

Lake Taneycomo - 2001 Data

Ozark Highlands Region

Lake Taneycomo is a 22 mile long, 2080 acre lake in the White River Basin. It is located between Table Rock Lake and Bull Shoals Lake. While the majority of Lake Taneycomo's watershed is forested, the lake is influenced by the location of Branson and other nearby developed areas. The majority of water flowing through Lake Taneycomo originates from the deep waters of Table Rock Lake. This water source plays a large role in determining the overall water quality of Lake Taneycomo. Another major influence on water quality in Lake Taneycomo is the **residence time** of the water in the lake, which can be very short (Knowlton and Jones 1990).

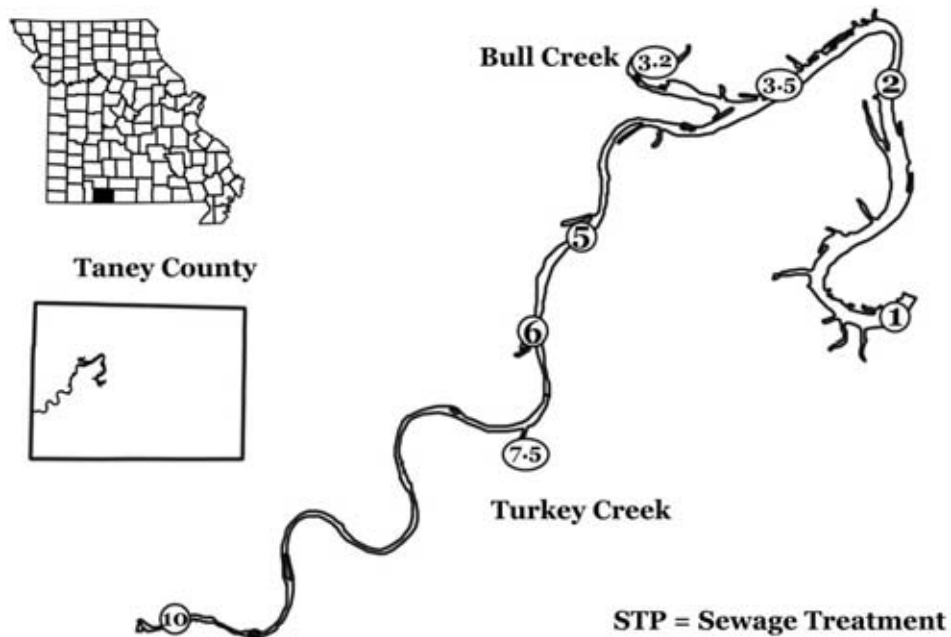


Figure 55. Location of Lake Taneycomo and sample sites.

- Excluding the sewage treatment plant site, geometric mean nitrogen values ranged from 453 to 800 $\mu\text{g/L}$. Sites 1 and 3.2 were mesotrophic and the rest of the lake sites were eutrophic based on geometric mean nitrogen data (Figure 56).
- Phosphorus values are comparable across the lake. All lake sites were mesotrophic based on geometric means of summer phosphorus values (Figure 57).
- Chlorophyll values were comparable across the lake. Sites 1 and 3.5 were mesotrophic while sites 2, 5, 6 and 10 were oligotrophic based on summer geometric mean chlorophyll values (Figure 58).
- Secchi values were generally deeper at sites 6 and 5, relative to the down-lake sites. This decrease in clarity was associated with the minor increases in chlorophyll at these sites (1, 2 and 3.5) (Figure 59).

Table 29. Descriptive statistics for sample sites on Lake Taneycomo – 2001.

Parameters		Site 1	Site 2	Site 3.5	Site 5	Site 6	Site 10
Secchi Transparency (inches)	# samples	7	7	7	8	8	7
	geomean	71	86	70	131 Ψ	143	*
	median	63	68	70	173 Ψ	188	*
	minimum	50	48	47	48	42	*
	maximum	160	246	122	192 Ψ	264	*
Phosphorus ($\mu\text{g/L}$)	# samples	7	7	7	8	8	6
	geomean	13	12	12	10	10	14
	median	12	12	14	10	9	17
	minimum	10	8	4	5	4	7
	maximum	18	18	20	18	24	18
Nitrogen ($\mu\text{g/L}$)	# samples	7	7	7	8	8	7
	geomean	528	540	503	711	602	678
	median	480	580	560	800	630	680
	minimum	300	260	270	350	300	500
	maximum	750	790	830	960	1130	940
Chlorophyll ($\mu\text{g/L}$)	# samples	7	7	7	8	8	7
	geomean	4.0	2.9	3.4	1.2	1.2	1.7
	median	4.7	3.7	2.9	1.3	1.0	1.4
	minimum	0.7	0.5	1.8	0.4	0.2	1.0
	maximum	7.8	7.2	7.1	5.6	9.9	7.3
ISS (mg/L)	# samples	0	0	0	0	0	5
	geomean	X	X	X	X	X	0.6
	median	X	X	X	X	X	0.6
	minimum	X	X	X	X	X	0.1
	maximum	X	X	X	X	X	1.5

* Secchi hit bottom each sample (about 3 feet deep)

Ψ Secchi hit bottom once

X = no sample

Table 30. Descriptive statistics for Supplemental sample sites on Lake Taneycomo – 2001.

Parameters		Site 3.2	Site 7.5	Site STP
Secchi Transparency (inches)	# samples	7	8	0
	geomean	42	72 ψ	X
	median	39	71 ψ	X
	minimum	32	51	X
	maximum	86	88 ψ	X
Phosphorus ($\mu\text{g/L}$)	# samples	7	8	7
	geomean	21	21	36
	median	25	23	39
	minimum	9	11	22
	maximum	28	37	58
Nitrogen ($\mu\text{g/L}$)	# samples	7	8	7
	geomean	453	580	3167
	median	410	520	3520
	minimum	340	320	1140
	maximum	830	1130	7480
ISS ($\mu\text{g/L}$)	# samples	0	8	0
	geomean	X	5.1	X
	median	X	6.0	X
	minimum	X	1.6	X
	maximum	X	12.3	X

X = no sample collected

ψ Secchi hit bottom

- The sewage treatment plant sample is taken directly from the outflow pipe, not from the lake. Phosphorus concentrations were 2 – 3 times higher than lake concentrations, but still low, considering the sample source. Nitrogen values were typically 5 times higher at the sewage treatment plant outflow than in the main lake, but did not substantially increase nitrogen concentrations down-lake.

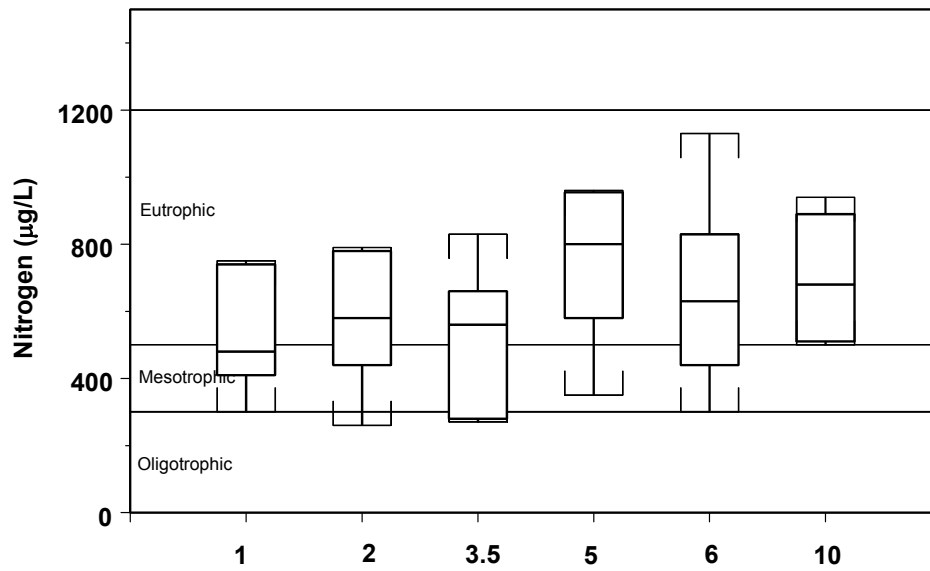


Figure 56. Nitrogen values for Lake Taneycomo – 2001.

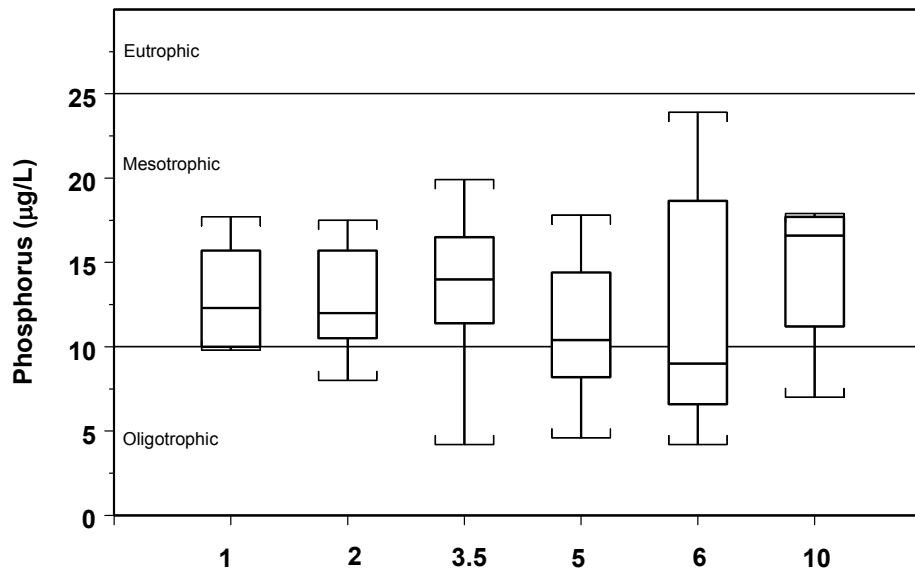


Figure 57. Phosphorus values for Lake Taneycomo – 2001.

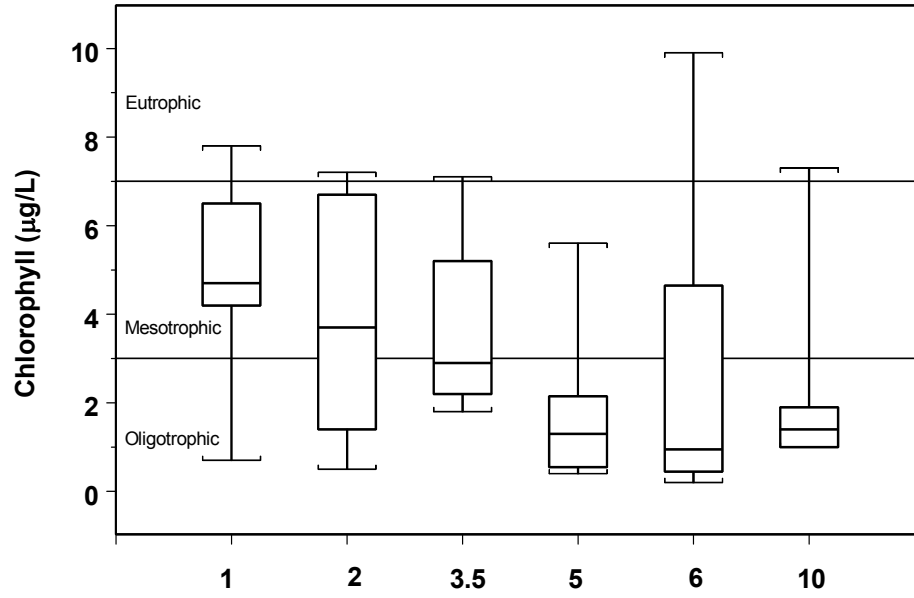


Figure 58. Chlorophyll values for Lake Taneycomo – 2001.

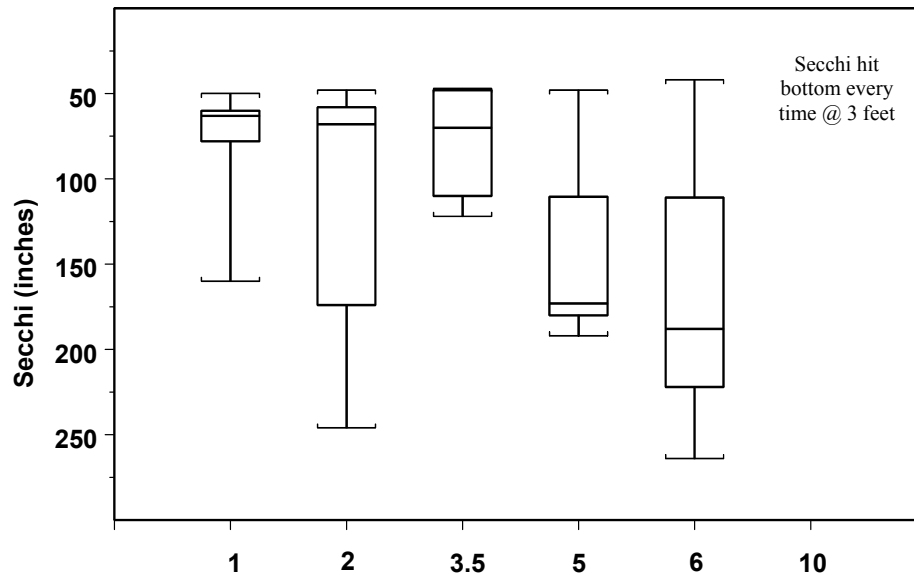


Figure 59. Secchi values for Lake Taneycomo – 2001