

# LEWIS RIVER AQUATIC COORDINATION COMMITTEE

Facilitator: ERIK LESKO  
503-412-8401

Location: TEAMS MEETING ONLY

Date: May 11, 2023

Time: 9:30 AM – 1:45 PM

## AGENDA

|          |   |
|----------|---|
| 9:30 AM  | Welcome <ul style="list-style-type: none"><li>➤ Review and Accept 05/11/2023 Agenda</li><li>➤ Review and Accept 04/13/2023 Meeting Notes</li></ul>  |
| 9:45 AM  | Public Comment Opportunity  |
| 10:00 AM | Annual Operations Report Presentation ( <i>PacifiCorp</i> )   |
| 12:00 PM | <i>Break</i>  |
| 12:15 PM | Swift No. 2 – Dam Safety Inspection ( <i>Farrar</i> )   |
| 12:30 PM | Hatchery Program Transition Plans Timeline and Schedule ( <i>WDFW</i> ) <ul style="list-style-type: none"><li>➤ Decision Making Process (<i>Lesko</i>)</li></ul>  |
| 1:00 PM  | Study/Work Product Updates <ul style="list-style-type: none"><li>➤ Flows/Reservoir Conditions (<i>Lesko</i>)</li><li>➤ Reservoir Shoreline Development Projects (<i>ACC</i>)</li><li>➤ WSDOT - Cougar Creek/Beaver Bay (<i>ACC</i>)</li><li>➤ ATS (<i>Lesko, ATS</i>)</li><li>➤ FPS (<i>Glaser, Olson</i>)</li><li>➤ Fish Passage/Operations (<i>Karchesky</i>)</li></ul> |
| 1:30 PM  | Public Comment Opportunity<br>Next Meeting Agenda ( <i>in-person and virtual</i> )  |
| 1:45 PM  | Meeting Adjourn   |

Note: all meeting notes and the meeting schedule can be located at:  
<https://www.pacificorp.com/energy/hydro/lewis-river/acc-tcc.html>

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**FINAL Meeting Notes  
 Lewis River License Implementation  
 Aquatic Coordination Committee (ACC) Meeting  
 May 11, 2023  
 TEAMS Meeting Only**

**ACC Representatives and Affiliates Present (20)**

Larissa Rohrbach, Anchor QEA  
 Nina Maas, Anchor QEA  
 Steve Manlow, LCFRB  
 Steve West, LCFRB  
 Melissa Jundt, NMFS  
 Jeremiah Doyle, PacifiCorp  
 Chris Karchesky, PacifiCorp  
 Erik Lesko, PacifiCorp  
 Todd Olson, PacifiCorp  
 Tyanna Blaschak, USFS  
 Jeffrey Garnett, USFWS  
 Bryce Glaser, WDFW  
 Josua Holowatz, WDFW  
 Peggy Miller, WDFW  
 Keely Murdoch, Yakama Nation  
 Amanda Farrar, Cowlitz PUD  
 Christina E. Donehower, Cowlitz PUD  
 Anne Baxter, Ecology  
 Bill Sharp, Yakima Nation  
 Jim Byrne, Trout Unlimited

**Guests (0)**

None

**Calendar:**

|              |             |               |
|--------------|-------------|---------------|
| May 11, 2023 | ACC Meeting | TEAMS Meeting |
|--------------|-------------|---------------|

**Assignments:**

| Assignments from May 11, 2023   | Status         |
|---|----------------|
| Lesko: Create decision document template about revisions to ACC ground rules. | <b>Ongoing</b> |

| Assignments from May 11, 2023  | Status         |
|--|----------------|
| ACC to review and provide comments on the Coho Transition Plan, due on May 30. | <b>Ongoing</b> |

| <b>Assignments from May 11, 2023</b>   | <b>Status</b>  |
|--|----------------|
| Farrar: Provide ACC with further documentation from Schnabel Engineering about the Swift No. 2 dam inspection details. | <b>Ongoing</b> |

| <b>Assignments from March 9, 2023</b>   | <b>Status</b>  |
|---|----------------|
| Glaser, Miller: Identify the types of decision that should be brought from the FPS to the ACC to clarify protocols for the FPS. | <b>Ongoing</b> |

| <b>Assignments from November 10, 2022</b>  | <b>Status</b>   |
|--|-----------------|
| Karchesky: Discuss potential impacts of Merwin conveyance system work with the ATS to determine broodstock collection modifications. | <b>Ongoing.</b> |

| <b>Assignments from April 14, 2022</b>   | <b>Status</b>   |
|--|-----------------|
| Erik Lesko: Coordinate with the TCC regarding the timing for WSDOT's Cougar Creek culvert project. | <b>Ongoing.</b> |

**Opening, Review of Agenda and Meeting Notes**

Erik Lesko (PacifiCorp) called the meeting to order at 9:32 a.m. and reviewed the agenda. No revisions to the agenda were made. Lesko reviewed the April 13, 2023, meeting notes. Editorial edits and comments were accepted, and the April 13, 2023, minutes were accepted with no additional edits.

Olson made an announcement that he will begin supporting new initiatives within PacifiCorp's Hydro and Renewables departments and will be stepping away from day-to-day management of Lewis River implementation activities. As a result, Erik Lesko has been promoted to Hydro Environmental Manager for aquatics and Kendel Emmerson to Hydro Environmental Manager for terrestrial. Both Kendel and Erik will transition into roles that Olson was managing or acting as the primary contact for in the past.

Bryce Glaser (WDFW) asked for clarification on who will lead for PacifiCorp within the various committees, including compensation mitigation negotiations. Olson clarified that for now, he will continue with the Fish Passage Subgroup and lead elements of the fish passage plan until the document is complete.

**Public Comment Opportunity**

None.

**PacifiCorp Annual Report Summary Presentation (PacifiCorp) (Attachment A)**

Erik Lesko provided an overview of the *Lewis River Hydroelectric Projects 2022 Annual Report* (2022 Annual Operations Report) and the license obligations (Attachment A). Lesko explained that with turnover of the ACC committee members, the presentation is designed to be a true high-level overview of the 2022 Annual Operations Report, focusing on where to find information and highlights of monitoring in 2022. Chris Karchesky (PacifiCorp) and Jeremiah



Doyle (PacifiCorp) will also give brief overviews of their work included in the 2022 Annual Operations Report.

The final 2022 Annual Operations Report is due to Federal Energy Regulatory Commission (FERC) by June 30, following ACC review. The report contains eight attachments where the bulk of the information is presented. Lesko showed the group where to access the report on the web. Lesko reviewed the format and structure of the report and discussed the Aquatic Resources section and overview of roles. Lesko provided an overview of attachments and noted today's presentation will focus on aquatic monitoring and evaluation (M&E).

#### Hatchery and Supplementation Program (Lesko)

Lesko presented a table describing the status of the monitoring objectives within the Hatchery and Supplementation (H&S) section as reported in the 2022 Annual Operations Report. The following are key highlights of Lesko's presentation:

- PacifiCorp, Washington Department of Fish and Wildlife (WDFW), and Cramer Fish Sciences are assisting with Objective 7, focused on genetic monitoring strategy, and have made a lot of progress on the strategy. The strategy will move forward this year and they are meeting soon to finalize the approach.
- Adult abundance estimates and trend data were provided for Late Winter Steelhead, Coho Salmon and Chinook.
- A summary of Late Winter Steelhead spawner lower Lewis distribution and timing was presented. Lesko noted that Reach 2 (continues to show the highest density of Late Winter Steelhead redds each year. Within Reach 2, there is a single glide and riffle habitat unit (known as Hagedorn's) that consistently produces the highest density of Winter Steelhead redds in the N. FK. Lewis River.
- An overview of lower Lewis juvenile abundance monitoring and figures were presented, with photographs of the tandem screw trap near the golf course in Reach 5 that was installed in 2013. Five year abundance trends were provided for NOR Chinook, Coho and Winter Steelhead indicating that Coho were currently in an uptrend for juvenile abundance.
- Lesko described precocity studies that Larissa Rohrbach is leading. The study is currently feeding fish differently and releasing them at different times to see whether there is a relationship between size and survival and precocity rates. Lesko presented pictures that display the visual precocity indicators. Lesko said precocious smolts do not contribute to the fishery or as adults for reintroduction. The ATS is interested in controlling precocity to improve overall survival of spring Chinook smolts released from the hatchery.
- Lesko provided a table showing actual and target hatchery production numbers (or pounds) by species for 2022.
- Josua Holowatz (WDFW) stated that kokanee poundage was low, but the absolute numbers were close to targets; fish were small.

- WDFW is developing methodologies for smolt-to-adult return estimates. Methods for estimating proportion of hatchery origin spawners or Winter Steelhead are also being reviewed with WDFW. Lesko noted that all of this work is aimed at meeting the reintroduction outcomes metric, which can be found in Section 3 of the 2022 Annual Operations Report.
- Lesko reviewed the current challenges including 1) developing monitoring strategies for genetics, SAR's and pHOS, 2) hatchery program transition planning, 3) HGMP's, and 4) establishing data management system to store and retrieve the many data streams that are produced through the monitoring efforts of the H&S and AMEP programs.

#### Lewis River Fish Passage Program (Karchesky)

Chris Karchesky presented a summary of the Lewis River Fish Passage Program Monitoring and Evaluation Plan Metrics and shows the list of 20 M&E plan metrics, which can be found in Appendix A. Karchesky mentioned that key modifications to fish passage can be found in Section 2 of the Fish Passage Report, which also includes any facilities outages that occurred during the year. Karchesky listed activities completed this year and mentioned the following highlights:

- Springtime screw trap operations at Eagle Creek continued during 2023. The focus was on monitoring for juvenile migration timing and abundance entering Swift Reservoir. This year's effort was expanded to collected additional information longer into the year. This was done in parallel with year one of the two year feasibility study designed to determine whether tagging of out-migrants collected at the Swift floating surface collector (FSC) can be used as surrogates for marked naïve fish entering the reservoir in order to calculate downstream survival and abundance parameters. Karchesky will present to the Aquatic Technical Subcommittee (ATS) a discussion on surrogates when data collection is complete.
- 2022 was one of the better years for Coho Salmon and Steelhead downstream juvenile passage at the Swift FSC. Spring Chinook salmon numbers were lower in 2023, and that out-migration timing for juvenile salmon overall was typical. Smaller parr were present in the early spring and late winter, prior to the peak of out-migrating smolts in spring. The peak out-migration was late April to July.
- Karchesky gave a brief review of collection efficiency data that was presented to the ACC in January 2023. Most smolts have a high success rate of finding the FSC but then are not observed passing into the collector; this has been the focus of the monitoring effort since 2021. Adjustments made to the lower portion of the entrance of the collector seem to have helped, and there will be more adjustments to the entrance of the FSC are planned in summer 2023 and to be tested in 2024.
- A record number of adult fish were transported to the upper basin in 2023. Transport goals were achieved for adult Coho and Spring Chinook salmon, but fell short for Winter Steelhead.
- Spawner surveys were completed for Chinook salmon in late August to mid-October; crews saw a lot of activity with a larger distribution of redds than in years past.

- Coho salmon surveys were also completed in the drawdown zone of Swift Reservoir. This is part of the new Monitoring and Evaluation Plan that found historically adult Coho distributed and spawned throughout the available habitat in the upper basin, but in all surveys a small proportion of fish were not successful. To determine whether these fish were spawning in the drawdown zone of reservoir especially later in the fall, spawner surveys were implemented in these areas for the next five years to better understand the exposed habitat in drawdown zone. During the first year, there did not appear to be a high use of these areas by spawning Coho.
- Bryce Glaser asked whether there is a figure in a similar format to the one presented earlier for H&S that displays whether objectives have been met. Karchesky said no, but at the beginning of the report, there is a summary table in a different format. Karchesky reminded the group that there is an M&E report that has a table summarizing each objective that indicates whether it was met or not and walked through the relationship between M&E and H&S.

#### Lewis River Bull Trout Recovery (Doyle)

Jeremiah Doyle began a presentation on Lewis River Bull Trout with an overview of the 2022 field work. Doyle clarified that the Lewis River Bull Trout Recovery Team works independently from the M&E and H&S programs and determines data collection strategies annually. Doyle presented the following program highlights:

- PacifiCorp's contractor, Meridian Environmental, carries out all of the Pine Creek redd surveys. Doyle also mentioned that 634 stable isotope samples (SIA) were collected last year from encountered species upstream of Swift Dam. The SIA samples gathered in 2022 were collected to inform a bioenergetics study. This study was also performed within the watershed in 2016. The bioenergetics report for data collected in 2022, as well as a comparison to data collected in 2016, will be available in late 2023.
- Passive integrated transponder (PIT) tags and antenna usage began in the basin in 2001. Currently 13 submersible 5 foot diameter antennae are deployed in various locations throughout the Lewis River watershed upstream of Yale Dam, during the bull trout spawn timeframe of August-October. These deployed antennae are beginning to record very old fish; last year a 16-year-old Bull Trout was interrogated within Cougar Creek.
- There are three local populations within the Lewis River Core Area, and these local populations comprise of the only three known bull trout spawning streams in the Lewis River watershed: Rush Creek, Pine Creek, and Cougar Creek. Redd surveys are performed in these three streams annually. All three local populations are genetically distinct from one another, and though Rush and Pine Creek are only 6 river miles apart, based on instream PIT detections and genetic analysis, mingling rarely occurs. All three spawning streams are flashy, and material within the stream bed can be blown out quickly, making for difficulty of redd surveys from one year to the next. Pine Creek is the largest of the three systems and contains approximately 10 miles of linear habitat. Bull trout require clean, cold water to spawn, and all three streams fall below 10°C every August. Superimposition of bull trout redds is a concern and has been documented, especially with later spawning Coho.

Cougar Creek is the only known bull trout spawning stream in Yale Reservoir and contains approximately 1.3 miles of spawning habitat. In order to get a more accurate count of migrating bull trout, a weir with a bypass camera was installed near the mouth from July-October in 2019-2022. PacifiCorp contracted the United States Fish and Wildlife Service to install the weir and operate the underwater weir/video camera, in the hope that counts could help inform more accurate fish per redd numbers. Jim Byrne (Trout Unlimited) asked in which stream superimposition of multiple species was observed in 2022, and Doyle answered that it was in P8 and Cougar Creek.

- Erik Lesko asked whether there is data to support an estimate for Bull Trout maximum age; 12 to 14 years was thought to be the oldest estimate. Doyle noted there is not a lot of data on Bull Trout longevity in the scientific literature, but other char species have been documented up to 50 years old (Lake Trout). Discussion then ensued concerning what may be the limiting factor in the Lewis to bull trout longevity. Doyle said long-term data recently suggested one source of mortality was from over handling, either by sport fishing or scientific monitoring. Six years ago, the Lewis River Bull Trout Recovery Team noticed an effect on Bull Trout mortality due to handling during monitoring. Due to this, certain aspects of bull trout monitoring in the basin now only occur every 3 years instead of annually.
- Bryce Glaser asked whether the changes in study design just mentioned are in the report. Glaser would like the ACC to be informed of changes because the Bull Trout group functions independently. Doyle said this information is included in the Annual Operations Report.

Lesko stated that PacifiCorp will need to receive comments back on the draft 2022 Annual Operations Report by June 9, 2023. Lesko reminded the group that he can guide anyone through the report if they have questions and to reach out to him by email.

#### Hatchery Program Transition Plans Timeline and Schedule (WDFW)

Bryce Glaser provided the Hatchery Program Transition Plans Timeline and Schedule update. Glaser stated that H&S plan calls for changes to some programs, and WDFW engaged with the ATS on those changes. Glaser stated that WDFW will be working with PacifiCorp to write and revise hatchery and genetic management plans (HGMPs), with aggressive timelines due to pending litigation risks. The objectives for the transition plans and HGMPs are supporting the existing hatchery supplementation and providing fish for reintroduction.

WDFW has worked on the Coho Salmon transition plan, and several people have been involved with presentations to and discussion within the ATS. The transition away from the existing segregated program is now focused on expanding the integrated late-run Coho Salmon program to include all natural-origin return Coho Salmon that return on a bimodal timeline. Glaser stated that they would like to maintain the existing integrated Coho Salmon program, and this is described in the transition plan. The transition plan was sent out to the ACC for review April 28, and comments are due on May 30.

Glaser mentioned that the plan can be difficult to follow because as written, the target audience is the decision-makers, so Glaser said if ACC members have comments or questions, reach out to him by email.

Glaser mentioned that the Steelhead transition plan will be described more at the next ACC meeting. The plan was sent to the ATS for comments, due to WDFW on May 18. A discussion of those comments will occur during the May 25 ATS meeting, and then the plan will be submitted to the ACC for 30-day review, for discussion in the June ACC meeting. Glaser is hopeful it will be complete by the end of July. Glaser stated that the intent is obtaining approval from the ACC of the Decision Document on the transition plans to be incorporated into the Hatchery Genetic Monitoring Plan (HGMP) so that everyone feels good about the general direction, but there will be additional steps and refinement to implementation later.

### **Decision-Making Process Review (Lesko)**

Lesko suggested the approval of the transition plans will need to be brought with a decision document to the ACC because of the connections to meeting obligations of the Settlement Agreement and due to the potential positive change in recovery, which is a change mentioned in the ground rules for decision documents. Glaser agreed that these do improve recovery, which will be a change at least for the Steelhead and will be significant.

Glaser stated that the spring Chinook salmon program will not need a transition plan at this point because no major changes have been proposed.

The ATS will produce a template by the June for final approval in the July ACC meeting. One decision document will be made for both Coho Salmon and Steelhead transition plans. Lesko agrees with that approach.

Glaser said WDFW is working on draft HGMPs concurrently.

Lesko would like to discuss decisions that do not require a Decision Document template, such as when technical committees come up with a recommendation to the ACC. He asked whether the ACC should discuss and then vote on these recommendations. Should the process be informal but decisions be bolded in notes to be documented? Lesko stated that no process exists in the ground rules for these informal decisions. Lesko suggested updating the records with these decisions so they are easier to find.

Peggy Miller (WDFW) would like to understand the meaning of “Consult” as found in the Settlement Agreement in regard to the ACC and recommending committees roles. Lesko clarified that in the ground rules, to “Consult” means a 30-day review by the ACC.

Glaser said he hopes there can be conversation about this at the FPS meeting; it is a recommending body. Glaser suggested that when these decisions occur the recommending subgroups, the ACC should be asked whether it needs decision document, and if not, then the path forward for review and acceptance should be decided. Glaser stated that not everything needs a template but agreed with Miller that the ACC needs to figure out what “consult” means. Glaser noted that subgroups make decisions on in-season adjustments to implementation, but all proposed changes to management goals and actions will need to go to the ACC.

Lesko said the subgroup should be doing the technical work for the ACC. Glaser agrees about workload but thinks there are two different scenarios. The first is an idea from the subgroup that is made as a recommendation to the ACC for expected approval. The second scenario would involve larger decisions that warrant deeper discussion, and he wonders what constitutes a large-scale decision.

Lesko will prepare a decision document about this recommendation process and send it for review during the June meeting. Glaser agreed. Lesko will call Peggy Miller to clarify whether she has any questions or concerns about this process and document.

### **Dam Safety Inspection Update (Farrar)**

Amanda Farrar (Cowlitz PUD) began an overview of the dam safety inspection work needed at Swift No. 2. Last year, FERC completed a safety inspection and noted that an internal inspection of the 30-inch corrugated steel pipe needs to be completed. To meet the obligations of the Settlement Agreement, Farrar noted that Services, WDFW, and the ACC need to be notified as far in advance as practicable. Farrar sent out information with details in advance of the meeting today to WDFW, Ecology, NMFS and USFWS. Cowlitz PUD (PUD) is requesting to shut off flow for a maximum of 8 hours and to not pump or siphon water into the inspection area, but the Settlement Agreement states that if flow is shut off, water must be pumped or siphoned in. The inspector would like to use cameras to listen and visually observe water that may be leaking. Farrar stated that they are hoping for a 2-to-3-hour shutoff timeline but are planning for the 8 hours to be conservative.

PUD consulted with PacifiCorp about fish salvage operations for this work. The work will be completed between July 15 to August 15 to comply with the in-water work window. Josua Holowatz asked whether this work will impact bypass reach flow. Farrar clarified that there will be water, but it will be affected. Lesko asked whether the water will be increased to account for the impact. Farrar said that can happen if that is what the ACC wants. Peggy Miller mentioned that the inspection is a FERC requirement, and the ACC should be focusing on best management practices to minimize impact of this work. Lesko agreed and asked whether there is documentation of fish salvage. Farrar will provide documentation from Schnabel Engineering about the inspection and further details.

Jeffery Garnett (USFWS) would like more time to review this information. Garnett asked whether the order from FERC to do this is on the e-library. Farrar stated that it is, and she will also include it in her email to the ACC. She would like comments within 2 weeks and will connect with Lesko offline about an ACC remote vote.

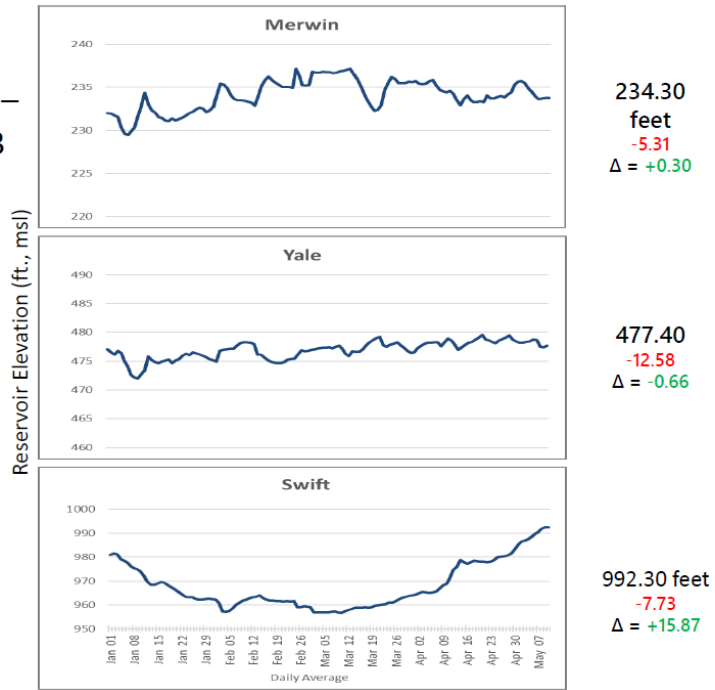
### **Study/Work Product Updates**

#### Flows/Reservoir Conditions Update

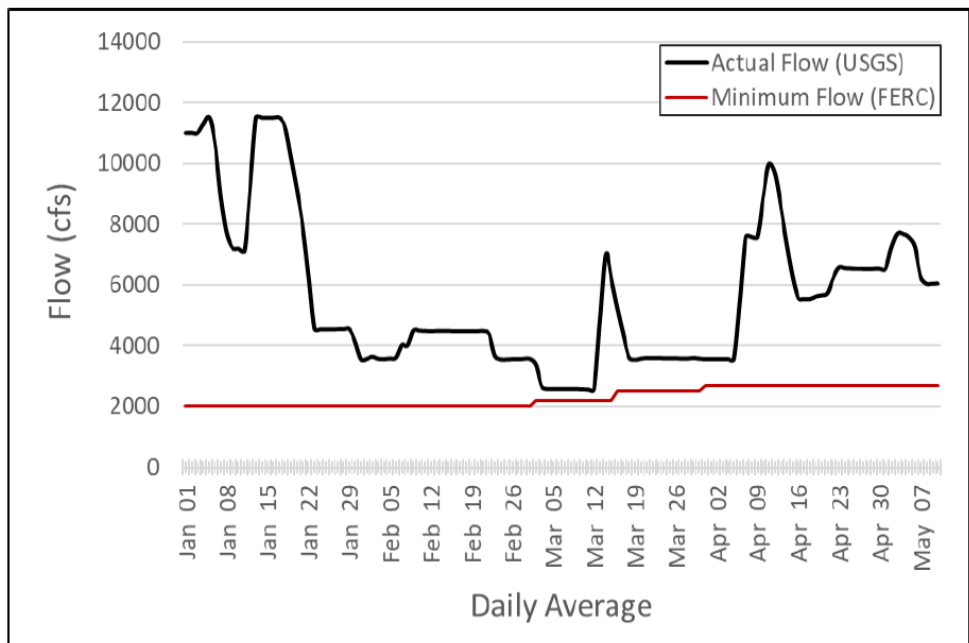
Erik Lesko shared the flows and reservoir conditions update. The reservoirs are filling in anticipation of recreation season. Swift Reservoir has gained an additional 15 to 16 feet since the last meeting. Yale and Merwin reservoirs are down slightly. FERC minimum flows are set at 2,700 cubic feet per second and will continue to be stable until the end of June. Lesko presented the snow telemetry report and noted that all low-elevation snow is melted. High-elevation snow is still above the average with respect to snow/water equivalent.

Daily Average  
Reservoir Elevations –  
Jan 1 – May 10, 2023

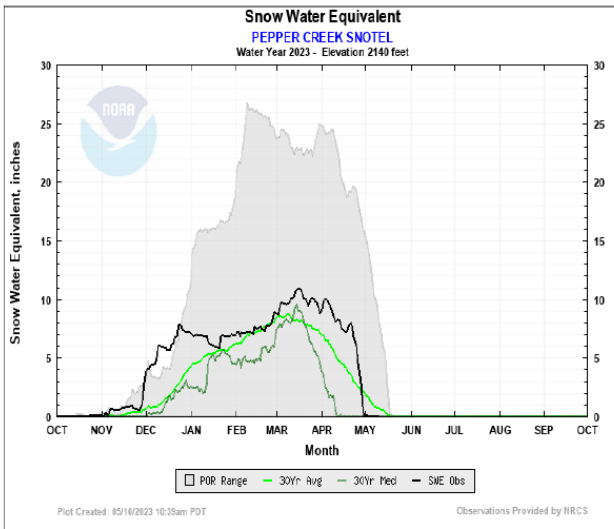
Total Draft = - 25.62 feet  
(-15.62 with Yale Restriction)  
Δ since Apr = +16.83



FERC Minimum Flows vs.  
Actual Flows, NFK Lewis  
River: Jan 1 – May 10, 2023

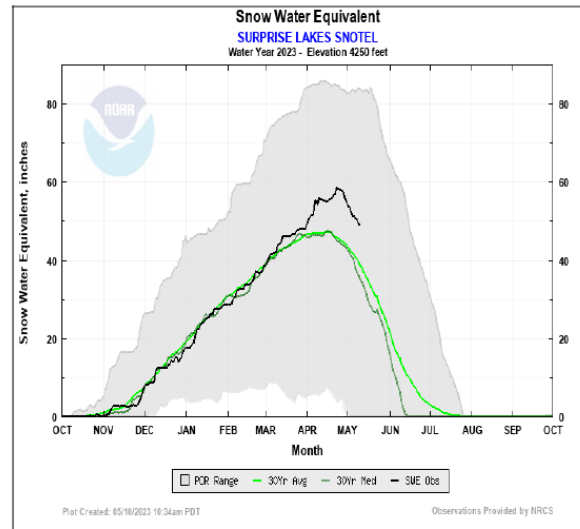


Current SWE: 0%  $\Delta$  -177 %  
Current snow depth = 0 in.  $\Delta$  -21 in.



Low Elevation

Current SWE: 125%  $\Delta$  +7%  
Current snow depth = 95 in.  $\Delta$  -28 in.



High Elevation

**Campers Hideaway** – A State Environmental Policy Act (SEPA) notice has been issued for the Campers Hideaway project. Comments are due June 1. Steve Manlow (LCFRB) noted that there are concerns raised about compensatory mitigation because of the amount of overwater cover and is curious about what the agencies are thinking about mitigation. Josua Holowatz thinks there are details lacking in the SEPA documents and would like to see more from the design. Light-penetrating docks were requested by the agencies but have not been addressed in the document, and there will be further discussion about this. Invasive milfoil issues have been discussed and contractors are aware.

Glaser wondered whether there is precedent for requiring compensatory mitigation. Manlow said yes but that the quality of documentation is questionable, but this issue is common and widespread in the region.

**Haapa Boat Ramp Americans with Disabilities Act (ADA) Platform** – Holowatz stated that a SEPA notice has also been issued for the ADA platform and is under 30-day review. He mentioned that there has been a lot of feedback on this project, including suggestions regarding a light-penetrating dock and moving the entire platform downstream of spawning areas.

### Fish Passage Subgroup (FPS) Update

Bryce Glaser stated that Todd Olson (PacifiCorp) sent out a revised full draft of the “Elements of Fish Passage” document for review. Today’s meeting will be focused on the changes that been made and alternatives analysis documentation. Glaser stated that progress has been made, although there are outstanding issues. Glaser mentioned that the contribution to habitat recovery fund “compensatory mitigation” will need to be discussed at the ACC level. He stated that there are a few questions left, and they will be getting more input today. Glaser mentioned that the last FPS meeting included design team updates, talk about the capacity estimates and modeling work that WDFW has done, and comment discussion.



Glaser stated that Olson has flagged three of four sections that have been revised in the latest version (capacity, downstream schedule to Merwin timeline, and alternatives analysis).

### **Merwin Fish Passage Update (see Attachment C)**

Chris Karchesky stated that there are approximately 800 spring Chinook Salmon collected in the system and the goal is for broodstock for hatchery needs. Josua Holowatz said we are on track for broodstock and have collected over 100 natural-origin returns. There have been 746 winter Steelhead upstream, which is slightly higher than other years, with a couple weeks left in the run. A few Summer Steelhead have been arriving already.

Karchesky described the Merwin lift and conveyance construction schedule. This work came out of monitoring work for trap efficiency where entrances and conveyances were examined. The examination showed that most hydraulics are good at the entrance, but the internal lift and conveyance from the top of fish ladder into pre-sort pond works but is labor intensive and experienced periods of unexpected outages. The outages caused a miss of performance standards, so the design team put together a new design that will eliminate dewatering for maintenance and allow easier access. The project is currently in final stages of design and into construction.

Originally, an outage was going to be scheduled for early July for a 2-month construction window, but Karchesky noted that it is difficult because once the crowder is out of commission, there is no second option for fish getting out, and broodstock Steelhead collection will be ongoing during that time. The ATS was consulted for a refined schedule and timeline.

Materials for the new crowder are currently seeing 30-to-50-week delays, and there are outstanding items needed before construction can begin. This work will now be split into a 2-year period. This year will focus on structural components and provide an upgraded V-trap and access platforms of the bulkhead ladder to improve maintenance. This work is on schedule for a July 1 start date. The crowder component will be delayed.

Karchesky reiterated that the outage will begin July 1 to the last week of July; and that the trap should be back in operation by August.

Once the first year is done and the parts for crowder have been procured, the second phase of construction will be completed next summer or potentially January or February of 2024 if possible. Karchesky mentioned that the winter timeline would be ideal because of the fish populations, but high water is a problem. This will be brought up with the ATS and then with the ACC.

Peggy Miller asked whether this means two outages. Karchesky clarified that yes, there will be two outages. He clarified that because the fish passage is so important, they want to make sure they have all parts before they start. Miller asked whether there will be additional outages during the upcoming spillway work. Karchesky said that this work should be completed before the spillway work starts.

### **Swift Floating Surface Collector (see Attachment D)**

Chris Karchesky mentioned that downstream passage is good. There has been an uptick in numbers, and PacifiCorp is bringing the reservoir up and are all-hands-on deck for debris management. Karchesky showed the committee a picture of the new debris boat that was bought last fall. He mentioned that these boats are produced for cleaning up trash in marinas and act as a

skimmer and are used heavily in the Midwest and East Coast. There have been many historical issues with dried debris from the low-water season clogging the reservoir. The new boom is working well and helping minimize debris at the collector.

### **Lewis River Fish Passage Report (see Attachment B)**

#### **Administrative Updates**

Erik Lesko has booked Merwin for next month's (June 2023) in-person/virtual meeting. At next month's meeting, the committee will discuss how many in-person meetings will occur in the future. Bryce Glaser noted that he would like the calendar appointment hold for the meeting to get extended if the meeting is truly going to be as long as projected.

Glaser would like a little time to review Steelhead transition plan and provide a draft template for the decision plan.

Peggy Miller would like to know how long the meeting will last in June so that the FPS committee meeting can be adjusted. Erik Lesko said we will figure out logistics, but the meeting room is booked for both. Miller mentioned that some members who do not attend both will need to know in advance when the meeting will begin. Lesko will send out an update.

#### **Public Comment Opportunity**

None present.

#### **Agenda Items for June 8, 2023**

- Study/Work Product Updates

**Adjourn 12:29 p.m.**

#### **Next Scheduled Meeting**

|                        |
|------------------------|
| June 8, 2023           |
| Teams Call             |
| 9:30 a.m. – 12:00 p.m. |

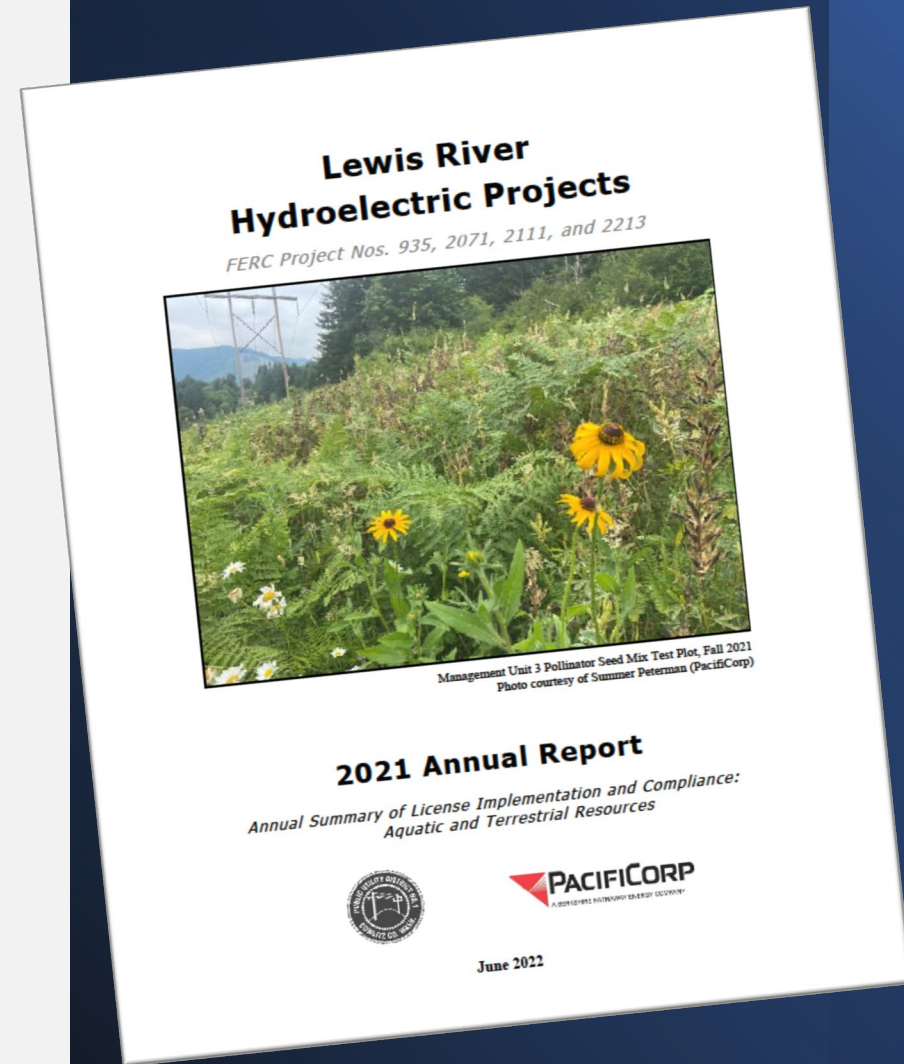
#### **Meeting Handouts and Attachments**

- Meeting Notes from April 13, 2023
- Agenda from May 11, 2023
- **Attachment A** – *Lewis River Hydroelectric Projects 2022 Annual Report*
- **Attachment B** – Lewis River Fish Passage Report (April 2023)
- **Attachment C** – Merwin Adult Trap Collection Report (April 2023)
- **Attachment D** – Swift FSC Facility Collection Report (April 2023)

# Annual Operations Report

- License obligation: (Articles 402, 404 and SA Section 14.2.6)
- Provides a summary of each SA section for aquatic and terrestrial resources
- Includes 8 attachments with detailed monitoring and evaluation results

Where to find: <https://www.pacificorp.com/energy/hydro/lewis-river.html>



# REPORTING FORMAT

1.0 Introduction and Background

2.0 Aquatic and Terrestrial Coordination Committees

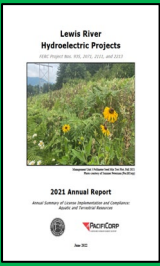
3.0 Aquatic Resources

- *Fish Passage and Transportation*
- *Bull Trout M&E*
- *Hatchery and Supplementation*
- *Aquatic Funds Management*
- *Habitat Preparation Plan*
- *Incidental take of fish species*

4.0 Water Quality and Flows (401 Certification)

5.0 Terrestrial Resources (WHMP)

6.0 Law Enforcement



# Annual Report

# Attachments

## Administrative

**A**  
Section 14 of the Lewis River  
Settlement Agreement

## Aquatic M&E

**B**  
Hatchery & Supplementation  
Report

**C**  
Aquatic Monitoring &  
Evaluation Report

## 401 WQ Certification

**D**  
Yale Water Quality Graphs

**E**  
Swift No. 1 Water Quality  
Graphs

**F**  
Merwin Water Quality Graphs

## WHMP

**G**  
Wildlife Habitat Management  
Plan

**H**  
Wildlife Management Plan  
Progress Report



**Attachment B**  
Hatchery &  
Supplementation Report

**Attachment C**  
Aquatic Monitoring &  
Evaluation Report

**Fish Passage Report**  
(metrics)

**Bull Trout Report**

**Kokanee Escapement**  
Report

# REPORTING STRUCTURE (AQUATICS M&E)

2022 Annual Report

# Hatchery and Supplementation Program

North Fork Lewis River

**Hatchery and Supplementation Program**

North Fork Lewis River

FERC Hydroelectric Projects 935, 2071, 2111, 2213









**2022 ANNUAL REPORT**  
*ACC Review Draft*

*Prepared by*



May 2023

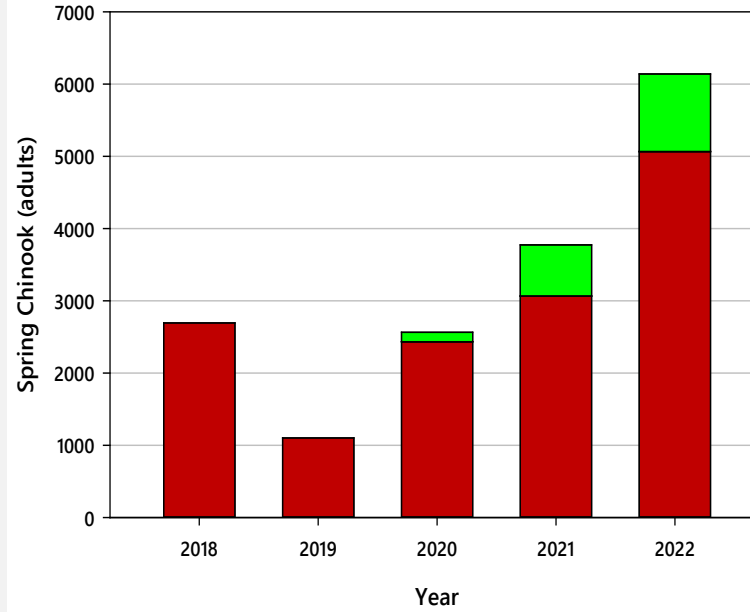
# Monitoring Objectives

| Obj. | Description   | Status  |
|------|---|---|
| 1,2  | Administrative: Biop's, HGMP's, annual reports and plans  |    |
| 3    | Hatchery production protocols incorporate best available management practices   |    |
| 4    | Adopt strategies that limit potential post-release ecological interactions  |    |
| 5    | Estimate spawner abundance  |    |
| 5.1  | Determine the spatial and temporal distribution of adult spawners   |    |
| 6    | Estimate juvenile outmigrant abundance  |    |
| 7    | Monitor the extent of genetic risks on naturally spawning populations   |  |
| 8    | Determine the percent hatchery-origin spawners (pHOS), proportionate natural influence (PNI) and pNOB (for integrated programs) |  |

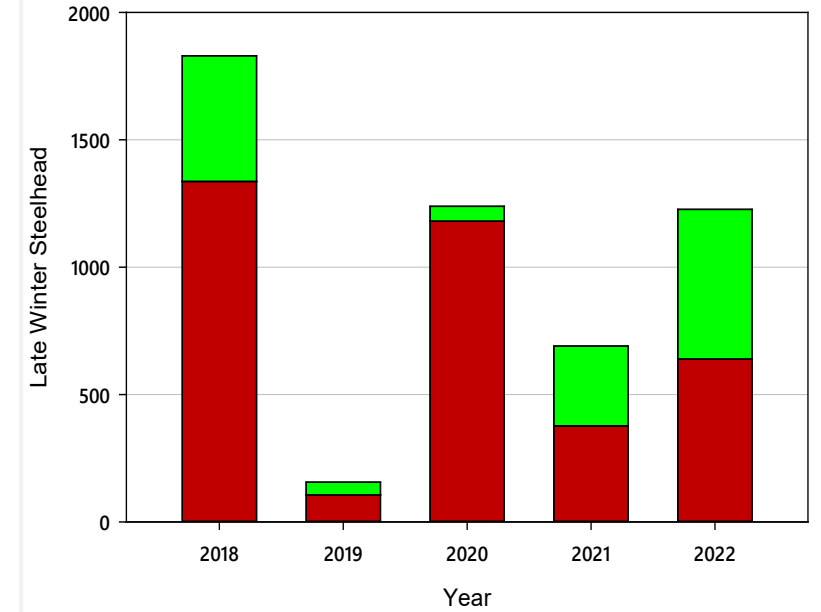


# Adult Abundance

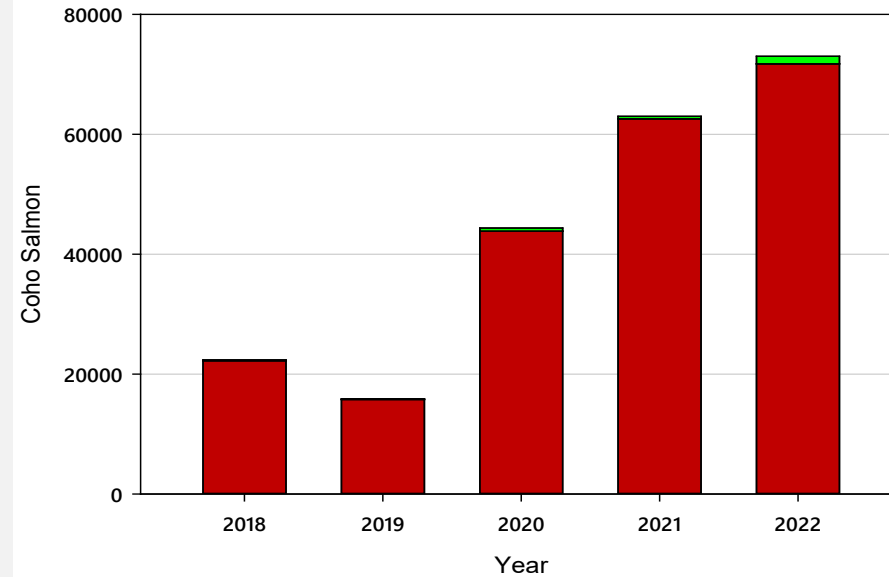
### Spring Chinook



### Late Winter Steelhead

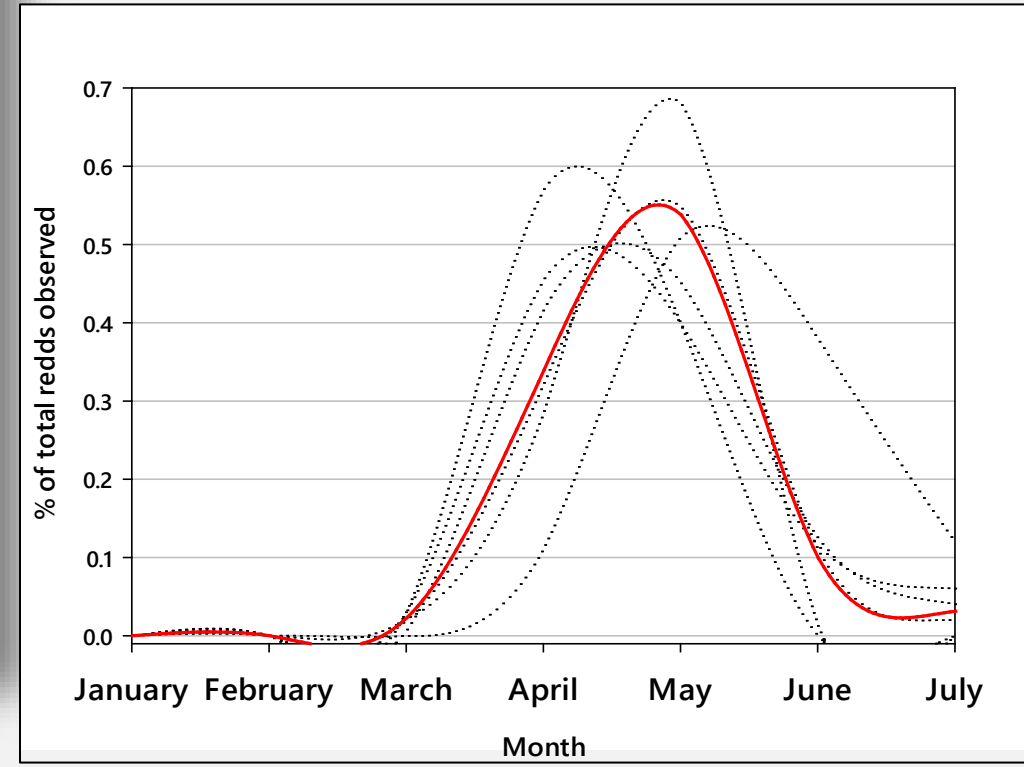
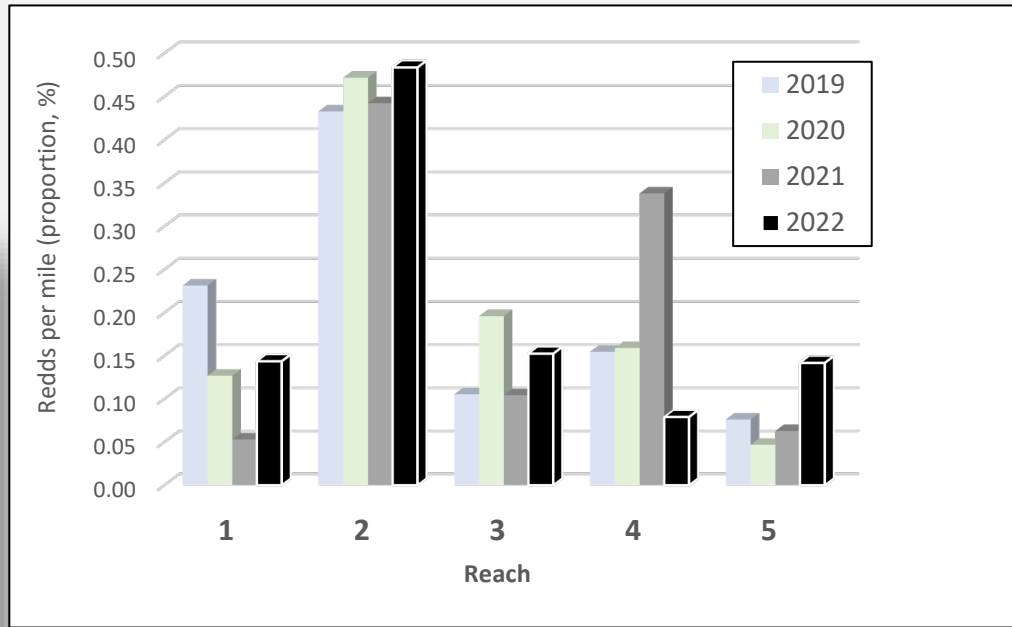
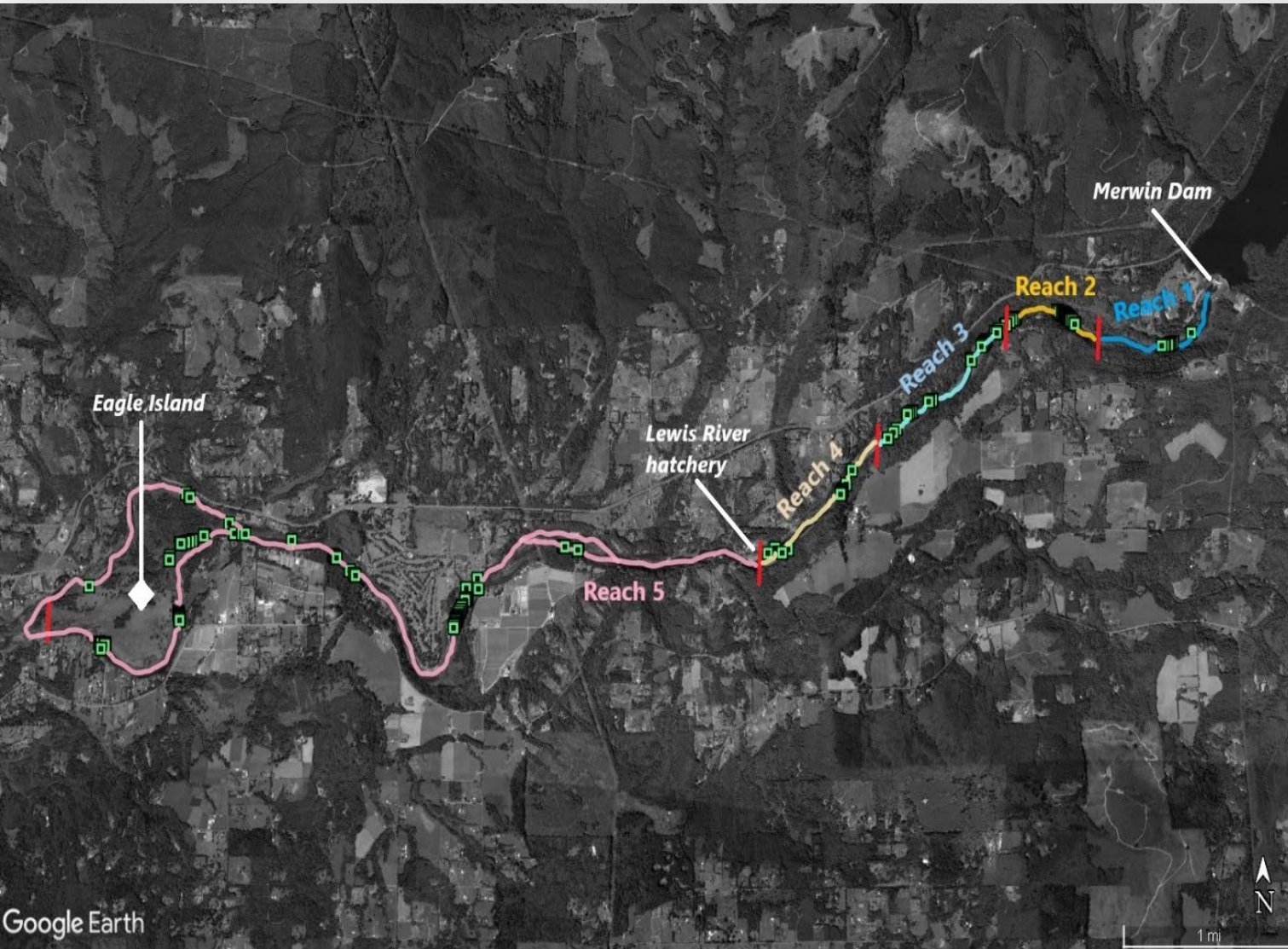


### Coho Salmon



- Trapped
- Natural Spawners

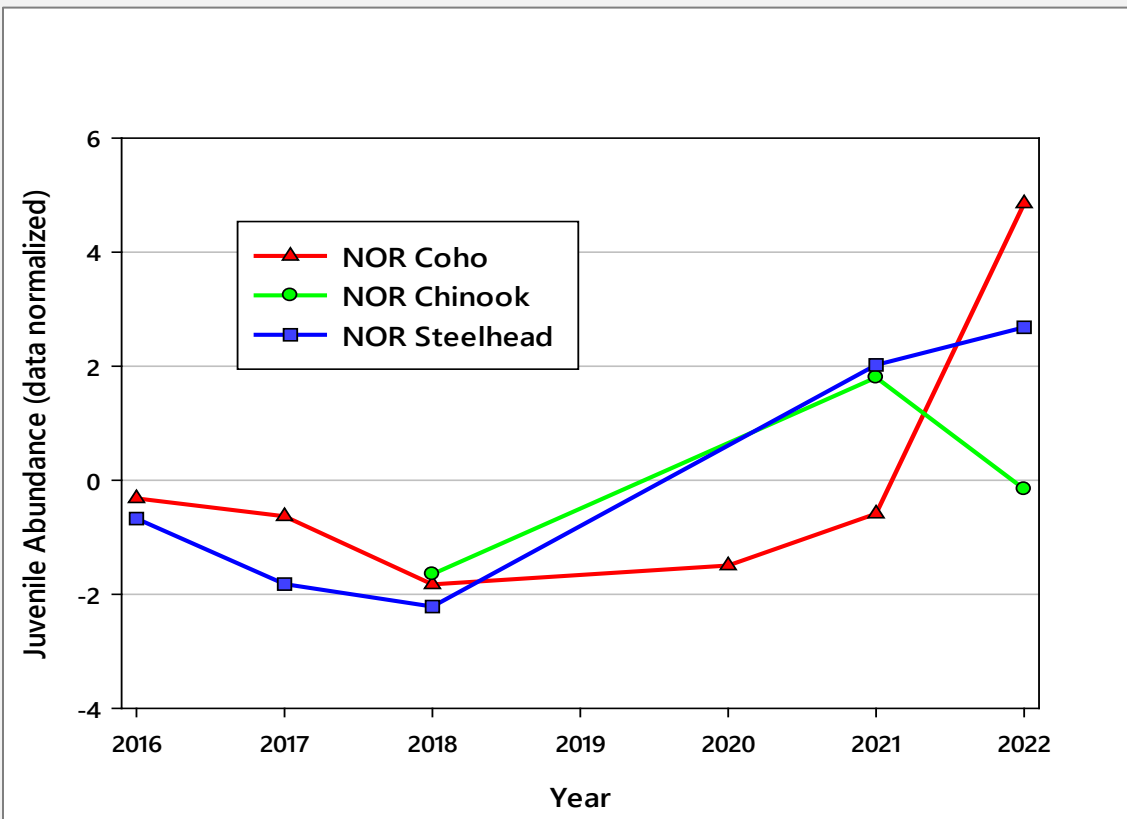
# Late Winter Steelhead Spawner Distribution and Timing





# Juvenile Abundance, NFK Lewis River

| Year | HOR Coho    | NOR Coho       | NOR Chinook | NOR Steelhead |
|------|-------------|----------------|-------------|---------------|
| 2016 | 1,309,518   | 74,065         | NA          | 20,404        |
| 2017 | 811,302     | 62,075         | NA          | 6,866         |
| 2018 | 1,852,836   | 16,488         | 1,250,158   | 2,212         |
| 2019 | No trapping |                |             |               |
| 2020 | 1,820,357   | 29,161         | NA          | NA            |
| 2021 | NA          | 63,781         | 4,595,197   | 52,193        |
| 2022 | NA          | <b>271,441</b> | 2,694,572   | 59,971        |



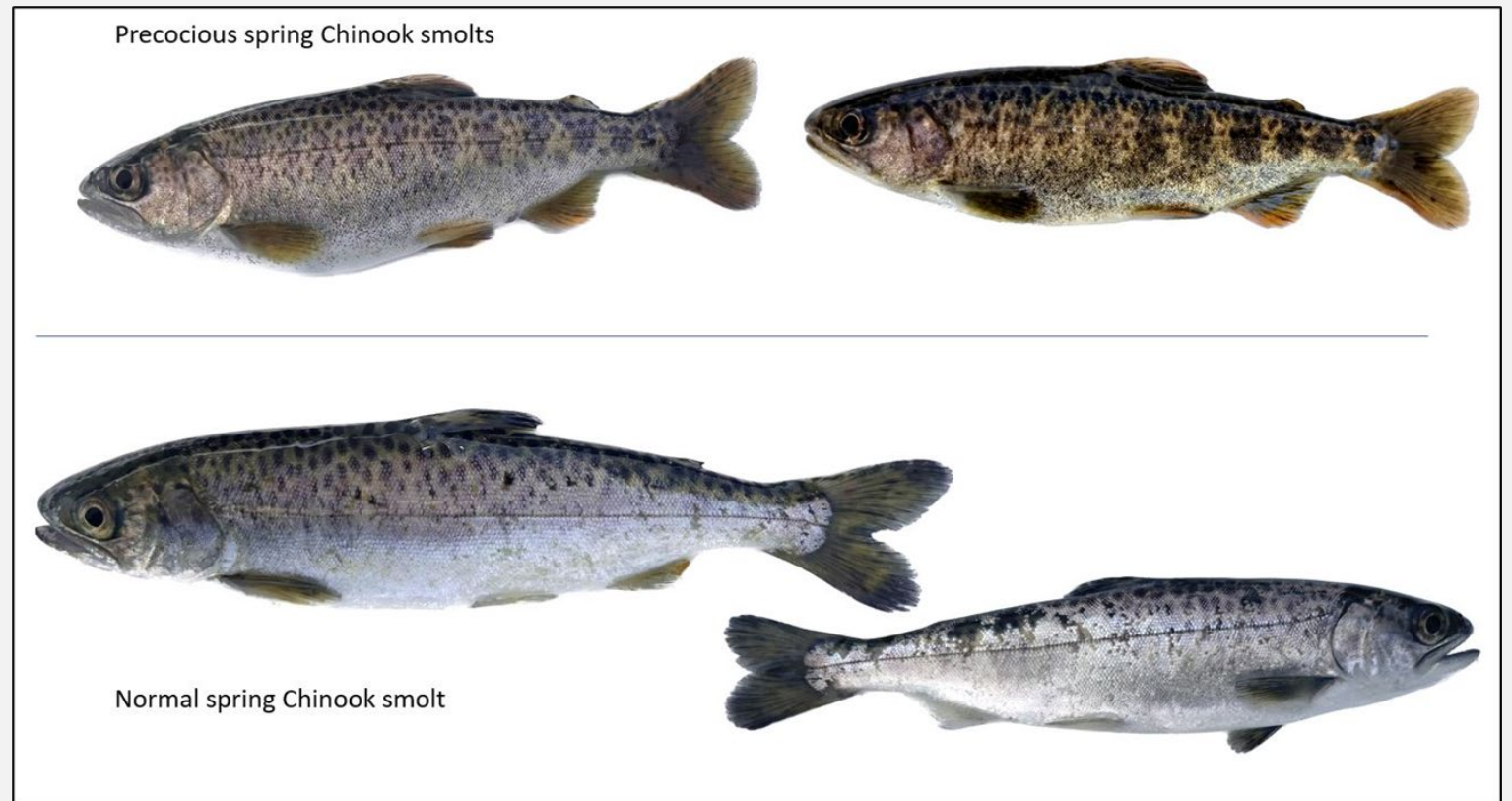
## Trends

| Species       | Observed Trend |
|---------------|----------------|
| NOR Coho      | Increasing     |
| NOR Chinook   | Stable         |
| NOR Steelhead | Stable         |

# Precocity Studies

(Lewis River Hatchery)

| Year        | Sample (n) | Lewis River Hatchery Raceway |      |      |      |      | Average   |
|-------------|------------|------------------------------|------|------|------|------|-----------|
|             |            | 13-1                         | 13-2 | 13-3 | 13-4 | 14-4 |           |
| <b>2019</b> | 1,031      | 5%                           | 10%  | 9%   | 3%   |      | <b>7%</b> |
| <b>2020</b> | 830        | 3%                           | 5%   | 4%   | 1%   |      | <b>3%</b> |
| <b>2021</b> | 559        | 1%                           | 4%   | 3%   | 2%   |      | <b>2%</b> |
| <b>2022</b> | 1,764      | 2%                           | 4%   | 4%   | 5%   | 11%  | <b>5%</b> |



# Hatchery Production 2022

| Species               | Production |           |   |
|-----------------------|------------|-----------|---|
|                       | Target     | Actual    |   |
| Spring Chinook        | 1,350,000  | 1,600,844 | ✓ |
| Coho Salmon           | 2,000,000  | 2,155,007 | ✓ |
| Summer Steelhead      | 175,000    | 177,991   | ✓ |
| Winter Steelhead      | 100,000    | 103,049   | ✓ |
| Late Winter Steelhead | 50,000     | 63,453    | ✓ |
| Kokanee (pounds)      | 12,500     | 10,663    | ✗ |
| Rainbow               | 50,000     | 46,900    | ✗ |
|                       |            | 4,157,907 |   |



# Challenges

- Genetics monitoring strategy
- SAR's
- pHOS – winter steelhead
- Hatchery program transition planning
- HGMP's
- Reintroduction outcome goal
- Data management

2022 Annual Report

# Lewis River Fish Passage Program

Monitoring and Evaluation Plan  
Metrics



## Lewis River Fish Passage Program 2022 Annual Report (Draft)

Monitoring and Evaluation (M&E) Plan Metrics

FERC Project Nos. 935, 2071, 2111 and 2213



Coho Salmon out-migrants collected at the Swift Reservoir Floating Surface Collector.  
Photo by Tyler McClure

*PacifiCorp*  
&  
*Public Utility District No.1 of Cowlitz County*

*May 2023*

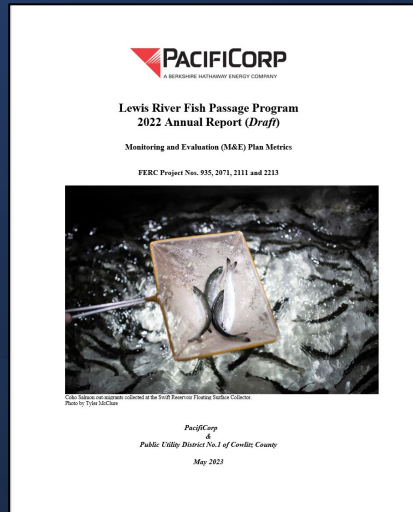
# Monitoring Objectives

(Reports on 17 of the 22 M&E Plan Objectives)

- Objective 1** Quantify overall juvenile fish downstream survival (ODS)
- Objective 2** Quantify FSC collection efficiency
- Objective 3** Quantify the percentage of juvenile fish available for collection that are not captured by the FSC and that enter the powerhouse intakes
- Objective 4** Quantify juvenile and adult collection survival
- Objective 5** Quantify juvenile injury and mortality rates during collection at the FSC
- Objective 6** Quantify the abundance and migration timing, by species, of juvenile and adult fish collected at the FSC
- Objective 7** Estimate the migration timing and number of juveniles entering Swift Reservoir
- Objective 8** Develop index of juvenile migration timing
- Objective 9** Quantify adult upstream passage survival
- Objective 10** Quantify adult trap efficiency at each upstream fish transport facility
- Objective 11** Quantify the number, by species, of adult fish collected at the projects
- Objective 12** Develop estimates of ocean recruits
- Objective 13** Develop performance measures for index stocks
- Objective 14** Document upstream and downstream passage facility compliance with hydraulic design criteria
- Objective 15** Determine spawn timing, distribution and abundance of transported anadromous adults
  
- Objective 18** Determine interactions between reintroduced anadromous salmonids and resident fish (Upstream of Merwin Dam)
  
- Objective 20** Determine when reintroduction outcome goals are achieved



# Report Structure



## Table of Contents

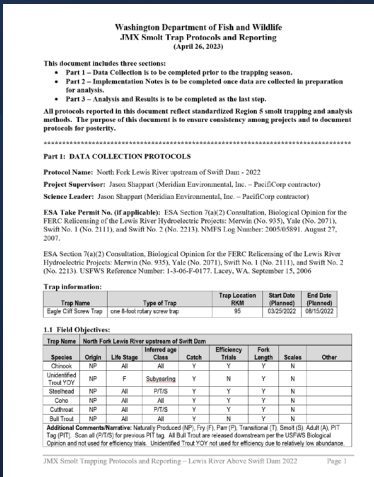
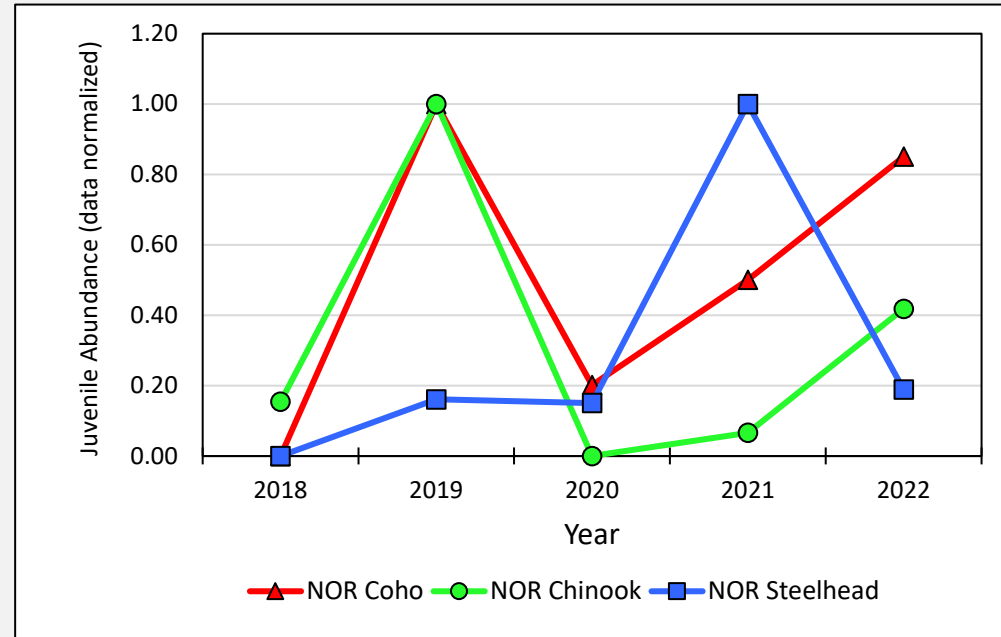
### Executive Summary (Annual Data Summary Table)

- 1.0 Introduction**
- 2.0 Passage Facilities**
- 3.0 Downstream Collection and Passage Metrics**
- 4.0 Upstream Collection and Passage Metrics**
- 5.0 Ocean Recruit Analysis**
- 6.0 Performance Measures for Index Stocks**
- 7.0 Reintroduced and Resident Fish Interactions**
- 8.0 Determining Achievement of Outcome Goal**

# Timing and Abundance of Juveniles Entering Swift Reservoir



Estimated juvenile abundance from Eagle Cliff screw trap over past 5 years (March ~July)



(Included as Appendix)

Year 1 of two-year feasibility study completed in 2022. Study to determine whether tagging out-migrants collected at the Swift FSC and then transporting them back upstream can be used as a surrogate (or bolster) marked naive-fish entering the reservoir to calculate overall downstream survival and abundance parameters.

| Tagging Location | Maiden in 2022 |            | Recaptured at FSC in 2022 |           |
|------------------|----------------|------------|---------------------------|-----------|
|                  | Coho           | Steelhead  | Coho                      | Steelhead |
| Swift FSC        | 1,331          | 200        | 381                       | 58        |
| EC Screw Trap    | 1,481          | 216        | 246                       | 31        |
| <b>TOTAL</b>     | <b>2,812</b>   | <b>416</b> | <b>627</b>                | <b>89</b> |

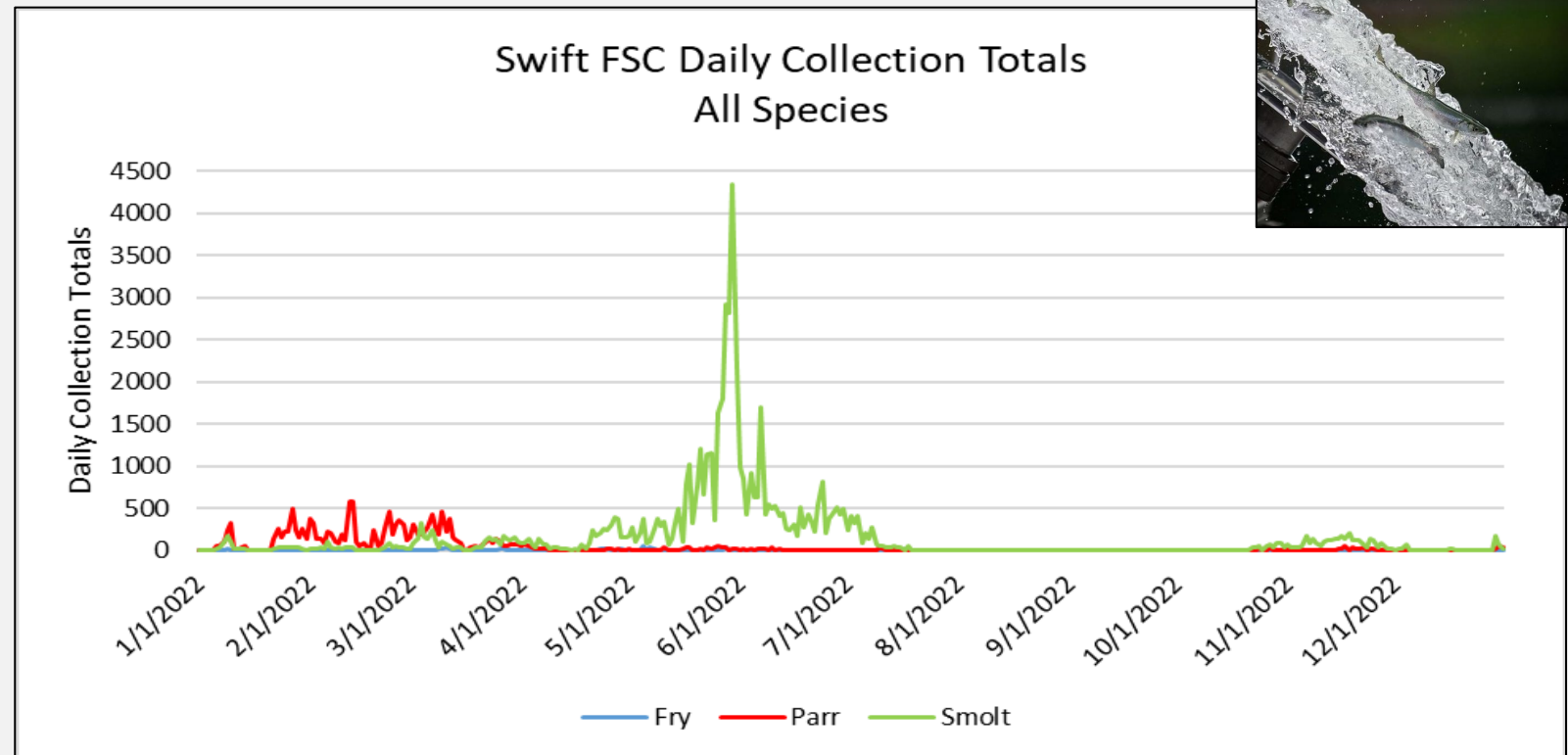


# Juvenile Collection and Migration Timing



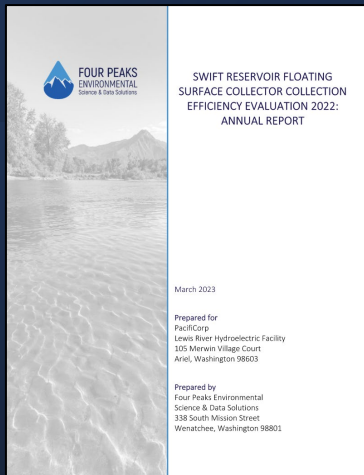
Number of juvenile outmigrants transported downstream annually since 2013

| Year        | Coho          | Chinook      | Steelhead    | Cutthroat  |
|-------------|---------------|--------------|--------------|------------|
| 2013        | 15,074        | 1,431        | 166          | 556        |
| 2014        | 7,588         | 2,164        | 539          | 857        |
| 2015        | 31,919        | 5401         | 1,324        | 811        |
| 2016        | 60,976        | 3,793        | 2,201        | 1,069      |
| 2017        | 28,098        | 5,801        | 1,816        | 790        |
| 2018        | 41,721        | 4,680        | 7,894        | 872        |
| 2019        | 96,817        | 10,886       | 3,012        | 939        |
| 2020        | 30,953        | 15,377       | 4,183        | 502        |
| 2021        | 69,950        | 3,024        | 5,659        | 748        |
| <b>2022</b> | <b>63,842</b> | <b>2,460</b> | <b>5,483</b> | <b>871</b> |





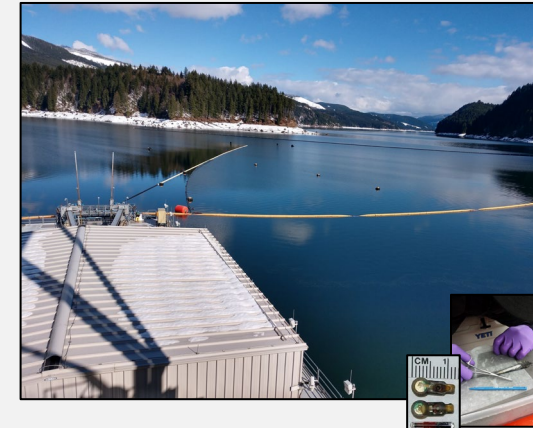
# Juvenile Collection Efficiency



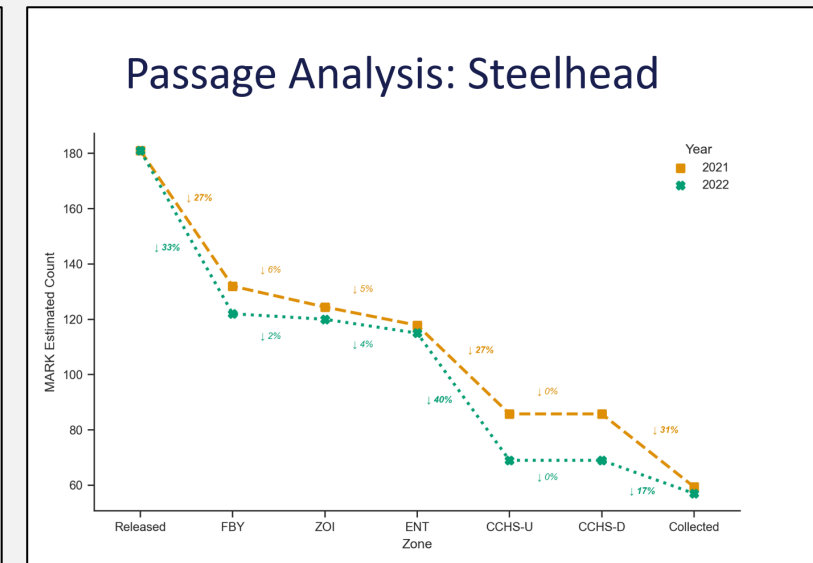
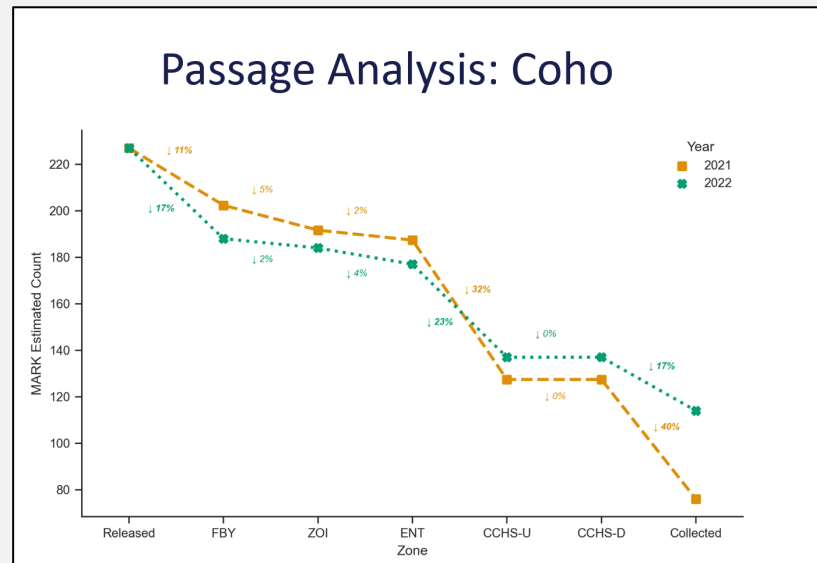
(Included as Appendix)

Downstream fish passage metrics at the Swift FSC since 2017

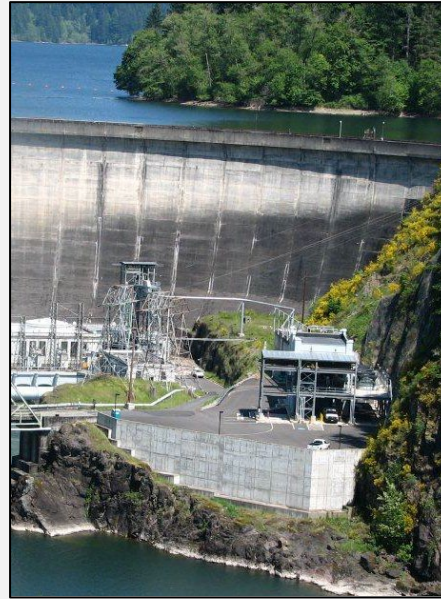
| Year | Species        | P <sub>ZOI</sub> (%) | P <sub>ENT</sub> (%) | P <sub>RET</sub> (%) | P <sub>CE</sub> (%) |
|------|----------------|----------------------|----------------------|----------------------|---------------------|
| 2017 | Chinook Salmon | 57                   | 47                   | 24                   | 11                  |
|      | Coho Salmon    | 74                   | 65                   | 41                   | 27                  |
|      | Steelhead      | 59                   | 49                   | 40                   | 20                  |
| 2019 | Chinook Salmon | 54                   | 78                   | 65                   | 51                  |
|      | Coho Salmon    | 82                   | 98                   | 64                   | 64                  |
|      | Steelhead      | 58                   | 97                   | 28                   | 27                  |
| 2020 | Chinook Salmon | 58                   | 95                   | 47                   | 44                  |
|      | Coho Salmon    | 62                   | 95                   | 42                   | 39                  |
|      | Steelhead      | 73                   | 99                   | 42                   | 42                  |
| 2021 | Chinook Salmon | 64                   | 100                  | 52                   | 52                  |
|      | Coho Salmon    | 84                   | 98                   | 41                   | 40                  |
|      | Steelhead      | 69                   | 95                   | 50                   | 48                  |
| 2022 | Coho Salmon    | 81                   | 96                   | 64                   | 62                  |
|      | Steelhead      | 74                   | 96                   | 50                   | 48                  |



Counts of study fish detected within each zone of the detection array in 2021 (orange) and in 2022 (green).



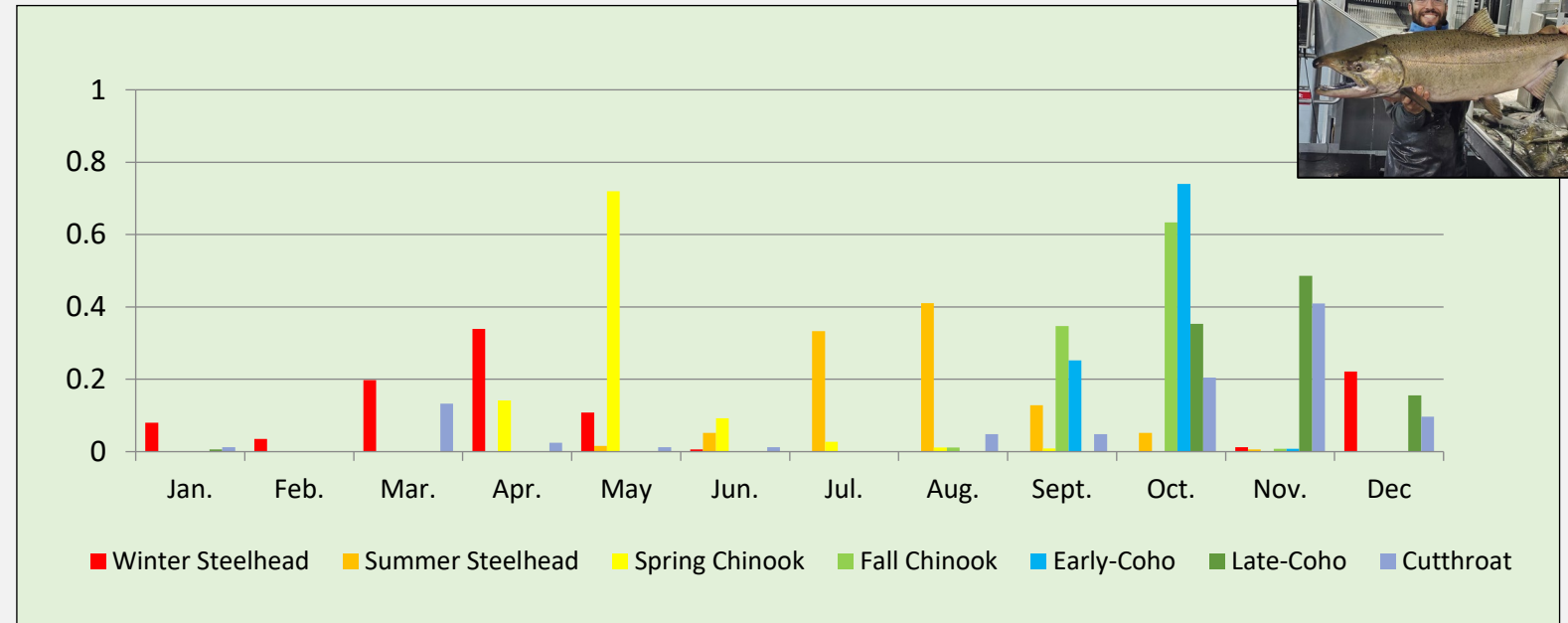
# Adult Collection and Migration Timing



Total numbers of adult fish collected at the Merwin Upstream Collection Facility in 2022

| Species          | HOR   | NOR  | Total         | %          |
|------------------|-------|------|---------------|------------|
| Spring Chinook   | 4,377 | 542  | 4,919         | 10.3       |
| Fall Chinook     | 285   | 145  | 430           | 0.9        |
| Early Coho       | 19585 | 2100 | 21,685        | 45.4       |
| Late Coho        | 12183 | 1362 | 13,545        | 28.4       |
| Summer Steelhead | 4367  | 10   | 4,377         | 9.2        |
| Winter Steelhead | 2004  | 652  | 2,656         | 5.6        |
| Sockeye Salmon   | 0     | 12   | 12            | 0          |
| Chum Salmon      | 0     | 3    | 3             | 0          |
| Pink Salmon      | 0     | 0    | 0             | 0          |
| Cutthroat        | 0     | 102  | 102           | 0.2        |
| Bull Trout       | 0     | 0    | 0             | 0          |
| <b>TOTAL</b>     |       |      | <b>47,729</b> | <b>100</b> |

Timing of passage by species in 2022



# Upstream Transport

Total number of adults transported upstream of Swift Dam in 2022

| Species                | Male  | Female | Jack | Not sexed | Female:Male Ratio | NOR:HOR Ratio | Total | Upstream Transport Goal |  |
|------------------------|-------|--------|------|-----------|-------------------|---------------|-------|-------------------------|--|
| Spring Chinook         | 1,886 | 1,428  | 286  | -         | 0.66              | 0.15          | 3,600 | ✓                       |  |
| Early Coho             | 2,297 | 2,561  | 244  | -         | 1.01              | 0.41          | 5,102 | ✓                       |  |
| Late Coho              | 2,005 | 2,290  | 148  | -         | 1.06              | 0.31          | 4,443 |                         |  |
| Winter Steelhead       | 374   | 220    | -    | -         | 0.59              | 0.31          | 594   | ✗                       |  |
| Cutthroat (>13 inches) | -     | -      | -    | 102       | -                 | 1.00          | 102   | NA                      |  |
|                        |       |        |      |           |                   |               |       | <b>13,841</b>           |  |

Total number of adults transported upstream of Swift Dam annually since 2013

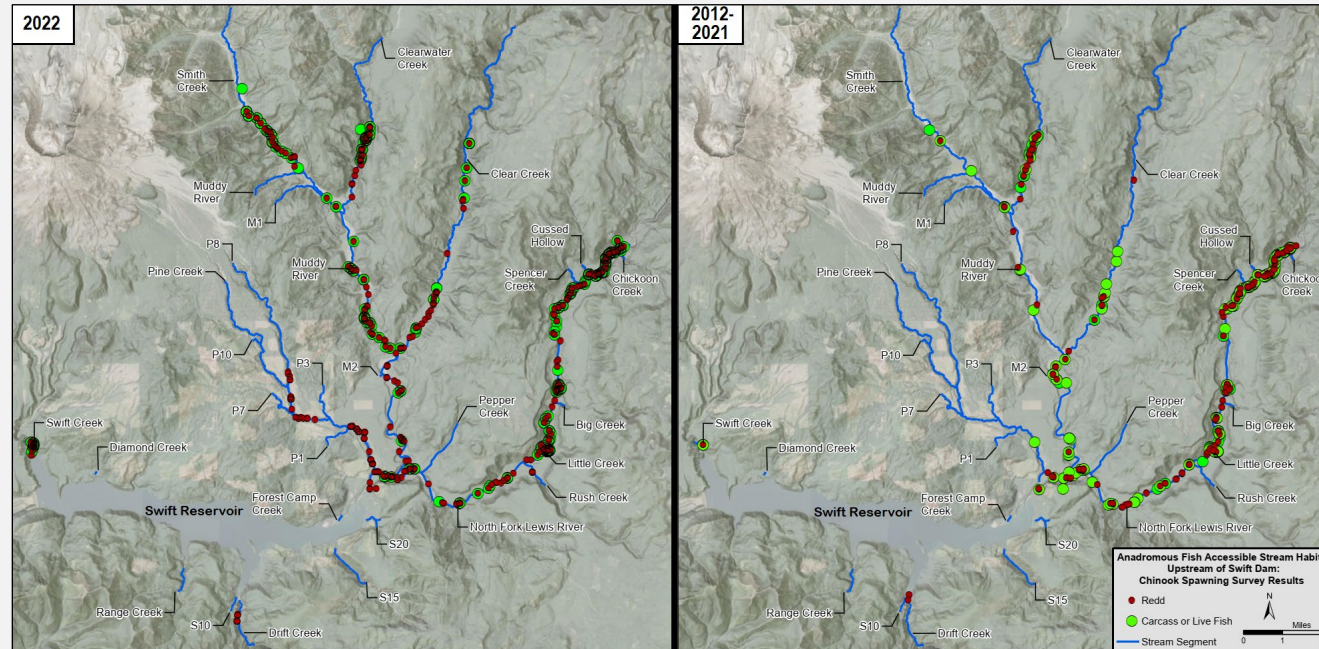
| Year        | Coho         | Chinook      | Steelhead  | Cutthroat  | Total Transported |
|-------------|--------------|--------------|------------|------------|-------------------|
| 2013        | 7,035        | 579          | 741        | 0          | 8,355             |
| 2014        | 9,179        | 0            | 1,033      | 42         | 10,254            |
| 2015        | 3,754        | 0            | 1,223      | 31         | 5,008             |
| 2016        | 7,346        | 0            | 772        | 73         | 8,191             |
| 2017        | 6,813        | 1,110        | 592        | 54         | 7,459             |
| 2018        | 7,060        | 700          | 1,225      | 77         | 8,293             |
| 2019        | 5,587        | 109          | 1,009      | 45         | 6,750             |
| 2020        | 9,486        | 634          | 1,052      | 86         | 11,258            |
| 2021        | 9,413        | 1,182        | 322        | 168        | 11,085            |
| <b>2022</b> | <b>9,545</b> | <b>3,600</b> | <b>594</b> | <b>102</b> | <b>13,841</b>     |





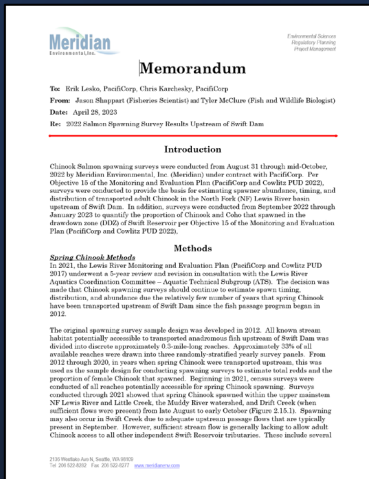
# Spawn Timing, Distribution, and Abundance of Reintroduction Species

Spring Chinook redd and fish observations made during spawning surveys in 2022 and all spring Chinook spawning survey observations combined from 2012-2021



Coho redd counts within drawdown zone channel of tributaries to Swift Reservoir (September 2022 to January 2023)

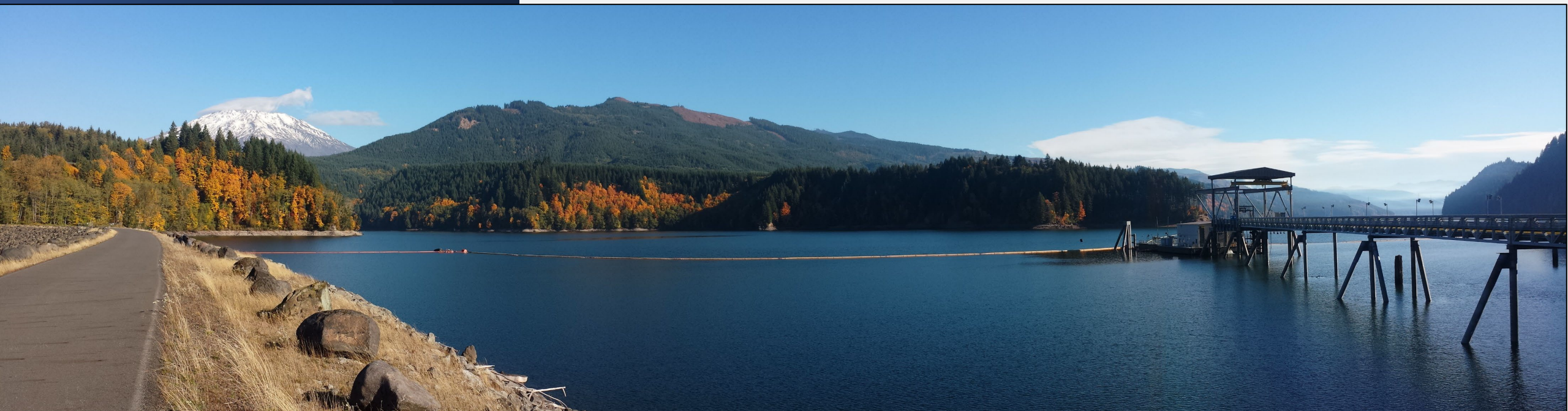
| Stream Name           | Total (%) Coho Redds Counted |
|-----------------------|------------------------------|
| Diamond Creek DDZ     | 2 (4%)                       |
| Diamond Tributary DDZ | 4 (8%)                       |
| Drift Creek DDZ       | 2 (4%)                       |
| Range Creek DDZ       | 6 (12%)                      |
| S10 Creek DDZ         | 4 (8%)                       |
| S15 Creek DDZ         | 4 (8%)                       |
| S20 Creek DDZ         | 0 (0%)                       |
| Forest Camp Creek DDZ | 0 (0%)                       |
| Swift Creek DDZ       | 19 (37%)                     |
| NF Lewis River DDZ    | 10 (20%)                     |
| <b>Total</b>          | <b>51</b>                    |



(Included as Appendix)



Questions?







## 2022 Lewis River Bull Trout Monitoring

# Bull Trout Monitoring Requirements & 2022 Planned Data Collection Activities

## Compliance Requirements

- Lewis River Settlement Agreement Sections 9.6 and 4.9
- Monitoring and Evaluation Plan Objective 19
- Annual Planning process is a collaborative effort among members of the Lewis River Bull Trout Recovery Team.

## 2022 Field Work

1. Eagle Cliffs collection and marking effort and Swift Reservoir Survival (S) estimate
2. Yale Tailrace collection and transportation
3. Swift Bypass Reach collection
4. Fixed Passive Integrated Transponder (PIT) antenna arrays in Pine and Rush creeks, P8, Rush Creek hole of the Lewis River mainstem, Eagle Cliff pool, and Cougar Creek
5. Comprehensive Bull Trout Redd Surveys of Cougar Creek, Pine Creek, Pine Creek Tributaries P8, P10, and Rush Creek. Exploratory redd surveys of the Muddy River
6. Partial weir with underwater video camera in Cougar Creek
7. Temperature monitoring of bull trout spawning streams in the upper Lewis River
8. Stable isotope sample collection



Lewis River Bull Trout (*Salvelinus confluentus*)  
Annual Operations Report - draft



North Fork Lewis River – 2022

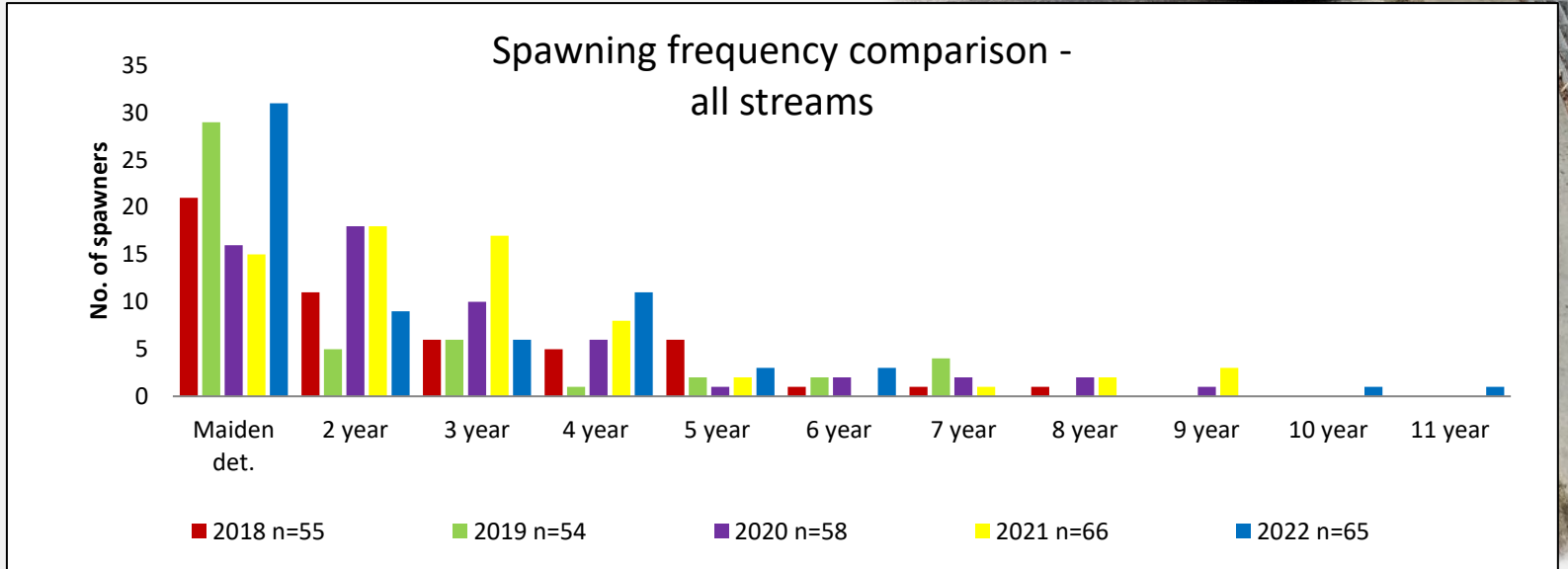
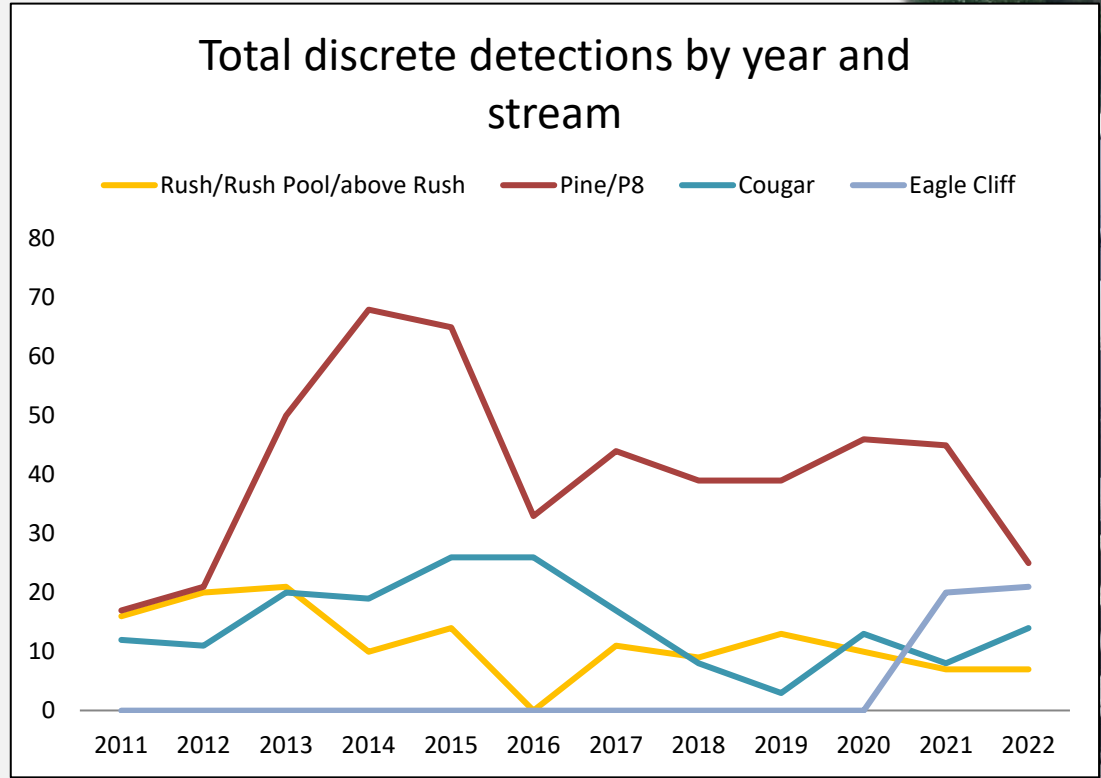
Merwin FERC No. 935  
Yale FERC No. 2071  
Swift No. 1 FERC No. 2111  
Swift No. 2 FERC No. 2213

Jeremiah Doyle, PacifiCorp

June 2023



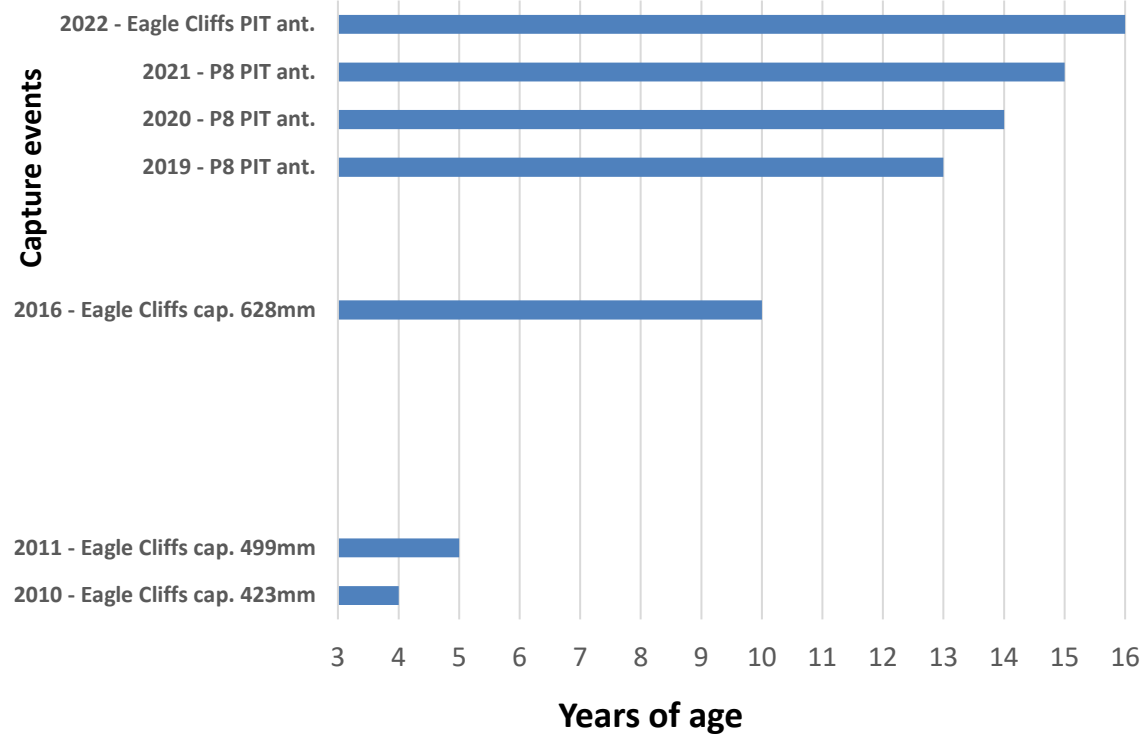
# PIT Detections by stream, year, and frequency



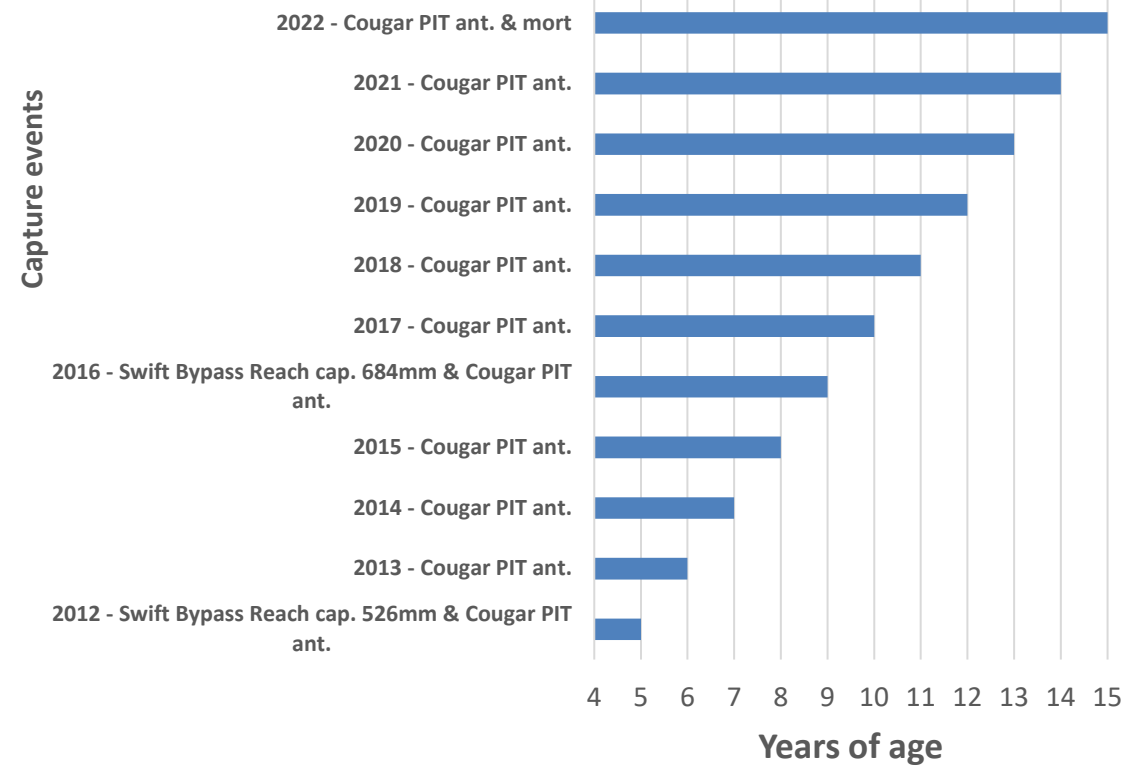
# Bull trout longevity



A0F6575

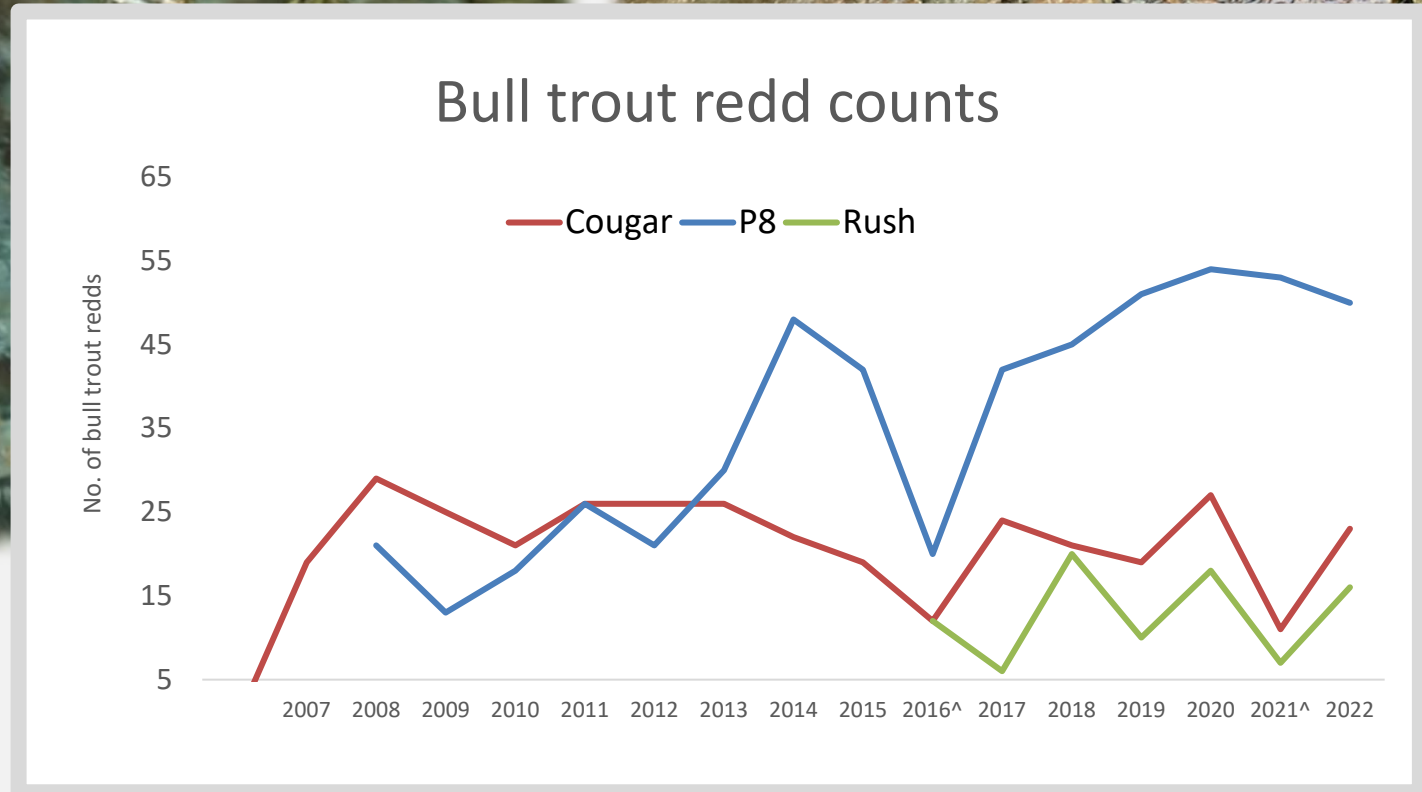
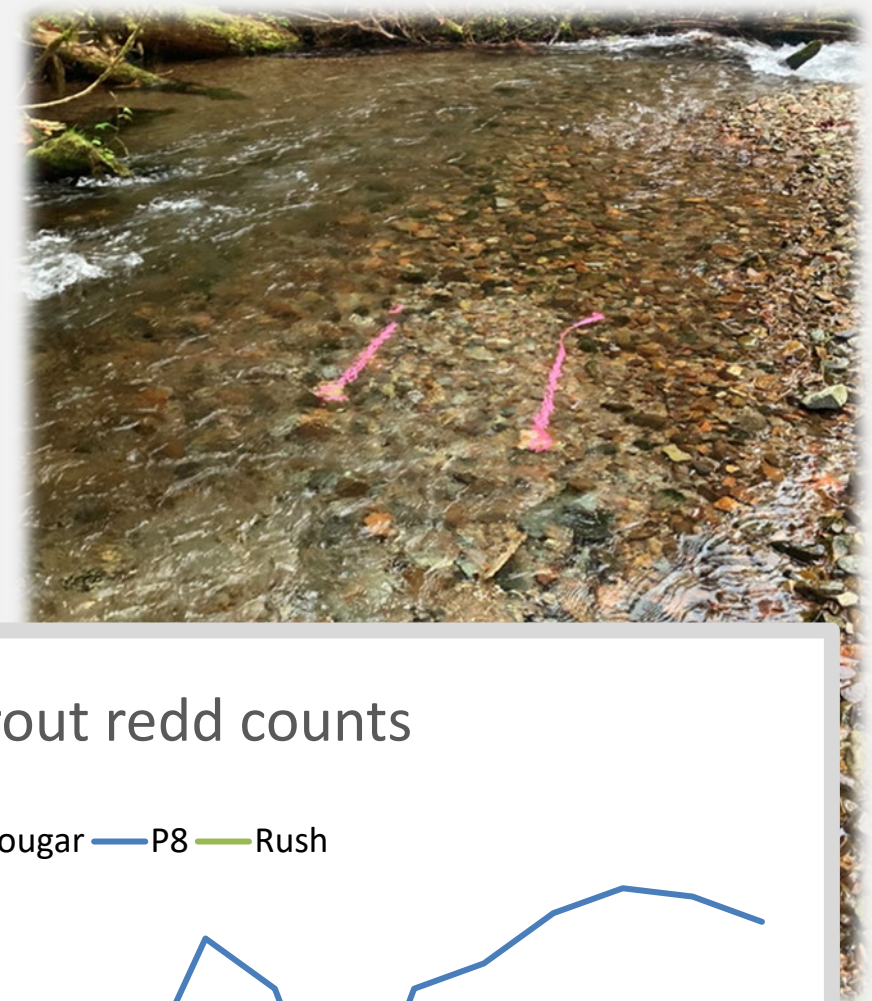


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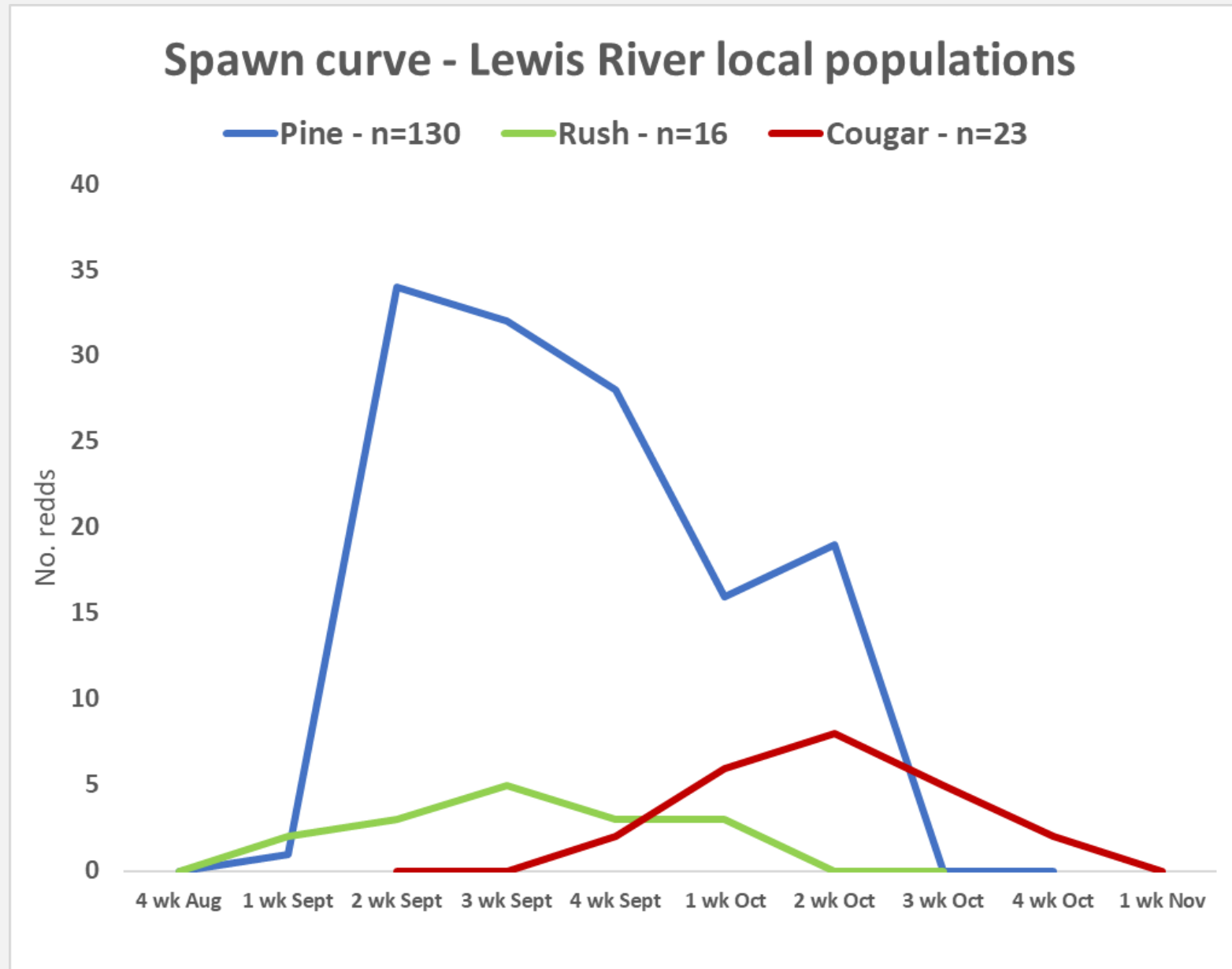
# Spawning Surveys



# 3 Local Populations in the Lewis basin – Rush Creek, Pine Creek, and Cougar Creek

Surveys start first week of September and continue through October, weather and flow permitting.

2022 was the first year since anadromous fish reintroduction in 2012 that spring Chinook/bull trout/coho redds all observed in the same stream.





# Cougar Creek weir and underwater video camera

Operated by USFWS July – October  
2022.  
35 bull trout, 214 coho, and 18 spring  
Chinook observed passing upstream on  
video.





Questions?



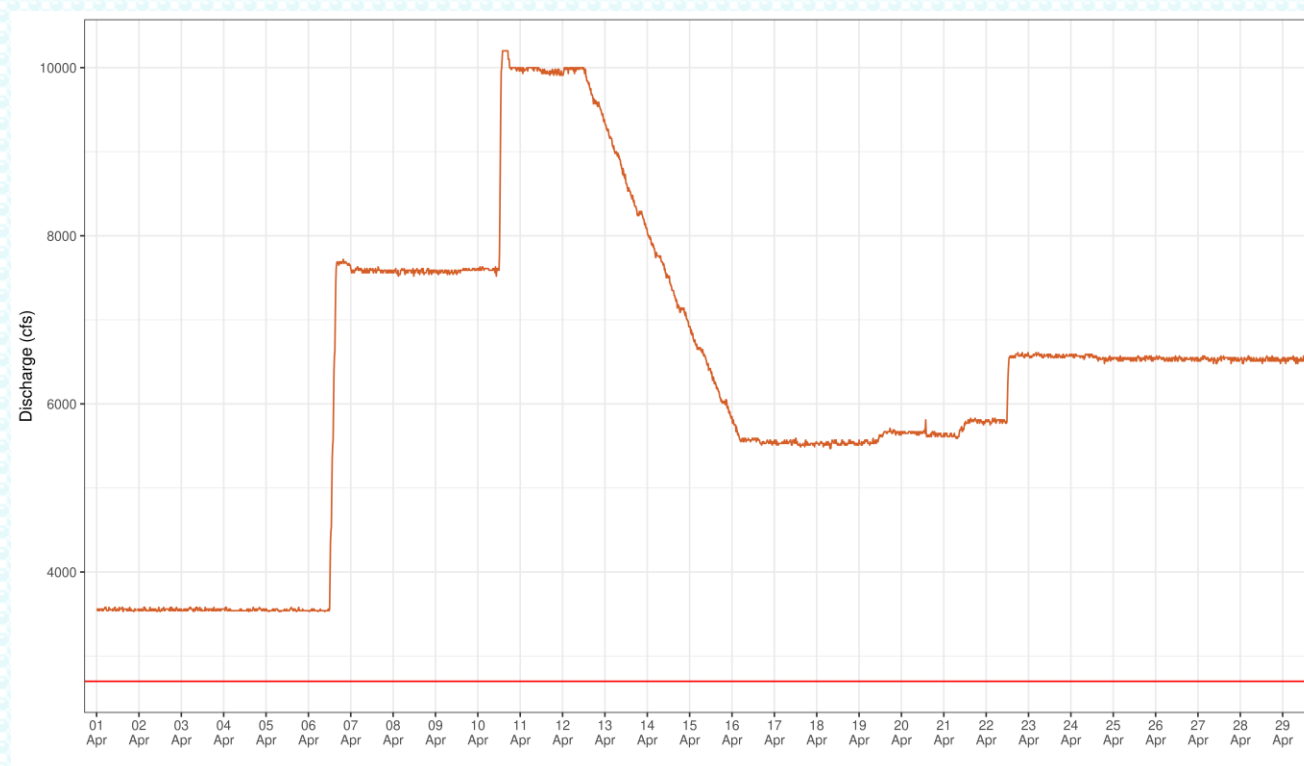


# Lewis River Fish Passage Report

## April 2023

### Merwin Fish Collection Facility and General Operations

During the month of April, a total of 818 fish were captured at the Merwin Dam Adult Fish Collection Facility (MFCF), which was an increase over the March total of 167. As is typical in April, winter steelhead were the most prevalent species collected (n= 528), followed by spring Chinook (n= 276), Cutthroat trout (n= 10), and summer steelhead (n= 4). All HOR spring Chinook were given to WDFW for broodstock needs.



**Figure 1. Flow in cubic feet per second recorded at the USGS Ariel, WA gauge (14220500) located immediately downstream of Merwin Dam.**

The MFCF lift and conveyance system was operational for the entirety of the month of April. Flows below Merwin Dam ranged from approximately 3,500 to 10,000 cubic feet per second in April (Figure 1).

Fifteen of the fish collected at the MFCF in April had been previously PIT-tagged, fourteen of which were steelhead; one of which was a cutthroat trout. One of these steelhead was tagged at the MFCF as an adult in 2022, given to WDFW for broodstock, and then released in the Lewis River after it had been spawned. This is the first confirmed returning broodstock kelt since the new facility was complete in 2014. One other steelhead was a returning kelt that had previously circumnavigated the fish passage facilities in 2022. The cutthroat trout was tagged at Kalama Falls Hatchery in April 2022. All other fish had been tagged as juveniles upstream of Swift Dam. For calendar year 2023 to-

date, a total of 21 previously PIT tagged fish have been collected at the MFCF (nineteen winter steelhead, one natural origin coho, and one cutthroat trout). Tagging history and detections of PIT tagged fish passing through the Lewis River Fish Passage Facilities are available through Columbia Basin PIT Tag Information System (PTAGIS).

### **Upstream Transport**

A total of total of 549 adult fish were transported upstream in April, which is an increase over the 136 fish that were transported in March. The majority of the fish transported upstream were winter steelhead (401 BWT and 77 NOR). Sixty-one NOR spring Chinook and ten cutthroat trout were also transported upstream of Swift Dam. So far in 2023, a total of 650 winter steelhead (537 BWT and 113 NOR), 64 spring Chinook, 38 late run coho, and 20 cutthroat trout have been transported upstream of Swift Dam. The majority of the NOR spring Chinook that have been transported upstream have been >15 pounds, with some weighing over 20 pounds (figure 2).



**Figure 2. One of the large, Natural Origin spring Chinook collected at the Merwin Fish Collection Facility in April.**

### **Floating Surface Collector (FSC)**

The Swift Reservoir Floating Surface Collector (FSC) was taken out of service on April 26 so that divers could take measurements on the Net Transition Structure (NTS) for an upcoming modification project. This project is intended to increase the entrance velocity by narrowing the walls of the NTS, and construction will take place during the summer maintenance outage.

A total of 1,607 fish were collected at the Swift FSC in April, which is considerably less than the 10 year average of 4,665 (Table 1). Colder than average water temperatures are the most likely cause for the low collection totals in April. The majority of the fish collected were juvenile coho (n= 695) and spring Chinook (n= 514). Steelhead (n= 172), hatchery rainbow trout (n= 172), and cutthroat trout (n= 54) made up the balance of fish collected for the month.

**Table 1: Total number of out-migrating juvenile salmonids (by species) collected at the Swift FSC during the month of April since 2013.**

|                 | <b>April Collection Totals by Run Year at the Swift FSC</b> |                |                  |                  |               |
|-----------------|---|----------------|------------------|------------------|---------------|
| <b>Run Year</b> | <b>Coho</b>   | <b>Chinook</b> | <b>Steelhead</b> | <b>Cutthroat</b> | <b>TOTAL</b>  |
| <b>2013</b>     | <b>953</b>  | <b>173</b>     | <b>5</b>         | <b>53</b>        | <b>1,184</b>  |
| <b>2014</b>     | <b>2,174</b>  | <b>175</b>     | <b>65</b>        | <b>102</b>       | <b>2,516</b>  |
| <b>2015</b>     | <b>739</b>  | <b>535</b>     | <b>143</b>       | <b>63</b>        | <b>1,480</b>  |
| <b>2016</b>     | <b>10,504</b>   | <b>282</b>     | <b>499</b>       | <b>168</b>       | <b>11,453</b> |
| <b>2017</b>     | <b>902</b>  | <b>340</b>     | <b>219</b>       | <b>52</b>        | <b>1,513</b>  |
| <b>2018</b>     | <b>2,795</b>  | <b>657</b>     | <b>815</b>       | <b>147</b>       | <b>4,414</b>  |
| <b>2019</b>     | <b>6,117</b>  | <b>610</b>     | <b>223</b>       | <b>113</b>       | <b>7,063</b>  |
| <b>2020</b>     | <b>2,106</b>  | <b>6,519</b>   | <b>1,282</b>     | <b>109</b>       | <b>10,016</b> |
| <b>2021</b>     | <b>1,271</b>  | <b>878</b>     | <b>661</b>       | <b>59</b>        | <b>2,869</b>  |
| <b>2022</b>     | <b>3,177</b>  | <b>333</b>     | <b>688</b>       | <b>40</b>        | <b>4,138</b>  |
| <b>2022</b>     | <b>695</b>  | <b>514</b>     | <b>172</b>       | <b>54</b>        | <b>1,435</b>  |



**Fish Facility Report**  
**Swift Floating Surface Collector**  
**April 2023**

| Day                  | Coho |      |       | Chinook |      |       | Steelhead |      |       |      | Cutthroat |        | Bull Trout | Planted Rainbow | Total |         |
|----------------------|------|------|-------|---------|------|-------|-----------|------|-------|------|-----------|--------|------------|-----------------|-------|---------|
|                      | fry  | parr | smolt | fry     | parr | smolt | fry       | parr | smolt | kelt | fry       | <13 in |            |                 |       | > 13 in |
| 1                    |      |      | 3     |         |      | 10    |           |      | 0     |      |           |        |            | 0               | 0     | 13      |
| 2                    |      |      | 4     |         |      | 9     |           |      | 0     |      |           |        |            | 0               | 0     | 13      |
| 3                    | 1    |      | 0     |         |      | 4     |           |      | 0     |      |           | 1      |            | 0               | 1     | 7       |
| 4                    |      |      | 9     |         |      | 2     |           |      | 0     |      |           |        |            | 0               | 1     | 12      |
| 5                    |      | 3    | 1     |         |      | 2     |           |      | 0     |      |           |        |            | 0               | 3     | 9       |
| 6                    |      |      | 1     |         |      | 0     |           |      | 0     |      |           |        |            | 0               | 2     | 3       |
| 7                    |      | 6    | 1     |         |      | 9     |           |      | 1     |      |           |        |            | 0               | 1     | 18      |
| 8                    |      | 4    | 3     |         |      | 6     |           |      | 0     |      |           |        |            | 0               | 0     | 13      |
| 9                    |      | 4    | 5     |         |      | 28    |           |      | 1     |      |           | 2      |            | 0               | 7     | 47      |
| 10                   |      | 1    | 9     | 4       |      | 24    |           |      | 0     |      |           |        |            | 0               | 2     | 40      |
| 11                   |      |      | 10    |         |      | 8     |           |      | 0     |      |           | 1      |            | 0               | 9     | 28      |
| 12                   |      |      | 57    |         |      | 20    |           |      | 5     |      |           | 1      | 1          | 0               | 17    | 101     |
| 13                   |      |      | 36    |         | 2    | 23    |           |      | 1     |      |           | 3      |            | 0               | 10    | 75      |
| 14                   | 2    | 1    | 55    |         |      | 14    |           |      | 2     |      |           | 3      | 1          | 0               | 6     | 84      |
| 15                   |      | 18   | 20    | 2       |      | 18    |           | 2    | 5     |      |           | 1      |            | 0               | 8     | 74      |
| 16                   |      | 13   | 31    |         | 1    | 27    |           |      | 8     |      |           | 2      | 1          | 0               | 4     | 87      |
| 17                   |      | 19   | 12    | 3       |      | 14    |           | 2    | 6     |      |           | 3      |            | 0               | 4     | 63      |
| 18                   | 1    |      | 16    | 3       |      | 20    |           |      | 7     |      |           | 1      |            | 0               | 11    | 59      |
| 19                   |      | 12   | 7     | 2       |      | 20    |           |      | 5     |      |           |        | 2          | 0               | 14    | 62      |
| 20                   |      | 3    | 24    |         |      | 12    |           | 1    | 8     |      |           | 4      | 1          | 0               | 6     | 59      |
| 21                   | 1    |      | 19    | 1       |      | 10    |           |      | 2     |      |           | 1      |            | 0               | 4     | 38      |
| 22                   | 3    |      | 14    | 4       |      | 21    |           |      | 3     |      |           | 2      |            | 0               | 3     | 50      |
| 23                   |      | 1    | 19    |         |      | 6     |           |      | 7     |      |           | 2      | 1          | 0               | 3     | 39      |
| 24                   | 2    |      | 9     | 2       |      | 6     |           |      | 5     |      |           | 1      | 3          | 0               | 4     | 32      |
| 25                   |      | 6    | 19    | 8       |      | 3     |           |      | 6     |      |           |        | 1          | 0               | 11    | 54      |
| 26                   |      |      |       |         |      |       |           |      |       |      |           |        |            |                 |       |         |
| 27                   |      | 9    | 9     |         |      | 22    |           |      | 29    |      |           | 2      | 1          | 0               | 14    | 86      |
| 28                   | 55   | 1    | 17    | 30      | 1    | 15    |           |      | 12    |      |           | 1      |            | 0               | 0     | 132     |
| 29                   | 20   | 15   | 33    | 23      | 1    | 40    |           | 5    | 33    |      |           | 8      |            | 0               | 15    | 193     |
| 30                   | 9    | 11   | 31    | 3       |      | 31    |           | 1    | 15    |      |           | 2      | 1          | 0               | 12    | 116     |
| <b>Monthly Total</b> | 94   | 127  | 474   | 85      | 5    | 424   | 0         | 11   | 161   | 0    | 0         | 41     | 13         | 0               | 172   | 1607    |
| <b>Total</b>         | 142  | 5028 | 2212  | 89      | 17   | 1014  | 2         | 26   | 215   | 0    | 0         | 92     | 14         | 2               | 234   | 9087    |