

# Snohomish Basin Salmon Recovery Technical Committee Meeting Summary

January 10, 2023, 9:00—11:00; Zoom

## Attendees

Gretchen Glaub, Snohomish County	Josh Chamberlin, NOAA NWFSC
Morgan Ruff, Tulalip Tribes	Keith Binkley, Snohomish County PUD
Mike Rustay, Snohomish County	Kyle Legare, Snohomish County PUD
Norah Kates, King County	Marty Jacobson, WA Dept of Ecology
Matt Pouley, Tulalip Tribes	Mary Lou White, Wild Fish Conservancy
Carston Curd, Snohomish County	Matt Baerwalde, Snoqualmie Tribe
Andrew McDonnell, Snohomish County PUD	Mike Crewson, Tulalip Tribes
Ben Cease, WDFW	Natasha Coumou, Tulalip Tribes
Brett Gaddis, Snohomish County	Pete Verhey, WDFW
Darcey Hughes, Snohomish County	Ryan Bartelheimer, Snohomish CD
Doug Hennick, Wild Fish Conservancy	Ryan Lewis, Snoqualmie Tribe
Elissa Ostergaard, Snoqualmie Watershed Forum	Sandy Dotts, RCO
Erin Ryan-Peñuela, Snoqualmie Watershed Forum	Thomas Bulhuis, Snohomish Conservation District
John Mahan, Tulalip Tribes	Trevor Jenison, WDFW

## Intros and Agenda Review

Co-Chairs Matt Pouley and Mike Rustay opened the meeting with introductions and attendees were directed to virtual breakout rooms for networking. Mike outlined the agenda for participants.

## Regional and Basin Updates

### Funding Update

Gretchen Glaub outlined federal funding (\$56M) for the relocation of the City of Everett's water supply line at Jackknife Bridge and restoration of Chinook Marsh (formerly Diking District No. 6). Other funding outcomes will influence exactly how much money will be coming through for our Salmon Recovery Funding Board grant round.

The [2023 Snohomish Basin Salmon Recovery Funding Board \(SRFB\) grant round is now open](#); since it's an odd year, we have about half a million dollars to allocate to projects for assessment, design, construction, and acquisition. It is possible that more money will be available depending on current grant allocations funding the existing project list, and decisions by the State Legislature. [Notices of Intent to Apply](#) are due on January 27<sup>th</sup>.

### **2023 SRFB Grant Round Timeline**

Date	Action
January 27	Project sponsors submit <b>Notice of Intent to Apply</b> in Google Forms
<b>February</b>	LE staff provide feedback on NOIs
February 24	<b>Project sponsors complete full applications in PRISM</b>
March 14 and/or 15	<b>Sponsors participate in project site visits with SRFB Technical Review Panel and local project review subcommittee</b>
<b>April/May</b>	Local Project Review Subcommittee scores projects
<b>May/June</b>	Snohomish Technical Committee reviews subcommittee scoring and makes project ranking recommendation to the Forum
<b>June 8</b>	Snohomish Basin Salmon Recovery Forum makes recommendation for final ranked project list
By June 26, noon	<b>Project Sponsors with Conditioned, NMI or POC projects revise project applications</b>
<b>July 20</b>	Applicants receive final SRFB Technical Review Panel comment forms identifying projects as Clear, Conditioned, or Project of Concern (POC)
<b>July – August</b>	<i>If needed:</i> Lead Entity committees meet to review and make final recommendations on ranked project list if major changes have been made to project applications or if projects have withdrawn from the grant round
August 3	<b>Sponsors accept SRFB conditions or withdraw project</b>

The [Cooperative Watershed Management Grant](#) has \$2.13M available for capital, monitoring and assessment, and/or education and outreach projects in the King County side of the watershed. Talk to Erin Ryan-Peñuela [[eryan@kingcounty.gov](mailto:eryan@kingcounty.gov)] for more information – [Notices of Intent to Apply](#) are due on January 23<sup>rd</sup>.

King County Park’s [Open Space Corridors](#) grant has \$9.9M to allocate for projects that restore the natural functions of rivers, create or restore public access, and/or increase public awareness of river corridors as valuable natural resources. The application period closes March 15<sup>th</sup>.

#### Project Review Committee

Gretchen solicited a request for 10 – 12 people to volunteer for the project review committee. If you’re interested, please talk to Gretchen. It is anticipated that this year’s grant round will be a bit smaller, so the time commitment will be a couple meetings and a couple of hours to review projects. Gretchen will be asking prior reviewers if they’re interested in serving again.

#### Committee Guidance Document

Mike Rustay shared the committee’s guidance document and solicited recommendations for change. The document includes information about membership and consensus continuum. Matt encouraged people to participate in the consensus continuum in the future.

#### **South Fork Skykomish: Sunset Falls Trap and Haul Operations Update**

Ben Cease is a Fish Hatchery Specialist IV and has been working in the state hatchery program for the past 13 years. He has been working at the Sunset Falls facility on the South Fork Skykomish River just east of Index since 2017. Sunset Falls is a natural barrier to fish migration and is part of a sequence of three natural fish barriers which also includes Canyon and Eagle Falls upstream. Fish are trapped below Sunset Falls and hauled above the upper of the three impassable barriers, Eagle Falls.

There are two staff members working July – September each year at the fish collection facility which has operated since 1958. There's a facility at the base of the falls, and about a 100-foot-tall fish ladder above it which includes softer areas for the climbing fish to rest. Only about 100 fish are trapped at a time due to hauling restrictions. On peak days, like October 31 this past year, 3,500 fish moved through the trap in a day. Most years, the peak day processes about 2,000 fish.

The trapping operation is an opportunity to count and learn about each fish, including its sex, species, and whether it is marked or unmarked. Due to the number of coho and pink salmon moving through the trap, some metrics like sex ratios are not able to be tracked, but always are for Chinook, steelhead, bulltrout, whitefish, cutthroat, chum, and sockeye. Broodstock collection for Chinook, steelhead and coho is also completed at the Sunset Falls facility. Sampling during the hauling operation includes scales, DNA, and fork and jaw lengths.

A water-to-water transfer is done during peak coho and pink season, or in warm-water events where handling fish is not safe for them. Water-to-water transfer with two trucks allows a 40-minute turnaround on coho and pink salmon transportation to a spot near Money Creek by Skykomish, about 11 miles east on Highway 2. A former release site near Baring was much closer, but the river avulsed away from it and it's no longer able to be used.

While on average almost 25,000 fish are annually trapped at the facility, there is substantial variability from year-to-year. In 2009, 124,228 fish were trapped. Sunset Falls generally contributes between 20 – 25% of Snohomish Basin coho escapement, currently at 21% of the basin return on a three-year average.

Weather can cause extreme flow events at the trap and can make unsafe conditions for fish at the intake if not accounted for. The Bolt Creek Fire caused operation restrictions as well. Every spring, wood and rocky debris must be removed from the trap and ladder and repairs completed because of the wear on equipment and infrastructure over the winter season.

#### Q&A:

- Where is the release site? Portions of Money Creek go dry in the summer.
  - Fish are released at the Money Creek Campground into the South Fork Skykomish. There's always enough water at the release site, even if there's not enough water at the falls (180 cfs is generally the minimum limit for the South Fork at Sunset Falls)
  - The site at Money Creek is deep and shaded
- During peak fish events when sampling isn't completed on 100% of the fish processed through the facility, is a subset enumerated or sampled for statistical purposes?
  - Yes, especially when there is not as much overlap between Chinook and pink peaks. Visual mark rates are employed instead during peak times, and those are distinguished in the data.
- During the 2015 'blob', 50% of the Basin's coho were attributed to the facility. It seems like the facility will be important as the basin experiences warming waters.
- Do fish go downstream of the release site?
  - It's hard to tell, but not many fish that look 'handled' end up back down at the falls.
  - Matt Baerwalde has completed snorkel surveys and saw two adult Chinook between the release site and the falls. Keith Binkley concurred.

- What are the biological samples used for?
  - The Tulalip Tribes' Stock Assessment Lab run samples and archiving DNA and updating genetics analyses and databases to supplement the work with the Snohomish PUD, including parentage productivity analyses; scales are sent to WDFW for ageing.
- How many river-spawning sockeye are processed?
  - A small increase over the past couple of years, varying between 8 and 70, more than bull trout. Sometimes bull trout get pushed around by other fish and aren't unable to use the ladder. Generally, more bull trout are seen when the water is cooler, approaching winter.
- Does the trapping interval time happen around the bull trout migratory window?
  - Not sure, but the majority of fish are seen during the cooler waters.
- When are peak Chinook counts?
  - Mid-late September or early October through mid-October.

#### **An Update on Chum Broodstocking at Wallace River Hatchery**

Trevor Jenison is the hatchery operations manager for Region 4 and has worked on the Wallace River Hatchery for 14 years. The chum program started in 2018 to recover the depleted natural origin chum salmon population in the Skykomish River watershed. Wild escapement goals vary from 28,000 in even years to 10,200 in odd years, and escapement has dropped steadily since the early 2000s.

Broodstock collection occurs through hook and line. A permit was obtained and volunteers including guides and anglers were engaged to collect 150 paired chum prior to spawning ('green'). Care during the transportation process is important to keep the fish healthy. WDFW uses a vinyl bag with a mesh enclosure that is minimally abrasive to the fish and can be anchored. Because a lot of the boats aren't outfitted with live wells, large coolers with bubblers, in-river net pens, and truck pickups are used to keep fish healthy. Holding pens at some of the river pickup sites are 16-foot diameter, circular, fiberglass ponds with netting covering to prevent inadvertent jumpers and keep stress low.

Spawning fish are processed by hand. Each fish is checked, females especially, for their readiness to spawn (ripeness), e.g. the development of eggs. They are taken from five fish 'pools' meaning five fish are put in a bucket, then split into five other buckets, and one male spawns a fifth of each female, while still maintaining a 1:1 spawn ratio (called 'matrix' spawning).

After spawning, ovarian fluid (to check for IHN virus), scales, otolith, DNA, length measurements, and kidney/spleen are taken to check for health conditions and build up a baseline for long-term tracking. The Tulalip Tribes and Region 4 staff assist with data collection and sampling.

Eggs are split and mixed, then sampled 100 at a time to inventory the eggs being processed. Incubation occurs by heath stacks and will be trying katois (large upwell boxes). After hatching, they go into raceways for rearing. They are fed 6 – 8 times a day about 2% their body weight and tracked weekly by sampling for growth patterns. Chum are kept between 2 – 6 weeks. Wallace facility is undergoing development of new rearing structures. If chum are kept too long, they are susceptible to gill disease. Before release, they are measured again. Release numbers have been increasing but are variable. In 2023, 239,987 chum are projected to be released.

## Q&A:

- What kind of feed is given?
  - BioPro is given, comparable to chinook, steelhead, and coho. It looks like extra ground coffee grounds, and is about 58% protein. Protein is mainly animal-derived (sardine or anchovy), especially for Chinook, but depends on availability from year to year. It floats at first, but then is transitioned to feed sizes that don't float as much.
- Antibiotics on the eggs?
  - No, not at any point. Salt is used with adults during handling transportation to protect slime coats and reduce stress. Potassium permanganate is a topical treatment for bacterial gill disease that can be used to oxidize organic material on gills and clean up the bacteria. Potassium has been used as a drip into the raceways at least one year but is not used every year.
- How are they released from the rearing channels?
  - 'Volitional' is ideal and is completed over a couple of weeks. It involves dropping the screens and dropping the pond a bit to reduce impact of falls. Trucking has occurred during construction.
- Mike Crewson discussed BioSupreme feed, guaranteed to be derived from fish meal for Chinook, which are 'finicky'
- Are the fish imprinted to the hatchery? Will they return there?
  - Hoping that imprinting occurs and that the hatchery's recruitment will be coming back. The fish are only there for a short time period and are prone to stray due to their life cycle. This year and the years to come will tell more. Wild fish are still ideal for broodstocking, and the permit is for up to 30% of the wild run. Otolith reading is needed to see whether it was a wild Skykomish fish or a Wallace Hatchery fish.
- Is there intent to continue an integrated hatchery program?
  - Yes, hoping to get up to 500k release and eventually a 2M release. Working closely with co-managers and working through the startup phase. As fish come back, spawning techniques will need to be set.
- Fecundity of females?
  - 3,000 to 3,400 on average
- Upon release, what is the mean fork length? What's the peak release timing? Sultan River chum outmigration is expected to be high this year. Typically, on the Sultan they are about 40mm while migrating out.
  - Peak release is typically in May, depending on weather. Mean fork length is 48mm – 55mm
- Endgame for the program? There was a former Chum hatchery program in the 80's...
  - Will assess as the years move on. First focus was to rebuild the run.
- Egg-to-Migrant survival ratio?
  - One bad dip in 2020, but usually about 85% survival from egg to release. 3% from green to eyed eggs is low, which is looking very good this year.
- Fish are 100% otolith marked?
  - Yes
- Any other species being identified for broodstocking?
  - No conversations coming up – the Wallace Hatchery rebuild is stretching capacity.
- 90% crash happened in the early 2000s, so 'good' years are relative. When do you institute a program? Can evaluate this in the coming years.

## Meeting Wrap-up

- Brett Shattuck mentioned interest in talking to partners about a targeted/prioritized culvert inventory assessment work for future barrier removal proposals as a possible collaborative SRFB proposal.
- Doug Hennick mentioned that Wild Fish Conservancy's efforts to restrict trolling in SE Alaska is moving forward.
- Elissa Ostergaard published a link to the [15-year Status Report](#) from the Snoqualmie Watershed Forum. The report has both technical and layperson information on fish, habitat goals, knotweed removal progress, funding, and more. Elissa recognized Cory, Emily, and the graphic design consultant for their work on the project. The annual status of Salmon Fact Sheet is coming out soon.
- Pete Verhey spoke about coho this year; seeing a lot of prespawn mortality in the index reaches, but supposes that the causes are not due primarily to tire dust, but vulnerability due to low-flow and predation by scavengers. 75k are expected for escapement this year on estimates from Sunset Falls and we were behind, but the peak spawn day was December 24 and there are still pulses of coho entering the basin. Matt mentioned that the 'rain on snow' condition recharged a lot of creeks that pushed hundreds of coho from Tulalip Tribes restoration projects. Pete, Brett Shattuck, and Matt talked about prioritizing upper reaches of Allen Creek to collaborate on some barrier reduction, mitigation, and restoration, despite a de-emphasis on state funding for coho projects.

### *Follow Up Items:*

1. Next meeting will occur on February 7, 2023.
2. Matt to talk with Brett about Culvert Prioritization feature in March.
3. Carston to include co-chair contact information online as needed.
4. Pete Verhey wants to connect with Mike Rustay on the headwaters of the Allen Creek watershed barriers and bring this idea up in project working groups.
5. Submit Notices of Intent for projects in the basin!