

CFL Community Water Monitoring Network

Lakeview Pond Data Guide



The Community Water Monitoring Network (CWMN) is a volunteer pond monitoring program in the Madison area. The program began in 2022 and is run by the Wilkinson Lab at the UW-Madison Center for Limnology. Our goals are to combine data-driven science and management with community engagement for the hundreds of ponds in the region. Stormwater ponds are important for controlling flooding and nutrient pollution. Long-term monitoring is helping us to better understand how these ecosystems function and change. Volunteers collect monthly data and participate through various events in the program.

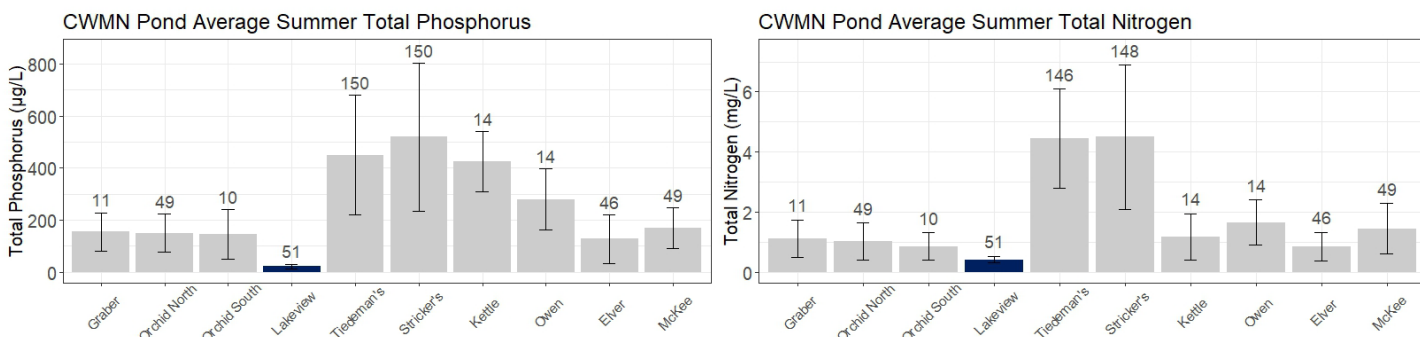
Lakeview Pond is located in Lakeview Park in Middleton. Lakeview has been monitored as part of the CWMN since summer 2022. The main pond in the park is used for recreation and does not have an inlet or outlet. There is another pond west of the main pond that is connected to the Stricker-Tiedeman flow path. The data presented in this guide is from the main recreational pond and not Lakeview West pond.



Data Definitions

Total Phosphorus 	The sum of all inorganic and organic forms of the element phosphorus. Key fuel for all primary producers like algae in pond ecosystems and is the limiting nutrient, which controls algal growth. Phosphorus particles stick to sediments and can be retained for long periods of time in the pond. TP concentrations indicate the degree of eutrophication (trophic status) in the pond.
Total Nitrogen 	The sum of all inorganic and organic forms of the element nitrogen. Key fuel for all primary producers like algae in ponds.
Dissolved Organic Carbon 	The concentration of all organic forms of carbon dissolved in the water. DOC is often derived from leaf litter and soil organic matter that get transported into the pond through runoff. These humic substances can color the water and are key food sources for microbes in the pond. Coffee and tea are examples of DOC!
Water Clarity 	Transparency, or how clear the water is, largely results from the presence or absence of algae or inorganic particles (sediment) in the water. Water clarity is another way to measure the trophic status (degree of nutrient enrichment) of the pond and is an indirect measure of algal biomass.
Conductivity 	A measure of the ion concentrations (molecules with a positive or negative charge) in the water. The more particles that carry a charge in the water will increase the conductivity. Ions can come from weathering of underlying geology or human activities like road salt application.
Chloride 	The anion component of common road salts often dissolved in water. This value will typically be higher in the winter and spring months from road salt application running off into ponds.

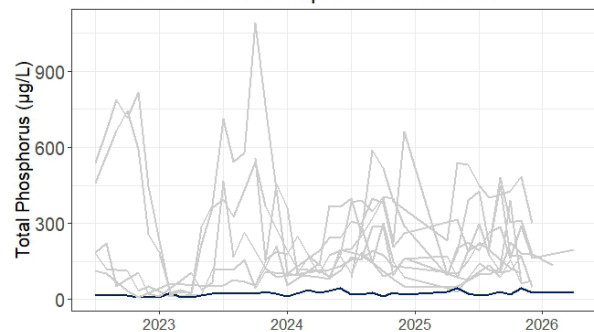
Nutrients



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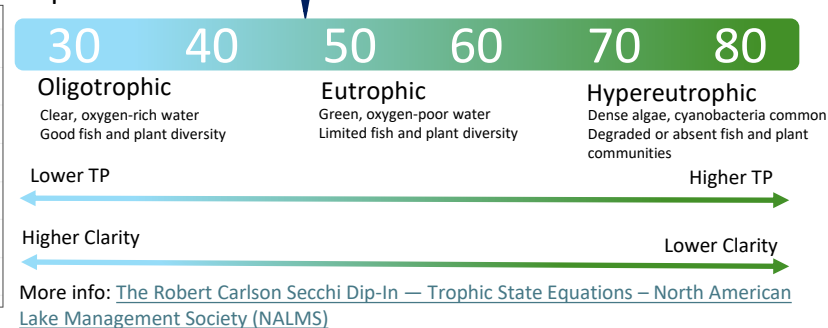
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CWMN Pond Total Phosphorus Time Series



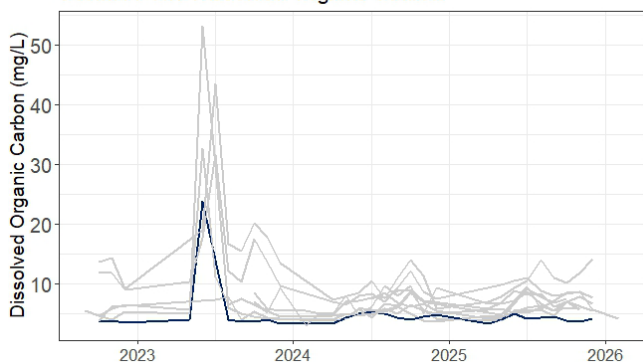
Lakeview Pond consistently ranks lowest among the CWMN ponds in Total Phosphorus and Total Nitrogen concentrations. The isolated watershed is likely the reason for the low input of nutrients into the pond. It is the only CWMN pond that falls below the eutrophic category.

Trophic State Index



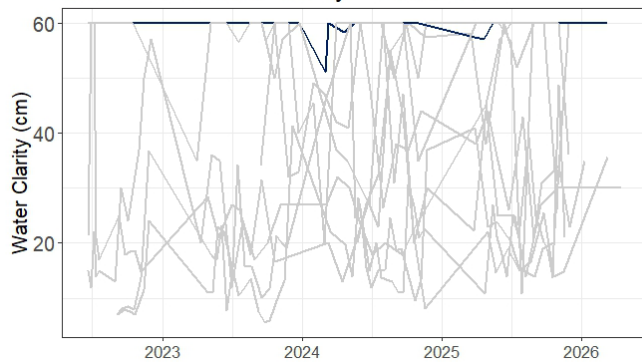
Water Color and Clarity

CWMN Pond Dissolved Organic Carbon



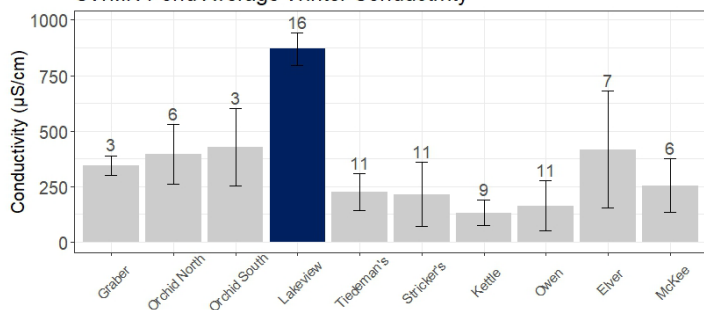
Lakeview Pond ranks lowest among the CWMN ponds in average Dissolved Organic Carbon concentrations. These values tend to be highest in the fall but there was a moderate spike in summer 2023 due to the build up of DOC during drought conditions and the low water level in the pond. It also has the highest average water clarity of all ponds. This trend is due to its low nutrient status that makes the water look clear year-round, supported further by Lakeview recording the lowest average chlorophyll values of the CWMN ponds.

CWMN Pond Water Clarity Time Series

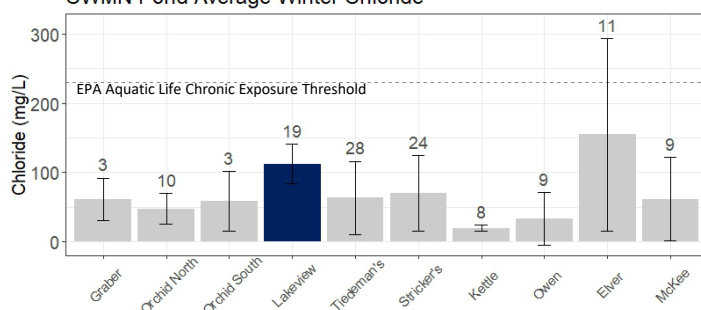


Human Influence on Dissolved Ions

CWMN Pond Average Winter Conductivity



CWMN Pond Average Winter Chloride



Lakeview Pond ranks highest among the CWMN ponds in average winter conductivity (twice as high as the next pond) and second highest in average winter chloride values. It ranks highest in average conductivity and chloride year-round. These values tend to be highest in the winter due in part to road salts in runoff that enters the pond from its enclosed watershed. These levels might also indicate a groundwater source of chloride. Conductivity is an indirect measure of chloride in the water and is therefore an important metric to record.