

## Bull Shoals Lake

Ozark Highlands Region

Bull Shoals Lake is approximately 45,440 acres in size, the majority of which is located in Arkansas. It is the last of four reservoirs found in the White River System (it is preceded by Taneycomo, Table Rock, and Beaver Lakes).

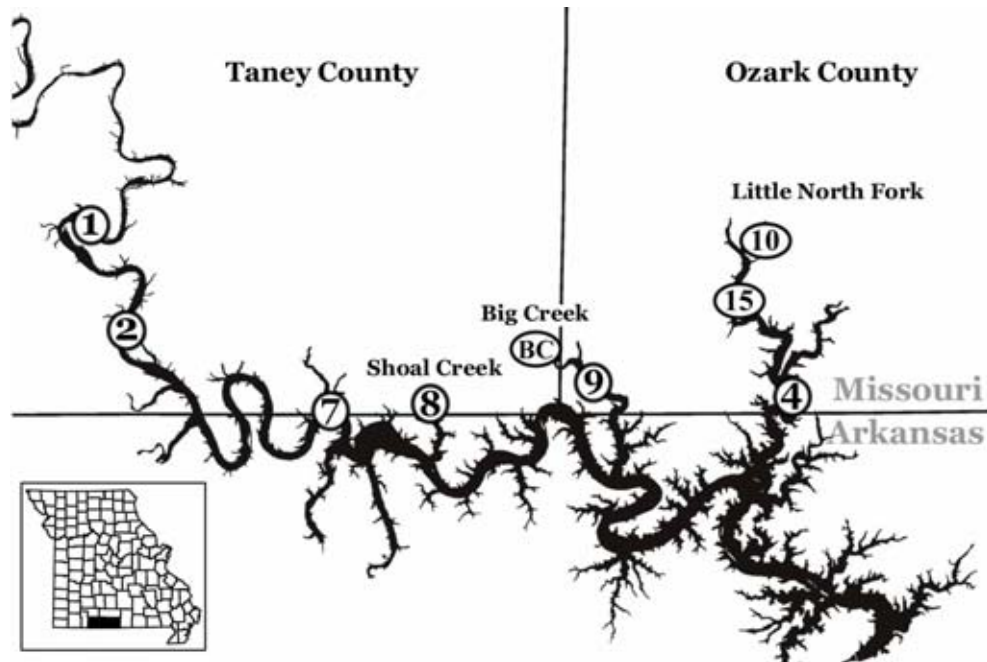


Figure 21. Location of sample sites on Bull Shoals Lake.

### 2003 Results

A brief description of these results:

- Samples were collected at 9 sites between April 29 and September 19
- 3 sites were on the main lake (1, 2, 7); 1 site was in the Shoal Creek arm; 2 were in the Big Creek arm (BC, 9); and 3 were in the Little North Fork arm (10, 15, 4)
- 2003 marks the first year of involvement with the LMVP for 6 of these sites (7, 8, 9, 10, 15, BC)
- The Little North Fork showed both the shallowest and deepest Secchi transparency
- Phosphorus concentrations increase with distance upstream in both the Little Fork Arm and the main lake
- The Big Creek stream site (BC) has high nitrogen concentrations relative to the other parameters observed at the site, though concentrations are still lower than at the upstream Little North Fork site (10)
- Because site BC is a stream site, the geometric mean chlorophyll concentration is low. Chlorophyll concentrations at sites 8, 4 and 9 are similar to the main lake

Table 10. Trophic assessment of sample sites on Bull Shoals Lake, based on 2003 geometric mean values (note: these assessments are based on geometric means of *all* samples, not just summer samples)

	Main Lake			Shoal Creek	Big Creek		Little North Fork		
	1	2	7	8	BC	9	10	15	4
<b>Nitrogen</b>	O	O	O	O	E	O	E	M	M
<b>Phosphorus</b>	M	O	O	O	O	O	E	M	M
<b>Chlorophyll</b>	M	M	M	M	O	M	E	E	O

O = Oligotrophic  
M = Mesotrophic  
E = Eutrophic

Table 11. Descriptive statistics from the main lake sites on Bull Shoals Lake – 2003.

Parameters		Main Lake Sites		
		1	2	7
<b>Secchi Transparency (inches)</b>	<b># samples</b>	7	7	8
	<b>median</b>	68	83	118
	<b>minimum</b>	58	59	54
	<b>maximum</b>	90	143	186
	<b>geomean</b>	70	86	109
<b>Phosphorus (µg/L)</b>	<b># samples</b>	7	7	8
	<b>median</b>	13	11	8
	<b>minimum</b>	8	7	6
	<b>maximum</b>	17	13	11
	<b>geomean</b>	12	10	8
<b>Nitrogen (µg/L)</b>	<b># samples</b>	7	7	8
	<b>median</b>	320	250	225
	<b>minimum</b>	200	230	200
	<b>maximum</b>	360	340	360
	<b>geomean</b>	281	269	240
<b>Chlorophyll (µg/L)</b>	<b># samples</b>	7	7	8
	<b>median</b>	5.4	5.9	4.7
	<b>minimum</b>	2.3	1.9	1.4
	<b>maximum</b>	8.4	7.5	8.7
	<b>geomean</b>	5.3	4.6	3.9

Table 12. Descriptive statistics from the tributary sites on Bull Shoals Lake – 2003.

Parameters		Shoal Creek	Big Creek		Little North Fork		
		8	BC	9	10	15	4
Secchi Transparency (inches)	# samples	8		7	3	3	3
	median	82		120	33	69	160
	minimum	36		37	30	65	155
	maximum	120		174	49	86	166
	geomean	75		94	36	73	160
Phosphorus (µg/L)	# samples	8	7	7	3	3	3
	median	10	7	7	32	15	9
	minimum	7	6	6	26	10	8
	maximum	16	11	13	51	18	34
	geomean	10	7	8	35	14	13
Nitrogen (µg/L)	# samples	8	7	7	3	3	3
	median	250.	580	280	670	360	520
	minimum	200	300	210	530	240	270
	maximum	370	770	430	1310	410	780
	geomean	269	548	297	775	328	478
Chlorophyll (µg/L)	# samples	8	7.0	7.0	3.0	3.0	3.0
	median	4.2	1.2	4.2	15.9	9.3	2.3
	minimum	2.0	0.4	1.8	12.7	4.6	1.9
	maximum	12.6	2.1	11.3	22.1	10.8	4.2
	geomean	4.8	1.0	3.9	16.5	7.7	2.6
ISS (mg/L)	# samples		7.0				
	median		1.2				
	minimum		0.5				
	maximum		3.4				
	geomean		1.2				

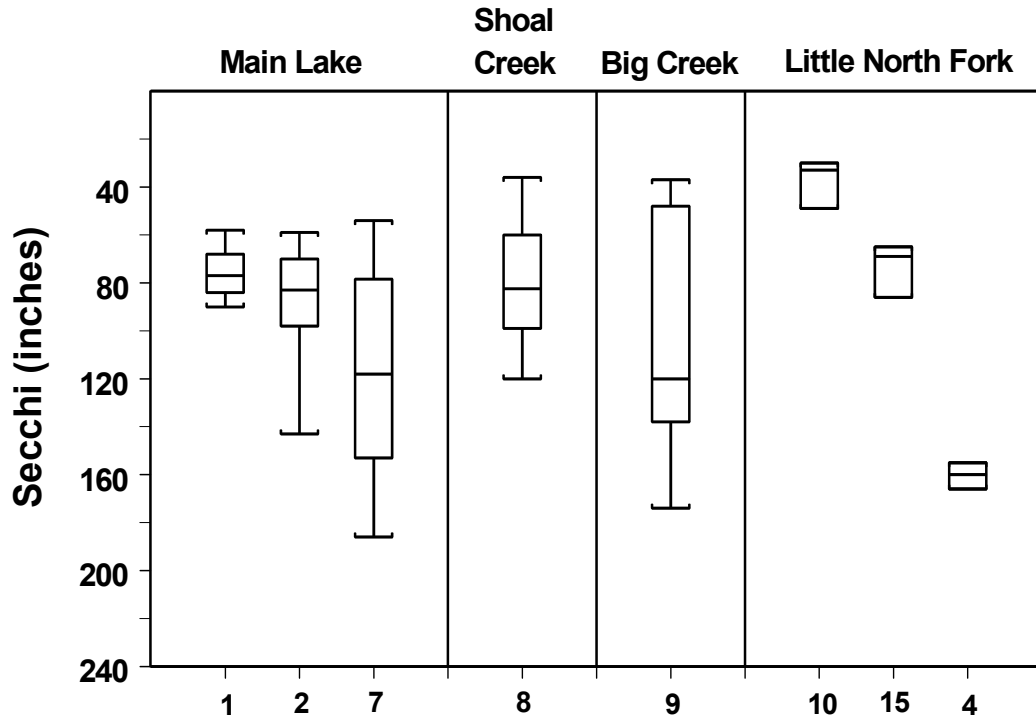


Figure 22. Secchi values for Bull Shoals Lake – 2003.

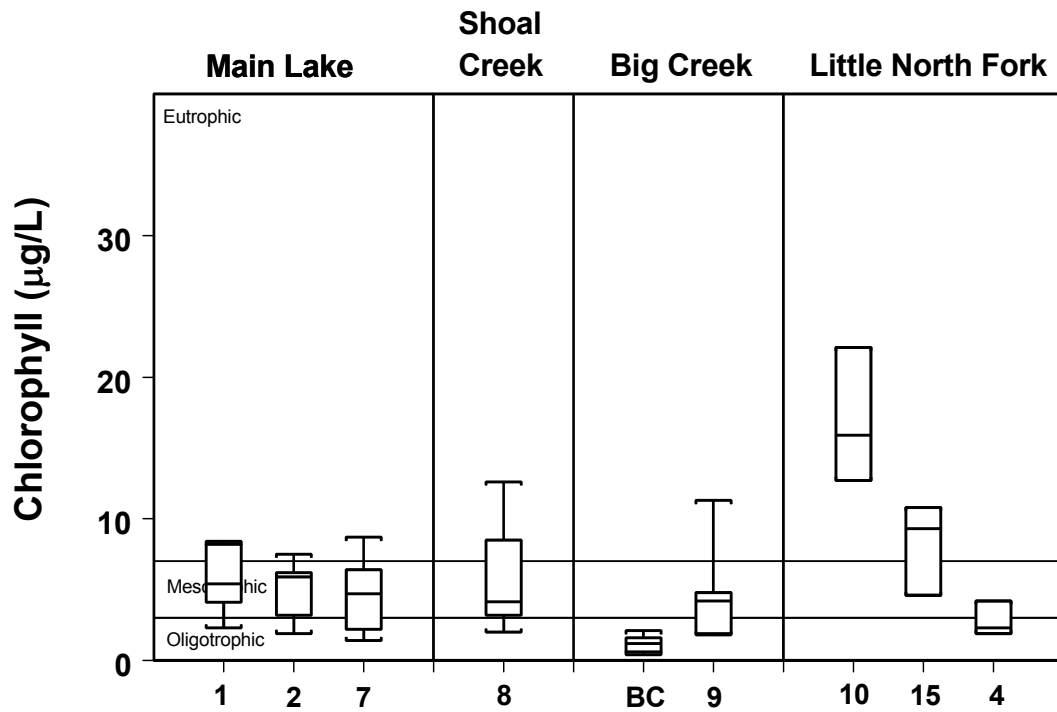


Figure 23. Chlorophyll values for Bull Shoals Lake – 2003.

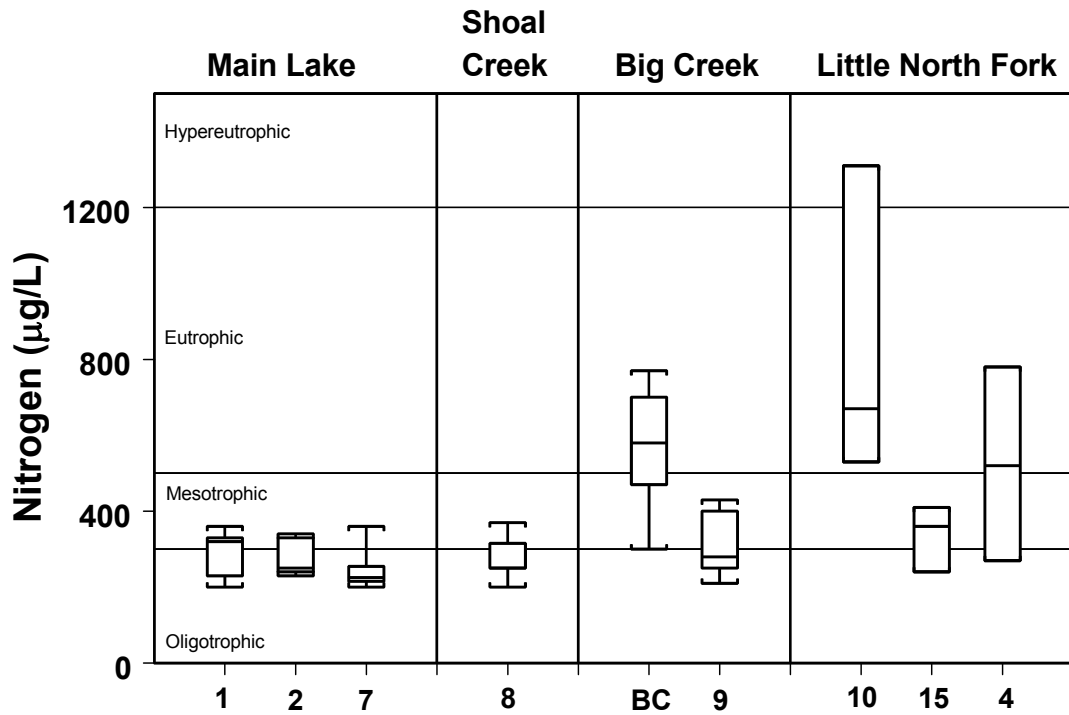


Figure 24. Nitrogen values for Bull Shoals Lake – 2003.

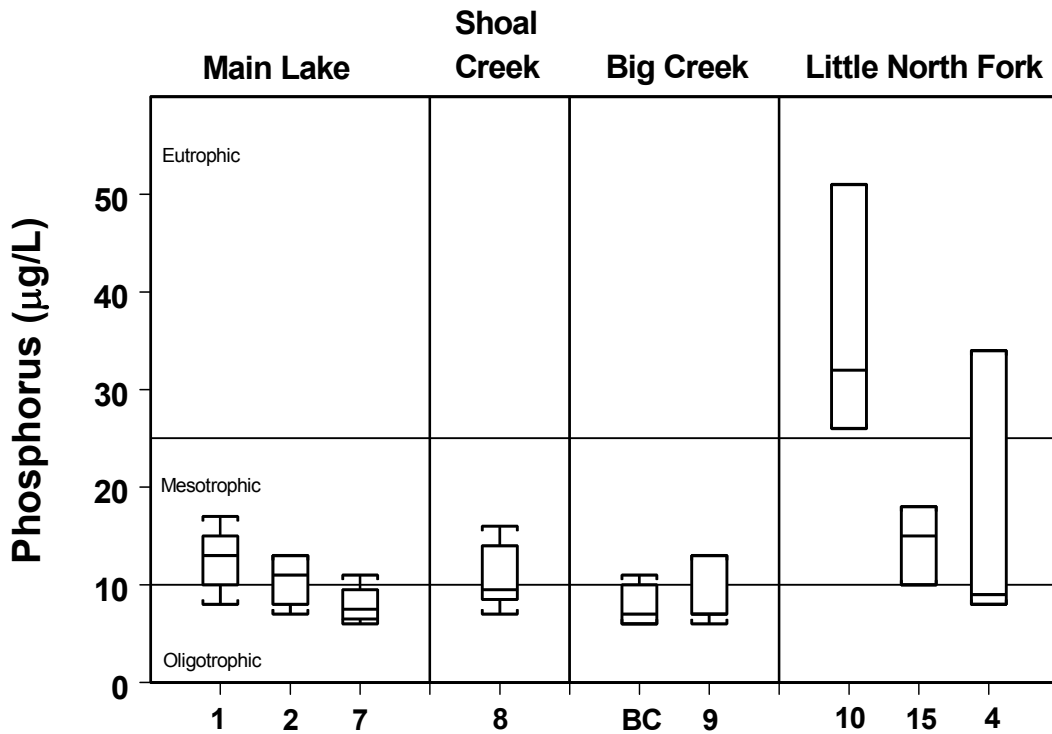


Figure 25. Phosphorus values for Bull Shoals Lake – 2003.