Mark Twain Lake Site 1

2011 DATA

Monroe and Ralls County
Latitude: 39.524 Longitude: -91.6478

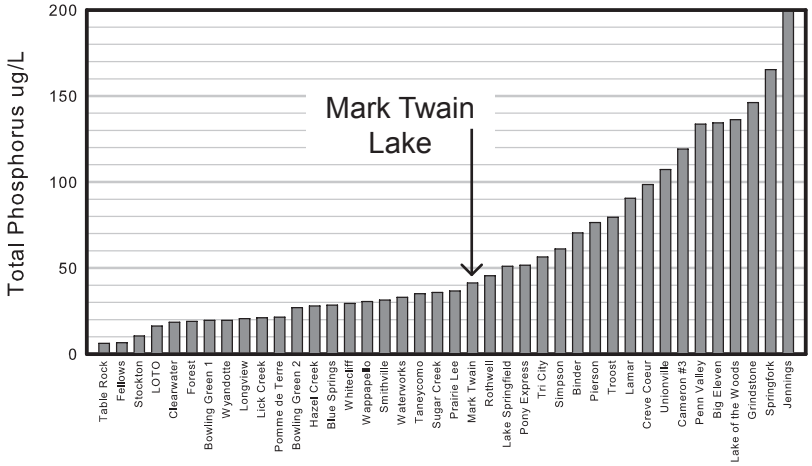
Date	4/23	5/14	6/5	6/26	7/16	8/6	8/28	9/17	Mean
Secchi (inches)	18	18	16	34	37	47	33	40	28
TP (µg/L)	132	109	84	62	41	27	21	20	49
TN (µg/L)	2290	2160	2130	2290	2000	1510	990	740	1644
CHL (µg/L)	8.2	6.4	14.6	20.2	19.0	18.7	31.8	27.3	16.2
ISS (mg/L)	7.6	6.3	6.0	3.5	2.4	0.6	1.3	0.7	2.5

Water clarity increased through the season at Mark Twain Lake dam (Site 1). Across the same period, concentrations of suspended sediment and both nutrients decreased by over 75 percent.

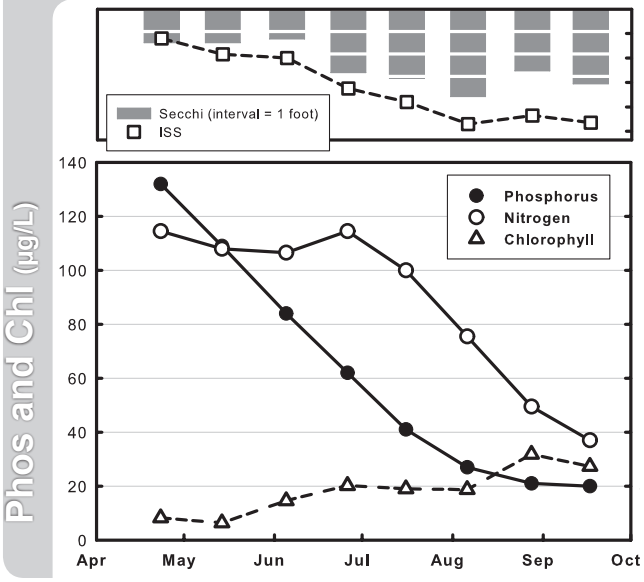
Interestingly, chlorophyll concentrations increased through the season despite the declining nutrient availability. By the end of the season, there was more chlorophyll in the water than phosphorus. The algal abundance (as measured by chlorophyll) is inversely related to suspended sediment concentrations. As sediment particles settle out, light penetrated deeper in the water column and provided light for algal growth.

2011 was the 10th year of monitoring at Mark Twain Lake. There are no water quality trends apparent, though the mean phosphorus concentration of 2008 was uncharacteristically high.

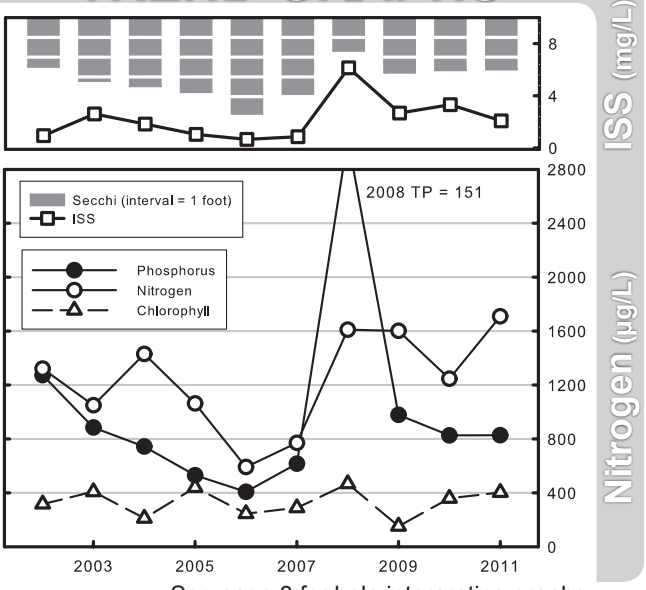
2011 Summer Mean Phosphorus Values



2011 GRAPHS



TREND GRAPHS



See page 3 for help interpreting graphs

Mark Twain Lake Site 2

2011 DATA

Latitude:39.5395 Longitude:-91.6972

Date	4/23	5/14	6/5	6/26	7/16	8/6	8/28	9/17	Mean
Secchi (inches)	16	18	20	36	36	44	33	39	28
TP (µg/L)	119	104	85	58	37	25	25	20	48
TN (µg/L)	1930	2080	1780	1930	2080	1430	900	840	1536
CHL (µg/L)	12.6	11.9	17.2	23.7	12.2	22.0	32.9	26.5	18.6
ISS (mg/L)	7.5	8.2	6.8	4.7	2.8	0.7	1.7	1.7	3.2

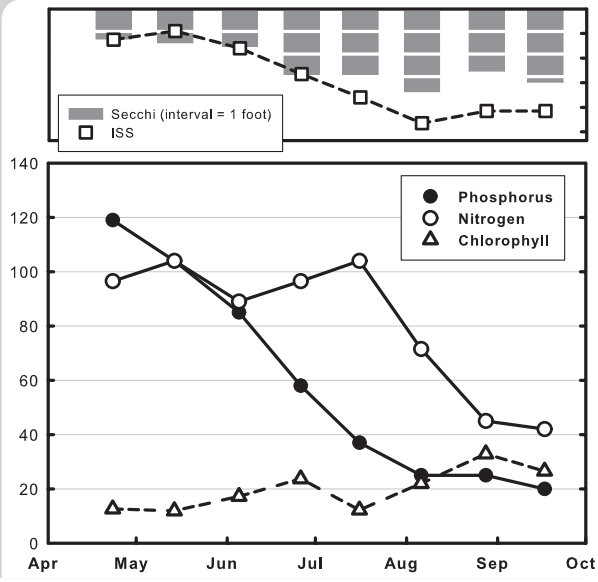
Mark Twain Lake sampling sites

Water quality at Site 2 was very similar to that of Site 1.

Water clarity and chlorophyll concentrations increased during the 2011 sampling season while sediment and nutrient values decreased.

Long-term data are similar to Site 1 as well, though the 2008 phosphorus peak was not quite as high (123 at Site 2 vs 151 at Site 1).

2011 GRAPHS



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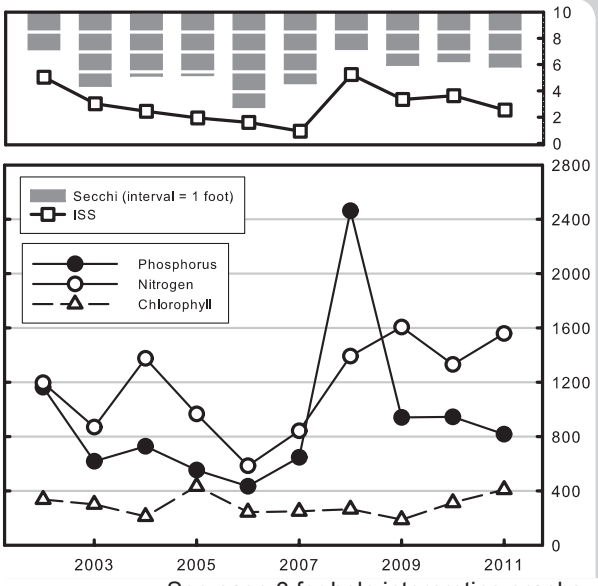


See page 3 for help interpreting graphs

Mark Twain Lake Site 5

2011 DATA

Latitude: 39.5066 Longitude: -91.7679

Date	4/23	5/14	6/5	6/26	7/16	8/6	8/28	9/17	Mean
Secchi (inches)	12	14	16	32	31	46	31	39	25
TP (µg/L)	142	116	100	64	36	25	25	21	52
TN (µg/L)	2530	1870	2130	2280	1900	1230	970	710	1570
CHL (µg/L)	3.8	9.6	21.6	23.1	24.2	25.5	35.3	27.5	18.0
ISS (mg/L)	11.5	7.6	7.2	4.1	3.1	0.6	1.3	1.7	3.2

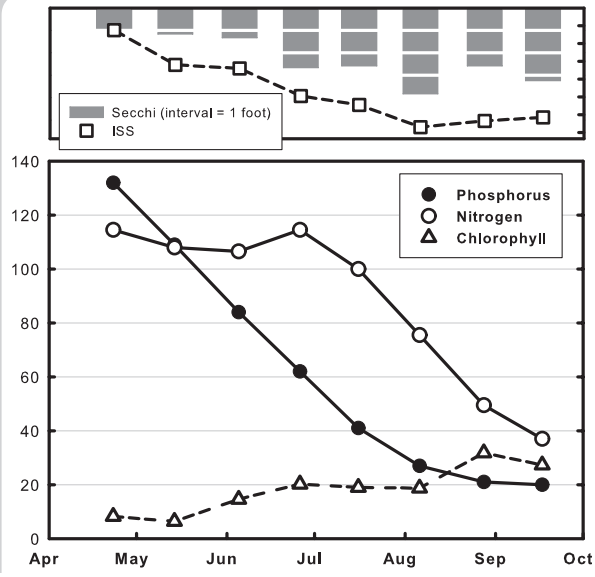
Water quality at Site 5 was very similar to that of Site 1 and Site 2.

Water clarity and chlorophyll concentrations increased during the 2011 sampling season while sediment and nutrient values decreased.

Long-term data are similar to Site 1 and Site 2 as well.

Mark Twain Lake sampling sites

2011 GRAPHS



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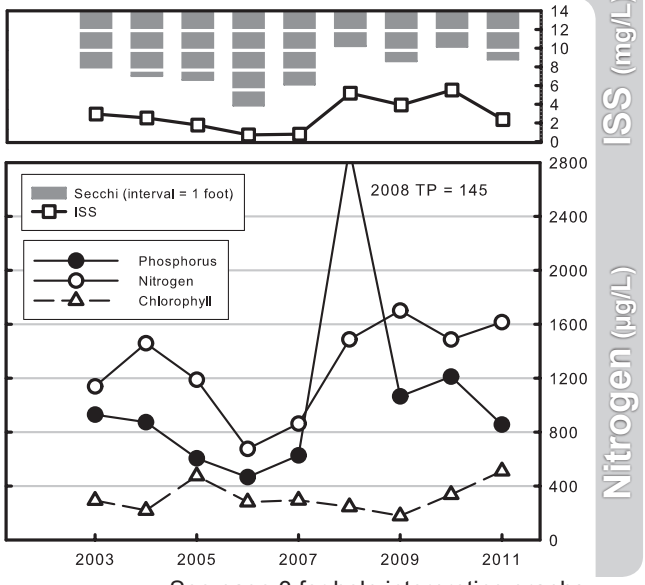

See page 3 for help interpreting graphs