

Little Traverse Lake Water Quality

2022 lake monitoring results

In 2022 Little Traverse Lake’s water quality was measured on eight occasions from May through October as a part of long-term sampling programs by the LTLPOA and the Leelanau Conservancy. Nine physical and chemical water quality parameters were measured including water clarity (secchi depth), total phosphorus, total nitrogen, Chlorophyll a (amount of algae growth), temperature, and oxygen concentrations. This data was summarized using the Carlson Trophic Status Index or TSI. This widely used and highly regarded index combines Secchi depth, concentrations of phosphorus and chlorophyll a, to calculate a value that summaries and classifies a lake’s water quality. In general, the lower the TSI the better the water quality of the lake. In 2022 Little Traverse Lake’s TSI value was

35.3, which was slightly above the long-term average of 34.6 but slightly lower than the 2021 value (figure 1). This value puts Little Traverse Lake in the Oligotrophic class of lakes, generally with the best water quality. This class includes other high-quality lakes such Big Glen Crystal and Torch lakes.

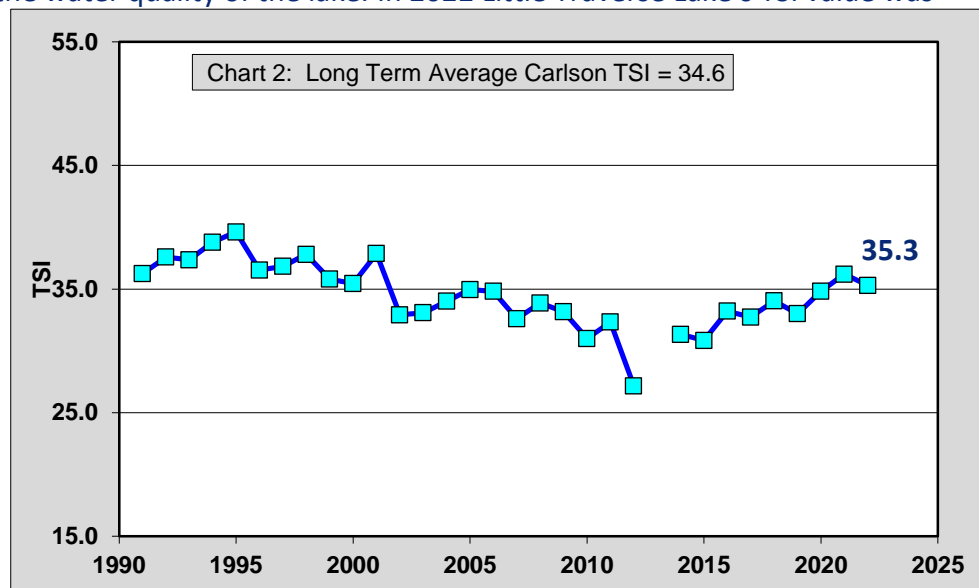


Figure 1. The long-term Trophic Status Index (TSI) for Little Traverse lakes.



The total phosphorus concentration (the limiting nutrient for algae growth) of 6.86 ug/L was higher in 2022 than the long-term average (5.4 ug/l) and continues a slight upward trend in TP since 2015 (Figure 2). Water clarity varied throughout the summer with a maximum value of 24 feet on June 23rd, and a minimum value of 9 feet in on August 6th (Figure 3). However, the average of 16.6 ft is greater than the long-term and 2021 average. Although these values remain at very healthy levels, the TP trends should be closely watched and monitored over the next 5 years.

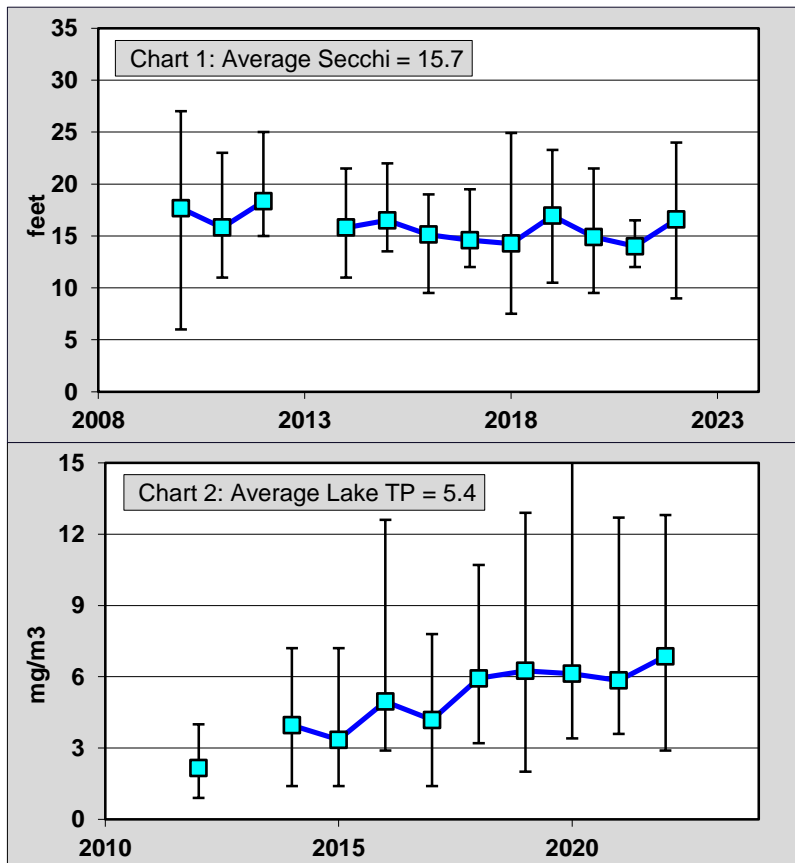


Figure 2. The long-term Secchi depth reading (chart 1) and Total Phosphorus concentration (TP) for Little Traverse Lake.

Overall, Little Traverse Lake remains a high-quality oligotrophic lake. Total phosphorus and nitrogen concentrations remain low and do not support large unsightly algae blooms on the lake. The maximum surface temperature was 75.5 degrees Fahrenheit in August is typical for lakes in Northern Michigan. Continued monitoring of all the current parameters is recommended and can be easily tracked through the Lake database.

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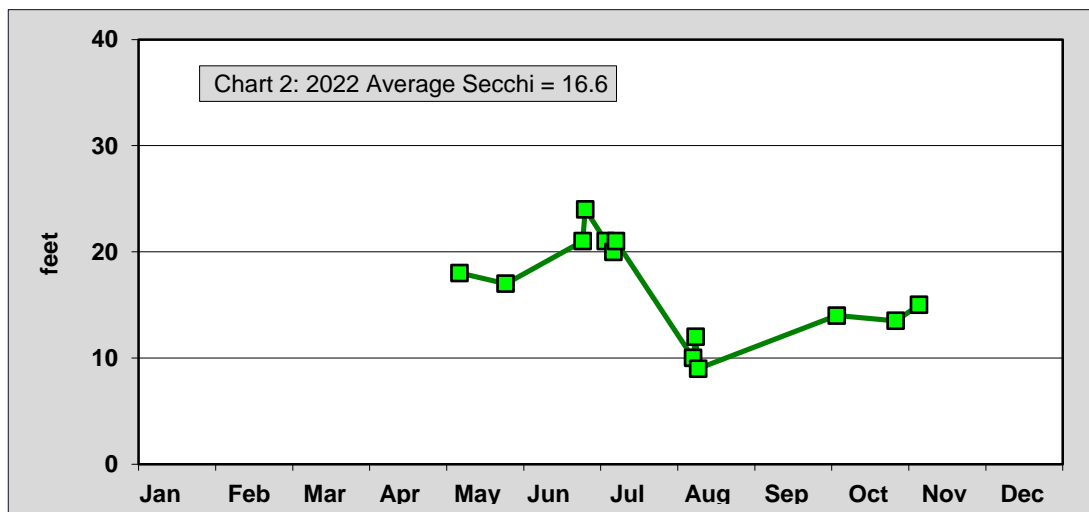


Figure 3. 2022 Secchi depth readings for Little Traverse Lake.