

# STRANDNESS

MN Lake ID: 61-0128-00



POPE SOIL & WATER



## SUMMARY

Strandness Lake is a shallow eutrophic lake and is on the MPCA Impaired Waters List. Algae concentration results (chlorophyll-a) show that the lake experiences algae blooms every summer. There is evidence of an improving trend in transparency over the past 22 years. Strandness Lake has adequate historical water quality monitoring data, which makes a lake evaluation like this possible. Monitoring should continue to enable future water quality analyses.



## LAKE VITALS

<b>ECOREGION:</b>	North Central Hardwood Forest
<b>MAJOR WATERSHED:</b>	Chippewa River
<b>SURFACE AREA (ACRES):</b>	92.06
<b>LITTORAL AREA (ACRES):</b>	92.06
<b>% LITTORAL DEPTH:</b>	100%
<b>MAX DEPTH (FT):</b>	5
<b>AQUATIC INVASIVE SPECIES:</b>	None

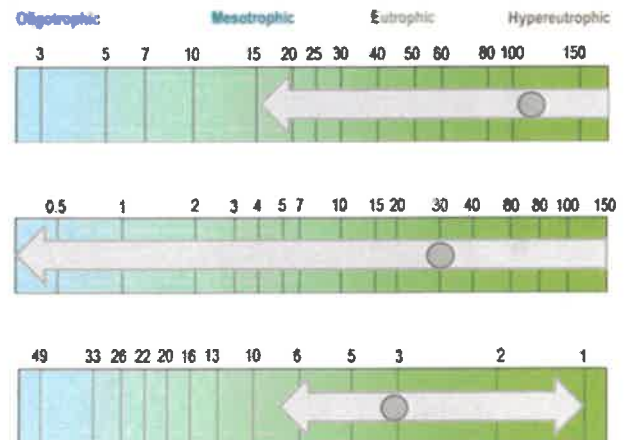
## WATER QUALITY CHARACTERISTICS

YEARS MONITORED: 1997 - 2021

PARAMETERS	201	202
TOTAL PHOSPHORUS MIN (UG/L):	127	15
TOTAL PHOSPHORUS MAX (UG/L):	239	1400
NUMBER OF OBSERVATIONS:	5	135
<b>TOTAL PHOSPHORUS MEAN (UG/L):</b>	<b>177.2</b>	<b>111.9</b>
CHLOROPHYLL-A MIN (UG/L):	3	0
CHLOROPHYLL-A MAX (UG/L):	150	180
NUMBER OF OBSERVATIONS:	5	124
<b>CHLOROPHYLL-A MEAN (UG/L):</b>	<b>72.6</b>	<b>31.8</b>
SECCHI DEPTH MIN (FT):	1.5	1
SECCHI DEPTH MAX (FT):	4.5	8
NUMBER OF OBSERVATIONS:	5	132
<b>SECCHI DEPTH MEAN (FT):</b>	<b>2.6</b>	<b>3.1</b>

## TROPHIC STATE INDEX

Hypereutrophic (62.9) - Site 202



## ECOREGION COMPARISONS

ECOREGION: North Central Hardwood Forest

<b>TOTAL PHOSPHORUS:</b>	Poorer Than Expected Range
<b>CHLOROPHYLL-A:</b>	Poorer Than Expected Range
<b>SECCHI DEPTH:</b>	Poorer Than Expected Range

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



# 2021 WATER QUALITY CHARACTERISTICS

SITE 202

PARAMETERS	TOTAL PHOSPHORUS (UG/L)	CHLOROPHYLL-A (UG/L)	SECCHI DEPTH (FT)
MIN:	36	< 1	3
MAX:	82	36	5
NUMBER OF OBSERVATIONS:	5	5	5
MEAN:	53	15.8	3.6

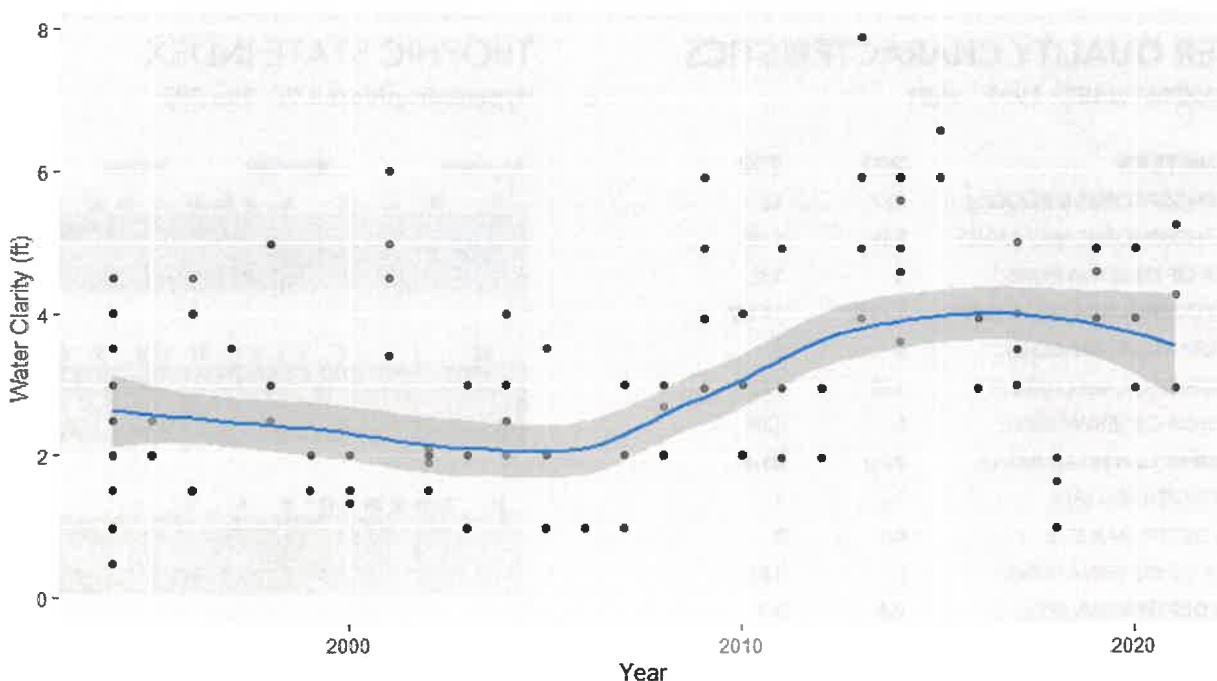
TROPHIC STATE INDEX: 57

## 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
202	Transparency	1997-2021	No significant trend exists
202	Total phosphorus	1997-2021	No significant trend exists
202	Chlorophyll-A	1997-2021	No significant trend exists

STRANDNESS LAKE TRANSPARENCY TREND



GRAPH SOURCE: MINNESOTA POLLUTION CONTROL AGENCY

Strandness Lake’s data indicates poorer than expected water quality for all three parameters. There are no significant trends for transparency, phosphorus, and algae concentration (chlorophyll-a) monitored over the past 22 years. Continued monitoring will allow these trends to be tracked in future years.