

Lake of the Ozarks

Ozark Highlands Region

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).

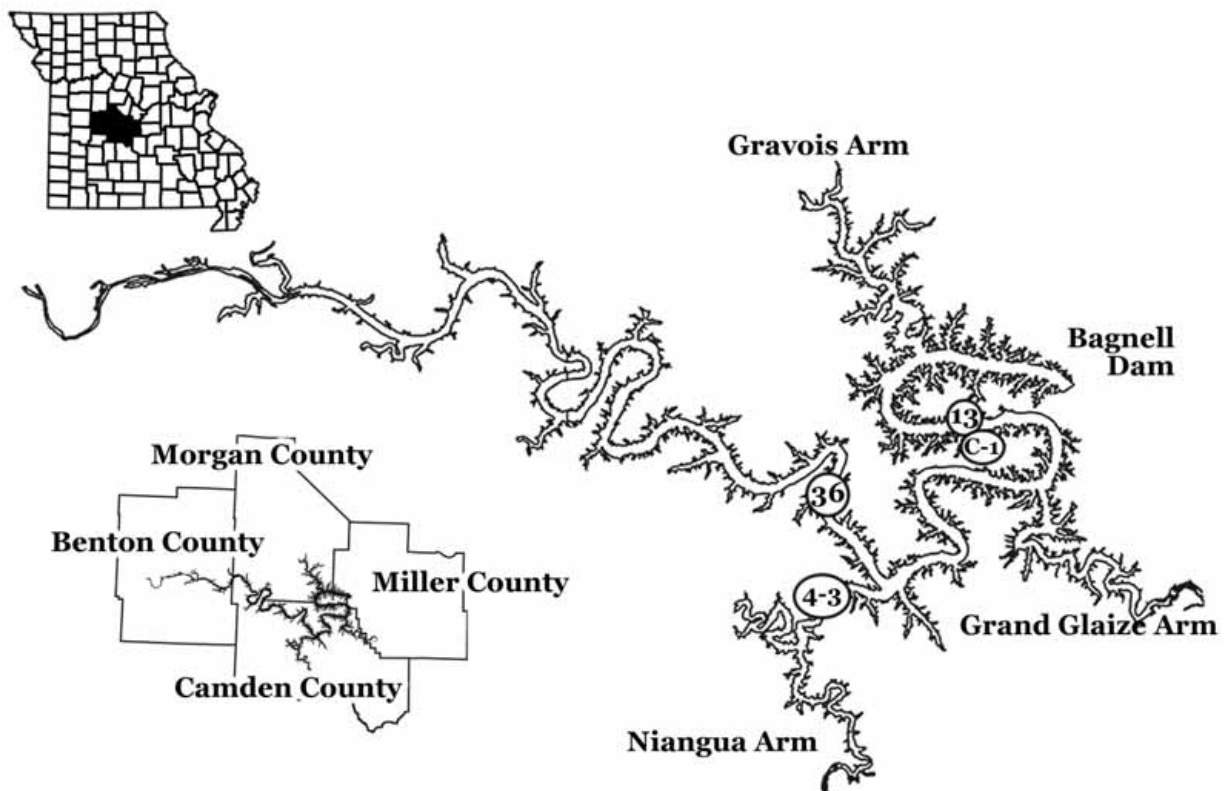


Figure 36. Location of sampling sites on Lake of the Ozarks.

- Sites 13 and 36 are located in the main lake channel (13 and 36 miles from the dam, respectively), C-1 is in a cove off of the main channel and Site 4-3 is in the Niangua Arm, 3 miles from the confluence with the main lake.
- Samples were collected from 5 to 8 times during 2003.

Table 18. Descriptive statistics and trophic assessment for Lake of the Ozarks – 2003.

Parameters		Site	Site	Site	Site
		13	36	4-3	C-1
Secchi (inches)	# samples	8	5	8	8
	geomean	99	52	56	74
	median	103	49	56	69
	minimum	73	41	45	59
	maximum	124	68	68	112
Phosphorus (µg/L)	# samples	8	5	8	8
	geomean	17	38	25	18
	median	18	42	24	16
	minimum	10	25	17	13
	maximum	22	53	35	29
Nitrogen (µg/L)	# samples	8	5	8	8
	geomean	324	643	464	302
	median	330	700	465	310
	minimum	250	430	320	200
	maximum	380	740	590	380
Chlorophyll (µg/L)	# samples	8	5	8	8
	geomean	7.8	17.8	17.0	9.1
	median	8.2	19.1	17.0	10.8
	minimum	3.9	9.1	11.1	3.7
	maximum	12.5	37.5	37.9	21.7
ISS (mg/L)	# samples	7	5	8	8
	geomean	0.1	2.5	1.2	0.9
	median	0.2	2.1	1.4	1.0
	minimum	0.0	1.7	0.7	0.3
	maximum	1.3	4.4	2.0	2.0

Trophic Assessment				
	13	36	4-3	C-1
Phosphorus	M	E	M	M
Nitrogen	M	E	M	M
Chlorophyll	E	E	E	E

M = Mesotrophic
E = Eutrophic

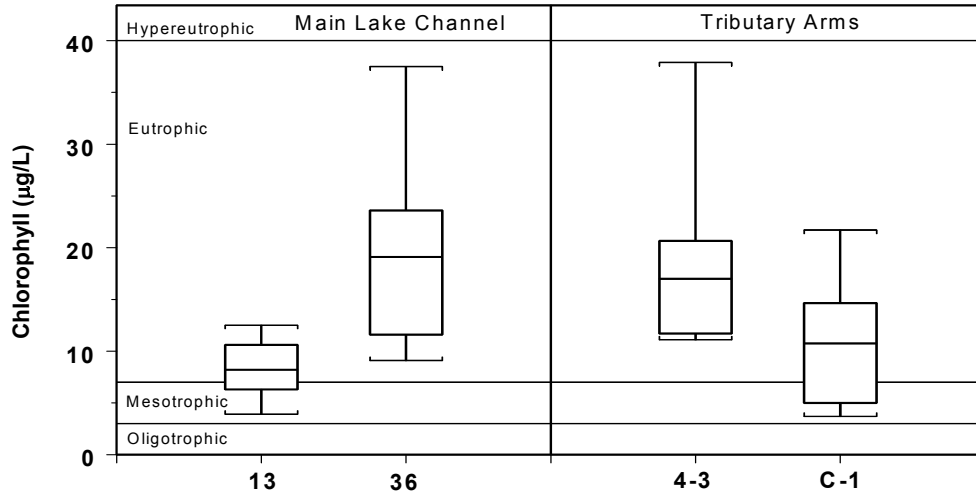


Figure 37. Box plot of chlorophyll values across Lake of the Ozarks - 2003.

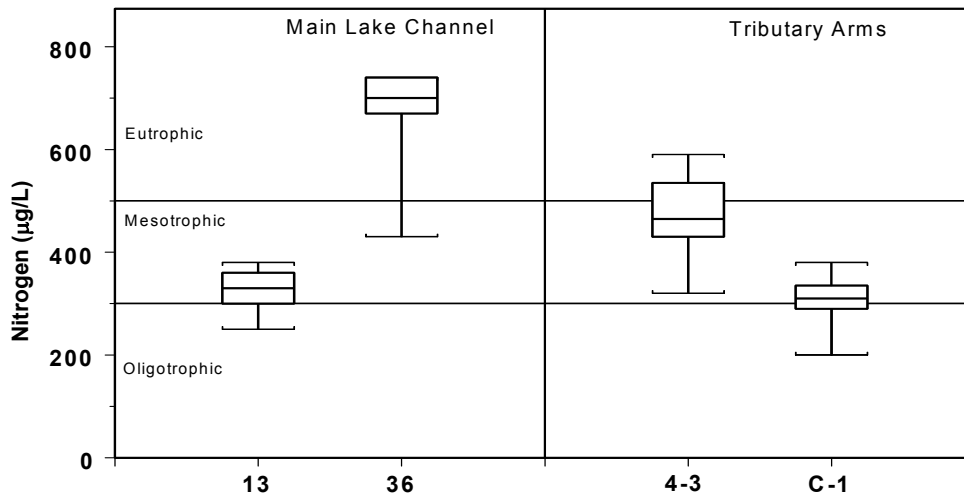


Figure 38. Box plot of nitrogen values across Lake of the Ozarks - 2003.

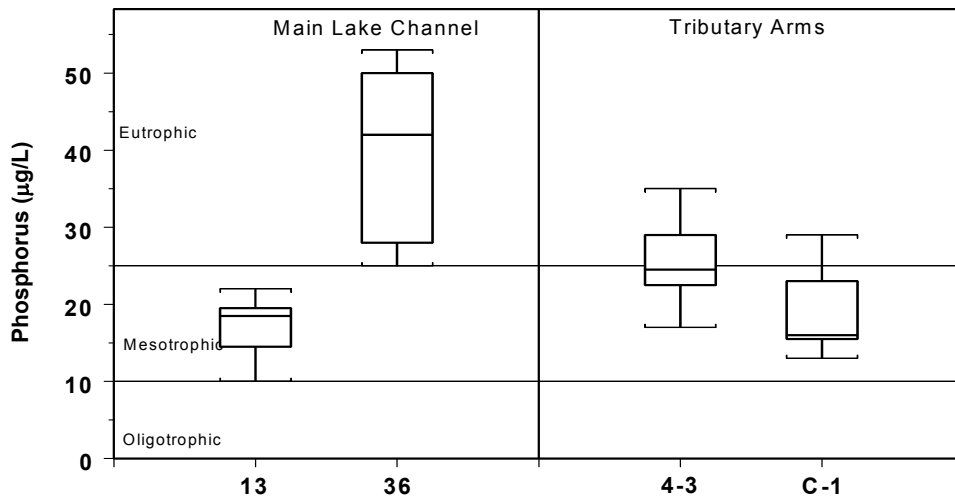


Figure 39. Box plot of phosphorus values across Lake of the Ozarks - 2003.

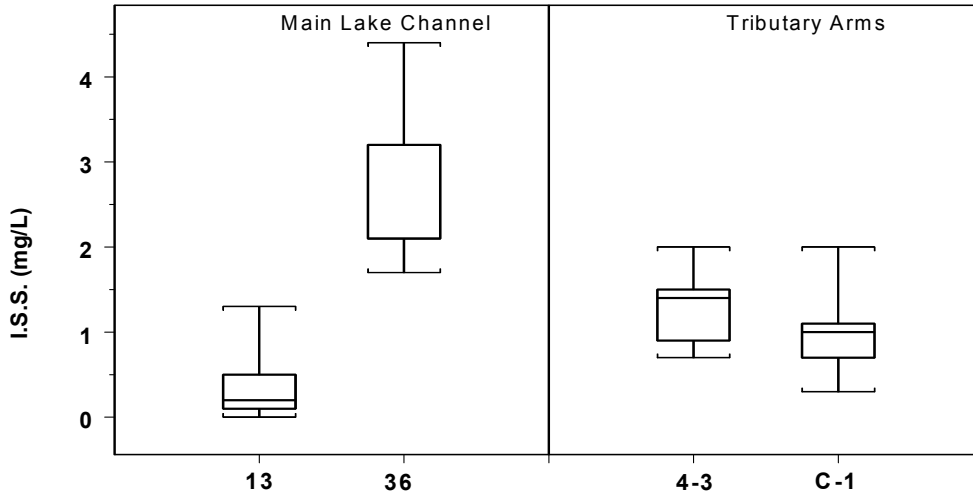


Figure 40. Box plot of inorganic suspended solids values across Lake of the Ozarks - 2003.

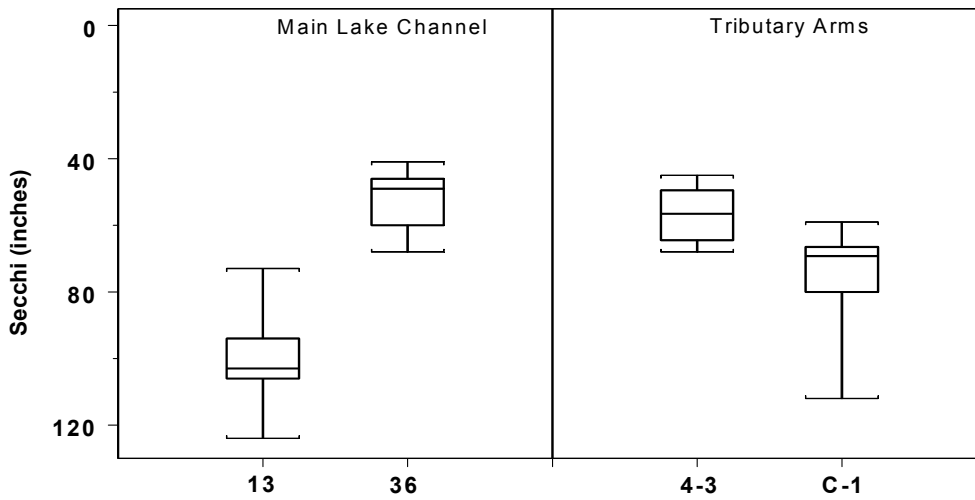


Figure 41. Box plot of Secchi values across Lake of the Ozarks - 2003.

Trends for Lake of the Ozarks (see page 18 for a description of box plots)

- Concentrations of chlorophyll, nitrogen, phosphorus and inorganic suspended solids were higher at site 36 than at site 13, which is closer to the dam. This type of gradient is common in reservoirs
- Concentrations of chlorophyll, nitrogen, phosphorus and inorganic suspended solids in the tributary sites were comparable, though slightly higher in the Niangua Arm site (4-3)
- Site C-1 was comparable to Site 13, with only slightly higher chlorophyll and ISS values