

Sugar Creek Lake, Site 1

Randolph County

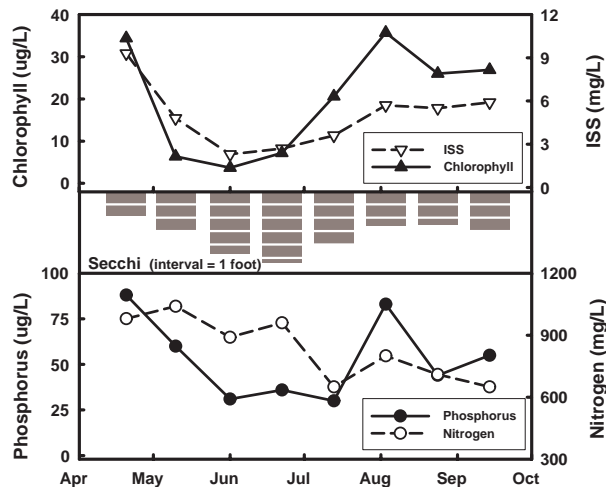
2008 DATA



Date	Secchi (inches)	TP (µg/L)	TN (µg/L)	CHL (µg/L)	ISS (mg/L)
4/20	22	88	980	34.4	9.3
5/10	35	60	1040	6.4	4.8
6/1	56	31	890	3.7	2.3
6/22	64	36	960	7.2	2.7
7/13	48	30	650	20.6	3.6
8/3	31	83	800	35.7	5.7
8/24	30	44	710	26.0	5.5
9/14	35	55	650	26.9	5.9
Mean	38	49	822	15.3	4.6

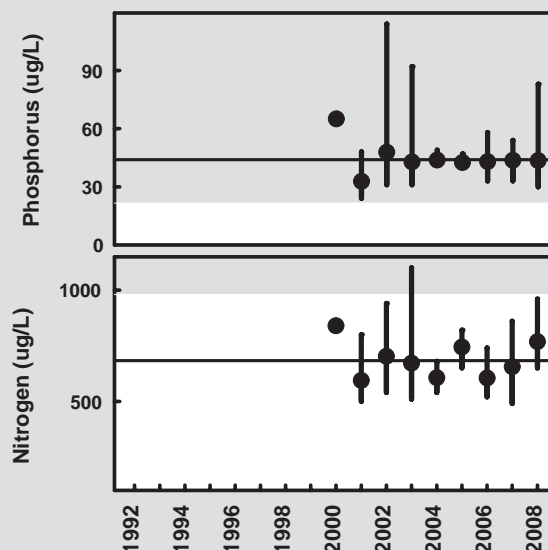
2008 SUMMARY

Nutrient, chlorophyll and inorganic suspended solids values were all high on the first sample date, a condition that is common in Missouri lakes due to springtime inflows. The decreasing nutrient concentrations through July are also a common pattern for Missouri lakes, reflecting reduced inputs into surface waters coupled with loss of nutrients and suspended solids to sedimentation. An early August spike in inorganic suspended solids was accompanied by an increase in phosphorus, suggesting the lake was impacted by a rain event which led to erosional runoff into the lake. One odd pattern at Site 1 was the fact that chlorophyll and inorganic suspended solids levels followed the same seasonal patterns. Usually we find the highest chlorophyll levels when inorganic suspended solids values are at a minimum.



TRENDS

Summertime geometric mean phosphorus values have been at 42 or 43 µg/L each of the last six summers at Site 1, representing an amazing level of stability. During this same period the average nitrogen concentrations ranged from 605 to 743 µg/L. There are no obvious trends observed for any of the water quality parameters.



Sugar Creek Lake, Site 2

Randolph County

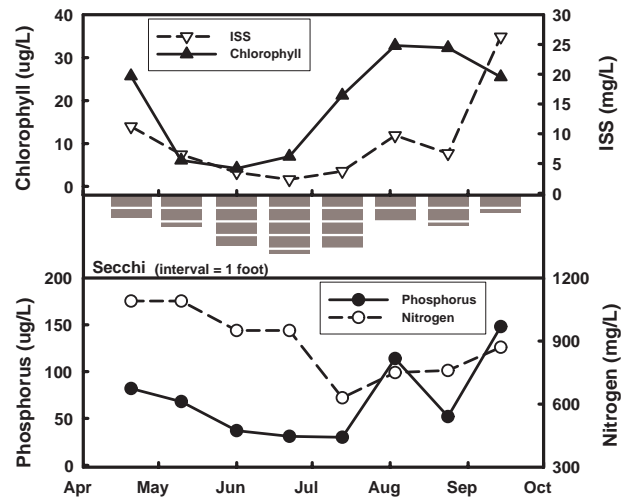
2008 DATA



Date	Secchi (inches)	TP (µg/L)	TN (µg/L)	CHL (µg/L)	ISS (mg/L)
4/20	21	82	1090	25.7	11.2
5/10	29	68	1090	6.1	6.5
6/1	45	37	950	4.2	3.5
6/22	52	31	950	7.0	2.3
7/13	48	30	630	21.2	3.7
8/3	23	114	750	32.8	9.7
8/24	28	52	760	32.3	6.7
9/14	16	148	870	25.5	26.3
Mean	30	60	872	15.1	6.6

2008 SUMMARY

The seasonal patterns observed at Site 1 were also seen at Site 2. An interesting note is that the Secchi, nitrogen and chlorophyll values (both maximum and average values) were fairly similar for the two sites on Sugar Creek Lake. In contrast, maximum phosphorus and inorganic suspended solids values at Site 2 were considerably higher than those at Site 1 (averages at Site 2 were slightly higher than those from Site 1).



TRENDS

The long-term trends for phosphorus and inorganic suspended solids at Site 2 mimic each other. This is not unexpected given that phosphorus often enters lakes attached to soil particles. This suggests that any reductions in concentrations of ISS (our estimate of soil particles suspended in the water) would likely reduce phosphorus levels also.

