

Smithville Lake

Region - Glacial Plains

Smithville Lake is a 7,087 acre Army Corps of Engineers reservoir located north of the Kansas City metro area. Grassland/pasture make up the largest portion of the watershed at 46%. Row cropping makes up about 28%, and 19% consists of forest. Only about 2% of the watershed is developed, with Plattsburg (located on the upper-reaches of the Little Platte Arm) being the bulk of this developed area. It should be noted that new developments are being built within the watershed.

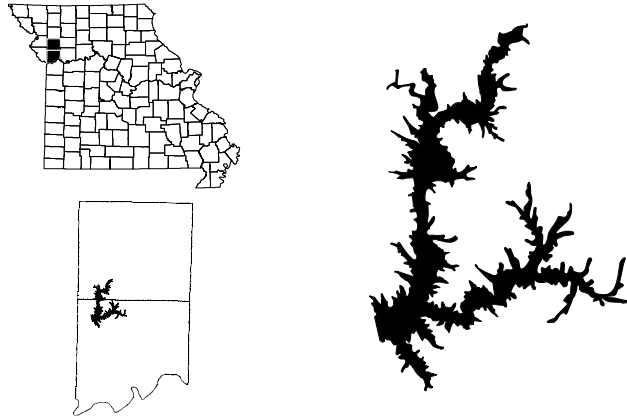


Figure 40. Location of Smithville Lake.

2000 Results

Figure 41 shows how the parameters phosphorus, nitrogen, algal chlorophyll and Secchi transparency varied in Smithville Lake during the 2000 sampling season. A brief description of these results are:

- ▶ Six samples were collected at the dam, the first on 5-16 and the last on 8-29.
- ▶ Phosphorus values were stable with low variability.
- ▶ Nitrogen values had moderate variability.
- ▶ This site was sampled in 1996. Phosphorus, nitrogen, inorganic suspended solids, and Secchi values are similar to this year's values. The average value for chlorophyll was higher in 2000 (1996 - $9.4\mu\text{g/L}$ compared to 2000 - $22.1\mu\text{g/L}$). More samples will need to be collected before we can make any comments as to whether this is a trend or just annual variation.
- ▶ Average values measured for phosphorus, nitrogen and chlorophyll were in the eutrophic range.

Table 20. Descriptive statistics for Smithville Lake - 2000.

Parameters	Average	Median	Minimum	Maximum
Chlorophyll ($\mu\text{g/L}$)	22.1	23.9	7.0	29.5
Nitrogen ($\mu\text{g/L}$)	648	655	510	820
Phosphorus ($\mu\text{g/L}$)	34	33	28	42
ISS (mg/L)	3.3	3.4	2.9	3.5
Secchi (inches)	42	35	29	72

ISS = Inorganic Suspended Solids

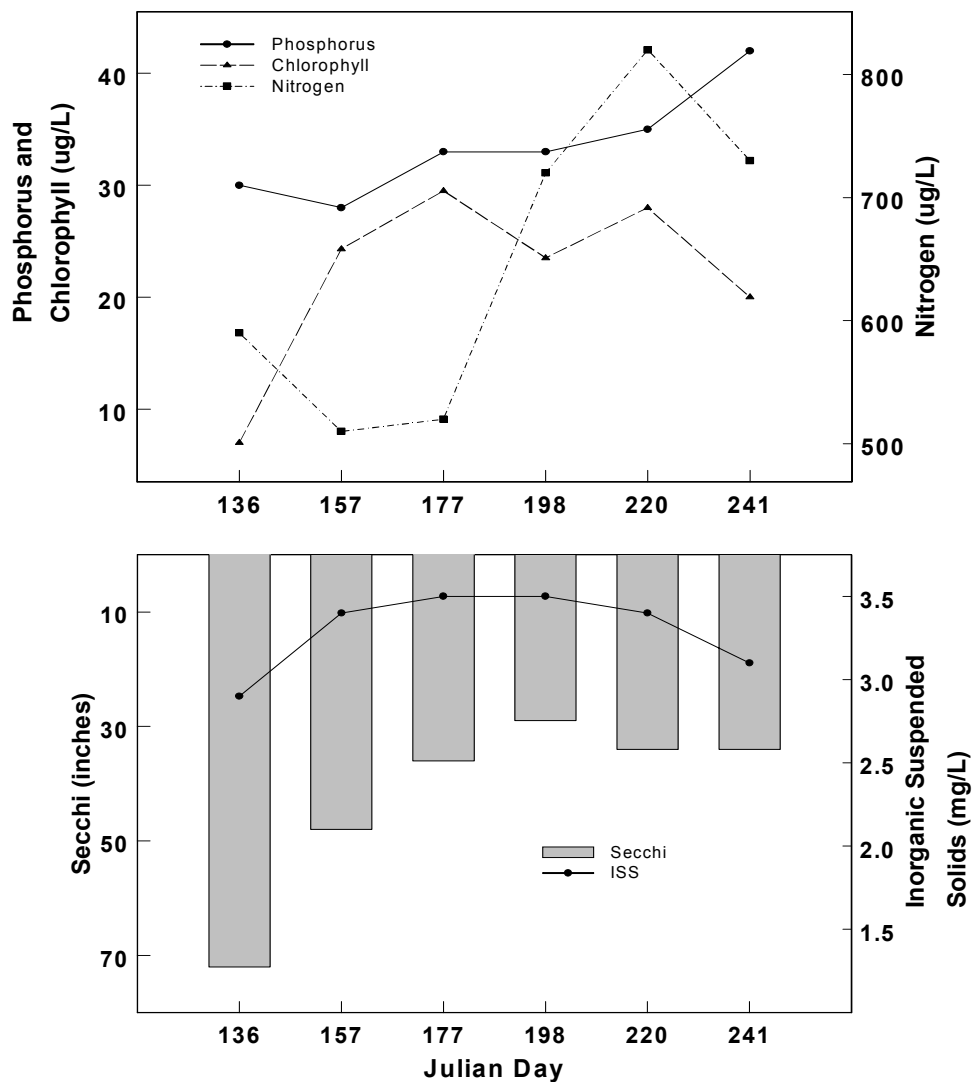


Figure 41. Seasonal fluctuations of parameters for Smithville Lake - 2000.