refreshes
Gretchen informed the group that there is roughly $500K to allocate to projects this grant round. She reminded attendees that even numbered years we have a larger grant round (around $2.4 million to allocate) thanks to expanded funding sources. This year, being a smaller funding year, we only received four full project proposals and considered alternate projects from last year’s grant round.

Gretchen gave an overview of the three ranked projects proposed for funding this year totaling $427k:

- Snoqualmie River Large Wood Placement Conceptual Design (Wild Fish Conservancy)
- Catherine Creek Large Wood Placement Preliminary Designs (Sound Salmon Solutions)
- Woods Creek Culvert Cooperative – 118th St Construction (Snohomish Conservation District)

She asked for approval of the ranked list, prepared by the Technical Committee, and approval to trade this year’s extra funds (ensuring current projects are fully funded first) with other neighboring watersheds. Funds given to other watersheds ($163k) would be repaid next grant round when we will likely have a deeper project list to fund. Members approved the ranked list and trading of funds.

**Focus Topic – Snohomish Salmon Trends**

Pete Verhey gave an overview of the WDFW and Tulalip programs for monitoring status and trends of salmonid populations. This is a group effort between WDFW, Tulalip Tribes, SnoPUD, and Seattle City Light.

- **What are our salmon numbers and where do they come from** – Escapement estimating requires frequent spawning ground surveys by foot, raft, and boat as well as helicopter aerial surveys. Methods include mark red marked census (Chinook and Steelhead) and base year expansions (Chum, Pink, and Coho). The base year expansions estimates are based on historic mark recapture studies where population size was calculated, and live and dead counts were made in index areas used today. Carcass sampling is used to determine hatchery origin recruits and natural origin recruits.

- **What do they mean?** – These sampling methods are then used to estimate population abundance. This can help us understand if our predictions are accurate, for example, when the 2015 drought had consequences for our record low 2019 returns.

Lindsey asked: have you guys ever thought of using a drone? It wouldn't be able to cover as much ground, but it would be a lot cheaper than a helicopter. Pete said with helicopters you can cover 500 miles in a couple hours versus with a drone you can’t do much more than 10 miles in a day.

Janne asked: Are WDFW and Tulalip still identifying the hatcheries of origin for HORs? Would like to know where the HORs in the Snoqualmie are coming from since there is no chinook hatchery program in the Snoqualmie. Pete said some are Tulalip and Wallace and out of basin (Nooksack, Skagit, Green River mostly) hatchery fish documented

Elissa asked: When in September do the Chinook start spawning? What's the “2.5 fish per redd” number based on, and do you think it's still accurate? Snohomish Chinook spawn in the beginning of September and sometimes we don’t see reds until the 10th or 15th of Sept. but we start looking at the beginning of Sept. Pete explained that the 2.5 fish number is from agency literature. It is a standard in the ballpark if not perfectly accurate. It’s been used for many years. To change it, we’d have to have a new study and then modify every escapement estimate we’ve done. These are comparable year to year since they’ve used the same number.

Matt Baerwalde asked: How does the HOR% in the Snoqualmie for Chinook compare to other Puget Sound rivers without Chinook hatchery programs? Pete said he could discuss this more offline.
Matt Pouley shared about the Tulalip smolt trap (rotary screw trap). He has been working on the trap since 2009 and managing the project since 2012 but Jonah Keith will be taking over as the trap project lead. This is a collaborative effort with many partners over the years including NOAA, WDFW, King County, Snoqualmie Watershed Forum, and Pacific Salmon Commission. The traps began by Kurt Nelson in 2000. In 20 years, they have sampled over 30,000 hours over the course of 4,000 sampling days. The Snoqualmie trap is located at RM 12.2 on private property. The Skykomish trap is located at RM 26.5. Matt described the sampling methodology—fish travel downstream and enter the cone at the bow of the pontoon barge. Live fish are held for up to 4 hours in the live box before being sampled. Traps sample 24 hours per day for up to 80 hours per week. Most catch is fry more so than smolt (30,000 – 40,000 per night).

Keith asked: Are you able to run the trap at flows above 10,000 cfs? And do you have a handle of what percentage of the total outmigration occurs under higher flows? Matt said yes, we can and do run the trap at higher flows. It just depends on maintaining safe operations. To keep an idea of outmigration numbers during times we aren’t fishing we use a linear regression model to estimate figures.

Emily asked: Can you offer any thoughts about why you can set your watch to Coho outmigration timing every year, whereas for Chinook it’s more variable year-on-year? Matt mentioned it is impacted by environmental factors that push the Coho to smolt at the same time. For Chinook, the escapement occurs over a longer period with consequently different necessary rearing times based on factors like temperature which then impacts what we see when sampling.

Emily added: it sounds like cumulative degree-days have a lot to do with it, but it would seem that every year, it would take different numbers of Julian days to reach the amount of degree-days necessary to smolt.

Mike asked: How big of a data gap is Pilchuck River outmigration? Any thoughts about trapping in Pilchuck? What would it take to make that happen? Matt couldn’t comment on how large the data gap is and said they haven’t looked into trapping on the Pilchuck. But he added that finding a way to trap on the Snohomish mainstem below the Pilchuck would be ideal for tying the pieces together and giving a full picture from all the monitoring efforts.

Andrew McDonnell presented about salmon and steelhead in the Sultan River including an overview of the Jackson Hydroelectric Project. Benefits of this hydroelectric project range from flood management and water supply needs to fisheries protection and recreation needs. 2020 recorded the largest spill of the dam spillway, due to record rainfall, since 1995. Fish catch per hour numbers were much lower in 2020; the worst on record since the last record lows in 2012. He described observed trend differences in fish numbers between even and odd years.

Emily asked: In years where pinks are present, do you attribute the lower egg-to-migrant survival of chinook to the fact that pinks are digging up chinook redds as they build their own redds, or to the fact that chinook are being pushed upstream into potentially more marginal habitat that may be more susceptible to redd scour (due to gradient or whatever else)? Are you able to parse it down to that level of mechanism at all?

**Around the Zoom Room – Maintaining connection and sharing information**

Quick breakout room session to discuss takeaways from today’s presentations and how to incorporate this information into our salmon recovery work. Attendees returned to the main room to share out the highlights from their group’s discussion.
Elissa and others commented: It would be great to have the Technical Committee really consider Matt's recommendation of a new smolt trap on the Snohomish and develop a funding strategy.

Ryan, Pete and Henry: All the information that we saw seemed to point to marine survival as a significant contributor to low abundance.

Heather Khan: folks felt that it was a lot of information to digest. From Pete's presentation, it was interesting to learn how they view redds; had not heard that before. Wondered if Sultan River will see more and more salmon as years go on since Sultan is cooler than Skykomish

Mike: So much great data in the Snohomish. These presentations show how well we work together and are very important to making sure connections are being made. Data gaps still remain so let’s continue to work together to fill them so our decisions are based on best possible info.

**Celebrate our successes – Pilchuck River video**

Tulalip staff have relayed that, "We did see both Chinook and Coho utilization above the dam in the 2020 spawning season. We conducted a total of 7 spawning ground surveys from the Boulder Creek area down to the old Dam Location. In 7 surveys we saw 19 live chinook salmon above the dam site, and 2 active Chinook Salmon redds with Chinook salmon present on the redds. I believe the redds were approximately 1.4 River Miles upstream from the location of the old dam site. This is the first known documented Chinook spawning utilization above the dam location. We also saw 79 live Coho in late October throughout the river above the dam site."

Meeting adjourned.