

## Little Sturgeon Lake

DNR Lake ID: 69-1290-00  
 County: St. Louis  
 Major Watershed: Little Fork River  
 Ecoregion: Northern Lakes and Forests  
 Surface Area: 302 acres  
 Maximum Depth: 22 feet  
 Water Quality Data: 5 years  
 Secchi Data: 11 years



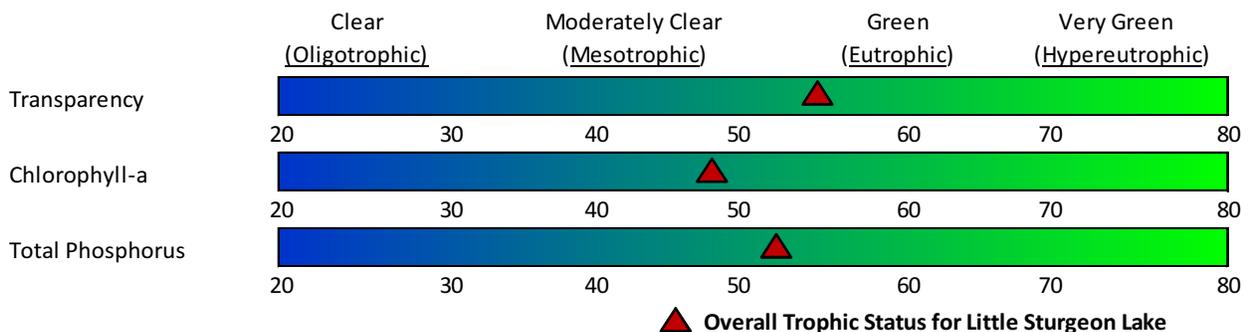
### 2013 Water Quality Summary

Sampling results for Little Sturgeon Lake in 2013 were very similar to the lake’s historical average but above expected ranges for this region. The trophic status of Little Sturgeon Lake is borderline eutrophic which means the lake is near a threshold where it likely experiences problems with algae blooms and macrophyte problems (submergent vegetation growth). Although it is supportive of all swimmable/aesthetic uses it may experience periods each year where recreation is inhibited. Due to the high tannin stain of the water, algae blooms are limited in comparison with lakes that are clearer and is indicated by the lower TSI score for chlorophyll-a. Although the lake is classified as borderline eutrophic, further study is required to determine if its current status is a result of natural conditions or anthropogenic (human).

### Little Sturgeon Lake Water Quality

Parameter	2013 Sampling Little Sturgeon	Historical Average Little Sturgeon	MN Northern Lakes & Forests Ecoregion
Total Phosphorus (ug/l)	25	28	14 - 27
Chlorophyll mean (ug/l)	5.6	5.6	4 - 10
Secchi Disk (feet)	5.9	5.1	8 - 15
Secchi Disk (meters)	1.8	1.5	(2.4 - 4.6)
TSI-Phosphorus	51	52	42 - 52
TSI-Chlorophyll-a	48	48	44 - 53
TSI-Secchi	52	54	38 - 47

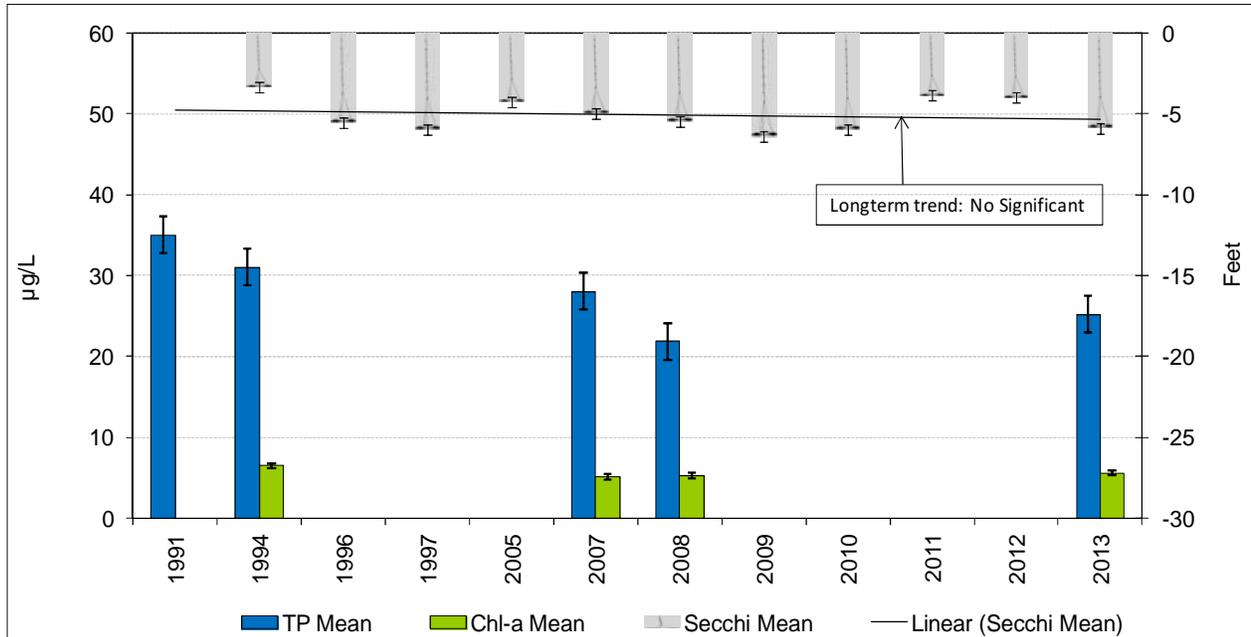
### Carlson’s Trophic Status Index (TSI)



Note: Trophic State Indices (TSIs) are an attempt to provide a single quantitative index for the purpose of classifying and ranking lakes, most often from the standpoint of assessing water quality. TSIs ranges from clear lakes, low in nutrients (oligotrophic), to green lakes, with very high nutrient levels (hypereutrophic).

### Historical Water Quality Summary

Little Sturgeon Lake’s historical data for total phosphorus and chlorophyll-a do not meet the minimum requirements for looking at trends. There is however 11 years of secchi data which provides sufficient data to perform long term trend analysis. Although the secchi data doesn’t show a “significant” positive trend, it is indicating a slight increase from 1994 to 2013 which is encouraging.



*Note: For detecting trends, a minimum of 8-10 years of data with 4 or more readings per season are recommended. Minimum confidence accepted by the MPCA is 90%. This means that there is a 90% chance that the data are showing a true trend and a 10% chance that the trend is a random result of the data.*

### Monitoring Recommendations

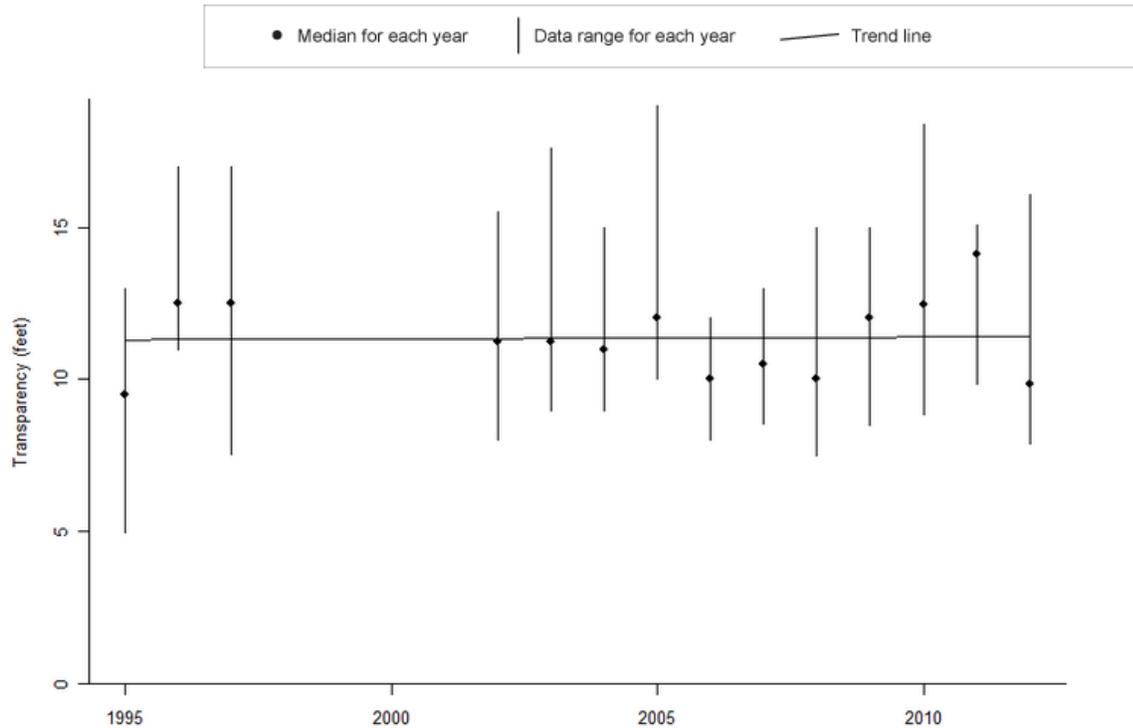
Transparency monitoring at site 202 should be continued annually. It is important to continue transparency monitoring weekly or at least bimonthly every year to enable year-to-year comparisons and trend analyses. Phosphorus and chlorophyll a monitoring should continue at site 202, every 5 years or as the budget allows, to track future water quality trends.

## Transparency Trend

These graphs show statistical changes in transparency over time at this site and across its watershed. For sites and watersheds with at least 8 years of data, the graphs include a trend line, which shows the direction of detected changes in transparency (increasing, decreasing, or no change).

### Lake Transparency Trend

**Trend analysis result:** The median transparency at this lake from 1995 to 2011 increased by 0.31 feet per decade. Given the variability over these years, there is no evidence yet of a long-term trend in either direction. A plausible range for the long-term trend is between a decrease of 1.10 and an increase of 2.28 feet per decade.



Water transparency is an excellent indicator of water quality, and the majority of these data are collected by volunteers. Many years of data are needed to detect trends in water quality, and we are always looking for new volunteers. Join the MPCA's [Citizen Lake Monitoring Program](#) and help collect this important information for your lake.