

Lake Taneycomo Site 3.5

Taney County



2011 DATA

Latitude: 36.6934

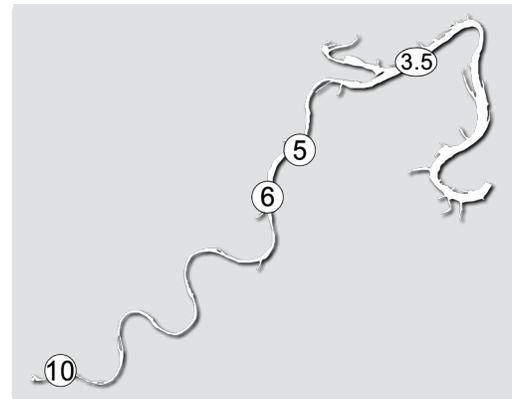
Longitude: -93.1583

Date	X	5/17	6/7	6/27	7/27	8/9	8/24	9/28	Mean
Secchi (inches)		99	72	67	104	54	44	78	71
TP (µg/L)		19		46	41	27	58	32	35
TN (µg/L)		810		890	970	950	950	1060	935
CHL (µg/L)		0.4	0.8	0.6	0.9	6.0	35.2	3.0	2.0

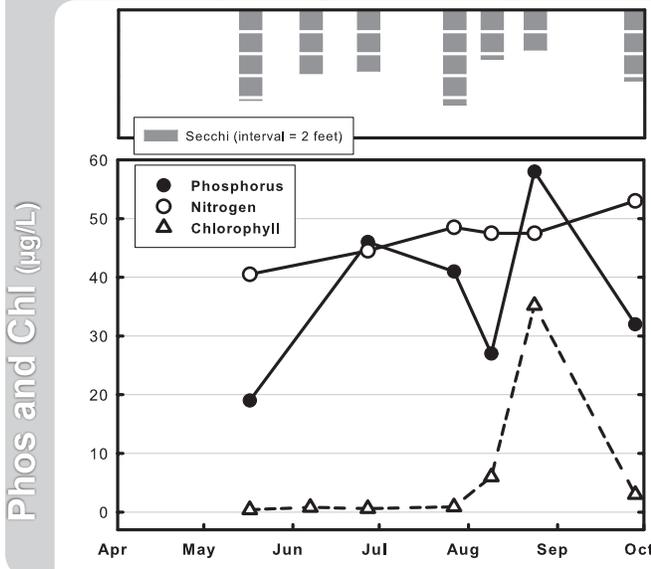
Phosphorus levels at Site 3.5 fluctuated during the sample season, with the maximum concentration being 3-fold higher than the minimum. In contrast, nitrogen values were fairly stable and display a slight trend of increasing concentrations over the course of the season. Chlorophyll values were generally low and stable with the exception of an extreme reading in late August. This maximum chlorophyll value of 35.2 was almost 6-times higher than the next highest value measured in 2011.

in the year. While not as dramatic, the annual nitrogen mean in 2011 was also high (second only to the 2010 value). Even with an extreme value, the annual mean chlorophyll concentration was comparable to previous values.

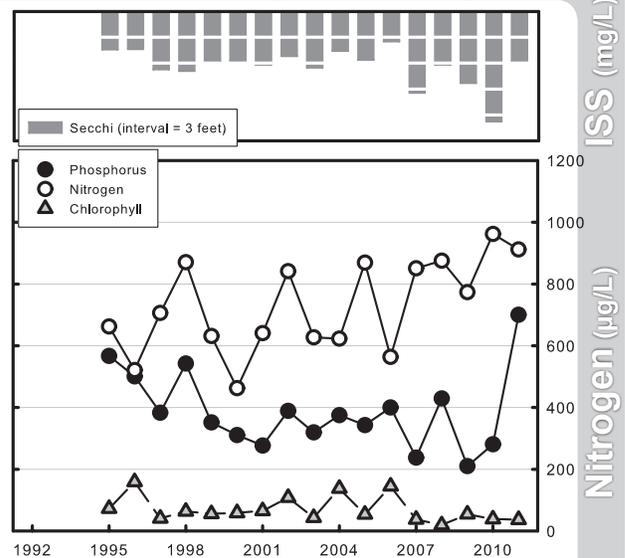
The 2011 annual summertime phosphorus mean exceeds all previous annual means for Site 3.5. It is very likely that the intense flooding that occurred in the Table Rock Lake watershed in spring of 2011 was a large source of the phosphorus measured at Site 3.5 later



2011 GRAPHS



TREND GRAPHS



See page 3 for help interpreting graphs

Lake Taneycomo Site 5

Taney County

2011 DATA

Latitude: 36.6722

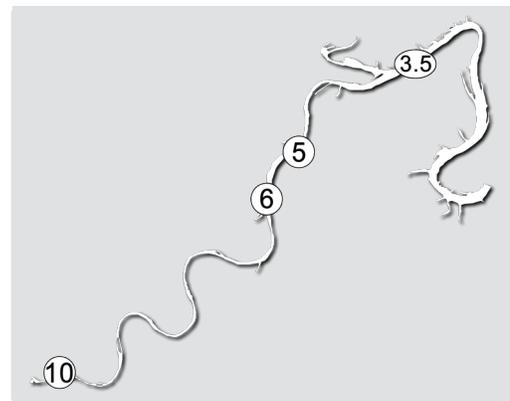
Longitude: -93.1986

Date	X	5/17	6/7	6/27	7/27	8/9	8/24	9/28	Mean
Secchi (inches)		116	73	84	96	92	114	129	99
TP (µg/L)		19		54		51	40	41	39
TN (µg/L)		840		820		1160	1160	910	967
CHL (µg/L)		0.1	0.3	1.1	1.1	0.6	0.8	0.6	0.5

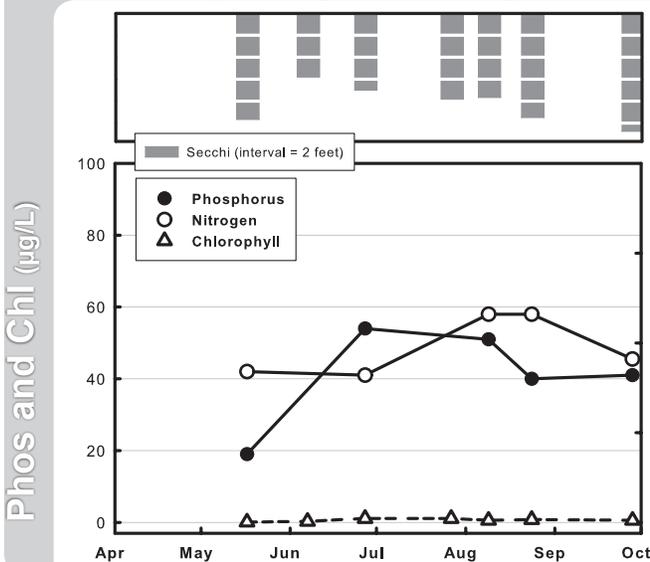
The range of phosphorus values at Site 5 was almost identical to that measured at Site 3.5, though fluctuations between individual values at Site 5 displayed less variability. As seen down-lake, nitrogen concentrations at Site 5 were quite stable across the sample season. Site 5 chlorophyll values differed from Site 3.5 in that all the measurements were low (<1.1 µg/L).

The long-term trends graphs show that the 2011 summertime mean phosphorus value was higher than it has been in a decade. This phosphorus spike is probably a result of the intense rains and flooding that occurred in the White River system during the spring 2011. Secchi transparency was low in 2011 compared to recent summers. Minimal algal chlorophyll concentrations suggest that algae were not the cause of the reduced clarity. It

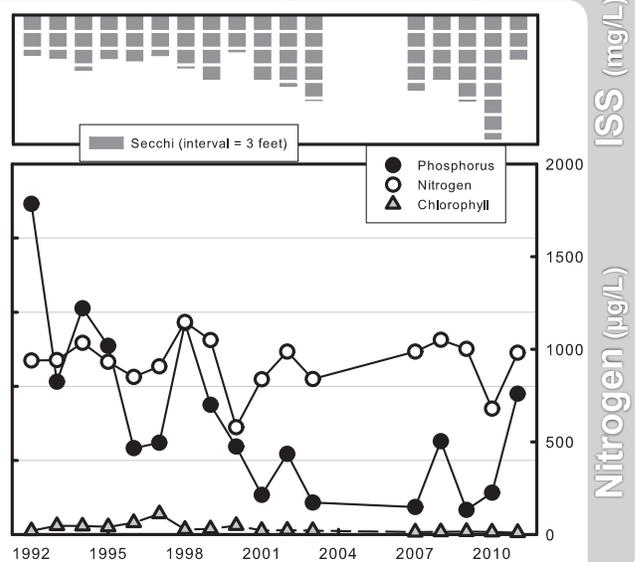
is most likely that the springtime floods also brought increased levels of suspended sediment into the system, which reduced Secchi readings.



2011 GRAPHS



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Lake Taneycomo Site 6

Taney County

2011 DATA

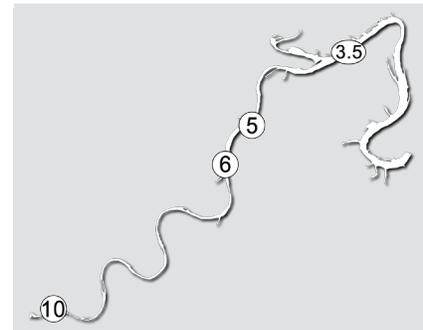
Latitude: 36.6519 Longitude: -93.2133

Date	X	5/17	6/7	6/27	7/27	8/9	8/24	9/28	Mean
Secchi (inches)		105	71	87	99	74	101	122	93
TP (µg/L)		23		93	47	41	36	33	41
TN (µg/L)		720		1220	1090	1270	900	1030	1020
CHL (µg/L)		0.3	0.4	1.0	1.4	0.6	1.5	0.8	0.7

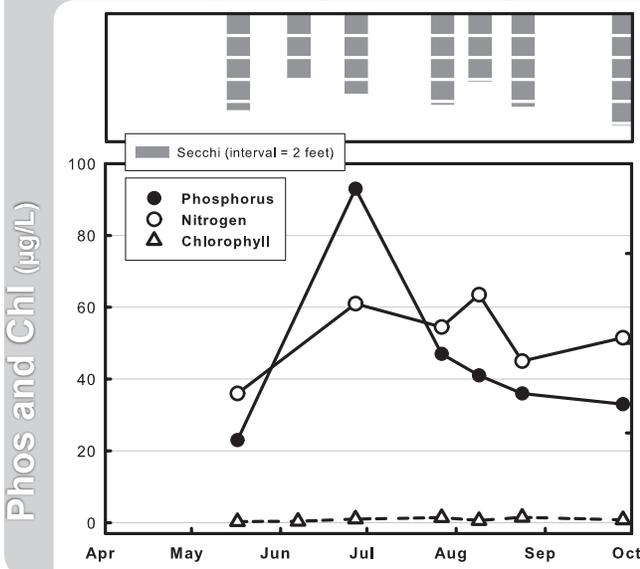
Phosphorus concentrations at Site 6 were more variable than at Site 5 during 2011 due to a spike in phosphorus measured in late June. This value of 93 µg/L was four-times higher than the minimum value measured in May at Site 6 (and was about twice as high as the maximum value measured at Site 5). The minimum nitrogen value was also measured in May, with nitrogen displaying much lower variability over the season than phosphorus. While nutrients fluctuated during the sample season, chlorophyll levels remained stable, never changing by more than 0.8 µg/L from one sample to the next.

The annual mean phosphorus value at Site 6 was the highest it has been since 1998. This is notable given the higher phosphorus levels in the early and mid-1990s occurred prior to the efforts to reduce point-source phosphorus inputs entering the system in the Table Rock

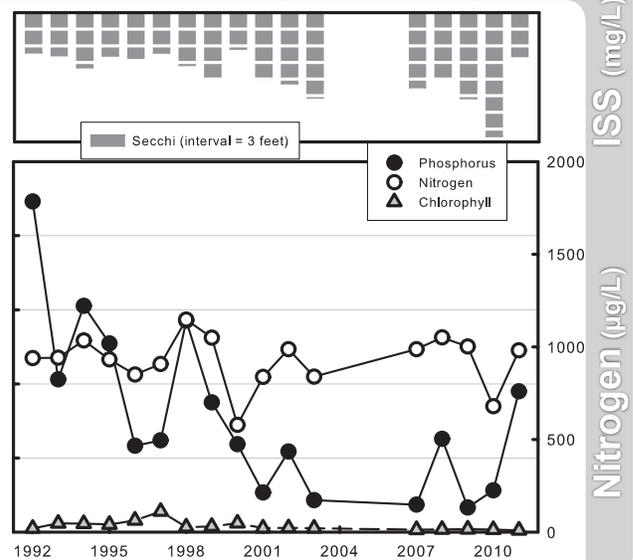
Lake watershed. Higher phosphorus at Site 6 probably reflects flooding that occurred in the spring of 2011 in Table Rock Lake. Secchi transparency during summer 2011 was low at Site 6 relative to readings from the last decade. Shallower Secchi readings did not seem to be the result of increased algal levels given the low chlorophyll values measured in 2011. Elevated amounts of suspended sediment in the water would account for a decline in transparency.



2011 GRAPHS



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Lake Taneycomo Site 10

Taney County

2011 DATA

Latitude: 36.5967

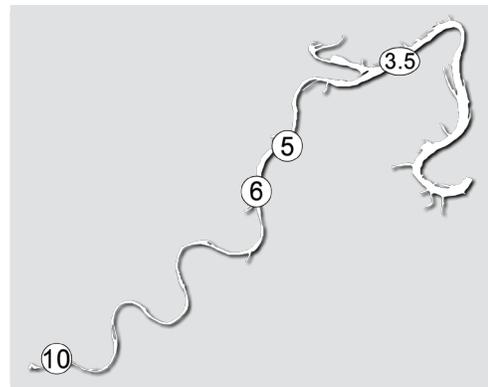
Longitude: -93.2950

Date	X	X	6/10	6/29	7/28	8/9	X	X	Mean
Secchi (inches)									
TP (µg/L)			50	43	62	97			60
TN (µg/L)			710	750	990	1410			929
CHL (µg/L)			0.6	0.5	6.2	7.7			1.9

Phosphorus and nitrogen both displayed a 2-fold difference in concentrations during the 2011 season, which is notable given sample collection was limited to a two month period during the summer. This amount of variation in the nutrient data is not unusual for a Missouri lake, but usually includes either samples from springtime when inflows into the lake are the greatest or samples from fall when the lake is starting to de-stratify.

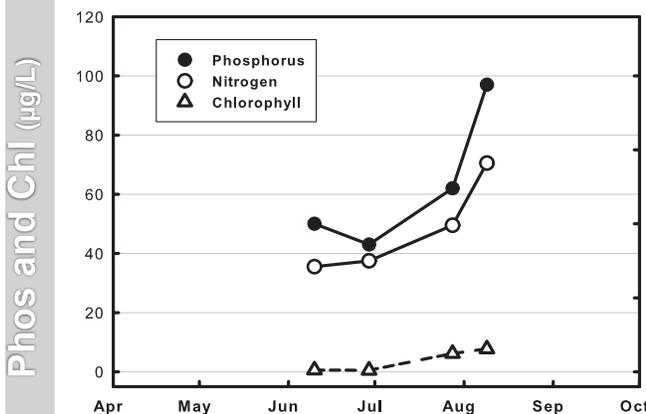
The summertime phosphorus mean at Site 10 was higher in 2011 than in any other summer of the last 20 years. This was not a function of one or two extreme values as the minimum concentration measured in 2011 (43 µg/L) exceeded all of the previous annual values. Springtime flooding in Table Rock Lake could account for the increase in phosphorus con-

centrations at Site 10 as this site represents the water coming into Taneycomo from Table Rock. In contrast, nitrogen and chlorophyll levels in 2011 were similar to previous data.



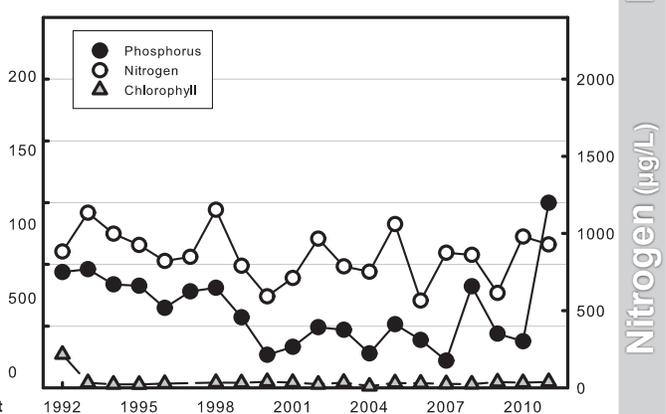
2011 GRAPHS

Secchi disk hits bottom at Site 10



TREND GRAPHS

Secchi disk hits bottom at Site 10



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