

LEVEN LAKE

MN Lake ID: 61-0066-00



POPE SOIL & WATER



SUMMARY

Leven Lake a moderately deep eutrophic lake and is on the MPCA's Impaired Waters List. Algae concentration results (chlorophyll-a) show that the lake experiences algae blooms most summers. Leven Lake has adequate historical water quality monitoring data, which makes a lake evaluation like this possible. Site 203 is the primary monitoring site. In 2016, data was collected at site 201, but additional monitoring has not occurred at that sample point. Continued monitoring of Leven Lake will inform future water quality restoration efforts.

LAKE VITALS

ECOREGION:	North Central Hardwood Forest
MAJOR WATERSHED:	Chippewa River
SURFACE AREA (ACRES):	281.99
LITTORAL AREA (ACRES):	159.13
% LITTORAL DEPTH:	56.4%
MAX DEPTH (FT):	33
AQUATIC INVASIVE SPECIES:	None



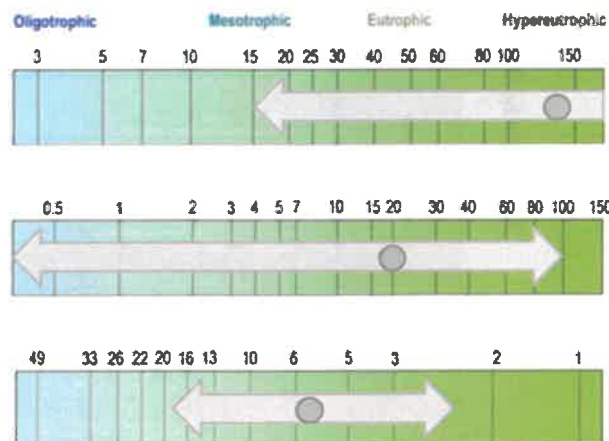
WATER QUALITY CHARACTERISTICS

YEARS MONITORED: 1992 - 2021

PARAMETERS	203	201
TOTAL PHOSPHORUS MIN (UG/L):	15	
TOTAL PHOSPHORUS MAX (UG/L):	340	
NUMBER OF OBSERVATIONS:	47.1	1
TOTAL PHOSPHORUS MEAN (UG/L):	140	35
CHLOROPHYLL-A MIN (UG/L):	0	
CHLOROPHYLL-A MAX (UG/L):	100	
NUMBER OF OBSERVATIONS:	127	1
CHLOROPHYLL-A MEAN (UG/L):	19.7	0.9
SECCHI DEPTH MIN (FT):	2.5	
SECCHI DEPTH MAX (FT):	19	
NUMBER OF OBSERVATIONS:	139	
SECCHI DEPTH MEAN (FT):	5.7	

TROPHIC STATE INDEX

Eutrophic (56.1) - Site 203



ECOREGION COMPARISONS

ECOREGION: North Central Hardwood Forest

TOTAL PHOSPHORUS:	Within Expected Range
CHLOROPHYLL-A:	Better Than Expected Range
SECCHI DEPTH:	Within Expected Range

PRIMARY SITE ONLY. COMPARISONS ARE BASED ON INTERQUARTILE RANGE, 25TH - 75TH PERCENTILE, FOR ECOREGION REFERENCE LAKES.



2021 WATER QUALITY CHARACTERISTICS

SITE 203

PARAMETERS	TOTAL PHOSPHORUS (UG/L)	CHLOROPHYLL-A (UG/L)	SECCHI DEPTH (FT)
MIN:	16	< 1	5
MAX:	37	15	19
NUMBER OF OBSERVATIONS:	5	5	5
MEAN:	26.4	6	10.8

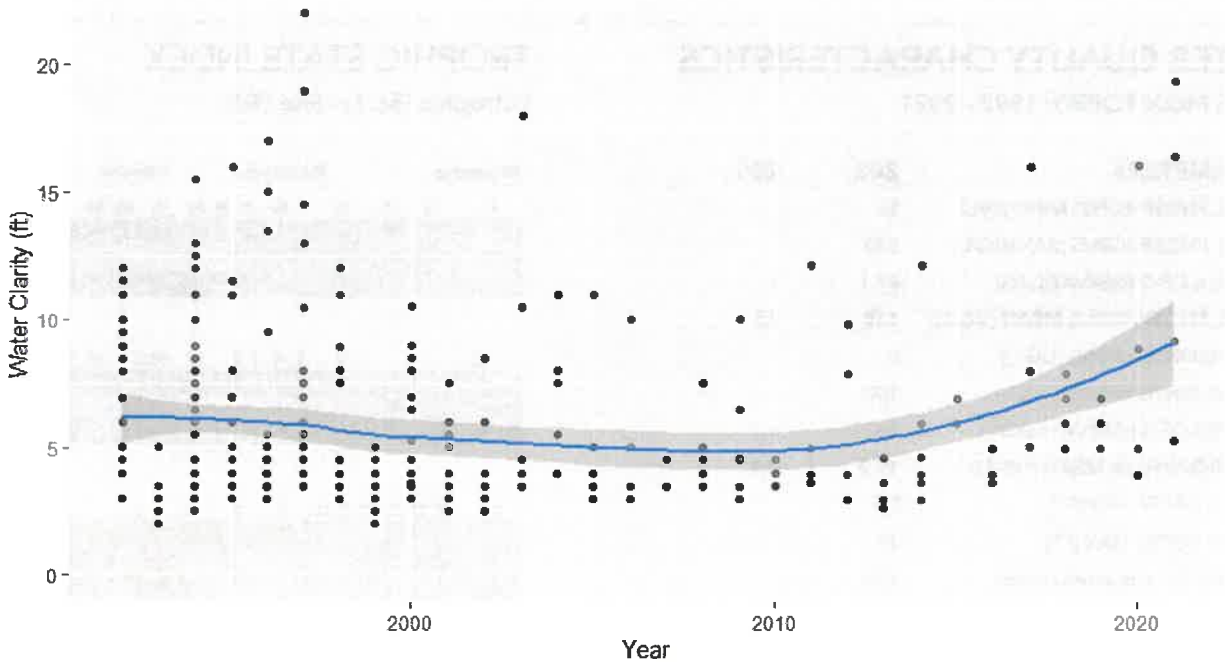
TROPHIC STATE INDEX: 45.8

TREND ANALYSIS REPORT

For detecting trends, a minimum of 8-10 years of data with four or more readings per season are recommended by the MPCA. Where data does not cover at least eight years or where there are only few samples within a year, trends can be misidentified because there can be different wet years and dry years, water levels, weather, etc., that affect the water quality naturally. The data was analyzed using the Mann Kendall Trend Analysis.

SITE	PARAMETERS	DATE RANGE	TREND
203	Transparency	2010-2021	Improving with 95% confidence
203	Total phosphorus	1996-2021	No significant trend exists
203	Chlorophyll-A	1996-2021	No significant trend exists

LEVEN LAKE TRANSPARENCY TREND



GRAPH SOURCE: MINNESOTA POLLUTION CONTROL AGENCY

Leven Lake shows evidence of an increasing transparency trend since 2010. Overall, these results show stable or improving water quality, with no sign of declining trends. Leven Lake is on the MPCA’s Impaired Waters List. According to MPCA, the lake is “not always suitable for swimming and wading due to low clarity or excessive algae caused by the presence of nutrients such as phosphorus in the water.” Monitoring should continue so these trends can be kept track of, aiding in future lake protection and restoration efforts.