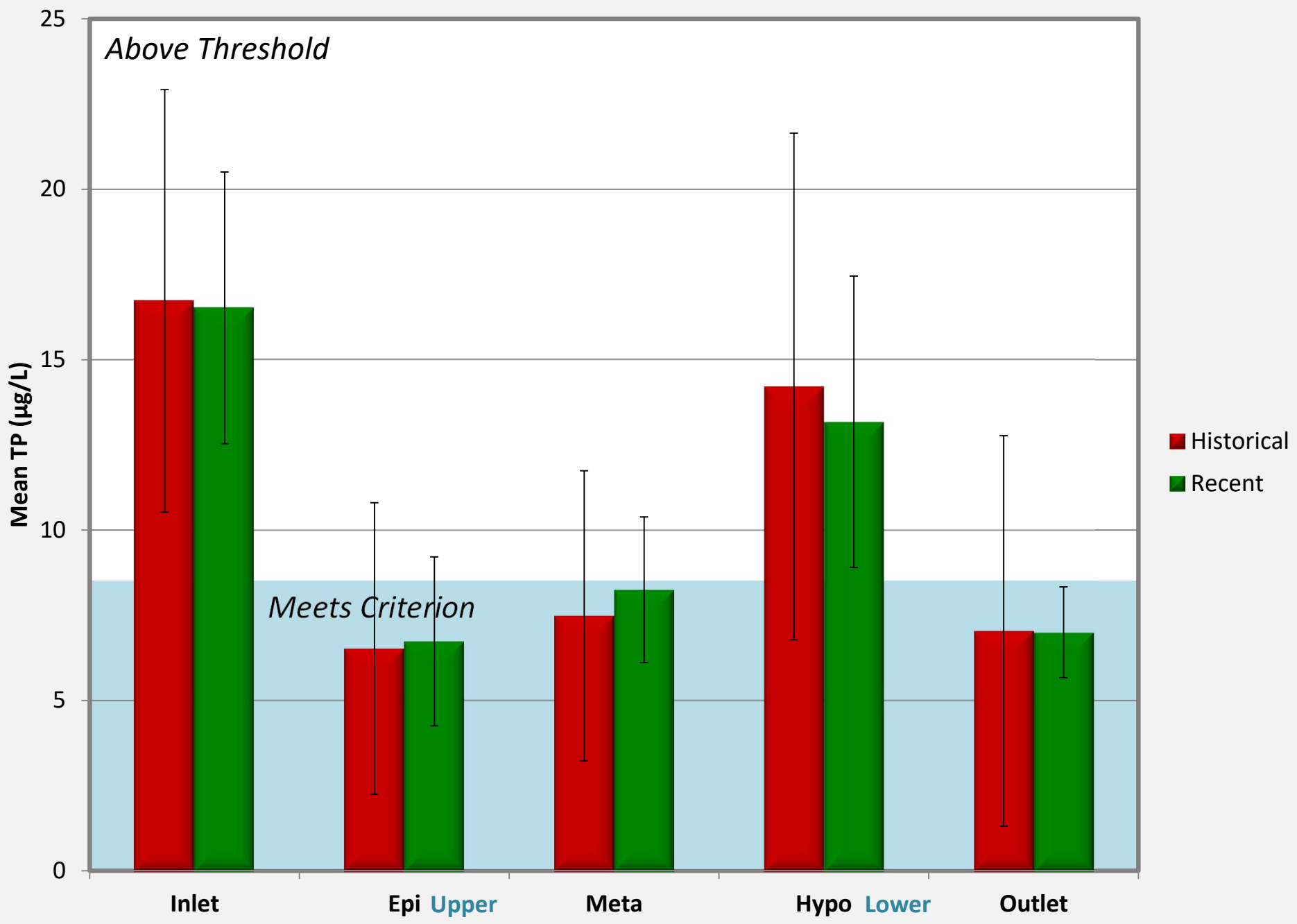




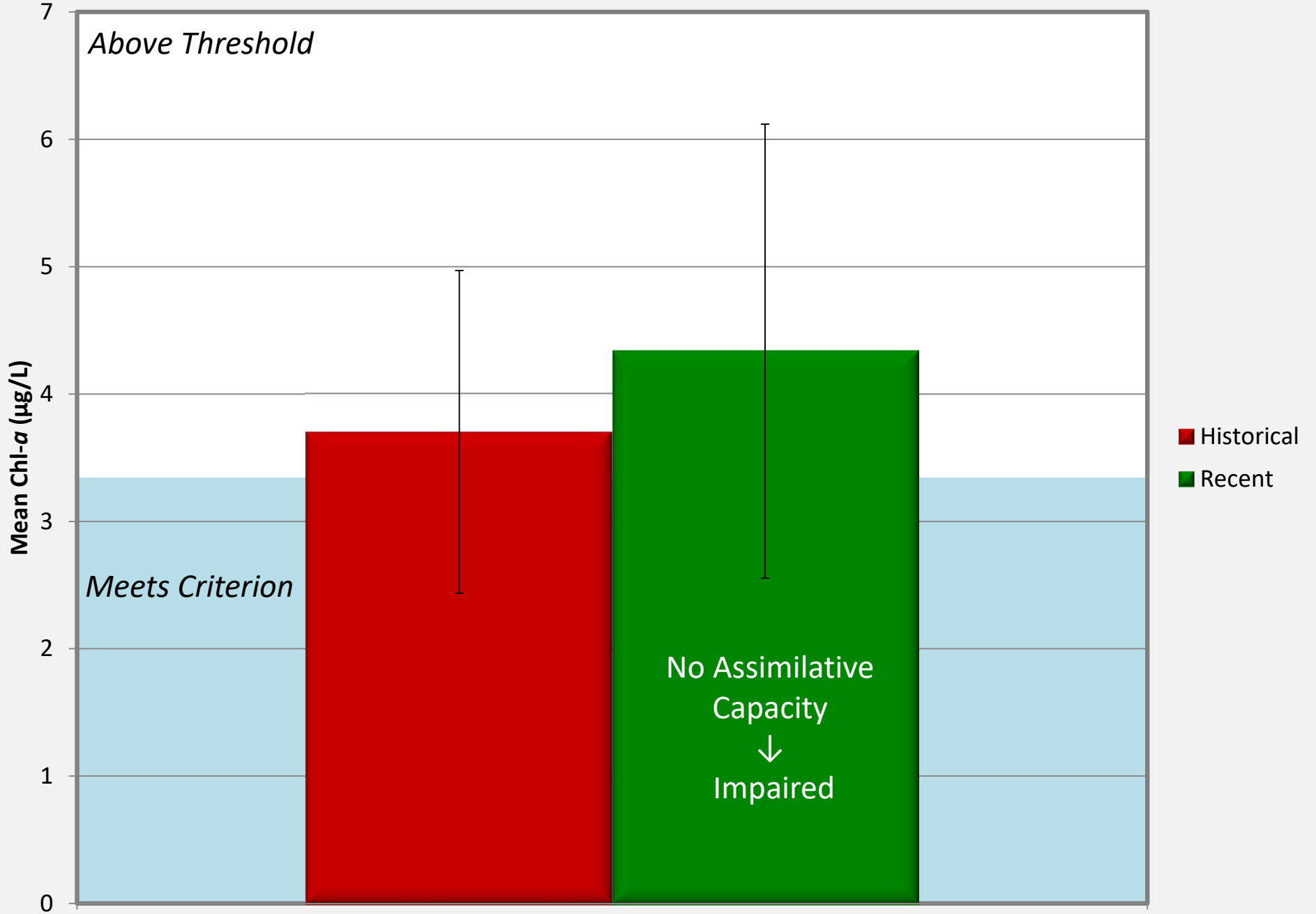
# Deep Spot Total Phosphorus



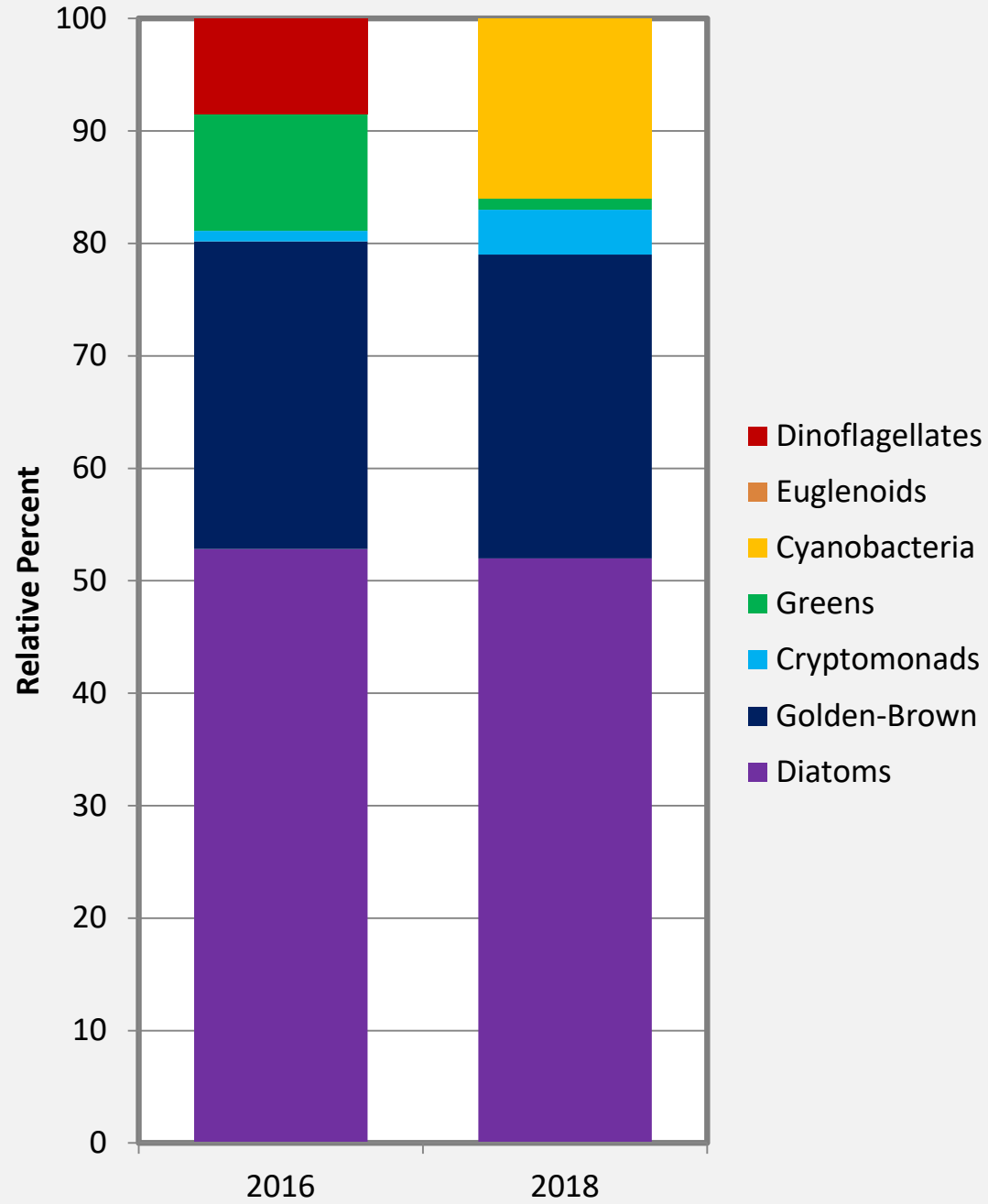
# Total Phosphorus



# Chlorophyll-*a* (Algae)



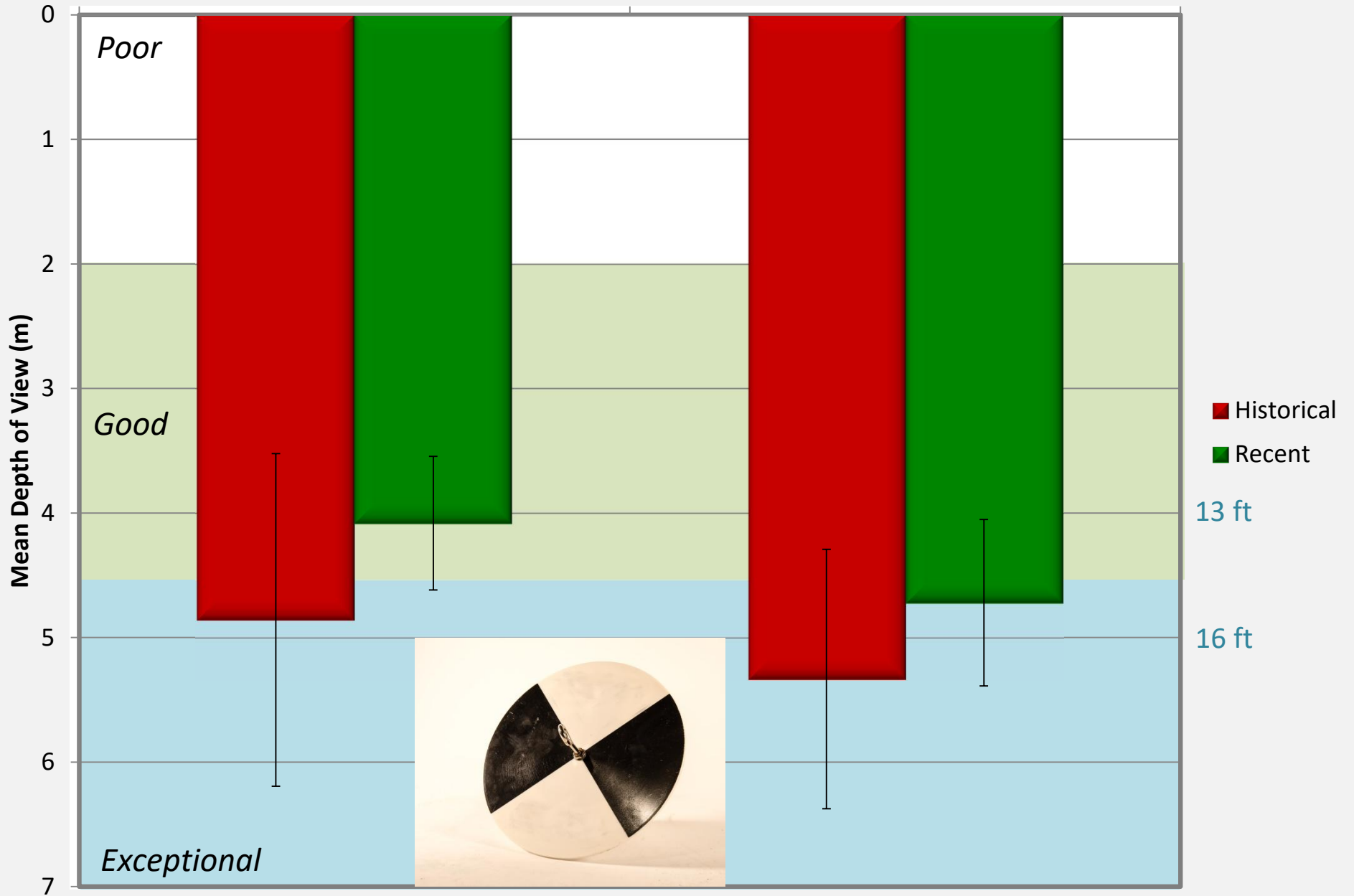
# Phytoplankton Populations



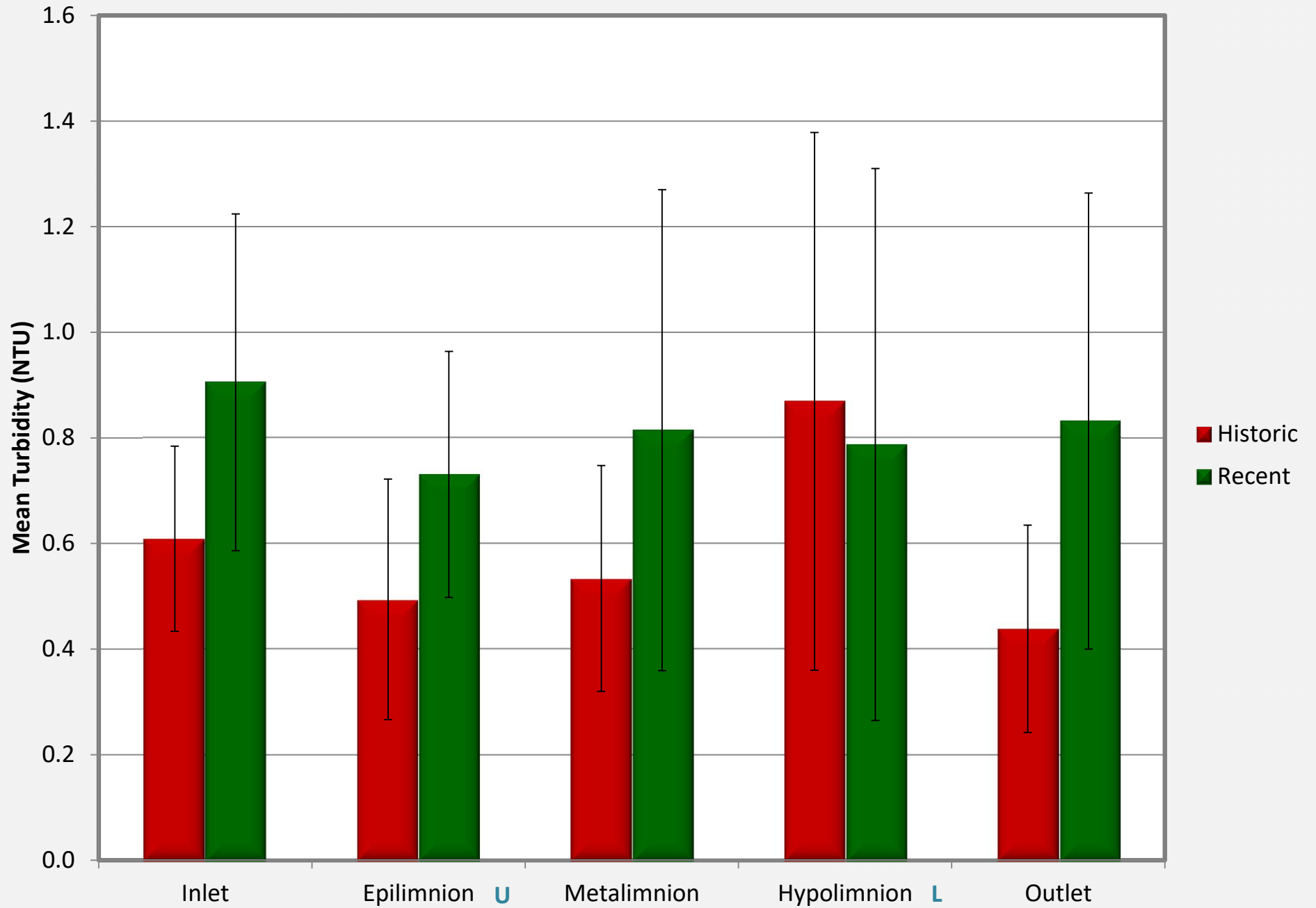
# Transparency

No Viewscope

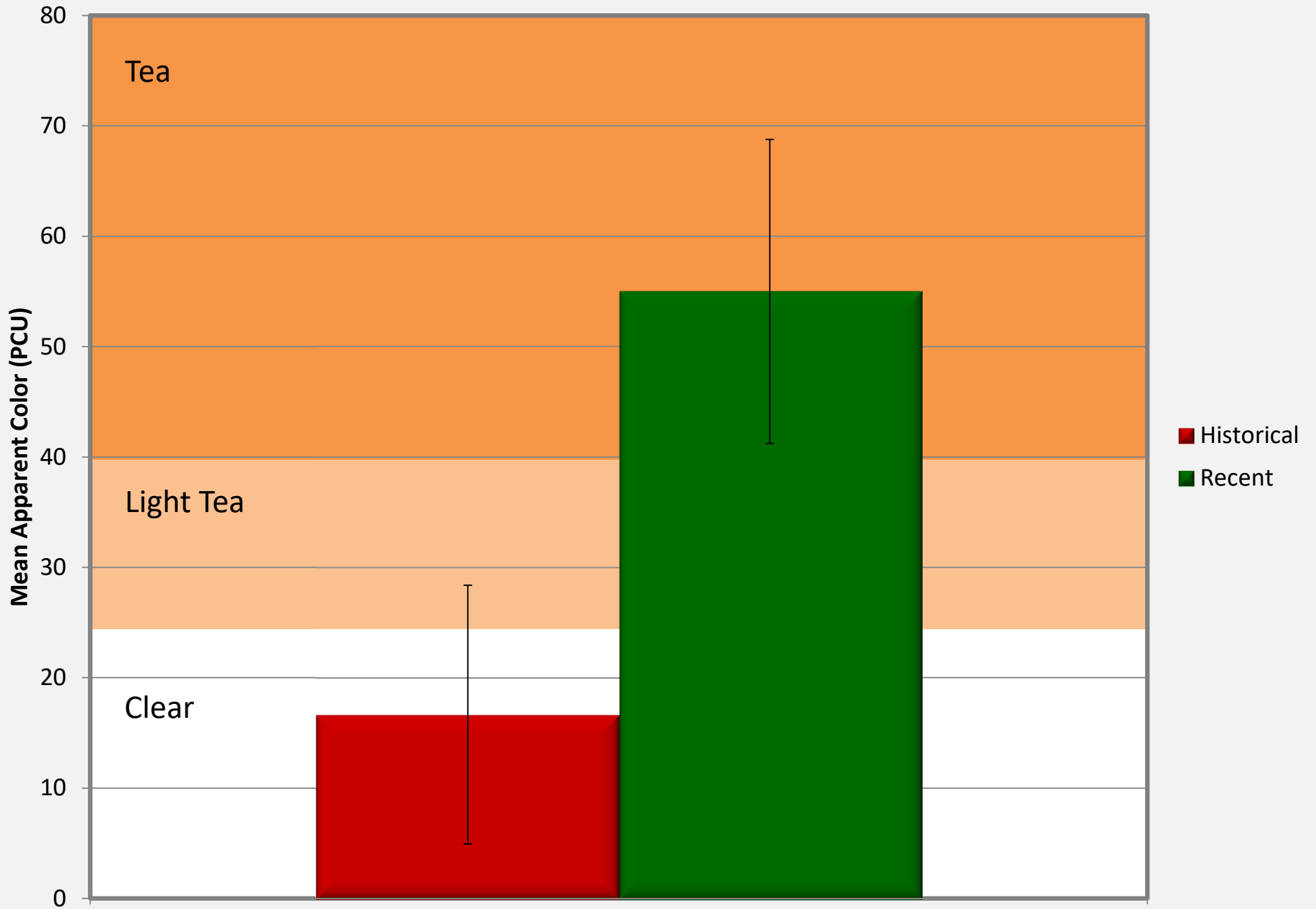
Viewscope



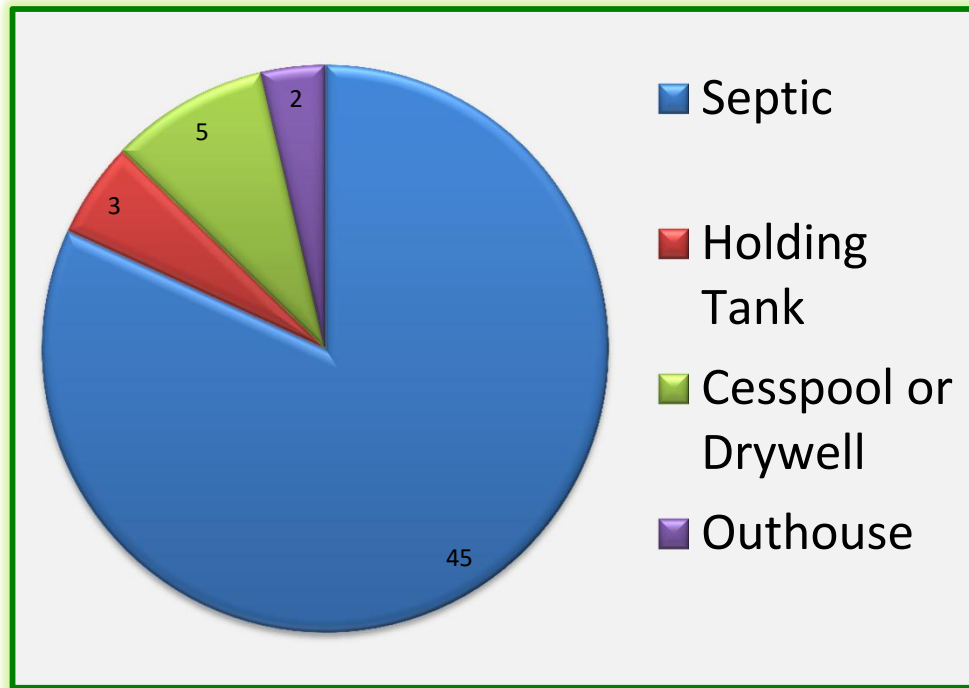
# Turbidity



# Apparent Color



# Septic Inventory



- Age
- Distance from lake
- Pumping schedules
- Residence occupancy
  - Number
  - Time



# Where Does Gregg Lake Stand?

## Challenges

- High chlorophyll-*a*
- High phosphorus
- Low dissolved oxygen
- Cyanobacteria appearing
- Bacteria increasing at beach
- Decreasing transparency
- Increasing turbidity
- Increasing color
- Increasing storm frequency and intensity

## Solutions

- Reduce phosphorus
  - Sources?
  - How far do we need to go?
- Reduce sediment
  - Carried in
  - Stirred up
- Control development
- Other?