FINAL

Final Meeting Minutes

Lewis River Aquatic Technical Subgroup

To: Lewis River Aquatic Technical Subgroup Date: August 13, 2025

From: Erik Lesko, ATS Facilitator, PacifiCorp

Cc: Larissa Rohrbach and Lincoln Baxter, ATS Administrative Support, Anchor QEA

Re: Final Minutes of May 22, 2025, Lewis River Aquatic Technical Subgroup Meeting

The Lewis River Aquatic Technical Subgroup (ATS) meeting was held virtually on May 22, 2025, on Microsoft Teams, from 9:30 a.m. to 1:00 p.m. Attendees are listed in Section VII of these meeting minutes.

Action Item Summary

- PacifiCorp will redistribute the materials on Bull Trout population and superimposition monitoring shared to date for ATS review alongside the draft Science Actions List by June 16, 2025.

I. Welcome

A. Review Agenda

Larissa Rohrbach introduced the objective to come to some conclusion on the discussion surrounding Bull Trout and Coho Salmon interactions and the message to bring back a recommendation to the Aquatic Coordination Committee (ACC). She explained that the discussion is progressing though the related decision document that has not been approved by the ACC. PacifiCorp has proposed that the group review the list of Science Actions again today to determine status and next steps. Some of the Science Actions are complete, but all members of the ATS should agree with that before moving on. She asked for feedback on the agenda and none was offered.

Erik Lesko (PacifiCorp) pointed out that members of the Lewis River Bull Trout Recovery Team (LRBTRT) have attended several meetings, so PacifiCorp would like to prioritize identifying any additional communication needs from them.

II. Brief Updates

A. Hatchery Practices and Pathology

Fish Health

Sean Roon (Washington Department of Fish and Wildlife [WDFW]) gave updates on fish stock health. He reported that bacterial kidney disease (BKD) has been detected in spring Chinook Salmon at Speelyai in the June release group and some of the October release group. He said that none of the February release group have shown any signs of BKD. He reported that losses have not been bad, but the June group's loss had increased recently. He stated that staff will continue to monitor the situation. The June stock is anticipated to be released before the BKD has the ability to become a bigger problem for the hatchery. Roon stated that he has not seen BKD infections in juveniles for a couple years and thought the problem had been solved with increased flows and altered feeding regime. Hatchery management had agreed to treat the October release group with Aquamyacin, and that group benefited from an early detection and has not seen high loss. The Aquamyacin treatment was started this week and is a 28-day treatment; updates will be provided after the treatment.

Roon updated the group that kokanee salmon at Speelyai developed an infectious hematopoitetic necrosis virus (IHNV) outbreak. Losses in this stock accelerated in May despite antibiotic treatment. He reported 67% loss in one group and 30% in another. The options for management were to treat with salt and alter their feed, or to depopulate the raceways, or to conduct an early release for this stock. He clarified that this strain of IHNV was only detected by qPCR and that no positive cell culture for IHNV has been obtained, so this is not an official diagnosis. The strain detected belongs to the upper strain, which occurs naturally across the Pacific Northwest and is known to result in high loss for Sockeye Salmon and kokanee, but effects are minimal on Rainbow Trout or other salmon species. He also clarified that this virus is endemic to the basin, and so the option for early release is still feasible because it would not constitute a new introduction of the virus to the Lewis River. Past studies have suggested lasting immunity in fish that have survived exposure to this virus, so the plan is to let the infection run its course.

Erik Lesko asked how these infections will affect fish production targets for this year. Kevin Young (WDFW) replied that the hatcheries have 67,000 production kokanee on hand currently, including 47,000 for the October release and 18,000 to 19,000 for the March release. He mentioned that stocks are still accruing loss, so they will not know how much affect the infections will have on production goals until it has passed, but he will keep the group updated.

Roon clarified his comment that the strain was "endemic" means that the hatchery has more options on how to manage this outbreak than in instances involving novel strains. Larissa Rohrbach asked for

clarification on next steps in the outbreak management process. Roon replied that an official decision will likely be made within the month but that his recommendation is to let the outbreak run its course, with extra sampling being implemented. Rohrbach asked the group what the best way for the ATS to interact with this situation and whether they should be providing input to decision made for management. Bryce Glaser stated that discussions would be held among WDFW staff to make decisions and then they will reach out to PacifiCorp to discuss next steps.

Adult Spring Chinook and Winter Steelhead Broodstock, Transport, and Disposition (K. Young; 10 min)

Young gave updates from Speelyai and Merwin hatcheries and stated that they had transported the October and February groups of spring Chinook Salmon to the Lewis Hatchery. Swift Reservoir was stocked with hatchery Rainbow Trout (Goldendale stock) the day prior. This is an annual event and typically occurs just before the Memorial Day Holiday weekend. Hatchery trout were also released into the power canal between Swift No 1. And Swift No 2. Projects. Broodstock collection for spring Chinook Salmon is ongoing, and they have seen low mortality in those adults. He reported that staff had recently inoculated one raceway of spring Chinook Salmon broodstock without issue. Merwin Hatchery has recently completed their spawning for the stepping-stone program for winter steelhead with an around 120,000-egg take. Their winter steelhead conservation program spawning is still ongoing with around 99,000 eggs to date. There is one final week of spawning activity for this program. Young then reported that summer steelhead rearing had been completed and volitional release was ongoing and broodstock collection beginning in June. He added that there are a couple of additional Rainbow Trout releases planned for recreational fisheries in the next couple months.

Mike Chamberlain (WDFW) mentioned that he had nothing more to add and that Roon had covered most of what he had to report about the fish stock transfer to Lewis. He reported that the medicated feed had been received and was being administered. His facility is setting up tagging trailers and are getting prepared to start the process of tagging Coho Salmon in June.

Young gave an update on spring Chinook Salmon broodstock curves. He stated collection had yielded 577 males and 539 females, which are being held at Speelyai Hatchery. He added that they had started collecting a week ahead with the approaching collection peak, but this has been easier for males than for females. Yesterday they implemented the upstream transport for adipose intact males collected at the Merwin Upstream Passage Facility. For females held at Lewis River hatchery, they will assess their goals after some further sampling and hope to transport some or all of them soon.

Chris Karchesky (PacifiCorp) asked about any concerns about double-handling the females as well as for confirmation on how many females are being held. Young replied that this topic had been on his

mind as well. The males and females are held in the same pond, so staff are unable to sort without handling them twice. Karchesky said that if it makes sense for PacifiCorp to send an extra truck to avoid double-handling during loading, they would be able to offer support to minimize fish handling. Young agreed to coordinate with Karchesky once a location and day had been established. He added that the holding pond contained 81 females and around 290 males. He reported that next week will wrap up spawning for the Winter Steelhead Conservation Program with no additional broodstock needed.

B. Winter Steelhead Mark Recapture

Jeremiah Doyle (PacifiCorp) reported on winter steelhead mark/recapture efforts, saying that this work was to monitor proportion of hatchery-origin spawners (pHOS). He reported 32 hatchery-origin returns with blank wire tags and 26 natural-origin returns have been caught by hook and line and tagged with passive integrated transponder tags thus far and stated this program had been underway since February with one more event planned. Modeling will start soon and will be wrapped up within the next couple months, after which an update will be provided to the ATS.

Kale Bentley (WDFW) asked about recaptures in the lower river hook-and-line fishing, as well as at the Merwin trap. Doyle replied that they will have a count of recaptures at the trap once the steelhead stop running but confirmed that some had been recaptured. Rohrbach asked when steelhead movement typically starts to taper off, and Doyle replied that it is starting to wane currently.

Lesko added a clarification that the model that PacifiCorp uses for this work provides estimates for three metrics—pHOS, abundance, and residual rates—and that these three estimates for last year were provided in the annual report.

C. Genetic Monitoring

Lesko reported that PacifiCorp will contract with Meridian Environmental to collect samples for this effort. This work will begin in mid-July and will run through August. He stated that there is still a question whether areas downstream from Merwin Dam will be able to be accessed this year. He stated that they are in talks with staff from Stantec to provide support at the end of the sampling window. An update on this issue will be provided next month.

Bentley asked about the likelihood of sampling in the lower river occurring. Lesko responded that the issue is staff availability and funding. Utilizing staff from Stantec will be efficient because they will already be on site while helping Meridian with the rest of the sampling effort. He concluded that likelihood is 50/50.

III. Bull Trout

A. Recap Status of Coho Salmon-Bull Trout Science Actions

Erik Lesko started by presenting the list of Science Actions and requested a discussion on each action with the group to assess status (including members of the ATS and LRBTRT who were in attendance). Larissa Rohrbach added that the intent of this exercise was to refine activities by determining what can be done to improve methods for this coming year (2025) versus topics that will require a longer-term discussion for the group.

Bryce Glaser responded by saying that when the ACC started having the discussion surrounding these interspecies interactions in January, the goal was to get the ATS working toward a solution quickly and to work through all the Science Actions this year be able to pass recommendations back to the ACC within the year in order to make decisions for the 2025 season. Lesko added that this was supposed to take place in the form of a summary report. Rohrbach recapped that there is already summary information that has been provided by the U.S. Fish and Wildlife Service (USFWS) over the past three meetings and stated that a report to be developed by the ATS could take the form of a compendium of presentations and executive summary of information that has been presented. Mike Hudson (USFWS) and Lesko stated that they approve of this approach.

A summary of the status and next steps for each Science Action discussed by the group is included below.

Draft List of Coho Salmon-Bull Trout Science Actions for ATS Consideration (as of April 10, 2025)

This list has been reorganized to indicate status of each discussion topic as of May 22, 2025, and identify next steps to support the discussion in the June 26, 2025, ATS meeting.

Generally, there was agreement that the additional information requested by the ACC has been presented, but that some participants would like additional time to review that information to determine whether each Science Action has been addressed or to define data gaps that remain and should be worked on by a subset of participants.

Following the meeting, Rohrbach redistributed information that has been shared over the past several months in a single email, requesting that participants review and provide written feedback to Lesko by June 16, 2025 for the following:

- Coho Salmon Salmon-Bull Trout Science Actions for ATS Consideration, reorganized to indicate status of each discussion topic as of May 22, 2025, and identify next steps to support the discussion in the June 26, 2025, ATS meeting

- 2025 Bull Trout Redd Superimposition Survey Protocols (updated to include mathematical approach to calculations)
- Presentations by Robert Al-Chokhachy (USFWS), Jeremiah Doyle, and Tim Whitesel summarizing existing information and work done to date
- Lewis River Bull Trout Synthesis

Pending formal ACC decision, the ACC will establish an assignment for the ATS as follows (Science Actions are in italics):

- *Engage members of the LRBTRT, and request participation in this assignment through the ATS process.*
  - Status: Ongoing engagement between the ATS and LRBTRT
  - Next Steps: Invite LRBTRT to respond to the ATS review of methods and approaches.
- *Develop a summary report for assigned tasks to be provided to the ACC and the Services that includes information to support the Services' evaluation of Coho Salmon and Bull Trout interactions, including any recommendations identified by the ATS.*
  - Status: The ATS will compile relevant meeting notes, presentations, and resulting summarized information into a package of information for the ACC. The summary report is to be completed no later than September 2025.
  - Next Steps: Summarize outcomes of the list below into a brief executive summary and attach to compiled materials.

Outcomes to be summarized in the report to the ACC:

- *Review Bull Trout redd superimposition results from 2024 and prior years if available.*
  - Status: Complete for 2024. No direct observations were collected prior to 2024.
  - Next Steps: Include 2024 results in summary report to the ACC.
- *Review existing methodology for redd superimposition monitoring.*
- *Review modeling analysis utilized by USFWS to estimate 2024 redd superimposition levels.*
- *Develop a list of alternative superimposition monitoring sites. (Are Pine Cr. and Cougar Cr. the correct sites? How does P8 factor into the incidental take statement limit given that it is a tributary to Pine Cr.? Are there other tributaries that should be included?).*
- *Determine if there are additional metrics to evaluate Bull Trout/Coho Salmon interactions.*
- *Develop a list of options for improved monitoring methods and analysis to estimate unbiased and precise estimates of Coho Salmon superimposition of Bull Trout redds, if this remains the appropriate metric.*
  - Status: Information on these topics has been shared via email and presented by PacifiCorp and LRBTRT in ATS meetings in late 2024 and early 2025, documented in transcripts and meeting notes.

  - Next Steps: Redistribute presentations given to the ATS to date, and updated 2025 PacifiCorp Tech Memorandum summarizing Bull Trout and Coho Salmon redd survey methodology, data collection and analysis. Request that ATS members review materials and provide written comments via email in response to the bullets above.
- *Review available literature to better understand ecological interactions between Bull Trout, Coho Salmon, and other salmonids, and identify both benefits and risks from the ecological literature.*
- *Identify key gaps in understanding, including identifying benefits to Bull Trout from the Coho Salmon reintroduction program.*
- *Develop a list of options and feasibility of evaluating Bull Trout population level impacts from redd superimposition including standardization of existing abundance data series.*
  - Status: A 2019 Lewis River Bull Trout Synthesis document was distributed to the ATS on January 30,2025, which describes available information and data gaps pertaining to the Lewis River population specifically. Where information is not available, answers may be additionally informed by surrogate studies on other species (e.g. kokanee and Bull Trout).
  - Next Steps: Members of the LRBTRT will develop a synopsis of the broader state of knowledge from existing literature about ecological interactions between Bull Trout and other salmonid species, risks and benefits of these interactions, and potential population level effects on Bull Trout on the Lewis River Coho Salmon reintroduction.
- *Evaluate impacts of non-transport of Coho Salmon on Upstream Passage Survival in 2024/25.*
  - Status: Not complete.
  - Next Steps: WDFW will develop draft calculation of the upstream passage survival metric using different approaches. Application of the different calculation approaches is pending further direction from National Marine Fisheries Service.

IV. Administrative Items

A. ATS Priorities – Status and Next Steps

The next meeting will be held on June 26, 2025. The June meeting agenda will include continuing work to address the ACC's request to understand interspecies interactions and to review feedback on information presented so far. This feedback is due 10 days prior to next meeting.

Some members will not be present in the June 26 meeting. There was discussion of tighter schedules and less availability for staff as the field season begins. It was requested that the members notify the group when they plan to miss a meeting and ensure backup staff are present for meetings.

Chris Karchesky requested time for the U.S. Geological Survey (USGS) to provide updates on the Coho Salmon integrated population model. USGS's presentation is intended to inform decisions on Coho Salmon transport for this coming season. Karchesky will give a preview of the information USGS in the ACC meeting to ensure the key points are presented prior to July and in two different meeting forums so that ideally all are able to participate in discussions.

V. List of Attendees

Name	Affiliation
Lincoln Baxter	Anchor QEA
Larissa Rohrbach	Anchor QEA
Amanda Farrar	Cowlitz PUD
Amelia Johnson	LCFRB
Jeremiah Doyle	PacifiCorp
Mark Ferraiolo	PacifiCorp
Chris Karchesky	PacifiCorp
Erik Lesko	PacifiCorp
Kathryn Blair	NMFS
Marc Johnson	NMFS
Jonathan Stumpf	Trout Unlimited
Robert Al-Chokhachy	USGS
Jeff Garnett	USFWS
Mike Hudson	USFWS
Marshall Barrows	USFWS
Kale Bentley	WDFW
Mike Chamberlain	WDFW
Bryce Glaser	WDFW
Josua Holowatz	WDFW
Anja Huff	WDFW
Christopher Kopack	WDFW
Peggy Miller	WDFW
Sean Roon	WDFW
Kevin Young	WDFW

Analysis of Bull Trout Redd Superimposition by Coho in Cougar, P8, and Pine Creeks

2025 Operating Plan

Background

The United States Fish and Wildlife Service (USFWS) issued their Biological Opinion (BiOp) for the Lewis River hydroelectric projects in 2005. The BiOp provides guidance with concern to acceptable levels of Bull Trout redd superimposition from Coho in Pine and Cougar Creeks. The Incidental Take Statement within the BiOp stipulates "*A small number of bull trout redds may be excavated by coho salmon (redd superimposition) in Pine and Cougar Creeks causing the loss of those eggs. This incidental take would be in the form of harm through the death of bull trout eggs. The amount of incidental take is difficult to quantify, but is expected to be <10 percent of bull trout redds*". Therefore, any level of superimposition less than 10 percent will serve as the acceptable level of impact.

Additional Data to be Collected

Along with monitoring parameters already identified in Section 2.5 of the 2025 Bull Trout Annual Operating Plan (perform weekly surveys in September and October, flag and GPS new Bull Trout redds, document location and characteristics with detailed notes, identify when marked redd is no longer visible), the following will also be collected in 2025 in order to provide enhanced spatial resolution of Bull Trout redds encountered in P8, Pine, and Cougar Creeks:

- Upon encountering a new Bull Trout redd, surveyors will deposit small painted lead weights (170 gram) tied with a strip of survey flagging to each side of the redd egg pile. Each redd will then be photographed for visual documentation and for comparison purposes when the redd is revisited during subsequent surveys (Baldock 2023). Picture and redd egg pile marking will be similar to picture in Figure 1.
- During surveys occurring after the second week of October, upon encountering a new redd in the location of a previously marked Bull Trout redd, surveyors will take an additional photograph of the new redd from the same angle and location as the previously photo documented old Bull Trout redd.
- To standardize inherent bias between surveyors, streams will be divided into defined reaches and each reach will be assigned a specific surveyor. The same surveyor will collect data only from the reach they are initially assigned for the entirety of the monitoring season.

Figure 1. Photo taken of marked Bull Trout redd egg pile in Cougar Creek in 2022.

Frequency

Bull Trout redd surveys in 2025 will occur weekly from September 1 through October 31. In order to assess possible interactions from Coho through competition for available spawning habitat, previously identified Bull Trout redds will need to be revisited on a weekly basis through the Coho spawn timeframe. It is proposed to extend weekly surveys through December 15. All spawning ground surveys will only be completed if stream water clarity is conducive to identifying tilled gravel on the stream bottom, and when stream flows do not create hazardous or dangerous wading conditions.

Study Area

Figures 2 and 3 visually represent areas in Pine and Cougar Creeks to be surveyed for Bull Trout redds, and Bull Trout redd superimposition from Coho. Survey areas within Pine Creek and Cougar Creek will be conducted throughout *all* available anadromous fish spawning habitat. Area surveyed within P8 is an established index of available habitat and is approximately the first 1,600 meters of the stream.

Figure 2. Bull Trout/Coho interaction redd survey reaches in Pine Creek and P8 – 2025. Survey reaches in red.

Figure 3. Bull Trout/Coho interaction redd survey reach in Cougar Creek – 2025. Survey reach in red.

Analysis

Based on historical spawning ground surveys in Pine and P8, very few Bull Trout spawn after the second week of October (less than 1 percent since 2012) and very few Coho spawn before this week, therefore newly excavated redds encountered the week of October 14 to the end of the 2025 monitoring season (December 15) with no live fish in the vicinity will be assumed to be Coho.

If a new redd is identified during and after the week of October 14 in the area of a previously identified Bull Trout redd, the picture of the old redd and new redd will be compared and along with the detailed notes on the previously hung flagging, superimposition (if any) will be assessed.

From past studies, the average depth of Coho redd excavation was found to be 21 centimeters (Burner 1951), while adfluvial Bull Trout were found to dig to an average depth of 15 centimeters (Weeber 2006). Given this, it is assumed that excavation impact to Bull Trout redds from Coho will at a minimum be to, and most likely exceed, that of the Bull Trout redd egg pocket.

Superimposition impact to Bull Trout redds will only be assessed to the Bull Trout redd egg pocket/mound, and not to the tilled/excavated portion of the Bull Trout redd. It is assumed surveyors will mark only completed Bull Trout redds, and that painted weights marking Bull Trout redds in the stream will stay in place under normal seasonal flow conditions.

If at any time during the Bull Trout redd superimposition monitoring season (Oct. 15 – Dec. 15) surveys cannot be performed (high flow river flow/turbidity, snow, extreme weather, etc.) and empirical estimates of superimposition have not exceeded 10%, the approach developed by the USFWS in 2024 will be utilized to estimate the redd superimposition rate.

During the 2024 spawning survey season, USFWS developed an approach to generate estimates of redd superimposition in the absence of on the ground data collection. The analysis compared the observed Bull Trout redd superimposition rate, and the number of released Coho salmon transported and released above Merwin Dam. Based on the data, a linear relationship between the redd superimposition rate and the number of released Coho was applied (Figure 4). Based on proportional increases in transported Coho salmon, this allowed for the estimation of redd superimposition rate in the absence of on-the-ground data collection. This estimate used empirical data points from 2024 redd superimposition surveys and Coho releases (Pers. Comm. Tim Whitesel, USFWS).

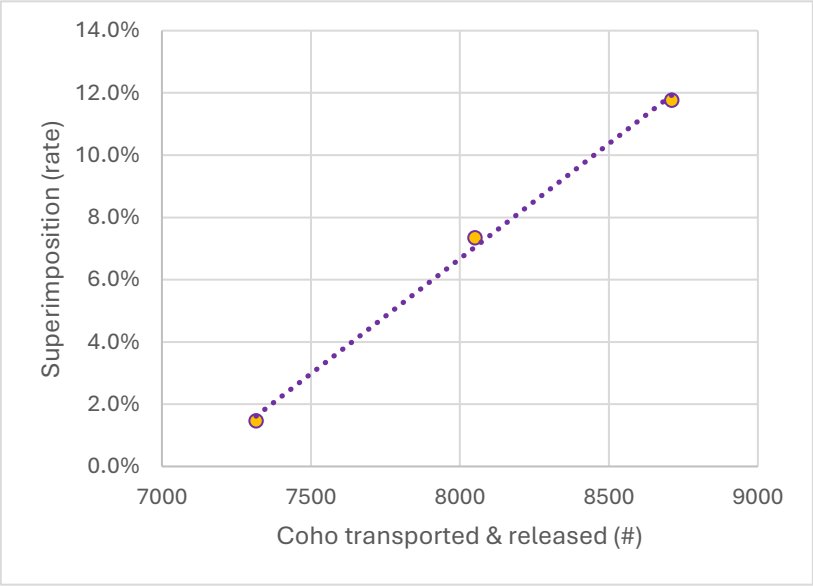

Figure 4. Relationship of Bull Trout redd superimposition and Coho salmon transported and released during 2024. This relationship (SI_{rate} = 0.00007 x Coho $salmon_{number}$ – 0.5245) was used to estimate superimposition rate during a three-week period in late November 2024 when no on-the-ground data could be collected.

Compliance with the USFWS BiOp Bull Trout redd superimposition percentage threshold (<10 percent) will be calculated by dividing the total number of observed or estimated Bull Trout redds disturbed by Coho in Cougar, P8, and Pine Creeks, by the total number of Bull Trout redds observed in Cougar, P8, and Pine Creeks (aggregate), with that number then multiplied by 100 for a percent of the total [(Total number Bull Trout redds superimposed/Total number of Bull Trout redds)*100].

In-season checks assessing percent total of Bull Trout redds impacted from Coho will be evaluated on a weekly basis beginning the week of October 14. Each week after October 14, the Utilities will provide USFWS with the most recent redd survey data as soon as it becomes available; if no survey occurs during a particular week because of high flows, turbid water, or any other reason, the Utilities will also share this information with USFWS. At the time of sharing redd survey data, the Utilities will also provide USFWS with a count of the adult Coho transported into Yale Reservoir and above Swift Dam to date.

References

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Burner, Clifford J. 1951. Characteristics of Spawning Nests of Columbia River Salmon. Fishery Bulletin 61, Department of the Interior.

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Weeber, Matt. 2006. Affects of Kokanee Superimposition on the Bull Trout Egg to Fry Survival: Summary of Initial Findings. ODFW Native Fish Investigations Project.