

Approved DRMT Zoom Meeting Notes September 8, 2021

Prepared by Shawn Hines, Jamestown S'Klallam Tribe

DRMT Members Present: Hansi Hals/Jamestown S'Klallam Tribe, Ben Smith/Dungeness Water Users Association, Shawn Hines/JST (alt), Judy Larson, Protect the Peninsula's Future, Tom Martin/Clallam PUD, Lorenz Sollmann/USFWS, Jenna Ziogas/Dungeness River Audubon Center (alt), Robert Beebe/Riverside Property Owner, Lance Vail/Olympic Peninsula Audubon Society (alt), Robert Phreaner/Olympic Peninsula Audubon Society, Cathy Lear/Clallam County, Powel Jones/Dungeness River Audubon Center

Others Present: Chris Waldbillig/WDFW, Kim Williams/Clallam Conservation District, Nicole Gutierrez/WWT, Phil Martin/resident, Robert Knapp/JST, Cynthia Rossi/Point No Point Treaty Council, Ryan Murphy/Point No Point Treaty Council, Lance Vail/, Genie Mixon/Dungeness Meadows, Jaimie Tippet/Riverside Landowner, Hillary Rose/CELP, Alex Scagliotti/Graysmarsh, Randy Johnson/JST, Maren Halverson/Riverside Property Owner, Hilton Turnbull/JST

I. Introductions

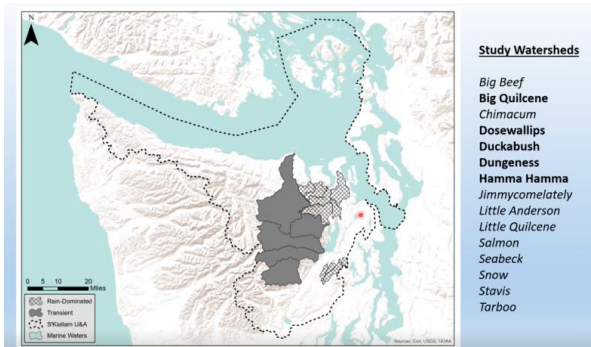
Hansi called meeting to order, introductions were made, and some shared what they are hopeful for in these challenging times.

Public Comment

- Judy Larson to forward video on success following removal of some fish farms in Canada.

II. Climate Change Stream Modeling Project, Ryan Murphy/Point No Point Treaty Council (see attached Powerpoint)

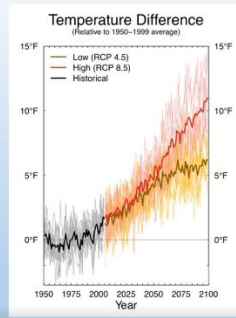
- Ryan described Point No Point Treaty Council – federally recognized non-profit tribal consortium established in 1974. Working to ensure treaty rights are preserved and treaty fisheries are conducted in a coordinated, sustainable, and biologically sound manner. Established climate change program in 2015, and subsequently – multi-phase stream/watershed modeling project in 2016.
- Project isn't making management or policy recommendations. Results are for information purposes only.
- Ryan went over some climate change concepts and local/Puget Sound trends before describing PNPTC's project.
- Reminder that with climate warming, Dungeness is transitioning from snowmelt to rain-dominated hydrology in mountainous areas. Impacts include increased winter flows and decreased spring and summer flows. Such trends are shown within the observational data record. Decreased spring snow melt peak, decreased summer flows, variable winter flows in the 10-year monthly average streamflow for Dungeness, and extending beyond Dungeness (Duckabush, NF Skokomish, etc.).
- Projected Climate: RCP 4.5 = moderate emission scenario; RCP 8.5 = more extreme emission scenario. In moderate scenario, temperature change of 9 to 10 degrees warming, and a little more than half that for the extreme scenario. Wetter days expected to get wetter.
- Project goal: predict impact of warming scenarios on fish habitat in Hood Canal and Strait of Juan de Fuca region by examining projected changes in streamflows and stream temperatures. Phase 1 = Streamflow and snowpack changes, Phase 2 = stream temperature changes, Phase 3 = focused species assessment, mid-HC Chinook (in progress), Phase 4 = riparian vegetation scenarios and stream temps (in progress), Phase 5 = extreme/peak streamflow changes and recurrence intervals (in progress). Discussing Phase 1 and 2 today.
- Study watersheds:



- For Hydrology Modeling, used Distributed Hydrology Soil Vegetation Model (DHSVM), physically based hydrology model; For Stream temp modeling, used RBM Stream Temperature Model (uses output from DHSVM outputs as its inputs).
- Climate.pnptc.org (plus attached Powerpoint) for details, including technical summary reports with all the methodologies.
- Streamflow Calibration Results: found that the model was replicating the data pretty well (observed vs simulated).

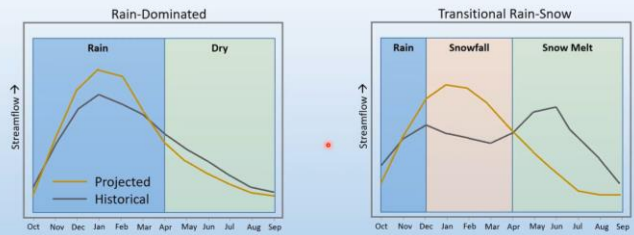
Summary

- Streamflow, snowpack, and stream temperature ensemble projections
 - 15 watersheds
 - RCP 4.5 and 8.5
 - Outputs for a variety of locations
- Relatively minor differences between RCP 4.5 and 8.5 until latter-half of century
- Elevation influences streamflow and temperature changes (*Higher elevation = more change*)



Source: Abatzoglou and Brown, 2011

Summary

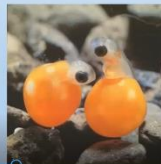


High-resolution watershed-specific modeling to highlight habitat vulnerability

- Flow changes are elevation-dependent
- Sub-basins can be of different watershed type than main system
- Lost in regional modeling

Impacts on Fish Habitat

- Streamflow Changes:** Increased scouring during high streamflow events can harm fish eggs
- Streamflow Changes:** Low summer and fall streamflows can strand fish in pools
- Streamflow Changes:** Increased flows can lead to increased suspended sedimentation
- Stream Temperature Changes:** Warmer water temperatures limit fish migration, health, and spawning ability and impact water quality



Photos: <https://pexels.com>

Assumptions and Uncertainty

Future Climate Scenarios:

- GCM outputs are largest source of uncertainty
- MACA downscaling method incorporates historical weather and assumes weather patterns to continue into the future

Project-specific Modeling Assumptions:

- Bias in the model is assumed to remain internally consistent through time
- Static vegetation/canopy
- Static stream geometry (i.e., no morphology changes)
- No deep groundwater component
- No reservoir/lake simulation

- Next steps: Phase 4, riparian vegetation impacts on stream temps; Phase 5, Peak streamflow event changes. Can update in a year or two when complete.
- rmurphy@pnptc.org contact; climate.pnptc.org

Q/A:

- Q: Downscale results, already gone through bias corrections? A: Yes, have bias corrected the downscaling. Ryan did correcting himself. Similar to CIG methodology. Phases 4 and 5 also working with CIG.
- Q: Why that particular model vs other options? A: pretty widely used in these types of studies, so can be methodologically consistent with what other research groups are doing in the area. It's also being updated, using latest versions of it. High resolution.
- Q: Correlation between observed and model results were astounding. Mechanism by which streams warm? Next to last slide. A: A number of warming mechanisms: correlation between air temp and water temp, decrease in snowmelt, different riparian conditions can lead to warming, direct solar radiation on streams; less heat capacity in lower volume streams.
- Q: Are you connected with Strait ERN's work on climate resiliency? And what is the level of confidence related to the models? A: No, not connected with Strait ERN. And the confidence info should be in the reports.
- Following on Ryan's earlier comment that this work is scientific observation/modeling for informational purpose only, without making any policy decisions; Hansi noted that DRMT is a watershed mgt team that provides information exchange and also does not make policy decisions, but does make recommendations based on studies. Hansi said the DRMT Executive Committee would discuss DRMT's role in looking at science and watershed management, how we are using this, who recommendations would go to, etc. Hansi invited further discussion by DRMT members at end of meeting.

Review and approval of July DRMT notes: Ben moved to approve notes. Judy seconded motion following correct spelling of "Raney" well. Motion approved, notes approved with correction.

III. Status of Dry Season Stream/Fish Irrigation Conditions and Actions, Chris Waldbillig/WDFW, and Ben Smith/WUA

Ben:

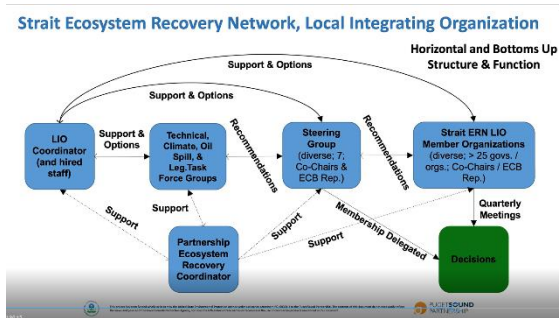
- Dungeness River at 89cfs. When River gets to 120 cfs, begin cut backs from max allowable withdrawals. Ratchet down on a daily bases for past few weeks. 5 outtakes. Every morning look at USGS gage, and compare to spreadsheet which tells how much each can withdrawal when river is at certain flow. Each has an allotted amount. Per agreement, always must leave 62.5 cfs in river, and/or 50% of the water flow at upper gage.
- Highland meter not working, so we've been manually checking that daily by Highland manager and weekly by water user's manager, who files water users report. Ecology still working on a fix.
- Can draw 55 cfs cumulatively when River at 120 cfs. At 89 cfs, max to withdrawal is 24 cfs. Withdrawing a little below that today.
- Shocked at where we are considering the great snowpack earlier on.

Chris:

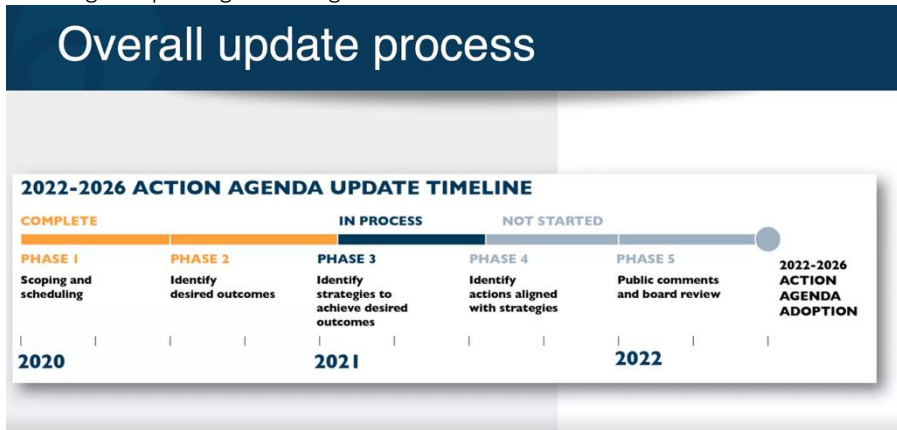
- Critical moment of needing moisture.
- Spent time on the river checking out low spots. Spoke with fish program staff and co-managers on the ground. Hurd Ck hatchery collected 75 Chinook from River. Screw trap went in later than normal because the water was high at that time, around the 4th of July. Unfortunately only caught 8 fish in the trap when it was located at Game Farm, so had to move it upstream, up to Dungeness Hatchery.
- Have done some netting to capture broodstock. 12 from hatchery, 40 from railroad bridge, 10 from Woodcock, 3 from Gamefarm. 1 mortality, which is very low. Need about 45 males and 45 females to get the 200,000 egg take. Expect to make goal. Also have four year broodstock that they've kept on station all four years, so could use those fish, if needed. Also planning to pull trap end of next week, or early next week.
- Lots of pinks throughout the river, thousands and thousands. Chinook spread throughout the river, as well. About 12 spawners above hatchery up to the fork.
- 101 down to Woodcock, low and "skinny" for Chinook to pass, with some Chinook holding downstream. In 2015 there was a large effort to deepen channels to help Chinook pass, but so far we aren't electing to do that this year since we are so late in season, and we are seeing Chinook throughout river. Although they are holding in deep water longer than usual, they are moving up to spawning reaches. Too late to do any manipulations. Hold off on doing any manipulations, don't want to do more harm than good. The fact we have fish throughout system is a good thing. They are getting through.
- New issue as of today, that water is getting through Highland. Chinook and Pink in there. Still monitoring to see how much in there. Depending on how many Chinook are in there, may try to put fish back into main river, and see if there's something to do to limit spawners in there. New info, adapting and rolling with it.
- Ben and Chris to follow up when plan is formed so that Highland can be more pro-active, for the current situation and also for future. Would passing more water down help for the current spawning there?
- Ben also commented that it would be great to have the reservoir project, which is designed to meet the needs for this timeframe, at the end of irrigation season.
- Jamie Tippet, river property owner, noted he's at the river every day, and observing thousands of pinks in the river and some Chinook, and that he saw a National Parks Service team in the river. Wondering with the coordination is with NPS. Hansi and Chris concluded it was probably the Riverscape Project that WDFW and JST is conducting, snorkeling the whole river. NPS is probably helping that effort. Shawn noted that effort will be discussed at a future agenda.
- Chris to forward some info on emergency drought funding. Opportunity to apply for funding, through Bureau of Reclamation.
- Ben: commented on 2015 drought year's irrigation shut-down surges, to try to help fish move upstream. Doesn't think there was any data about how effective that was, but made sense that that would help. Wondering if there were any volunteers to be on the river on the 15th and 16th/17th to notice any changes with fish movement after irrigation shutoff. Normal shut down on evening of the 15th, would simulate a surge, as there will be an immediate ~20cfs increase in the river. Would be interesting to see what kind of quantitative data we could gather after shutdown, e.g. 75% of fish moved out of pools. To see if we could get conclusive data showing the benefits, that pre end of season surges are beneficial. Not sure who could participate in that kind of monitoring. Interested folks could discuss offline.

IV. Strait ERN/Action Agenda Update, John Cambalik, Strait ERN Coordinator (see attached Powerpoint slides)

- Puget Sound is recognized as National Estuary by Federal Government, in National Estuary Program.
- Puget Sound Partnership formed in 2007. Basin is broken up into 10 Local Integrating Organizations working with various entities together to accomplish various actions for Puget Sound basin. Strait ERN is our local LIO.



- Strait ERN work is focused on Tier A Components (Vital Signs): drift cells, large estuaries, floodplains, Water Quality, Salmonids, Shellfish and Finfish Harvest, Vegetated Land Cover
- Created a plan 5 years ago: 2018-2022 Ecosystem Protection and Recovery Plan
- 13 local strategies including conservation and restoration, and local programs.
- 91 identified data gaps/barriers, needs, plus universal needs.
- 65 Local Strait Near Term Actions to conduct over a five year period. 37 non salmon recovery related, 28 salmon recovery related.
- Working on updating Action Agenda:



- Just kicking off identifying actions, Phase 4. No longer using NTA's. Task groups will be helping identifying actions.
- Working to eliminate barriers. Efforts to communicate externally, outside our geography, about our work.
- Pacific States/BC Oil Spill Task Force, Tribes, MRCs all involved.
- Climate Action Team (CAT) – Tribes, state agencies, some local reps. Developing climate strategies, and now actions for the Action Agenda. Focused on adaptation, resilience, greenhouse gas reduction across basin and carbon sequestration. An area that has been successful at bringing local perspective to regional group.
- Implementation Strategy Work Group (ISWG) – regional group. Defining regional strategies. Strait ERN provided local perspective.
- Action Agenda Coordination Group (AACG) – regional group. Diverse group, overseeing development of AA in its entirety. Strait ERN provided local perspective.
- Trying to inform and educate decision makers:
 - First LIO that met directly with Leadership Council, back in 2019.
 - Presented 5 topics to LC, especially two: 1) large scale, multi-benefit projects (like dike setback), permit process/costs a barrier; resulted in meeting where they committed to making federal permitting more efficient; 2) oil spill preparedness/response barriers and data gaps; resulted in letter that requested Coast Guard release of

long awaited draft of Ports and Waterways Assessment, which analyzed risks from oil spills; to be released after review

- Developed 5 different legislative priorities (list).
- New website being developed for Strait ERN, focused on funders, volunteers, new members.
- Strait ERN meeting on Friday if anyone is interested.

V. Other Orders of Business, Announcements and Standing Agenda Items

Project Updates:

- Cathy: Phase 1, Dungeness levee project went out to bid, and contract awarded. First item of business is to put culvert into small tributary of Meadowbrook Ck, to be installed by end of the month.
- Randy: Tribe's setback levee, 5,000 feet long, which will contain the 10,000 year flood, is complete except for the hydro-seeding which will be done next week. Not connected at either end, but the new levee is in place.



- Ben: Conservation District acquired \$80K to do 30% completion of engineering on the discharge pipe portion of the reservoir. That has wrapped up. Engineer still working on 30% engineering on the entire project. Still moving forward on that.

Next/Future Agenda Items:

- Shawn listed agenda items in the works: October – 2 themes: overview and status of the dike setback projects, and more on fish status (surveys) | November – hopefully Riverscape survey results and video footage of that effort
- Judy had several ideas for future agenda item requests:
- - update regarding Sporseen project, relates to Highland water flows that have sometimes adversely affected City of Sequim. Controlling stormwater. Ann update on Sporseen Road project?
- - Autobiography of David Susuki – overall view of looking at nature terrestrial N vs ocean N. Anyone from Batelle doing any studies of distribution of N?
- - Comparison of Elwha vs Dungeness regarding temperatures?
- - How melting of ice affects currents/weather patterns – NOAA?
- Hansi said Exec Committee would discuss these ideas.
- Hansi also to discuss with Exec Committee idea of potential technical group to pull together different pieces related to climate, resource, management, and recommendations moving from science to policy pieces.

Public Comment

- Ben: Chris Burns would be great person for watching river on the 15th. Hansi to follow up.

Meeting Adjourned