

Lake Susan

Located in Chanhassen, Lake Susan is a part of the Riley Creek Chain of Lakes. It is the third lake that Riley Creek flows through as it makes its way to the Minnesota River.

From June to September every year, District staff visit the lake every two weeks to collect water samples and take readings. Samples are sent to a laboratory to be tested for nutrients and other compounds. Staff also measure water clarity by lowering a Secchi disk into the water and measuring how deep it goes before it is no longer visible. The data indicates the lake's health based on standards set by the Minnesota Pollution Control Agency (MPCA).

Lake Susan is classified as a "Shallow Lake" by the MPCA. To be considered healthy, the lake must have very low average phosphorus and chlorophyll-a levels and average water clarity of 1.0 meter (3.3 feet) or greater. For more detail, see the back page.

P **Total Phosphorus:** No significant trend. In 2023, the lake just met the MPCA shallow lake standard (<0.06 mg/L) with an average total phosphorus level of **0.055 mg/L**.

Chlorophyll-a: No significant trend. In 2023, the average reading for chlorophyll-a was **45.3 µg/L**, which failed to meet MPCA shallow lake standard (<20 µg/L). Blue-green algae numbers were high in June-August, indicating a probable presence of toxins during that time.

Water clarity: No significant trend. Over the previous few years, the lake was consistently meeting the MPCA shallow lake standard (>1.0 meters). In 2023, the average reading of **0.7 meters** did not meet standard.

Fish: Electrofishing was used to monitor Common Carp, an invasive species that harms water quality by destroying aquatic vegetation and stirring up lake bottom sediments. The 2023 carp biomass estimate was 11 kg/ha, which was well below the damaging threshold of 100 kg/ha. This combined with limited recruitment mean carp are not an issue for Lake Susan.

Plants: In 2023, herbicide treatments were carried out on 5.3 acres to reduce Curly-leaf Pondweed. UMN conducted three plant surveys in 2023 to track aquatic vegetation populations. In May maximum depth of growth was 3.1 meters, decreasing to 1.5 in August. Invasive Eurasian watermilfoil has declined in frequency since 2011 and was not observed on any rake tosses in 2018-2023. Invasive Brittle Naiad remains at low levels.

Lake & watershed characteristics

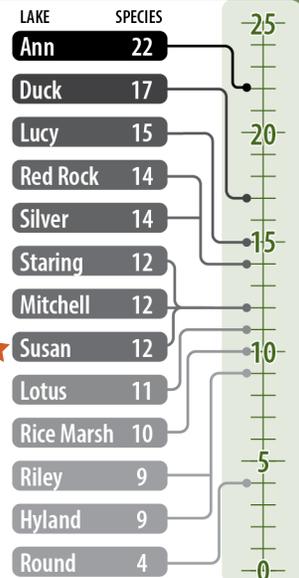
Lake size	88 acres
Average lake depth	10 feet
Maximum lake depth	17 feet
MPCA lake classification	Shallow lake
Watershed size	1,231 acres
Impervious surface	27% of watershed
Impairment listing	Mercury & nutrients
Common fish	Bluegill, Black Crappie, Northern Pike, Black Bullhead, Yellow Bullhead
Invasive species	Curly-leaf Pondweed, Eurasian Watermilfoil, Common Carp, Brittle Naiad



Watershed Boundary



Native Aquatic Plant Diversity
How does **Lake Susan** compare to **other lakes** in the District in **number of native plant species?**



Lake Susan Water Quality by the Numbers

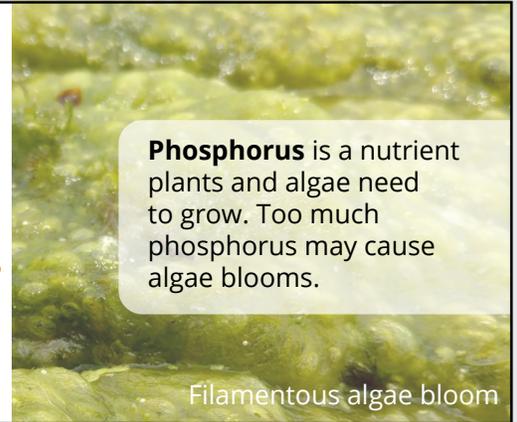
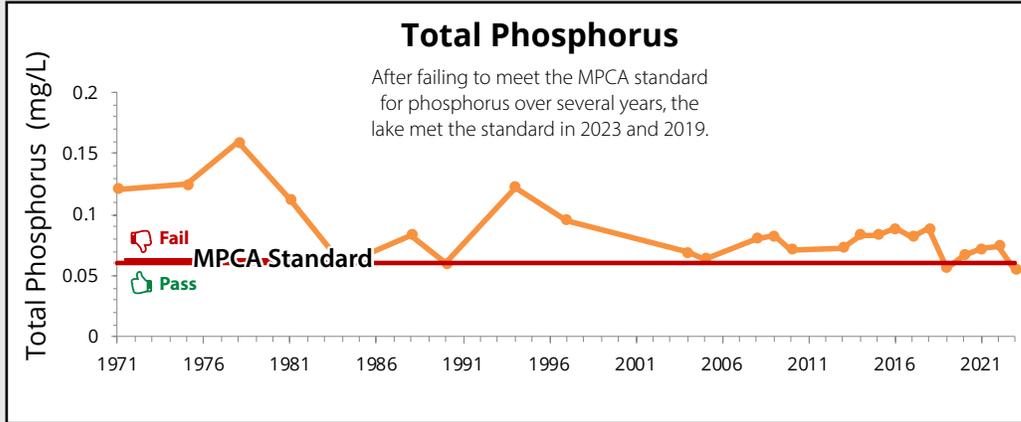
The graphs below show water quality trends over time with the red line representing the MPCA standard for shallow lakes. In 2023, Lake Susan failed to meet two clean water standards set by the MPCA.

Water Quality Report Card

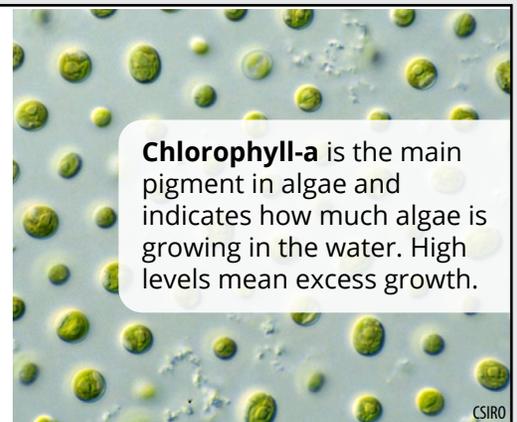
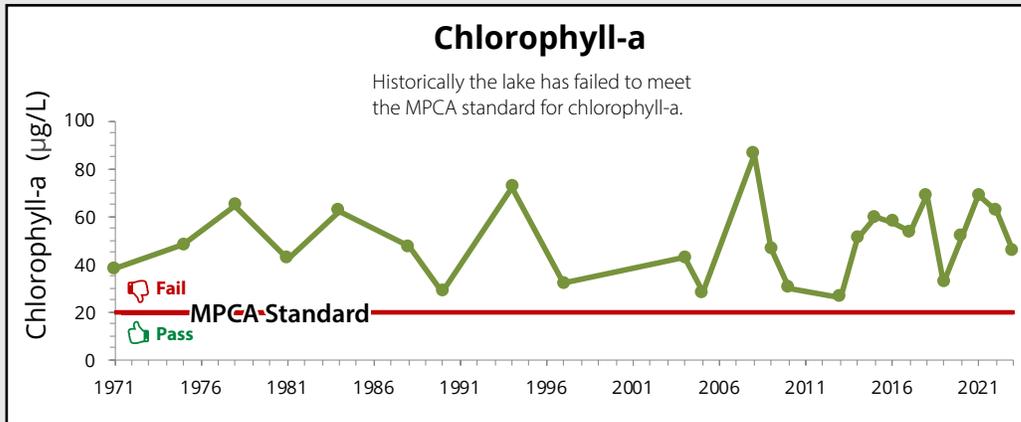
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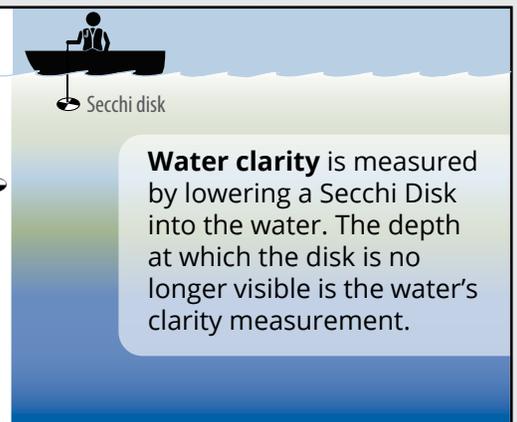
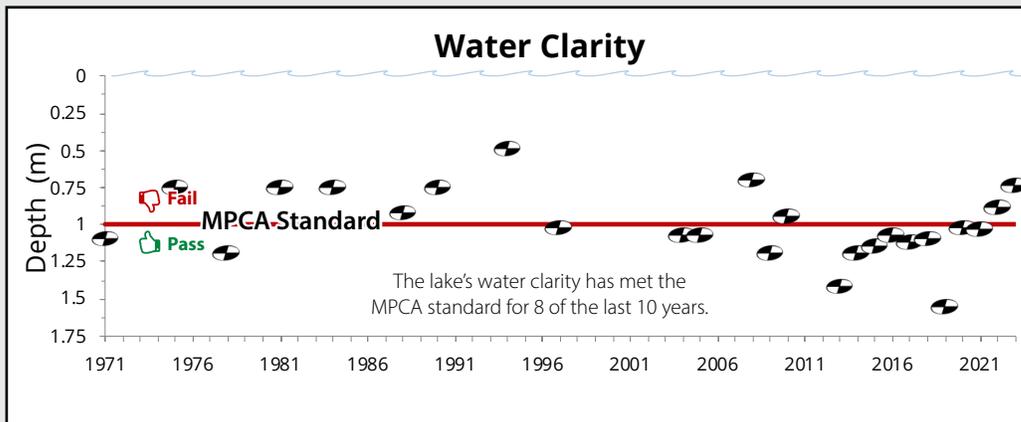
Trends Over Time: 1972-present



Phosphorus is a nutrient plants and algae need to grow. Too much phosphorus may cause algae blooms.



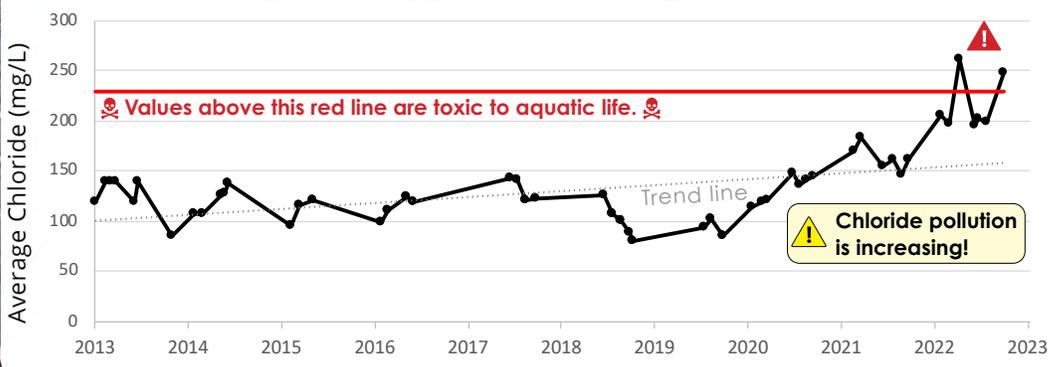
Chlorophyll-a is the main pigment in algae and indicates how much algae is growing in the water. High levels mean excess growth.



Water clarity is measured by lowering a Secchi Disk into the water. The depth at which the disk is no longer visible is the water's clarity measurement.

Chloride: A Growing Concern

Chloride permanently pollutes our lakes, ponds, and streams!

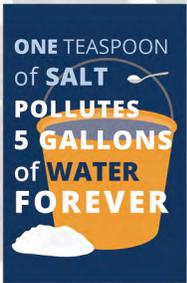


What can I use instead of winter de-icers?

All affordable & effective residential de-icing products contain chloride, even those labeled as "eco-friendly" or "pet safe."

Focus instead on reducing build up of ice on your property:

- Shovel early & often
- Prevent ice formation, avoid driving or walking on snow
- Pile snow where it won't melt & refreeze on walkways



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