

Lake Steward Report – 2023

Otter Lake continues to be a healthy and clean lake.

Results of Water Quality Testing in 2023

We are seeing some effects of climate change. Higher water temperatures as well as later ice-on times and earlier ice-off times are some of the indicators. The Secchi Disc readings in the chart below clearly indicate the water is still quite clear, although it has that green tinge to it due to the abundant microscopic plant life. This abundant plant life has had a negative effect on the Dissolved Oxygen levels in the lake as you will see in the graphs later in this report. The plant life grows, dies and falls to the bottom, where it decays, using the available oxygen there. The concentration of dissolved oxygen in lakes is affected by temperature and has well-defined seasonal cycles. Cold water can hold more dissolved oxygen than warm water.

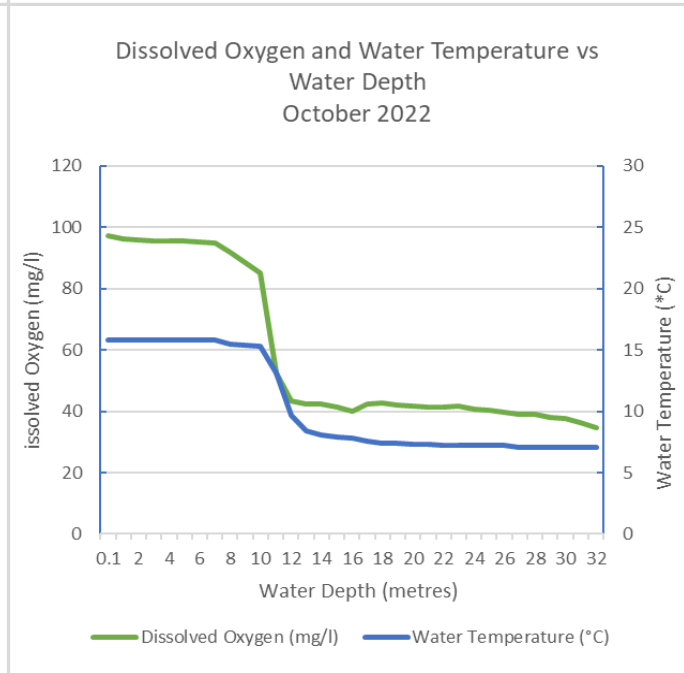
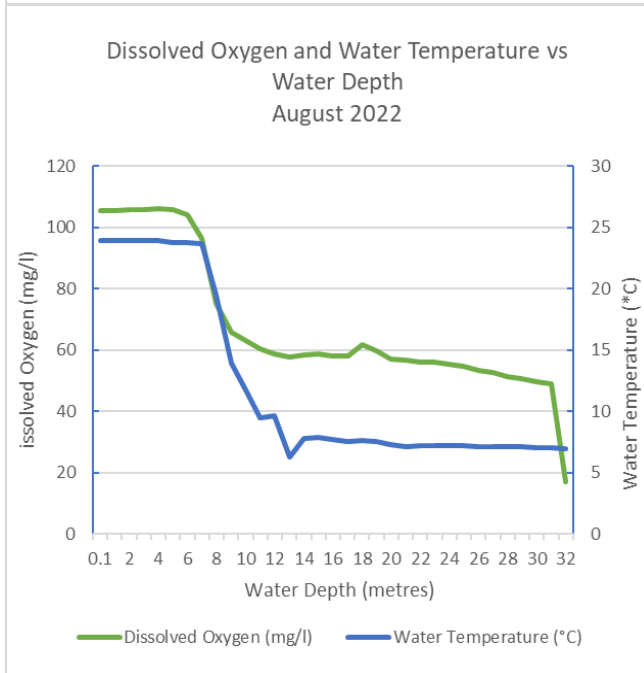
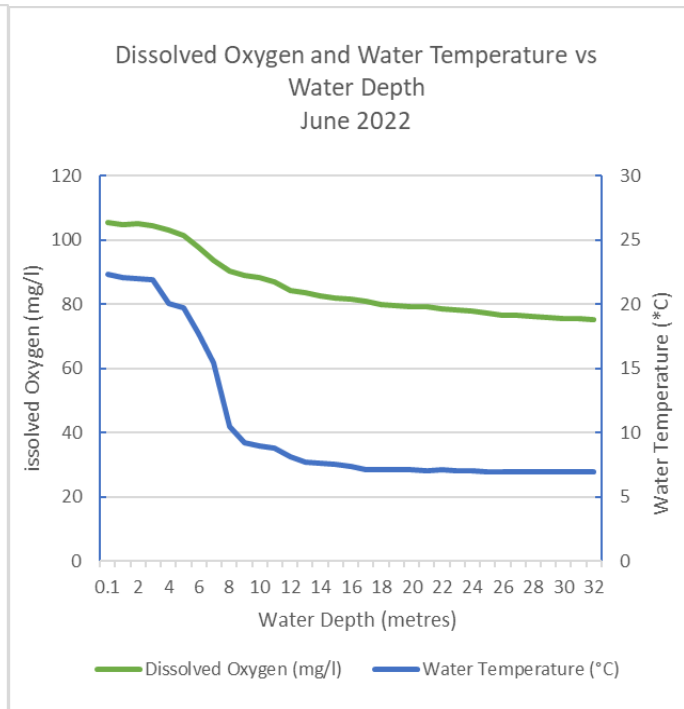
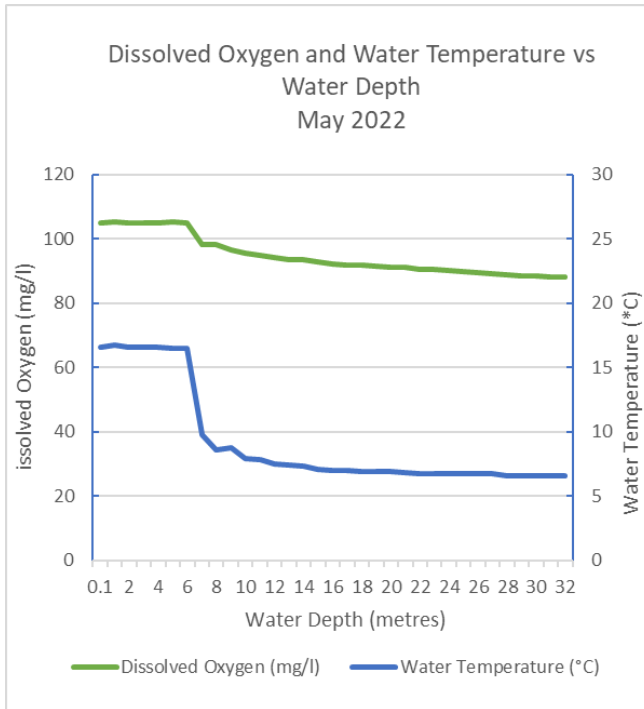
Water Quality Data - 2023																			
RVCA ID	OLLA ID	Total Coliform (cfu/100 ml)			E. Coli (cfu/100 ml)			Total Kjeldahl nitrogen (µg/l)				Total Phosphorous (µg/l)				Secchi Disk (metres)			
		Jun	Jul	Aug	Jun	Jul	Aug	May	Jun	Aug	Oct	May	Jun	Aug	Oct	May	Jun	Aug	Oct
RVL-26A	OLLA 16				1		4		400	300			8	5					
RVL-26B	OLLA 09				1		0		400	400			51	5					
RVL-26C	OLLA 03				2		0		400	300			9	2					
RVL-26D	OLLA 04				3		0		500	400			1	2					
RVL-26DP1	OLLA 05A							400	400	400	400	5	7	2	12	8.0	7.0	7.0	7.0
RVL-26DP3	OLLA 06							300	400	400	400	6	7	5	5	7.0	7.0	7.0	7.0
RVL-26E	OLLA 12				1		0		400	400			14	2					
RVL-26F	OLLA 18				3		2		400	300			7	2					
RVL-26G	n/a				5		4		400	400			9	7					
Average					1.86			386.36				7.86				7.13			
Std. Error					1.70			46.76				10.20				0.35			
Water Quality Recommendations					<100			<500				<20							
Oligotrophic								310 - 1160				3 - 18				5.4 - 28			
Mesotrophic								360 - 1400				11 - 96				1.5 - 8.1			
Eutrophic								390 - 6100				16 - 390				0.8 - 7.0			

Total Kjeldahl Nitrogen (TKN) levels were in the acceptable range of between 200 - 500 µg/L, very similar to previous years. As for Total Phosphorous (TP), all but one of the sites tested had values less than 15 µg/L, below the Provincial Water Quality Objective (PWQO) – Lakes of less than 20 ug/L. There was one high reading in the North Bay, but the following test indicated normal levels. We have no idea what caused this “hiccup”.

RVCA performed measurements of water temperature and DO in May, June, August and October at two deep water sites OLLA 5A/RVCA DP1 and OLLA O6/RVCA DP2. The results obtained by RVCA in 2022 are shown in the following graphs.

Note: For more technical information on water quality please go to our website <https://otterlake.org/environment/water-observation/>

Lake Steward Report – 2023 (cont'd)



Submitted by Jeff Neal, Lake Steward