



Clean Water Advisory Committee – Surface Water Subcommittee Meeting

January 19, 2023

Committee Members in Attendance: Jenny DeGroot, Vicki Heater, Judy Meyer, Kimbal Sundberg, Cathi Winings

Ex-officio, County support staff, and members of public: Paul Andersson, Lincoln Bormann, Dean Dougherty, Erin Halcomb, Laura Pitts, Wendel Raymond, Lee Robbins, Buck Smith, Kendra Smith, Daniel Vekved, Cindy Wolf

9:07 AM Welcome and Coast Salish Acknowledgement Kim Sundberg

Let us acknowledge we reside on the ancestral lands and waters of the Coast Salish people who have called this place home since time immemorial and let us honor inherent, aboriginal and treaty rights that have been passed down from generation to generation.

9:08 AM Follow up on livestock use of False Bay Preserve Memo Lincoln Bormann, Dean Dougherty

Lincoln: We've been discussing the letter as a staff; I'll raise it tomorrow with the Commission. It's complicated. The lease has expired, plan to discuss lessee's intentions around grazing this year. Also, uncertain on status of the CD cost share project, we have money for additional fencing but if we do additional fencing or change timing of grazing will that be adequate? And is water quality testing winding down in FB (False Bay) creek?

Wendel: correct, at least as far as my involvement is concerned. The money that made this happen is no longer necessarily allocated nor is it clear that there's anyone available to continue the work

Lincoln: I feel this is an important period to continue doing that. Fencing at Red Mill is complete so will be interesting to see the impact. Also, some remediation upstream of Zylstra. So, water quality testing is important

Kendra: it needs staff. I need to refill some positions, and timing can be difficult – requires watching the weather to get bacteria samples to mainland in time for analysis. We can try to grab more samples.

Wendel: I was sampling at 9-10 sites monthly, not all are necessary to maintain a baseline. Possible to pare down

Kendra: if you can advise us, I'll make a commitment to follow up. No need to keep fencing creek corridor if cattle are moving off the preserve. But anywhere within floodplain causes manure and bacteria to contribute to the system. Maybe we can fence further upstream where we can get more bang for our buck keeping livestock out of wet zones.

Judy: That preserve is so valuable due to its position in the watershed. Can we ask CD if funds for fencing are transferrable? Still have fencing to do on SJ Valley creek, other places where cattle have access to stream.

Cathi: I believe the funding is secured, I'll let Paul and Laura talk details

Laura: I'm the project manager at the CD. It's unlikely we'd be able to reallocate, we'd need to return funds and reapply. Withdrawing this project and applying again will take time. We needed shovel-ready riparian corridor projects, and we heard the long-time lease was planning to continue grazing. We can't push the fence out so far to exclude entire flood plain. There could be manure raking and seasonal grazing in addition to fencing. If no grazing cattle don't need fencing, but since that's still undecided we thought conservative action was to fence

No implementation yet, we plan to do it in spring. Likely April when it's dry enough to work

Kim: so, decision tree is 1) Lincoln to talk with CLB Board tomorrow about CWAC FBP memo, 2) determine if cattle lessee wants to renew for 2023 (check availability of alternative grazing lands such as False Bay Farms), 3) CLB makes decision about 2023 grazing on FBP and whether to spend CD cost share \$\$ there.

Dean: Regarding the conservation easement and the letter, the easement is neutral on this topic. The easement itself is in support of both agriculture and environment.

Kim: seems ideal if funds could be reallocated to another part of the watershed, let's not spend more money on FBP fencing until we have consensus on livestock management solution.

9:27AM Update FB Creek restoration planting & SJV Creek fencing/livestock watering *Dean Dougherty*
Dean shares screen, shows SJ Valley property map. The fencing at Red Mill farm is completed, planted trees and shrubs. Shows sections of SJ creek not fenced yet, also part of FB creek that still isn't fenced. This is another place where there's a lot of standing water, even when it's not a flood situation. Any sitting manure gets washed into creek. Not the case with SJ Valley where the creek doesn't flood – issue there is cattle standing in stream. Now we have over 1000 plants to maintain and another planting season coming up. Working with Byron we had another plan for planting on the west side of SJ Valley creek, who's taking that over?

Kendra: We have money to move forward with riparian revegetation in this corridor, we plan to keep moving on it. We have plants ordered. I agree this area needs to be replanted

Dean: it's not the money slowing down the ability to do more planting/fencing, it's people and logistics

Judy: when you're deciding where to fence next, bacteria levels are higher in SJ creek than FB. I understand about flooded areas, but I think SJ Valley creek may still be the bigger problem. We should check the data

Kendra: curious about the true source of that – could it be livestock upstream? There's a place near SJV road where we haven't taken samples but maybe we should. - More discussion of specific locations

Kim has also seen data showing bigger bacteria inputs from SJ Valley Creek, has visited a couple hotspots where cattle loiter in the stream.

9:37AM Dean needs to depart for other meeting, we'll continue to discuss prioritization. Thanks Dean

9:38 AM Updates from CLB on 2023 management strategy for FB and Zylstra Preserve *Lincoln Bormann*

Lincoln: strategy remains the same, haven't made progress with attorney. Idea is to put in a change application and try to work with neighbors who believe they have water rights.

Kendra: would it be helpful if we could remove the Land Bank from the discussion and focus on what's in the CW utility's purview with respect to harmful algal blooms and fixing this watershed? Give Land Bank separation?

Lincoln: we'd be in favor of that

ACTION ITEM: Let's discuss that at the broader CWAC level. Land Bank is holding it but it's a County water right. We can show we're paying attention to water conditions, conserving fish and wildlife habitat.

Kim: Helpful to take political heat off the Land Bank reauthorization. Environmental Stewardship should be on agenda for ARC annual meeting focused on water issues – can CWAC help draft a presentation about status and concerns? (i.e., taking of water, metering, and pollutant inputs). We should put this item on the February agenda.

Lincoln: we can also position ourselves getting letter ready for the water rights neighbors

Kim: In December meeting, Buck said Ecology had no role to resolve disputed water rights. I understand the way to implement this is with a change of use letter to the parties proposing the settlement of legal ownership/claims.

Lincoln: I'm not sure mine or Peter's sense of this is the same, I need to speak with him

Buck: there are two water rights, the reservoir certificate, and the surface water right. IF the change of application comes through, it needs to be signed by all the legal landowners. If that includes more than one

party, you need to tell us how the right is divided up (by percentage? volume?) and distinction between the paper water right but when we do the change it can only include what has historically been perfected and used. 180gallons/minute/acre, has that been used or was it less in last 5 years? The question is how much of right is used whom – that’s a private matter that needs to be decided before it comes to Ecology
Lincoln: part of problem is that there has been no metering. There is a siphon coming out of the lake, but we don’t know what fraction of that is going to irrigation.

Buck: we have an instantaneous flow meter we use to get a volume, then look at aerial photos to estimate amount irrigated for annual volume. That’s common practice, but we need the application first to work on it
Kim: the water right has a stipulation that a weir/measuring device is required at the point of take, yet that’s not being provided by the individuals taking water. Who enforces that? There’s also a screening requirement for fish.

Buck: We can get involved in that if the County files an Environmental tracking system report. Then Kelly Hamilton would get involved. The screening part would end up going to DFW

Kendra: that is a course of action I’d want to think about strategically and discuss with Lincoln. We’d want to give the neighbors a heads-up if we were going to do that and have the Utility put in the request not the Land Bank

Vicki: I support that strategy. But if you put pressure on them, they will resist. Getting solid information and a clear strategy and playing the long game will be important

Kim: I heard consensus that the Utility will come up with a strategy to take heat off Land Bank

Kendra: yes and we’ll discuss with full committee to confirm everyone’s comfortable

9:56AM Work session on UW-FHL FB Watershed-Water Quality Monitoring study *Wendel Raymond*
Wendel starts a new position as a nearshore research ecologist with WDFW in a month. Collaborating with DNR on various projects, focus on San Juan County eelgrass beds which aren’t doing well. Wrap up for this project, make all accessible in a usable data dump. Stable isotope data not yet processed that can add value. Worked on a variety of projects including the FB monitoring for past 2 years, thanks to many helpers. Project goals: establish a baseline of water quality parameters, address nutrient inputs, and track *Ulva* species’ growth in False Bay. Data collected via monthly sampling for various parameters at most stations plus continuous temperature data at a few sites. *Ulva* mass assessed; some data collected from drone-collected aerial footage

ACTION ITEM: Wendel can provide Kendra with map include sampling locations (stations 1-10, marine-upstream)

Shows total precipitation: 2021 was a very dry summer followed by a wet fall and winter. November 2021 was the wettest month in at least 20 years. Precipitation can be considered a proxy for flow in the stream. At most stations, no flow in the summer, then rapid increase in the winter, then falls off quickly by May or June.

Temperature: plots shown arranged by station, from top of watershed downstream to the most marine.

Temperatures can get high in the summer, close to 25 °C, and come down to 15°C even in summer.

Kim: Above 20°C is marginal for salmonids, 25°C is lethal for salmonids.

Jenny: Some studies have a lower lethal limit for salmonids which are closer to 20°C

More on water temperatures: continuous temperature loggers show a lot more variability in the summer.

Wendel shows Dissolved Oxygen variation at various stations.

Total nitrogen shows big variations over time, spikes associated with the November 2021 flooding.

Shows total Nitrogen/Phosphorus ratio –nitrogen limitation vs. phosphorus limitation –applies to plankton

Focus on salinity at lower stations, 1 and 2. It’s a proxy for flow, Station 1 was always salty except for the big pulse in Nov 2021. But station 2 at the mouth was only salty in the summer, when the flow is so low high tide fills in the lower stretch of the creek all the way up to the UW property line. Then when tide goes out that water sits there. I wonder if, in the summer, we’re not really sampling stream water there but some mix of ocean water.

Kim: that could also be from salty groundwater base flow, some wells drilled in valley are purported to be salty
Wendel shows data for nitrates, nitrite, and silicate. Silicate varies between sites (more in creek than in marine)

Map shows quadrat site for gathering mass for dry Ulva samples. Shows plot of Ulva dry mass, only in the summer (due to Ulva presence and timing of low tides). High variability. Shows bay-wide Ulva percent cover, rough estimate extrapolated from images identifying certain pixels as Ulva. Discusses some issues with sampling (i.e., variation relative to one tide cycle). Ulva ramps up and then stays consistent throughout summer.

For the nutrient and Ulva question, Wendel shows plots for precipitation, nitrate levels, and Ulva mass. Is cow waste fueling an unnatural amount of Ulva? Probably not, due to timing of nitrate levels vs. highest Ulva growth

Judy: phytoplankton prefer ammonium over nitrate, is that true with Ulva? there's less ammonium than nitrates

Wendel: in general, Ulva is better at taking up N and nitrate compared with other nearshore marine algae. Wendel shows ammonium plots, should be similar amounts.

ACTION ITEM: Wendel will look at ammonia component more

Next steps: Process collected Ulva tissue for future stable isotope analysis to track nitrogen source

QUESTIONS

Kendra: I understand the point about there being more marine Nitrogen, but what about the sediment being flushed down into the bay? Maybe the volume doesn't matter, in freshwater systems that would matter because of the way it re-entrains. Is sediment transport and their associated nutrients not an issue in marine environment? Is part of the reason the marine has a lot of nutrients from the sediments we contribute?

Wendel: a set of samples I didn't take was close to sediment, pore-water data, that is worthy of investigation. We don't know the answer to that question. Stable isotope data from Ulva samples could help show that

ACTION ITEM: Wendel can share slide deck with Kendra and/or Kim for distribution

Kim: False Bay gets muddy when it's raining hard or in storm conditions. Often keeps what comes into it, once objects come in, they don't leave. Looking at big spike of nutrients that came down during biggest flood, I wonder how nutrients may be incorporated into sediments in False Bay to be used in following spring?

Wendel: If something was dissolved in the water, the transport is high. The bay fills and drains daily and adjacent to a high current strait. Once nutrients are suspended, they're getting used or moving around, at least mixing. But what is trapped in sediment? That's a different story. There's more to learn

Judy: when analyzing to see how much of Nitrogen is organic. That can help distinguish particulate nitrogen and help distinguish sedimentary N from suspended. -Total N and P samples are not filtered

Cathi: about drone imagery use to analyze Ulva presence, could that be used to identify eelgrass too?

Wendel: yes, there's a workshop about that coming up at Padilla Bay. They use that method for kelp too.

Wendel's email address, wraymond@uw.edu (Paul Andersson sent follow up email regarding eelgrass)

Kim and Wendel will discuss best timing for Wendel to present to the full CWAC, when remaining data analyzed.

11:02 AM Adjourn