

# Lake Springfield, Site 1

Greene County

2008 DATA



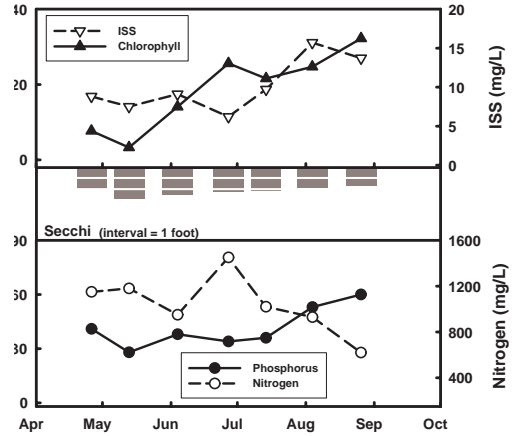
Date	Secchi (inches)	TP (µg/L)	TN (µg/L)	CHL (µg/L)	ISS (mg/L)
4/26	24	41	1150	7.7	8.8
5/13	34	28	1180	3.3	7.5
6/4	30	38	950	14.1	9.1
6/27	27	34	1450	25.6	6.2
7/14	26	36	1020	21.6	9.7
8/4	22	53	930	24.7	15.7
8/26	20	60	620	32.2	13.7
<b>Mean</b>	<b>26</b>	<b>40</b>	<b>1014</b>	<b>14.8</b>	<b>9.6</b>

2008 SUMMARY

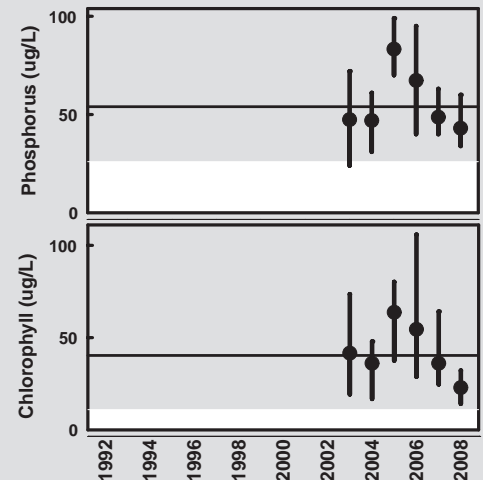
The most obvious (and interesting) seasonal pattern at Site 1 was the increase in chlorophyll concentrations that occurred as the sample season progressed. This pattern has been documented at this site in previous years, and is of interest because there is no increase in nutrients or decrease in inorganic suspended solids that would explain the increase in algal biomass. The higher chlorophyll concentrations seem to correspond to increased water temperatures. Evaluation of all Site 1 data (2003-2008) indicates that the average chlorophyll value when water temperatures are <77°F was 10.0µg/L. In contrast, the average chlorophyll value when water temperatures are >77°F was 45.0µg/L.

Lower water temperatures early in the season may represent periods with higher water flow moving through the lake. If water does not remain in the lake long enough to heat to 80°F then there may not be enough time for algal biomass concentrations to increase. Additionally, higher water temperatures may benefit algal growth by favoring species that not only tolerate, but excel in warm water. Another possibility is that the warm water may negatively affect the zooplankton community in the lake. Fewer zooplankton (or decreased zooplankton activity) would translate to lower levels of algae grazing, allowing biomass to increase.

Phosphorus and chlorophyll display similar year to year patterns, suggesting that the phosphorus concentrations at Site 1 do play a role in determining algal levels. The high phosphorus levels during the summer of 2005 were considerably higher than values from other years. It should be noted that only two phosphorus values were collected that year during the summer period, so the data in the long-term graph may be misleading. None of the water quality parameters display any identifiable trends.



TRENDS



# Lake Springfield, Site 2

Greene County

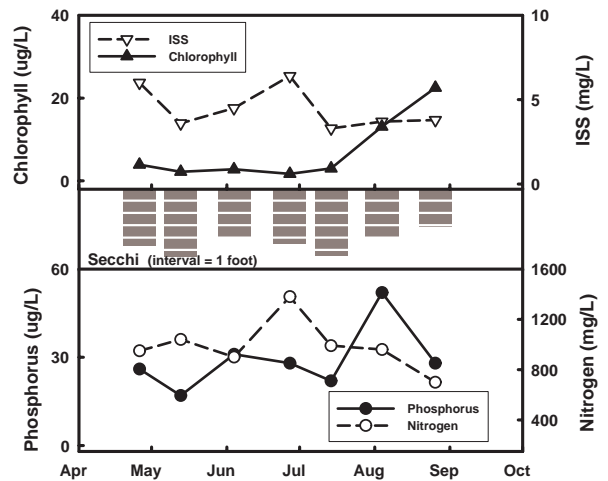
2008 DATA



Date	Secchi (inches)	TP (µg/L)	TN (µg/L)	CHL (µg/L)	ISS (mg/L)
4/26	56	26	950	3.9	6.0
5/13	67	17	1040	2.2	3.6
6/4	48	31	900	2.8	4.5
6/27	54	28	1380	1.7	6.4
7/14	66	22	990	3.0	3.3
8/4	48	52	960	13.1	3.7
8/26	38	28	700	22.5	3.8
<b>Mean</b>	<b>53</b>	<b>28</b>	<b>971</b>	<b>4.5</b>	<b>4.3</b>

2008 SUMMARY

Chlorophyll levels were low through most of the sample season, with an increase during the last two sample dates. Like Site 1, increases in algal chlorophyll did not seem to correlate to increases in phosphorus or nitrogen, or decreases in inorganic suspended solids. The two higher chlorophyll concentrations did occur on the two sampling days when water temperature was at its highest. The average temperature for the first five samples was ≈67°F while during the last two samples the average temperature was 13°F higher (80°F).



TRENDS

Secchi transparency values have been deeper during the last two years (both summertime mean and maximum values) compared to the previous four years. This increased clarity can be explained in part by the lower algal biomass as measured by chlorophyll during 2007 and 2008.

