## GOOSE LAKE & EAST & VLAWMO WEST

# **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, Elodea, 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. The lake outlets at the northern end of West Goose into the

**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 uses.



**LAKE SUMMARY:** Goose Lake is on the State Impaired Waters list due to high nutrients. A combination of factors affect the lake: historical discharge of treated wastewater, frequent water ski traffic, stormwater runoff, eroding shorelines and channels that drain into the lake, and permitted input of water into West Goose from a local business. Studies show that internal loading is the main reason for the lake's impairment, which has been caused by the historical discharge (1930s-60s, see reverse page) and the lake's modification from a wetland into a lake due to development.



#### **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 and West Lake basins.
- 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.
- Feasibility studies for an alum treatment were completed in 2019 and alum was identified as the optimal strategy to improve the lake. This effort has been controversial due to boat motors potentially disturbing a successful alum treatment.
- An Adopt-a-Drain effort is underway to promote volunteer stormdrain cleaning. This helps protect the lake from additional nutrient loading. Visit adopt-a-drain.org to join in and give your drain a fun name!

#### **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 bottomfeeding habits. In 2019, it was documented that bullhead populations rebounded, and additional bullhead removals are planned for 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 favor habitats with aquatic plants and 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