

SIGNALNESS

MN Lake ID: 61-0149-00



POPE SOIL & WATER



SUMMARY

Signalness Lake is a shallow mesotrophic lake. Algae concentration results (chlorophyll-a) show that the lake rarely experiences algae blooms. There are no detectable trends in water clarity over the past 22 years. This means that the lake is stable, with no indications of declining water quality. The phosphorus concentration does vary considerably from year to year, but this is likely due to the small, shallow nature of the lake. Signalness Lake has adequate historical monitoring data, which makes a lake evaluation like this possible. Monitoring should continue to enable future water quality analyses.

LAKE VITALS

ECOREGION:	North Central Hardwood Forest
MAJOR WATERSHED:	Chippewa River
SURFACE AREA (ACRES):	41.07
LITTORAL AREA (ACRES):	41.07
% LITTORAL DEPTH:	100%
MAX DEPTH (FT):	14
AQUATIC INVASIVE SPECIES:	Zebra Mussels



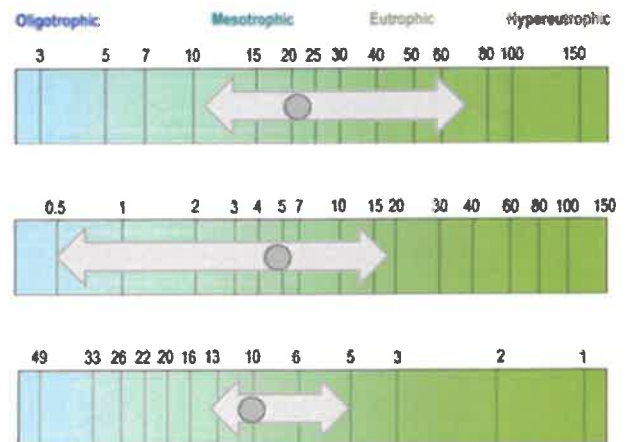
WATER QUALITY CHARACTERISTICS

YEARS MONITORED: 2000 - 2021

PARAMETERS	201
TOTAL PHOSPHORUS MIN (UG/L):	11
TOTAL PHOSPHORUS MAX (UG/L):	71
NUMBER OF OBSERVATIONS:	120
TOTAL PHOSPHORUS MEAN (UG/L):	21.9
CHLOROPHYLL-A MIN (UG/L):	0.5
CHLOROPHYLL-A MAX (UG/L):	18
NUMBER OF OBSERVATIONS:	108
CHLOROPHYLL-A MEAN (UG/L):	4.8
SECCHI DEPTH MIN (FT):	5
SECCHI DEPTH MAX (FT):	14
NUMBER OF OBSERVATIONS:	120
SECCHI DEPTH MEAN (FT):	10.7

TROPHIC STATE INDEX

Mesotrophic (45.1)



ECOREGION COMPARISONS

ECOREGION: North Central Hardwood Forest

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

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



2021 WATER QUALITY CHARACTERISTICS

SITE 201

PARAMETERS	TOTAL PHOSPHORUS (UG/L)	CHLOROPHYLL-A (UG/L)	SECCHI DEPTH (FT)
MIN:	11	1	10
MAX:	30	9	11.5
NUMBER OF OBSERVATIONS:	5	5	5
MEAN:	18.4	4	10.8

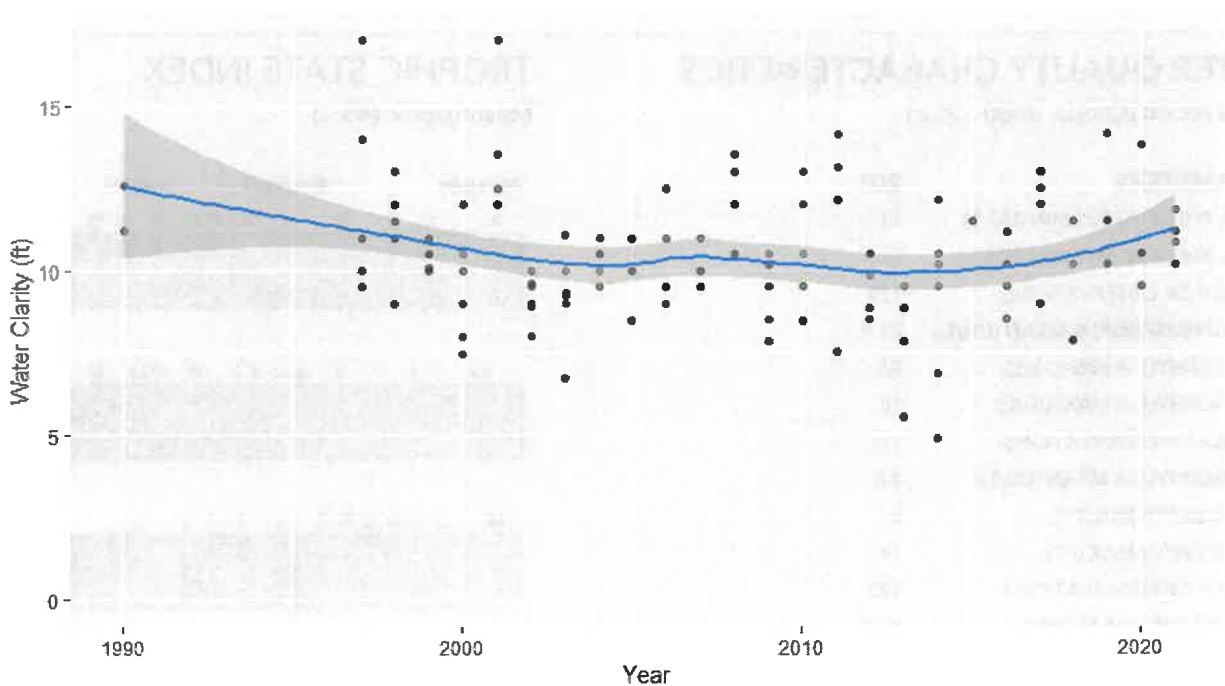
TROPHIC STATE INDEX: 43

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
201	Transparency	2000-2021	No significant trend exists
201	Total phosphorus	2000-2021	No significant trend exists
201	Chlorophyll-A	2000-2021	No significant trend exists

SIGNALNESS LAKE TRANSPARENCY TREND



GRAPH SOURCE: MINNESOTA POLLUTION CONTROL AGENCY

Signalness Lake shows no evidence of water quality trends for any of the parameters monitored over the past 22 years. Overall, these results show that Signalness Lake is stable, with no indication of declining water quality. Monitoring should continue so that these trends can be tracked in future years.