The mission of Water Rangers is to build the tools to help citizens and scientists easily record and analyse water data so that they can use the data to learn about problems, share discoveries and engage with their neighbours.

Their test kits are built for communities, schools, and passionate individuals who want to learn about the health of local lakes, rivers, or other waterbodies! They have tested them against professional equipment to make sure one can get accurate tests in the field without a lab.

In April 2020 our BLPOA signed-up to participate in this year's monitoring program as one initiative to supplement the annual Water quality testing performed by RVCA.

Our Association wishes to thank Peter & Cathie McGann (Road B3) for volunteering to support this project and take the necessary monthly samples from our lake for submission to Water Rangers.

BASS LAKE - WATER ANALYSIS READINGS

	2020					
Month	**May**	**June**	**July**	**August**	**September**	**October**
Air Temperature	12	26	26	21	21	3
Water Temperature	18	23	25	22	17.5	11
Chlorine	0.5	0.5	0.5	0.5	0.5	0.5
Ph Level	7.8	8.0	8.4	7.8	8.4	7.8
Alkanity	120	120	120	120	120	120
Hardness	200	200	200	100	150	100
Conductivity						
US	207	212	214	207	196	213
Water Temperature	18.5	22.8	26.3	22.1	18.1	11.2

Notes

1. Reading are always taken on the last Sunday of each month.

Refer to set of Definitions on page 2.

DEFINITIONS

Water Temperature - can affect pH, conductivity and dissolved oxygen. It impacts water's density and waters abilities to support life, absorb gases (like CO2), and other nutrients. Increases in water temperature can cause some chemicals to become more soluble. Algae blooms and other vegetation can also grow more easily in warmer water

Conductivity

Measures ionic content (ie: calcium, nitrogen, phosphoros, iron, sulphur, salts etc) by seeing how much electricity it can conduct. A jump in conductivity is a possible indicator of polution (nitrates, phosphates, road salts affect readings). Some ecosystems have naturally high connectivity basd on their bedrock, so it is important to get a baseline value.

Common Values	us/cm
Distilled water	0.5 -3
Freshwater streams	100 -1500
Industrial polution	10000+
Salt water	55,000

Chlorine

Chlorine is commerically produced to purify water - create cleaning products

Common Values	
0.0 - 0.5 ppm	Great
1 ppm	Worrying
2+ppm	Pool levels

Ph

Values range between 5 (acidic 5 to 9 basic) depending on composition of rockbed etc

Rideau River benchmark has a pH of around 8.

pH sets up conditions for how easy it is for nutrients to be available to support algae bloom and heavy metals can dissolve in the water. Pollution can change Ph levels. Acid rain and mining run off lower the Ph level.

Low pH can reduce how many fish eggs succesfully hatch and make life generally difficult for fish and macroinvertabrates.

Algae Blooms

Excess nutrients cause algae blooms and human activity is the normal source. Algae blooms trive when the pH is between 8.2 - 8.7 and usually appear in late summer/early fall. When the algae grows the pH levels can reach 10 (all fish die above 10).

Plants affect pH over the cousre of a day through photosynthesis. pH is highest in the aftrenoon, lowest before sunrise.

Akalinity

Shows waters capacity to neutralize acid or resist deceases in Ph. Natural water has the alkalinity is affected by soil, bedrock etc. Limestone tends to make water have a higher alkalinity. High alkalinity is NOT normally a sign of bad water quality.

Common Values	
10ppm	Very Low
11 - 50ppm	Low
51 - 150ppm	Moderate
151 - 300ppm	High

Hardness

Hrdness is related to alkalinity (they often change together) as both measure calcium carbonate content. It also measures other ions in the water that do not necessarily neutralize acid. Hard water is high in dissolved minerals, including calcium and magnesium.

How to Interpret	
0 - 20 ppm	Soft
21 -60ppm	Moderately Soft
61 - 120ppm	Moderately Hard
121 -180ppm	Hard
180ppm+	Very Hard