



**NRC Citizens Advisory Committee
Meeting Minutes
December 12, 2017, 6:00 – 8:00 PM
Nisqually Tribe Natural Resource Office**

Present:

Ed Kenney
Ariona
Bob Smith
Marjorie Smith
Phyllis Farrell

Allie Denzler
Fred Michelson
George Walter, NIT staff
Emily McCartan, NRF staff

1. Phyllis called the meeting to order at 6:03 pm.
2. Nisqually Hydrology Report - George Walter, Environmental Program Manager for Nisqually Indian Tribe.
 - George has been with the Tribe's Natural Resources Department for almost 40 years. The CAC requested he speak to today's meeting about water availability in the Nisqually watershed. Deschutes and other watersheds in the area have been working on water availability issues pursuant to the Hirst decision.
 - Compared to many other places, Nisqually has lots of water. Pacific Ocean and SW prevailing winds, which bring us abundant rainfall compared to many other places in the world.
 - Hydrology is rooted in understanding of geology, and Nisqually system has distinct geology in the upper and lower watershed.
 - Upper watershed is at high elevation, not subject to continental glacier, lot of bedrock and outwash near the surface. Developed on the edge of ancient continent through series of volcanoes over last 50-60 million years. High enough elevation that captures water from clouds coming in from the west via precipitation (snow for at least half the year). Most of the water ultimately leaves upper watershed in streams.
 - Lower watershed was subject to continental glacier, which flattened out the land and left sand, gravel, till behind in layers. The continental glacier basically ended here in the Nisqually watershed. Bald Hills are glacial moraines. Whole area is glaciated, with sand and gravel layers exposed, meaning that most of the water leaves the lower watershed through the aquifer (seeps through gravel streambeds, into the ground) rather than through streams. No big streams, some long ones.
 - Surface aquifer fills up and depletes every year. Most wells are in surface aquifer (60-80 feet deep). Sometimes it gets so full that it actually surfaces and causes flooding. Number of aquifers is variable. There are many interconnections under the surface, and they fill up at different times. Can be a problem for homeowners who build in areas where an aquifer hasn't been filled for many years, and then it fills up and floods the property (especially for Yelm and southern Thurston county). Once the aquifer fills up and floods, doesn't go away very fast.

- Watershed has lots of water in the winter, less in the summer. Several major reservoirs help maintain stream flows in summer. Snow and aquifers are natural reservoirs, Alder Lake is man-made. Good aquifers are the reason we had good salmon runs in the Nisqually. Streams that go across prairies (Yelm Creek, Muck Creek, etc.) with glacial layering can become intermittent (water flowing where streambed is clay, and going underground and leaving streambed dry on gravel).
- Are seasonal variations of in-stream flows due to seasonal precipitation?
 - Natural stream (without hydroelectric project influence) follows natural hydrograph. Prairie streams tend to go right down to zero in low-flow summer season.
- Do streams in the upper watershed maintain good instream flows year-round?
 - Yes, because they are fed by some amount of snow or springs. No deep aquifers in upper watershed, water surfaces pretty quickly in bedrock environment.
 - Wells in Ashford and other upper watershed areas are not below bedrock, they go maybe 30-60 feet down to the shallow aquifer that flows right along the Nisqually River.
 - Problem for Eatonville is that their wells are in close connection to aquifer underneath the stream. Mashel can get very low in the summer. Known as ground water under the influence of surface water, have to treat it like surface water.
- City of Olympia takes about 85% of its total water supply from Nisqually watershed. Used to come from McAllister Springs, which was surface flow at high risk of eventual pollution. In 2014, city moved its source up-gradient, above the railroad, to a well field. Tapping a similar aquifer, but now groundwater. The change was not controversial. Streamflow in McAllister has actually increased since Olympia moved its source.
 - Olympia, Lacey, and Yelm were required by Ecology to do huge raft of studies about this aquifer. We know a lot about it. Huge, draws from big prairie areas under JBLM, North and South of the river. Water chemistry is slightly different in different springs.
 - Discharges in springs all along the valley. Majority of discharge is underwater into Puget Sound, along the face of the estuary. About 100 million gallons a minute, under the seabed and along edge of the dropoff.
- What kind of water availability is there in the county for growth and instream flows and exempt wells?
 - Nisqually is at 800 cfs in middle of the summer. Right now George estimates it's about 3,000 cfs (2,500 cfs required for Tacoma Power at full generation, which they are right now. 1,800 per USGS gauge near Ed's house). USGS has several continuously reporting gauges.
 - In 1978, set some minimum gauge flows based on estimates and commissioned additional studies (state, federal agencies, NIT, utilities contributed). Ecology studies in 1980s found same flows. Ecology rules found tributaries were all overappropriated. All tributaries downstream of hydroelectric projects were closed for future out-of-stream appropriations, other than exempt wells.
 - Vast majority of Nisqually watershed is still relatively undeveloped.
 - Difficult to impossible to notice the impact of any wells that tap the Nisqually, and probably major tributaries as well. Each exempt well is allowed to draw a maximum of 5,000 gallons per day, and average is probably more like 500

gal/day. 1 cubic foot second = 27,000 gal/hour, so it would be difficult to measure on a stream and see the impact. An irrigation pipe would be different, but there are no future water rights available.

- Can Yelm tap into this aquifer, given the major issue of water for its development?
 - That's the dilemma of the Foster decision (2015, found that Ecology could not grant exemptions that would permanently impair senior water rights or instream flows). Yelm, Olympia, and Lacey did big study in the 1980s, seeking some change in existing water rights. Ecology's memorandum of decision approved Yelm's water right (which Foster overturned) on the basis that municipal water rights are a preferred use. Ecology did not use the studies, which indicate that Yelm water rights would have no or positive benefits on stream flow, because they would draw water from the deep aquifer that would otherwise be going through to Puget Sound (and fully or over-mitigating water back into the streams). Ecology went more conservative and lost in Foster decision.
- Differences between Nisqually and other local watersheds:
 - Deschutes aquifer is actually tributary to Nisqually aquifer. No studies to determine what percentage turns from Deschutes and ends up discharging in Nisqually watershed springs. Deschutes is well-developed downstream with lot of wells, runs pretty low in the summer. Closed for future out-of-stream appropriations.
 - Hirst decision isn't a huge issue for Nisqually Tribe given makeup of the watershed and low development. Other tribes and other streams do. We would if there was a huge urban development in the Mashel, but there isn't.
- Talk of a resort in upper watershed? Is there water for that?
 - If there wasn't enough water for it, it wouldn't be feasible. Not major concerns, only small streams with no anadromous fish. Resort is likely not viable (permits are expired) but main concern was financial, not water.
- How is glacier recession affecting instream flows?
 - National USGS streamflow gauge at Ashford demonstrates that amount of water coming down hasn't diminished substantially. But glacier is diminishing. Conceivable that sometime in the distant future, inflow could be substantially lower. Biggest impact would be on Tacoma Power's hydroelectric generation. Might not necessarily affect Tribe's interest in salmon downstream because rules protect instream flow for salmon first. Does point to ongoing issue of climate change, but Nisqually will be insulated from the worst impacts because of the ocean effect. Snow vs. rain proportions will change, but not monumentally. Tiny over time. Tacoma will continue to operate the hydroelectric project and be able to capture enough flow to do that. The further the glacier diminishes, the higher it goes in elevation, where it's colder. In a global sense, glacier recession is small potatoes.
 - If push comes to shove, does Alder Dam have to maintain streamflows at expense of power generation?
 - Yes. Nisqually River Coordinating Committee is still in effect and discussing this. TPU talks to natural resource people and sometimes go lower flow in the summer to buy higher flows in the fall when salmon are spawning, in case of drought. George works closely with them and feels

confident it's a good relationship: everyone wants to make sure choices are informed. If you give up flow in summer, you can get it back in October, when the risk of low flows is most dangerous for salmon.

- Phyllis: based on what you know about the aquifers, you're not as concerned as other watersheds are about water availability in terms of exempt wells.
 - George: Correct. Might be able to make a good factual basis for impact in other streams. Hard to do that in Nisqually, anywhere except Mashel, which is already under a lot of scrutiny.
- Fred: Squaxin Island Tribe has concerns about this in the Deschutes. Recall from water planning that it wasn't easy to get the number of exempt wells. Department of Health had most info about it, but wasn't great. Loopholes for multiple hookups allowed some overdevelopment. Saw the Squaxin letter and wondered if maybe things have changed in Nisqually as well.
 - George: Hirst isn't about whether streams are low or high. It's about who has the burden of proof. I would think Squaxin case is to get Thurston to accept their responsibility to demonstrate that new development won't impact flows/senior water rights. Less about numbers, more about requiring county to make rules about who keeps track.
 - 40% of water taken out municipally comes back, through the septic system.
- It's difficult to translate stream flows to water numbers that are understandable. Typical well use is 350 gallons a day. 1 cfs = 1.5 million gallons a day, which is a little stream. 5000 gallons/day is less than 1/100th of a cfs, so it's hard to picture that making a difference in a little stream.
- Phyllis: discussion around Hirst about trying to get better metering on wells, because it's so hard to estimate how much is coming out.
- Emily can provide links to Thurston planning documents.
- Justin has a paper George wrote about Nisqually aquifers and geology. Emily will provide.

3. Updates on Member Goals:

- Rainier fee increase: NRC should approve letter to send to NPS at Friday's meeting. Comment period was extended to December 22.
- Net pens update:
 - Phyllis: Sierra Club meeting tomorrow night will have a speaker about aquaculture.
 - Legislation introduced for 2018 session: Ranker has one in Senate, MacEwen and Walsh have one in House. Quibbling over language – Ranker's bans Atlantic salmon net pens, other coalitions want "non-native species." MacEwen and Walsh's bill bans all net pens, exempting tribes. Some of the tribes are taking a very strong stance against net pens. Not sure where Nisqually is. NIT has not expressed concerns that they were endangering our runs. New evidence has come from BC suggests previous escapes shows some reproducing.
- The CAC has asked the Nisqually River Council to take a position on Thurston County's proposal to use all of Conservation Futures funding for gopher mitigation in the Habitat Conservation Plan. A number of environmental groups are very opposed because those

funds are seed money for Land Trusts and other habitat preservation purchases. Will ask NRC to approve draft letter on Friday.

- Manke Lumber update from Ariona: Nisqually Land Trust doesn't have the money to purchase the Powell Creek Complex parcel before scheduled logging starts. Ariona has approached but not heard back from Tribal Council. This year's coho run is low, but it is not officially endangered, so salmon recovery funds aren't available for this property. A local neighbor is coordinating a walk with Joe Kane from NLT and others, hoping that will open up more conversation. Another resident is working on a GoFundMe site, possibly with NLT (still discussing with them). As a last resort, will still try to talk to Manke, try to encourage sustainable cutting, or limit harvesting.

4. The meeting was adjourned at 7:48pm.