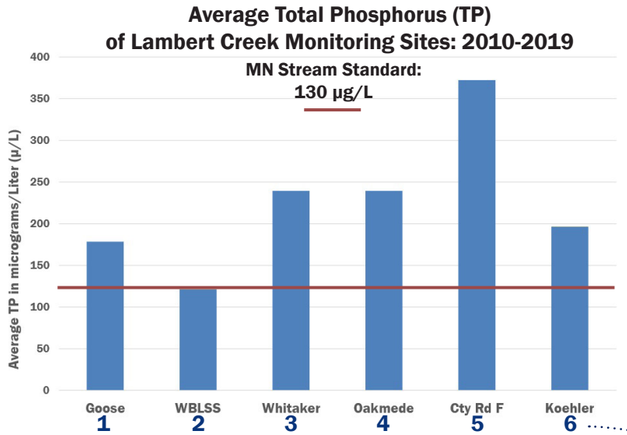
Lambert Creek



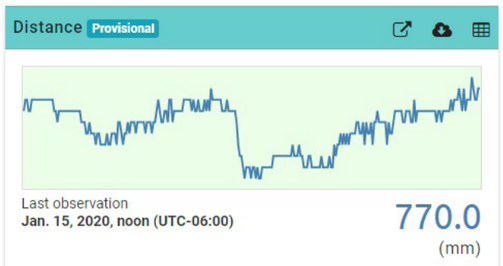
Lambert Creek is impaired for high bacteria, and although not officially impaired for nutrients, the overall creek results show it's above the state standard. Water samples from six sites are taken along the creek every other week from May to September (locations mapped on right). E. coli bacteria has been detected as largely avian and canine.

Waterbody impairments: VLAWMO has seven lakes and one creek impaired under MN water quality standards (right). For a lake to be listed as "impaired", it must show a trend in being above state standards in two of three readings: Chl-A, TP, and/or Secchi disk (turbidity). Deep and shallow lakes have different standards for impairment. Pleasant and East Vadnais Lakes are deep lakes primarily monitored by the Saint Paul Regional Water Services.

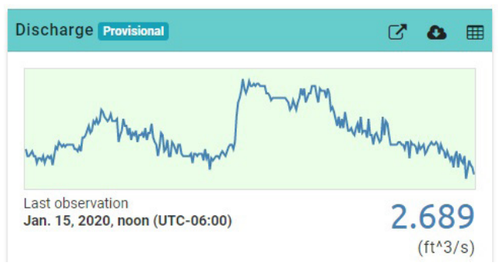
Remote Sensors

To better understand and evaluate the needs of Lambert Creek, VLAWMO has installed four new monitoring devices at existing monitoring locations along the creek. Each station is equipped with a sensor that is programmed to take readings of the water levels every 15 minutes. Data from the sensor is sent to a cellular service account, which is then sent to our on-line portal. Stream flow, depth, and macroinvertebrate sampling data from the four creek sites is publicly available through the Monitor My Watershed web portal, linked from our website: http://www.vlawmo.org/waterbodies/lambert-creek/

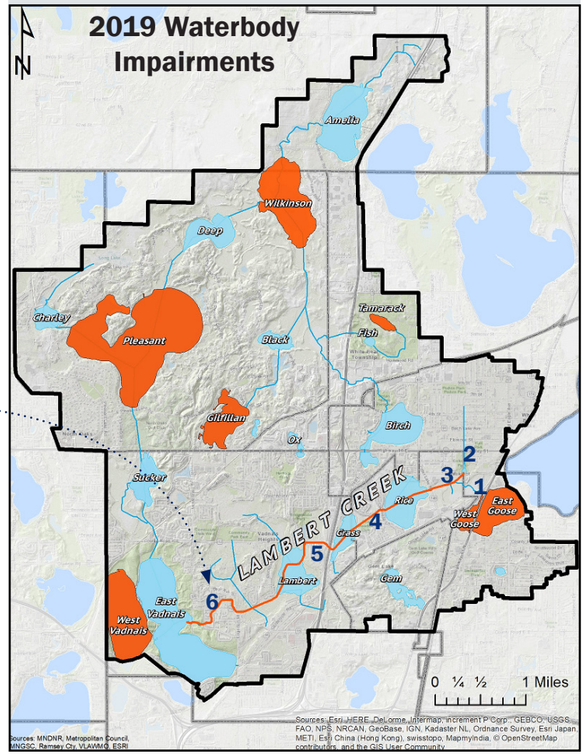
Below: The distance reading indicates creek depth - the distance from the sensor to the water surface.



Right: The discharge reading tells the volume of water moving beneath the sensor at that site.



Visit **VLAWMO.org/get-involved** to see how you can be a part of the solution!



Above: Anthony Aufdenkampe of LimnoTech guides VLAWMO staff in assembling remote sensor devices.

VLAWMO
EST 1983
Vadnais Lake Area
Water Management Organization

Brian Corcoran
Water Resources Manager
brian.corcoran@vlawmo.org
(651) 204-6075

Vadnais Lake Area Water Management Organization

2019 Water Monitoring Summary

VLAWMO's monitoring program consists of:

- 12 Lakes: *Grab samples*
- Lambert Creek: *Grab samples, remote sensors*
- Water quality sampling every other week from May to September:

  Phosphorus, nitrates, chlorophyll-A, chloride, turbidity, bacteria, pH, and storm sampling

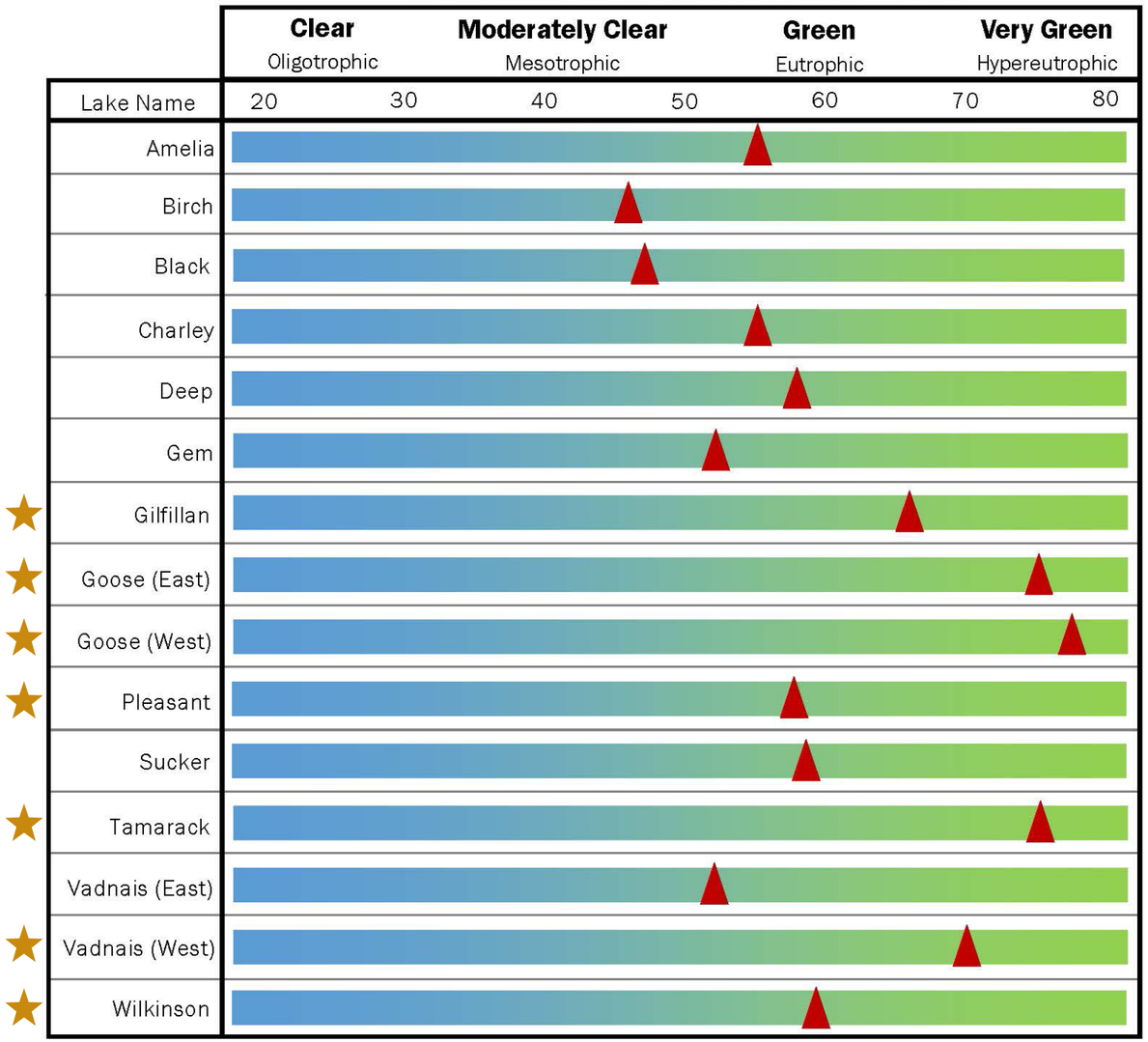
See the complete report at www.VLAWMO.org/resources/reports

The Watershed at a Glance

*See the 2019 water monitoring report at **vlawmo.org/reports** for more information.*

★ = Nutrient impaired waterbody (see reverse)

TSI Status of VLAWMO Lakes: 2019



Definitions:

TSI: Trophic Status Indicator. The trophic status of a lake pertains to its nutrient levels, transparency, and chlorophyll. The data for each reading is combined to create a single value, which is a TSI index, depicted with red arrows.

Oligotrophic: Low nutrient levels and abundant oxygen. May be suitable as an unfiltered water supply.

Mesotrophic: A moderate amount of dissolved nutrients. Iron or manganese taste/odors, turbidity increases.

Eutrophic: Rich in nutrients, supporting either a dense plant population or large algae blooms.

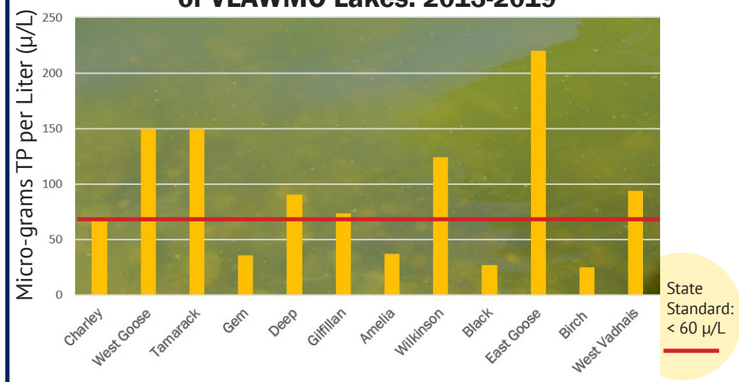
Eutrophication is the process of nutrient loading into a waterbody from the surrounding watershed (i.e. upland area). It is a natural process that can be accelerated by stormwater runoff and erosion.

Hypereutrophic: Exceptionally high nutrients causing dense algae and macrophyes. Rough fish (bullhead, carp) dominate, blue-green algae most likely, fish kills possible during algae blooms. Episodes of severe taste and odor.

Nutrients and Chlorides

*Visit **vlawmo.org/waterbodies** for specific lake studies, reports, and lake fact sheets.*

Average Total Phosphorus (TP) of VLAWMO Lakes: 2013-2019



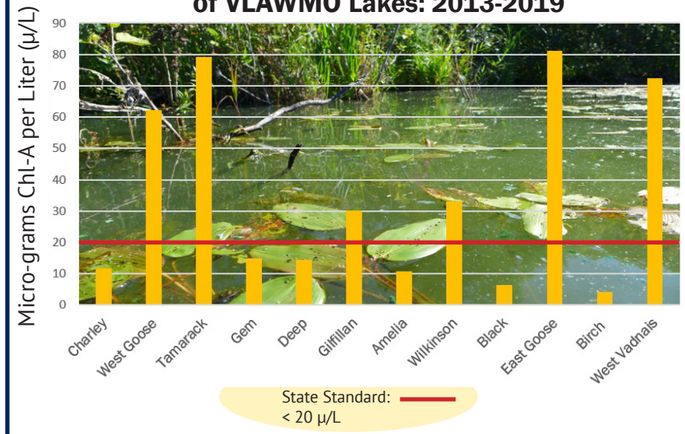
Phosphorus: What is it?

Phosphorus is a naturally occurring nutrient. and a main driver of algae growth. 1 lb. of phosphorus can produce up to 500 lbs. of algae. Increased algae levels create low oxygen, poor light penetration, and reduced fish and wildlife habitat.

What it means to me:

Human activities can accelerate phosphorus levels and algae growth. To control this, it's important to keep sediment and nutrients on the landscape. We can do this by keeping grass clippings out of the street, covering bare soil, picking up pet waste, and more. Visit vlawmo.org/residents for more info.

Average Chlorophyll-A (Chl-A) of VLAWMO Lakes: 2013-2019



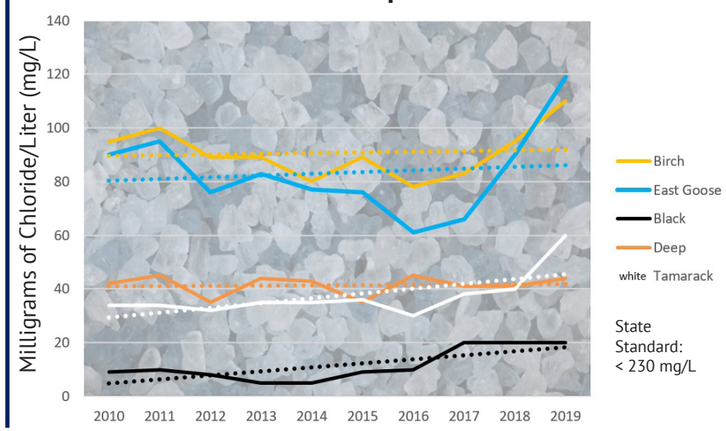
Chlorophyll-A: What is it?

Chloride is the green pigment that helps algae and other plants produce food. The concentration of chlorophyll present in the water is directly related to the amount of algae living in the water.

What it means to me:

Six VLAWMO lakes exceed the State Chlorophyll-A standard. Chlorophyll is a key ingredient in photosynthesis. While phosphorus is a nutrient for plants and algae, chlorophyll is what enables plant growth and algae blooms. Too much chlorophyll indicates a risk for large algae blooms that can deplete lake oxygen and kill fish.

VLAWMO Lakes That Show Upward Trends in Chloride



Chloride: What is it?

Chloride is a common ingredient in de-icers and home water softening. Chloride is a permanent pollutant to water quality, requiring only 1 tsp to pollute 5 gallons of water. It is toxic to aquatic life and interrupts lake temperature and nutrient cycles.

What it means to me:

VLAWMO has no waterbodies impaired for chloride, but some lakes show upward trends. Chloride level can decline as water flushes through lakes, but incoming salt from winter de-icing increases chloride levels in the watershed. This is why it's important to practice smart salting - visit "VLAWMO.org/residents" to learn more.