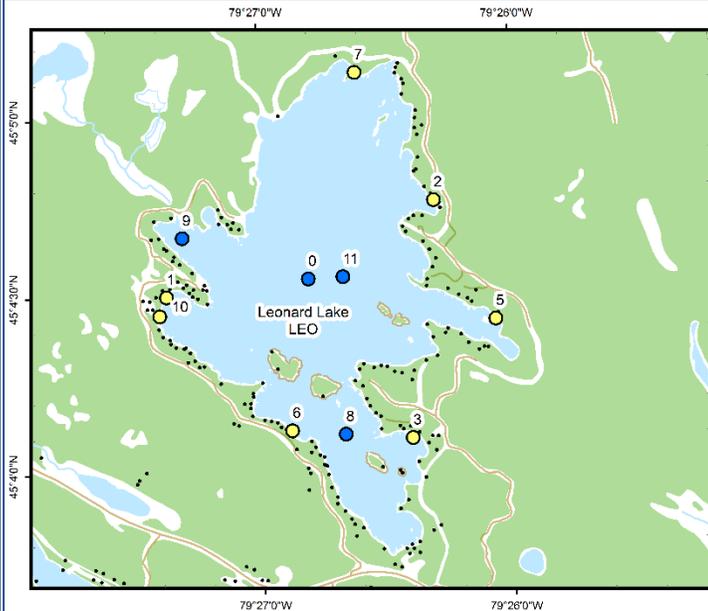


# Leonard Lake (LEO)



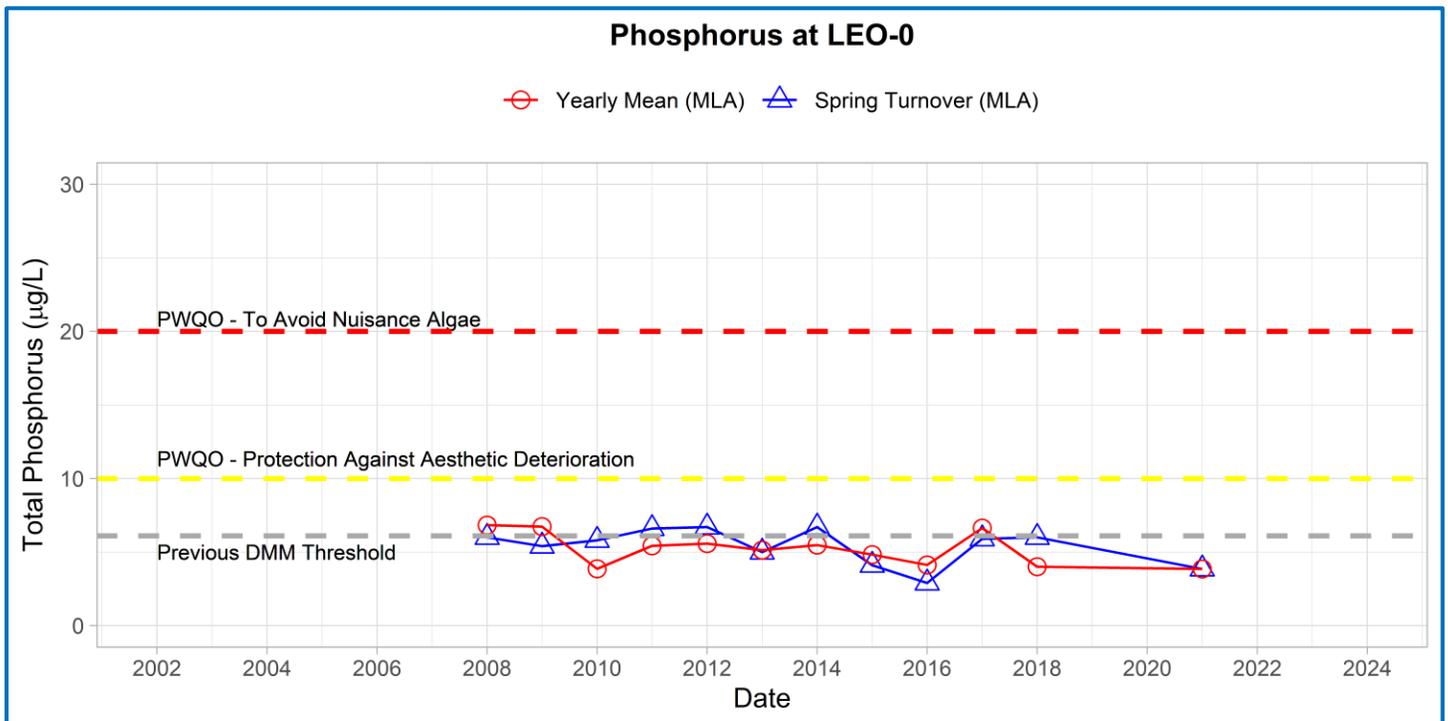
### Area Description:

Leonard Lake is a moderately developed lake with a surface area of 1.52 km<sup>2</sup> and a maximum depth of 16 m. The shoreline of Leonard Lake remains largely unaltered with 93% identified in a natural state, while backlot assessment estimates ~9% altered. There is limited inflow and outflow of water on this lake, and wetlands comprise 9% of the watershed. Leonard Lake is currently listed as vulnerable due to a recent algae bloom, which is currently under investigation by the DMM. MLA monitoring of Leonard Lake began in 2008.

Volunteer Recognition: Betty Isbister, Ester Giesbrecht, and Bruce McNeely

### 2021 Water Quality Results:

	Mean Secchi Disk (m)	Total Phosphorus (µg/L)		E. coli Yearly Geometric Mean (cfu/100mL)	Total Coliforms Yearly Geometric Mean (cfu/100 mL)
		Spring Turnover	Yearly Mean		
LEO-0	3.46	3.3			
LEO-9			4.4		
LEO-10		5.1	4.2		
LEO-12		8.6	5.7		



Note: Grubbs test indicates no outliers in Spring or Annual Total Phosphorus data.



The spring phosphorus concentration at the deep-water station (LEO-0) was below the historic DMM threshold of 6.1 µg/L and Provincial Water Quality Monitoring Objectives for Protection Against Aesthetic Deterioration (10 µg/L) and Nuisance Algal Growth (20 µg/L). Nearshore monitoring of spring phosphorus concentrations at LEO-9, 10 began in 2018, while LEO-12 was a newly established station sampled for the first time in 2021. LEO-8 and LEO-11 were established in 2018 but have not been resampled in 2021. The high number of sampling sites with a lack of consistent or long-term sampling makes it difficult to assess potential changes in the lake or to potentially connect those changes with activities within the watershed. We would recommend a review of the Leonard Lake sampling strategy by the MLA to focus on fewer sites that are sampled regularly, as is done elsewhere. *E. coli* samples were not collected in 2021.

Average annual Secchi disk depth (3.6 m) was consistent with previous monitoring (3.25 – 6.0 m). Leonard Lake experienced cyanobacterial blooms in 2020 and 2021 with toxin concentrations below 20 µg/L and is listed as yellow pending the completion of a causation study on the impact of development in the area. **HESL recommends a review of the Leonard Lake sampling strategy by the MLA to focus on fewer sites that are sampled regularly beginning in 2022 to monitor for long-term trends and emerging issues.**