Meeting Minutes

Lewis River Aquatic Technical Subgroup

To: Lewis River Aquatic Technical Subgroup   Date: July 25, 2024

From: Larissa Rohrbach, ATS Coordinator, Anchor QEA, LLC

Re: Final Minutes of the May 25, 2023, Lewis River Aquatic Technical Subgroup Meeting

The Lewis River Aquatic Technical Subgroup (ATS) meeting was held virtually on May 25, 2023, from 9:00 a.m. to 12:30 p.m. Attendees are listed in Section IV of these meeting minutes.

Action Item Summary

- See Work Plan.
- All ATS members will provide comments on the Lewis River winter-run steelhead abundance and composition monitoring prior to the June 29 meeting.

Agreements or Recommendations

- None.

Review Items

- Review of Lewis River Winter-Run steelhead abundance and composition monitoring (Washington Department of Fish and Wildlife [WDFW]).

Finalized Documents

- None.

I. Review Agenda, Review Last Meeting Action Items, and Approve Previous Meeting Minutes

A. Announcements

- None.

B. Review Agenda

- Larissa Rohrbach reviewed the agenda, and no changes were requested.

C. Review ATS Work Plan Priorities

- Rohrbach reviewed the most recent version of the ATS Work Plan which was distributed with today's agenda and updated the status of the work plan.
- Erin Peterson said WDFW is preparing a written review of the abundance and composition monitoring strategies, focused initially on Lewis River winter-run steelhead for ATS review. They will distribute the review early next week and would like to receive comments from ATS before the next meeting. They will then focus on Coho Salmon.

II. ATS Meeting Topics

A. Draft Steelhead Transition Plan – Comment Responses

Bryce Glaser thanked ATS members who commented on the draft steelhead transition plan. He sought a recommendation from the ATS in this meeting to move the revised document forward to the Aquatic Coordination Committee (ACC) for formal review. WDFW has corrected some errors and added some clarifying language.

Erik Lesko said PacifiCorp's comments were centered around the mixing of the integrated program fish into a new stepping-stone variant for harvest and whether that could delay moving that program toward a local adaptation phase for recovery. Glaser said the theme in the comments were questions around the stepping-stone alternative, which is technically a segregated program, but differs from a typical segregated program. There were also questions around broodstock collection approaches and other issues. The approach must continue to be adaptively managed as documented through the Annual Operating Plan (AOP). Glaser said WDFW would like to address concerns that the program could potentially delay recovery, because that is not their interpretation. An analysis of tradeoffs prepared by Kale Bentley in the April 27 meeting showed how the stepping-stone approach will move the steelhead program further toward recovery compared to current implementation approach. Glaser presented the comment response matrix. Highlights of the discussion are recorded as follows:

- National Marine Fisheries Service (NMFS) staff provided feedback on the need for proportionate natural influence (PNI) metrics expressed in this plan to support later formal consultation on the hatchery and genetic management plans.
- A conservation program error was found: The proportion of natural-origin brood (pNOB) target was misrepresented. The program would continue to strive to use natural-origin returns (NOR) as brood and would use hatchery-origin returns (HORs) as backup. The transition plan originally stated a pNOB of 30%, which is the NOR mining rate.

- Regarding the proposed new stepping-stone variant, the objective would be to use the conservation program offspring (F1s) for brood, which would only be one to two generations removed from NOR fish. The narrative has been expanded to explain that the objective of the stepping-stone program is to strike a balance between keeping the program similar to the conservation program while not affecting the ability to meet upstream transport and recovery objectives of that program.
- Regarding the interpretation that the plan proposes to add production, the proposal is a reduction of 25,000 juveniles in the winter-run program through a transfer to the summer-run program. The focus is on transitioning the program away from using the Chamber's Creek stock to something that is more genetically similar to in-basin programs and potentially achieves or improves hatchery mitigation obligations. The Chamber's Creek program is a harvest program, so the transition would fulfill that role. There will be increased overlap between the HOR and NOR return timing, but use of the stepping-stone variant would improve the genetic effect of that program by moving away from the Chamber's Creek program. Currently, North Fork Lewis River has a single endemic steelhead population, although it is managed separately between the upper and lower basins. Most of the habitat will eventually exist upstream of Merwin Dam. The biggest lift to the population will occur through improvements in passage, collection efficiency and expansion of the population upstream, and management opportunities to achieve recovery objectives.
- Lesko said that if we are moving toward a 50,000 fish integrated conservation program and 75,000 fish for the segregated stepping-stone harvest program, there would be an increase in the number of F1 returns from the stepping-stone program. There is concern about increasing the number of HOR fish in the environment over current conditions, even though the total production remains the same. Bentley said that by using the life-cycle demographic model with simulated proportion of hatchery-origin spawners (pHOS) and PNI and making comparisons between the new stepping-stone program, a fully integrated program or fully segregated program could be used to attain program objectives across all scenarios (varying smolt-to-adult returns (SARs), collection efficiency, and lower river harvest). Bentley found that the stepping-stone program had a similar PNI to the fully integrated program across all those scenarios. Because the stepping-stone fish would always be more similar to the natural-origin fish, the genetic risk is always less than a fully segregated program. The risk is described qualitatively in the transition plan. Lesko highlighted PacifiCorp's concern about that risk but understands that if experts in genetic risk have contributed to and reviewed the plan, he trusts that expertise. Glaser said WDFW had similar concerns about ensuring that changes proposed for transition would provide a recovery lift compared to the Chambers stock segregated program. If it provides the harvest benefit, then it is considered a win-win. The stepping-stone approach appears to be the best approach.

- Glaser said, regarding how to determine when healthy and harvestable is achieved, some of that work will be developed through the in-progress Integrated Population Model life-cycle modeling approach. The healthy and harvestable target set by the Columbia Basin Partnership, at the high end, is 3,000 adult returns. Life-cycle modeling approaches will continue to ground truth that number.
- Glaser said that language in the transition plan will match the current transport target in the Hatchery and Supplementation Plan (H&S Plan) and AOP, which is 1,700 adult returns. 1,239 is a newer target based on revised Ecosystem Diagnosis and Treatment modeling. Glaser suggested including a footnote about targets moving toward the updated 1,239 number. Lesko agreed and said that at the time that the 2020 H&S Plan update was developed, the revised Ecosystem Diagnosis and Treatment (EDT) numbers were not available. Karchesky said 500 fish was the original number, and he supported adding footnotes showing the connection between the H&S Plan, AOP, and the transition plan. This is consistent with how this has been handled in the Fish Passage Implementation Plan.
- Karchesky noted that to support programmatic decision making, it would be helpful to walk the reader through the terminology and practices describing each program type.

Lesko said the evaluation was reviewed for whether new or different monitoring would be necessary and whether there would be differences in management. Lesko asked whether anything is missing in terms of additional monitoring needs above and beyond what is in the H&S Plan now.

Glaser said making progress on calculating pHOS, PNI, and pNOB will be important. Determining how to calculate pHOS impacts for the two separate program is an issue (integrated program or stepping-stone program). Emi Melton said usually the stepping-stone component will have its own pHOS, but with just one PNI metric for the overall population. Separate pHOS metrics are needed, but reporting impact to the population separately for each component (PNI) is not needed.

Bentley said that for the multi-population model, there are separate pHOS inputs for each component, and separate inputs are needed for the component groups. There is a way to do this through reimplementing the mark-recapture in the Lower Lewis River. There will be more details provided in the plan Erin Peterson is working up. The only way to differentiate those programs is to obtain fish to separately estimate pHOS. Glaser said he does not view this as anything different than what must be done anyway. Lesko agreed: this is already a key question in the AOP.

Lesko asked whether there is a 75,000-smolt release there may be 600 fish that return. Will harvest be managed to "remove" those surplus fish from the river? What will be done with those fish that return to the trap? Glaser said the primary outlet for returning adipose clip-only stepping-stone program fish will be surplus, similar to how the Chambers program fish are currently managed. They would only be used for broodstock in an extreme shortage option. The goal would be to have as many harvested as possible. Further discussion is needed to determine how to manage that surplus and to consider recycling opportunities for harvest in the river with the primary outlet being surplus.

<u>Broodstock Collection and Timing</u>

There is a need for infrastructure to support broad broodstock collection timing, which will require additional egg takes and additional holding space. A possible strategy is condensing the number of spawning events down and managing rearing to optimize size and minimize residualism post release survival. The proportional numbers of BWT fish that are transported upstream of Merwin Dam must not be impacted. It would not be good to affect the spawn timing of fish being moved upstream to spawn above the dam. The goal is to manage the return ahead of the peak while also watching to ensure too many fish are not captured and impacting what can be transported upstream. Continued annual evaluation and clarification of the plan in the AOP will be needed. Excess fish taken for broodstock could be transported upstream if they have not ripened in time for spawning.

The start of broodstock collection is aimed for February 1. There are concerns a 1:2 collection rate may be too high. Based on what returns are observed, an annual collection rate can be set. This lets the program performance and annual review drive the next collection curve. Lesko said the collection rate of 1 out of every 2 fish was shocking. Returns have been low—approximately 600 to 700 fish relative to transport targets. There is a concern that fish held too long in the hatchery will not be healthy enough for upstream transport. Glaser said that those used for the segregated program will be BWT fish and to collect just enough for broodstock early in the curve. All BWT should not be taken to the hatchery, so none are available for upstream transport. This would cause a gap in upstream transport early in the curve. A better understanding of collection rates has been reached after looking at existing returns. 1 out of 2 fish has been settled on.

Rohrbach asked whether annual adjustment of collection curves will need additional processes or milestones. Bently replied that slight tweaks were made to how broodstock was collected last year. The framework changes each season; fish collection is adaptively managed on a weekly basis. It would be appropriate to reassess that framework and update it now that we have a new use for those F1 fish. Updated decision rules need to be incorporated into the framework. Rather than coming up with prescriptive 1 out of 2 or other rules now, will need to evaluate the rule sets again each year in the context of the effect on number of fish for brood and fish for upstream transport. That should be worked about a month in advance. Rohrbach said she can ensure the decision rules and framework are carefully described in the AOP, then staff use their usual processes for determining numbers in the collection curve.

Glaser said he is hoping for a recommendation from the ATS to move it forward to the ACC for review with the final edits discussed today. Lesko and Karchesky agreed to moving this forward to the ACC for review. It is important to characterize this not as a formal recommendation from the ATS, but as a work product of the ATS. Glaser said the H&S Plan is the plan that links program implementation to the settlement agreement. The H&S Plan states that these transition plans will be necessary to fulfill the obligation of the H&S Plan. Lesko said there is a change in the production composition here, which would be a change that the ACC would need to approve. The numbers do not change, but the composition does.

Melton asked during the year of low NOR and HOR returns, will F1s be prioritized as the integrated stock? Glaser replied that the goal is to use 100% NOR in the conservation program If there is a shortage that may not be possible. pNOB is less than 100% with a 30% mining rate on NORs and backfill of BWT fish. For the stepping-stone program, BWT fish are used as the primary source for broodstock. F2s may be used as backfill, or it must be accepted that the program may fall below the goal. It is likely BWT fish will be prioritized first to get the conservation program completed.

Glaser said the Lower Columbia Fish Recovery Board emailed and said they support the direction the ATS is headed with the Coho Salmon and steelhead plans. They did not submit formal comments but asked for Bentley to present the information outside of the ATS. This was done, and the board did not submit further comments after that.

The transition plan will be presented to the ACC tomorrow for introduction, discussion, and 30-day review. Then hopefully a decision document can be prepared for a decision on both transition plans.

The end of the 30-day review on the Coho Salmon transition plan is next week.

B. Update: Genetic monitoring strategy update

Lesko said one of the priorities this year is to finalize the genetics monitoring strategy. The focus for this year has been monitoring steelhead in the upper basin that may be a collection of subpopulations. Gary Winans (Northwest Fisheries Science Center) had collected a number of samples many years ago that were sent to Cramer Fish Sciences. A subsample of those were run to try to determine what the population structure was. They found 3 to 4 subpopulations upstream of Merwin Dam. There were not a lot of fish to run in the past, so Meridian Environmental, Inc., will collect additional samples from tributaries upstream of Swift Reservoir. Lesko will have a sampling design by the end of next week. Some key samples are missing from the original inventory prior to any steelhead being transported upstream; the samples will be attempted to obtain to increase the baseline understanding of that structure. Changes as steelhead are reintroduced to that population will be observed.

Chinook and Coho Salmon samples are being collected downstream of Merwin. There are already a lot of samples collected for Chinook Salmon. An increased sample rate of Coho Salmon carcasses was proposed this year. An increase in steelhead juvenile e-fishing sampling in select tributaries downstream of Merwin Dam was also proposed. It would be good to finalize the strategy this year, prior to implementation in 2024. An area where all Lewis River data can live is needed so participants can visit that site and obtain data efficiently.

Bentley said that detailed sampling plans have never been fully developed. The genetics monitoring strategy will move into the detailed sampling approach with the priorities outlined for upper basin, specifically focused on steelhead. There is still a need to sample in the lower basin for all three species. There are select locations in tributaries where steelhead samples could ideally be collected this summer. Meridian Environmental will sample in the upper basin, which is an extensive area with a lot of sites. There are not as many sites in the lower basin. There is a need within the ATS to discuss whose responsibility it would be to sample in the lower basin. Lesko said surveys and sampling in the lower basin would take place next summer because Meridian Environmental is occupied with work in the upper basin. Bentley asked what the staff availability is for sampling in the lower basin this summer.

All elements of the genetics monitoring plan should be addressed this summer if possible. This effort is something that WDFW could quickly discuss internally to identify potential capacity to get it done. Lesko said he is supportive of completing the work this summer, if possible, but he is sensitive to the amount of work already ongoing this summer.

Bentley said the genetics monitoring strategy that was drafted a year ago and had been included in the AOP largely addresses the key questions and will not change substantially.

C. Update: Hatchery Practices, Other In-Season Changes

Coho Salmon ponding, rearing, and marking will commence, and late-winter steelhead spawning has wrapped up. Spring Chinook Salmon collection is underway and ahead of schedule. There is currently code wire tag (CWT) implanting in the brood, with excess likely soon to be surplus. Return has been good, and fish have been transported upstream. Karchesky said with CWTs used as brood and excess, the upstream transport target has not been met. Karchesky asked the group about their thoughts about moving CWTs into surplus versus monitoring. This would be better for moving more fish upstream. Glaser said having more CWT fish back than needed for broodstock is not a normal issue. A study design approach to collect that CWT to evaluate H&S strategies is important. Holding additional fish until after this discussion today was proposed. Discussion on sample sizes needed for evaluation to recover CWTs versus upstream transport is needed.

Karchesky said low numbers are observed initially and then many fish returned very quickly. It would be worth revisiting what is in the AOP. In the short-term, analysis is needed on CWTs and whether those fish are able to be available for upstream transport. It would be worth looking at the long-term approach in mid-May when there is the quick increase in arrival of spring Chinook Salmon. Glaser said he does not want to jeopardize the ATS's ability to answer monitoring and evaluation questions by allowing those fish upstream because the ATS has invested in tagging those fish. He would like to include people who are thinking about SAR evaluation.

Glaser proposed to take excess BWT fish to hold at Lewis River Hatchery. The feedback was that plan would be too complicated for transport and should instead surplus in the interim. Karchesky agreed that it would be logistically difficult to do that. If it can provide some realistic information about CWTs, then they could be moved upstream in the near term.

Sam Gibbons said that summer steelhead have started being collected through an insurance program to collect enough ahead of drought closures. Lesko asked about the surplus on CWTs; the discussion at the time was to take all fish to brood, but they are likely to see extra fish this week. Karchesky said 96 females are needed to meet broodstock requirements. Hatchery staff were trying to focus on taking CWT fish to broodstock to prioritize collection of the CWTs versus transport upstream.

D. Other Updates

Glaser said the hatchery Chinook Salmon and steelhead fishery is reopening in the Lower Lewis River starting today. Holowatz said bank-only harvest is open in the reach from Johnson Creek to Colvin Creek; boat harvest can be very effective, and they do not want to allow all fish to go to harvest.

Holowatz noted that flows were around 8,600 cubic feet per second (cfs) and are now going down to 5,100 cfs. Lesko said the reservoirs are full for recreation and the campgrounds are open this weekend for Memorial Day. Subject to runoff, flow management is forecasted to bring lower river flows to 3,000 to 4,000 cfs (3,500 cfs average) next week. Natural inflows are only around 2,000 cfs; there is still a lot of snow at higher elevations, and hot weather could cause that number to increase. The forecasted flows could change because there is no additional storage capacity. Holowatz said WDFW is starting their fall Chinook Salmon juvenile seining project next week.

E. Review Next Meeting Topics

The ATS identified the following potential items to discuss at the next meeting:

- Coho Salmon and steelhead abundance and composition monitoring review (Erin Peterson)
- Merwin Trap outage (Chris Karchesky)

III. ATS Administration

The next ACC meeting will be held on June 8, hybrid (in-person and online), at the Merwin Hydro Control Center.

The next ATS meeting will be held virtually on June 29.

IV. List of Attendees

Name	Affiliation
Larissa Rohrbach	Anchor QEA
Christina Donehower	Cowlitz Tribe
Jeremiah Doyle	PacifiCorp
Chris Karchesky	PacifiCorp
Erik Lesko	PacifiCorp
Kathryn Blair	NMFS
Emi Melton	NMFS
Kale Bentley	WDFW
Sam Gibbons	WDFW
Bryce Glaser	WDFW
Josua Holowatz	WDFW
Erin Peterson	WDFW
Aaron Roberts	WDFW
Keely Murdoch	Yakama Nation