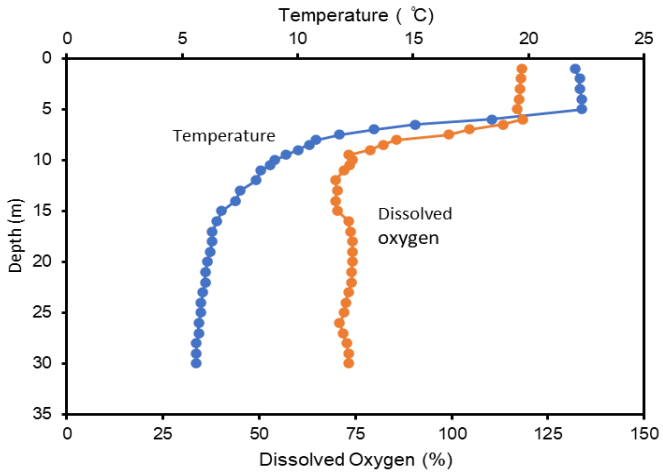
# Chandos Lake

**Trent Aquatic Research Program**

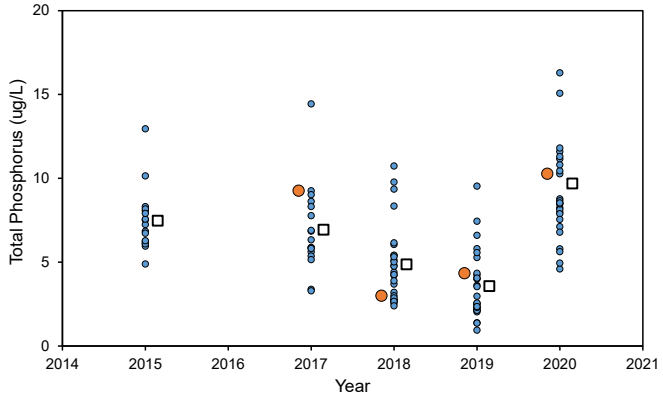
**Water Quality Report 2015-2020**

This report provides a summary of key water quality parameters for Chandos 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 Chandos 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:** We sampled temperature and dissolved oxygen across depths in Chandos Lake. On this day of sampling in August of 2019, temperature was 22°C at the surface and around 6°C at the lake's bottom. Dissolved oxygen was elevated in surface waters (~118%). This supersaturation of dissolved oxygen (above 100%) is usually seen in surface waters with levels of algae or that have recently increased in temperature. While the dissolved oxygen content is lower in the bottom half of the lake (10 m or greater), it is well above levels that would be of concern for fish and other aquatic taxa.

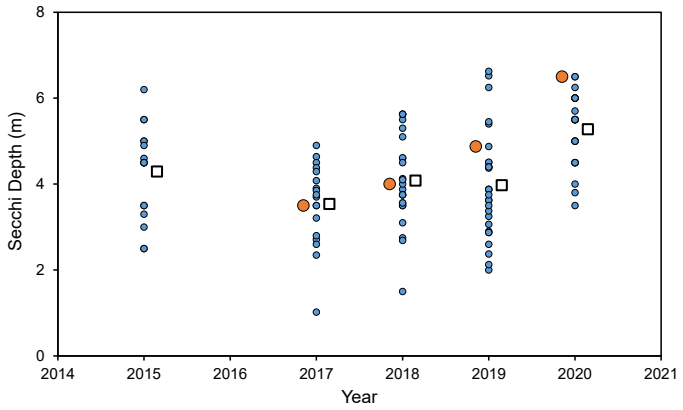



**Total Phosphorus:** Concentrations of total phosphorus in Chandos Lake are generally low and consistent with good water quality. There has been some year to year variability with higher values observed in 2017 and 2020 and lower values in 2018 and 2019. It is not immediately clear why total phosphorus varies across years and this would be worth focused work in the future. Nonetheless these levels of total phosphorus are low and not generally associated with excessive levels of algal biomass.

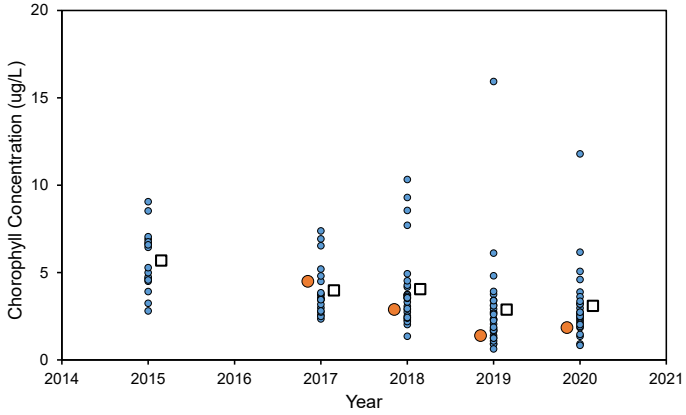
In this graph and the ones to follow, orange dots represent measurements for Chandos Lake, blue dots denote data from other sampled lakes, and open squares mark the average of the sampled lakes.

**Sampling Location.** In Chandos Lake, we sample from at the deepest location in the main lake. Click here to see this location in Google Maps: 44°48'32.37"N, 77°57'46.98"W

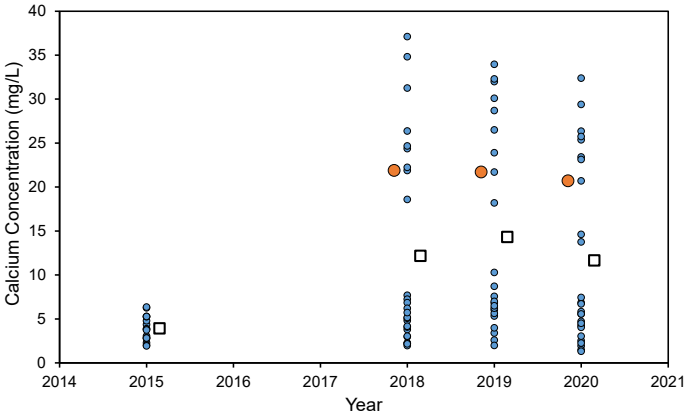
This report was produced by the Trent Aquatic Research Program, Trent University, Peterborough, Ontario. Please direct all questions and inquiries about this report to Dr. Paul Frost.



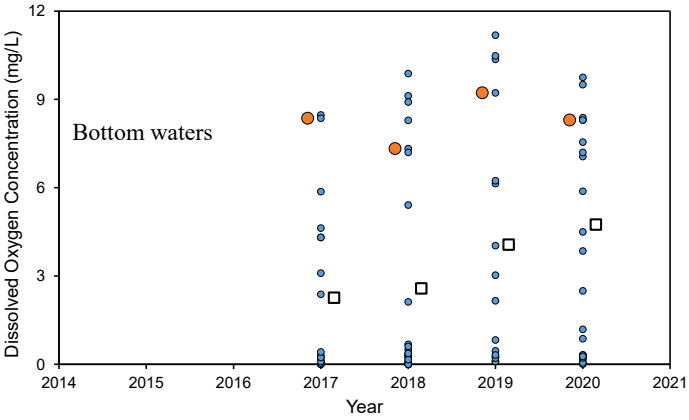

**Water Clarity:** Secchi depths in Chandos Lake have been near or above the regional average over the past four years. The last two years (2019 and 2020) were above the average and indicate that Chandos has very high clarity. These Secchi depths are consistent with good water quality and a low abundance of algae in the water column.




**Chlorophyll:** Chlorophyll concentrations have been lower than the regional average in each of the past three years. Low chlorophyll values, such as those observed in Chandos lake, indicate low algal biomass and high water quality. These values also indicate that Chandos is unlikely to experience harmful algal blooms.




**Calcium:** Concentrations of calcium in Chandos Lake (~22 mg/L) are higher than those found in many Kawartha region lakes. These higher values place Chandos well above lower concentrations thought to harm aquatic foodwebs. While its not clear why calcium concentrations would be higher in Chandos Lake, they may increase the chances of colonization by invasive species having higher calcium requirements, such as the starry stonewort.




**Dissolved oxygen:** The concentrations of dissolved oxygen in water 1 meter off the bottom of Chandos Lake is relatively high and close to saturation. These concentrations are much higher than those thought to harm aquatic taxa, such as some fish species. At this time, there is little threat to Chandos Lake's foodweb due to low dissolved oxygen in its bottom waters.

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Summary of sampling information. We collect water for this program once each summer during late-July or August. Water is collected from a single location at the deepest point in each lake from two depths (1 m below surface and 1 m above sediments). We use standard methods both in the field and laboratory and ensure all data are high quality through use of a thorough QA/QC process. All data are available in a comprehensive database upon request.