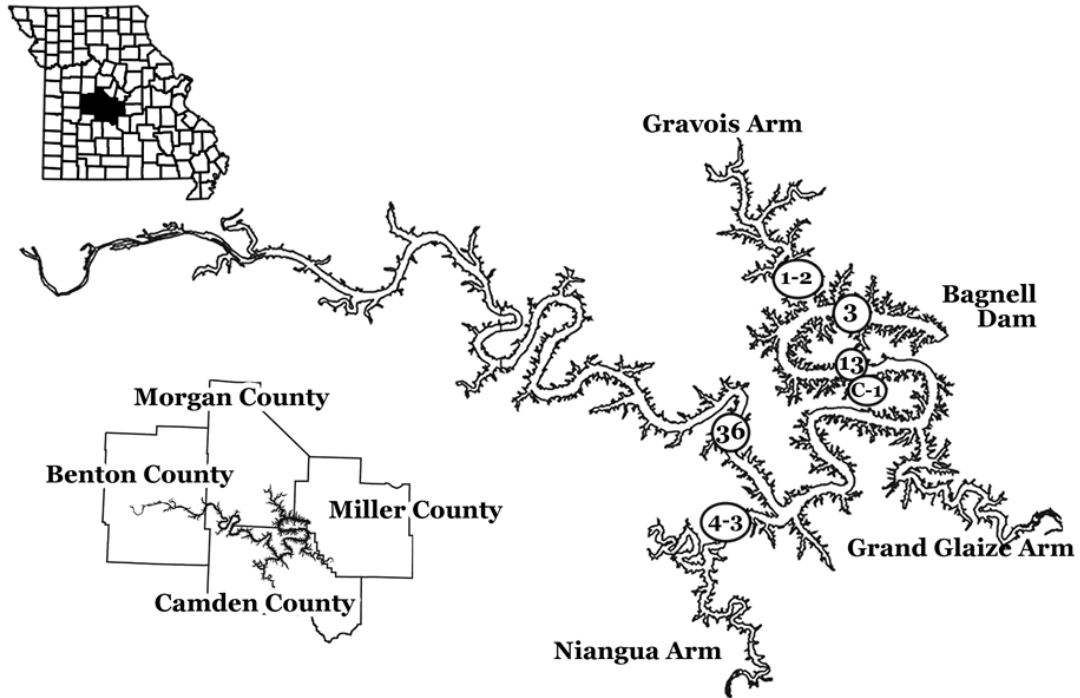


Lake of the Ozarks



Location of Lake of the Ozarks and its sample sites

Lake of the Ozarks is located in the Ozark Highlands, though a portion of the watershed originates in the Osage Plains Region. The Harry S. Truman Reservoir precedes this large impoundment on the Osage River. Even though the majority of the watershed is forest and grassland, the proximity of urban areas to the lake may influence water quality. Truman Reservoir also influences water quality. Past research has shown, when large volumes of water are being released from Truman scouring occurs in the old river channel. At these times, large amounts of inorganic suspended solids along with high concentrations of nutrients are brought into Lake of the Ozarks (Jones and Kaiser 1988).

Lake of the Ozarks

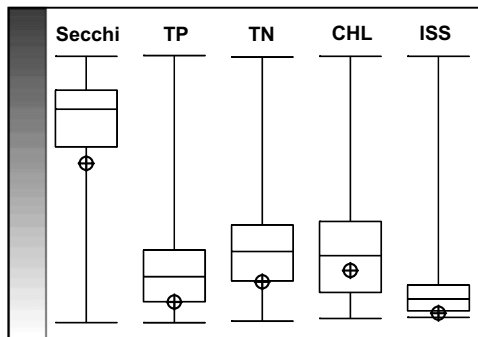
Descriptive statistics for Lake of the Ozarks – 2005

Parameters		36	13	3	4-3	C1	1-2
Secchi Transparency (inches)	Mean	47	74	68	51	61	71
	Minimum	31	54	47	41	43	48
	Maximum	66	98	93	69	75	106
Phosphorus (ug/L)	Mean	39	24	26	30	24	21
	Minimum	24	16	13	14	17	17
	Maximum	73	46	56	48	39	30
Nitrogen (ug/L)	Mean	588	557	540	489	506	498
	Minimum	430	440	360	350	420	420
	Maximum	860	760	920	680	690	610
Chlorophyll (ug/L)	Mean	18.9	12.3	11.6	16	12.7	11.2
	Minimum	7.6	6.9	3.2	5.9	9.4	6.6
	Maximum	48.5	21.2	30.3	33.2	19.2	15.2
ISS (mg/L)	Mean	2.7	0.8	1.0	1.8	1.0	1.1
	Minimum	1.4	0.3	0.3	1.2	0.1	0.6
	Maximum	7.5	2.4	3.0	4.0	3.3	3.3

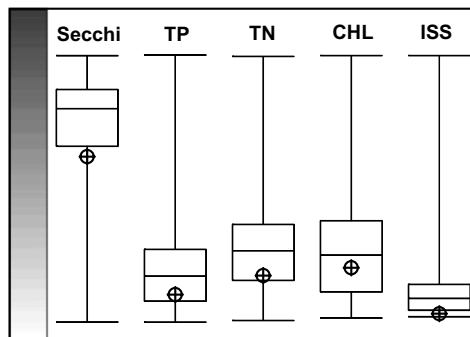
Secchi transparency values were similar at the three sites below the Grand Glaize arm of the lake (13, 3, 1-2) and at the two sites above (36, 4-3). Phosphorus concentrations varied little across the lake, with site 36 showing the maximum mean (39ug/L) and site1-2 showing the minimum mean value for 2005. While mean nitrogen concentrations were comparable among all of the sites, the main lake sites had higher maximum values. Chlorophyll concentrations were highest at sites 36 and 4-3. The remaining sites had similar mean chlorophyll concentrations. Site 3 had the most variable chlorophyll concentrations, ranging tenfold in 2005. Suspended sediments were similar across the lake. Site 36 was the only standout, having maximum values roughly double those of other sites.

Lake of the Ozarks—Relative Rank Graphs

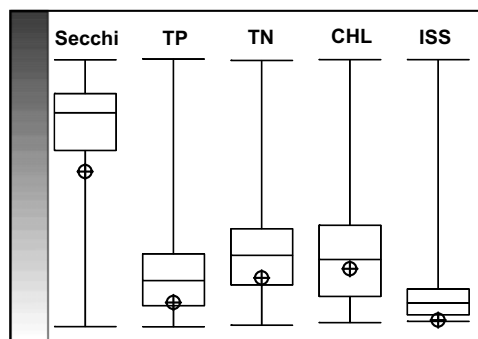
Lake of the Ozarks, Site 1-2



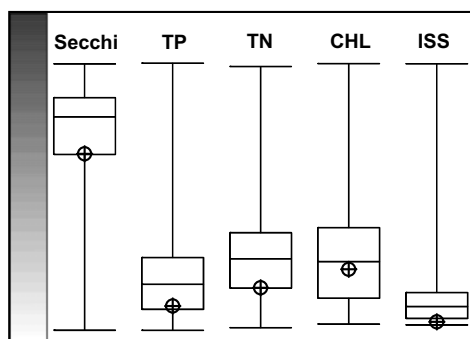
Lake of the Ozarks, Site 3



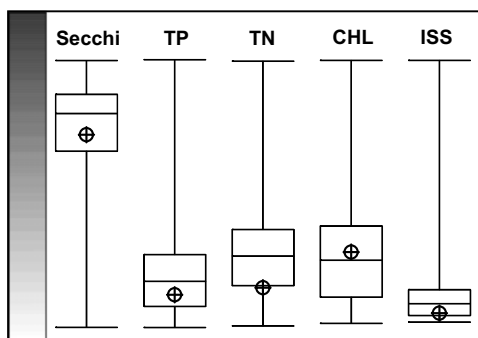
Lake of the Ozarks, Site 13



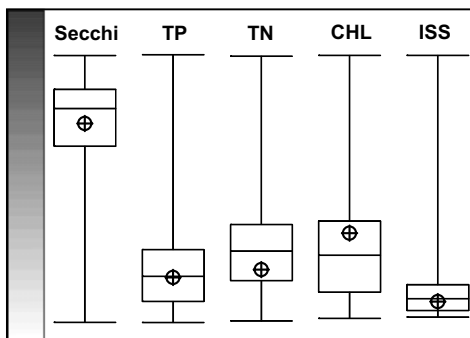
Lake of the Ozarks, Site C1



Lake of the Ozarks, Site 4-3



Lake of the Ozarks, Site 36

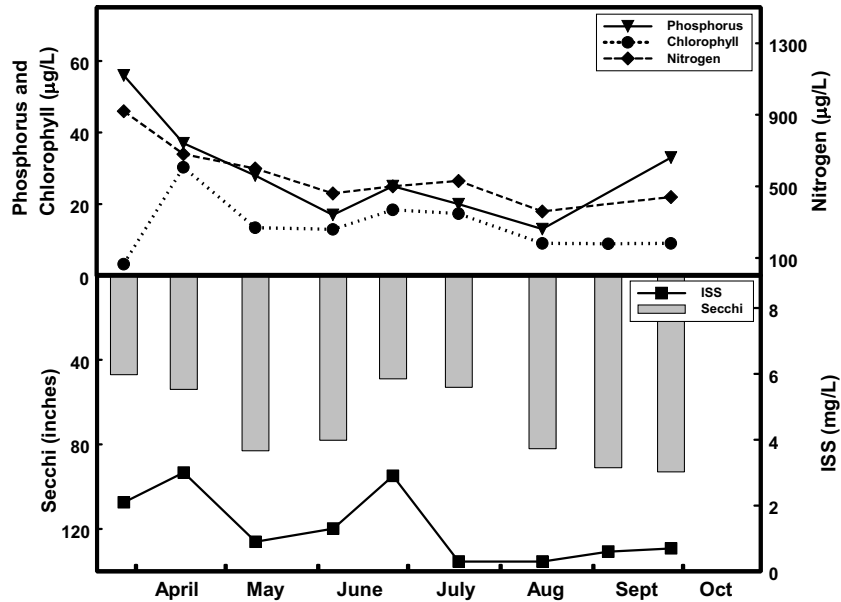


Means for all parameters were typically below state median values, and often near the 25th percentile. The exceptions were chlorophyll concentrations, which were higher than the state median at sites 36 and 4-3.

Lake of the Ozarks

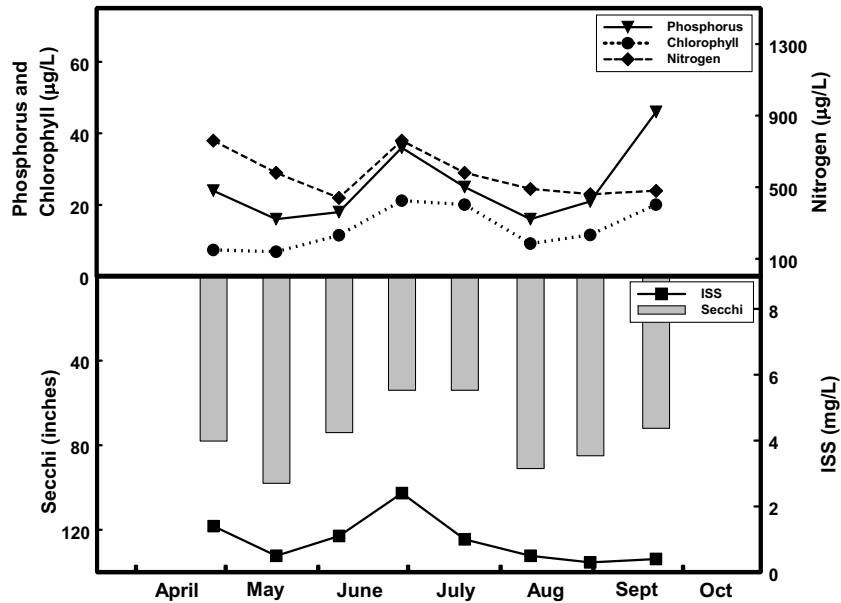
Seasonal fluctuations of parameters for Lake of the Ozarks, Site 3 - 2005

The late June peak in ISS may be attributable to inflow from Truman Lake. This ISS peak is apparent lake-wide. The volunteer sampling at this site (and site 1-2) collected an additional sample in late March. Cold water at this site may be responsible for the low chlorophyll concentration that day.



Seasonal fluctuations of parameters for Lake of the Ozarks, Site 13 - 2005

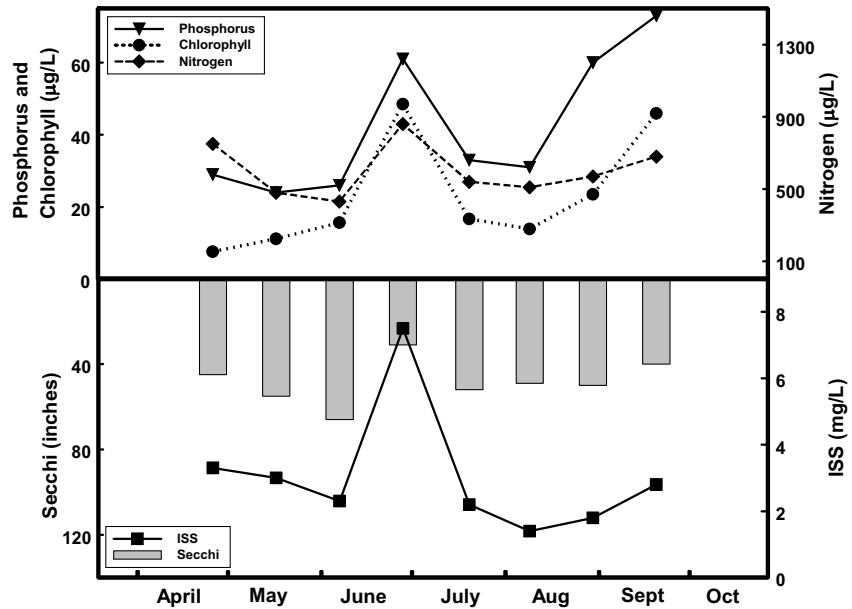
The nutrients and chlorophyll showed an increase simultaneously with the ISS increase in late June. The late season phosphorus peak correlates with increased inflows from Truman in late August and rainfall events in late September.



Lake of the Ozarks

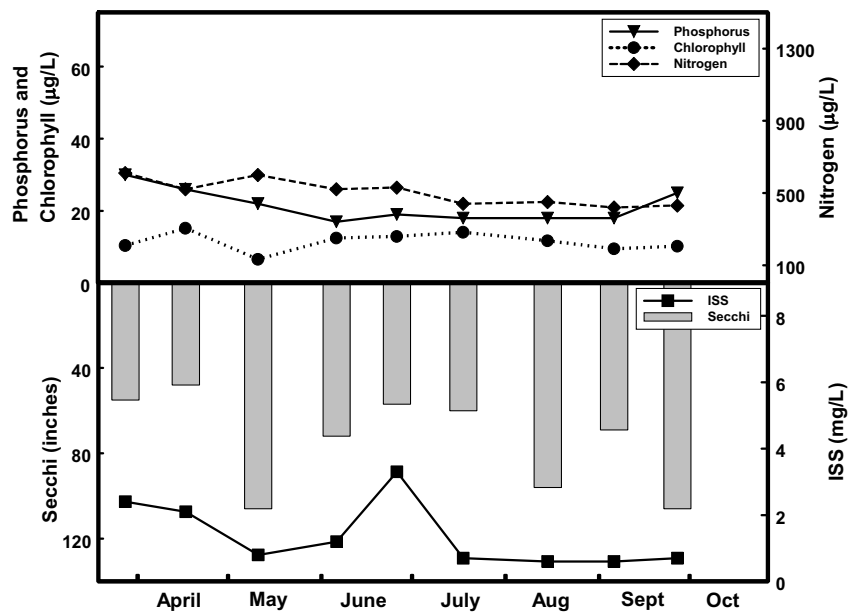
Seasonal fluctuations of parameters for Lake of the Ozarks, Site 36 - 2005

Site 36 showed a very dramatic late June increase in nutrients, chlorophyll and ISS.



Seasonal fluctuations of parameters for Lake of the Ozarks, Site 1-2 - 2005

Chlorophyll and nutrients showed almost no variability throughout the season. The peak in ISS observed during late June in the main lake also occurred in the Gravois arm.

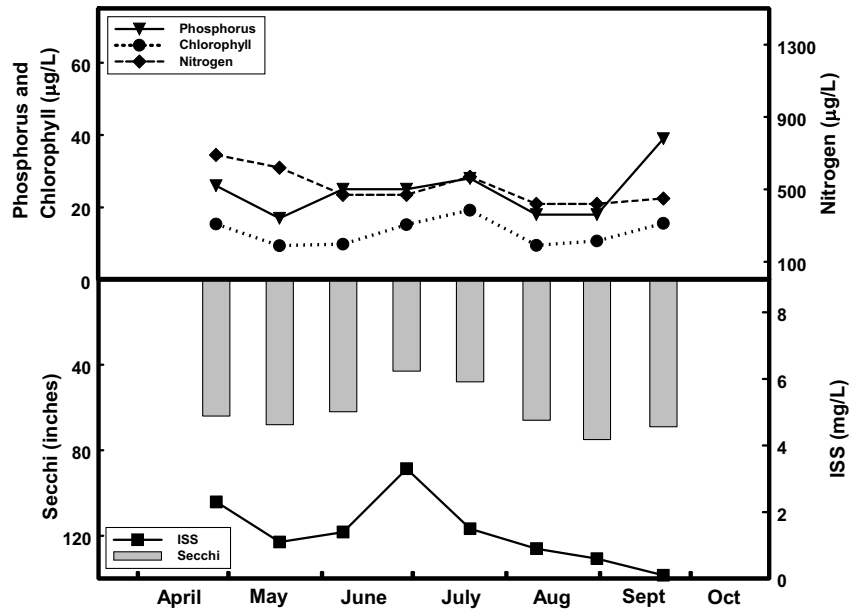


Lake of the Ozarks

Seasonal fluctuations of parameters for Lake of the Ozarks, Site C1 - 2005

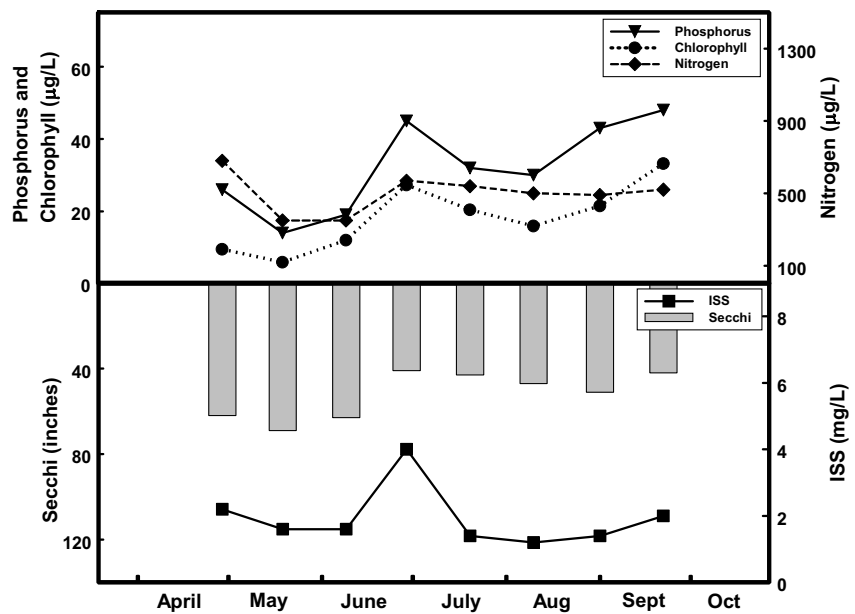
This site is very similar to site 13. This is no surprise, as the two sites are located in close proximity.

Site C1 displays less variability than Site 13, though the difference is small.



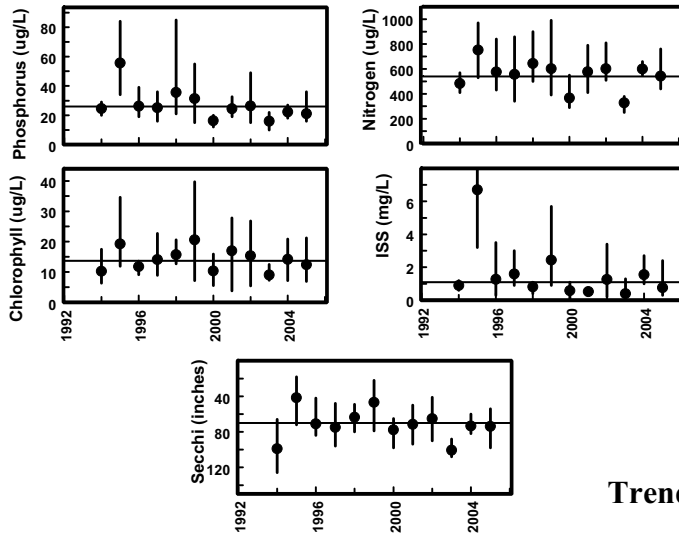
Seasonal fluctuations of parameters for Lake of the Ozarks, Site 4-3 - 2005

The seasonal fluctuations at site 4-3 are similar to those seen at site 36, the closest main lake site. The maximum values are lower at this Niangua arm site than at site 36.



Lake of the Ozarks

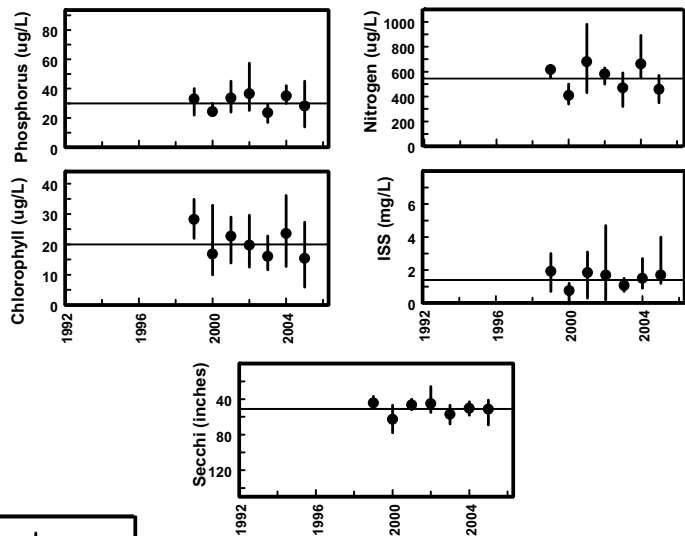
Trends for Lake of the Ozarks, Site 13



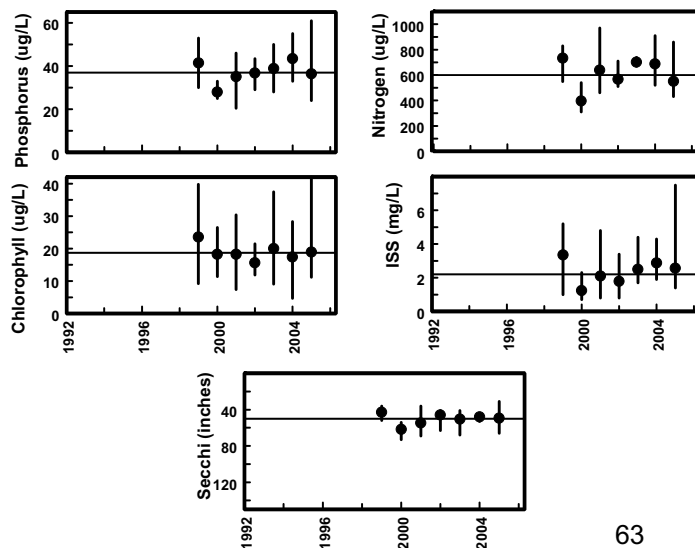
No trends are apparent at Site 13. Nutrients and chlorophyll were lower in 2003 than in more recent years. Those low values led to clearer water in 2003 than seen since. 2005 seems to be the more typical year, with mean summer values near the overall mean.

No apparent trends at Site 4.3. Phosphorus variability was a bit higher in 2005. This is likely related to the greater variability of ISS concentrations observed in 2005.

Trends for Lake of the Ozarks, Site 4.3



Trends for Lake of the Ozarks, Site 36



There were no apparent trends at Site 36. 2005 ISS concentrations were more variable than previously seen at this site. This resulted in high variability (i.e. high maximum values) for chlorophyll and phosphorus.