2022 Skogman Lake Monitoring Report

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

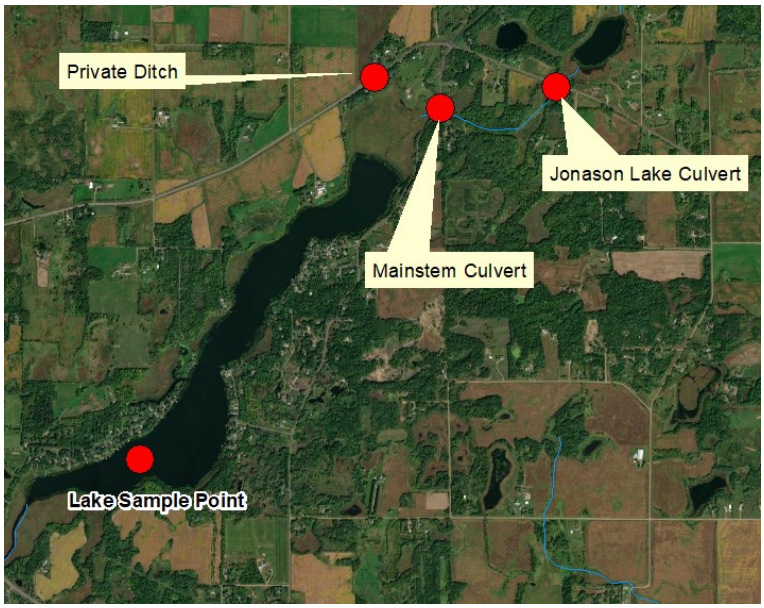
Tributary: The SWCD investigated locations for sample collection and had a goal of collecting up to 8 samples during a mix of rain events and non-rain events. Samples were analyzed for Total Phosphorus (TP), Ortho-Phosphorus, and Total Suspended Solids. In the field transparency and flow were collected.

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.

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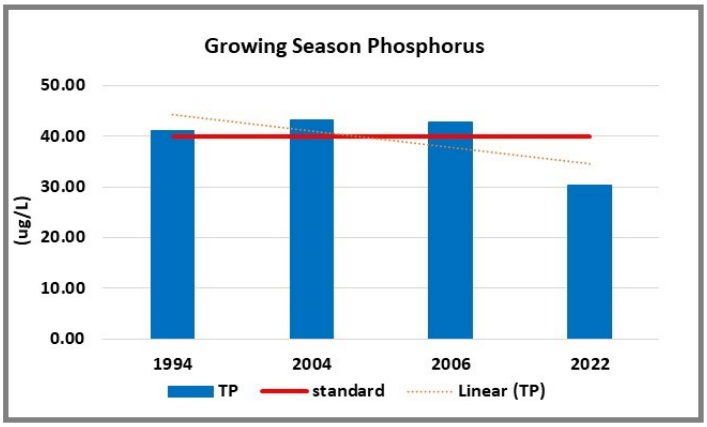
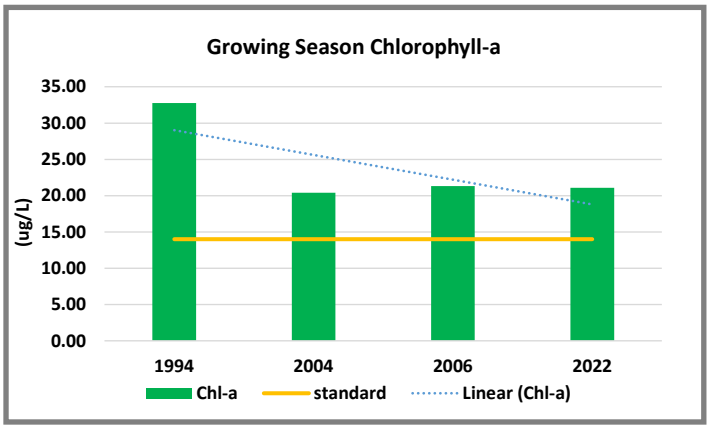
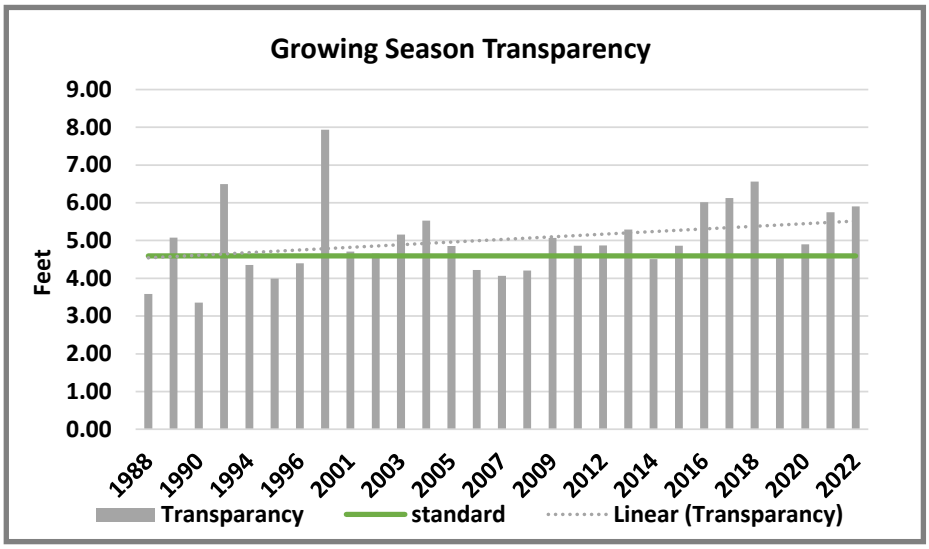
Historic Water Health







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

⇒ In 2022 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

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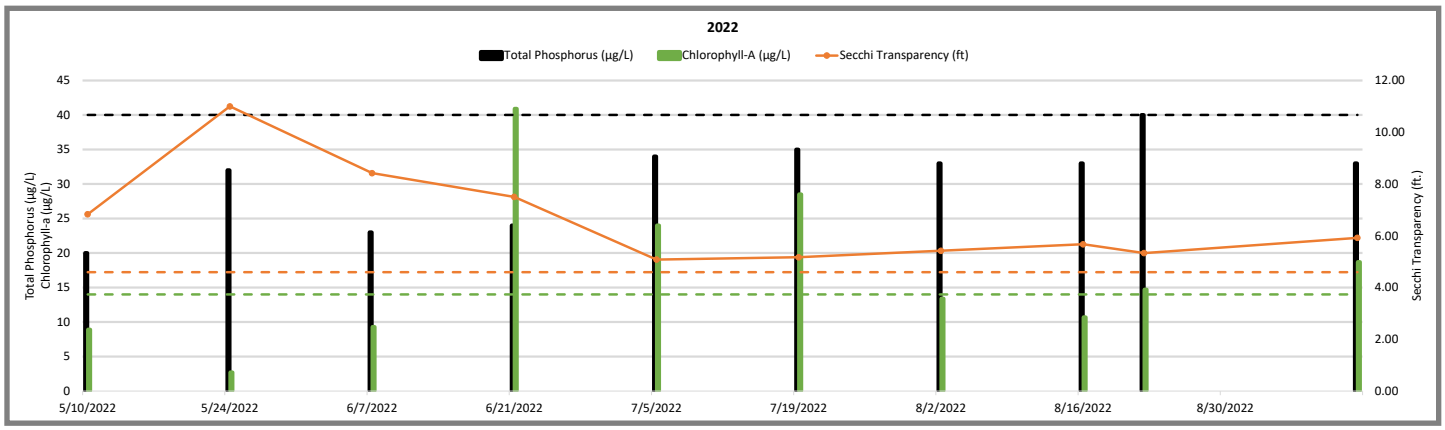
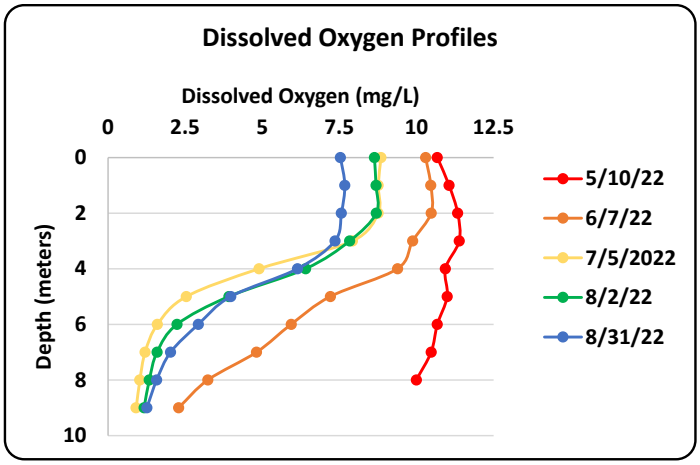
2022 Lake Samples

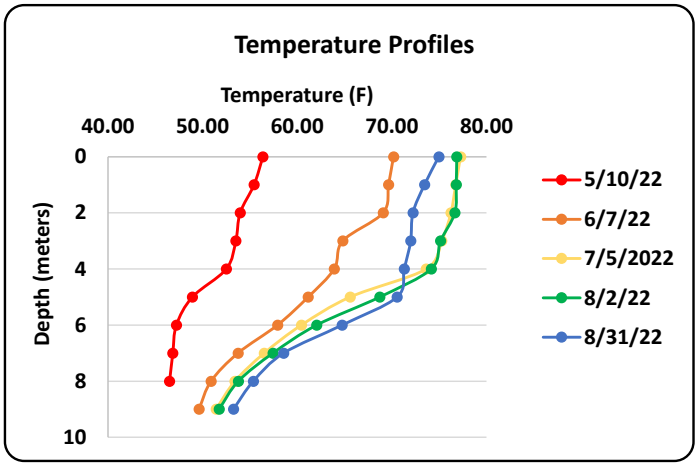


The dashed lines indicate the standard or limie for each parameter sampled

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 sample season. Undoubtedly, the water column mixes when the weather cools in late September.

We recommend shifting lake sampling to include two samples in September along with a DO and Temp profile collection during the second sample collection to see the lake mixing effects on water health.

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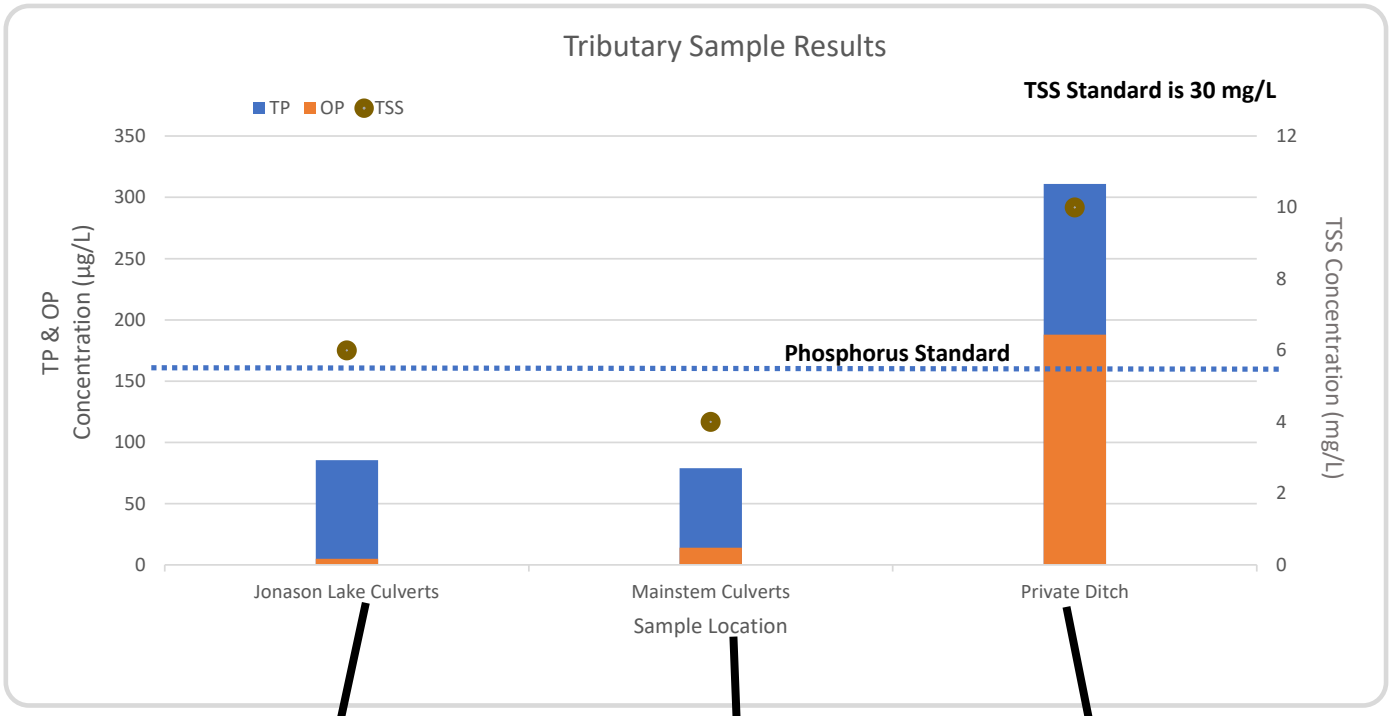
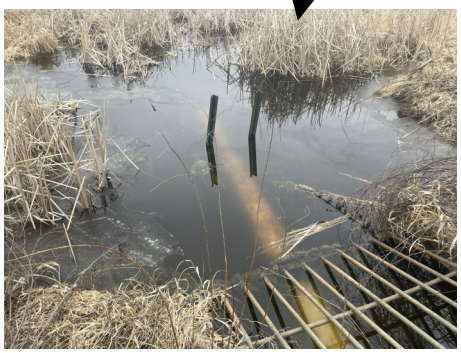
Inlet Monitoring





After field and computer investigation, we elected to sample at two inlet locations (see map on the front page). Additionally, we collected one sample on the main inlet into the lake ("mainstem inlet"). The mainstem inlet is situated at a road culvert closest to where the flow enters the lake; however, the sample site is located in a wetland, making it a poor location to sample regularly.

Due to the flashiness of the inlets and the low precipitation, only two samples were collected at each primary site. Nevertheless, the information provides insight into pollution sources and, more importantly, locations for projects to improve water quality.