

## Sugar Creek Lake Region

Glacial Plains

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.

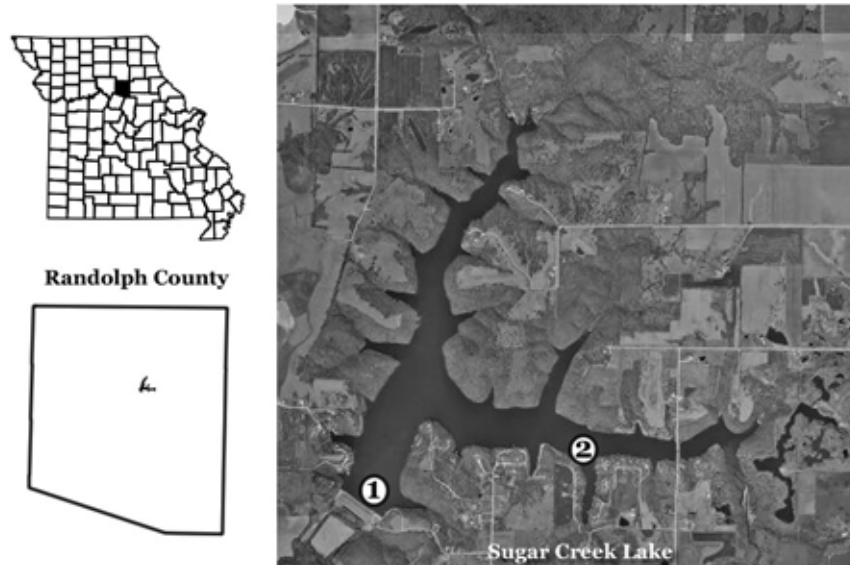


Figure 73. Location of Sugar Creek Lake and sample sites.

### 2003 Results

Figures 74 and 75 show how the parameters phosphorus, nitrogen, algal chlorophyll, inorganic suspended solids and Secchi transparency varied in Sugar Creek Lake during the 2003 sampling season. The descriptive statistics appear in Tables 34 and 35. A brief description of these results:

- Sugar Creek Lake was sampled eight times at two sites between April 25 and October 19
- Mean concentrations of nutrients and chlorophyll were slightly higher at Site 2 than at Site 1, and Secchi values were slightly lower, though the maximum values for chlorophyll, nitrogen and phosphorus were observed at Site 1
- Geometric mean concentration of inorganic suspended sediments at Site 2 was 50% higher than at Site 1
- Both sites were eutrophic in 2003, based on concentrations of chlorophyll, nitrogen and phosphorus

Table 34. Descriptive statistics for Sugar Creek Lake, Site 1 – 2003.

	Secchi (inches)	TP ( $\mu\text{g/L}$ )	TN ( $\mu\text{g/L}$ )	CHL ( $\mu\text{g/L}$ )	ISS (mg/L)
# of Samples	8	8	8	8	7
Median	31	39	655	12.2	5.0
Minimum	20	31	510	1.6	1.7
Maximum	47	92	1100	68.2	11.0
Geometric Mean	31	43	690	12.8	5.0

Samples were collected between April 25 to October 19

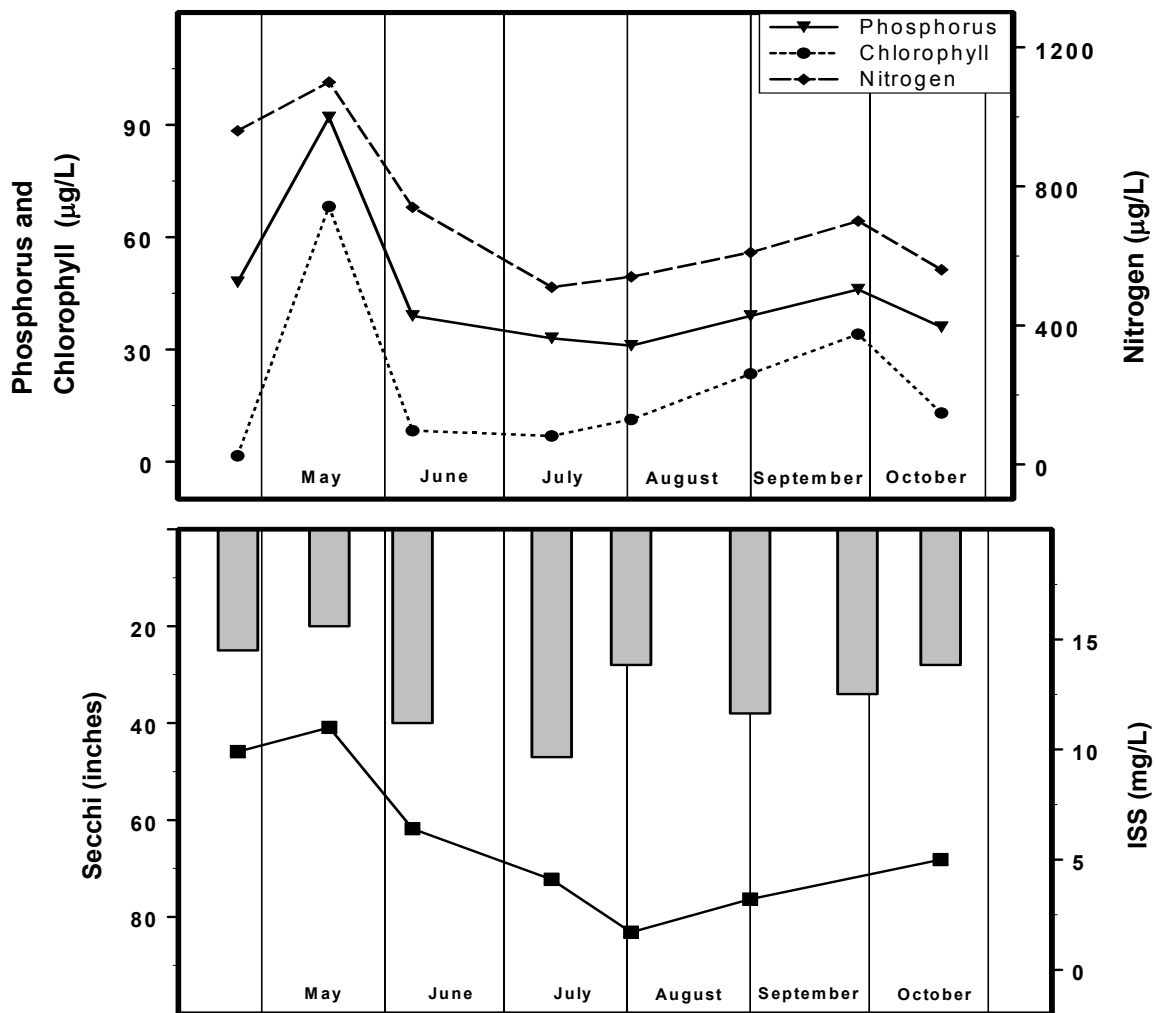


Figure 74. Seasonal fluctuations of parameters for Sugar Creek Lake, Site 1 – 2003. Bars represent Secchi, line represents ISS.

Table 35. Descriptive Statistics for Sugar Creek Lake, Site 2 – 2003.

	Secchi (inches)	TP ( $\mu\text{g/L}$ )	TN ( $\mu\text{g/L}$ )	CHL ( $\mu\text{g/L}$ )	ISS ( $\text{mg/L}$ )
# of Samples	8	8	8	8	8
Median	28	50	705	22.8	7.4
Minimum	19	42	560	1.8	5.4
Maximum	45	77	1020	48.3	17.7
Geometric Mean	28	53	736	17.9	8.4

Samples were collected between April 25 to October 19

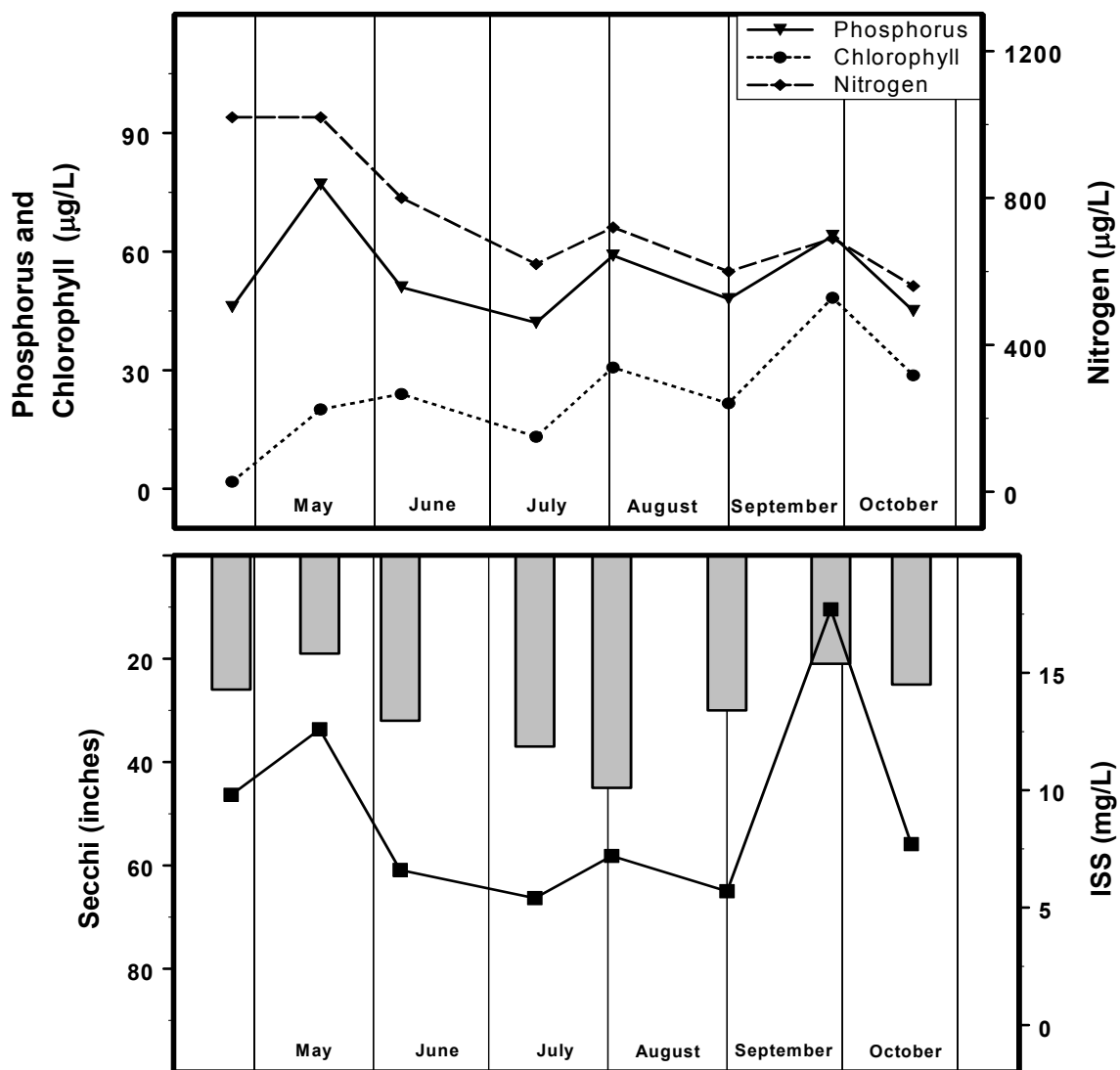


Figure 75. Seasonal fluctuations of parameters for Sugar Creek Lake, Site 2 – 2003. Bars represent Secchi, line represents ISS.