

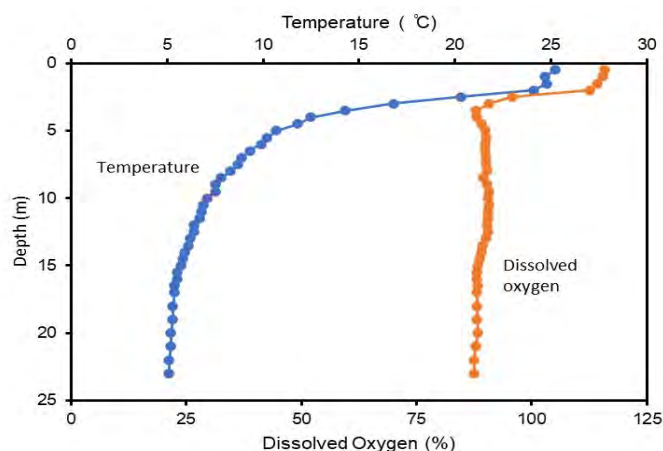
Catchacoma Lake

Trent Aquatic
Research Program

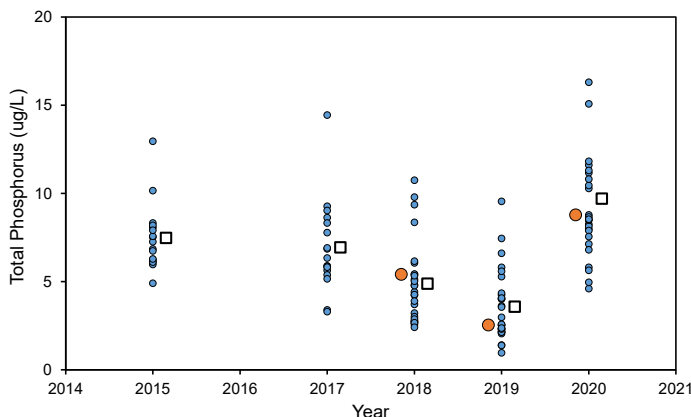
Water Quality Report 2015-2020

This report provides a summary of key water quality parameters for Catchacoma Lake measured as part of the long-term research program on the Kawartha region by the Trent Aquatic Research Program (TARP). One aim of this research is to track the health of the region's lakes as a means to identify problems early and to better understand longer term dynamics. So far, lake data has been collected over six years from fifty-two lakes. Due to logistics and financial constraints, not all lakes are sampled for all variables each year but this remains a goal as the program continues to develop. This lake-specific report uses the collected data to provide you information on Catchacoma Lake including water clarity, temperature, dissolved oxygen, phosphorus, calcium, and chlorophyll. For more background on these parameters and their meaning, please refer to our short review of water quality basics and limnology (email paulfrost@trentu.ca for a free copy).

To learn more about the Trent Aquatic Research Program and how you can support this work, please visit: <https://mycommunity.trentu.ca/tarp>



Temperature and Oxygen: Temperature always shows a typical pattern in Catchacoma Lake. On the day of sampling in 2019, temperature was about 25°C at the surface and 5°C at the lake's bottom. Dissolved oxygen was high in surface waters (~116% saturated) of Catchacoma Lake and lower, but still fairly elevated, in the bottom waters (~80% saturated). The supersaturation (>100%) seen in surface waters likely reflects oxygen being released from algae into the water column faster than it can escape to the atmosphere or recent changes to surface water temperatures.



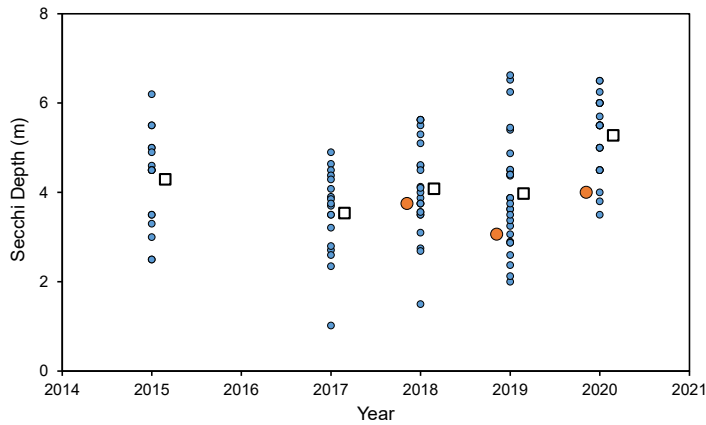
Total Phosphorus: Concentrations of total phosphorus in Catchacoma Lake were in the middle of the range of sampled Kawartha region lakes. In all three years (2018-2020), Catchacoma was found close to the regional average. In 2020, Catchacoma had a slightly higher phosphorus concentration but was still lower than the regional average.

• Total phosphorus concentrations in Catchacoma Lake are well within the normal range and reflective of very good water quality.

In this graph and the ones to follow, orange dots represent measurements for Catchacoma Lake, blue dots denote data from other sampled lakes, and open squares mark the average of the sampled

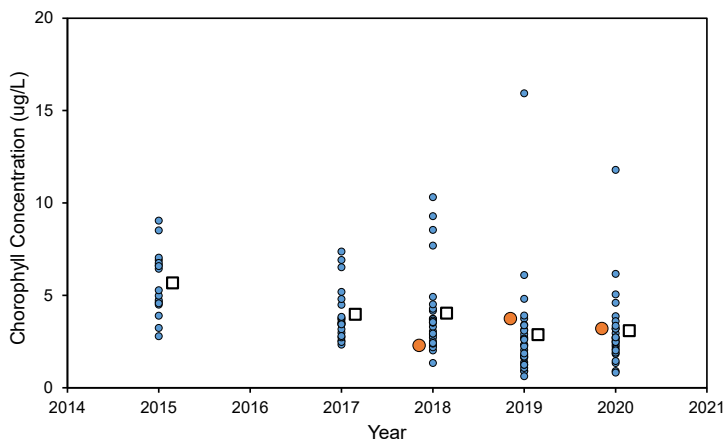


This report was produced by the Trent Aquatic Research Program, Trent University, Peterborough, Ontario. Please direct all questions and inquiries about this report to Dr. Paul Frost.
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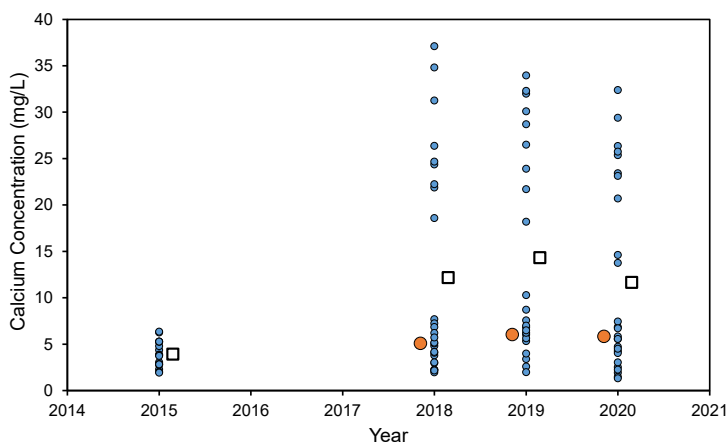


Water Clarity: Secchi depths (~4 m) in Catchacoma Lake are quite typical of many Kawartha region lakes. Catchacoma is consistently below the regional average, which suggests somewhat lower transparency.

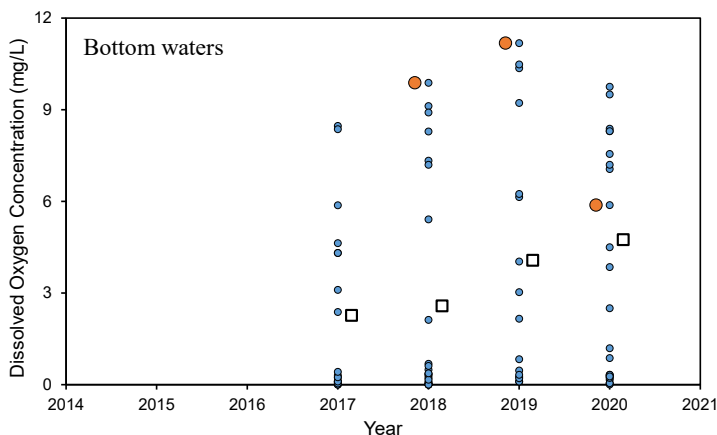
- The lower Secchi depths in Catchacoma indicate reduced water clarity but the reason for this is not clear. Additional work is needed to determine if this is a result of water colour (e.g., humic material) or from algal biomass.



Chlorophyll: The concentration of chlorophyll in Catchacoma Lake was very low in 2018 and near the regional average in 2019 and 2020. In all three years, the chlorophyll concentrations are low relative to that seen in more productive, eutrophic lakes and generally indicate low algal biomass. These values are consistent with very good water quality in Catchacoma Lake.



Calcium: Concentrations of calcium in Catchacoma Lake (~5-6 mg/L) are quite typical for lakes in the Kawartha Highlands. While these concentrations were below the region average, they remain higher than concentrations (<3 mg/L) are potentially problematic for lake foodwebs. These lower calcium concentrations are not currently worthy of concern for Catchacoma Lake but are worth monitoring to ensure that they are relatively stable.



Dissolved oxygen: The concentrations of dissolved oxygen in water one meter off the bottom of Catchacoma Lake are always very high. In 2018 and 2019, we found dissolved oxygen at the bottom of the lake to be close to saturated values. In 2020, we found a lower but still relatively high value for dissolved oxygen in Catchacoma Lake.

- The bottom of Catchacoma Lake had high concentrations of dissolved oxygen but should be measured again to see if 2020 was an unusual measurement or is part of an emerging pattern of greater concern.