

Mink Lake 86-0229-00

Mink Lake is a moderately sized, deep lake located approximately two miles north of Maple Lake, Minnesota. Mink Lake's watershed is small with an area of 1,042 hectares (2,580 acres) and a watershed to lake ratio of 8:1. Land use is dominated by cropland and the percentage is just above the range of values expected for the NCHF ecoregion (Appendix D).

The average TP and chl-*a* values for Mink Lake were 134 µg/L and 81 µg/L respectively. Each was well above the water quality standard for lakes within the NCHF ecoregion. Total phosphorus and chl-*a* data, collected in 2009 and 2010, ranged from 54 µg/L to 148 µg/L and 6 µg/L to 108 µg/L respectively. Coinciding with the high levels of TP and chl-*a*, the water clarity for Mink Lake was above the water quality standard with an average of 0.8 meters (2.6 feet) (Appendix A).

Historic profile data, collected in 1996, indicated that Mink Lake formed a thermocline at 6 meters (19.7) throughout the monitoring season, with the exception of July, where a layer formed at 3 meters (9.9 feet). This suggests that Mink Lake stratifies during the summer months. Additionally, DO levels dropped below 5 mg/L at a depth of 3 to 4 meters (9.9 to 13.1 feet) throughout most of the season with, often times, anoxic conditions existing below.

Long-term chemistry and Secchi data is available to complete a trend analysis. Figure 74 does not indicate an increase or decrease in TP levels; however, a slight decline in water clarity is visible. Total phosphorus averages for all years have been above the water quality standard. Additionally, nearly all of the Secchi averages have been above the water quality standard.

Based on the chemical monitoring results and water clarity, Mink Lake was classified as a hypereutrophic lake. Additionally, based on the TP and chl-*a* standards for the support of aquatic recreation, Mink Lake was determined to be non-supporting of aquatic recreational use and was listed as an impaired water under the 2008 303(d) Impaired Waters List. Recent data supports this listing.

Figure 74. Mink Lake long-term water quality data

