

## Lamar Lake

Osage Plains Region

Lamar Lake provides drinking water for the City of Lamar. This 147 acre lake has a 3055 acre watershed that is comprised of 11% forest, 65% grassland, 15% cropland, and 4% urban.

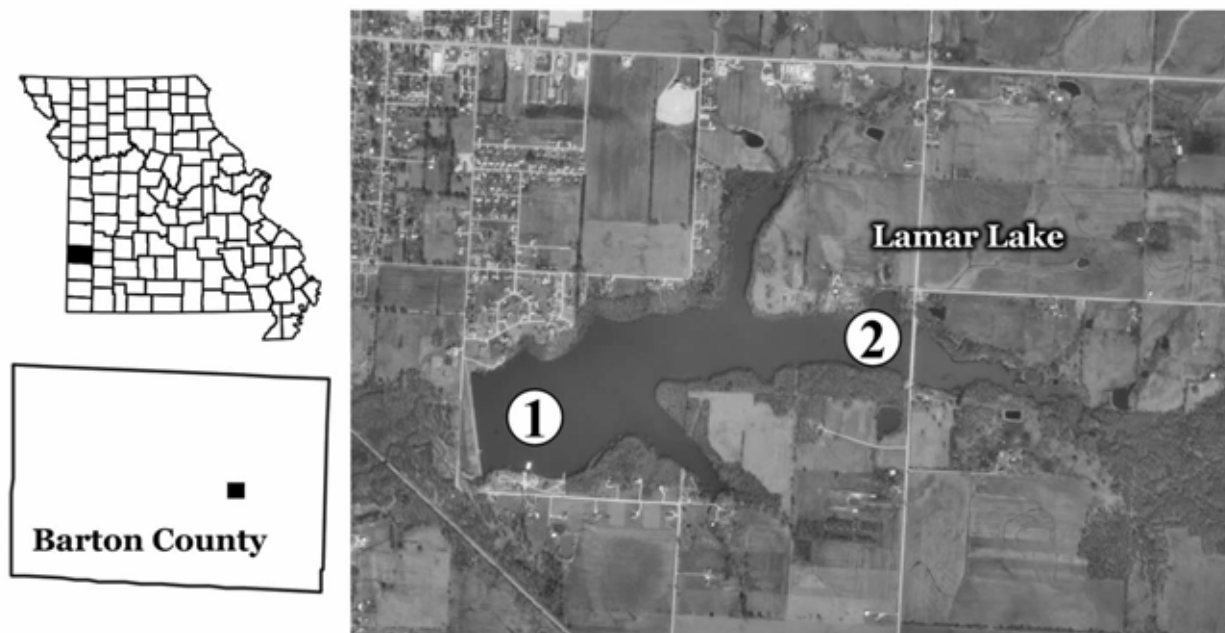


Figure 42. Location of Lamar Lake.

### 2003 Results

Figures 43 and 44 show how the parameters phosphorus, nitrogen, algal chlorophyll, inorganic suspended solids and Secchi transparency varied in Lamar Lake during the 2003 sampling season. The descriptive statistics appear in Tables 19 and 20. A brief description of these results:

- 8 samples were collected between May 19 and September 29
- Chlorophyll concentrations varied little at Site 1 (10 ug/L difference between maximum and minimum values)
- Inorganic suspended solids concentrations were slightly higher at Site 2 than Site 1
- All parameters differed marginally between the two sites
- Lamar Lake was eutrophic based on nitrogen and phosphorus concentrations
- Chlorophyll geometric means differed between the Sites 1 and 2 by only 2 ug/L, but were on the border between eutrophic and hypereutrophic, as a result Site 1 is hypereutrophic based on chlorophyll and Site 2 is eutrophic
- 2003 was the first year that Lamar Lake was sampled for the LMVP

Table 19. Descriptive statistics for Lamar Lake Site 1 - 2003.

	<b>Secchi (inches)</b>	<b>TP (<math>\mu\text{g/L}</math>)</b>	<b>TN (<math>\mu\text{g/L}</math>)</b>	<b>CHL (<math>\mu\text{g/L}</math>)</b>	<b>ISS (mg/L)</b>
# of Samples	8	8	8	8	7
Median	27	73	900	41.2	1.6
Minimum	24	59	800	34.7	1.0
Maximum	48	101	1260	45.6	2.4
Geometric Mean	29	75	916	40.1	1.5

Samples were collected between May 19 and September 29

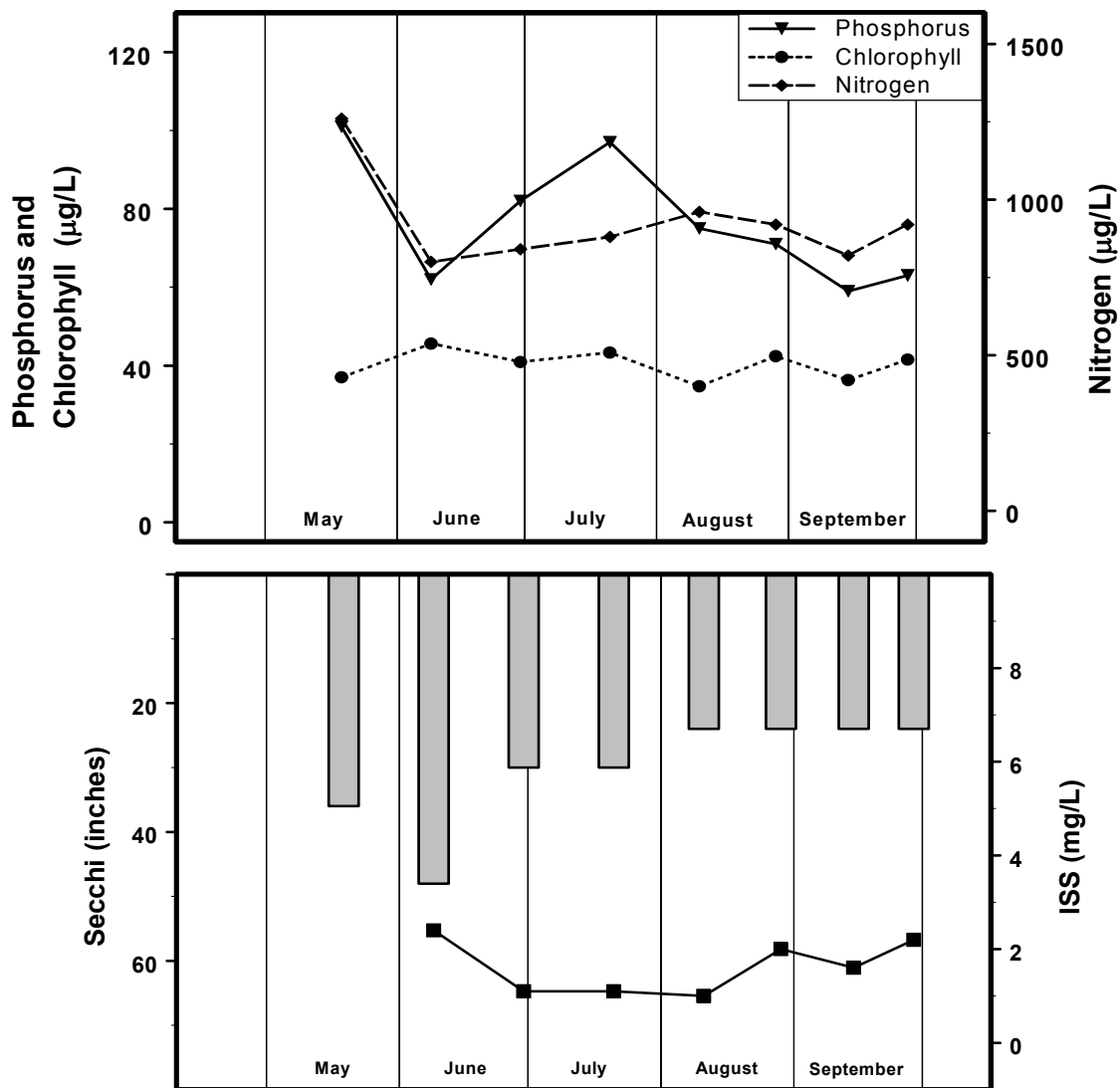


Figure 43. Seasonal fluctuations of parameters in Lamar Lake, Site 1 – 2003. Bars represent Secchi, line represents ISS.

Table 20. Descriptive statistics for Lamar Lake Site 2 - 2003.

	<b>Secchi (inches)</b>	<b>TP (<math>\mu\text{g/L}</math>)</b>	<b>TN (<math>\mu\text{g/L}</math>)</b>	<b>CHL (<math>\mu\text{g/L}</math>)</b>	<b>ISS (mg/L)</b>
# of Samples	8	8	8	8	7
Median	27	72	940	38.1	2.6
Minimum	24	58	630	26.9	1.0
Maximum	36	95	1520	58.8	3.7
Geometric Mean	28	72	958	38.1	2.4

Samples were collected between May 19 and September 29

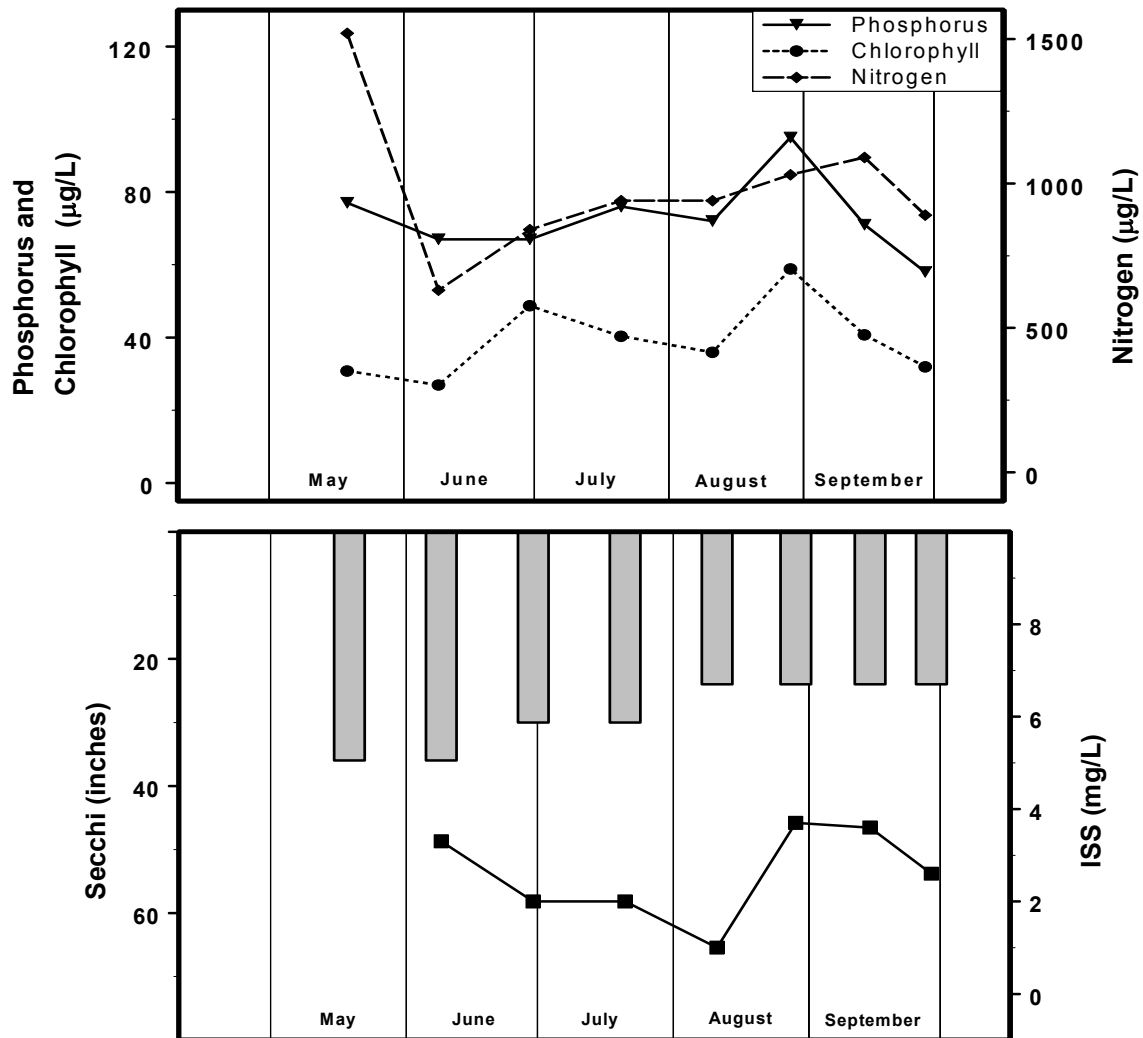


Figure 44. Seasonal fluctuations of parameters in Lamar Lake, Site 2 – 2003. Bars represent Secchi, line represents ISS.