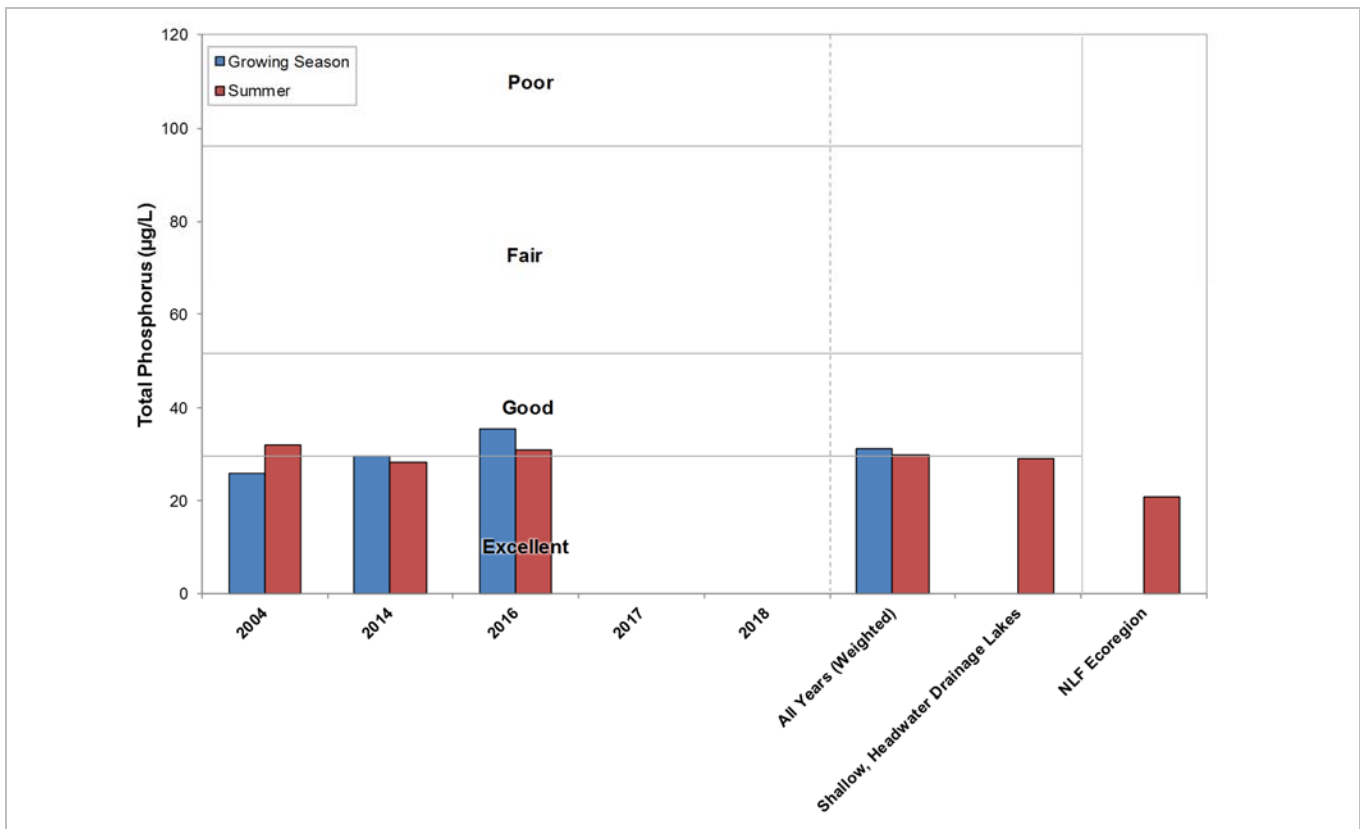


## INTRODUCTION

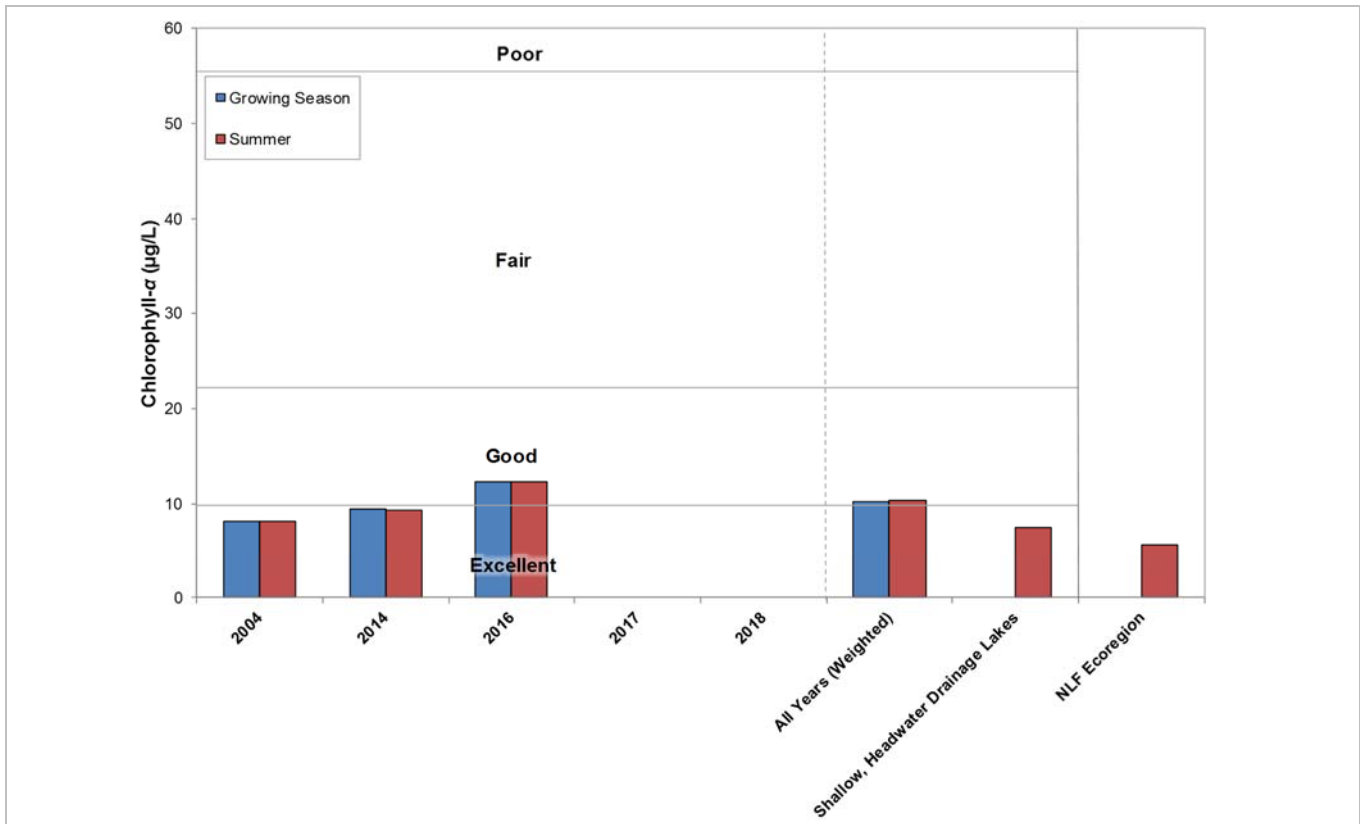
Mann Lake, Vilas County is a shallow, headwater 255-acre lake with a maximum depth of 18 feet and a mean depth of 5 feet. Water from Mann Lake flows through Mann Creek under to the north, next entering Trout Lake. As a part of the Mann Lake Comprehensive Management Plan, Mann Lake has added an aeration system to the lake to help minimize anoxia and winter fish kills. Included within the aeration grant, Friends of Mann Lake wanted to continue to monitor the water quality of Mann Lake throughout the summer and winter.

## RESULTS

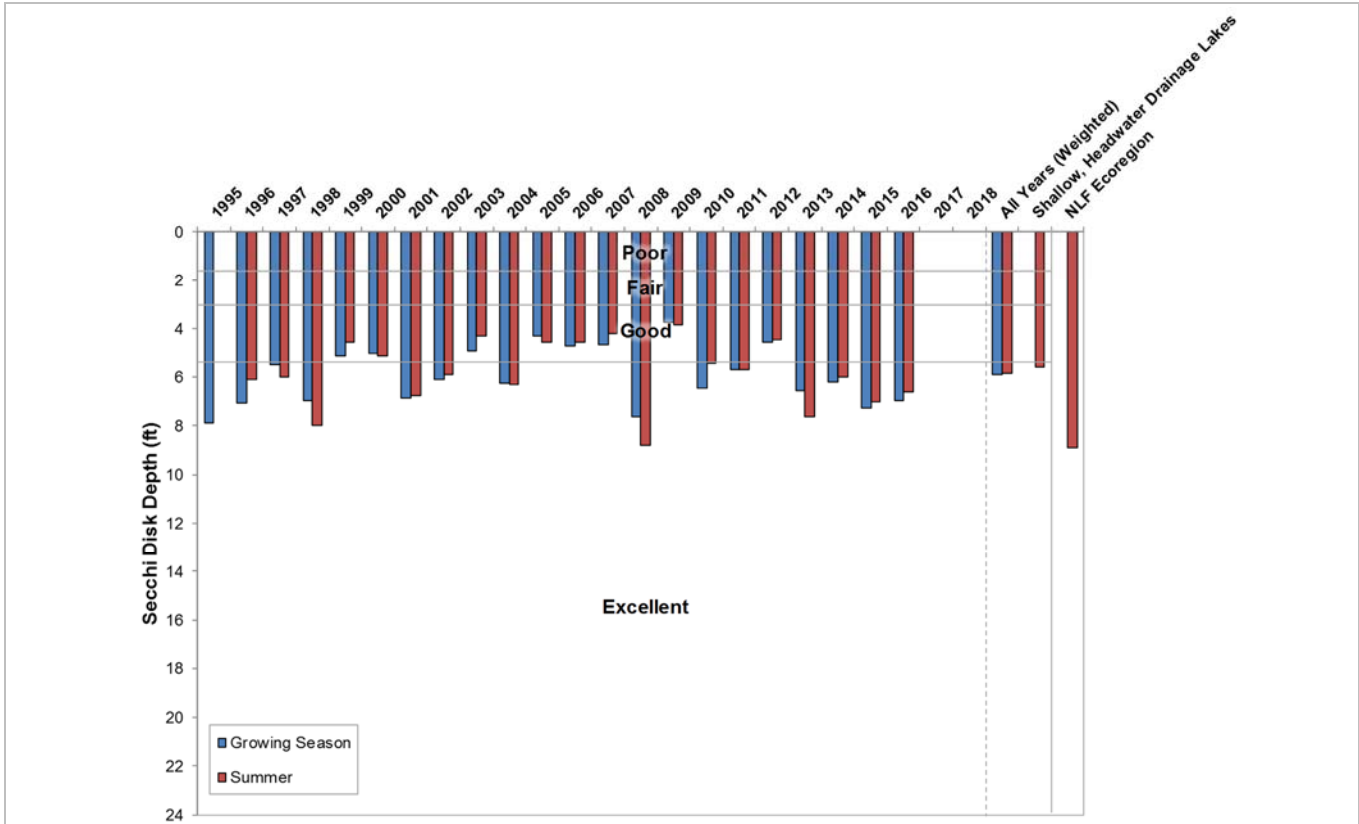
Volunteers of Friends of Mann Lake collected water quality from April to August of 2016. Figure 1 displays the total phosphorus concentrations collected from 2004 to 2016. The data collected in 2004 was a result of the Lake Baseline Monitoring by the WDNR and the 2014 data was collected by Onterra, LLC as part of the management plan project. While the 2016 concentrations do look slightly higher than 2004 and 2014, the values still lie on the *Good to Excellent* border. This increase in total phosphorus is most likely due the increase in precipitation seen in 2016. Chlorophyll-a was also collected in 2016 and, again, its levels look higher than in previous years (Figure 2). This is most likely due to the increased precipitation in 2016, similar to the increase in total phosphorus. With this increase in chlorophyll-a and total phosphorus, we should see a slight decrease in Secchi disk. Figure 3 shows that most of the Secchi disk readings taken fall within the good to excellent range, 2016 was no exception. There is no obvious trend within the Secchi disk data but the assumption can be made that over the years, with increases and decreases in run off due to climatic events, i.e. precipitation, the clarity and turbidity of the water will fluctuate causing these variations in Seccci disk readings.



**Figure 1. Mann Lake average annual total phosphorus concentrations and median total phosphorus concentrations for state-wide shallow, headwater drainage lakes and Northern Lakes and Forests ecoregion lakes. Water Quality Index values adapted from WDNR PUB WT-913**



**Figure 2. Mann Lake average annual chlorophyll- $\alpha$  concentrations and median chlorophyll- $\alpha$  concentrations for state-wide shallow, headwater drainage lakes and Northern Lakes and Forests ecoregion lakes. Water Quality Index values adapted from WDNR PUB WT-913**



**Figure 3. Mann Lake average annual Secchi depths and median Secchi disk depths for state wide shallow, headwater drainage lakes and Northern Lakes and Forests ecoregion. Water Quality Index values adapted from WDNR PUB WT-913.**