Sugar Creek Lake

Glacial Plains Region

Sugar Creek Lake is a 346-acre lake located in Randolph County. Owned by the City of Moberly, it is used as the city's drinking water reservoir. Sugar Creek's watershed is approximately 6,700 acres.

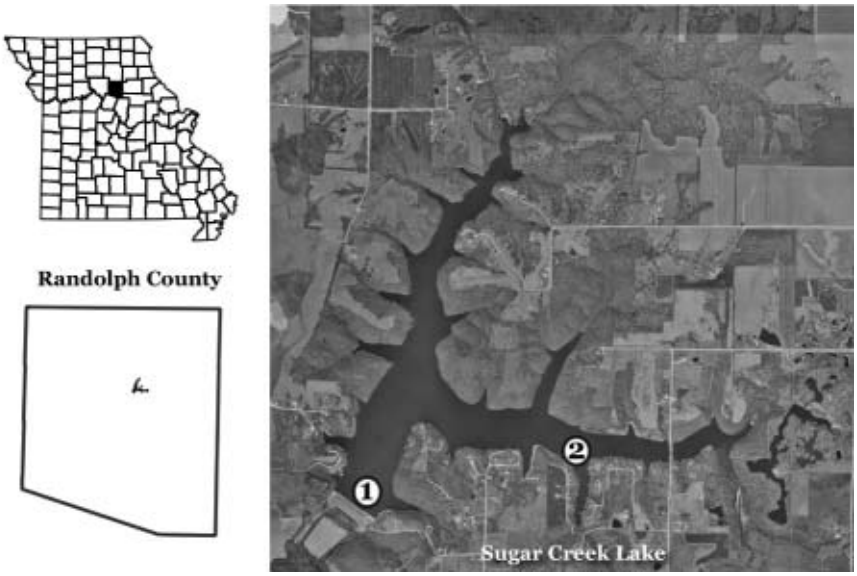

Figure 49. Location of Sugar Creek Lake and sample sites.

2002 Results

Figures 50 and 51 show how the parameters phosphorus, nitrogen, algal chlorophyll, inorganic suspended solids and Secchi transparency varied in Sugar Creek Lake during the 2002 sampling season. The descriptive statistics appear in Tables 23 and 24. A brief description of these results:

- Sugar Creek Lake was sampled nine times at two sites between April 14 and October 19.
- Seasonal patterns were nearly identical between the two sites.
- Site 2 had slightly higher nutrient, chlorophyll and ISS values and slightly lower Secchi values than Site 1.
- Geometric means for nitrogen and phosphorus were slightly higher in 2002 than in 2001 for both sites, though chlorophyll values were comparable.
- Sugar Creek Lake was eutrophic at both sites based on geometric means of chlorophyll, nitrogen and phosphorus.

Table 23. Descriptive statistics for Sugar Creek Lake, Site 1 – 2002.

Parameters	# of Samples	Geometric Mean	Minimum	Maximum	Median
Secchi Transparency (inches)	9	30	15	56	30
Phosphorus (μg/L)	9	47	31	114	40
Nitrogen (μg/L)	9	741	540	940	730
Chlorophyll (μg/L)	8	17.5	8.6	29.3	20.2
ISS (mg/L)	8	4.8	1.9	11.1	6.1

ISS=Inorganic Suspended Solids
Samples were collected between April 14 and October 19

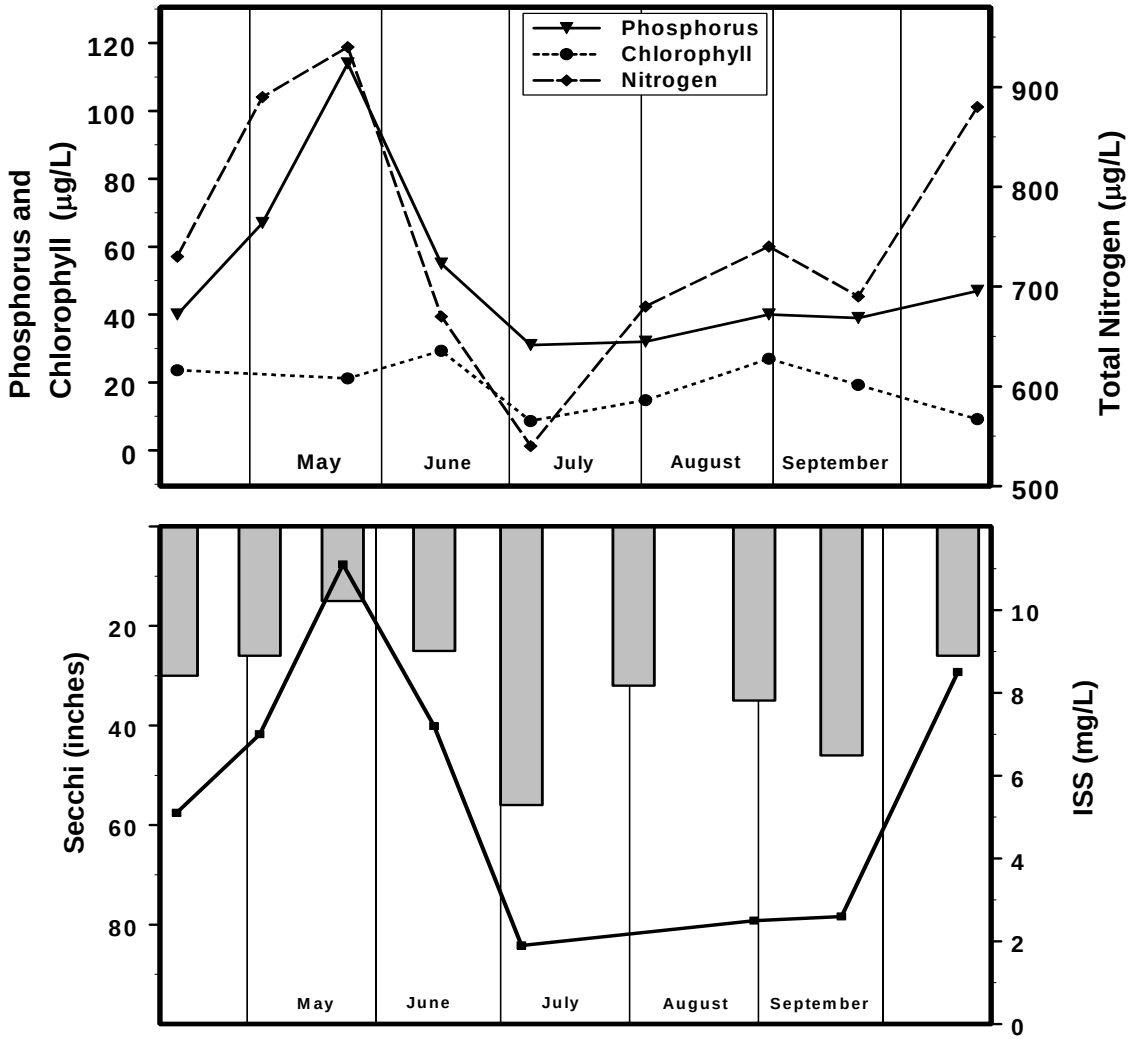

Figure 50. Seasonal fluctuations of parameters for Sugar Creek Lake, Site 1 – 2002. Bars represent Secchi, line represents ISS.

Table 24. Descriptive Statistics for Sugar Creek Lake, Site 2 – 2002.

Parameters	# of Samples	Geometric Mean	Minimum	Maximum	Median
Secchi Transparency (inches)	9	28	15	45	28
Phosphorus (μg/L)	9	52	32	118	47
Nitrogen (μg/L)	9	773	560	1030	740
Chlorophyll (μg/L)	9	21.3	12.1	44.0	21.0
ISS (mg/L)	8	5.9	1.8	14.0	7.6

ISS=Inorganic Suspended Solids
Samples were collected between April 14 and October 19

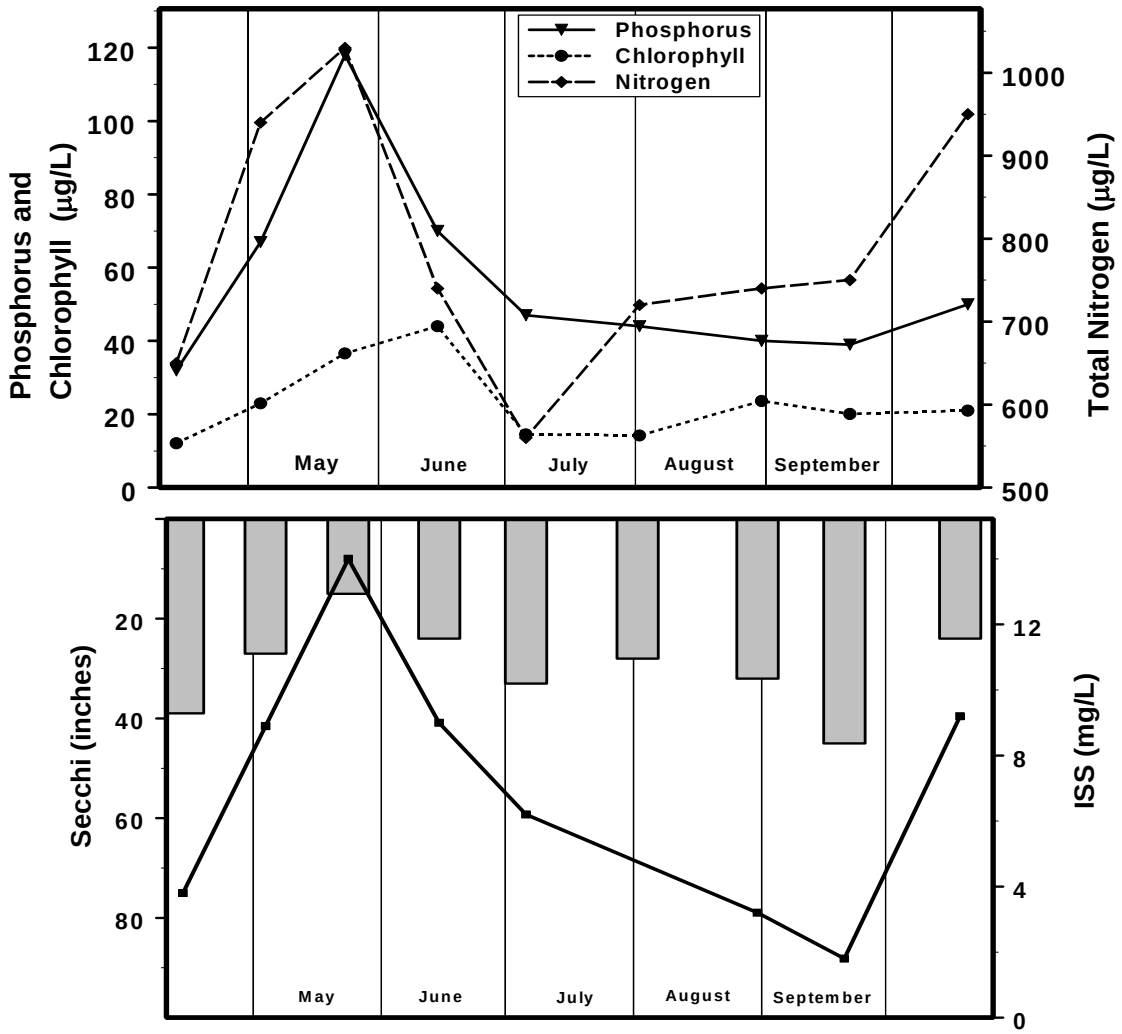

Figure 51. Seasonal fluctuations of parameters for Sugar Creek Lake, Site 2 – 2002. Bars represent Secchi, line represents ISS.