

# Mark Twain Lake, Site 1

Monroe County and Ralls County

2007 DATA



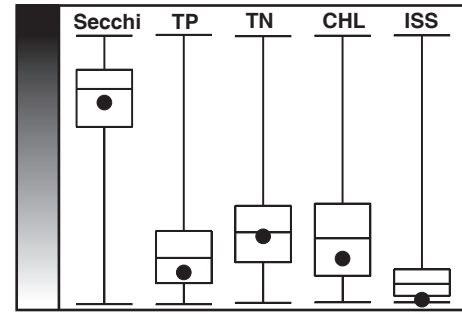
Date	Secchi (inches)	TP (µg/L)	TN (µg/L)	CHL (µg/L)	ISS (mg/L)
5/13	14	134	1440	22.5	6.3
6/23	47	52	970	24.5	1.3
7/15	56	35	800	22.7	0.4
8/7	41	19	810	4.7	1.1
8/28	49	26	560	16.6	1.0
9/22	78	13	380	8.5	
10/6	82	11	420	1.3	0.2
<b>Mean</b>	<b>47</b>	<b>29</b>	<b>700</b>	<b>10.1</b>	<b>0.9</b>

2007 SUMMARY

Seven samples were collected at each of the three sites monitored at Mark Twain Lake in 2007. Observed water quality parameters at all three sites were nearly identical.

Despite early season high phosphorus concentrations across the entire lake, the algae did not respond with greater than expected growth.

Secchi transparency was greater than observed in most Missouri lakes, while nutrient and chlorophyll concentrations were lower. Sediment (ISS) concentrations were quite low this season

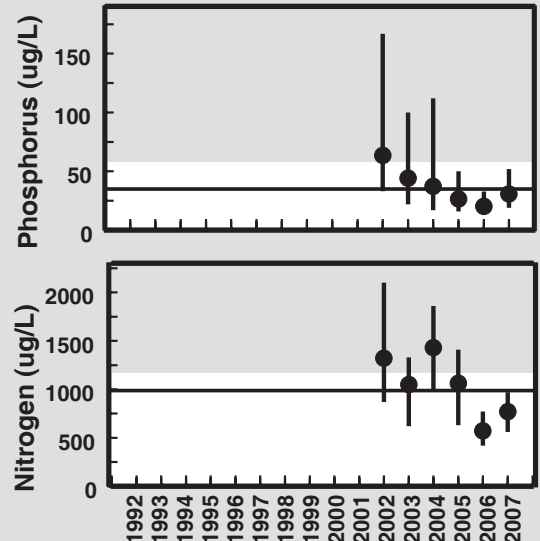


Relative Rank Graph  
See page 11 for details

TRENDS

Phosphorus concentrations were below the long-term mean for the third consecutive year. The 2007 mean nitrogen concentration at the dam was the second lowest observed by LMVP volunteers.


Mean concentrations of both nutrients and chlorophyll (not shown) were below the recently proposed limit values.



# Mark Twain Lake, Site 2

Monroe County and Ralls County

2007 DATA



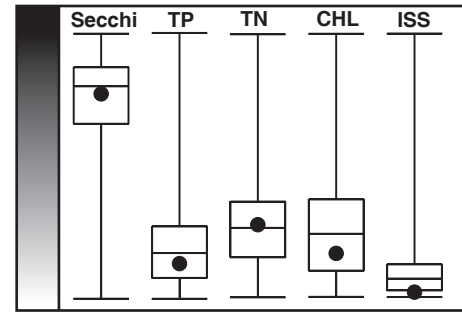
Date	Secchi (inches)	TP (µg/L)	TN (µg/L)	CHL (µg/L)	ISS (mg/L)
5/13	20	137	1420	44.2	9.5
6/23	46	45	920	25.5	1.8
7/15	56	35	1050	23.1	1.2
8/7	32	29	950	2.2	1.7
8/28	41	24	550	18.9	0.2
9/22	60	18	380	11.6	
10/6	66	12	500	0.9	0.5
<b>Mean</b>	<b>43</b>	<b>32</b>	<b>750</b>	<b>10.2</b>	<b>1.2</b>

2007 SUMMARY

Mark Twain Lake was sampled seven times in 2007. The three sites on Mark Twain Lake had nearly identical water quality measurements.

Phosphorus, chlorophyll and sediment concentrations were very high on the first sampling date. Values from that date contributed to the high chlorophyll variability observed in 2007 (low of 0.9, high of 44.2 µg/L).

The relative rank graph for Site 2 is practically identical to that of Site 1. One minor point to make is that nitrogen concentrations at Site 1 were below the statewide median, but at Site 2 are just above the statewide median.

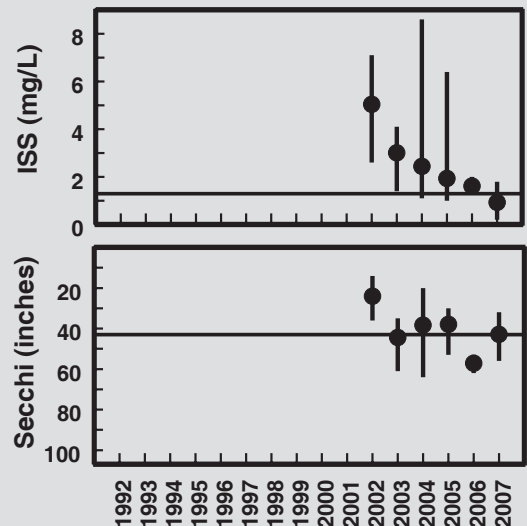


Relative Rank Graph  
See page 11 for details

TRENDS

It appears that sediment concentrations are decreasing steadily at Mark Twain Lake. Suspended sediments in lakes are most frequently associated with runoff, which is exacerbated by heavy rainfall. Fewer spring rains in the last few years may be responsible for much of the decrease in sediments. Considerable work in the watershed may have contributed to improvements as well. We'll have to wait and see.

Despite decreases in mean sediment concentrations, The Secchi transparency values are holding consistently near the 40 inch range.



# Mark Twain Lake, Site 5

Monroe County and Ralls County

2007 DATA



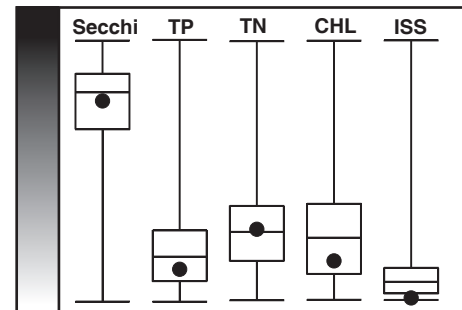
Date	Secchi (inches)	TP (µg/L)	TN (µg/L)	CHL (µg/L)	ISS (mg/L)
5/13	14	154	1550	13.0	5.0
6/23	38	53	1100	39.9	3.4
7/15	62	37	1130	26.9	1.1
8/7	38	19	910	2.3	1.0
8/28	45	26	490	19.1	0.1
9/22	70	15	410	11.3	
10/6	76	10	370	0.9	0.2
<b>Mean</b>	<b>44</b>	<b>30</b>	<b>750</b>	<b>9.4</b>	<b>0.8</b>

2007 SUMMARY

Seven samples were collected at Site 5 in 2007. Water quality at all three sites was very similar.

Secchi at Site 5 ranged from a low of 14 inches to a high of 76 inches. The seasonal low Secchi occurred on May 13, the same day as the seasonal high phosphorus, nitrogen and sediment values.

2007 seasonal means were nearly identical at all three sites, thus the relative rank graphs are all nearly identical. Like Site 2, Site 5 had a 2007 TN mean of just above the statewide median.



Relative Rank Graph  
See page 11 for details

TRENDS

The seasonal phosphorus and chlorophyll means have generally remained near the long-term mean.

The 2004 phosphorus concentrations showed higher than usual variability, and all of the 2005 chlorophyll concentrations were above the long-term mean.

Even at this up-lake site, the long-term nutrient and chlorophyll concentrations meet the criteria proposed for the dam. Typically, sites up-lake have higher concentrations of nutrients, sediments and chlorophyll than the dam site.

