Cowichan Lake & River Stewardship Society

May 2024 Newsletter

CLRSS acknowledges that our virtual newsletter is being shared on the unceded territories of the Quw'utsun, Malahat, Pauquachin, Ts'uubaa-asatx, Halalt, Penelakut, Stz'uminus, Lyackson, Ditidaht & Pacheedaht Peoples who have stewarded this land since time immemorial.

CRSS will be emailing member newsletters every six weeks. Contributions from members: Judy Brayden (editor), Jean Atkinson, Jim Deck, Dave De Pape, Diana Gunderson, Parker Jefferson, Cam McCauley, Heather Pritchard, Maureen Quested, Joe Saysell Genevieve Singleton, Jacqueline Sherk, Ken Traynor, Leroy Van Wieren, and many others. Any questions, comments or feedback please see Home | Cowichan Lake & River Stewardship Society British Columbia (cowichan-lake-stewards.ca)

Your next CLRSS AGM
May 26th, 2024
1:00 – 3:00 p.m.
at the
Curling Lounge
At the Lake Cowichan Sports Arena

Agenda for the May 26th, CLRSS AGM:

12:30 Member sign in and voting card distribution

1:00 Call to Order: President, Jim Deck, presiding

1.) Adoption of Agenda: Moved and seconded that the agenda be adopted as printed.

2.) Approval of Minutes of the 2023 AGM: Moved and seconded that the Minutes of the 2023 Annual General Meeting be accepted as printed.

3.) Presentation to Board members

4.) Annual Report to the members on the work of the 2023/24 Board of CLRSS by PowerPoint presentation. This would include Year End Financial Report and a draft budget for the 2024/25 year, to be amended or approved by the 2024/25 Board of Directors at a meeting early in their new term.

Motion to accept the reports as presented in the PowerPoint

2:00 Election of Board of Directors for 2024/25 - Thanks to Ian Morrison

Members standing for election this year:

President	Judy Brayden
Vice President	Cam McCauley
Secretary	Dianne Flood
Treasurer	Maureen Quested
Members-at-Large	Jean Atkinson
	Rosemary Danaher
	Dave DePape
	Diana Gunderson
	Rodger Hunter
	Chris Steeger
	Jay White

2:15 Short break

2:30 – 3:00 Guest Speaker

CLRSS meets regularly on the first Monday of each month, unless it falls on a statutory holiday, then the next Monday. EVERYONE WELCOME!

Next meeting: **6:30 p.m. Monday, June 3rd**

In person meeting at the Country Grocer Meeting Room, Lake Cowichan

Everyone welcome!

Winner of the 2024 CLRSS membership drive draw prize, Marian Van Wieren, won a CLRSS T shirt, ball cap, and copy of "Witnessing the Water" because she renewed he annual membership by April 26th
Congratulations, Marian!

Online at [Membership | Cowichan Lake & River Stewardship Society (cowichan-lake-stewards.ca)]

Only $10.00 = 4 cups of coffee

You can support CLRSS programs by purchasing Thrifty Smile Cards – order Smile Cards in any amount up to $1000. 6% of the card value is donated to CLRSS.

Also remember code **484** will allow you to donate your bottle and can return money to CLRSS at the Duncan Island Return It. With thanks!

In this Edition:

- AGM info – May 26th – 1:00 – 3:00 – Cowichan Lake Sports Arena – Curling Lounge
- IMPORTANT! Calling for volunteers to do summer and fall water sampling!
- Weir All Connected – Fun in the summer, family, stewardship event! – July 20th

- Why we never ever pick a trillium! – Jacqueline Sherk
- More on Project 84,000 – Judy Brayden
- How groundwater effects river water temperature – Jennifer Shepherd, Community Researcher, Xwulqw'selu Connections
- Reminding you about the Report all Poachers and Polluters (RAPP) line!
- Have you purchased your copy of *Witnessing the Water*?

We need members more than ever!

CLRSS is looking for volunteers to take water samples this summer and fall!

Over the last few years, the Cowichan Lake and River Stewardship Society has assisted various other organizations in water sampling on the Cowichan lake and river.

The Cowichan Watershed Board will be testing the lake and river this summer and fall and are looking for volunteers to assist them with this program. I have been asked to put a request out to our membership to determine if any of our members are interested in participating in the program. A project scope has been prepared and is as follows:

Project Scope: The project will conduct a water quality study in the Cowichan watershed to complement and continue sampling which has previously been conducted in the watershed. Water quality sampling will include streams, and tributaries to Cowichan Lake, stations in Cowichan Lake, and stations in the upper and lower Cowichan River.

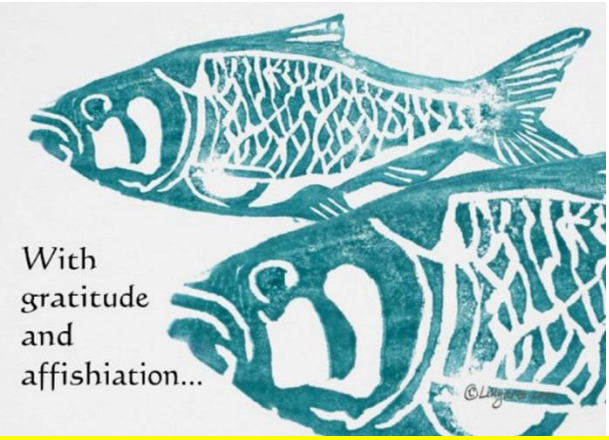
This water quality monitoring work will be a continuation of the 2022 Water Quality Attainment Study for the Lower Cowichan and Koksilah Watershed conducted by the Cowichan Watershed Board under the leadership of Cowichan Tribes. It will also complement water quality monitoring work which was previously supported by CLRSS when members of the Society provided volunteer assistance to collect samples in the upper river, lake and its tributaries.

The goal of this monitoring work is to provide local and provincial researchers, managers and the public with objective water quality data. This data will enable transparent and objective discussions on the progress of management efforts and help identify areas of concern and new areas of research to inform the public and aid management decisions.

Under the current scope of work proposed, water quality sampling will take place between July 1 and December 15, 2024. Additional work to develop a Provincial Water Quality Attainment Study is contemplated for completion by Spring 2025, should

additional funding be available.

This water quality monitoring program will adhere to the provincial '5 in 30' sampling standard, where at each site samples are taken once a week for five consecutive weeks over a 30-day span (Epps and Phippen 2011).



Sampling in the summer will be conducted at the period of lowest flow and again in the fall following the first significant rain events to capture input from overland flow via tributaries to Lake Cowichan during winter conditions approaching Full Supply Level.

If you are interested in being part of this program, please contact, CLRSS President, Jim Deck Res: (778) 429-2924 or Cell: (403) 620-2220

CELEBRATING WATER FESTIVAL – *Weir All Connected*
by Festival Chair, Maureen Quested

Planning for the 2024 CELEBRATING WATER FESTIVAL started on February 24 when an organizing committee was formed and a decision made to focus on the weir. Subsequently, *Weir All Connected* was chosen as the theme and Saywell Park chosen as the venue.

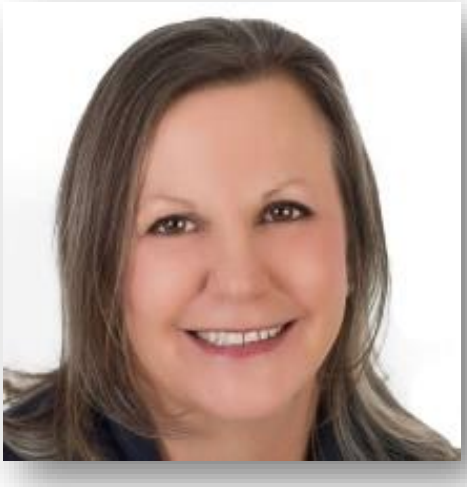
Two meetings a month are held, one in-person and one Zoom meeting. The committee has modified last year's logo to reflect the annual name of CELEBRATING WATER FESTIVAL. The theme will change every year and exhibitors were invited and will be invited in the future based on their connection to the theme.

Chief Georgina Livingstone of the Ts'uubaa'asatx and Chief Cindy Daniels of Cowichan Tribes have been invited to take part in the opening ceremonies. The day will start out with a welcoming ceremony, a light breakfast, and the cutting of a weir-themed cake. This year, CLRSS will, again, staff the welcome tent, giving out information on the day and activities, selling swag, and signing up new or renewing members. The Riparian group, under the leadership of Jean Atkinson, will have a booth and has plans well underway. Judy Brayden will have a Project 84,000 table where you can participate in the fish rubbings. "Witnessing the Water – an authentic relationship" will also be available for those who have not yet purchased one. We hope the new CLRSS Invasive Species group will be able to organize an information table and related activity. Invitations to about 20 groups went out in April with a request to reply by May 15.

Cowichan Watershed Board and Paper Excellence have committed at this point. Cowichan Tribes will also take part.

Volunteers are the heart of non-profit societies such as CLRSS. As always, volunteers are needed on the day to help with a variety of activities. Please email Maureen Quested at mquested@shaw.ca to join our volunteer ranks. Volunteers will receive a free breakfast and a ticket for a draw prize. They will also earn our undying gratitude.

Why we Never Pick Trilliums - *by Jacqueline Sherk*



The demure yet showy flowers of the Western trilliums (*Trillium ovatum*) that blanket our lower elevation forests at this time of year are coming to an end. The pure white petals fade to shades of pink and purple while inside the tiny ovary of each flower its seeds are ripening. Trilliums, including *Trillium ovatum*, have an interesting way of dispersing their seeds. Each seed has a fleshy structure called an elaiosome, which contains an oily, protein-rich substance that attracts ants. The ants harvest these seeds and bring them back to their nests, where they feed the elaiosomes to their larvae. Once the seed's surface has been cleaned off, it is discarded into a garbage chamber within the ant's underground nest, from where it grows. This process, known as *myrmecochory*, helps spread trilliums across the forest floor. Hence it can take up to seven years for a trillium seed to mature into a flowering plant. For this reason, cutting trilliums is highly discouraged. It is recommended instead that we simply admire them in nature for the delicate and ephemeral wildflowers that they are and respect the symbiotic relationships that have been at play to produce this incredible flower.

Western Trillium (*Trillium ovatum*)

Source: 'Plants of Coastal British Columbia', Pojar & Mackinnon (1994) and

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PROJECT 84,000*

So why is this a CLRSS project?

This spring, CLRSS was approached by Cowichan Watershed Board's *Connections Target* Working Group member, Jennifer Shepherd, to undertake a project about ecological grieving. That is a feeling that some people might be experiencing as they enter a new phase of climate change and climate action demand.

"I'm fine and I don't want anyone to tell me how to feel!"

No one is suggesting that.

What we are doing is helping our wider community to visualize what 84,000 lost fish look like and in the process recognizing that this was an unprecedented and unsustainable fish 'die off' that we all have to work to prevent from happening again. We are all connected, and we have to work together through education, political action and on-the-ground stewardship activities in the face of climate urgency. In this project we are doing this together through the "lens of art".

Participants have commented, "The process is mesmerizing and actually cathartic! Thank you!"

To May 10, 2024, our community has produced 11,169 images of juvenile steelhead on one side of a sheet of brown paper that is the equivalent of 186.5 feet (56.9 m) long. Our goal of 84,000 images will require 700 linear feet (213 m) of paper 3 feet (.9 m) wide and printed on both sides!

**Number from Cowichan River Fish Mortality Event Summer 2023 - Impacts to fish and how to avoid a repeat; Presentation to Cowichan Watershed Board by Mike McCulloch – Anadromous Fisheries Specialist, BC Fisheries West Coast Region, WLRS*

For more information or to request an activity kit for your next event, contact: Jennifer Shepherd, Community Researcher, Xwulqw'selu Connections (236) 800-9011 jshepherd@uvic.ca or ***Judy Brayden, Cowichan Lake and River Stewardship Society, judybrayden@shaw.ca***

So How are we Preventing This From Happening Again?

Canada and British Columbia invest in the final phase of wastewater infrastructure upgrades

Reprinted from the CWB website, November 2023:

The final phase of wastewater infrastructure upgrades is set to get underway thanks to an investment of more than $10.1 million from the governments of Canada and British Columbia, as well as Lake Cowichan. Announced by Minister Sean Fraser, Minister Anne Kang, and Mayor Tim McGonigle, this project will enhance the wastewater system, safeguarding the Cowichan River. The funding will support the expansion of the wastewater treatment facility, enhancements in lagoon aeration, and the implementation of phosphorus removal and disinfection processes. All of these upgrades are essential for ensuring strict compliance with water quality standards in order to protect our environment and the well-being of the community. By investing in infrastructure, the Government of Canada is growing our country's economy, building resilient communities, and improving the lives of Canadians. "As we enter the final phase of the upgrades, our government remains committed to supporting infrastructure projects in Lake Cowichan that safeguard our water supply from environmental threats and promote sustainable wastewater management. We will continue investing in infrastructure that contributes to a brighter and promising future for our environment and communities." *– The Honourable Sean Fraser, Minister of Housing, Infrastructure and Communities*

Quick Facts

- The Government of Canada is investing $4,053,600 in this project, while the Government of British Columbia is investing $3,377,662. The Town of Lake Cowichan is contributing $2,702,738.
- The Government of Canada's funding comes from the Green Infrastructure Stream of the Investing in Canada Infrastructure Program.
- This stream helps build greener communities by contributing to climate change preparedness, reducing greenhouse gas emissions, and supporting renewable technologies.

- Including this announcement, 82 infrastructure projects or project bundles under the Green Infrastructure Stream have been announced in British Columbia, with a total federal contribution of more than $392 million and a total provincial contribution of more than $243 million.
- Under the Investing in Canada Plan, the federal government is investing more than $180 billion over 12 years in public transit projects, green infrastructure, social infrastructure, trade and transportation routes, and Canada's rural and northern communities.
- Infrastructure Canada helps address complex challenges that Canadians face every day—ranging from the rapid growth of our cities, to climate change, and environmental threats to our water and land.

Check out these articles about **Project 84,000** in local and national media:

https://bc.ctvnews.ca/community-mourns-thousands-of-fish-lost-as-b-c-drought-risk-looms-again-1.6878222

https://vancouversun.com/news/local-news/community-mourns-lost-fish-as-bc-drought-risk-looms

https://www.nationalobserver.com/2024/05/08/news/vancouver-island-community-mourns-fish-lost-bc-drought

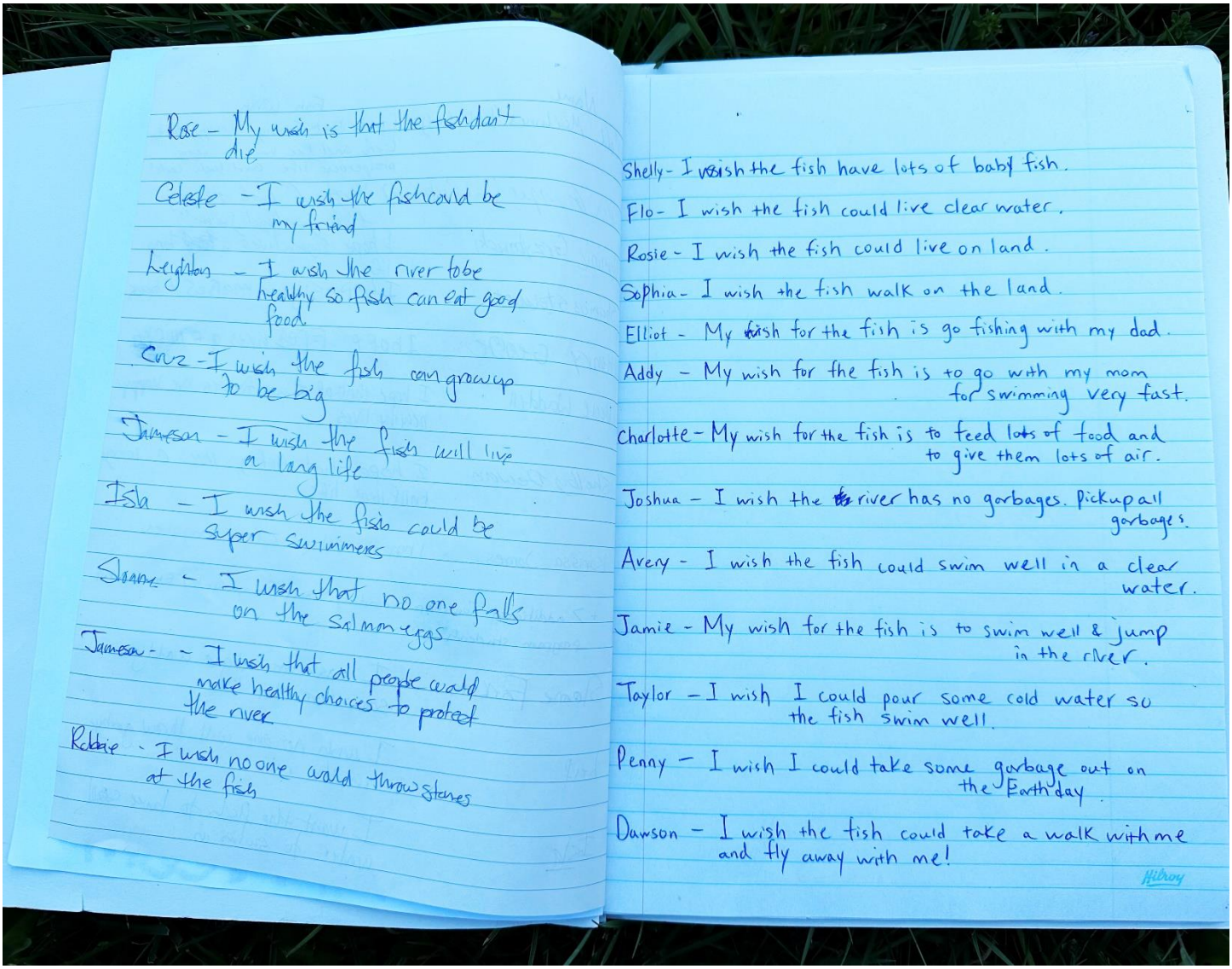
This is the shorter version of the article run by CBC:

https://www.cbc.ca/news/canada/british-columbia/drought-risk-fish-die-off-1.7197525

Here is the link to The Discourse article by Shalu Mehta published April 18, 2024

https://thediscourse.ca/cowichan-valley/community-project-honours-84000-fish-that-died-in-cowichan-river

… and I know you have this, but here is a handy link to our Project 84,000 site:
https://onlineacademiccommunity.uvic.ca/xwulqwselu/2024/03/84000/



From Fish Wish Book words collected from pre-school children at the Shawnigan Montessori Preschool, May 2024

Project 84,000 Groundwater Science Fact Sheet

The Importance of Water Temperature in a Healthy Environment for Fish

Fish that move through the Quw'utsun Sta'lo' can only survive within a specific range of conditions, including water temperature. The warm river temperature in July 2023 was one of several factors that contributed to the fish deaths.

What affects the temperature of a river and its tributaries (streams and creeks)?

Stream water temperature varies by the amount of energy coming from the sun, air, and materials in the streambed. The source of the water also affects the water temperature:

- ***Groundwater*** enters a stream from underground.
- ***Surface water*** enters a stream or river as snowmelt or rain.

Groundwater stays consistently cool. It is usually around 10ºC. ***Surface water*** is sometimes warm, sometimes hot, and sometimes cool. The temperature changes depending how long the water has been receiving heat from the sun above, from rocks below, and from rain draining and falling into the river. In sunny and shallow spots, surface water can get as warm as 20ºC.

Stream water is often a mix of groundwater and surface water, but sometimes it is only one or the other. Surface water and groundwater connections vary at different locations along the stream and seasonally.

Think of the stream (or river) having two taps of water flowing into it: a groundwater "cold" tap and a surface water "warm" tap. Imagine you could control the water coming from the taps, like you would when preparing a bath. If you only turn on the hot water tap, the bath would be too hot. When you add cold water, it mixes with the hot water and cools the tub down to a comfortable temperature.

Imagine stepping into a stream in the summer in a few different places where it is safe to stand.

How warm or cool is it?

- Where the water is cool, it is likely there is more groundwater than surface water in it.
- Where the water is warm, it is likely there is more surface water than groundwater in it.

Why does river water stay cool in some places when it's hot outside?

When snow has melted and rain has stopped falling in spring or summer, it's like the surface water "warm tap" has turned off. Snowmelt and rainwater that has already fallen will continue to move downstream (or be used by plants and animals) but no more water

from that “tap” will be added to the river until the next rain. When a stream is cool in the summer, it’s likely that only groundwater is flowing into the river at that spot.

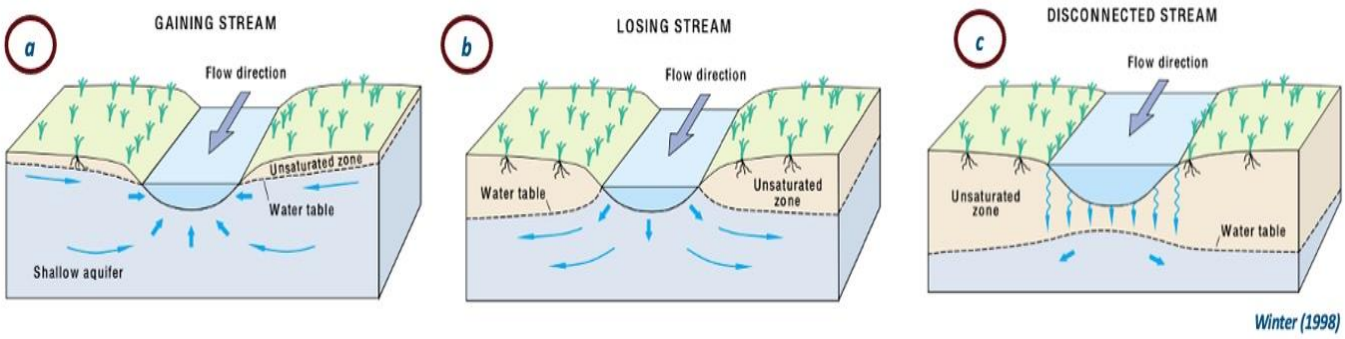
Why is stream water warm in some places in the watershed?

Groundwater doesn’t always have a way to flow into a stream. There may be rocks or other materials that prevent groundwater from reaching the stream. The water table may also be lower than the streambed. When there is no groundwater flowing into a specific place along a stream, it’s like the “cold tap” is off there. Once all the surface water has drained past that point, the stream goes dry.

Can the amount of water we draw from wells impact water temperature and streamflow?

Yes! Pumping water from wells can lower the water table and change a gaining stream into a losing stream or a disconnected stream.

- A *gaining stream* has more water flowing into it than out. It is gaining water from the ground.
- A *losing stream* has more water flowing out than in. It is losing water to the ground.
- A *disconnected stream* is not in contact with groundwater anywhere along its course.



Winter, T. C. (2000) Ground water and surface water: a single resource. Diane Publishing.

A stream can be gaining in one place and losing or disconnected in other places along its course. That relationship can change by season, too! The mix of groundwater and surface water – and the volume of water – can change meter by meter and day by day along streams and rivers. That’s why it’s important to look for general patterns in data by place and time and understand how much water we use.

In general, gaining streams only change temperature by 1-2ºC. The temperature stays fairly consistent because cool groundwater has a moderating effect. The temperature of losing streams can swing up or down by about 5ºC. It takes a lot of energy to heat up water, so a five-degree change is a BIG change!

Since disconnected streams only have surface water flowing in them, it's as if only the "warm tap" is turned on. Disconnected streams might be gushing with surface water from rain and snow melt in early spring, but that flow slows down through the late spring and summer. The water that remains gets warmer as it is exposed to the sun. The water temperature climbs higher until the water is gone.

How warm or cold is water in the Xwulqw'selu Sta'lo' (Koksilah River)?

How does this compare to streams that flow into the river?

Scan the QR code to view a map of the Xwulqw'selu watershed prepared by PhD candidate Kristina Disney. https://kdisney.shinyapps.io/test3_addtemp/

Click on a yellow circle to open a line graph of water temperature at that site.

Notice how the water temperature has changed in that place over the summer and as compared to 2021 and 2022. *Note: This is a sneak peek! Kristina continues to refine the map and update data in the graphs. Please be patient; it may take a moment for the page to load.*

Why is it important to understand the connection between groundwater and stream temperature?

By observing, making connections and learning, we can all make decisions about water use and land use that impact the health of watersheds – including fish and their habitat – today and in the future.

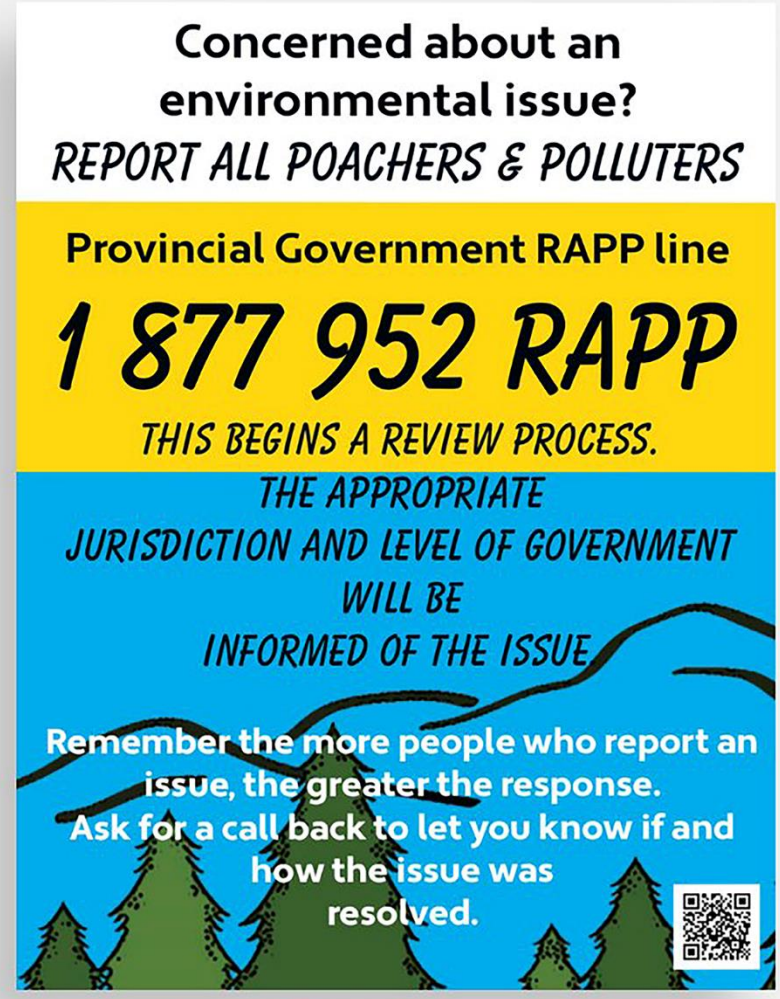
Would you like to monitor stream temperature in Koksilah creeks this summer?

Join a Stream Team! Have fun visiting with the watershed, meeting people, learning and making connections you'll never forget. For more information, contact:

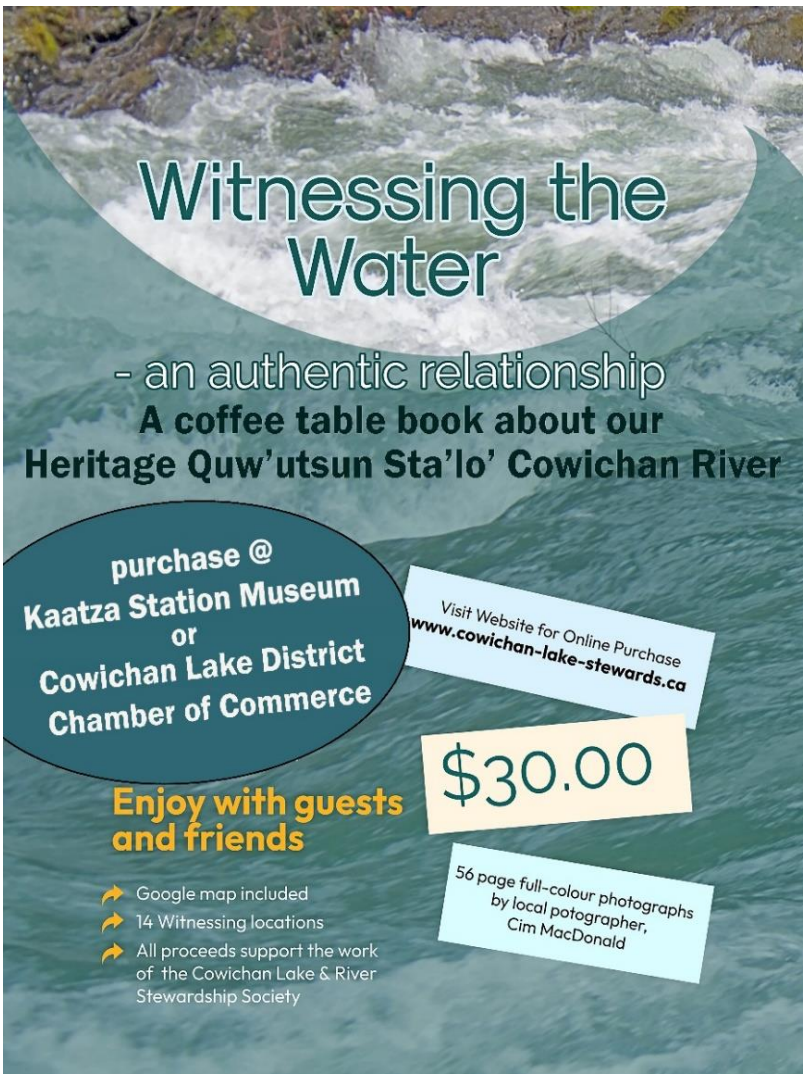
Jennifer Shepherd, Community Researcher, Xwulqw'selu Connections

(236) 800-9011 jshepherd@uvic.ca

Please call this number directly when you see



anything that concerns you!



Witnessing the Water
– an authentic relationship

Find your copy at Kaatza Station Museum, Cowichan Lake District Chamber of Commerce, Volume One Books and Ten Old Books in Duncan and online at [W the W | Cowichan Lake & River (cowichan-lake-stewards.ca)]

What readers are saying about the book:

"I just want to tell you this is a magnificent book about our river…it's such a beautiful tribute to this ancient life-giving, sacred water.

Check this out!

Witnessing the Water
YouTube video *thanks to Parker Jefferson*

https://youtu.be/MsQ5wPjlEjI?si=CyNo_n-17lwpVWuM