

## Lake Health Assessment Report for Big Cedar Lake

The following lake health assessment report was prepared by Diane and Ralph Trauzzi for the BCLSA meeting held on Sunday May 21, 2017.

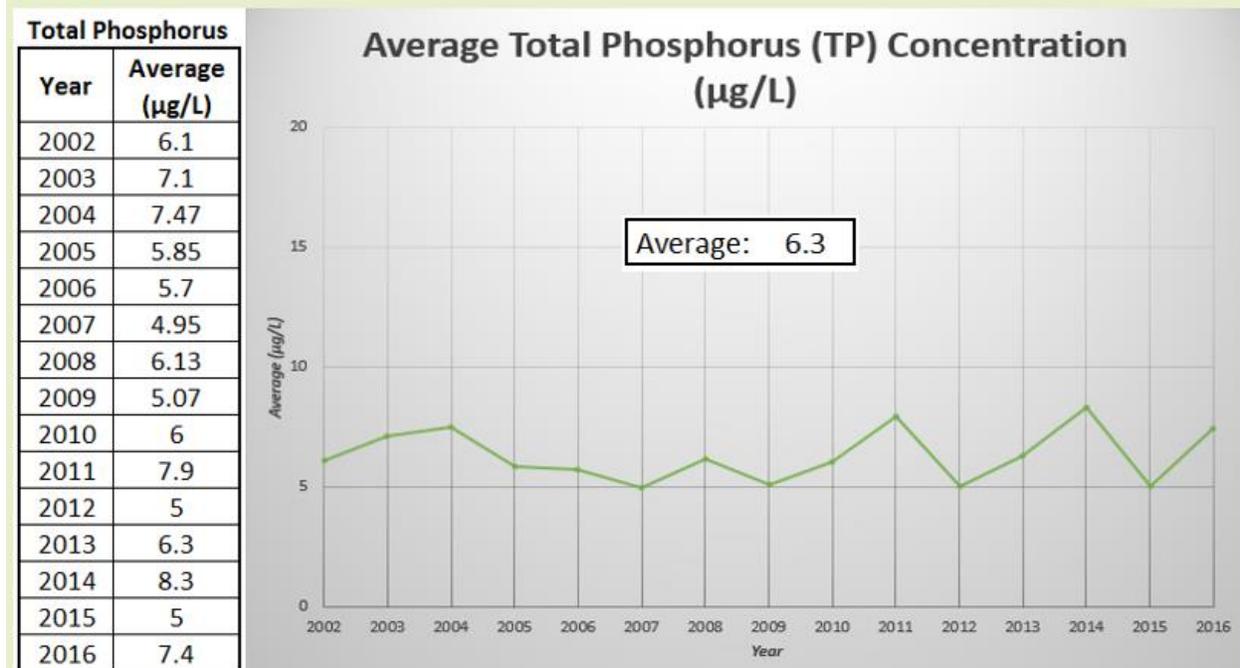
### Phosphorus

Phosphorus tests are done annually in May, with two samples being sent to the Ontario Lake Partner Program for testing. Total phosphorus concentration are used to interpret nutrient status in Ontario lakes, since phosphorus is the element that controls the growth of algae in most Ontario lakes. Increases in phosphorus will decrease water clarity by stimulating algal growth. In extreme cases, algal blooms will affect the aesthetics of the lake and/or cause taste and odour problems in the water.

Lakes are placed into three broad categories with respect to nutrient status. Lakes with less than 10 µg/L TP (Total Phosphorus) are classified as oligotrophic. These lakes rarely experience nuisance algal blooms. Lakes with TP between 10 and 20 µg/L are termed mesotrophic and are in the middle with respect to trophic status. These lakes show a broad range of characteristics and can be clear and unproductive at the bottom end of the scale or susceptible to moderate algal blooms at concentration near 20 µg/L. Lakes over 20 µg/L are classed as eutrophic and may exhibit persistent, nuisance algal blooms.

The average total phosphorus measurement for 2016 was 7.4 µg/L. The average phosphorus measurement over the last 15 years is 6.3 µg/L.

Phosphorus levels can be minimized by reducing or eliminating fertilizer use, pumping out your septic system on a regular basis, and being careful with soap (try to only use phosphate-free soap). What goes on your property and into your drain eventually finds its way into the lake.

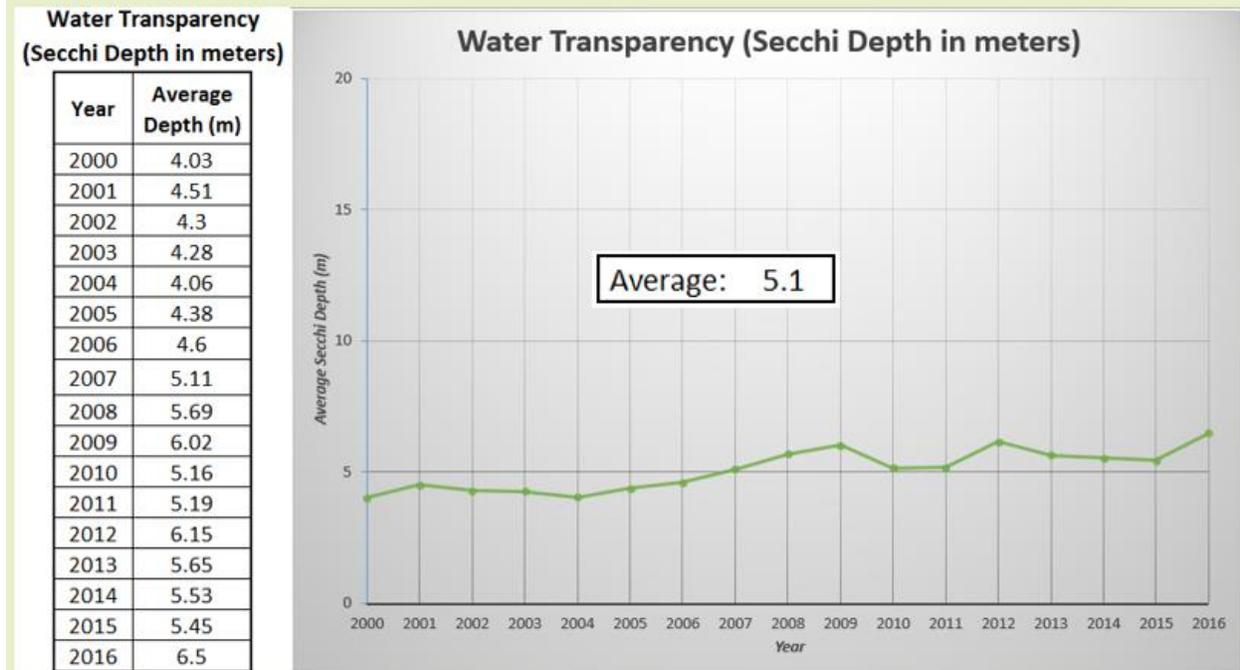


## Water Clarity

Water clarity tests are performed with a secchi disk two times each month in the deepest part of the lake (approximately 28 metres deep). Information from these tests will allow the early detection of changes in the nutrient status and/or the water clarity of the lake due to the impacts of shoreline development, climate change and other stresses.

Increases in phosphorus can decrease water clarity by stimulating algal growth. However, the amount of phosphorus in the lake is not the only factor controlling light penetration, as the amount of dissolved organic carbon (DOC) or non-biological turbidity also plays an important role. We have also seen changes in water clarity due to invading species such as zebra mussels. Thus, although it is possible to use total phosphorus to evaluate the nutrient status of the lake, nonetheless, water clarity readings are useful for tracking changes in the lake that might be occurring that would not be noticed by monitoring TP concentration alone, such as a resurgence of zebra mussels.

Average water clarity for 2016 at Big Cedar Lake was measured at 6.5 metres. The average for the last 17 years was 5.1 metres. Year to year variation of clarity measurements has been minimal, however clarity has increased over time, particularly since the 2005 Zebra Mussel invasion.



Diane and Ralph Trauzzi have volunteered to be members representing Big Cedar Lake in the North Kawartha Lake Association (NORKLA), replacing Barry Hooper. NORKLA are participating in some more in-depth water testing in association with Dr. Frost from Trent University and we have offered to participate in that program to supplement the water testing currently being done.