



Cowichan Lake & River  
Stewardship Society

## December 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.

CLRSS will be emailing member newsletters every six weeks. Thanks to contributions from members: Judy Brayden (editor), Jacqueline Sherk, Dianne Flood, Jean Atkinson, Maureen Qusted and many others. Any questions, comments or feedback please see [Home | Cowichan Lake & River Stewardship Society British Columbia \(cowichan-lake-stewards.ca\)](https://www.cowichan-lake-stewards.ca)

**NOTE: No CLRSS meeting in December – have a marvelous seasonal break with your loved ones!**

**Our next regular Board meeting is Thursday, January 9, 2025  
at 6:30 – VIA ZOOM**

**Watch for Zoom link announcement  
Everyone welcome!**

**We need your support!**

### **What is the Thrifty Smile Card fundraiser all about?**

Thrifty Foods has a program for non-profit organizations that generates funds for those groups. CLRSS sells “Smile Cards” that you can use to buy your groceries in Thrifty Foods stores. The charity gets a discount on the purchase price of the cards and the difference becomes a donation to that group.



Smile cards can be purchased in any amounts, but cards are usually ordered in denominations of 1,000, 500, 200, 100, or 50 dollars.

On behalf of CLRSS, Maureen Quested always purchases at least \$4,000 worth of cards to receive the maximum discount of 6%. She then pays that amount, \$240 to CLRSS. It is an easy to administer with no cost to CLRSS.

Please consider ordering one or more cards. Contact Maureen Quested at [mquested@shaw.ca](mailto:mquested@shaw.ca) or 250 478-7595 for info.



Your bottle and can return money can also go to CLRSS at Duncan *Island Return It...*

Just say **code 484**. With thanks!

### **In this Edition:**

**Weir Waiting Patiently!** by CWB consultant, Tom Rutherford – all you need to know to be “up to speed”!

**Water sampling update** by Dave DePape

**Gifting a Membership to CLRSS**

**Turning to Native Ferns** by Judy Brayden – we begin a series of articles about native ferns that CLRSS will be incorporating into a new fern garden by the Kaatza Museum

**Purchasing a unique Christmas gift** - Witnessing the Water – an authentic relationship, 56-page full colour coffee table book for your friends and neighbours

## Cowichan Weir Update – “hot off the press” by CWB staffer, Tom Rutherford

Work continues towards the construction of a new weir at the outflow of Cowichan Lake. Here’s a quick reminder of why this is important – and an update on how things are going with this important *climate change adaptation project*.

### The Background:

- The existing Cowichan weir was constructed in 1957 and is no longer capable of storing enough water to provide ecological flows for the river as snowpack diminishes and our summers become hotter and drier.
- To “keep our river alive” massive electric pumps have had to be deployed twice over the past 5 years and in 2023 there was a massive fish kill linked to a complex mix of low flows, inadequate sewage dilution, high temperatures and algae growth.
- We need a new, higher weir to ensure a healthy river – and a healthy community – for future generations.

### The Project:

- An inclusive, collaborative Water Use Planning process carried out in 2018 called for a new weir with 70 cm of additional storage to mitigate the effects of climate change and loss of snowpack (nature’s natural storage).
- Funded by a joint Federal/Provincial grant to the CVRD, Stantec Inc. has designed a new weir with enhanced fish passage and safety features.

### The Challenges:

- To move ahead with this project a number of challenges need to be addressed
  - Cost of construction – as with all major infrastructure projects, construction costs have increased significantly over the past few years and, although federal and provincial funding is now in place, there is still a shortfall that needs to be addressed.
  - Issues associated with ownership, Licensing, permitting and ongoing operation costs all have to be resolved before construction can begin.

### Recent Progress:

- Cowichan Tribes have indicated a willingness to assume ownership of the new structure and the conservation license and are currently at the table negotiating

with the province of BC around how to share the responsibilities associated with this.

- A technical working group table including representation from Cowichan Tribes, CVRD, Province of BC, Domtar (mill owner) and Cowichan Watershed Board are meeting bi-weekly and making good progress on the detailed work associated with preparing a conservation license application, necessary permitting and clearly defining what ongoing costs of operation are likely to be.
- Both the Federal and Provincial governments remain committed to moving this project forward to provide a sustainable future for our salmon, our river and our community.
- The bottom line is that things are moving forward on all fronts with an expectation of completing the license application and all permitting in 2025 with the 2-year construction phase beginning in 2026.

# Cowichan Lake Shoreline Assessment

## What are we talking about?

### Why are we doing a Shoreline Assessment?

The Shoreline Assessment will determine the potential impacts to the Cowichan Lake shoreline due to a higher weir. Water will be stored earlier and at a higher level than in the past.

This assessment will be used to guide the response and approach of the Province of BC in approving a water licence and any responsibilities of a future licence holder to those property owners where effects may be projected.



### Present Natural Boundary 2020

The Present Natural Boundary 2020 (the physical natural boundary) was established for this project to inform the analysis of future impacts to the shoreline resulting from the increased height of the weir. This work is NOT being done to define the legal natural boundary which is used to establish property boundaries.

A natural boundary is determined by the presence and action of water as well as the soil type and slope of the land. Differences in wind, waves, gravel, sand, soil, vegetation and grade/slope around the lake will alter the location of the natural boundary depending on where you are on the lake.

The Present Natural Boundary 2020 was defined by Gazette Land Surveying Inc. using standard land survey practices and the BC Land Act definition: "natural boundary" means the visible high water mark of any lake, river, stream or other body of water where the presence and action of the water are so common and usual, and so long continued in all ordinary years, as to mark on the soil of the bed of the body of water a character distinct from that of its banks, in vegetation, as well as in the nature of the soil itself.

### Future Natural Boundary

This part of the project will be modelled and assessed over the next 6 months. Factors that will be taken into account include the new weir height, soil and vegetation, wind and wave energy, and climate change. The Future Natural Boundary will be presented as part of the project outcome in April 2022.

### Supply

Supply is the amount of water in the lake that is held back by the weir. When the gates in the weir are closed, and the water no longer flows over top of the weir, the water left in the lake is the water supply.

### Existing Weir Crest - Full Supply Level

The full supply level of the existing weir is the water's edge when the lake level is at the crest of the existing weir. The water elevation at full supply level is 162.65 m.

### Proposed Weir Crest - Full Supply Level

The full supply level of the proposed weir is the water's edge when the lake level is at the weir crest. The water elevation at full supply level of the proposed weir is 163.35 m. This represents a 0.7 m rise.

### Cowichan Lake Floodplain Boundary

The Flood Plain Boundary is defined in the Cowichan Lake Provincial Flood Mapping dated 1984, confirmed in 2019 and is used for land use regulations.

The boundary defines the area that can be expected to flood, on average, once every 200 years. This is called the 200-year flood. A 200-year flood can occur at any time in any given year, however the likely hood of it happening in this area is 0.5%. Raising the weir height does not in any way impact this boundary. The Cowichan Lake Floodplain Boundary is at a water elevation of 167.53 m.

### Parcel Boundary

The Parcel Boundary is a representation of the legal boundaries based on plans prepared by BC Land Surveyors and registered in the Land Title and Survey Authority.

### Water Levels

The water levels for Cowichan Lake are measured at the Government of Canada's 08HA009 Station located on the most easterly point of Cowichan Lake. Lake measurements have been recorded throughout the day since the 1950s.

[wateroffice.ec.gc.ca/report/real\\_time\\_e.html?stn=08HA009](http://wateroffice.ec.gc.ca/report/real_time_e.html?stn=08HA009)

### Average Annual High Water Level

The Average Annual High Water Level for Cowichan Lake is the average of the lake's highest recorded water level each year averaged over 67 years (from 1953–2020). The Average Annual High Water Level is a water elevation of 164.2 m.

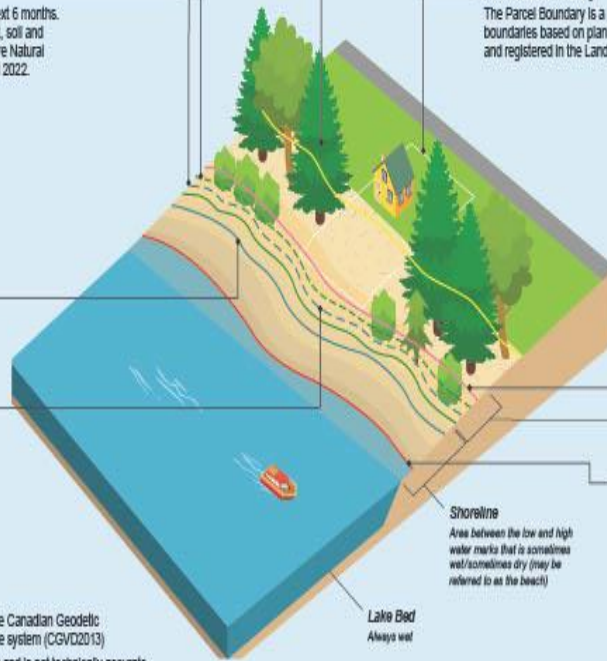
### Riparian Area

The area between the lake and the land made up of lush, green, moisture-loving vegetation that surrounds the lake.

### Minimum Licensed Lake Level (with pumping)

If water levels lower to a point at which it is necessary to use the pumps to transfer water from the lake to the river, the Minimum Licensed Lake Level is the lowest water elevation that may be reached. After this, no more water may be transferred from the lake without approval. The Minimum Licensed Lake Level is a water elevation of 161.00 m.

★ 2020 had the lowest lake level on record. To maintain minimum water levels in the Cowichan River, water was pumped from the lake down to a water elevation of 161.93 m. Low water levels affect the use of docks and boats, vegetation, and fish. The goal of the new weir is that there will be sufficient water in storage without the need to pump (though the capability will still be there).



NOTES: All elevations are based on the Canadian Geodetic Vertical Datum of 2013 height reference system (CGVD2013).  
Graphic is for illustrative purposes only and is not technically accurate.

## Water sampling update by Fisheries Biologist and CLRSS Board Member, Dave DePape

How do we prevent another massive fish kill in the Cowichan River?

To understand the state of the lake and river, a solid analysis of the system's chemical composition is needed. The Cowichan Watershed Board (CWB), with grant funding from the province of BC, sponsored a study to gather and analyze the data, which will be key in directing efforts of many parties going forward.



The CWB, with input from a variety of organizations designed the study, with Dave DePape being retained to manage the sample collection and the many volunteers involved.

Twenty-two volunteers donated 330 hours of their time, with staff of CVRD, Ministry of Environment and CWB filling in as there were insufficient volunteers. CLRSS volunteers included the Cam McCauley family, Roy & Marian VanWieren, Bee Greenway and Sandy Cumming.

Samples were taken on 10 days: 5 last summer, and 5 after the rains arrived this autumn in order to capture changes once flushing flows arrived in the fall.

An extensive 16 sites were chosen. 6 Sites were sampled by boat: 1 on Bear Lake, 2 on the South Arm of Cowichan Lake, 3 on the North Arm. From shore: 1 at Shaw Creek; 3 at creeks on the south shore of the Lake; 6 sites on the Upper River from Just Jakes to Stolz Pool; 6 sites from Sandy Beach to the confluence of the Lower River and Somenos Creek.

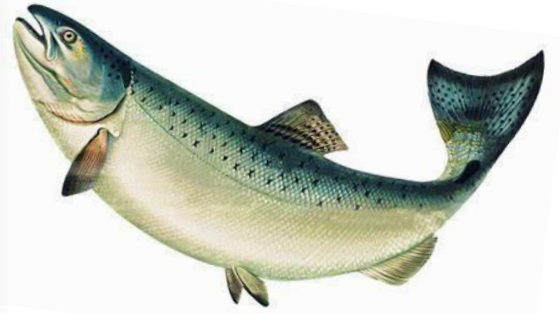
Sincere thanks to the dedicated volunteers whose efforts in a variety of weather, road & water conditions made this important project possible.



Sandy Cumming seen here with YSI monitor and below with water sample



*Thank  
you!*



## Gifting a Membership to CLRSS

### **CLRSS** has a gift idea for you!



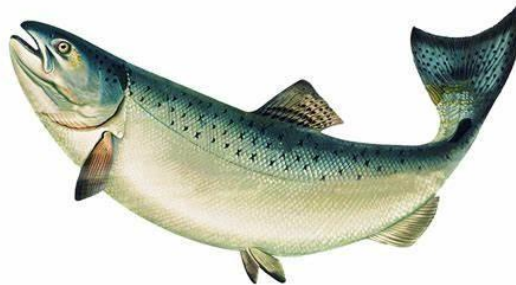
Because you know friends and family who love and care about the Cowichan watershed, **why not gift them a single year membership to the Cowichan Lake and River Stewardship Society?**

For a \$10 purchase you can introduce a friend or neighbour to CLRSS watershed activities, news updates, important river flow information, socials, hands-on stewardship opportunities, plus much more.

Simply visit our website, [Home | Cowichan Lake & River Stewardship Society British Columbia](#), choose **Gifting a**

**CLRSS Membership** and purchase a gift certificate that will be emailed to you. It will contain a link for the new member to complete the important membership information. New members will receive membership benefits as soon as they complete the form. The life of this gift promotion is April 1, 2025, to March 31, 2026.

*Thank  
you!*





## Turning to Native Ferns...

CLRSS members Lois Atchison and Jacqueline Sherk are busy planning a fern garden addition to the GTMNP Garden. Ferns to be planted around the Kaatza Museum. Thanks!



We begin our fern series with the very common and hardy **Western Sword fern**

Polypodiaceae -

Hul'q'umi'num' name: Sthxelum from *Luschim's Plants – Traditional Indigenous Foods, Materials and Medicines, Harbour Publishing Co., 2021 and Wikipedia*

The preferred habitat of this fern is the understory of moist coniferous woodlands at low elevations. It grows best in well-drained, acidic soil of rich humus and small stones. It is very resilient and survives occasional droughts, but flourishes only with consistent moisture and it prefers cool weather.

In cultivation, it also responds well to regular, light fertilization. While this fern is a favored horticultural subject in western North America, it has proven difficult or impossible to cultivate satisfactorily in the eastern part of the continent.

From *Luschim's Plants*: This is a very sacred plant, used ceremonially by Coast Salish peoples. Luschim describes it (sthxelum) as the one that grows in clumps...it's used all year round, including the winter dance.' He continues, 'Probably in January, depending on the elevation, maybe even December, you go to that big clump, you dig in there and you get the fiddleheads. That's good. But once you can see them in that clump, it's too late. Yeah, you just dig into it. You eat that, yes. Nice and juicy. If you're a little bit too late, it gets kind of hairy. Yes, also used by the st'alkwlh non-dancers. It's used for thul'shutun, something like a foot mat, a mat for your feet, when you go to kw'aythut (bathe). You get that and lay it (down); that's what you're going to step on, on the ground. When you finished, you're supposed to take those ferns (and) put it where the wind can catch it, in the branches...so the wind will cleanse off whatever you've wiped off around there.'

Coast Salish people of B.C. and Washington state use this plant as a pain reliever. When applied directly to the area where pain and inflammation occur, according to Della Rice

Sylvester, an elder and medicine woman of the Cowichan tribe, the sword fern 'takes the pain away!'. This traditional use has spread among the hiking communities and youth scouting organizations of the region, where it is a common piece of hiker's lore that a rash from a stinging nettle can be counteracted by rubbing the spores on the underside of sword fern on the area.

Luschim notes that the shoots could be used as food. He had heard of sword fern fronds being used in pit-cooking but has never used them himself; he would use bigleaf maple leaves, bracken fern and fireweed.



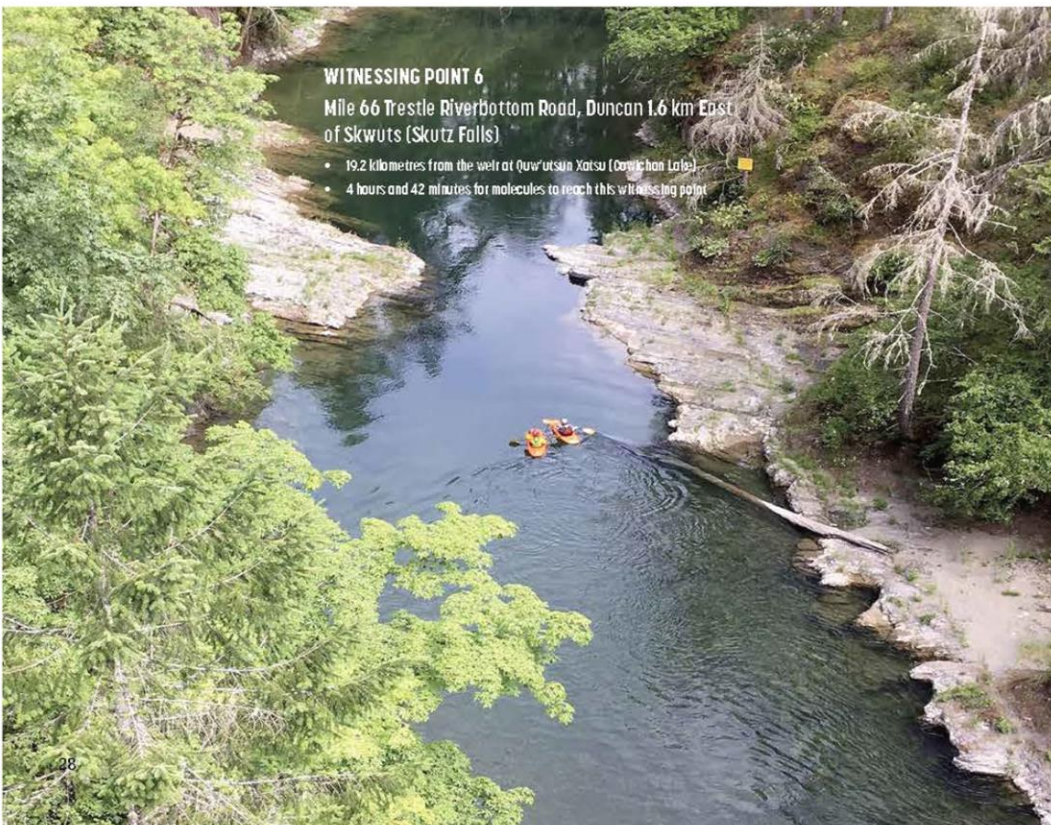
A very hardy and happy addition to any shade garden



# The Cowichan Lake and River Stewardship Society

has another gift idea for you!

Because you know how important our Quw'utsun Sta'lo' Cowichan Heritage River is to our community, why not gift friends and family a copy of *Witnessing the Water – an authentic relationship*, a 56-page, full colour book that includes a map of the entire river with 14 public access points highlighted for ease. Experience the whole watershed in all its beauty. Includes wise words from 14 river stewards and a personal dedication by David Suzuki!



*"Late one night in 1998 my husband Dave, our young family, and I rolled into the drive of our rental cottage after moving across the province. We woke to see and hear the Quw'utsun Sta'lo. I fell in love with it. My heart was home. After all these years, I sense that I am walking in Indigenous footsteps. I hear the land and the water speaking to me...this sacred place, home to Quw'utsun Mustimuhw since time immemorial."*

Genevieve Singleton



Books are on sale at the Kaatza Museum, the Chamber of Commerce kiosk in Lake Cowichan, Volume One Books and Ten Old Books in Duncan or by contacting judybrayden@shaw.ca (250) 701-0570 to arrange a personal delivery.

**\$30 - single book- 5 or more \$25 each**