



Meeting Minutes
Nisqually River Council Meeting
October 18, 2019
Longmire Community Building, Mount Rainier National Park
Information: 360.438.8715

Attendees:

NRC Members:

Molly Carmody – City of Yelm
Amy Cruver – Pierce County Council
Sheila Marcoe – Dept. of Ecology
Kevin Skerl – Mount Rainier NP

René Skaggs – Pierce Conservation Dist.
David Troutt, chair – Nisqually Indian Tribe
Gary Stamper – Lewis County BoCC

CAC Members:

Phyllis Farrell
Howard Glastetter
Ed Kenney

Karelina Resnick
Robert Smith
Marjorie Smith

Guests:

Roger Andrascik – NLT/NSS
Warren Bergh – NLT/NSS
Brad Beach – Nisqually Indian Tribe
Michelle Brigham – Preserve the Commons
Annie Cubberly – NSS

Colleen Glastetter
Amy Malik – Preserve the Commons
Jim Reistroffer – NLT/NSS
Etsuko Reistroffer – NLT/NSS
Darin Swinney – Mount Rainier NP

Staff:

Justin Hall – NRF
Emily McCartan – NRF

Sheila Wilson – NRF

1. Call to Order, Introductions, Approval of Minutes and Agenda

David called the meeting to order at 9:39am. Minutes will be approved next meeting. The agenda for the day was approved.

2. Committee Reports and Updates

Advisory Committee Reports:

Citizens Advisory Committee Report – Phyllis Farrell

This month the CAC discussed Thurston County Conservation Futures funds and the recent decision of the Board of County Commissioners to dedicate half to conservation projects while reserving half for the gopher Habitat Conservation Plan. The CAC is also monitoring the Thurston County shoreline master plan update and some members are advocating for a standard of “net ecological gain” rather than “no net loss.” The recent federal court decision against the Army Corps’ aquaculture permitting process in Washington will create some changes. CAC members are concerned about proposed net pens in Puget Sound for native trout, steelhead, and black cod. Thurston County’s RAP proposal is still under consideration. The NRC’s letter is expected to be finalized and sent this week. It encourages local field

studies to understand real local impacts, especially in light of proposals to mine beneath the water table. Thurston County Flood Hazard Mitigation Plan annual meeting on October 23. Howard attends and is happy to pass along comments.

Ed reported on the Yelm biosolids proposal, which has been in process for 10 months. Citizen group Preserve the Commons met multiple times with Ecology and pursued legal pressure. Ecology has now withdrawn their determination of non-significance for the permit. Community members hope that the Nisqually Tribe will look at the general permit closely when it is up for review in 2020. Preserve the Commons has also met with several individuals working on innovative wastewater treatment solutions that would reduce toxins of concern and plan to host demonstrations in Yelm if possible. Many different approaches to trying to deal with this problem are being tried around the world.

Chair Report – David Troutt

David presented with consultant Lisa Dally Wilson on the Nisqually Streamflow Restoration planning process at the American Water Resources Association conference. Proud that we were able to get to the finish line on that process and share it with others. David participated in a debate at UW with the Wild Fish Conservancy (WFC) about their film *Artifishal*. The Tribe and WFC have very different perspectives on the issue, which made for a robust and respectful debate. David noted that the film makes an over-simplified argument that claims hatcheries are the main problem for wild salmon populations and also equates hatcheries and net pen farms, which are very different issues with different consequences and impacts. Salmon recovery is incredibly complex and management has evolved over time more than the film shows. Hatcheries historically had a negative influence on wild salmon, and in the Nisqually and other places managers are working to correct those practices. WFC also ignores the negative impact on habitat from massive population growth, which has major consequences for salmon populations regardless of hatcheries. There isn't a single magic bullet to solve the problem, and solutions need to be holistic. It's good to raise public awareness of these complex issues and the film is creating discussion.

David is involved in an effort among tribal, recreational, environmental, and state government officials to develop a multi-year legislative agenda to address holistic salmon recovery needs. We are losing ground on habitat for wild fish. There are concerns that orca and salmon recovery will not be a priority for the Governor's budget in the next session. David has been giving speeches this summer about the need to invest significantly - \$1 billion in state and federal money – to make a difference over the next 10 years, or wild Chinook will face extinction in Puget Sound. Stillaguamish had 23 Chinook return this year. If the State of Washington is not going to fully invest, the Tribes and salmon recovery stakeholders will need to find other partners, including exploring private partnerships. Competitive grant processes are the main funding mechanism, meaning that the Nisqually has to compete against other regions to get any implementation funding for the major plans we have in place (2514, 6091, and salmon recovery). An alternative strategy is to go directly to the Legislature to seek full funding for local needs.

Staff Report – Emily McCartan

Emily is working on wrap up from the Watershed Festival and Evans Event, as well as the move to the new office. The next stage of the Nisqually Watershed Stewardship Plan is to identify actions for the priorities set at the last two NRC retreats. Emily will be updating on these topics at the end of NRC meetings on a regular basis.

Allied Programs Report:

Nisqually Land Trust – Roger Andrascik

The NLT Board met last night. Pierce Conservation Futures approved funding for the Soundview Camp purchase Key Peninsula (Unanimous, #1 rated project). Thurston commissioners approved Conservation Futures funds 2-1 for Johnson's Point project. 250 people participated in nature walks and talks on NLT properties this summer, along with 110 for the raft trips. Community Forest BBQ was canceled for low pre-registration. Will try to do better advertising in the future. Yesterday, Roger attended a field trip to the Ohop restoration site with Kevin Hansen, Brian Combs, Ashley Von Essen and streamflow restoration teams from other watersheds who are looking at the Ohop as a model.

Nisqually River Education Project – Sheila Wilson

Water Quality Day was yesterday. Numbers are slightly lower due to teacher staff turnover and less participation in Yelm. Yelm 5th grade teachers have to do it as a volunteer position, which is a lot to ask, but 5-7 are interested in participating. Asking for the NRC to help prioritize which sites to monitor, because data that is meaningful for stakeholders is more relevant for students.

The No Child Left Inside grant has brought Wa He Lut students on field trips to Clear Creek Hatchery and Medicine Creek Springs. Several youth from the Nisqually Youth Center went horseback riding with Servine Tack & Feed through the same grant. Middle and high school teachers are participating in professional development meetings for the CLAMSS NOAA grant. NREP will be working on tree plantings field trips at NLT habitat restoration with 20 school groups (40 classes) over the next. Volunteer signups for Saturday (11/2 and 11/9) and weekday events by contacting Sheila or visiting the NLT website.

Tomorrow, Sheila will represent NREP at a Thurston Climate Action youth outreach event. The North Thurston Public School Board recognized NREP and partners (South Sound GREEN and the Refuge) as Partners in Science, for providing many quality opportunities for NTPS students to connect science to community and Next Gen Science Standards.

Nisqually River Foundation – Justin Hall

The Foundation's two September events were both successes. The Evans Event fundraiser on September 4 was attended by about 150 people and raised over \$54,000. The artwork honoring Jim Wilcox will be displayed at the Wilcox Farm museum (the first two award pieces are displayed at the Refuge). The Nisqually Watershed Festival on September 28 was attended by over 1,000, in spite of rain in the morning. This year was the 30th anniversary of this watershed celebration. Justin and Sheila met with the James Lee Foundation at their invitation to explore funding for NRF/NREP. Justin and David spoke to the National Wildlife Refuge Foundation (national advocacy group for the Refuge system) on behalf of the Friends

of Nisqually National Wildlife Refuge Complex group. They emphasized partnerships and the Tribe's role, and many audience members commented that the Nisqually community is unique in the context of the national refuge system. Justin also spoke yesterday to the American Planners Association about watershed councils, along with KGI, Puyallup, Chambers Clover groups.

Community Forest – Justin Hall

JSH participated in a legislative field tour of several community forests around Washington this month. They showcased different models of forest management and are hoping to continue progress on creating a statewide acquisition funding program for community forests next session. The Nisqually Community Forest is working on an outreach plan and community engagement strategy going forward.

Salmon Recovery – Chris Ellings

The Nisqually hatcheries are working on updating their Hatchery Genetic Management Plan (HGMP), which is part of federal permitting for hatcheries and includes a NEPA environmental impact study. Nisqually has done a lot of innovative work already to integrate habitat and harvest/recovery goals and the next step is to think creatively about how hatcheries can fit into picture without impairing recovery. HGMP will codify all that integrated work we've been doing. Science has been evolving a lot in this area. Hope to have a draft for Chinook and coho by end of 2019, after which it will go through a public comment period. Chris noted that the Nisqually management planning is very creative, progressive, and integrated in striking a balance between hatchery programs that support critical tribal treaty right fisheries (which would not exist without hatcheries), as well as equally important natural population recovery through habitat and integrative stock management. Try to maintain adaptive management and built-in flexibility as science and knowledge evolves.

Nisqually Salmon Recovery is a partner in the Salish Sea Marine Survival Project, which is researching the role Puget Sound conditions play in recovering salmonids. Puget Sound populations survive ocean migration differently than coastal populations. Ocean conditions that are good for coastal fish are not necessarily good for Puget Sound fish (plankton, nutrients, predation). Sound fish have typically lower survival due to the distance and exposure they have to travel and the impacts of plankton, nutrients, and predation factors. Nisqually salmon have to swim through the entire Sound twice. The project has produced numerous academic studies over the last 10 years and the next phase will be applying them to management actions. Next phase is taking academic research and start putting it into management actions (for example, developing indicators based on zooplankton community to predict salmonid survival and modify harvest and hatchery goals accordingly). Other actions may be looking at nutrient and wastewater outfalls impact on zooplankton productivity, pinniped predation on steelhead, and actions that could help with those limits on survival.

Questions:

- Is carbon dioxide in water affecting fish? – Levels in Puget Sound and Nisqually are much too low to give fish CO2 poisoning. However, CO2 pollution is causing ocean

acidification, which inhibits zooplankton, which has negative impacts on the whole food web (particularly shellfish).

- Alder Lake has been low this summer, is there enough water for salmon? – With climate patterns yielding low snowpack and low rain, this is becoming the new normal. TPU has a set schedule for meeting flow requirements in their FERC license, but in recent years has worked with the Tribe to actively manage deviations in minimum flow in late summer so they can meet flows during the critical fall spawning season. Having this ability to re-regulate the flow this way has been beneficial for fish, because the natural inflow would not be sufficient to support fish on its own.
- What is the status of the flame retardant study? - Chris has the draft report in review and will let everyone know when the final is available so they can present to NRC. It will not answer every question, but will help with deciding where to do another round of sampling based on this preliminary data. Current study was based on dry season data and focused on outfalls, does not address biosolids or other wet-season impacts. The results suggest that these chemicals are very prevalent, and if you look somewhere using these new techniques, you'll find them. The levels are not a concern for human health, but are an issue for ESA-listed steelhead survival because it concentrates impacts on juvenile fish at the highest stress point in their life when they are living on fat reserves where the chemicals concentrate.

3. Insights on the Geomorphic Characteristics of the Nisqually Headwaters

Taylor Kenyon and Robby Jost, Mount Rainier National Park

The Park conducts geologic monitoring on the Nisqually River between Glacier Bridge and the Nisqually Entrance. Changes are being driven by glacial recession (estimated 1 meter of recession every ten days in the summer). As the glacier moves up the valley, it exposes huge amounts of sediment from lateral and terminal moraines, which is unstable and tends to move downstream, raising the riverbed. In addition, the park is receiving increased precipitation events (more rain at once), and the freezing level has risen by a kilometer, meaning precipitation that used to be stored as snowpack is now falling as rain and contributing to runoff and sediment discharges. Nisqually River is a productive watershed in terms of sediment. Over 1 million tons of sediment has been exported into Alder Lake between 1945 and 2011, and the rate is accelerating. As more moraines are exposed by the receding glacier, more material has produced the braided stream channel with very dynamic multiple paths. Sediment adding to the system decreases the slope, making the channel more likely to migrate, and increases deposition, which causes aggradation – increase in streambed elevation. Aggradation is cyclic - deposition increases it, then disperses and decreases, but net result is positive increase in elevation.

The concern with this process is for critical park infrastructure that lies along the Nisqually River. 80% of visitor traffic comes through the Nisqually entrance, and there are an abundance of cultural resources (Longmire, administration center, roads, and historic buildings) in the watershed along with the main access route through the park. This study mapped the Nisqually Valley to identify critical areas with threatened infrastructure and the risks posed by river behavior.

Study Methods:

- 1) Fluvial landform mapping, with tiers of interest by size of object:
 - Is it man-made or natural? (bridge vs. riparian buffer)
 - What type of structural element is it? (Engineered Log Jams, levees, ripraps)
 - Natural features (inorganic = boulders; organic = debris, channel)
 - In-channel features – mostly organic or unintentional (concrete from old glacial bridge deposited later, person-sized features)
- 2) Bank erosion/channel widening calculations and cross valley slope calculations
 - Four sections, focused on chronic damage areas from 2006 flood and other events
 - Former Sunshine Point Campground: Bank erosion from 2006 damaged millions of dollars of infrastructure (took out 6 acres of campground, decommissioned in 2011). Cross valley gradients showed that all slopes are oriented towards the road, so without any other factors, the river would follow the slope and impact the road. Lower slope above and below are transition zones where river is likely to be erratic, predicting damage in those areas. Paul Kennard drafted a memo this year on options for the site.
 - Milepost 5 to Longmire: Milepost 6 area was heavily impacted in 2006, with valley gradients again oriented to the roads. An ELJ was installed to prevent further erosion which has held up in subsequent events, but bank erosion is happening above and below it.
 - Longmire to Cougar Rock: Longmire was nearly inundated in 2006 and sustained severe infrastructure damage. Levees were built after the flood to confine the river and protect infrastructure. Gradients are still oriented toward the road and erosion continues during normal flows, so another 2006-type flood could erode the levee given the right conditions. At Milepost 9, riprap was installed where the bank was undermined in 2006. Gradient above and below this point is oriented to the road, and bank erosion is still occurring.
 - Cougar Rock to Van Trump Creek: observing bank erosion and channel widening, but no infrastructure damage yet. The picnic area is on a high terrace that could erode quickly (the eroded bank is a good spot to see very old geologic deposits). The Lower Van Trump curve has been a site of interest since before 2006. Debris flows and landslides have created a choke point with high terraces. Cross-channel gradient points away from the road toward the landslide deposits on opposite bank. A moderate flood or sediment flow could change that and direct river back to side channels that would overtop the terrace, which is above the paved road. A major flood could punch through at roadway to Longmire Meadows.

In summary, these sites need continued monitoring. The road runs along the river for an extended distance, and the riparian buffer was larger at time of construction but now is significantly narrower. Van Trump Curve is a potentially catastrophic point of failure. Going forward, planning should focus on pre-emptive action at sites where there is known consistent damage. Want to be able to respond before hazards or have plan in place. Permitting is a major bottleneck for construction. Guidelines are in place, but can be neglected during emergencies. Hope to be able to do more assessments of elevation surveys

and hydrologic modeling to design structures that will be effective under these conditions. Ongoing monitoring would ideally update LiDAR and elevation data. Last data set is from 2012, which is now very out of date for a system this dynamic. Collaborations between Park departments and other agencies (USGS) needed to develop and fund projects.

Questions:

- Could Alder Dam have released sediment after the 2006 storm to help recruit sediment downstream to the delta? - Not likely to have made a major impact, because much of the sediment deposited behind the dam is very heavy. Finer sediment might have moved off, but heavier material would likely have remained.
- What preventative actions can the Park take with this information? - Funding is a challenge, and budgetary constraints limit what they can do preemptively. A goal is to have a response plan in place before something happens to protect areas of greatest risk and respond with reconstruction. These studies make the park management team aware of the risks. The challenge is then to address the risks with limited funds from NPS or in collaboration with other entities where possible. It's easiest to get funding after the road washes away, even though it would be less expensive to do the pre-emptive work.
- Schedule for Pierce County work on levee near the park entrance? – Initial construction starting next year.
- What's happening with precipitation shift? – The average elevation where rain turns to snow has gone up about 1 km. Glacial outburst floods are a major consequence of glacial recession. Nisqually has been noted to have several (1926, most recent in 2012). Other watersheds in the Nisqually are more active – Tahoma Creek had one this August. Trying to predict and study them is a big emphasis for the geology staff.
- Would there be flood risks for the proposed Park Junction Resort? – They could take advisement from Park processes and reports, but NPS would not have any direct consult, since it is outside the Park.
- Is there predicted extinction of the Nisqually glacier? – Models don't predict extinction. Expect it to recede into the high alpine zone and stabilize at a much smaller area.
- How does this work to maintain access to the park and human structures balance with wilderness protection? – The NPS mandate is to protect access at lowest possible environmental impact. Geologists would be on site at any infrastructure project to ensure that all compliance needs are met. 97% of the park is wilderness. Much of the other 3% is a national historic landmark district, including all of Longmire, which is at the highest level of protection for cultural resources. Have to protect both of those things. Roadways are part of the historic district too, in very dynamic environment that original planners did not have the same awareness of.
- What would be the best preemptive action to avoid catastrophic damage to Longmire in a volcanic eruption? – Such an extreme, small likelihood event is hard to plan for.
- Is there modeling about the volume of the Nisqually River once the glacier stabilizes? It will have a major impact on temperature and streamflow if the volume goes down significantly. – Modeling glaciers is very difficult to do at an operational level of uncertainty. USGS is trying to address the habitat concerns with stream temperature surveys. NASA/USGS collaborate on daily data for glaciers, which could potentially yield some good high resolution data. It could be interesting to see if it's possible to incorporate glacial flow data into VELMA model at the large landscape scale.

- Is the system too dynamic to consider instream structures for smaller 10-15 year flood events? – Have identified sites where they could propose an instream structure like an ELJ. Long-term workplan to assess sites for those designs.

4. Sustainability and Stewardship Planning Update

Emily is continuing the work of the Nisqually Watershed Stewardship Plan Report and next steps for long-term watershed planning under the Foundation's Bureau of Reclamation WaterSmart Grant. As recapped at the August retreat, the next steps from the report could include: communications, mapping, and/or a deeper dive into researching some of the issues where we know less. This process also includes thinking about sustainability for the NRC as an organization, revitalizing membership, looking at engaging with other organizations or stakeholders, and exploring stable funding. May suggest a sub-committee meet with Emily in the new year to discuss this.

5. For the Good of the Order

- Should the NRC consider taking a position on the proposed Park Junction Resort? Members are interested in asking for a briefing from Pierce County on the status. The Tribe is tracking progress and has submitted a letter requesting a new permitting process begin if development is to move forward, since it has been over 20 years since the environmental impacts and other permitting considerations were last reviewed. It is not known that there are new investors or economic impetus behind it at this point.
- What is the status of Roundup spraying on Nisqually Land Trust properties? Land Trust staff were not present to comment. Tribal staff noted that they are phasing out the use of chemicals by the NIT native plant crew (which does a lot of the work on NLT properties), but there are areas that are so large where invasives are very difficult to control that they may have to continue spraying on a limited basis. Phasing out chemicals means slowing the pace of recovery for forests, because it limits the area that can be replanted and maintained. Restoring planting is at least a 10-year commitment to get native plants established – doing it mechanically and by hand would require a long-term fundraising and staffing effort.
- Yelm has had a series of highly contentious public hearings on the homeless situations. Landowners along the river, including private landowners and NLT properties, should expect an increase in homelessness camping along the river as Yelm begins enforcing against people camping in the city limits.
- Orca Recovery Day is tomorrow. This is a joint effort of conservation districts and others to have salmon restoration work parties. Looking for private-corporate funding for restoration projects going forward. betterground.org has list of all the projects statewide, and NLT, Thurston and Pierce Conservation Districts are all hosting work parties.