Meeting Minutes
Nisqually River Council Meeting
August 21, 2015
Wilcox Family Farms
Information: 360.438.8715

Attendees:

Council Members
Roger Andrascik – *Mount Rainier National Park*
Amy Cruver – *Pierce County*
JW Foster – *City of Yelm*
Amber Martens – *JBLM*
Doug McClelland – *WA Dept. of Natural Resources*
Glynnis Nakai – *Nisqually National Wildlife Refuge*
Sandra Romero – *Thurston County*
Rene' Skaggs – *Pierce Conservation District*
*** CAC Representatives** (2)

Citizens Advisory Committee Members
Ed Kenney
Fred Michelson
Steve Pruitt*
Karelina Resnick*
Marjorie Smith
Bob Smith
Lois Ward

Guests
Jim Ballweber – *King County*
Greg Blair – *ICF*
Chris Ellings – *Nisqually Indian Tribe*
Bill Grantham – *Center for Natural Lands Mgmt*
Kristen Harma – *Chehalis Tribe*
Alex Harwell – *UW*
Kevin Holtee – *Citizen*
Bob McKane – *Environmental Protection Agency*
Lisa Rungwinger – *WA Environmental Coalition*
Chris Schutz – *Pierce County*
Paula Swedeen – *WA Environmental Coalition*
Ashley Von Essen – *Nisqually Indian Tribe*
Charissa Waters – *Thurston County*
George Walter – *Nisqually Indian Tribe*

Staff & Associated Nonprofits
Morgan Greene – *Nisqually River Council*
Justin Hall – *Nisqually River Foundation*
Joe Kane – *Nisqually Land Trust*
Tyler Willey – *Nisqually River Ed. Project*
Sheila Wilson – *Nisqually River Ed. Project*

1. **Call to Order, Approval of Minutes and Agenda, Introductions**
   Call to Order – Sandra called the meeting to order at 9:15 am.

   Approval of Meeting Minutes and Agenda – There was a motion to approve July's meeting minutes as presented. They were approved, as was the agenda for the day.

2. **Reports**
   Advisory Committee Reports
   - *Citizens Advisory Committee* – The CAC met this month in a joint meeting with the Nisqually Stream Stewards (NSS). The evening included a presentation from Chris Ellings on Salmon Recovery and from Jed Moore on the fish counter in the Centralia Dam. Next month, the CAC will host the NSS again to give an overview of the NRC, Nisqually River Foundation, CAC, and Nisqually River Education Project. Steve noted that several CAC members are taking the Stream Stewards class. Chris appreciated the interplay between the two groups—it's a great way to bring new energy to both sets of people.

   - *Chair Report* – David was unable to attend the meeting.

   - *Staff Report* – Morgan reported that Nisqually Stream Stewards is off to a great start! Twenty-two people are signed up, and the group has enjoyed several field trips so far. The Delta Data report is also coming

together well, with the public report due out at the end of the year. Morgan is preparing to release a survey for the Nisqually River Trail, and will be hosting an Advisory Committee meeting soon.

Allied Programs

- *Nisqually Land Trust* – Joe reported that the float trip went well, despite the river having dropped by 25% three days prior. Both days of the float were sold out! The most recent Land Trust Board meeting was held in Ashford, in honor of Judy Scavone. Judy recently passed away; she will be remembered through the energy, drive and support that she provided. The Board voted to move ahead with the marine conservation project, and will be bringing on a contractor to help lead it. Joe also noted that the Strategic Plan is being finalized.

  On Wednesday, the Community Forest Board submitted a bid on 5,000 acres in the Mashel sub-basin. The bid was submitted through Lime Timber, an investment firm that will hold the land until the Land Trust can fully purchase it. It was a $19 million bid. Joe noted that it is a competitive market, but remains hopeful.

  JW noted that the Annual Meeting will be on September 13th at Oddfellows Park from 4:00-7:00 PM. National Fish and Oyster will be grilling oysters, in addition to the salmon bake. There is a suggested $10 donation.

- *Nisqually River Education Project* – Sheila announced that summer vacation is coming to an end for many of her schools and she's getting a better feel for participation numbers. She anticipates approximately 45 teachers this year, with 6 new teachers in Eatonville and several new teachers in Graham. On another note, NREP was denied four grant applications in the last two weeks.

  NREP hired a new Americorps who will start in October; Tyler continues through September. Sheila recently hosted a curriculum workshop on Next Generation Science Standards, and will host water quality monitoring training on September 19th. The Nisqually Watershed Festival is on September 26th, and will feature the new Nisqually Idol event. It is open to people 18 and younger, and has cash prizes!

  The Nisqually Tribe, South Puget Sound Salmon Enhancement Group and Nisqually Land Trust are hosting a fish-out in Ohop Creek on Monday and Tuesday, before water is moved to the new channel.

- *Nisqually River Foundation* – Justin is excited for the new Americorps position to start. Other than that, he's been busy with grant reporting and researching new grant sources. He leaves for vacation on Saturday.

- *Salmon Recovery Update* – Chris reported that the primary challenges in the Salmon Recovery program this year are the low summer flows and warm water temperatures. It has been an unprecedented summer and is having large impacts on the fish. The FERC licenses for Centralia Light & Power and Tacoma Public Utilities established a coordinating committee with state agencies, tribes and other stakeholders. The Committee has been meeting weekly to deal with the low flows, and have deviated from the minimum flow standards out of Alder. At the same time, Centralia Light & Power has shut down their operations on the river in an attempt to help cool water temperatures in the mainstem Nisqually. Chris noted that this is real time adaptive management, and he's been very impressed with the quick actions of the Coordinating Committee.

  To put it in perspective, Chris shared that water temperatures have fluctuated wildly based on cloud cover. On very hot days, water temperatures have spiked to about 70 degrees. In response, fish are slower to migrate into the river, and those that do are more susceptible to diseases. The weir has been lowered, allowing the Tribe to count fish that cross, but not do additional processing.

  On a more positive note, the low water levels in Alder Dam have clearly exposed the huge amounts of sediment that the dam is trapping. This has started a conversation between stakeholders on how to move that sediment downstream. This is an important first step in determining options, feasibility and more. On another note, the recent glacial outburst at Mount Rainier sent a pulse of cold water downstream.
  Questions:

- Fred wondered how long Centralia could keep their power generation stalled. Chris replied that it will be down until water levels rise again.
- Fred wondered about Mashel River temperatures. Chris isn't sure, but expects it to be above 70 degrees, with flows around 6 cfs.
- Karelina wondered about the coming winter. Will it be worse that this last one? People in Switzerland are covering glaciers in sheets; is that viable here? Rene' noted that projections predict more rain this winter. Roger noted that Mount Rainier is too vast to consider covering glaciers; it wouldn't be feasible.
- Roger asked if flow regimes from Alder could be changed to hold water for longer before releasing it? Chris is continuing to meet with the Committee to do adaptive management. TPU has the capabilities to always produce power, so they're willing to work with the Tribe as much as possible. Centralia has to purchase power from the open market when not diverting into the canal, which exposes them to penalties.
- Chris noted that he believes the Tribe lost a full year class of fish last year, so he's trying to maximize their survival this year.
- Marjorie noted that David and Morgan should meet quickly with TPU to get their increased attendance at NRC meetings.
- Rene' noted that Pierce Conservation District has been spreading the word on the impacts of rock dams on salmon. Perhaps an article in the NVN or News Tribute would be useful?

3. **Thurston County Voluntary Stewardship Program** – *Charissa Waters, Thurston County Planner*
Charissa leads Thurston County's Voluntary Stewardship Program (VSP), which focuses on using incentive, based methods to increase conservation on private lands. The VSP is an alternative approach for counties to protect and enhance critical lands, but is only applicable to lands with agricultural activities. Not only is the VSP the new method for Thurston County to protect critical areas, it also reduces the need for further ordinances and improves the viability of agriculture.

   The VSP has two goals: 1) protect and voluntarily enhance critical areas, and 2) promote agricultural areas. Critical areas are defined as aquifer recharge areas, geological hazard areas, fish and wildlife conservation areas, frequently flooded areas and wetlands. The VSP was adopted by the legislature in 2011 in an effort to reduce conflicts between agricultural communities and conservation efforts.
   It is a program of the Conservation Commission, and counties have the choice to opt-in or not. If the counties don't opt-in, they can continue to use existing regulations. Twenty-eight of the 39 counties opted-in; Thurston County adopted the VSP in 2012.

   Once VSP was adopted, Thurston County established a Watershed Work Group. The group is currently developing a work plan, with funding secured in 2013. Charissa noted that the program applies to unincorporated, agricultural properties in the county. Priority watersheds include the Nisqually, though the Work Group is initially focusing on the Chehalis Watershed. Eventually, VSP will work within all watersheds in the county. Because Thurston County was one of two counties to receive initial funding, it is serving as a model for other Washington counties.

   The Work Group must include specific information in the Work Plan, including watershed resource conditions, species recovery plans, benchmarks and enhancement goals. It must also include information on agricultural activities, critical areas, and the intersection of the two. Currently the Work Group is identifying goals and to better understand activities on the ground. This includes analyzing all types of agricultural activities, like noncommercial operations. The in-depth analysis has resulted in the county's agricultural area being twice as large as originally anticipated.

   At the beginning of their process, the Work Group launched a public input phase. This helped the group establish benchmarks and goals, by understanding the important of farming, and barriers to continue that practice. They discovered that many challenges stem from economic challenges. One solution to overcoming some barriers is to have a liaison between the agricultural community and legislation. Thurston Conservation District is the lead on-the-ground entity, and plays a vital role in connecting various stakeholders. TCD also works with landowners to develop individual management plans.

Looking ahead, the Work Plan will be submitted to the director of the WA Conservation Commission. It will be reviewed by a technical committee. If approved, the Plan can be implemented; if not, the Work Group will reconvene and make necessary edits. The Work Group is working on a three-year timeline, but Charissa would like to submit sooner. She hopes an earlier deadline will allow for greater adaptive management and flexibility.

The next steps are to identify priority areas where critical areas and agricultural activities overlap; develop strategies for protection and enhancement; and prioritize specific areas. The Work Group will also develop a public outreach and participation plan. One of the greatest hurdles to overcome is to identify funding, specifically to support Thurston Conservation District. TCD will need to hire additional staff to run the program.

Questions:

- Fred wondered if Thurston County was up-to-date on their Critical Area Ordinances (CAO). Charissa noted the CAO was updated in 2012, but did not update agricultural areas, in anticipation for the VSP. This is now called the Agricultural Activities Critical Area Ordinance.
- Ed asked if "agricultural activities" includes forestry work. Forestry operations with less than 20-year rotations do, like Christmas tree farms. Anything else is not included.
- JW was curious about the incentives offered. Although the specifics are still being worked out, one of the major incentives is that this program is non-regulatory. It's designed to be flexible for landowners and can be used on a case-by-case basis. It also opens the door for grant funding or ecosystem services programs.

Charissa's presentation is available here: http://www.slideshare.net/Nisqually/voluntary-stewardship-program-background-and-progress-in-thurston-county.

4. **Can longer harvest intervals increase summer streamflow for salmon recovery?** – *Bob McKane, EPA*
Bob works for the research and development arm of the Environmental Protection Agency. He is based out of Corvallis, OR, and works closely with communities and salmon recovery programs. His main focus is to develop meaningful research to aid sustainability planning. In particular, he has developed a model that shows the impacts of timber harvesting on summer streamflows. This project focuses on three watersheds, including the Mashel River Watershed. Bob was initially approached by Laurie Benson of the WA Department of Natural Resources. He was excited to learn more about the efforts in the Nisqually, and based his models on realistic alternative land-use information.

For background information, the transformation of mature forests into short-rotation forests has been a prevalent land-use trend in western Washington, including within the Nisqually Watershed. In fact, several clear cuts have occurred in the Mashel Watershed in recent years. Most of the forests are between 30 and 40 years old! Bob noted that the Busywild sub-watershed contains most of the old-growth trees. This modeling project focuses on long-rotation forestry practices and its impact on summer streamflows. Bob noted that summer flows in the Mashel can drop to less than 1 cubic foot per second (cfs); finding a way to increase that flow could be vital for salmon recovery.

Young, vigorously growing forests can transpire three times more water than old forests, because the trees are constantly sucking water from the ground. Bob noted that it's difficult to draw water to the top of a 100-foot tree, but much easier to draw to the top of a 40-foot tree. In other words, large trees draw water at a slower rate. This results in high streamflows in older forests, and less streamflow in young forests. The project aimed to answer two questions: 1) how does forest age impact streamflow, availability of large woody debris, and stream temperature; and 2) can stand age help mitigate the impacts of climate change on salmon populations? Bob's team used three different models, and applied the models to three watersheds throughout Washington and Oregon.

The VELMA Eco-hydrological Model models the interaction of hydrological and biogeochemical processes. It considers soil characteristics and captures the ability of the soil to collect and drain water. It also considers how biology and geology interact to influence water flow. The drivers of change can include climate (such as temperature and precipitation amounts), fire, harvest, fertilization, development, and forest age. The VELMA model has been validated extensively with results published in multiple papers. Bob can share the papers with anyone interested.

In the Mashel Watershed, monthly streamflow varies from 14 cubic meters per second (cms) to less than 2 cms. Bob used the VELMA model to show streamflows with an actual land-use scenario, a 40-year old landscape and 240-year old landscape. The preliminary results show that minimum flows vary from 0.17 cms (actual landscape) to 0.05 cms (40-year old landscape) to 0.30 cms (240-year old landscape). The changes are particularly important in September, during salmon spawning season. This implies that increasing the timber rotations in the Mashel may help increase summer streamflows and aid in salmon recovery. To address the issue of climate change, Bob's team modeled snowpack from April 2012 to April 2112, based on a 3.5 degree increase in temperature. Based on that model, the Mashel will receive almost no snow in 2112, and would result in average low flows of 0.09 cms. However, when the same model was applied to a 240-year old forest, 0.19 cms remain in the river, essentially mitigating the challenges caused by declining snowpack.

The group also modeled the impacts of stream shade and water temperature. Using video, he was able to understand how long an area is in the shade as the day goes on; this translates into warming and cooling of the water. The model is also able to give estimates of the amounts of large woody debris in the watershed. Currently, most of that material is available in the Busywild system, and least available in the intensively management areas.

This information can be useful in determining future land-use.

- The establishment of >80-year old forest landscapes can increase streamflow by several times during low-flow months and can help mitigate the effects of climate change.
- The model can help prioritize the type and location of restoration practices, and shed light on how climate change may limit future effectiveness of restoration.

The group furthered the model by comparing land-use based on 4 different scenarios: no harvest, intensive plantation harvest, NW Forest Plan, and an AMA Plan. The AMA Plan features 120-year rotation and keeps all old-growth trees. The results visually displayed trade-offs within each scenario. For instance, the no-harvest scenario results in high carbon sequestration, while the intensive harvest scenario does not. Bob noted that this visualization of ecosystem services can help managers make land-use decisions based on more than timber. He hopes to create a similar tool based on Plans in the Mashel watershed.

Questions:

- Chris asked why the 240-year landscape doesn't moderate peak flows, too. Don't older trees slow stormwater runoff? Bob noted that trees don't transpire at the same rate during the winter months, so they have a greater impact during the summer. The physical characteristics of the forest do release stormwater runoff more slowly, but the water is ultimately still a part of the river system.
- Can ecosystem services overcome the desire for increased timber harvesting, if they're properly monetized? Yes, ideally the ecosystem services can protect forests and lead to longer rotation times.
- George wondered if the model teased out evaporation and transpiration, or if it only considered evapotranspiration. It does delineate between the two. Transpiration plays a large role when trees are smaller, but becomes less of a factor when the trees are taller. Evaporation plays a large role too, especially on soil moisture conservation.
- Karelina inquired if the planting projects in the watershed are harmful. Don't young trees take away more than they give back? Bob said to start with, young trees do use a lot of water. Their benefits as they age far outweigh that initial period, however.
- Fred wondered whom else Bob has shared this information with. Forest Service? Bob works with local managers, especially in areas that allow for flexible management. He uses real plans and current numbers whenever possible. In addition, the Forest Service research branch is conducting similar models to provide guidance to their own agency.
- Greg asked if Bob had considered simulating a soil moisture regime in an intensively managed forest, to allow for better snowpack infiltration into the soil. Doug noted that DNR has blocks of land used for Spotted Owl management; this could be a good place to test the model. Perhaps dispersed habitat blocks for owls have additional benefits.

Bob's presentation is available here: http://www.slideshare.net/Nisqually/can-longer-forest-harvest-intervals-increase-summer-streamflow-for-salmon-recovery.

5. **Recovery of *Schoneoplectus pungens [Sweetgrass]* in the Nisqually Delta** -- *Alex Harwell, Former UW Masters Student*

Alex monitored the recovery of sweetgrass at the Nisqually Delta in response to the restoration work. Rather than approaching her project in a strictly scientific sense, Alex is considering the recovery in terms of cultural impacts. Sweetgrass is highly valued by native tribes who use it to weave baskets. Alex has always been interested in connecting human relationships with native plants; this project helps answer 'so what' in terms of why recovery of the plant is important. To do this, she relied heavily on Traditional Ecological Knowledge (TEK) provided by Nisqually elders. The purpose of her study was to define the current plant associations in the Nisqually Delta. She also described habitat preferences and requirements, and mapped the current re-growth of the species.

The Nisqually Delta and estuary is where the salt water and freshwater combine. It's biologically productive, and is culturally productive too. Juvenile salmon, basketry plants, and other food sources grow and thrive in the area. She noted that people have used the area for thousands of years. This can be easily forgotten in the context of today's rapidly changing world. In fact, the Nisqually Watershed has changed dramatically in 100 years, including the diking of the Nisqually delta, the construction of Alder Dam, and much more. Finally, in 2009, the dikes at the delta were removed, which re-introduced saltwater for the first time in over 100 years.

Since 2009, saltwater has slowly inundated the Nisqually Delta, creating conditions favorable for sweetgrass. Sweetgrass is a member of the sedge family. It grows in estuaries, which means most of its preferred habitats have been destroyed, largely for shipping purposes. It was traditionally used to weave baskets, but is becoming more rare due to declining habitat. Alex noted that several other Puget Sound Tribes still gather sweetgrass for basketry. Establishing stands within the Nisqually Delta provides an important link for tribal members. She noted that there is some controversy in bringing the plant to restored areas—some people believe this is introducing a new plant. However, based on oral histories, Alex believes the plant is simply being re-established within its historic range.

In 2011, Jesse Barham planted several stands of sweetgrass at the Nisqually National Wildlife Refuge, and Alex began monitoring their survival. There were initially about 3,000 bareroot plants, in groups of approximately 500. Several planting locations were unsuccessful, but some of the stands survived. Of those surviving stands, one is easily accessible, and may provide harvesting opportunities for Tribal elders and weavers. Alex noted that Cathy Sampselle has monitored stands planted on Nisqually Tribe properties on the eastern side of the river; there has been excellent survival there!

When examining stand preferences, Alex monitored salinity, soil samples, elevation, surrounding vegetation and germination type. She also included interviews with native and non-native weavers, historic maps and museum collections. She found that the plant survives best in low elevation sites, and can thrive in a variety of sandy soils. Sweetgrass prefers Puget silt loam.

Questions:

- Roger wondered if the lack of sediment is hindering restoration efforts. Alex is unsure of the answer.
- Fred wondered if the grass was connected by a large root system. If so, he may know of two patches. It is connected by a large root system.
- Jim wondered about the source of the stock. It originally was harvested in the Skagit estuary, but has been reproduced vegetatively at 4th Corner Nursery.

Alex's presentation is available here: http://www.slideshare.net/Nisqually/the-restoration-of-kaqsk-in-the-nisqually-delta-an-ethnobotanical-restoration-effort.

6. **For the Good of the Order**

JW and Morgan have been slacking on Beer College. Next one will be held on August 28th from 5-7 pm at the Oly Taproom.

Adjourn – Meeting was adjourned at 11:53am.

Next Meeting: Friday, September 18, 2015
Mount Rainier National Park, 9:30 – 12:30
NWSP Topic: Sustainable Businesses