GOOSE LAKE EAST & WEST

VLAWMO Vadnais Lake Area Water Management Organization

QUICK FACTS

Lake Catchment Area	841 acres
Surface Area	145 acres
Maximum Depth	6-8 ft
Average Depth	4-6 ft

Common Fish

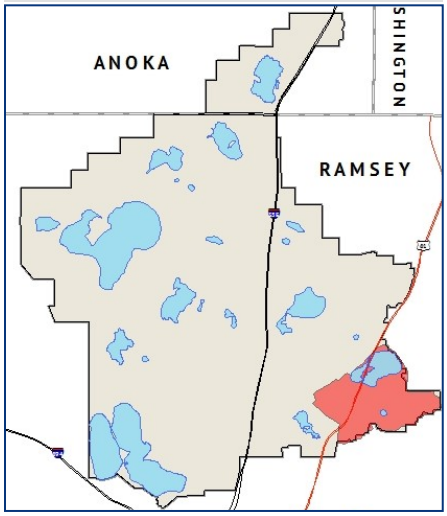
Bullhead, Black Crappie, Sunfish, Bass, Yellow Perch

Predominant Vegetation

Curlyleaf pondweed, Narrow-leaf Pondweed

Invasive Species

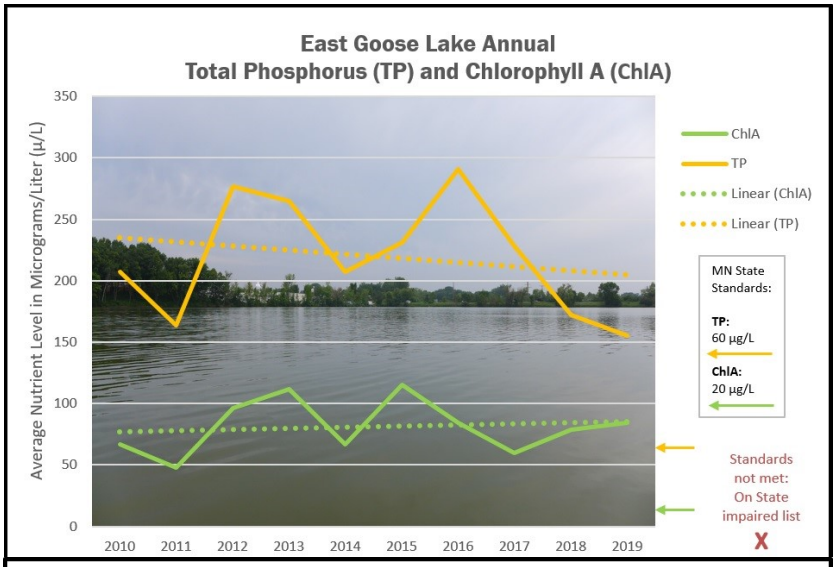
Curlyleaf pondweed

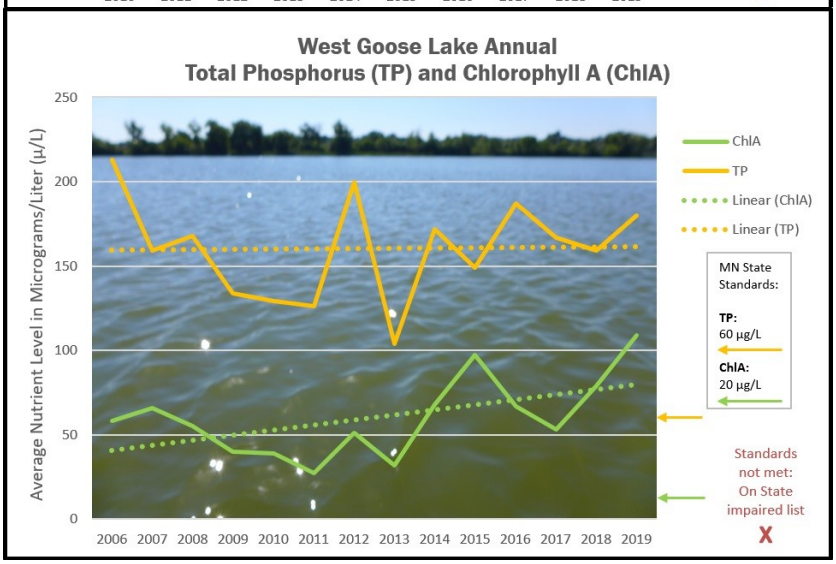


LOCATION: Goose Lake is located in the City of White Bear Lake. The subwatershed includes residential, industrial, and commercial properties as well as a portion of a golf course. Highway 61 divides the lake into east and west basins, connected by two culverts under the highway. West Goose outlets into the headwaters of Lambert Creek.

OAK KNOLL POND, also known as Wood Lake, which is located south of East Goose Lake near White Bear Avenue. It feeds into Goose Lake and is an important part of Goose Lake's improvement. Records and aerial imagery indicate that Oak Knoll is a natural pond that has transitioned from agriculture to suburban landuse.

LAKE SUMMARY: Goose Lake is on the State Impaired Waters list due to high nutrients. Studies show that internal loading is the primary reason for the lake's impairment, meaning that nutrients in the lake bed are circulating into the water column. Major sources of these nutrients include historical wastewater discharge (1930s-60s) and the lake's modification during the transition from agriculture to suburban development. Like many regional shallow lakes in the Twin Cities, Goose Lake was a dynamic waterbody that switched between a wetland and an open water lake depending on water levels. West Goose Lake is classified by the Minnesota DNR as a wetland, but is commonly referred to as a lake due to its uses.





NUTRIENT SUMMARY:

- Nutrient levels are above State standards for East and West Goose Lakes. The lakes produce large amounts of algae each summer due to high TP and Chl A levels. These algae levels discourage aquatic vegetation growth, which studies show is sparse in East Goose Lake.
- According to the Total Maximum Daily Load (TMDL) plan for East and West Goose Lakes, East Goose is required to reduce TP by 91% and West Goose by 70% to bring TP to State standard levels.
- Part of Goose Lake's nutrient loading comes from historical waste water dumping by the City in the 1930s-60s. This history contributes to a high internal nutrient load, which circulates from the lake bottom into the water column.
- A feasibility study for lake improvements was completed in 2019. Alum was identified as the most cost-effective strategy, but fish and vegetation management still provided challenges to confront. This led to a broader adaptive lake management (ALM) planning effort.
- An Adopt-a-Drain is a volunteer stormdrain cleaning effort to help protect Goose Lake from additional nutrient loading. Visit adopt-a-drain.org for more and to sign-up.

SEDIMENT STUDIES:

Sediment cores taken in 2017 indicated that frequent resuspension from wind and recreational boating contributes to raised phosphorus levels and turbidity in the water column. While algae is abundant in the lake, the cores also determined that toxic cyanobacterial algal blooms are possible when lake temperatures are warm.

FISH & VEGETATION SURVEYS:

A fish survey was conducted in 2017 as a follow-up to rough fish (bullhead) removal in 2015. Bullhead were removed in 2015 to decrease their impact. These fish re-suspend lake sediment and nutrients through their bottom-feeding habits. In 2019, it was documented that bullhead populations rebounded, and additional bullhead removals were conducted in 2020. Vegetation studies indicate that Goose's vegetation is sparse due to algae that prevents plant growth. This creates a dilemma that discourages predator fish such as bass and crappie, which are known to feed on juvenile bullhead.

Visit VLAWMO.org/waterbodies for studies, reports, FAQ, and summaries on Goose Lake.

Vadnais Lake Area Water Management Organization | 800 Co Rd E East | (651) 204-6070 | office@vlawmo.org *Updated 7/21 - NV*