

Bowling Green Lakes

The Bowling Green Lakes provide drinking water for the City of Bowling Green. Lake 1 was built in 1954. Its surface area is 45 acres and it has a 900 acre watershed. Of those 900 acres, 44% are forest, 27% are cropland, and 26% are grassland (including pasture). Lake 2 was built in 1990 and covers 31 acres. The watershed of Lake 2 is 850 acres, which includes 52% forest, 10% cropland, 23% grassland (including pasture), and 14% urban.

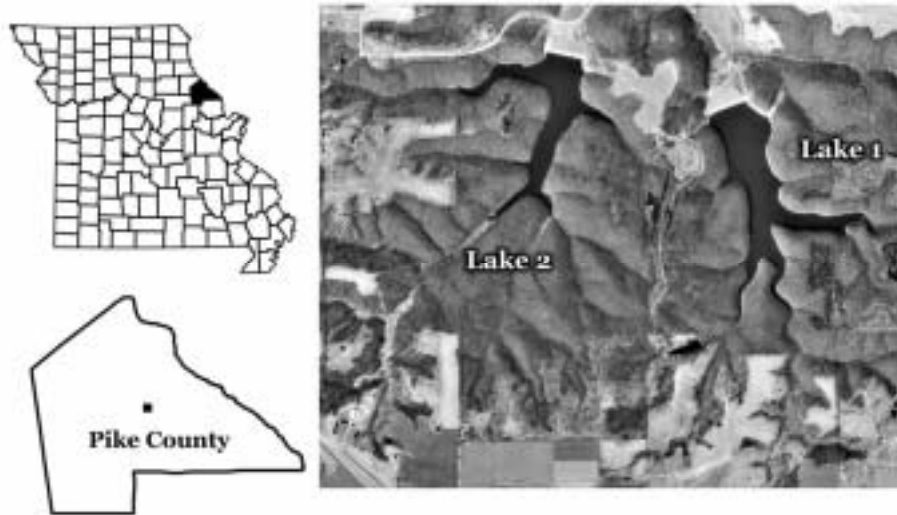


Figure 20. Location of Bowling Green Lakes 1 and 2

2004 Results

Figures 21 and 22 show how the parameters nitrogen, phosphorus, algal chlorophyll, inorganic suspended solids and Secchi transparency varied in Bowling Green Lakes 1 and 2 during 2004. The descriptive statistics appear in Tables 4 and 5.

A brief description of the results:

- ISS concentrations were nearly undetectable in both lakes, when measured.
- Phosphorus and chlorophyll concentrations were low for both lakes.
- Chlorophyll concentrations in Lake 2 were lower than expected based on nutrient concentrations.
- Higher chlorophyll concentrations in Lake 1 resulted in more variable Secchi transparency values.
- Nitrogen concentrations in Lake 2 were double those of Lake 1.

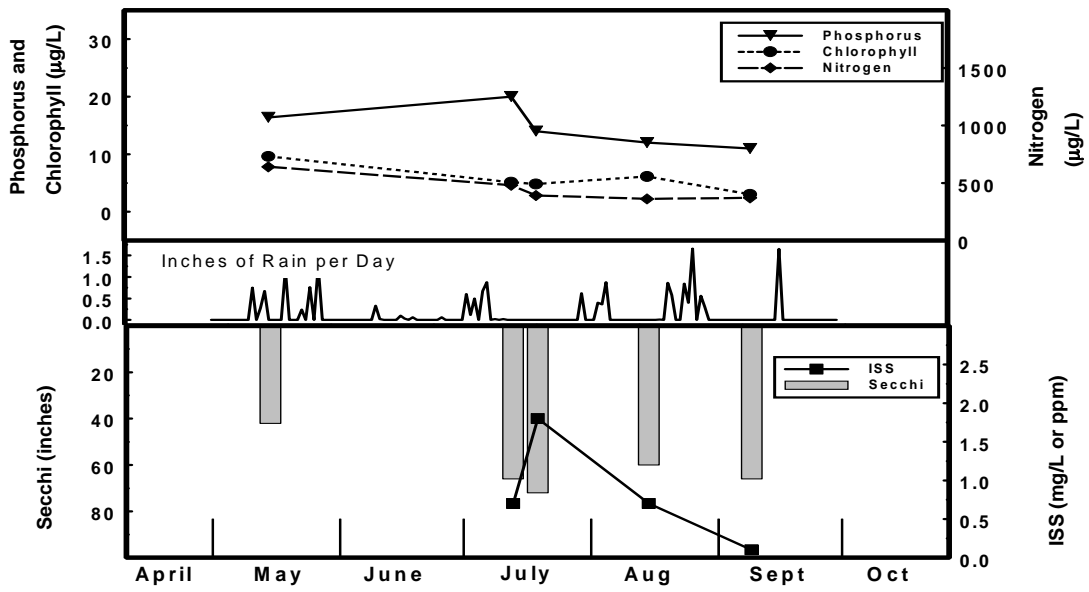


Figure 21. Seasonal fluctuations of parameters for Bowling Green Lake 1 – 2004

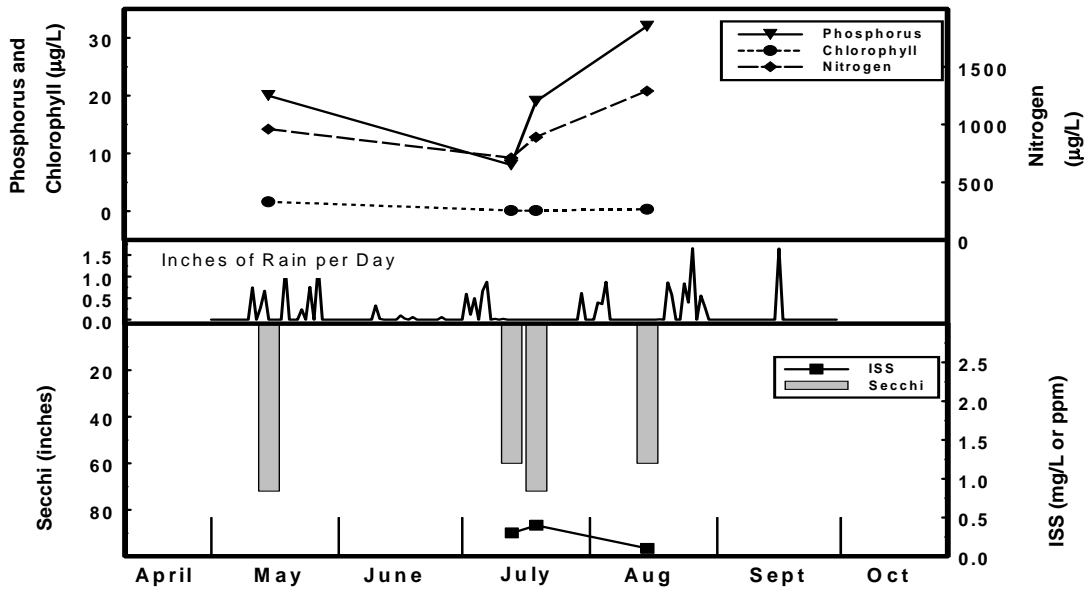


Figure 22. Seasonal fluctuations of parameters for Bowling Green Lake 2 – 2004

Table 4. Descriptive statistics for Bowling Green Lake 1 – 2004.

	Secchi (inches)	TP (ug/L)	TN (ug/L)	CHL (ug/L)	ISS (mg/L)
Geometric Mean	60	14	437	5.3	0.5
Minimum	42	11	360	3.0	0.1
Maximum	72	20	640	9.6	1.8
Number of Samples	5	5	5	5	4

Table 5. Descriptive statistics for Bowling Green Lake 2 – 2004.

	Secchi (inches)	TP (ug/L)	TN (ug/L)	CHL (ug/L)	ISS (mg/L)
Geometric Mean	66	18	940	0.3	0.3
Minimum	60	8	710	0.1	0.1
Maximum	72	32	1290	1.6	0.4
Number of Samples	4	4	4	4	3

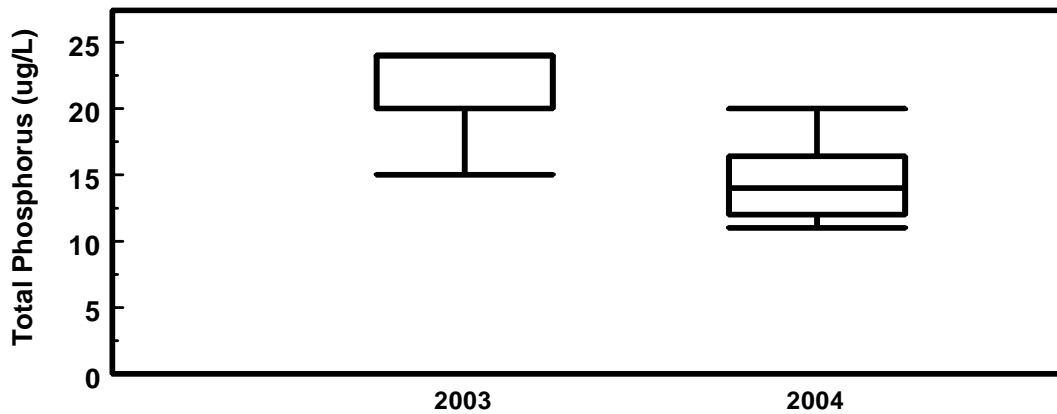


Figure 23. Phosphorus trends in Bowling Green Lake 1. Phosphorus concentrations were lower in 2004 than 2003, but there's not enough data to call it a trend.

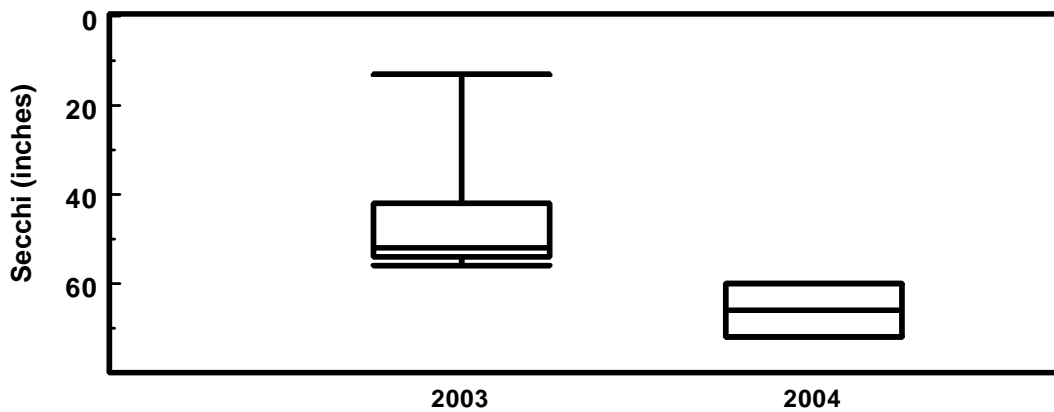


Figure 24. Secchi trends in Bowling Green Lake 2. Water was clearer in 2004 than in 2003, but there's not enough data to call it a trend.