

Sturgeon River Water Quality Data Report

Open Water Sampling Season 2020



> A southeast-facing view of our sampling site on the Sturgeon River at the outflow from Lac Ste. Anne

CreekWatch is a program of the non-profit RiverWatch Institute of Alberta, specializing in community-based environmental monitoring and award-winning citizen science education for twenty-six years. This 2020 Report shares our findings with the public, governments, and water quality professionals to collaboratively work towards the base-line monitoring and improvement of our stormwater creeks in Alberta.

This annual CreekWatch Report examines the state of the Sturgeon River as it flows out of Lac Ste. Anne based on the water quality data collected with the assistance of community-based environmental monitoring groups and water quality technicians. You can view a snapshot of data in the attached graphs generated by the RiverWatch online and responsive [graphing tool](#). Thank you to HSBC for major funding support and to all of our dedicated volunteers who have made this sampling season possible – we couldn't have done it without you!

Sturgeon River By-the-Numbers

	2020	2019
Number of Sampling Events	13	18
Number of Data Points	76	108
Number of Sampling Hours	12	8

Analysis

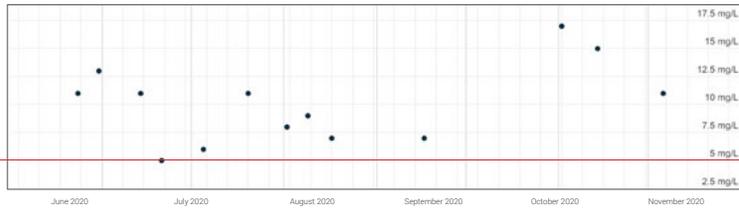
This year's report shows a similar number of sampling events and data points generated by our dedicated volunteers, and an increase in sampling hours despite pandemic restrictions. Based on median values, improvements were observed in dissolved oxygen concentrations and slight reductions in water temperatures.

Sturgeon River Water Quality Data

Parameter	Median Value	
	2020	2019
Dissolved Oxygen (mg/L)	11.0	9.0
Water Temperature (°C)	17	18
pH	8.2	8.0
Ammonia Nitrogen (mg/L)	0.3	0.3
Phosphorus (mg/L)	0.04	0.00
Chloride (mg/L)	20	18

NOTE: All data collected during the open water season of the specified calendar year.

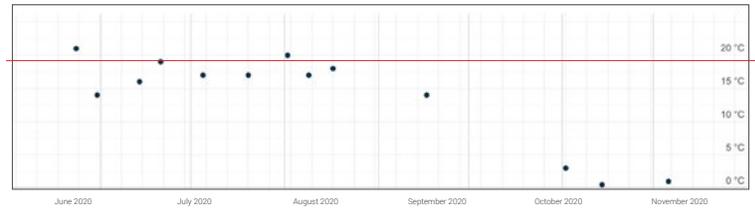
Dissolved Oxygen (mg/L)



Median 11.0

Dissolved oxygen concentrations are measured using either a YSI probe or a Hach kit with a drop-by-drop titration to show a change in water colour until totally clear. Red line indicates the Environmental Quality Guidelines for Alberta Surface Waters (2018) for exceedance is minimum 5 mg/L for instantaneous value.

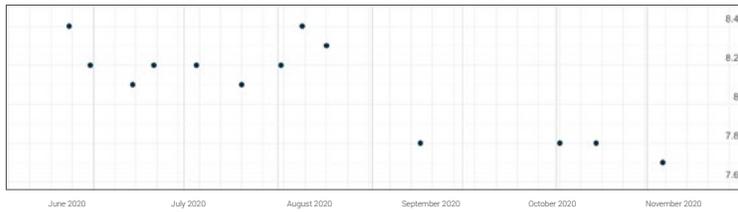
Water Temperature (°C)



Median 17

Water temperatures are measured using a non-mercury glass thermometer or YSI probe placed in flowing, shallow water near shore. Red line indicates the Water Quality Objective identified as an ideal value according to the Bow Basin Watershed Management Plan. Values should not exceed a maximum 18°. Higher values may cause stress on aquatic life.

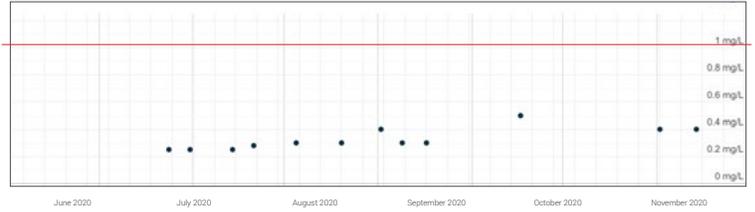
pH



Median 8.2

Creek pH is measured using either a YSI probe or a Hach kit that compare a change in water colour. The Environmental Quality Guidelines for Alberta Surface Waters (2018) for exceedance is a pH value outside the range of 6.5 - 9.

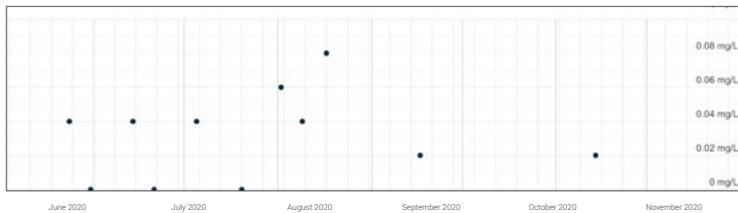
Ammonia Nitrogen (mg/L)



Median 0.3

Ammonia nitrogen concentrations are measured by dipping Hach test strips into water and noting the colour change. Red line indicates the Environmental Quality Guidelines for Alberta Surface Waters (2018) for exceedance is maximum 1.0 mg/L at pH 8.0, 10°C.

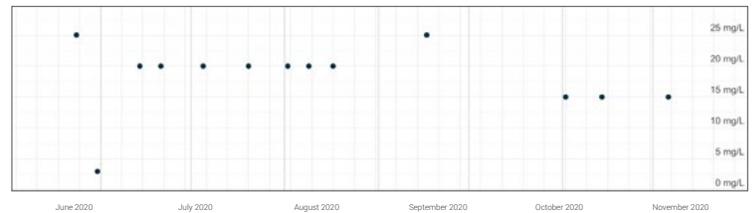
Phosphorus (mg/L)



Median 0.04

Orthophosphate concentrations are measured with either a LaMotte colorimeter or a Hach kit that compare a change in water colour.

Chloride (mg/L)



Median 20

Chloride concentrations are measured using Hach kits with a drop-by-drop titration to show a change in water colour from yellow to orange. The Environmental Quality Guidelines for Alberta Surface Waters (2018) indicates an exceedance above maximum 120 mg/L.

To review our data reports, visit creekwatch.ca/creekwatch-reports