2023 Skogman Lake Monitoring Report

Lake: LID volunteers collected Total Phosphorus (TP), Chlorophyll-a, and transparency information 2x per month from May through October. SWCD staff collected dissolved oxygen and temperature profiles 1x per month during sample events.

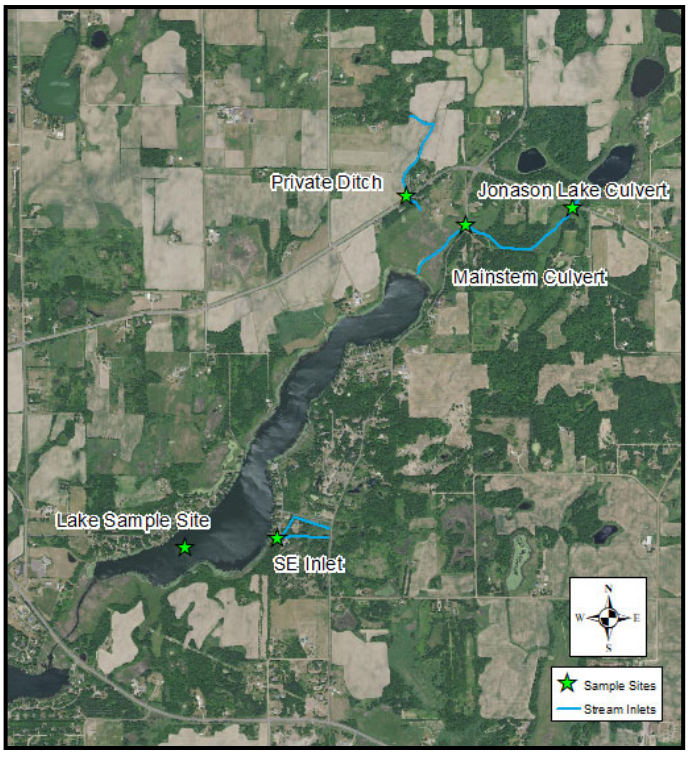
Tributary: The SWCD had a goal of collecting up to 6 samples at two locations during a mix of rain events and non-rain events. Samples were analyzed for Total Phosphorus (TP), Ortho-Phosphorus, and Total Suspended Solids. In the field transparency and flow were collected.

Why: While the lake has been monitored for Secchi depth transparency regularly since 1988 there is limited nutrient data to help lake managers make educated decisions to improve the lake's health. The new information will help diagnose areas of concern and provide evidence for the need to implement lake improvement projects (great for grant applications).

Quick Facts

Township	Cambridge
MN Lake ID	3002200
# of Public Boat Access	1
Aquatic Invasive Species	Eurasian Watermilfoil, Curly-leaf Pondweed, purple loosestrife
Surface Area	228
Littoral Area (<15ft deep)	135
Maximum Depth	36
Lake Depth Classification	Deep
Lake Health Status	Impaired
SWCD Priority Lake	Yes

Monitoring Locations

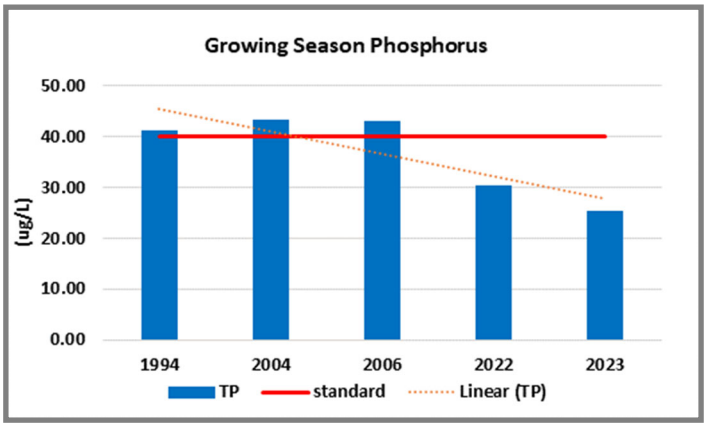


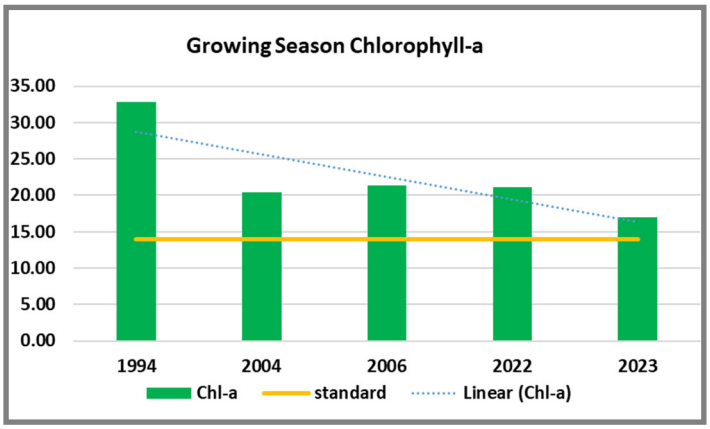
Definitions

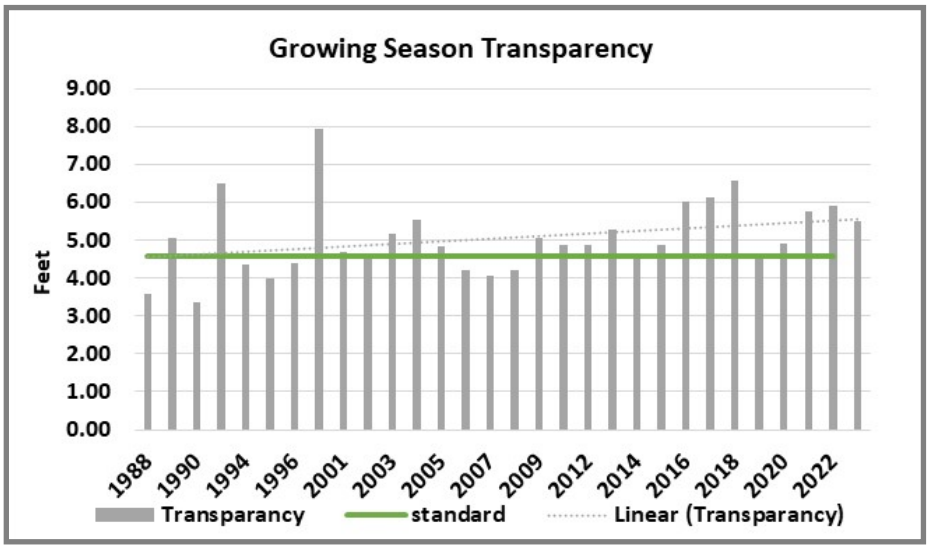
Total Phosphorus (TP): An essential plant nutrient in which an excess can cause severe algae blooms.
Chlorophyll-a (Chl-a): A pigment found in green plants, used to estimate quantity of algae in a lake.
Secchi Transparency: A measure of light penetration in water, an indication to the amount of algae in the water.
Ortho-phosphorus The amount of phosphorus that is immediately available for algae and plant growth.
Total Suspended Solids: Tiny particles of soil and other matter that remain suspended in water making it cloudy. Particles include sediment and organic matter.

2023 Skogman Lake Monitoring Report

Historic Water Health







⇒ The lake was listed as impaired in 2013 because both Phosphorus and chlorophyll-a exceeded state standards for deep lakes

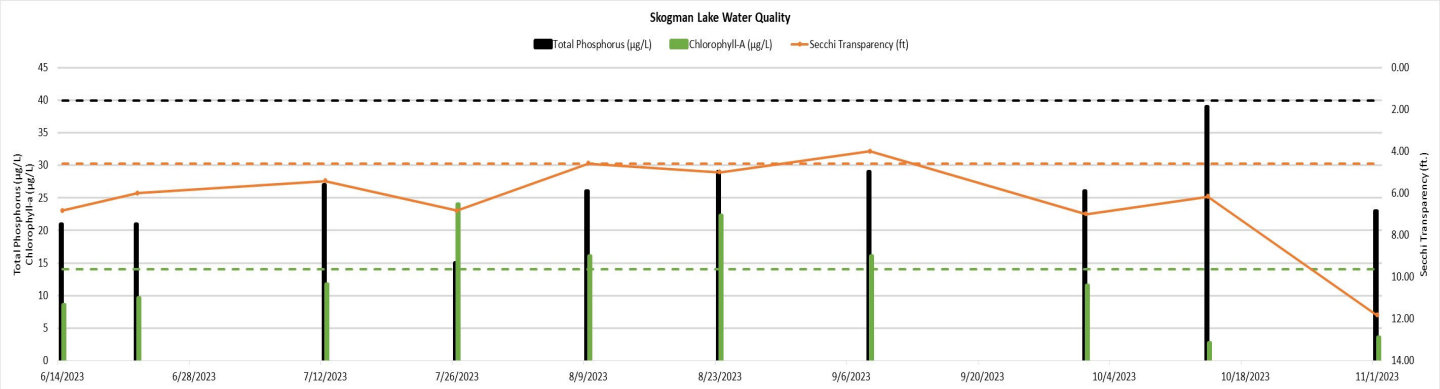
⇒ In 2022 & 2023 the lake met water quality standards for Phosphorus and Transparency (this is good!)

⇒ Available data indicates there is an improving trend in water health (this is good!)

⇒ More information is needed

2022 Skogman Lake Monitoring Report

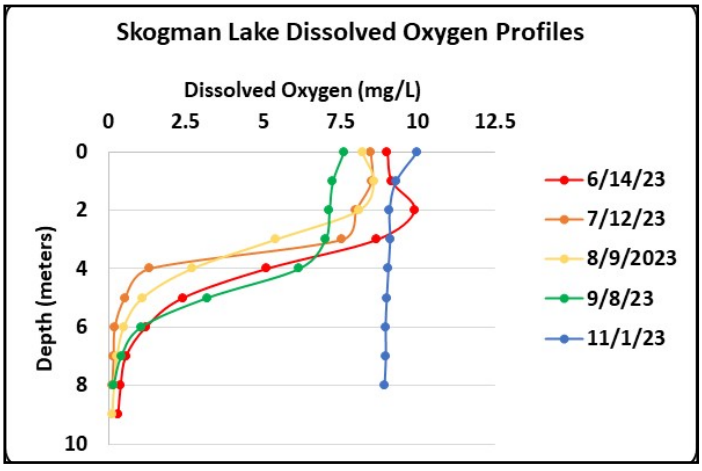
2023 Lake Samples

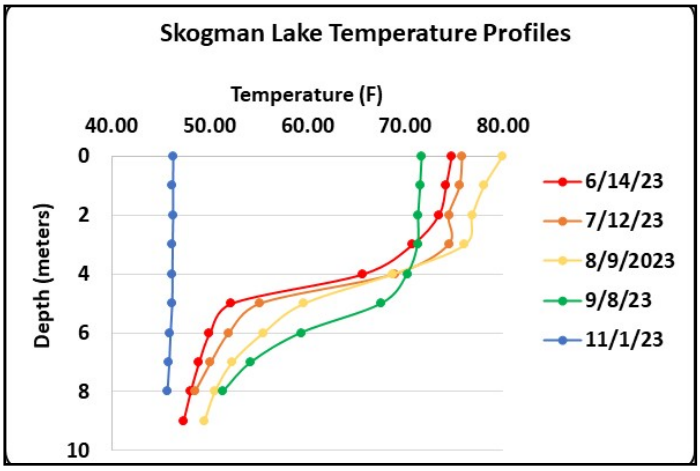


The dashed lines indicate the standard or limit for each parameter sampled

While some fluctuation in water health is normal, larger changes may be due to weather conditions (i.e. drought or extreme rain events), lake mixing, and curly-leaf pondweed die-off.

Dissolved Oxygen and Temperature Profiles



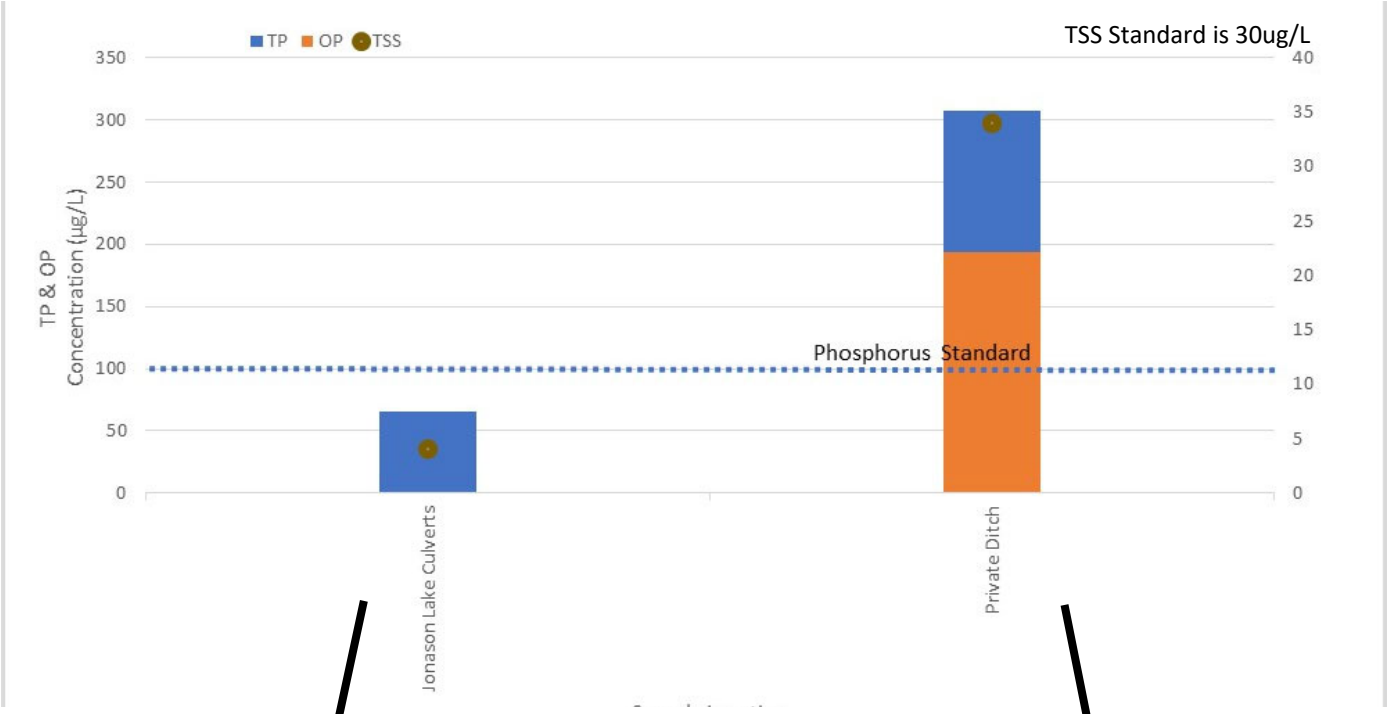


This information helps lake managers understand water fluctuations in water health, it will also be useful for future lake diagnostic studies. Water column profiles were stratified (formed layers with different temperature and oxygen levels) throughout much of the sample season. The water column mixed when the weather cooled late in the season.

In 2023 we intentionally collected a sample and a profile during the final sample to see the effect of lake mixing on water health.

2022 Skogman Lake Monitoring Report

Inlet Monitoring



Drought conditions in 2023 resulted in no flow throughout nearly the entire sample season. As such, only one sample was collected at two locations. We did locate the inlet on the South East side of the lake; however, the water was stagnant throughout the season and no sample was collected.

Nevertheless, the information provides insight into pollution sources and, more importantly, locations for projects to improve water quality.