Long Branch Lake

Long Branch Lake is a large lake (2,435 acres) located in Macon County. Grassland/pasture, crop land and forest make up 37%, 34% and 22% of the watershed, respectively. The lake is an important recreational resource as well as a drinking water reservoir.

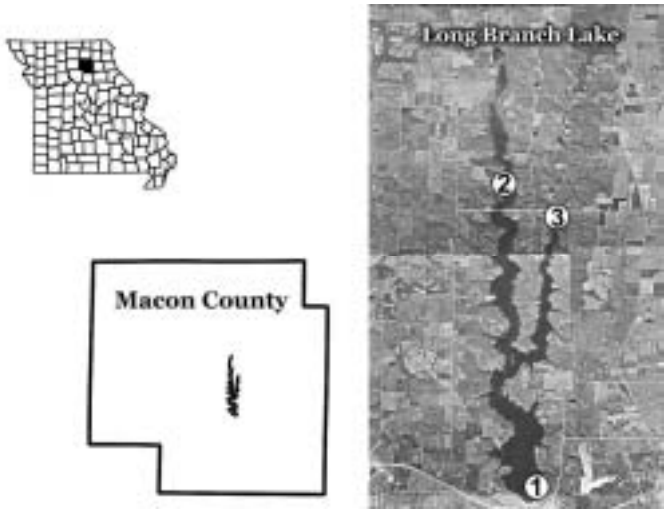

Figure 60. Sampling locations on Long Branch Lake

2004 Results

Figure 61 shows how the parameters nitrogen, phosphorus, algal chlorophyll, inorganic suspended solids and Secchi transparency varied in Long Branch Lake during 2004. The descriptive statistics appear in Table 18-20.

A brief description of the results:

- Nutrients and chlorophyll concentrations at Site 1 (dam) are quite stable compared to Sites 2 and 3.
- Secchi transparency values at Site 1 were twice (or more) those observed at Sites 2 and 3
- Sites 2 and 3 were comparable to one another, characterized by high concentrations of nutrients, chlorophyll and ISS. ISS concentrations at Sites 2 and 3 were very high, with 6 of the 8 highest concentrations observed by the LMVP in 2004.
- The longitudinal gradient observed between the up-lake sites and the dam site is common. Sediments tend to settle out of the water column. As phosphorus is often bound to sediment particles, it settles out as well.
- Nitrogen concentrations were lower at site 1 compared to up-lake sites.

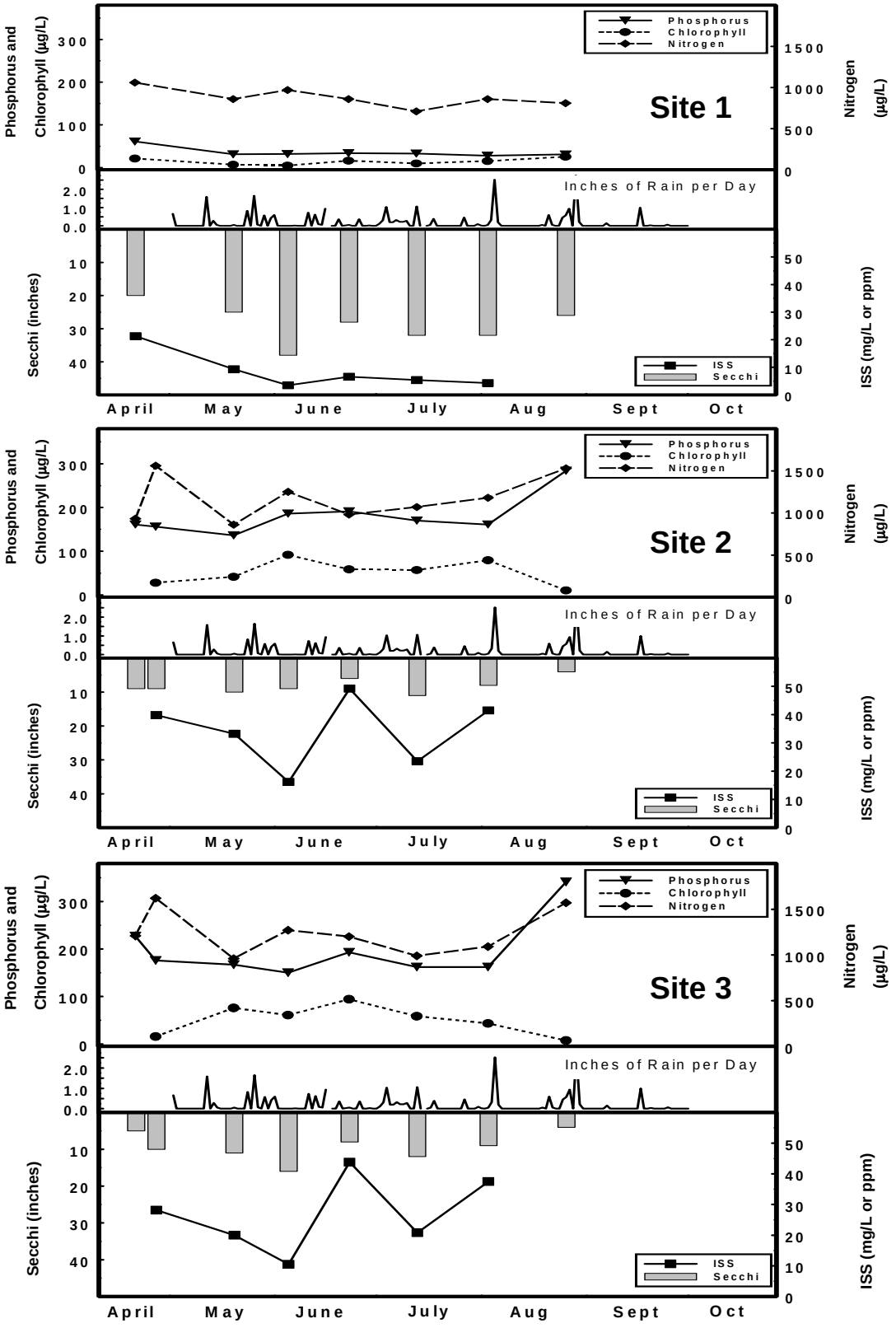

Figure 61. Seasonal fluctuations of parameters for Long Branch Lake Sites 1,2,3 – 2004

Table 18. Descriptive statistics for Long Branch Lake Site 1 – 2004

	Secchi (inches)	TP (ug/L)	TN (ug/L)	CHL (ug/L)	ISS (mg/L)
Geometric Mean	28	35	870	12.4	6.9
Minimum	20	28	710	5.0	3.5
Maximum	38	61	1060	25.6	21.3
Number of Samples	7	7	7	7	6

Table 19. Descriptive statistics for Long Branch Lake Site 2 – 2004

	Secchi (inches)	TP (ug/L)	TN (ug/L)	CHL (ug/L)	ISS (mg/L)
Geometric Mean	8	177	1145	43.4	31.8
Minimum	4	136	860	10.3	16.2
Maximum	11	284	1560	91.8	49.2
Number of Samples	8	8	8	7	6

Table 20. Descriptive statistics for Long Branch Lake Site 3 – 2004

	Secchi (inches)	TP (ug/L)	TN (ug/L)	CHL (ug/L)	ISS (mg/L)
Geometric Mean	9	190	1218	38.3	24.2
Minimum	4	150	960	7.2	10.5
Maximum	16	341	1620	94.1	43.8
Number of Samples	8	8	8	7	6

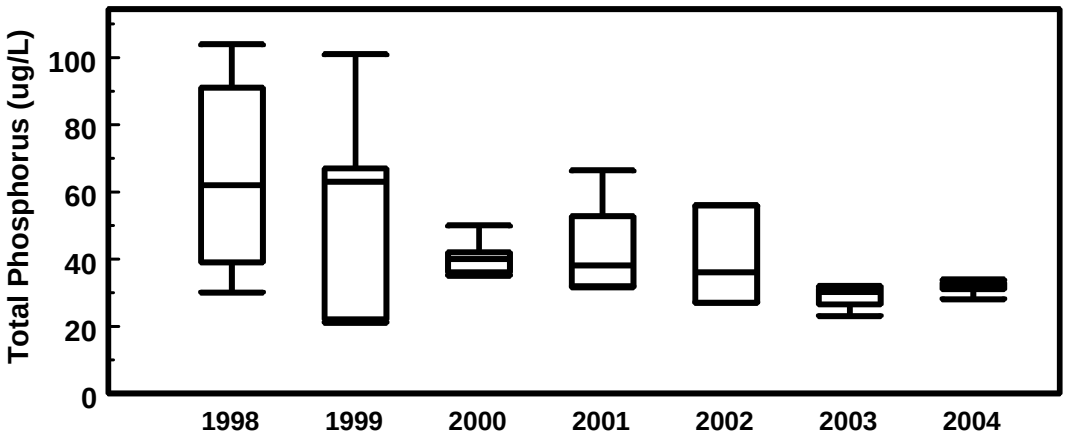

Figure 62. Phosphorus trends in Long Branch Lake, Site 1. Within season variability of phosphorus concentrations in Long Branch Lake has been low for the last 2 years. There have been no observations over 70 ug/L since 1999.

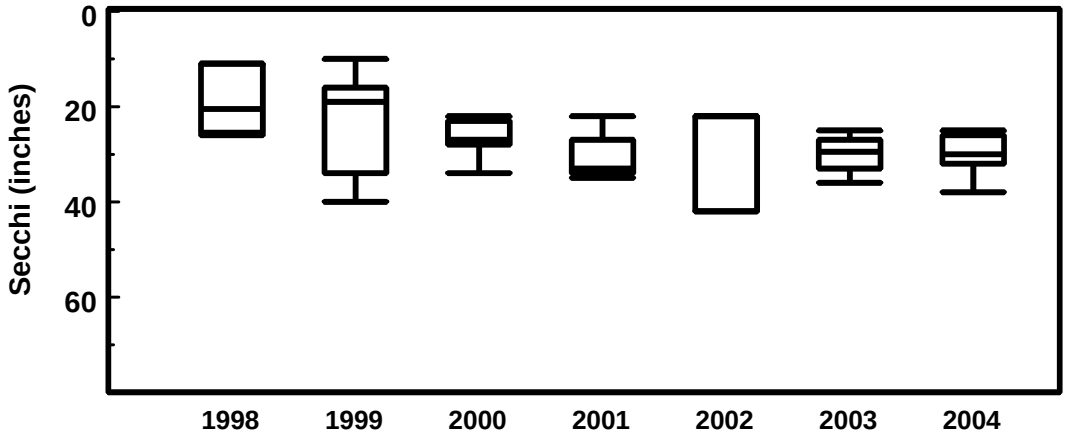

Figure 63. Secchi trends in Long Branch Lake, Site 1. All summer Secchi transparency values have been 20 inches or over since 1999, but no long-term trends are apparent.