

Creve Coeur Lake - 2001 Data

Ozark Border Region

Creve Coeur is a 320-acre lake located in the Missouri River floodplain, where the nutrient-rich soil is easily eroded. Even though the lake is part of a 1,141-acre park, the area adjacent to the lake is urban. Creve Coeur Lake differs from all of the other lakes in the program in that it is not a reservoir, but an oxbow lake. Having once been part of the Missouri River, this lake is now about two miles from the present channel, separated over time by the natural meandering of the river.

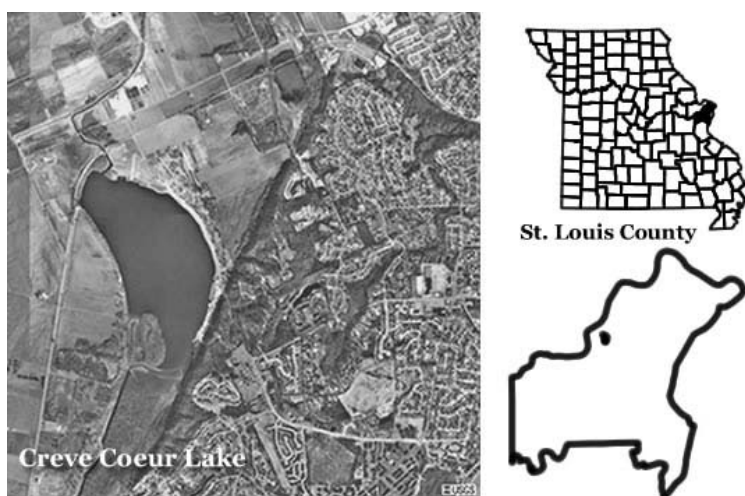


Figure 24. Location of Creve Coeur Lake.

2001 Results

Figure 25 shows how the parameters phosphorus, nitrogen, algal chlorophyll, inorganic suspended solids and Secchi transparency varied in Creve Coeur Lake during the 2001 sampling season. The descriptive statistics appear in Table 12. A brief description of these results:

- Nine samples were collected from April 8 to September 23.
- The chlorophyll to phosphorus ratio was 1.8 on April 8 (Julian Day 98). This high value suggests conditions were ideal for an algae bloom (see page 7)
- ISS values were among the highest in the program for this oxbow lake. Easily eroded soils in the watershed and the shallow nature of this lake result in elevated levels of suspended materials (which may hold nitrogen and phosphorus).
- The Secchi values track the ISS values, indicating that suspended solids, rather than algal concentration, determines water clarity. This is interesting, given that the chlorophyll concentrations were among the highest in the program.
- Creve Coeur Lake was eutrophic based on the geometric mean of the nitrogen values, and hypereutrophic based on geometric means for chlorophyll and phosphorus.

Table 12. Descriptive statistics for Creve Coeur Lake – 2001.

Parameters	# of Geometric				
	Samples	Mean	Minimum	Maximum	Median
Secchi Transparency (inches)	9	12	10	15	13
Phosphorus ($\mu\text{g/L}$)	9	130	86	195	130
Nitrogen ($\mu\text{g/L}$)	9	931	730	1160	910
Chlorophyll ($\mu\text{g/L}$)	9	63.7	43.8	157.1	57.5
ISS (mg/L)	9	15.8	8.8	28.0	16.2

ISS=Inorganic Suspended Solids

Samples were collected between April 8 and September 23

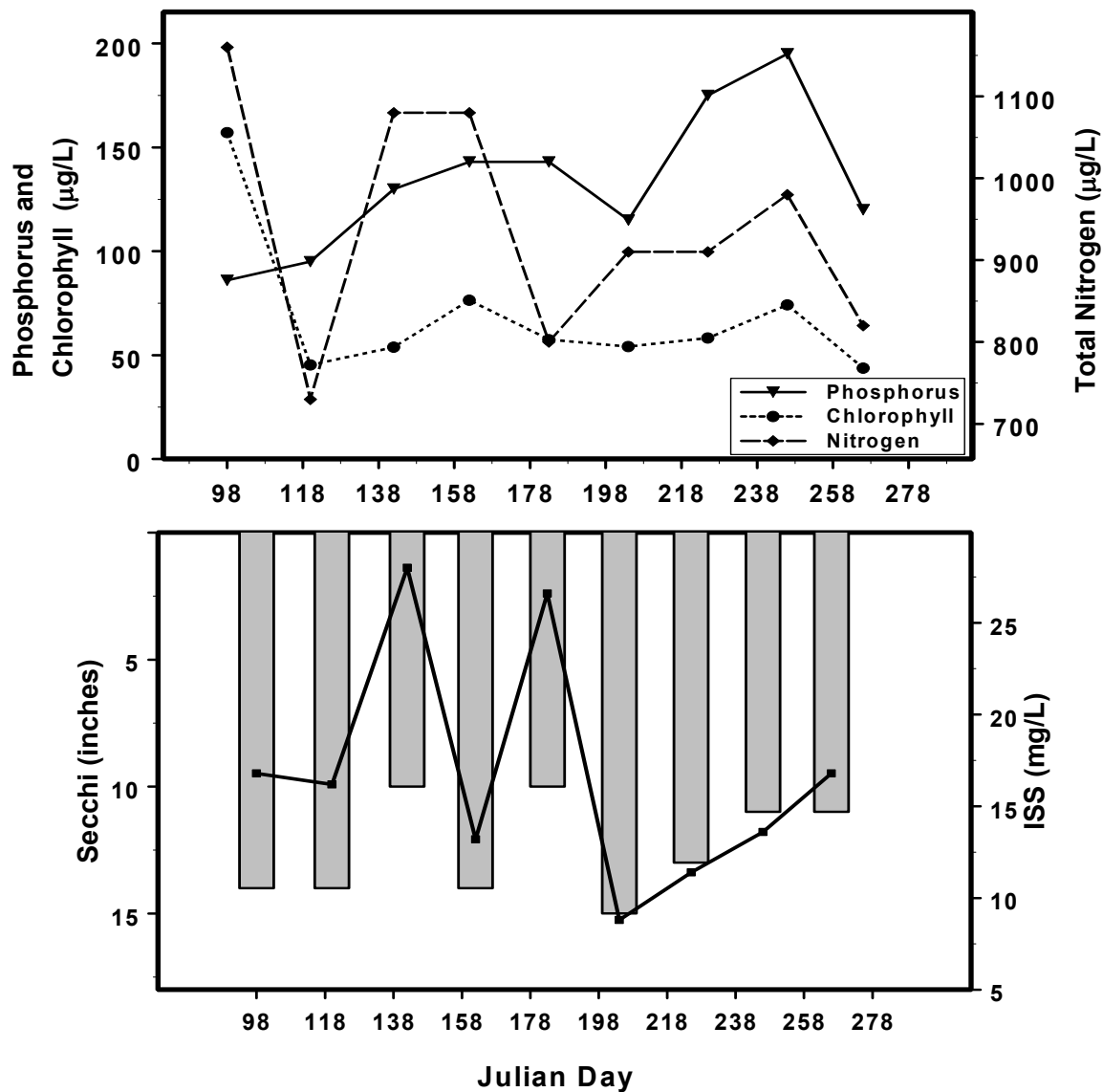


Figure 25. Seasonal fluctuations of parameters in Creve Coeur Lake – 2001. Bars represent Secchi, line represents ISS.