Meeting Minutes

Lewis River Aquatic Technical Subgroup

To: Lewis River Aquatic Technical Subgroup   Date: February 9, 2024

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

Re: Final Minutes of the January 25, 2024, Lewis River Aquatic Technical Subgroup Meeting

The Lewis River Aquatic Technical Subgroup (ATS) meeting was held virtually on January 25, 2024, from 9:00 a.m. to 12:00 p.m. Attendees are listed in Section IV of these meeting minutes.

Action Item Summary

- Erik Lesko and Larissa Rohrbach will update Annual Operations Plan (AOP) Strategies A and B on adult steelhead abundance and composition monitoring for review and discussion by the ATS, including improvements to redd survey methods.
- Bryce Glaser and Anja Huff will coordinate a meeting with Erik Lesko, Mark Ferraiolo, Chris Karchesky, on Coho salmon transition preparations.
- Erik Lesko will work toward finalizing the draft Genetics Monitoring plan by convening a meeting with consultants, to include Marc Johnson.
- Larissa Rohrbach will review the Annual Operations Report stoplight table to identify monitoring metrics that should be prioritized in the ATS Work Plan.
- Erik Lesko will work to adjust the scope for reporting juvenile smolt trap monitoring results in September.

Agreements or Recommendations

- None.

Review Items

- 2024 Annual Operating Plan and Data Responsibilities spreadsheet (sent to a small group for review)
- Revised AOP Strategies A and B Adult Abundance, Composition, Spatial and Temporal Distribution Monitoring

Finalized Documents

- None

I. Welcome (Rohrbach/Lesko)

A. Review Agenda

II. ATS Meeting Topics

A. 2024 Annual Operating Plan Status

Update: Adult Steelhead Abundance and Composition Monitoring

Jeremiah Doyle and contract staff conducted a site visit this week. Sampling events (hook and line sampling at designated reaches) will be held weekly starting from February 6. There are higher levels of runoff forecasted for Merwin Reservoir with spilling starting on Saturday that could affect the ability to observe and catch adult steelhead, however the flow should come down by February 3. Sampling events will occur at flows up to full generation, but will be cancelled if spilling occurs. Redd surveys will also occur weekly for abundance estimates. Redd surveys typically begin in early March and continue on a 7-to 10-day frequency through early June.

Bryce Glaser expressed a desire to have overlap between survey methods for a few years to develop correction factors if changing from estimates based on redd surveys to estimates based on mark-recapture. Lesko said that he understands the justification to also conduct redd surveys this year, but would need further discussion to extend redd surveys (for abundance) for multiple years simultaneously with the effort to use mark-recapture to model pHOS/abundance.

Kale Bentley previously commented on the way surveys are being conducted, and has suggested that redd life be tracked through counting new redds versus still visible redds. Jeremiah Doyle said that this is the method has been attempted since 2009. He noted that a problem occurs in areas where a lot of redd superimposition occurs, making it difficult to mark a redd and record how long that marked redd persists. Previous attempts to mark redds with flagging and weights were continuously buried by superimposition. Due to difficulty demarcating specific redds, the survey methodology included only new redds only to produce an estimate. Doyle said it may be possible to assess redd life in some places where the redds are more spread out; in previous years a redd life of 10-days was observed and assumed for calculations.

Bentley asked that if it is not possible to track redd life, what will the strategy be for accounting for missed surveys, or miss-counts of new redds? An Area-under-the-curve (AUC) method is mentioned in Strategy A, but has never been used. There is a need to clarify actions that can be taken to address issues with the time series. Erik Lesko asked if Bentley was referring recalculating past data; and agreed that the data can be reviewed. Doyle added that instances of surveys not being completed due to turbidity was more typical than the survey being missed. Lesko agreed that consistency of doing redd surveys every 7-10 days is not typically the issue, rather poor river conditions often persist over several weeks or a season and prevent redd surveys from being conducted either due to turbidity or safety.

Glaser suggested that Doyle, or others, write a more formal response about these challenges to address concerns brought up by ATS members. Doyle agreed, and said that he had responded with comments to the methodology review memo, and can help characterize the issue in writing.

(Following the meeting, language was added to the revised version of Strategy A, distributed following the meeting, to identify this constraint).

Bentley agreed to ask other WDFW staff how important it is to track individual redds versus applying some redd lifespan value to the total count of all redds. Jeremiah agreed that it would be helpful to know whether that approach could work well with an AUC analysis.

Lesko will provide additional information to the ATS about when redd surveys will start and whether they will be surveyed separately from hook and line sampling for mark-recapture.

Josua Holowatz said that some steelhead surveys are completed by rotary wing aircraft or helicopter. Lesko answered that surveys in the 1990's were done by aircraft, but since at least 2009 have all been done by jet sled.

John Best said he is working with the multi-state mark recapture model to be used for pHOS and abundance; he has most of the framework put together to run simulations to test the importance of potential sources of bias and run a power analysis.

<u>Update: Steelhead Transition Plan Implementation in 2024</u>

Rohrbach asked if there were any updates on infrastructure or planning. Kevin Young said the collection curve to be presented to the ATS will be discussed in February. A collection curve has already been provided for the integrated program and a collection curve will be provided for stepping-stone soon.

A conversation between a smaller group of WDFW and PacifiCorp staff about the Coho salmon transition will be held to discuss what would be needed and to bring this information back to the group in upcoming meetings. Bryce Glaser and Anja Huff will coordinate a meeting with Erik Lesko, Mark Ferraiolo, Chris Karchesky, Glaser, and Huff.

Data Responsibilities

Rohrbach shared the AOP objectives and data tracking spreadsheet for ATS members to review and comment on following the meeting.

B. Updates:

Hatchery Practices and Pathology

Sean Roon provided an update on various pathology issues. Tomorrow, a spring Chinook salmon pre-release survey will be done. Pond 14-4, which holds the yearlings transferred in spring, were formalin treated for fungal flagtail. This may have helped mitigate some of the infection, however, fungal infection is still present. This could be from smolting and rubbing. There is bacterial kidney disease (BKD) present in this group as well. Lewis Coho salmon are looking good. There are no issues thus far regarding gill fungus related to turbidity in early groups. Next month this group will start prophylactic treatments with potassium permanganate. The treatment was done last year prior to marking when a density bottleneck lead to bacterial cold-water flare ups. Fry and young juveniles transferred from Speelyai Hatchery are looking good. There is a small amount of *Costia* which is typical for this time of year. This group is undergoing prophylactic formalin treatments every other week.

Kevin Young reported that during inclement weather, which included snow and ice, Speelyai had some generator problems. Nothing major occurred and staff are currently working with PacifiCorp to fix these issues. The last group of kokanee are currently being ponded. All other species have already been ponded and fry are being taken care of for marking season in March.

Merwin Hatchery fared well through the severe weather. Chinook salmon egg-picking is finished and preparation for collecting conservation program brood has started. Collection will begin the week of February 5.

Mike Chamberlain said Lewis Hatchery lost a pump at the downstream intake. It was pulled out and taken back to the shop to be rebuilt. It will be back in place next week. The upstream intake blowoff system went down. Chamberlain is working with Mark Ferraiolo from PacifiCorp to get that repaired. Lewis Hatchery has started ponding early Coho salmon and operating their trap.

Lewis Hatchery is hiring for a Fish Hatchery Specialist II and Speelyai Hatchery is hiring for a permanent Fish Hatchery Specialist II. WDFW will also start recruiting for Young’s former position at Merwin Hatchery.

Spring Chinook return forecast and fishery update

Josua Holowatz described the Cowlitz-Kalama-Lewis (CKL) document which is used as part of annual pre-season forecasting and fishery planning for spring Chinook salmon. This document serves as a factsheet for the Kalama, Lewis, and Cowlitz and highlights juvenile releases, historical returns, and information about how those forecasts are generated.

The forecast for the Lewis River is for a return to the mouth of 3,260 fish. The 10-year average is 2,800 fish which is similar to returns seen in the recent 5 years. There is a need for 1,380 fish for broodstock, and an additional 1,400 fish for fishery and upstream transport. Based on that return prediction, WDFW is likely to implement the standard permanent rules for retention of 1 fish, ad-clipped only, until the end of April.

Bryce Glaser said there are hard numbers in the Columbia River management agreement that says that the Lewis and Cowlitz rivers need to meet targets. The actual broodstock needs vary annually depending on fecundity and survival at specific facilities. Actual need may be slightly different than the targets in the management agreement.

Young said that the need for broodstock is based on survivability, and the true spawner count may be lower than that number. The target number results from other management concerns. Excess hatchery juveniles are released in June based on the study plan for juvenile size at release. Sub-yearling releases in June, and yearling releases in October and February have individual coded-wire-tag (CWT) marks. June releases have adipose fins because they are released earlier than then clipping is implemented. Glaser said efforts to improve rearing and release strategies may be helping. There will be an evaluation of smolt to adult returns for all releases to assess which groups are most successful. Updates may be brought to the ATS later in the spring.

Chris Karchesky said the number of fish transported upstream 2 years ago was more than 3,000 fish, meeting targets, and last year the number was between 1,000 and 2,000 total, with the NOR component around 10-20%. Glaser said there is still some uncertainty in predicted composition made up of NOR and HOR for 2024, which will be tracked in season. Young confirmed there were about 250 NOR last year.

Genetics plan update (Lesko)

Lesko provided an update on Strategy G on Genetic Monitoring of Lewis River salmon and steelhead. He noted he would like to make implementing this strategy a priority for moving the plan forward.

Marc Johnson asked whether samples are being collected for Parental Based Tagging (PBT) analysis. Johnson asked if tissue samples are collected on fish being passed upriver. Lesko said that genetic samples of blank wire-tagged (BWT) and natural origin return (NOR) steelhead being passed upstream at the Merwin trap have been collected between 2012 and 2019. There are hundreds of samples and all metadata for those samples are available. He was uncertain what the sampling rate has been in recent years. Johnson noted those samples could be eventually analyzed to estimate adult-to-adult productivity or refine estimates of pHOS. Assumptions or sources of bias would need to be refined to understand whether fish are moving back upstream or staying in the lower river. Lesko agreed and has inquired with Cramer Fish Sciences on developing a PBT strategy as this approach has the potential to address several of the key questions in the H&S plan.

Lesko said sampling upstream of Swift Dam was completed by their contractor for *O. mykiss* in 2023.

Lesko said he will share information with Johnson on the status of the genetic monitoring strategy, and initiate a side-group discussion to move it toward completion.

The group identified the following next steps:

- Preparation of a comments-response matrix to document how concerns will be addressed.
- Identifying tasks that are still ongoing and organizing priorities (summarized in an email from Lesko to Bentley on July 6, 2023).
- The genetic plan lacks documentation of how to manage data, from collection to analysis, to generate metrics. Metrics will be different for different species.

Discussions will be restarted to finalize that document.

- There were comments pertaining to finalizing content, and better focus of some content, or different location within the documents.
- Sampling of steelhead in the upper basin was implemented last summer. There needs to be a review of what was gained in this sampling and how it relates to the genetic plan.
- Sampling in the lower basin did not happen last year and there should be a discussion on when it will happen this year. There is a fair amount of coordination that would need to happen for field methods and logistics. Lower basin sampling may be more challenging due to land ownership and river access for randomizing locations.
- The specific details for implementing the work done have not been documented, and these details should be added to the strategy in the AOP. Lesko agreed it is time to start documenting preparing a field methods section and those conversations can be started while wrapping up the preliminary work to catalogue samples for determination of the genetic baselines. Strategy J will be updated once the sampling plan and field methods are determined.

III. ATS Administration (Rohrbach)

A. 2024 Meeting Plans (Rohrbach)

Erik Lesko noted his goal for 2024 would be to prioritize the ATS focus on a smaller number of topics each meeting to identify what strategies need work to meet the objectives in the AOP.

The ATS agreed to meet in person periodically. They agreed to plan for in-person meetings at the WDFW Region 5 offices in March, and tentatively in June, and September.

B. Review Next Meeting Topics (Rohrbach)

The following topics will be discussed in the next meeting:

- Genetic monitoring
- Update on steelhead abundance monitoring, redd survey plans
- ATS Charter
- Yale Habitat Preparation Plan fish selection (initial discussions; to be added to work plan for April to May, and completed by June)

IV. List of Attendees

Name	Affiliation
Larissa Rohrbach	Anchor QEA
Chris Karchesky	PacifiCorp
Erik Lesko	PacifiCorp
Jeremiah Doyle	PacifiCorp
Kathryn Blair	NMFS
Marc Johnson	NMFS
John Best	WDFW
Kale Bentley	WDFW
Bryce Glaser	WDFW
Josua Holowatz	WDFW
Anja Huff	WDFW
Sean Roon	WDFW
Kevin Young	WDFW
Aaron Roberts	WDFW
Steve West	LCFRB