

These two factors may have significantly influenced the water quality conditions in Weaver Lake for 2005. Unfortunately, it is difficult to determine the influence that each potential factor may have had on improving water quality conditions. Additional monitoring efforts would be necessary to determine the influence each potential factor may have had on the water quality conditions. Consequently, it becomes critical to further monitor Weaver Lake to determine potential changes in water quality conditions.

French Lake

French Lake has impaired water quality conditions that inhibit recreational use. Unfortunately, the lake does not have any long term monitoring data to determine whether there are any water quality trends.

Despite the absence of long term water quality data, it is apparent from the data collected in 2005 that the lake has had a history of severe eutrophic conditions. The average phosphorus concentration in 2005 was 347 $\mu\text{g}/\text{L}$ with values ranging between 116 and 539 $\mu\text{g}/\text{L}$. The excessive amount of phosphorus in the lake causes severe algae blooms.

The average chlorophyll-a concentration was 260 $\mu\text{g}/\text{L}$ in 2005. Seasonal variation in chlorophyll-a concentrations ranged between 6 $\mu\text{g}/\text{L}$ in the early spring to 525 $\mu\text{g}/\text{L}$ in the summer. Consequently, water clarity conditions were extremely poor in which secchi depth measurements ranged between 0.16 m to 1.2 m. The severe algae blooms provided a shading effect that inhibited the development of a diverse aquatic plant community.

The poor water quality conditions are partially due to large amounts of watershed nutrient loading from surrounding agricultural areas. In addition, the shallow morphology of the lake with the absence of a diverse aquatic plant community is conducive for internal loading of nutrients that are re-suspended from the sediments. The lake is frequently vulnerable to winter and summer fish kills due to the extreme eutrophic conditions.



Appendix 4 Water Quality Data

French Lake, 2005

