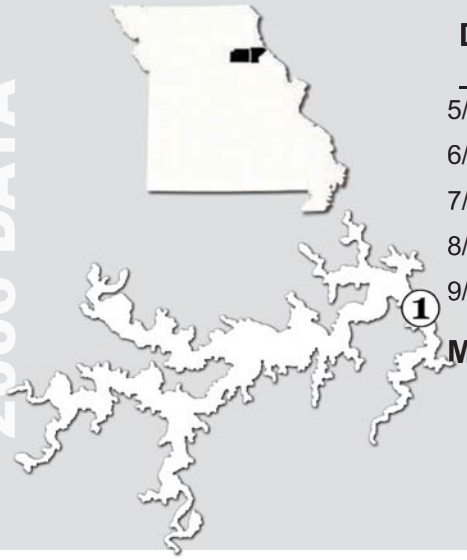
# Mark Twain Lake, Site 1

Monroe County and Ralls County

## 2006 DATA



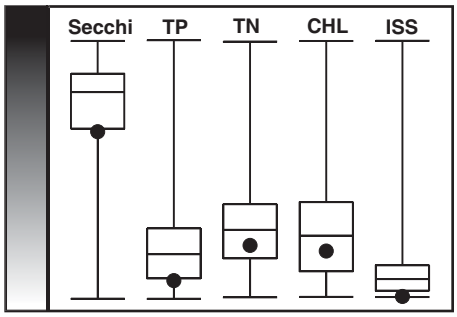

| Date | Secchi (inches) | TP (µg/L) | TN (µg/L) | CHL (µg/L) | ISS (mg/L) |
|---|---|---|---|---|---|
| 5/13 | 78 | 22 | 680 | 9.9 | 1.5 |
| 6/4 | 84 | 16 | 420 | 6.3 | 0.8 |
| 7/16 | 41 | 33 | 770 | 27.6 | 0.9 |
| 8/26 | 63 | 16 | 640 | 10.7 | 0.4 |
| 9/16 | 60 | 16 | 580 | 8.5 | 0.3 |
| **Mean** | **63** | **20** | **606** | **10.9** | **0.7** |

## 2006 SUMMARY

Concentrations of nutrients, chlorophyll and sediments at Mark Twain Lake showed little variability (difference between maximum and minimum values) in 2006. Secchi ranged from a low of 41 to a high of 84 inches at the dam, a range typical of this site.

The July 16 sample at site 1 had the highest concentrations of nutrients and chlorophyll observed at any site in Mark Twain Lake during 2006.

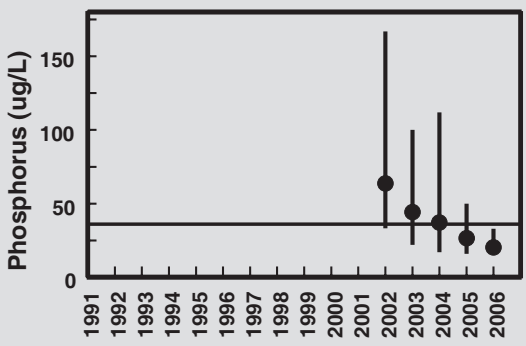
The water clarity (as measured by Secchi) is greater at Mark Twain Lake dam than observed in 75% of Missouri lakes. Likewise, phosphorus and ISS concentrations are lower than 75% of Missouri lakes, while nitrogen and chlorophyll concentrations are below the statewide medians.

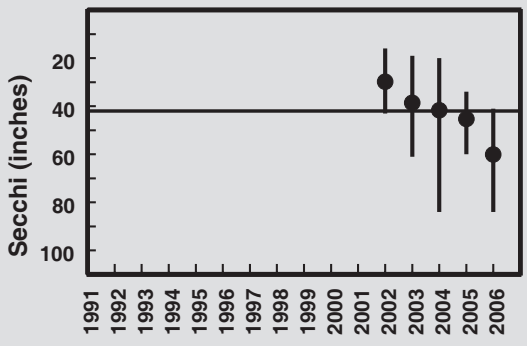



**Relative Rank Graph**
**See page 11 for details**

## TRENDS

The mean phosphorus concentrations at all sites appear to be declining, and within season variability is declining as well. The mean Secchi depth at all sites is increasing also, but the trend is most pronounced at the dam.

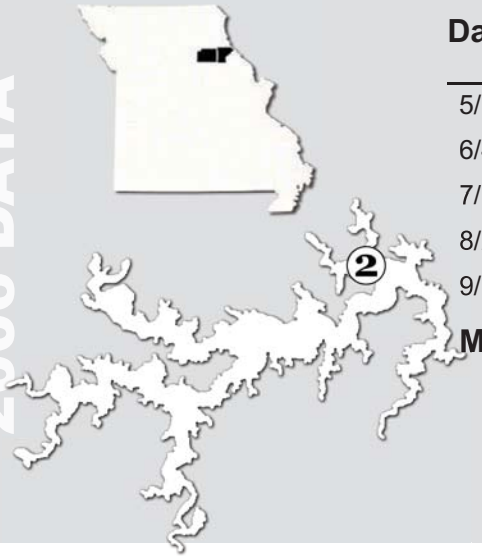


# Mark Twain Lake, Site 2

Monroe County and Ralls County

## 2006 DATA



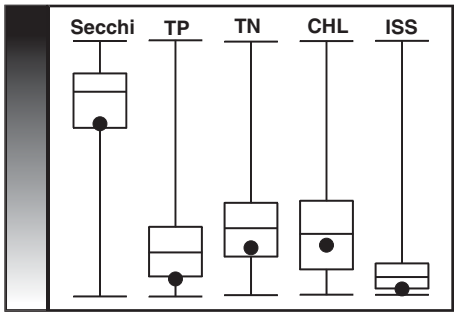

| Date | Secchi (inches) | TP (µg/L) | TN (µg/L) | CHL (µg/L) | ISS (mg/L) |
|---|---|---|---|---|---|
| 5/13 | 62 | 21 | 720 | 11.5 | 2.1 |
| 6/4 | 62 | 17 | 510 | 8.8 | 2.0 |
| 7/16 | 53 | 30 | 740 | 14.2 | 1.6 |
| 8/26 | 57 | 20 | 530 | 14.4 | 1.3 |
| 9/16 | 60 | 13 | 430 | 11.2 | 0.6 |
| **Mean** | **59** | **19** | **573** | **11.8** | **1.4** |

## 2006 SUMMARY

Conditions observed at site 2 were similar to those at the dam (site 1). Variability (difference between maximum and minimum) was low for all parameters at site 2 in 2006. Lower than normal rainfall brought fewer inputs to the system, resulting in lower overall concentrations of nutrients and sediments and greater water clarity.

There was no apparent reduction in chlorophyll concentration in 2006. The low ISS concentrations likely relieved the algae of the light limitation commonly associated with Mark Twain Lake, allowing the algae to realize maximal growth.

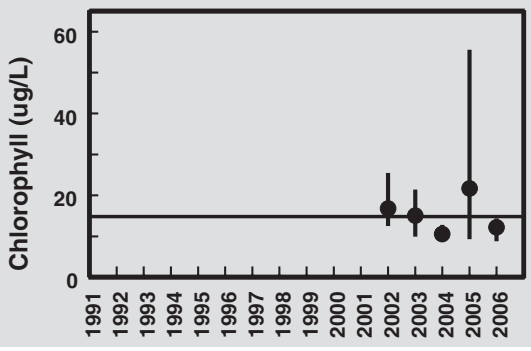
All nutrients, chlorophyll and sediment concentrations were well below the median concentrations for Missouri lakes. Water clarity (as measured by Secchi) was greater than found in 75% of Missouri lakes.

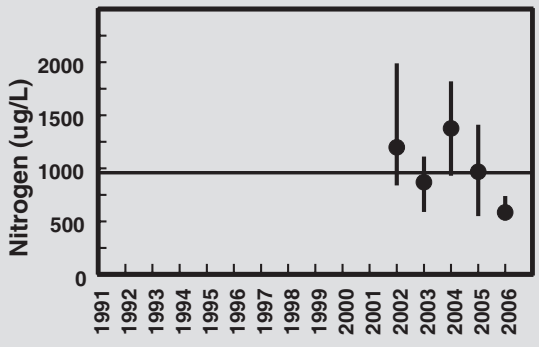



**Relative Rank Graph**
**See page 11 for details**

## TRENDS

The 2006 mean chlorophyll concentration was similar to other years, but the range of values observed was low. The 2006 mean nitrogen concentration was the lowest observed to date, and variability was low.

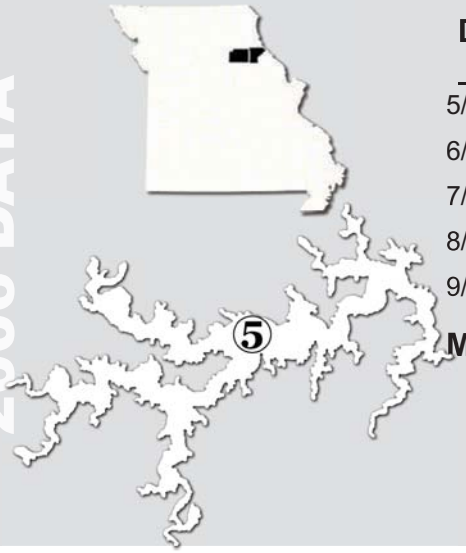


# Mark Twain Lake, Site 5

Monroe County and Ralls County

## 2006 DATA



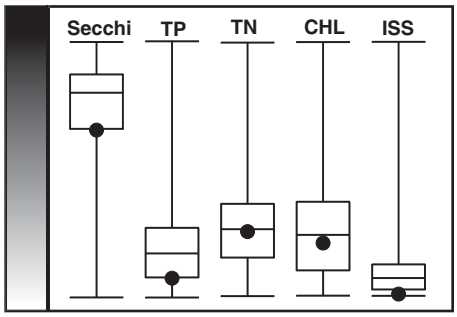

| Date | Secchi (inches) | TP (µg/L) | TN (µg/L) | CHL (µg/L) | ISS (mg/L) |
|---|---|---|---|---|---|
| 5/13 | 72 | 20 | 760 | 11.5 | 2.1 |
| 6/4 | 81 | 18 | 550 | 9.3 | 1.1 |
| 7/16 | 40 | 32 | 850 | 17.1 | 1.1 |
| 8/26 | 59 | 22 | 660 | 17.4 | 0.3 |
| 9/16 | 67 | 15 | 760 | 9.6 | 0.5 |
| **Mean** | **62** | **21** | **708** | **12.5** | **0.8** |

## 2006 SUMMARY

Concentrations of nutrients, chlorophyll and sediments (ISS) at Mark Twain Lake showed little variability (difference between maximum and minimum values) in 2006. Secchi variance was typical (40 to 81 inches).

ISS concentrations were very low in 2006 due to the lack of significant rainfall during much of the sampling period. Mark Twain Lake is generally light limited, especially during years with normal or above average rainfall. However, with ISS concentrations so low, the algae would not have been shaded by sediments.

ISS and phosphorus concentrations were among the lowest 25% of Missouri lakes. Water clarity was greater than observed in 75% of Missouri's lakes. Nitrogen and chlorophyll concentrations were near the median for Missouri lakes.




**Relative Rank Graph**
**See page 11 for details**

## TRENDS

The trends graphs show the low ISS concentrations and low variability observed this year. The mean Secchi transparency value was greater than observed at this site to date, but the variability was typical for the site.