

Koksilah Community Info Night

Hosted by: Koksilah Low Flow Working Group

Date: April 29, 2024

Virtual Meeting Summary

The welcome, introductions, and presentations were recorded and are available to attendees here:

https://us06web.zoom.us/rec/share/5xzuaWqc5wiMeomv7inZkNMfZ3Q2G9eAh2xGCBkUGMmkleM71S589NBnp_qxSvoq.Q5ZiuA_8glGWH_Ou

Facilitators:

Alison Nicholson (Cowichan Watershed Board, CVRD Area Director, Koksilah Working Group)

Cali Melnechenko (Ministry of Water, Land and Resource Stewardship, Water Resource Manager for West Coast Region)

Presenters:

- **Larry George** (Lulumexun Lands and Governance Manager, Cowichan Tribes First Nation, Xwulqw'selu Watershed Project Government to Government Representative.)
- **Natasha Overduin** (Xwulqw'selu Watershed Project, Joint Executive Director for the Government to Government partners)
- **Ben Vanden Dungen** (Koksilah resident, dairy producer)
- **Sean Staplin** (Ministry of Water, Land and Resource Stewardship, Water Authorizations Section Head, West Coast Region)
- **Kristina Disney** (Xwulqw'selu Connections, University of Victoria hydro-geology PhD researcher)

of Attendees:

117 joined by zoom (some duplication; some multi-person connections; estimated actual ~90)

140 registered through event website ([link](#))

Meeting began at 7pm.

Welcome

- Larry George offered words of welcome and context from his perspective as a Cowichan Tribes community member.

Introductions

Alison and Cali introduced the format of the meeting, the history and purpose of these community information sessions, and the guest speakers (listed above).

Presentations

[A video recording of the presentations is available [here.](#)]

1. Overview of water/watershed issue: Kristina Disney, Xwulqw'selu Connections Research Leader
2. What is being done in the short term? Sean Staplin, BC Government, Water Authorizations branch; Ben Vanden Dungen, Koksilah area dairy farmer
3. What is being done for the longer term? Larry George, Xwulqw'selu Watershed Planning (XWP) Government-to-Government Table member (Cowichan Tribes) and Natasha Overduin, XWP Executive Director. (www.koksilahwater.ca)

Questions and Answers

[Note that resources referenced can be found on page 4; questions not addressed during the meeting were subsequently addressed by KLFWG members - see page 6]

Q: *List your confirmed sources of climate change?*

A: Alison – There is much scientific data that is being used in projects in the Koksilah. CVRD has climate projections specific to Cowichan (link provided on the next page).

Q: *a) Can you please speak to how discussion about forestry will occur?*

b) Has there been any discussion regarding urgent changes to the forestry industry within the Koksilah watershed?

A: Larry – There are connections between forestry and the watershed. Early discussions are underway with Mosaic, a significant company within the watershed. There will be more meetings and we will continue to gather information that's usable for everyone involved.

Q: *During the irrigation restrictions in 2023, were the vineyard, concrete plant and other non-irrigating businesses issued orders as well?*

A: Sean - Orders were issued to multiple water use purposes, including forage and industrial users. Analysis was done to minimize impacts to the economy and maximize returns to the river.

Q: *a) Why are all the test wells clustered so close together?*

b) Do you have water level testing into the various aquifers that lie within the Koksilah and underlie other adjacent watersheds?

A: Cali – Two of the observation wells are nested together, monitoring 2 separate aquifers. One other observation well is in close proximity to the river.

Sean – There are observation wells across many areas of the province. Would be nice to have more wells. Challenging to get more. More would be better.

Q: *Is there precipitation monitoring happening now in the watershed or just WSC gauges?*

A: Cali - No provincially operated precipitation station in the watershed. Nearest is Shawnigan watershed. We are looking at installing one in the Koksilah watershed. [Editing clarification: Shawnigan weather station operator has retired and is not currently operational.]

Q: *How does this plan protect the Koksilah/Cowichan River Estuary?*

A: Alison – The Cowichan Estuary has its own environmental management plan adopted by order in council #1652

Natasha – clarified that the estuary is not within the Xwulqw'selu Water Sustainability Plan area.

Q: *How can your everyday person help? What are the ways we are asking citizens to be part of the solution?*

- A: Natasha – Koksilah has a strong sense of community. It’s why WSP is happening here. There may be a community monitoring project developed. Other stewardship projects are underway. Sean – stay informed, check the drought information portal (see next page), and as drought levels escalate, conserve water use. Helps in the short term. Kristina – understand that your water use has a big impact on close neighbours, i.e., wells that are hydraulically connected to each other. Restoration work is coming down the line. Some will be accessible on smaller scales – volunteer/training opportunities. Spend time by the stream & smaller water bodies. Notice changes, entwine your life with the river.
- Q: *In the planning process is consideration given to help farmers transition to types of farming that require less water, going from forage and livestock to lower water use crops?*
- A: Larry – yes, there are some initiatives – e.g. Farmland Advantage. Natasha – we understand it’s not that easy to transition. What does it look like? Can we support it? Need to understand practical feasibility and timelines for switching crops. Ben – there have been programs like this before, but not currently. Dairy farms have been closing at an alarming rate. Prices have never been higher.
- Q: *Can Ben give us a bit more information about what farmers are finding easiest/less expensive/fastest ways to preserve/retain water?*
- A: Ben – There aren’t any easy solutions. Solutions are cost intensive and there are other hurdles. Dugouts and efficient irrigation systems have been great ways to preserve and retain water. Keep pushing for funding as it’s expensive.
- Q: *My understanding from Kristina's presentation is that Mosaic's current land management practices (growing and cutting almost exclusively "teenage" trees and maintaining lots of logging roads and ditches) is likely causing a substantial water deficit in the summer. Is this an accurate interpretation of Coble's findings, which you displayed with the graphics?*
- A: Kristina Disney [Editing note - this is a written response provided by Kristina following the call.] The examples shown in the presentation were used to provide a series example for community members to understand how different processes can affect a watershed. For Coble et al. (2020) the paper identifies “three distinct periods of expected low flow responses as regrowth occurs following forest harvest: in the first period an initial increase in low flow can occur as replanted stands regenerate, in the second period low flow is characterized by mixed and variable responses as forests become established, and in the third period, which follows canopy closure, low flow declines may occur over long timescales.” This study gives insight into changing water demands of trees with age but right now it is too early to make the direct connections to this or other published research. There is robust evidence of persistent decreases in low flows in small, paired catchments but ambiguous evidence of low flows changes in large catchments with multiple tree ages.

Coble, A. A., Barnard, H., Du, E., Johnson, S., Jones, J., Keppeler, E., ... & Wagenbrenner, J. (2020). Long-term hydrological response to forest harvest during seasonal low flow: Potential implications for current forest practices. *Science of the Total Environment*, 730, 138926.

Wrap-up

Thank you for attending. Any questions we didn't get to will be addressed in the follow-up notes which will be circulated to all registrants.

Co-Chairs and Presenters Contacts

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Links and Resources

Hul'q'umi'num' place names (in the original language of the area)

Hwsalu-utsum (Koksilah ridge)
Xwulqw'selu (Koksilah river)

Cowichan Watershed Board (including description of Koksilah Low Flow Working Group)

<https://cowichanwatershedboard.ca/koksilah-watershed/>

Cowichan Tribes First Nation

<https://cowichantribes.com/about-cowichan-tribes>

Xwulqw'selu Watershed Planning (XWP) Project

<https://www.koksilahwater.ca/>

Sign up for updates here: <https://www.koksilahwater.ca/updates>

Collaborative Community Advisory Table member list.

https://www.koksilahwater.ca/_files/ugd/5703ba_39926bdb6eec48dfa57c236eb0c0e826.pdf

Contact the Planning Team: contact@koksilahwater.ca

Xwulqw'selu Connections Project, University of Victoria

<https://onlineacademiccommunity.uvic.ca/xwulqwselu/>

Join a Streamflow monitoring team. Email: jshepherd@uvic.ca

Cowichan Valley Regional District

Climate projections.

<https://www.cvrld.ca/DocumentCenter/View/81884/Climate-Projections-Report?bidId=>

Watershed Atlas. Includes aquifer mapping, well locations, Environmentally Sensitive Areas, and hazard areas. <https://www.cvrld.bc.ca/2160/Watershed-Planning>

The New Normal <https://cvrdnewnormalcowichan.ca/>

B.C. Ministry of Water, Land and Resource Stewardship

Report to determine whether the Fish Protection Order of 2019 had a positive impact on Koksilah River flows. <https://a100.gov.bc.ca/pub/acat/public/viewReport.do?reportId=58654>

Drought Information Portal

<https://www2.gov.bc.ca/gov/content/environment/air-land-water/water/drought-flooding-dikes-dams/drought-information>

BC Water Resources Atlas. <https://maps.gov.bc.ca/ess/hm/wrbc/Xwulqw'selu>

Watershed Planning site. <https://www.koksilahwater.ca/planning>

Provincial Observation Well Network.

<https://governmentofbc.maps.arcgis.com/apps/webappviewer/index.html?id=b53cb0bf3f6848e79d66ffd09b74f00d>

Environment Canada / Water Survey of Canada

https://wateroffice.ec.gc.ca/mainmenu/real_time_data_index_e.html

Search by Station name: Koksilah

Koksilah Working Group (Cowichan Station Area Association)

<http://www.koksilahwatershed.org>

Email: koksilah@cowichanstation.org

Facebook Group (public): [Koksilah Watershed](#)

B.C. Ministry of Agriculture and Food – water-related funding programs

[Beneficial Management Practices \(BMP\) Program](#)

Email questions to: bmp@iafbc.ca

[Agricultural Water Infrastructure \(AWI\) Program](#)

Email questions to: awi@iafbc.ca

Vancouver Island University - Cowichan Campus: Agriculture Workshop Series

VIU-Cowichan is offering a variety of one-day climate adapted farming/gardening practices workshops for anyone interested. Generally ~\$30 each. [Agriculture Workshops](#)

Tips for Reducing Outdoor Water Use in Residential Gardens

Drought Tools for Home

<https://cverdnewnormalcowichan.ca/drought-smart/drought-tools-for-home/>

Water Wise Summer Video (residential) https://www.youtube.com/watch?v=I6_ETR5tN50

Additional Questions Asked during Community Meeting

Questions (Copied from Chat)	Response from Low Flow Working Group
Do you have water level testing into the various aquifers that lie within the Koksilah and underlie other adjacent watersheds?	Cali: There are 5 observation wells in the Koksilah watershed that monitor water levels in Aquifers 197, 198 and 199. See the Provincial Observation Well Network website for all provincially operated observation wells.
Natasha, I AM so happy you have decided to ask the GRANDMOTHERS, Who is advising you thus far?	Natasha: The Xwulqw’selu Watershed Planning process is advised by a Xwulqw’selu Cowichan Guidance Table (comprised of Quw’utsun Mustimuhw), a Collaborative Community Advisory Table, and a Government to Government table. Learn more here. https://www.koksilahwater.ca/
Has there been any discussion regarding urgent changes to the forestry industry within the Koksilah Watershed? In the long term, I would hope that the provincial government is considering purchasing, restoring, and protecting the	Alison: There is a Forest Working Group within the Xwulqw’selu Watershed Planning process that will address forestry related questions like this in the coming year(s). Learn more here. https://www.koksilahwater.ca/

<p>areas of the watershed currently owned by forestry companies. In the short term, it seems that clear cutting within the watershed should no longer be allowed to try to preserve and manage the release of what snow pack we do receive.</p>	
<p>What is you L.and A.ir Water of "ONE" Quantum Systems program?</p>	<p>Apologies, we didn't understand this question.</p>
<p>In the planning process is consideration given to help farmers transition to types of farming that require less water going from forage and livestock lower water use crops ?</p>	<p>See Ben's reply to the question above. Bejay: The BC Ministry of Agriculture and Food supports agriculture in climate affected areas through funding opportunities and programs such as the EFP/BMP program, Farmland Advantage, and is developing new local initiatives on irrigation efficiency, alternative forage crops, and dry farming.</p>
<p>Are there any studies or data that shows the farmers shutting off their water last year saved any fish ??</p>	<p>Cali: Fish population survival thresholds are based, in large part, on habitat availability for a particular fish species. Maintaining flow above this threshold means that habitat critical to maintain a population of fish will remain available. The species in the Koksilah River during the low flow period are in their rearing and juvenile life stages. It can be inferred that if habitat remains available fish will survive.</p>
<p>What does this mean for undeveloped ALR land within the Koksilah ? There has been a lot of discussion on existing farms and farmers, but what about new farms within the watershed? Provincial grants etc are only open to farms in production. How can new farms start without water ?</p>	<p>Cali: There is not sufficient water in the Koksilah Watershed to meet environmental flow needs and existing water demands during the dry season. Unless mitigation measures can be put in place to avoid any additional impacts to stream flow and/or existing water users it is unlikely that a new water licence would be issued. Before establishing a new farm in the Koksilah watershed, water supply options should be strongly considered. The long term Water Sustainability Planning process may modify how water is managed within the watershed. The work to evaluate management options is just beginning and will require public participation and input. Community members are encouraged to participate in information sessions and reach out to Collaborative Community Advisory Table members (links above) to share their interests and concerns.</p>
<p>I may have missed this, but is there recent river water testing data? Meaning, the chemicals</p>	<p>Jeff: The Cowichan Valley Regional District conducts water sampling three times per year at four locations in the Koksilah watershed. Results are available on the provincial</p>

<p>present or not present.</p>	<p>EMS system https://www2.gov.bc.ca/gov/content/environment/research-monitoring-reporting/monitoring/environmental-monitoring-system</p> <p>Jill: The Cowichan Watershed Board completed Water Quality testing in the lower Koksilah in 2022. Find the report here. https://cowichanwatershedboard.ca/water-quality-target/ Also watch that page for a map of all known WQ sampling in the Cowichan-Koksilah watershed, coming soon.</p> <p>Alison: The Koksilah Watershed Working Group (links above), Cowichan Tribes, and others are involved in a BC Conservation Foundation water sampling project to understand the presence of tire wear toxin 6-PPDQ (toxic to fish) in the watershed.</p>
<p>Has there been any discussion about curtailing residential development? Is it known how much development affects the watershed?</p>	<p>Alison: The Cowichan Valley Regional District is in the process of modernizing the Official Community Plan (OCP) for the region. A Special Study Area is proposed for the Koksilah Watershed to address concerns related to water availability for future development. In addition, there will be a discussion about land use with both Cowichan Tribes and the CVRD as part of the sustainability planning process.</p>
<p>The Koksilah Watershed and Options Feasibility Project published in May 2021 outlines many options that could be taken in the watershed. Are any of these being followed? Apart from the water infrastructure funds through IAF, has the province or DFO invested in any of these options over the last year?</p>	<p>Cali: That was a phase 1 (Xwulqw'selu Watershed Plan Scoping phase) feasibility study that gave us a long list of potential storage and alternative water supply options. What we plan to do next is phase 2 to get to a short list of storage and water supply options, and do an in depth feasibility study of those options. This and other work on the XWP is funded by the Province.</p>
<p>Is DFO part of the Watershed Sustainability Plan process?</p>	<p>Natasha: DFO is not part of the planning process right now but it's likely they'll have expertise we'll need as we start getting into detailed analysis.</p>
<p>Alison, please provide your knowledge on your ability to gauge how much water is actually in the Aquifer under the Dinsdale farm?</p>	<p>Cali: The Provincial Observation Well Network (link above) measures water levels in aquifers. There are three active monitoring wells in the area however the observation well on the Dinsdale property is no longer active.</p> <p>David Slade provided additional information: We know that there are some highly productive aquifers under the Cowichan Bay Estuary including the Dinsdale Farm. This</p>

	<p>has been verified by test wells and high production commercial, municipal and irrigation supply wells. While there are several aquifer layers identified, the "principal" highly productive aquifer is a pressurized confined aquifer. This means that the aquifer is protected from surface contamination and salt water intrusion by dozens of feet of low permeability clay and silt, and its static water level is generally above ground level. This is referred to as a "flowing artesian aquifer" and indicates that the water enters the aquifer up stream/gradient and is "trapped" beneath a confining/protective layer of clay/silt.</p>
<p>Ben - Since the 1970's have you or other Producers noticed any changes in crop type, ie (Pasture vs. Corn). I think we all are aware that Dairy has become aggregated with the sale of milk quota off site.</p>	<p>Specific information on the variation in forage grown from year to year in the Koksilah Watershed is not available as it is up to individual dairy producers to decide what they will grow.</p> <p>(Ben also provided his email address above for further discussion.)</p>
<p>Will removal of dikes allow Sewage Outfall already contaminating shellfish, salmon to cover a broader Estuary area along with saltwater infiltration into water sources including local wells?</p>	<p>Apologies, this question is out of scope for the Koksilah Low Flow Working Group.</p> <p>Learn about the Estuary Restoration/dike removal project here: https://www.estuaryresilience.ca/cowichan-estuary-restoration-project/</p>
<p>Is it now needed for Sewage Lagoons and Outfall to be removed from waterways given the area's construction growth including the new Hospital?</p>	<p>Apologies, this question is out of scope for the Koksilah Low Flow Working Group.</p> <p>The sewage lagoons and outfall are on the Cowichan River mainstem. The project to remove the outfall pipe from the Cowichan River is being led by the Joint Utilities Board. Learn more here: https://www.northcowichan.ca/business-development/municipal-projects/joint-utility-board-sewage-treatment-plant-outfall</p>
<p>Who is in charge of redirecting the 81% clean drinking water to Crofton Mills?</p>	<p>Apologies, this question is out of scope for the Low Flow Working Group.</p> <p>See https://paperexcellence.com/mill-location/crofton/ The Crofton Mill diverts untreated water from the Lower Cowichan River through its pumphouse in Duncan under license with the Province.</p>
<p>Who will be in charge of the NEW WIER?</p>	<p>Apologies, this question is out of scope for the Low Flow Working Group.</p> <p>Track the progress of the Weir Replacement project</p>

	here. https://cowichanlakeweir.ca/water-use-plan/
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