Snohomish Basin Salmon Recovery Technical Committee Meeting Summary

November 1, 2022, 9:00—11:00; Zoom

Attendees

Matt Pouley, Tulalip Tribes
Mike Rustay, Snohomish County
Morgan Ruff, Tulalip Tribes
Carston Curd, Snohomish County
Andrea Mojzak, King County
Andrew McDonell, Snohomish County PUD
Ashley Kees, WDFW
Denise Krownbell, Seattle City Light
Doug Hennick, Wild Fish Conservancy
Elissa Ostergaard, Snoqualmie Forum
Gwendolyn Hannam, WDFW
Jason Hall, Cramer Fish Sciences
Jim Shannon, Port/City of Everett, H&A
John Klochak, King County
Josh Chamberlin, NOAA NWFSC
Josh Kubo, King County
Keith Binkley, Snohomish County PUD
Kevin Lee, WDFW
Kollin Higgins, King County
Kyle Legare, Snohomish County PUD
Lindsey Desmul, WDFW
Marty Jacobson, WA Dept of Ecology
Matt Baerwalde, Snoqualmie Tribe
Micah Wait, Wild Fish Conservancy
Mike Crewson, Tulalip Tribes
Norah Kates, King County
Paul Crane, City of Everett
Pete Verhey, WDFW
Ryan Lewis, Snoqualmie Tribe
Susan O'Neil, Environmental Science Associates
Todd Zackey, Tulalip Tribes

Intros and Agenda Review

Co-Chair Matt Pouley opened the meeting with introductions and reviewed the agenda.

Regional and Basin Updates

Snoqualmie Watershed Forum Staffing Update

Elissa Ostergaard provided a staffing update – The Snoqualmie Watershed Forum's Technical Coordinator role has been filled by Norah Kates, who begins on November 14. The Project Coordinator position has been filled by Erin Ryan-Peñuela who will begin on November 7.

Salmon Recovery Grant Round Update

Morgan Ruff summarized current updates to the grant round approved in June – projects are still waiting on funding to go through. Currently, several projects on the list are lacking funding, but additional RFPs and grant programs are being sought by the Lead Entity to fully cover the ranked list.

It is anticipated that the Governor's budget and subsequent legislature operations will also change the list's funding status by spring of next year.

- *Puget Sound Acquisition and Restoration fund* (PSAR) will need about $60M from the State Legislature for our project list to be fully funded, specifically to fund $5M of work on Thomas' Eddy (ranked #8 by PSAR) under one of our possible funding scenarios.
- The committee was reminded that the Tulalip Tribes' Pilchuck Wood project was disqualified by Recreation and Conservation Office (RCO). The Lead Entity is in communication with RCO and providing feedback on qualifications.
- The Sultan River Floodplain project was funded separately from the Washington Department of Ecology's *Streamflow Grant Program*.

- Our Snohomish County-area projects for the *Floodplains by Design* grant program were ranked third on the list and well within the typical funding the program receives.
- Two projects in the basin are ranked pretty well (#3 and #17) on the *Estuary and Salmon Restoration Program* (ESRP).
- *Fish Passage Barrier Removal Board* – due to relatively low ranking throughout the basin, the Lead Entity is determining if applying to this program is worthwhile.
- Department of Natural Resources (DNR) *Watershed Resilience Action Plan* (WRAP) is fairly comprehensive with 34 hopeful outcomes for ecosystem recovery. Since a Watershed Steward position for the basin was just filled, it was suggested that DNR give an update in the near future.
- *Bipartisan Infrastructure Legislation* (BIL) funding: many applications are in progress – including coastal resiliency and transformational habitat restoration program, the community-based restoration program, culverts, and more, especially by The Tulalip Tribes.
- Other programs currently being explored include the *Habitat Strategic Initiative Lead* (Habitat SIL) request for proposal, and the Department of Transportation Fish Passage program.

Additional discussion about the PSAR Large Capital grant program occurred – since it's been around for 3- to 4 biennia, there is still a lot of refinement occurring. Systemic priorities of the program are related to populations of species "close to extinction," and populations "close to recovery," which favor certain basins over others. In basins like ours, where the Snohomish fits neither category while the Snoqualmie watershed is in more dire straits, partners are expressing concern of prioritizing populations as the only metric instead of an approach that would "fund the best projects." Regardless, Mike Crewson pointed to data that qualifies the Snohomish Basin's extreme rates of decline in the last 20 years:

- Comparing the 5-year running average escapement at the beginning and end of the 2000-2021 time series (so, 2000-2004 compared to 2017-2021), Snohomish Basin Salmon and Steelhead Stocks Sharply Declining (50-90% in the last 20 years)- Think these are the sharpest recent declines of any Puget Sound watershed but would like to compare this time period across the watersheds
- Sharp Basin-Wide Chinook Decline from 20 years ago when runs averaged more than double
Sharp Basin-Wide Coho Decline from 20 years ago when runs averaged three times higher
- Sharp Basin-Wide Steelhead Decline from 20 years ago when runs averaged 4 times higher
- Sharp Basin-Wide Chum Decline from 20 years ago when runs averaged 10 times higher
- 2017 before the 2019 collapse so new extinction risk modeling for the Skykomish could result in high probability of extinction <40 years now, not sure but it was borderline in 2017 and buoyed by only one more recent year when productivity was >1.0

The Puget Sound Partnership (PSP) will be further refining and evaluating the program in a participatory process – while it is unclear on timelines and engagement approaches, it is anticipated the Lead Entity will have space for feedback.

Sultan Basin Fish Monitoring

Andrew McDonell, Senior Environmental Coordinator with Snohomish County Public Utility District presented on Salmon Abundance, Habitat Conditions, and Monitoring Updates from the Sultan River. With 160 inches of annual precipitation, the basin provides 35,000 homes with power and 80% of the county's water supply. The Jackson Hydroelectric project in the basin is an unusual hydroelectric project in that it also helps to regulate water temperature control and flow protection, as well as sustaining environmental recreation targets and salmon recovery support.

Data: Chinook salmon returns in the Sultan River constitute between 5 – 19% of Snohomish Basin populations. In even years, Chinook spawn lower in the Sultan River; however, with an influx of pink salmon in odd years, a majority of Chinook spawn in the upper reaches. This year, 54% of Chinook spawned in the lower reach of the river and 24% spawned in the upper reaches. Last year, only 27% spawned in the lower reach while 42% spawned in the upper reaches. Data are 'ground-truthed' with drone surveys of salmon redds by the Department of Fish and Wildlife, although drone imagery is more accurate in the lower reaches where there is more exposure. Comparable data are gathered by hydroacoustic devices attached to the diversion dam in the upper reach in 2018, which confirms about a 2.5:1 ratio of fish to redds used for escapement estimates.

Findings: Fish escapement is dependent on (1) the number of Fall spawners, and (2) peak flow (scour) during incubation. There is also some fluctuation depending on brood year—for example, the 2014 chum returns on a 4-year cycle and is a relatively higher brood population. 2020 flooding impacted sub-yearling coho catches in 2021. During peak flow years, the upper reaches are prone to scour and there is a lower egg-to-migrant survival ratio. Yearling Chinook (20% of Chinook within the Sultan River) are impacted the year after peak flow years during outmigration. Additional sources of scour include significant head cutting after a sluiceway was opened, resulting in about 12 feet of scour along the thalweg, or lowest point of the channel.

Four side channels comprising about 10,000 lineal feet in the lower reach of the river have been restored by the PUD. Engineered logjams were installed in 2012. Within the side channels, monitoring observations have found lots of rearing and some spawning. After high flow events, other habitat subtypes form and evolve; riffles become pools and are converted to glides. Overall, habitat diversity and the volume of large woody debris have increased over time.

Future Monitoring: PUD has been operating smolt traps more frequently. They want to determine what magnitude of flows result in redd scour with accelerometers, which will help inform peak flow impacts and flow protection within the project area. The PUD has also obtained a Department of Ecology Streamflow grant, which will help to install a new side channel within the lower reach of the river.

Q&A:

- How far down does streamflow sedimentation occur?
    - Aggradation in the lower river suggests sedimentation occurs over a couple of miles. When the Sultan and Skykomish Rivers are running high, backwaters occur and increase gravel input throughout the basin. The Sultan River Basin is highly landslide prone with good source material for gravel sediment – this is not often the case in hydro projects.
- What's the seasonal outmigration for subyearling Chinook?
    - Most years exhibit a bimodal population; there's a peak in April and a smaller in May. The trap has not intercepted many yearling Chinook.
- Have you noticed any difference in seasonal patterns in size of juvenile fish between upriver-downriver years?
    - Not really; the juvenile fish are typically pretty small – there may be a genetic component to this observation.

Whidbey Basin Cumulative Effects Study: Overview and Progress
Josh Chamberlin from NOAA NW Fisheries Science Center provided a summary of the study regarding the cumulative effects of historic ecosystem restoration in the Whidbey Basin. The project has been a collaborative effort and Jason Hall from Cramer Fish Consultants and Todd Zackey from The Tulalip Tribes have been involved as well.

The goal of the study is to analyze salmon recovery projects at many different scales to track their effectiveness. The project is tied to the Whidbey Basin (Skagit, Snohomish, and Stillaguamish Rivers) because of the extensive history of monitoring. The study hypothesizes that restoration has benefitted Chinook pups across the Basin. It will use an analytical framework to assess habitat, structures, processes, growth, distribution and migration, and survival and abundance to determine cause and effect relationships.

The next phase of the project will focus on implementation – it will include development of ecosystem models, literature review, and other analytical techniques to develop the cause-and-effect outcomes. The next phase is estimated to take between 2 and 3 years and will likely result in determining the effectiveness of implemented recovery actions. The outcomes should help in revising and updating recovery plans and documents, summarizing how we've been investing in recovery.

Q&A:

- How will the project assess the marine components? Migration from the nearshore seems complex.
    - Spatial overlap of populations was considered in the development of the model. Extrinsic factors influencing outcomes can't be included in the framework due to lack of intensive monitoring and/or high-resolution data. This will be recognized in the study.
- Will upstream factors from the nearshore be included in the study?
    - "Mediating factors" such as adjacent land use, peak flows, hatcheries, etc. will be included.
- How will the study analyze compounding effects of "highly restored areas?"
    - There are seven or eight endpoints for the analytical framework, including compounding, threshold, time crowding, landscape, etc.
- How can the technical committee stay involved?
    - Review the study design – Josh will provide periodic updates. The Puget Sound Partnership is setting milestones and future webinars will be circulated. The next project deliverable will likely be a 'Methods' paper, which will be a shortened form of the report, available online as a link in the Technical Committee's meeting materials.

2022 Work Plan Review
Co-chairs Matt Pouley and Mike Rustay shared Technical Committee accomplishments and presentation highlights from 2022. Technical Committee feedback was positive; members appreciate sharing information and learning information about specific projects. There is interest in climate change thematic elements of future presentations and discussing updates to monitoring plans and habitat targets, provided sufficient staff capacity. A draft 2023 Work Plan will be circulated by end-of-year highlighting what was covered and what remains from 2022. Members were encouraged to communicate interests with the co-chairs.

SBSRTC 2022 Accomplishments Summary –

- Culverts! – KC Water and Land Rec Division Culvert Prioritization, and Pilchuck Culvert Prioritization (Required TC approval of Pilchuck priority document and LE LOS)
- Middle Pilchuck R Scope Change (Snohomish Co) – Budget scope change, Required TC approval
- Committee update from LE on DNR WRAP, Received LE LOS
- Susan O'Neil Knotweed Control Strategy – Presentation; Required TC Comments, Lit Review, and Lit approval and finalization.
- FbD and SRFB Project Presentation
- FbD and SRFB Project package approval required vote from the TC and LE LOS.
- 4YWP Update and draft from LE
- NOAA LCM Presentation, Update and comments. LCM Webinar. Final lit materials out now.
- Blue Heron Slough, Pre and Post construction updates!
- Tulalip Beaver Project Update, past present future
- Whidbey Basin Cum Effects CEE analysis, update, next steps.

Project Presentations in 2022:

- Beckler River (WFC)
- Lower Miller River (KC)
- Tualco Valley Drainage Analysis (Tulalip)
- Holy Cross Floodplain Acquisition (Tulalip)
- Shinglebolt Slough (Snohomish Co)
- Thomas' Eddy (Snohomish Co)
- Woods Creek Trestle Removal (AASF)
- Blue Heron Slough Estuary Restoration (Port of Everett)

Monitoring Presentations 2022:

- Tulalip Beaver Study Work
- Sultan River Monitoring and Smolt Trap
- PSP Whidbey Basin CEE

Meeting Wrap-up

- Elizabeth from Seattle City Light may provide an update from the Tolt watershed in the coming months.
- A relevant large woody debris presentation may be given at the RCO conference.
- Elissa Ostergaard hopes to circulate the 15-year Snoqualmie draft by end-of-year.
- Next meeting is on December 6, 2022, including a 'Fish-In-Fish-Out' update.

Follow Up Items:

1. Consider having DNR present on WRAP updates.
2. Dept. of Fish & Wildlife and The Tulalip Tribes are updating escapement & juvenile numbers which will be featured in the 'Fish-In-Fish-Out' presentation next month.
3. The co-chairs will share a draft 2023 Work Plan at the end of the year.