

# Snohomish Basin Salmon Recovery Technical Committee Meeting Summary

December 6, 2022, 9:00—11:00; Zoom

## Attendees

**Matt Pouley, Tulalip Tribes**

**Mike Rustay, Snohomish County**

**Gretchen Glaub, Snohomish County**

**Carston Curd, Snohomish County**

Andrew McDonell, Snohomish County PUD

Anne Savery, Tulalip Tribes

Ashley Kees, WDFW

Austin Richard, Tulalip Tribes

Brett Shattuck, Tulalip Tribes

Darcey Hughes, Snohomish County

Doug Hennick, Wild Fish Conservancy

Elissa Ostergaard, Snoqualmie Watershed Forum

Gwendolyn Hannam, WDFW

Jim Shannon, Port/City of Everett, H&A

John Mahan, Tulalip Tribes

Josh Chamberlin, NOAA NWFSC

Keith Binkley, Snohomish County PUD

Kevin Lee, WDFW

Kirk Lakey, ARHPM WDFW

Kyle Legare, Snohomish County PUD

Lindsey Desmul, WDFW

Marty Jacobson, WA Dept of Ecology

Micah Wait, Wild Fish Conservancy

Mike Crewson, Tulalip Tribes

Natasha Coumou, Tulalip Tribes

Norah Kates, King County

Pete Verhey, WDFW

Ryan Bartelheimer, Snohomish CD

Thomas Bulthuis, Snohomish CD

## Intros and Agenda Review

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

## Regional and Basin Updates

Gretchen Glaub reviewed the Technical Committee's schedule for 2023 – the committee will be meeting the First Tuesday of the month, or the Second Tuesday in the event of a holiday. Expect meeting invites from Carston in the next week or so.

- The state salmon recovery grant round will have a Request for Proposals (RFP) that will be published in the next week or so.
- If you're expecting a cost increase in your current grant, notify Gretchen or Morgan Ruff.
- The Snoqualmie Watershed Forum's Cooperative Watershed Management (CWM) Grant Program has released their \$2M – 2.4\$M RFP in the King County side of the watershed through mid-January (23<sup>rd</sup> or 24<sup>th</sup>). Coordinate with Erin Ryan-Peñuela ([ERyan@kingcounty.gov](mailto:ERyan@kingcounty.gov))
- Conversations are happening about how we engage in regional grant rounds. Future considerations may be brought to the Technical Committee as warranted.

## Fish In Fish Out

Matt Pouley presented about the current status and trend of salmon populations in the basin to help track recovery methods and identify trends and shortfalls over time.

### Fish In

Escapement is the total number of fish that escape the Basin and return to reach spawning gravel as adults. The information is collected from spawning ground surveys on boats and helicopters, which count redds. The data series from The Tulalip Tribes and Department of Fish and Wildlife (WDFW) extends back to 1965.

- Chinook Salmon 2022: 2,221 (-778 from 2021)

Chinook are ESA listed. Escapement for Chinook tracks closely with patterns in the Skykomish population, which sources 70% of the natural origin Chinook in the Snohomish Basin. Overall, Chinook numbers show a gradual but persistent decline since monitoring began in the mid-1960s, with a more marked and volatile decline (50%) in the last 20 years. Record low escapements were noted in 2009, 2011, and 2020. Environmental conditions (like the 2014 Sea Surface Temperature Anomaly 'blob', El Niño, La Niña, snowpack) generally correlate with dramatic shifts in population, although there is multimodal trend of rising and falling.

- Coho Salmon 2022: 64,218 – 80,000? (2021: 96,801)

Snohomish Basin coho represent 25-50% of the entire Puget Sound population. Coho aren't yet listed under the ESA but runs have been experiencing volatility and an overall 70% decline in the last 20 years. After record-low escapements in 2015 and 2017, strict fisheries regulations have been applied since about 2018, when coho populations have been below 'normal management' status. 2023 appears to have high enough escapement to achieve 'normal management' status.

- Chum Salmon 2022: >16,119 (+3,590 from 2021)

A high flow event in 2006 caused significantly low escapement, and the population has not been able to rebound since that time, tracking with a regional trend in Puget Sound. The population varies annually but experiences a bimodal distribution where every other year (even years) is more abundant. This year, extremely healthy runs in both the Snoqualmie and Skykomish basins have been reported. Anecdotal reports of 10x the usual chum population have been seen in the Tolt, for example. Brood stocking in the Skykomish by WDFW about three or four years ago may also be a contributing factor.

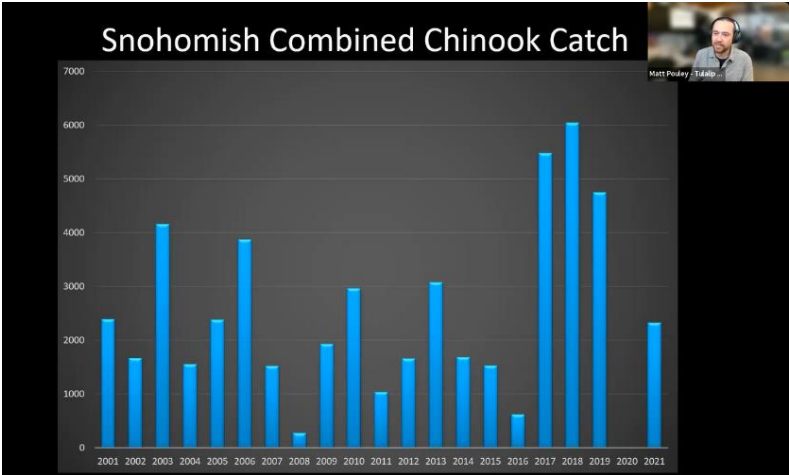
- Winter Steelhead 2021: 1,454

Steelhead populations have been below targets since the mid-1990s, with record low escapements in 2018 and 2019, where less than 1,000 fish returned to the Basin. Overall, the Basin has experienced a 75% decline in steelhead in the last 20 years. All steelhead numbers have been struggling regionally throughout the state. They have a long freshwater residency, and we don't fully understand their lifecycle in the marine environment.

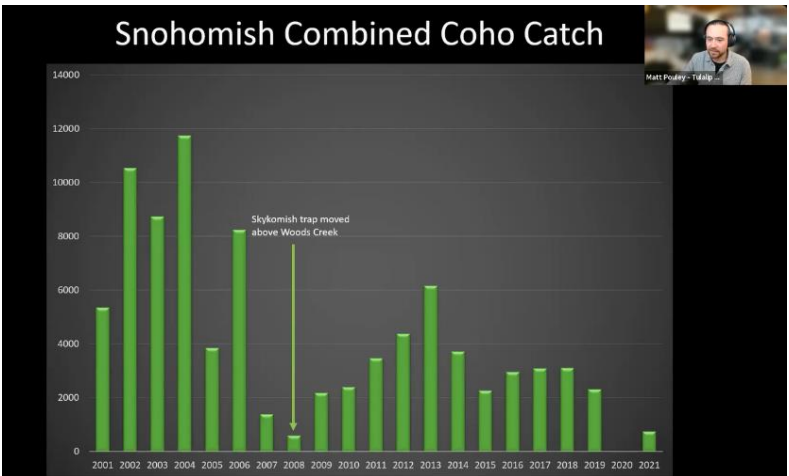
Many salmonid stocks have been experiencing long-term declines, increasing in speed and frequency over the last two decades. The last 5 years have seen record low escapements for coho, Chinook, chum, and steelhead populations. Coho are showing signs of recovery from their overfished status. Chum numbers remain depressed but are showing signs of improvement. Overall, salmon escapements over the last few decades from the Basin haven't been great.

### Fish Out

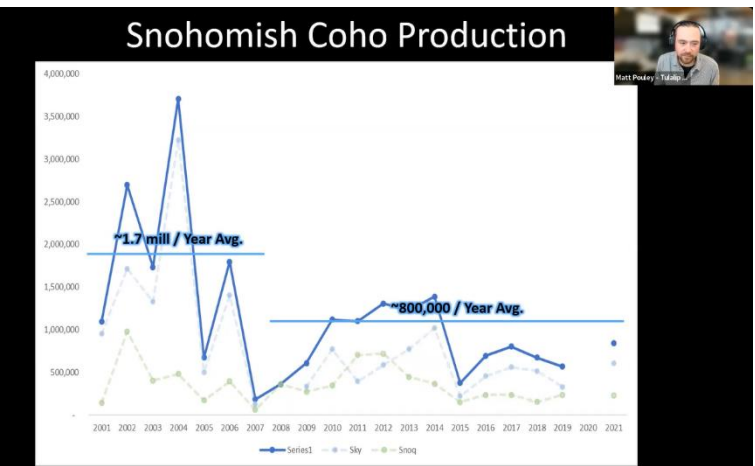
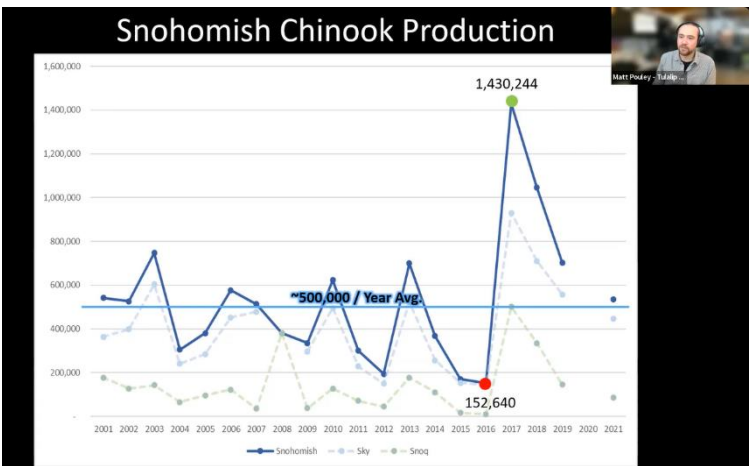
There are four smolt trap operations (by Tulalip Tribes and Snohomish PUD) that count baby fish as they emerge from gravel streams near their redds. Outmigrant numbers are tracked in the estuary as well, but smolt traps are used to bolster escapement data.



In 2008, the Skykomish trap didn't operate, and on neither system in 2020 due to COVID. The Snoqualmie accounts for a smaller proportion for the fish leaving the Snohomish system than the Skykomish. Chinook subyearling numbers are variable which may be accounted for by environmental conditions. It seems like the Basin is stuck in a low outmigrant, low productivity pattern, encountering about 2,500 subyearling fish per year on average. Record high outmigrant numbers were seen in 2017-2019, probably due to good environmental conditions.



Coho yearling numbers were skewed by trap position moving in 2008. Prior to moving the trap above Woods Creek, trapping numbers were averaging 7,000 fish per year. After moving the trap, numbers average 3,000 per year. Covid and debris near the trap affected 2020 and 2021 numbers.



Overall, the trapping numbers suggest about **half a million juvenile (subyearling) Chinook** salmon leave the Basin each year, tracking closely to Skykomish numbers. Basin production of (yearling) **coho** is estimated at about **800,000** fish per year.

Low numbers are attributed to fluctuating ocean conditions, record high predation (especially by harbor seals, which are bolstered by the Marine Mammal Protection Act and human infrastructure effecting a loss of 15M salmon, about 5-6% of salmonid populations, although salmon are not their primary preferred food source), harvests, and habitat. Harvest has been operating on a 'no net loss' paradigm which prevents a positive feedback loop from any population gains. British Columbian and Alaskan fishery exploitations are dependent on Puget Sound fish. Tulalip has identified the northern intercept as the primary cause of low populations in Puget Sound systems. The degraded state of habitat conditions, and further habitat loss outpacing conservation and restoration efforts is another important factor.

In terms of our Recovery Goals – the Basin's escapement numbers (~3k) are well below our productivity targets (14k-64k). The bottom line is that salmonids in the Snohomish Basin aren't doing great. Over the past decade, we've been setting record low returns. Data is interannually variable but most stock are experiencing long-term decreasing trends. Coho are doing a little bit better. Northern intercepts in Canada and Alaska wreak havoc on Puget Sound bound fish – more work is needed by northern neighbors to recover populations. Canada has instituted some commercial fisheries buybacks and other curtailing measures. Low escapements are probably tied to climate and marine survival, although recent near term marine indicators have shown tentative improvement. In general, the current pace of recovery is too slow.

#### Q&A:

- Do Chinook from Snoqualmie appear to be an increasing proportion of basin Chinook escapement?
  - It's possible; also, a decrease of the Skykomish population could be driving the proportional increase from the Snoqualmie population.
- Mike Crewson made a comment about El Nino and La Nina conditions and regime shifts in population patterns across Salish Sea regions. Environmental patterns also push population patterns, including flow – flooding in 2019 drove lower population numbers.
  - Matt underscored that flow plays into differences in efficiency at the trap, redd scour, and many other variables, including dependence on time of year and life cycle windows, where high flow can sometimes be advantageous.
- Are there outmigration timing difference between traps on the Skykomish and Snoqualmie?
  - Chinook subyearling patterns are affected strongly by environmental factors.
  - Coho outmigration occurs like clockwork in early May.
  - Andrew McDonnell suggested coordination of datasets on the Sultan River and let people know they could request and talk about those data with Snohomish County PUD.
- How does the coho contribution break out over specific tributaries?
  - Escapement is broken out over stream reaches. Pete Verhey said that DFW doesn't trap individual streams anymore.
  - Lower streams aren't captured by the traps which are upstream. However, the overarching trends at the traps should track with what's happening lower in the basin.
- It was appreciated that Matt mentioned that harbor seals don't prefer to eat salmon.
- The Pacific Salmon Treaty is the overarching salmon management for waters between the Columbia and Alaska. Within the next 5 years, it may be up for renegotiation. Tulalip and other tribes will be at the table. This was identified as a possible topic for the Technical Committee to bring up.

## 2023 SBSRTC Work Plan Preview

Co-chairs Matt Pouley and Mike Rustay shared Technical Committee workplan goals and ideas, and opened a brainstorming slide (*below*) for additional suggestions as well as gauging interest in an in-person meeting in June. In addition to general Lead Entity tasks, priorities were identified:

- Continue working on culvert prioritization
- June meeting could be a workshopping meeting around utilizing the models we currently have

**2023 Topics? Brainstorm Ideas for the 2023 Tech Comm**  
(help us build a robust and productive work plan for the year!)

Chum broodstocking details! Would love to hear more about the program and how we think it is impacting chum numbers.

Closeup look into how the trap at Sunset Falls is operated and trends.

Overlook on how the North of Falcon process takes place and how the numbers are determined.

Update on coho prespaw mortality study

Wood - what have we done, does it work, what's in the works? What else should we be done

What do the models tell us? Not tell us? How can we use them? What's next? (VELMA, LCM...?)

Remote sensing state/wound wind? ? What does it tell us?

Updates on past recovery projects and current projects.

Broodstocking

A work group to talk about the projects we haven't gotten to or struggle to fund

Ongoing data collection efforts that refine and further our understanding of early marine survival in the Salish Sea.

How can we improve bull trout escapement numbers? Would more funding help? What about juvenile abundance?

Reiterating an interest and desire to be better informed on Northern intercepts and what it means for basin recovery.

Complete freshwater targets for the plan update. Specifically, can we speed up riparian condition analysis and then reconvene the riparian target work group.

LWD effectiveness tracking, generally, in Puget Sound, and in Snohomish basin; Is this tracking the same thing as a restored system w/ historic wood loads?.

Snapshot on current winter and summer steelhead mgmt in the Snohomish. Status and trends. Hatchery/wild mgmt and interactions, and future plans. What are we doing for steelhead recovery? What more can we do?

The committee provided general consensus and interest in an in-person meeting in June 2023.

## Round Table Updates

- It was shared that the Department of Natural Resources instituted a fish pen ban, which will be applied in mid-December.
- Elissa Ostergaard mentioned that the first phase of the 2-year Fall City Floodplain Project has progressed well this year and King County wants to express appreciation for Tech Comm's support of the project, and for The Snoqualmie Tribe's early planting! Matt Baerwald mentioned that chum were spotted in a side channel during planting!

### Follow Up Items:

1. Carston to send 2023 meeting invites to committee members in the next few weeks. Watch your inboxes!
2. Next meeting will occur on January 10, 2023.