

# Mahoney Lake



# Site 1

## 2010 DATA

Putnam County  
Latitude: 40.4997 Longitude: -93.0244

Date	X	5/6	5/20	X	X	7/22	8/20	X	Mean
Secchi (inches)		9	6			7	9		8
TP (µg/L)		170	301			218	139		198
TN (µg/L)		1610	1810			1370	1210		1483
CHL (µg/L)		48.1	37.6			49.4	68.4		49.7
ISS (mg/L)		12.4	22.3			18.9	7.9		14.3

The four samples collected at Site 1 in Mahoney Lake indicate extremely high nutrient, algal chlorophyll and inorganic suspended sediment concentrations. Because both algal chlorophyll and suspended sediment levels were high, water clarity was remarkably low (~20% of the statewide average). The nutrient and suspended sediment concentrations tracked each other across the sample season, while fluctuations in chlorophyll differed. The changes in chlorophyll reflect shifts in suspended sediment, with the lowest chlorophyll measurement occurring the day suspended sediment was highest and the maximum chlorophyll being measured when suspended sediment dipped below 10mg/L.

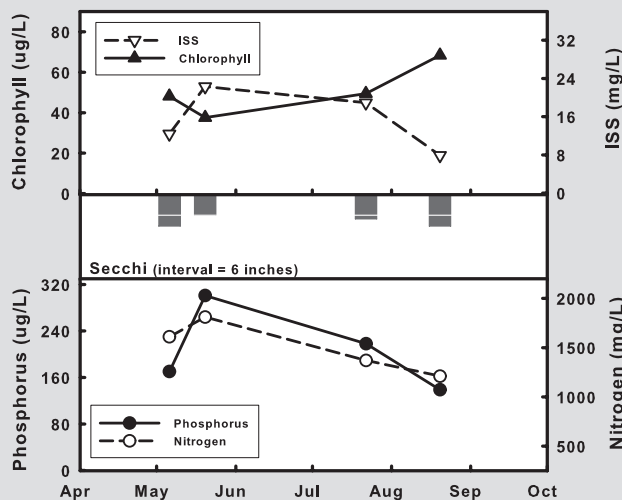
While summertime phosphorus concentrations in Mahoney Lake have historically been elevated compared to state and regional averages, phosphorus levels during the last four

summers have been extremely high with all values exceeding 100µg/L and ranging up to 300µg/L. Often times we find elevated phosphorus concentrations accompanied by higher inorganic suspended sediment levels (phosphorus tends to bind to the sediment particles). In three of the past four years suspended sediment levels have been moderate, with only the 2010 values being elevated. Nitrogen levels (not shown) have only been high during the last two summers, with 2007 and 2008 values being below the long-term average.

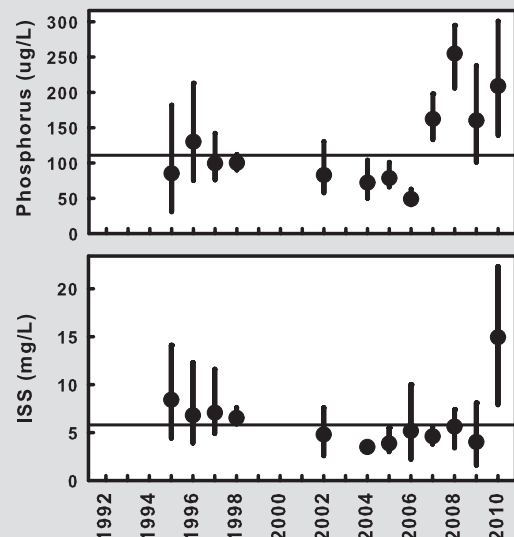
Mahoney Lake sampling sites



## 2010 GRAPHS



## TREND GRAPHS



See pages 10-11 for help interpreting graphs

# Mahoney Lake



## Site 2

### 2010 DATA

Putnam County  
 Latitude: 40.4956 Longitude: -93.0236

Date	X	5/6	5/20	X	X	7/22	8/20	X	Mean
Secchi (inches)		9	6			6	9		7
TP (µg/L)		206	309			344	146		238
TN (µg/L)		2150	2020			1620	1160		1690
CHL (µg/L)		97.6	53.0			23.5	62.2		52.4
ISS (mg/L)		20.3	25.6			31.2	11.9		21.0

Site 2 is located approximately 500 yards up-lake from Site 1, and predictably has higher concentrations of nutrients and suspended sediment. When data from individual sample dates are compared we find the strength of this gradient can vary, with similar water quality at both sites on some sample dates. Water clarity was always similar at the two sites due to the high levels of both algae and suspended sediment.

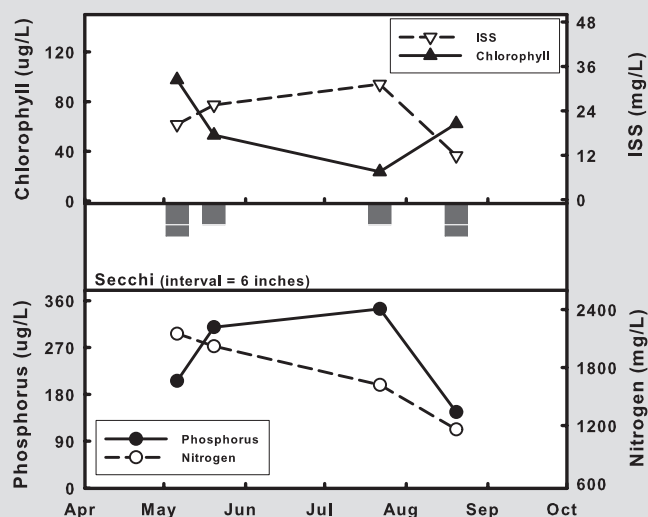
only have the last three summers found water clarity at Site 2 being low, but also very stable with very little variations from sample to sample within individual summers.

Average summer chlorophyll concentrations have been higher than the long-term mean during the last three years. These higher chlorophyll levels generally correspond to higher nutrient values. A result of the increased chlorophyll concentrations is lower Secchi transparency readings.

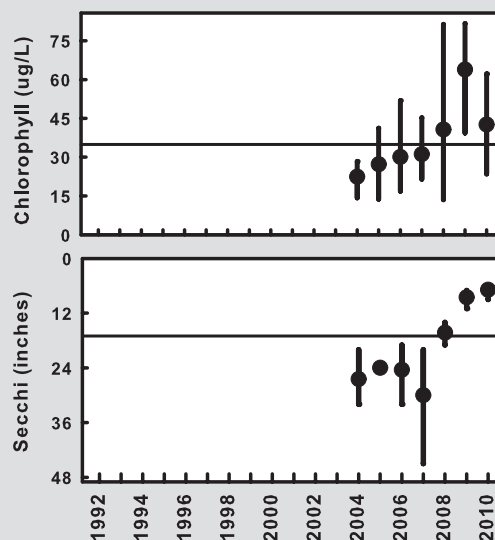
Mahoney Lake sampling sites



### 2010 GRAPHS



### TREND GRAPHS



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