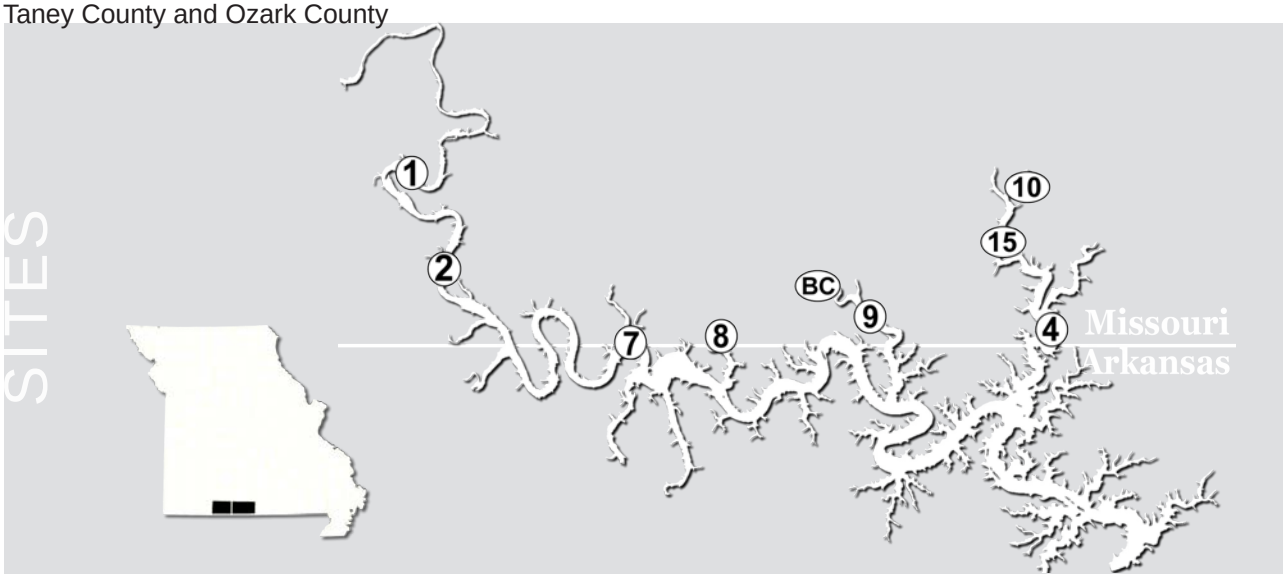
Bull Shoals Lake

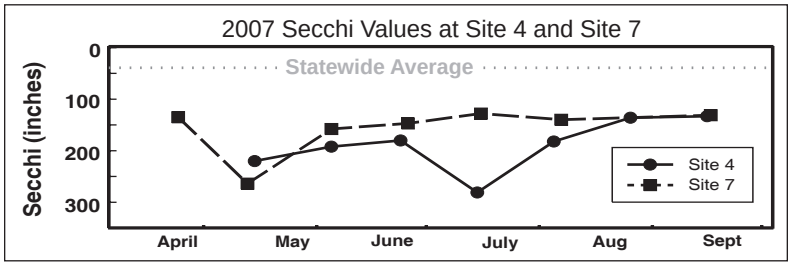
Taney County and Ozark County



Main lake sites (1, 2 and 7) displayed predictable longitudinal gradients, with a decrease in nutrients and chlorophyll as site location moved down-lake. The decreases in chlorophyll were accompanied by increases in Secchi transparency. Average nutrient and chlorophyll values at Site 7 were some of the lowest measured statewide during 2007.

The same spatial gradient was observed in the Little North Fork Arm of Bull Shoals, with an even more pronounced decrease in nutrients and chlorophyll at the down-lake site (#4).

Secchi readings >20 feet were measured at both sites 7 and 4 during the 2007. Comparison of these values with the "overall" statewide average of around 3 feet underlines just how impressive these Secchi readings are.



2007 SUMMARY

	Site	1	2	7	8	10	15	4
Number of Samples		7	7	7	7	7	7	7
Secchi	Mean	92	100	153	113	63	97	184
	Minimum	57	64	128	96	37	72	133
	Maximum	150	154	264	144	93	121	281
TP	Mean	9	10	6	7	17	10	7
	Minimum	6	6	4	6	9	7	5
	Maximum	13	12	9	9	27	15	9
TN	Mean	393	303	156	340	441	324	330
	Minimum	250	210	80	300	250	220	200
	Maximum	640	540	300	470	750	510	490
CHL	Mean	5.1	5.3	2.8	3.4	9.2	5.1	1.9
	Minimum	2.7	2.5	1.5	2.4	4.3	2.1	1.1
	Maximum	10.0	13.0	7.9	5.8	18.8	12.2	6.0

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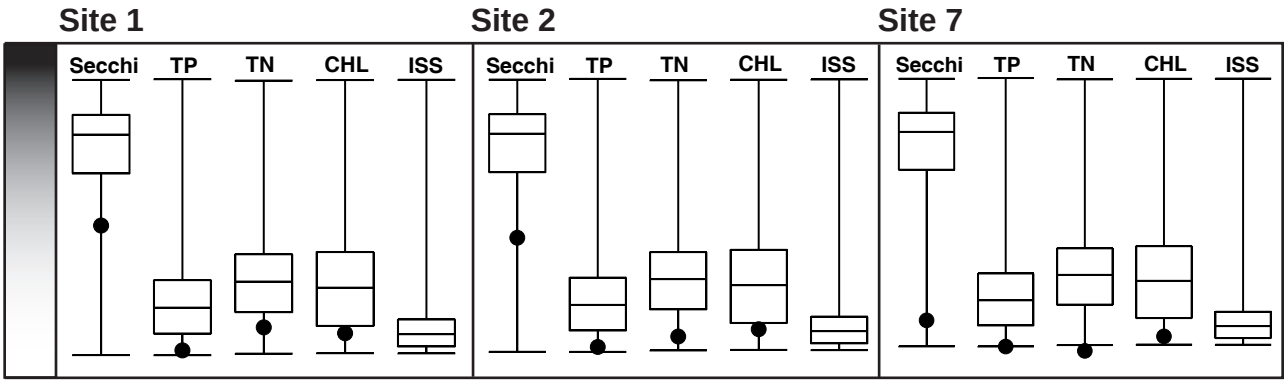
RELATIVE RANK

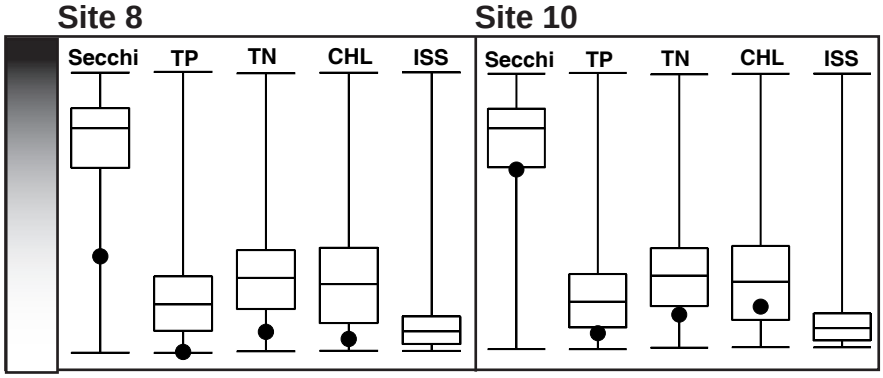
See page 11 for details

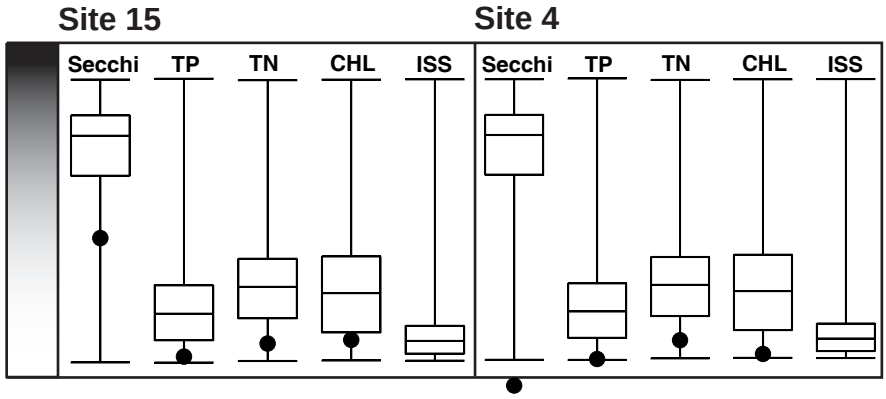


All parameters at all sites (with the exception of chlorophyll at Site 10) were within the bottom quartile of the statewide rankings, indicating water quality that is better than 75% of Missouri lakes.

Some mean values from 2007 were off of the statewide ranking scale (Site 7 nitrogen, Site 4 Secchi). This indicates that nitrogen at Site 7 during 2007 was less than the lowest long-term lake mean, and water clarity at Site 4 exceeded the deepest long-term average Secchi depth.

RELATIVE RANK





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As of now, Missouri nutrient criteria would not apply to Bull Shoals Lake, because the dam is in located in Arkansas. However, that could change as criteria development continues.

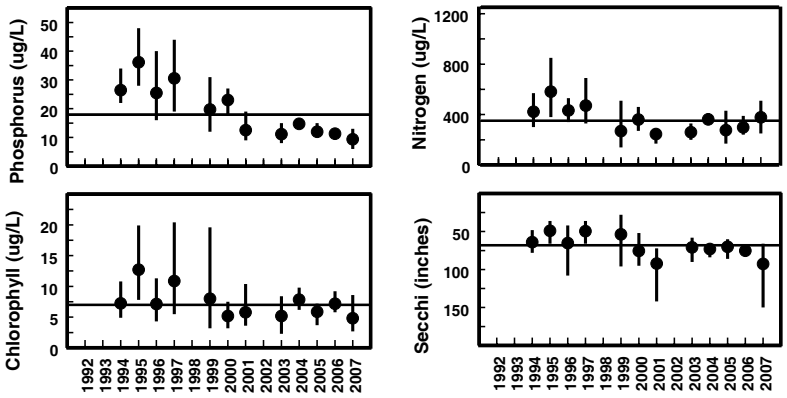
TRENDS

Nitrogen displays a downward trend over time at Site 1. This may be partly due to a small shift in the location of the sample site in 1999. Water quality in this part of Bull Shoals Lake displays a longitudinal gradient, with predictable decreases in nutrients as water moves down-lake. This shift in site location is probably a minor reason for the trend of decreasing phosphorus at Site 1, with the majority of the decrease occurring because of reductions in phosphorus inputs into Lake Taneycomo.

Decreasing nutrients, especially phosphorus, have resulted in a slight decrease in algal chlorophyll at Site 1. Along with lower annual means, this site displays less variability within single summers in chlorophyll values compared to the 1994-1999 period.

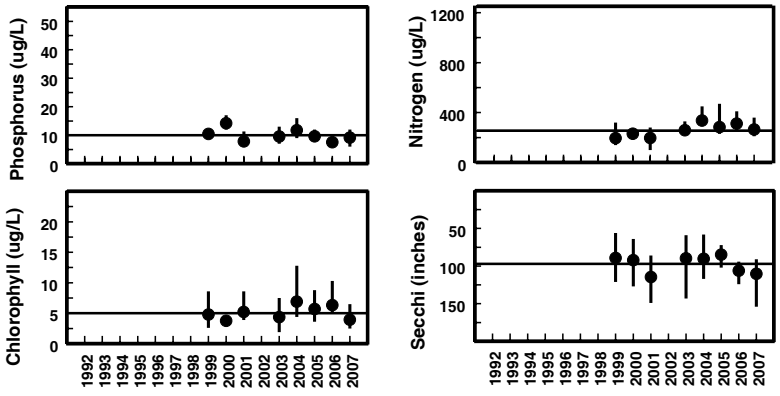
A minor increase in Secchi transparency has resulted due to the slight decrease in chlorophyll.

Site 1



Site 2 was first sampled in 1999, after phosphorus reductions had taken place in Lake Taneycomo. Because of this, there are no noticeable trends in phosphorus, chlorophyll or Secchi transparency at this site.

Site 2



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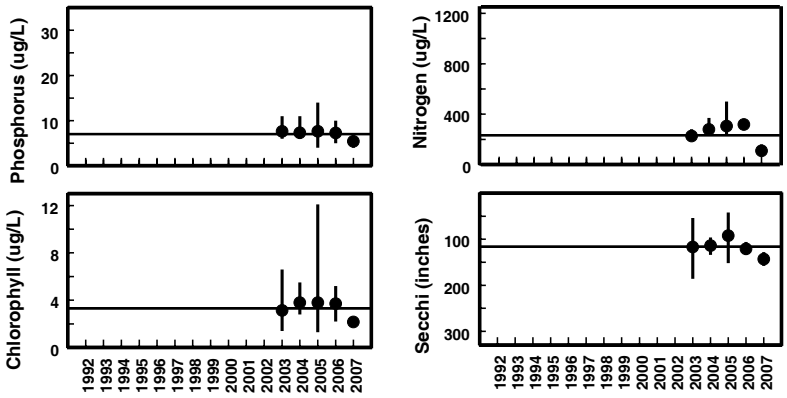
TRENDS

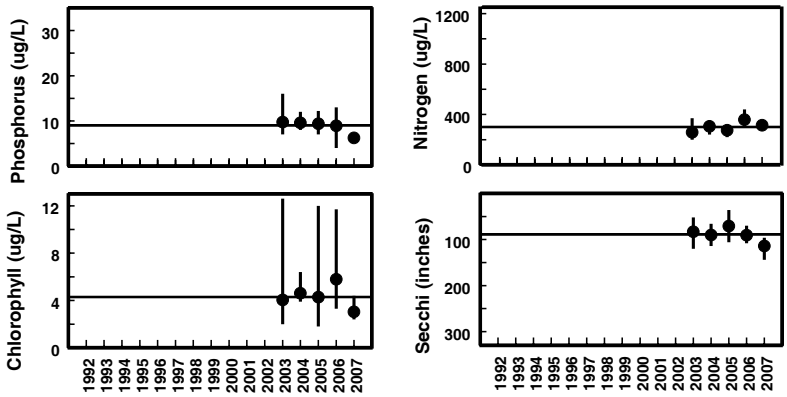
There are currently no detectable trends in water quality at Site 7. Nutrients and chlorophyll were lower in 2007 than in previous years, with deeper Secchi readings.

Site 7



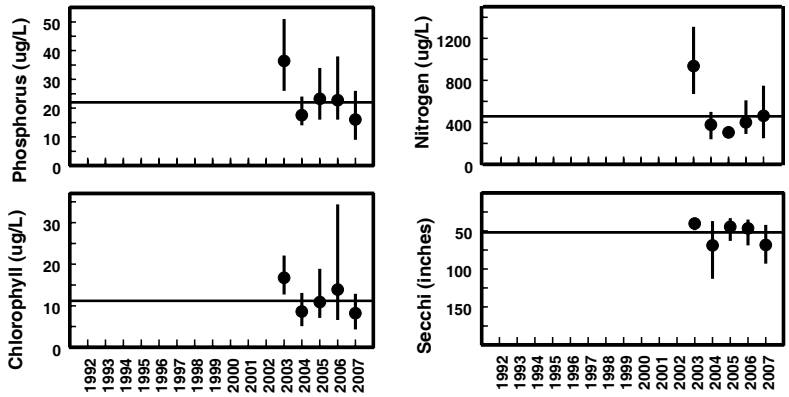
There are no identifiable water quality trends at Site 8. Chlorophyll seems to be considerably more variable within individual years than the other three parameters – care should be taken when making comparisons due to the different scales used for each parameters (nitrogen scale is 100 times greater than the chlorophyll scale!).

Site 8



Site 10 displays some variation from year to year, with 2003 standing from the rest of the data as a year of high nutrient levels. This site, being located up-lake and closer to the watershed, is more responsive to weather patterns (which increase within year variability) and annual differences in climate. Currently no trends in water quality are identifiable.

Site 10



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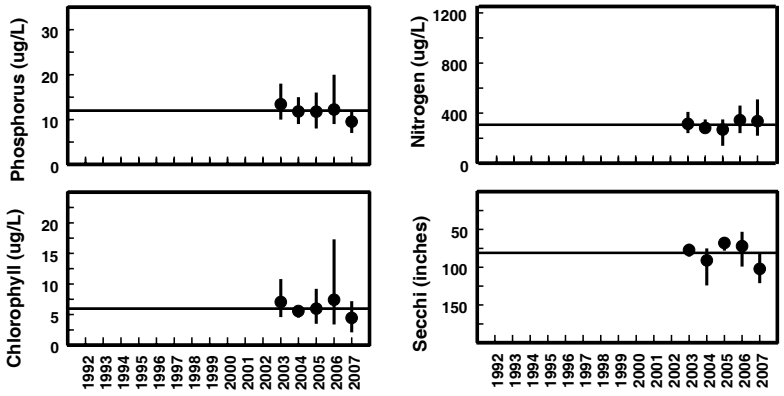
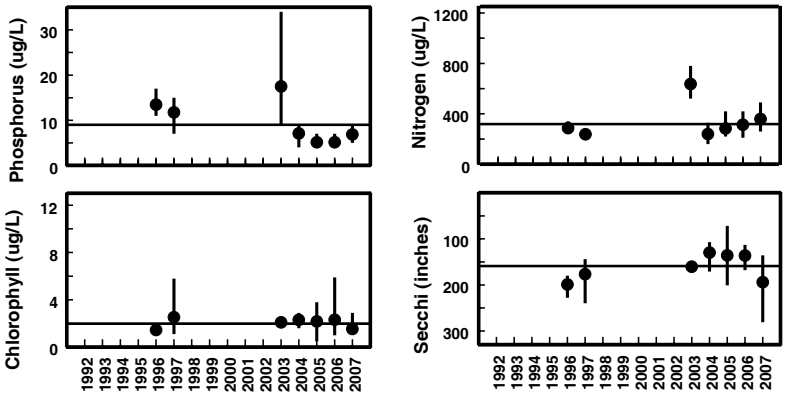
Site 15



Water quality at Site 15 has been fairly stable during the last five years, with only minor differences from year to year. This site displays some within year variability, but less than that measured up-lake at Site 10. There are no obvious trends in water quality at Site 15.

Site 4



Site 4, being located down-lake from Site 15, should display less year-to-year variability as well as lower within year variability. This would be the case, with the exception of data from 2003, which represent only two sampling efforts in August. Nutrient values for Site 4 from 2003 were higher than those measured at Site 15. Field sheets indicate that on both sampling occasions there had been heavy thunderstorms in the area. It is very likely that the elevated nutrients in 2003 reflect local rain events.