Whitecliff Park Lake

St. Louis County
Latitude: 38.5561 Longitude: -90.3688

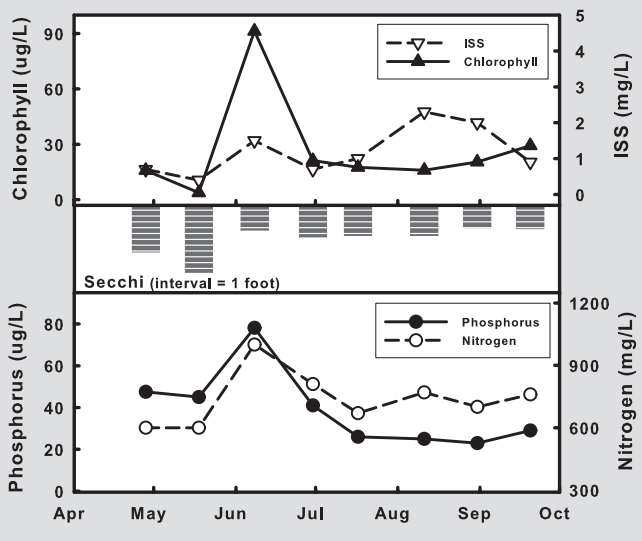
2010 DATA

Date	4/28	5/18	6/8	6/30	7/17	8/11	8/31	9/20	Mean
Secchi (inches)	98	140	53	67	64	64	48	50	68
TP (µg/L)	48	45	78	41	26	25	23	29	36
TN (µg/L)	600	600	1000	810	670	770	700	760	729
CHL (µg/L)	15.9	3.8	91.3	21.2	17.6	16.0	20.5	29.3	19.4
ISS (mg/L)	0.7	0.4	1.5	0.7	1.0	2.3	2.0	0.9	1.0

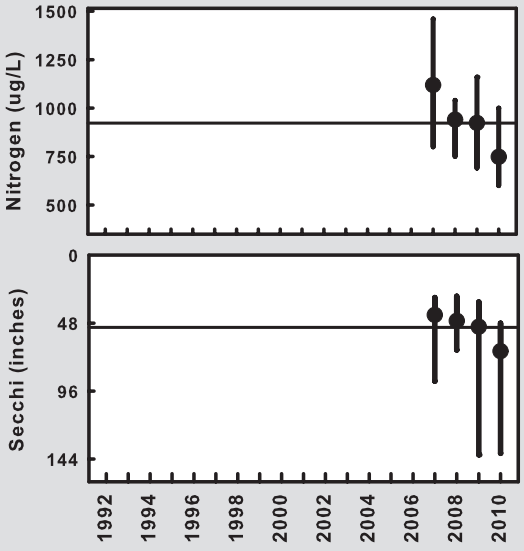
The two nutrients generally followed the same seasonal pattern of fluctuations, though the ratio of nitrogen to phosphorus changed over the season. During the first three samples there was approximately 13 units of nitrogen for each unit of phosphorus. This ratio suggests that neither nutrient was in excess relative to algal requirements. By the end of the season the ratio was around 30 units of nitrogen to each unit of phosphorus. This ratio indicates excess nitrogen and that phosphorus was probably the limiting nutrient. Chlorophyll mimicked the nutrients, peaking when nutrients were at their maximum. Inorganic suspended sediment levels were generally low and fairly stable across the season.

There has been a decrease in average summertime nitrogen concentrations in Whitecliff Lake over the four years of monitoring. In 2007 the summertime mean was 1119µg/L with four of five samples exceeding 1000µg/L. In contrast, the summertime mean in 2010 was 748µg/L with only one of six samples exceeding 1000µg/L. The only other water quality parameter that seems to be trending is Secchi transparency, but care needs to be taken when reviewing this graph. While the mean Secchi readings have improved from 42 inches in 2007 to 68 inches in 2010, the maximum values shown in the graph are somewhat misleading. Both 2007 and 2008 had water clarity readings that exceeded 150 inches, they just occurred prior to May 15th, the day we use to represent the beginning of the summer. When all values from each year are used to generate a geometric mean value, the difference from 2007 to 2010 is smaller (54 versus 68 inches).

2010 GRAPHS



TREND GRAPHS



See pages 10-11 for help interpreting graphs