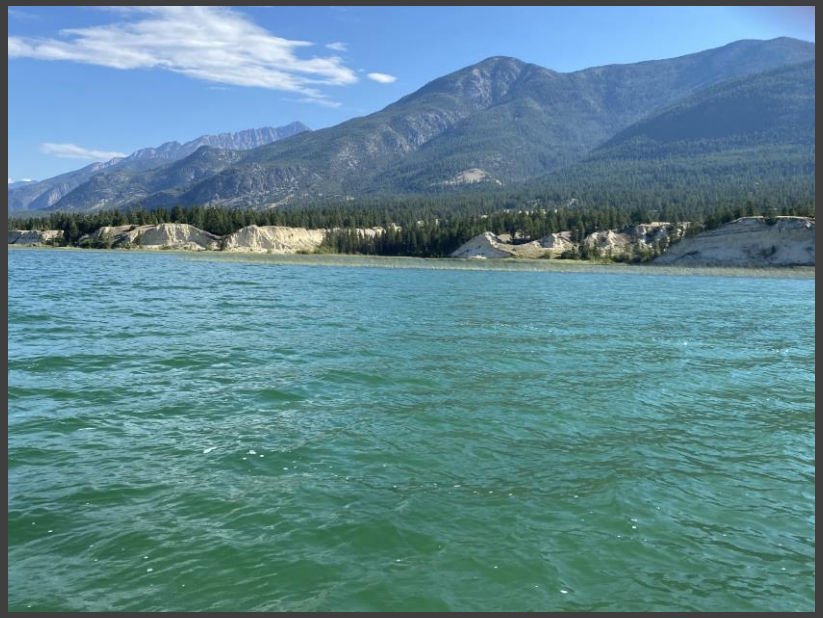
Columbia Lake Stewardship Society 2020 AGM, October 10, 2020



Agenda

Confirmation of Quorum

Agenda Review

Minutes of 2019 AGM

2020 Financial Report

2020 Directors Report

Proposed Activities for 2021

Other Organizations (LWA, CWSP)

Board of Directors Election

Adjournment

Funding, Volunteers & Staff

CLSS would like to acknowledge the generous funding that allowed us to undertake our programs.

- Funding included:
- • Columbia Valley Local Conservation Fund
- • Columbia Basin Trust
- • Canada Summer Jobs
- BC Hydro
- • Lakeside Communities (Canal Flats, Columere Park, Spirits Reach, Columbia Ridge)

- Volunteers:
- •20+ Dedicated Volunteers
  - All our long-term volunteers agreed to continue sampling and accommodate additional physical distancing
  - And new volunteers joined us!

Summer Students and Part-time Employees (fall/winter)

- Summer Students Amira Elwakeel (2020) and Ellen Storey (2019)
- Contract employee Shannon McGinty
- Georgia Peck began a 6-month part time contract on October 1, 2020

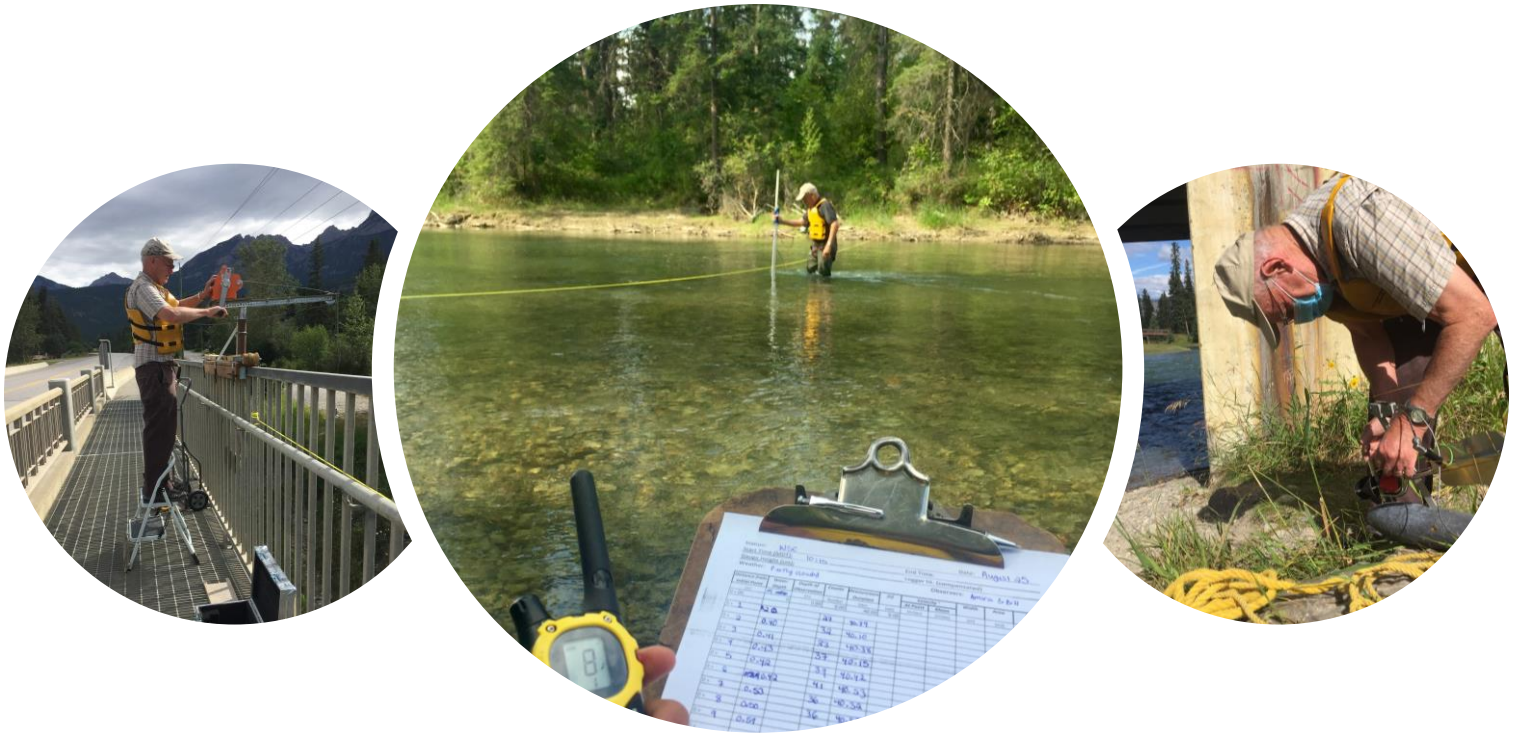

Financial Report

2019 / 20 Directors Reports

- Lake Monitoring
- Water Quality
- Water Quantity
- Stream Sampling
- Watercraft Counting
- Education
- Outreach and Advocacy
- Communication

Note: Our 2019 AGM was held in June 2019, so the directors reports will summarize both the 2019 and 2020 summer season. The reports for the 2019 water quality and water quantity sampling were completed in January 2020 and are on our website (Columbialakess.com)

Water Quantity Monitoring



Water quantity work allows us to continually refine our understanding of the water balance of the lake, an understanding of which is required to is required to manage the water resource of the lake

Water Quantity Monitoring

2019

The 2019 report is available on our website. Major findings were:

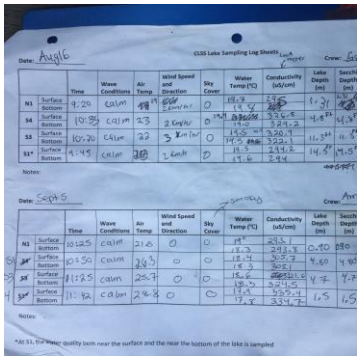
- **Annual rise in lake level due to water entering the lake from Dutch Creek spring runoff**
- **The lake gains water from : precipitation, local streams and groundwater**
- **The lake loses water to: evapotranspiration and consumptive use**
- **Work undertaken in 2019 focussed on isolating groundwater contributions**

2020

We continued to monitor the volume of water entering and leaving the lake and the resulting change on lake level. Since monitoring is conducted outdoors physical distancing was not a significant issue

- **Monitoring of lake level and inflows and outflows to Columbia Lake in progress.**
- **Data base containing temperature, humidity, and wind data from**
- **the nearby Fairmont Airport weather station established.**
- **Data loggers on the Kootenay River and Columbia Lake installed.**
- **Timber Springs weather station in operation.**
- **Temperature, snow depth and rainfall data from the Fairmont Flood Mitigation Project weather station recorded**
- **Report will be completed by end January 2021**

Water Quality Monitoring



Date: Aug 16 — CLSS Lake Sampling Log Sheets — Crew: Sam

		Time	Wave Conditions	Air Temp	Wind Speed and Direction	Sky Cover	Water Temp (°C)	Conductivity (uS/cm)	Lake Depth (m)	Secchi Depth (m)
N1	Surface	9:20	calm	19°	[illegible]	0	18.9	[illegible]	1.31	[illegible]
	Bottom						19.9			
S4	Surface	10:35	calm	23	2 km/hr	0	[illegible]	326.5	4.8	4.3
	Bottom						19.0	329.2		
S3	Surface	10:20	calm	22	3 km/hr	0	19.5	320.1	11.3	11.1
	Bottom						19.0	322.1		
S3*	Surface	9:45	calm	20	2 km/hr	0	19.5	314.8	14.8	14.5
	Bottom						19.6	2.44		

Notes:

Date: Sept 5 — Crew: Ann

		Time	Wave Conditions	Air Temp	Wind Speed and Direction	Sky Cover	Water Temp (°C)	Conductivity (uS/cm)	Lake Depth (m)	Secchi Depth (m)
N1	Surface	10:25	calm	21.5	0	0	19°	243.1	0.70	2.80
	Bottom						18.3	248.8		
S4	Surface	10:50	calm	24.5	0	0	18.4	305.7	4.60	4.80
	Bottom						18.3	305.1		
S3	Surface	11:25	calm	25.7	0	0	15.6	325.5	4.7	4.7
	Bottom						18.5	324.5		
S3*	Surface	11:42	calm	26.8	0	0	18.5	323.1	1.5	1.5
	Bottom						17.5	334.7		

Notes:

*At S1, S3, and S5 water quality both near the surface and near the bottom of the lake is sampled

CLSS continued its bi-weekly monitoring of selected water quality indicator parameters. Samples were collected by volunteers and our summer student twice a moth and analyzed once a month. An expected range of values has been established and any changes to lake health can be noted and shared with decision makers

Water Quality Monitoring

2019

The 2019 report is available on our website. Major findings were:

- **Overall, the lake's water quality has not changed during the five years of monitoring and it remains suitable for a variety of its intended uses: recreation, domestic water supply and aquatic habitat**
- **Maximum turbidity exceed the maximum expected value recorded between 2014 and 2018.**
- **The survey at fourteen monitoring locations along the lake repeated from the 2018 survey shows that ph. conductivity and chloride values increase from the north to south and conductivity**

2020

- **We were able to continue our lake and stream monitoring by ensuring that the data collection was either done by family groups or people were physically distancing during collection.**

- **Seven regular sampling events were conducted and included**
  - **Three sets of water samples for hardness, chloride, iron, and manganese alkalinity, total phosphorous, dissolved phosphorous and nitrate**
  - **Indicator parameters, conductivity, pH, dissolved oxygen, and turbidity monitored during all 7 events**
- **Two events monitoring the chloride profile along the lake**
- **Report will be completed by end January 2021**

Stream Monitoring

- CLSS visited four creeks that flow into Columbia Lake to measure water quality and estimate flow:
  - Hardie Creek
  - Marion Creek
  - Dutch Creek
  - Canal Flats Creek.

2019:

The creeks were identified and one set of samples collected

2020:

Monitoring protocol refined; Regular monitoring commenced in spring 2020

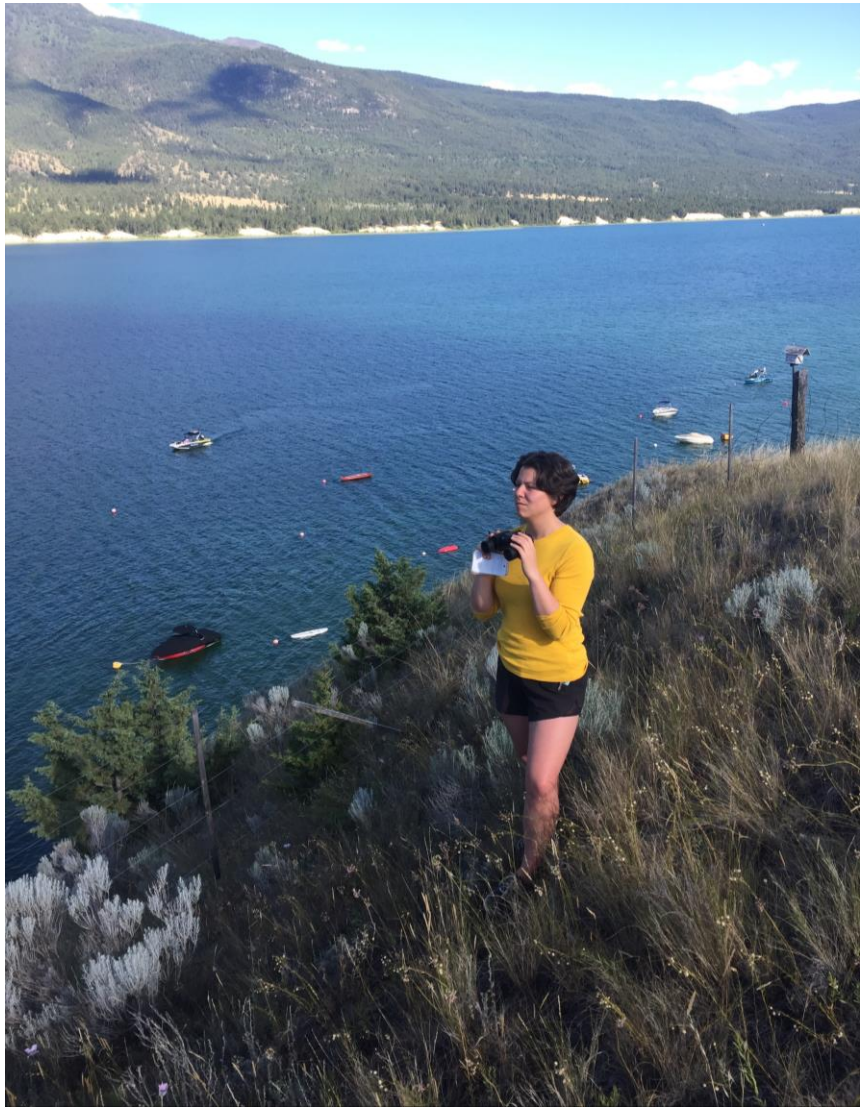
- Monitoring these streams will help us get a better picture of water quality upstream of Columbia Lake so that we can trace any changes in the lake's water quality

- We estimated flow and measured the same water quality parameters as we measure on the lake

- Results will be included in the 2020 water quality report

Watercraft Counting

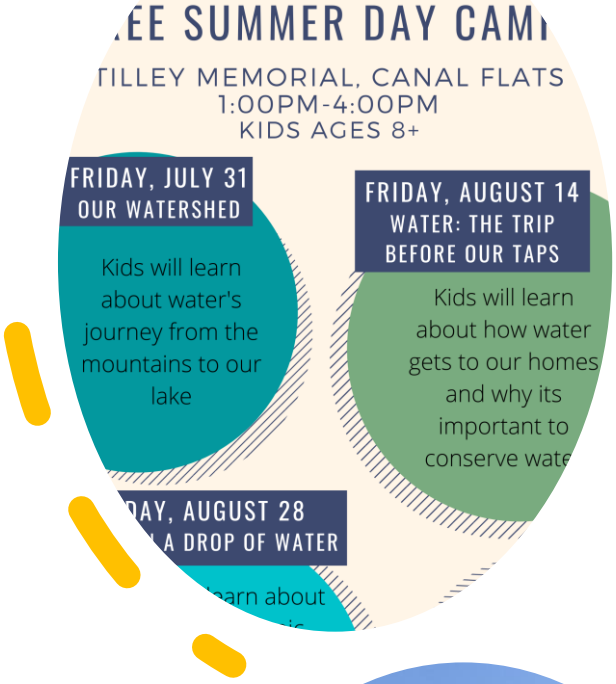
- Our summer student conducted regular watercraft counts in 2020 to better understand the recreational uses of the lake and see if there is a correlation between lake use and water quality
- The highest count was over 60 watercraft
- Lake usage varied depending on the weather and peaked on holiday weekends
- A wide variety of water-crafts are used on Columbia Lake



Education

- **2019**
- Lake Tours, School Programs
  - Multiple lake tours by boat and one multi stop tour along lake
  - 3rd year of school program

- **2020:** Modified due to Covid 19
- Summer Camps
  - Conducted jointly with LWA; New camps developed
  - Topics were: Our Watershed, Water: the trip before our taps, Life in a drop of water,
  - Conducted at Tilley Memorial for first time



Outreach and Advocacy

Weed Pulls

New Signage
- Tilley Memorial
- Southwest Boat Launch

Booths at Farmers markets
- Did jointly with LWA
- Developed new game

Provided input into CLMP update

Commented on development and rezoning applications

Brochures stocked at lake and riverside locations

Educational signs installed at lakeside locations

Communication

Facebook and Instagram Posts
Articles in Canal Flats News
Newsletter
Reports

Summary of Columbia Lake Stewardship Society's 2019 Water Quantity Monitoring Program
Prepared by W. Thompson
February 2020

Summary of the 2019 Water Quality Monitoring Program for Columbia Lake
Columbia Lake Stewardship Society
February 9, 2020

View this email in your browser

COLUMBIA LAKE STEWARDSHIP SOCIETY

Goodbye Summer 2020!

Cool nights, few boats on the water, and kids back in school! Summer 2020 has come to a close, and we have concluded our SEVENTH season of monitoring Columbia Lake. This summer was certainly strange; however, with the help of our dedicated volunteers, we completed most of our regular programming AND commenced several new projects.

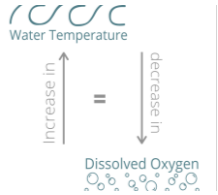
We'd like to extend a huge thank-you to everyone who volunteered with CLSS this summer. As a volunteer-run organization, the valuable work we do to protect our lake wouldn't be possible without you!

New Programs

2020 Water Quality of Columbia Lake

Water Temperature and Dissolved Oxygen

What's something warm that can make you feel cool? Spring-fed Columbia Lake, of course! Did you know that Columbia Lake is the largest warm-water lake in the East Kootaneys? Although swimming in the warm Columbia feels better than swimming in a glacier lake, there are side-effects associated with warm lake water. As water temperature increases, the amount of dissolved oxygen that water can hold decreases (dissolved oxygen is simply the amount of oxygen that is dissolved in water). In addition to rising lake temperatures, dissolved oxygen levels can also be depleted by increased bacterial activity as a result of excess nutrient loading in the water.



Monitoring dissolved oxygen is important because all forms of aquatic life use dissolved oxygen to breathe. If there isn't enough dissolved oxygen in the water, aquatic organisms such as fish will either struggle with growth and reproduction, or die.

So far, the oxygen levels monitored by the Columbia Lake Stewardship Society for over 5 years show that Columbia Lake maintains dissolved oxygen levels that will support aquatic life. CLSS will continue monitoring dissolved oxygen levels and other parameters so that we can work towards keeping our lake healthy!

COLUMBIA LAKE STEWARDSHIP SOCIETY

Around the Lake...

GET AMPED UP!

We are delighted to present to you our first series of AMP articles! This is a series of short and interesting articles about **A**nimals, **M**inerals and **P**lants around the lake.

This edition features a cheeky bird, a geological gem, and the scoop on aquatic vegetation. Click here to read our September edition of AMP articles.

Water Quantity

- Continue existing monitoring program

Water Quality

- Maintain existing testing program
- Research the use of CABIN

Small Streams

- Maintain existing testing program; Train and educate volunteers on sampling protocols

Fish and Biota

- Participate with LWA in Fish survey
- Educate and train volunteers on how to monitor for fish and Biota (CABIN)

Organization and Governance

- Develop a 5-year plan; coordinate some aspects with LWA

Education and Outreach

- Watershed education program in 1 school
- Develop and deliver summer camp

Communication

- Develop material for booths and displays
- Post frequently on social media about the lake

Interactions with Other Groups

- Develop synergies with LWA

Advocacy

- Provide data and input into CLMP
- Respond in a timely manner to any issues that may impact the lake

Fundraising

- Apply for charitable status; Establish further funding for employee

Proposed Activities for 2021

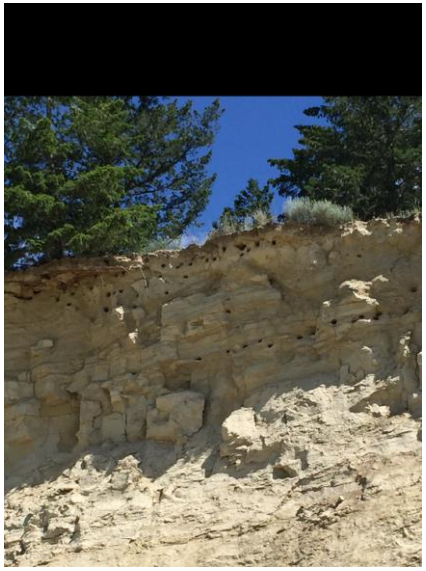
*1-year plan on website

Other Organizations

- CLSS would like to acknowledge the support and input of other organizations including:

  - Lake Windemere Ambassadors
  - Columbia Wetlands Stewardship Partners
  - East Kootenay Invasive Species Council
  - Living Lake Canada
  - Swallow Survey

- CLSS will continue to work and share resources with these and other organizations



Board of Directors Election

- **Proposed Candidates**

• Nancy Wilson	Chair
• Pat Silver	Treasurer and Communication Coordinator
• Tom Symington	Secretary and Fundraising Coordinator
• Bill Thompson	Water Quantity Coordinator
• Tom Dance	Water Quality Coordinator
• Colin Cartwright	Canal Flats Representative
• Mary McGovern	Swallow survey representative, Writing coordinator