LEWIS RIVER AQUATIC COORDINATION COMMITTEE

Facilitator: ERIK LESKO
503-412-8401

Location: TEAMS MEETING ONLY

Date: June 9, 2022

Time: 9:30 AM – 12:00 PM

AGENDA ITEMS

9:30 AM	Welcome ➢ Review and Accept 6/9/2022 Agenda ➢ Review and Accept 5/12/2022 Meeting Notes
9:45 AM	Public Comment Opportunity
9:55 AM	Proposed Swift Reservoir Stranding Surveys 2022 – *Erik Lesko*
10:25 AM	Proposed Updates to the Aquatic Fund Evaluation Process – *Erik Lesko*
11:00 AM	Study/Work Product Updates ➢ Flows/Reservoir Conditions Update ➢ Reservoir Shoreline Development Projects ➢ ATS Update ➢ FPS Update ➢ Compensatory Mitigation Discussions Update (tentative) ➢ Fish Passage Update ➢ Annual Operations Report ➢ USFWS update on fish stranding above Swift (tentative)
11:50 AM	Next Meeting's Agenda • Review of Yale Habitat Preparation Plan Summer field visit to USFS Restoration Projects – Potential dates Public Comment Opportunity
12:00 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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Or call in (audio only)

+1 563-275-5003,,644857650# United States, Davenport

Phone Conference ID: 644 857 650#

FINAL Meeting Notes
Lewis River License Implementation
Aquatic Coordination Committee (ACC) Meeting
June 9, 2022
TEAMS Meeting Only

ACC Representatives and Affiliates Present (17)
Larissa Rohrbach, Anchor QEA
Christina E. Donehower, Cowlitz Indian Tribe
Eli Asher, Cowlitz Indian Tribe
Amanda Froberg, Cowlitz PUD
Steve West, LCFRB
Steve Manlow, LCRFB
Bonnie Shorin, NMFS
Chris Karchesky, PacifiCorp
Erik Lesko, PacifiCorp
Todd Olson, PacifiCorp
Kyle Wright, USFS
Aaron Roberts, WDFW
Peggy Miller, WDFW
Josua Holowatz, WDFW
Sam Gibbons, WDFW
Bryce Glaser, WDFW
Bill Sharp, Yakama Nation

Guests (0)
None

Calendar:

June 9, 2022	ACC Meeting	TEAMS Meeting

Assignments from June 9, 2022	**Status**
ACC Representatives: Provide additional edits/comments on the Swift Reservoir Fish Stranding Proposed Monitoring Plan to Erik Lesko via email by July 1.	**Complete July 1, 2022.**
ACC Representatives: Provide additional feedback on the Aquatic Fund Updates to Lesko via email by July 1.	**Complete (July 1, 2022)**
Todd Olson: Provide the draft letter to FERC regarding the ACC's progress, agreements, and outstanding discussion items for ACC review.	**Ongoing**

Assignments from May 12, 2022	**Status**
Bonnie Shorin: convene a subgroup of ACC representatives (Glaser, Asher, Manlow) to discuss potential compensatory mitigation actions and processes.	**Complete.**
Erik Lesko: Include the Northshore new ramp and float project in Lake Merwin in future Shoreline Project Updates.	**Complete**

Assignments from April 14, 2022	Status
Chris Karchesky: Consider conducting public outreach or installing signs at Yale Park to notify anglers fishing Yale Reservoir of the ongoing telemetry study. (Acoustic-tagged coho should be reported as harvest and not as mortalities.) Note: Karchesky informed the ACC that he had discussed this with Holowatz, and they decided that this may cause more confusion than necessary. This will be addressed in future years if there appear to be problems with angler removal of study fish this year. Holowatz said, based on the tag size and small fish size, they determined that angler removal may not be a problem as originally thought.	**Complete.**
Erik Lesko: Coordinate with the TCC regarding the timing for WSDOT's Cougar Creek culvert project.	**Ongoing. (Currently planned for 2023.)**

Assignments from March 10, 2022	Status
Erik Lesko and Kate Day/Kyle Wright: Schedule a site visit to the USFS restoration projects in the Lewis River basin in summer 2022.	**Complete**

Assignments from February 10, 2022	Status
Erik Lesko: Revise the questions in the Aquatic Fund Scoring Template to incorporate feedback from 2022 process and provide a revised template for the ACC to consider. Review process recommendations.	**Complete**

Assignments from January 13, 2022	Status
Erik Lesko: Present monitoring strategies for fish stranding assessments in Swift Reservoir in 2022 with the ACC.	**Complete**

Opening, Review of Agenda and Meeting Notes
Erik Lesko (PacifiCorp) called the meeting to order at 9:32 a.m. and reviewed the agenda.

Christina Donehower introduced herself as the new ACC alternate for the Cowlitz Indian Tribe.

Lesko added an agenda topic to identify a time for a field visit to USFS restoration projects.

Lesko reviewed the April 14, 2022, meeting notes, and the May 12, 2022 meeting notes. Revisions were reviewed and approved to both sets of notes at 9:52 a.m. Josua Holowatz commented the greater level of detail in the meeting notes and inclusion of slides in the notes has been helpful.

Public Comment Opportunity
None.

Swift Reservoir Fish Stranding Proposed Monitoring 2022
Lesko shared the draft plan, Swift Reservoir Fish Stranding Monitoring 2022 (Attachment A), for which the Aquatic Technical Subgroup (ATS) has provided comments, primarily from WDFW and NOAA Fisheries. He provided an overview of the plan and direction provided by the ATS. Update to the plan address the following issues:

1) Pools start to form at reservoir elevations below 989 ft and become isolated (or dry) down to and approximate elevation of 980 in the Northwoods area. It has been a challenge to predict with accuracy at what reservoir elevations the pools become isolated; PacifiCorp proposes sending a drone pilot to the Northwoods area during the summer and fall of 2022 as the reservoir is expected to slowly draft down to capture images over a broad range of reservoir elevations. The reservoir is currently full. Last year, surveys were done in early July but are likely to occur later this year because of current high inflows and above average snowpack in the GP Forest. Satellite imagery using a paid service might also provide the resolution necessary to evaluate pool formation over time and could be an option if use of the drone or frequency of surveys does not address this issue.

2) To respond to the question of whether there are other areas in the reservoir where fish could become stranded, PacifiCorp reviewed the bathymetry of Swift reservoir and identified an area east of Drift Creek Island as a concern (Figures 5 and 6 of the stranding proposed monitoring plan). Based on observations over the years, pools start to develop around 980 ft elevation at this site. PacifiCorp plans to visit this site at the same time as visits to the Northwoods area to determine more precisely when pools form.

3) PacifiCorp will continue to survey the Northwoods area as in previous years and continue to conduct fish recovery efforts to remove and sample fish from isolated pools and return all captures to the reservoir.

4) PacifiCorp will install thermographs in the old river channel including a water level sensor to gain more information on conditions within the old river channel at the Northwoods site.

Lesko said this monitoring is intended to provide the Services with more information regarding fish stranding in Swift reservoir to assist in amending the existing BiOp for implementation of the Lewis River Settlement Agreement and FERC operating licenses.

Steve Manlow noted that in some Google Earth aerial photos it appeared there was some standing water due north and east of the boat ramp (swimming area; shown in Figure 5 of the stranding monitoring plan) and asked if that site should be examined as a potential stranding area. Lesko made a note of this area for inclusion as a potential stranding area.

Bill Sharp asked whether detailed topographic details will be obtained for these areas to understand the amount of area above pool and inform a strategy to fill areas with fill with vegetation. Lesko said the resolution of the exiting bathymetry is fairly good, within 2 ft. Sharp understood that by knowing the full pool elevation, PacifiCorp could calculate the volumes of material needed to fill an area and eliminate a pool.

Peggy Miller asked how much potential for change has there been from when was the bathymetry taken and now? Lesko estimated the bathymetry was taken in 2008, and agreed there could have been sediment transported downstream into the area since that time.

No further comments were made in the meeting. Lesko added that he spoke with Kelly Jorgensen and Matt Harding (Northwoods) are both are supportive of these proposed efforts.

Lesko suggested addressing the comments to prepare this for the ATS meeting in early July, estimating that surveys are unlikely to be needed until late July due to current water levels and snowpack. Bryce Glaser suggested that the ACC would agree to a recommendation from the ATS to adopt the plan in the July ACC meeting and Lesko agreed with that final step. Lesko asked for attendees to send him an email if they have other comments on this plan.

Aquatic Fund Updates
Lesko said he has been working on revisions to the Aquatic Fund Process (Attachment B) to incorporate feedback provided by the ACC during the May 12, 2022 meeting. PacifiCorp's objective is to make the process more transparent and inclusive to all applicants.

Evaluation Questions
Lesko said, some issues came up on how the evaluation questions are phrased. There is a large amount of information regarding the development of survey questions and the inherent bias in survey questions – especially marketing surveys. For instance, questions are phrased to be biased to solicit positive responses. The problem with some of the evaluation questions is that they use "negative phrasing" and these questions were revised to use "positive phrasing" to reduce any confusion and be consistent with the scoring scale (i.e., 10 being best) Erik showed an example on questions 7 and 14 (slide 3). Erik asked if there were any comments or questions about the revisions. Minor edits were also made to some questions to improve clarity.

Bonnie thanked Lesko for recognizing that question framing does tend to influence answer outcomes.

Lesko noted that evaluations will not be done until later this year. Bryce Glaser asked when comments should be submitted to leave enough time for revisions to be discussed prior to inclusion of this information in the RFP. Lesko said if he does not receive feedback from any attendees before July 1, he will assume the questions are accepted as revised. Any responses will be discussed, if necessary, in the next ACC meeting. No attendees indicated a need to provide major feedback. Erik will send the questions out as a Word document after today's meeting for reviewers to comment on by July 1, 2022.

Applicant Engagement
Lesko then reviewed some modifications to the schedule for the Aquatic Fund application process intended to improve applicant engagement (slide 6). It was requested that the utilities provide more support for applicants that are not familiar with the application process, especially members of the public. Applicants that do not have experience with implementing habitat projects may lack the knowledge, resources or experience for successful completion of project. For example, individuals may not realize the financial requirements needed to manage lump-sum funding. The utilities will be available to support and educate applicants, as needed, during the application process July 1 through October 20. Another concern among previous applicants was that project concerns were not identified earlier in the process. A milestone was added (that doesn't change the overall schedule) to initiate earlier engagement with a proposed project information meeting on November 10 that includes an applicant presentation. The proposed project information meeting is an opportunity to identify fatal flaws with proposals, to ensure applicants have an opportunity to respond to any negative feedback, and decide whether to

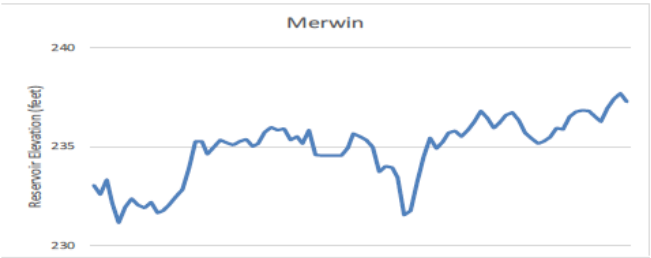
continue to go forward. The ACC should be prepared to express any concerns during this initial presentation meeting and follow up on any concerns in writing to the applicants.

Steve Manlow thanked Erik for including those milestones for engagement with applicants.

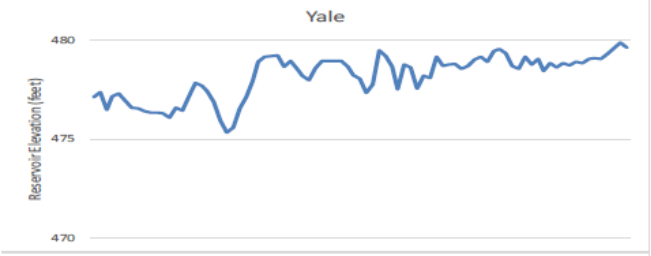
Study/Work Product Updates

Flows/Reservoir Conditions Update
Lesko shared the flows and reservoir conditions update.

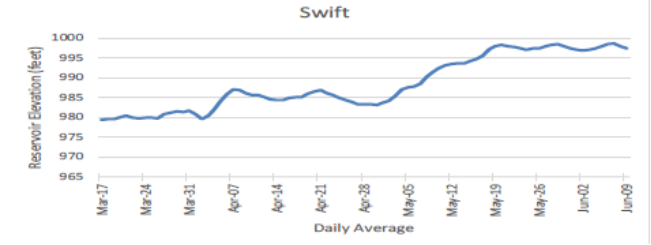
-2.54 feet



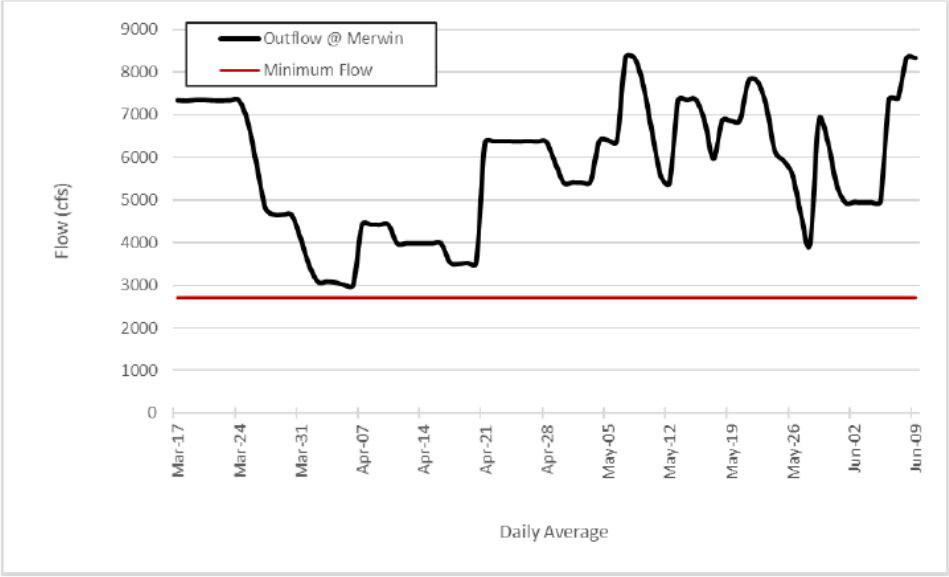
-10.60 feet



-2.48 feet



Total draft = -15.62 feet
Available = -5.62 with Yale restriction



Current outflow = 8,570 cfs
FERC minimum = 2,700 cfs

He said the available draft of -5.62 feet includes the 10 ft restriction at Yale Reservoir. Merwin Reservoir is down -2.5 ft, Yale Reservoir is down -10.6 ft. Peggy Miller asked if there is concern about the atmospheric river that is forecasted and if there is a need for additional drawdown and increase outflows at Merwin Dam to adjust for a potential AR? Todd Olson said this is a concern over the weekend; flows were increased to 9,500 cfs out of Merwin Reservoir, but there was a line restriction that caused them to lower this to 8,500 cfs. Olson said there is a little more space in Merwin Reservoir at this time, and there may be a need to spill from Yale Dam to Merwin Reservoir, but reservoir managers do not expect a need to spill from Merwin Dam. Lesko said flows are well above the long-term average of 3,500 cfs at Merwin.

Shoreline Development Update
Lesko provided an update on various shoreline development and other projects:

- Seawall Project: A project called simply the "Seawall Project" is located at the Woodland Park area in Lake Merwin. Lesko shared photos from the SEPA application related to a seawall repair and dock expansion they are proposing, below.

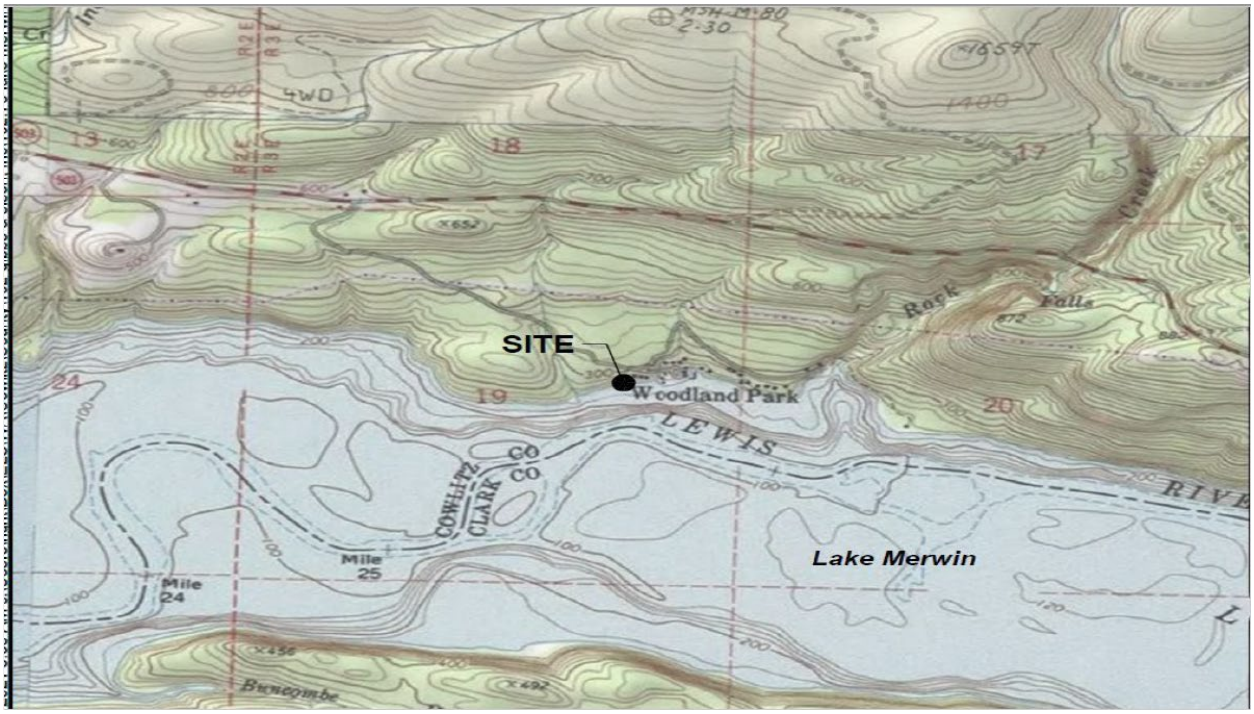


Photo 4. View to the east of the bulkhead and shoreline.

Photo 10. Drone photograph of the shoreline. The proposed mitigation area is in the shaded lawn area at the far left side of the photo and is beneath native tree cover.

Lesko said a vinyl sheet pile bulkhead replacement is proposed with new gangway and docks proposed along with some vegetation plantings as mitigation for the new seawall location. Todd Olson thanked Steve West for proving that information otherwise PacifiCorp would not have known about the project. Many of the residents around the reservoirs are very familiar with PacifiCorp's shoreline management plan, and most often PacifiCorp receives a required pre-application; in this case the landowner did not do that. PacifiCorp's land managers were able to contact the landowner to inform them they were out of sequence with their application. Manlow said that now that the parties are working toward reintroductions, the LCFRB is looking more carefully at whether the habitat

baseline is being maintained now. The ACC needs to pay attention to incoming applications to ensure no net loss is being achieved (across the region) to ensure we are recovering project investments. Lesko asked if the permits have been issued. West said SEPA and shorelines permits have been done for this project and believes that at least one other agency has issued a permit. Lesko questioned whether a start date of July 1 is possible with the need to obtain a permit from PacifiCorp.

Bonnie Shorin said the photos seem to show an in-water structure and shade that could create a risk for predation. Shorin asked if because this is a reservoir, it does not trigger a typical 401 or 404 or Section 10 permit, understanding that the SEPA and shorelines permit relationship is a bit different because PacifiCorp is the true landowner with some terms created by the FERC license, and this is not the same kind of permit that would be required by a city or county. Shorin said typically the question raised about predaceous fish would be handled through that city or county process. West said one of the challenges is that the Section 10 jurisdiction is below Merwin, so the process in the reservoir hinges on a 404 trigger for discharge of fill. West said he does not know whether the Army Corps of Engineers has looked at the predaceous fish issue through the 404 process.

Josua Holowatz said, looking at the plan shown now, it looks to be a rebuild of the existing seawall. He said he would like to clarify whether there would be habitat loss; whether the applicant is building out, or just building upon the exiting footprint. Manlow and West confirmed there would be an extension of the seawall. Holowatz asked if this SEPA checklist could be shared among the ACC. Bryce Glaser noted that the SEPA checklist, it is likely filed with the WFDW Habitat Division. West confirmed it is online, in WDFW's HPA system and can also distribute this information because it is public information. Holowatz said he would obtain this information internally through WDFW.

- Campers Hideaway: Lesko said FERC has submitted a 60-day request for public comment at least one month ago, but is unsure when that is closed. The next step will be to see how FERC responds.

ATS Update

Erik Lesko said he and Larissa Rohrbach are working on finalizing the 2022 Annual Operating Plan. A draft version or portion of plan will be sent out ahead of the next ATS meeting in early July. Specifically, the ATS will be asked to review the Monitoring and Evaluation section of the plan.

A water quality test for TDG will be performed at Lewis River hatchery this summer. The inlet of one of those ponds has been modified to mitigate high TDG levels that may be a stressor to those fish. Lesko is working with WDFW's pathologist to sample for signs of GBT in the fish this summer.

Karchesky said the new M&E plan (2022) is currently being implemented, which brought some slight changes to spring sampling efforts, but otherwise going well. The collection efficiency study at the Swift FSC is still underway with all test fish being released by the first week in June. Karchesky reminded the ACC that this study was focused on fish passage in the secondary portion of the fish channel just before they enter the fish sorting building.

FPS Update
Bryce Glaser said at the last FPS meeting, updates were provided by PacifiCorp with a new PacifiCorp project lead (Nathan Higa) for the new upstream passage facilities. The FPS started discussing an implementation schedule for those activities. One topic that needs discussion are recommendations to the ACC regarding the passage configurations in the short-term and the long-term. There are discussions around the downstream fish passage configurations where migrants are collected at each of the collectors then bypassed or trucked. The FPS determined downstream migrating fish should not be passed from one reservoir to the next, that all juvenile fish in hand from Swift and Yale should be transported and released below Merwin rather than expecting them to pass through one reservoir then the next. The upstream passage options discussed range from a volitional swim-through option to trap and haul. There is a need to define our ultimate goals under a healthy and harvestable scenario with a list of pros and cons comparing the various scenarios. Eli Asher said that notes from the May FPS will be posted to the site shortly.

Olson added that Yale fish passage study work is ongoing. Design teams continue to develop facility design aspects following NOAA design criteria. One of the topics raised at the FPS meeting was to apply lessons learned from the Swift juvenile collector and the Merwin adult fish facility systems and other facilities around the Pacific Northwest. Yale bathymetry work has been completed and PacifiCorp is now working to complete the CFD modeling in July. With regard to the adult releases into the reservoirs, one of the items that the utilities would like to talk about is what expansion of upstream passage would look like if a swim-through option is prioritized. Lastly, Olson said he is working on a draft letter to FERC as an update on where the ACC has agreement in principle and what items are still under consideration to show progress over the last few months. Olson said he would like to submit this letter to the ACC for review before submitting the letter to FERC, likely early next week ahead of the subgroup meeting, and will walk through it in the next subgroup meeting as well. Glaser thanked Olson and asked for agenda topics to be sent to Peggy Miller. Olson said Beth Bendickson is going to start taking meeting notes for that forum.

Miller asked about how the "agreement in principle letter" is being developed in relation to a request to FERC for extension of time. Olson said there are still a few things the FPS continues to discuss, and the Utilities hope these can conclude by October 1, 2022. At that point, Olson said PacifiCorp would submit to FERC the formal extension of time request for the new construction schedules.

Compensatory Mitigation Discussions
A subgroup of ACC representatives (Asher, Glaser, Manlow, Shorin) were convened by Bonnie Shorin to discuss temporal loss in determining compensatory mitigation. Shorin said the issue will be discussed with Olson in the near future.

Bryce Glaser said he has no update on Kokanee mitigation; he and Olson have not talked in detail about the Kokanee fishery and sampling yet. He said some ideas have been brainstormed that may be brought to the ACC in the next meeting.

Merwin Fish Passage Update (see also Attachment C)
Chris Karchesky reported that adult spring Chinook Salmon collection has been good, over 4,000 fish so far at Merwin and PacifiCorp is likely to be able to transport the 3,000 fish goal upstream this year. The most spring Chinook transported upstream in the past was 800 adults (plus 310 jacks) in 2017. He said that this year's collection numbers are tracking well in M:F ratios. He

also mentioned that the Merwin Trap was currently offline for quarterly maintenance and expected it to be back online by the end of the day.

Sam Gibbons said the large numbers of returning spring Chinook salmon has made it easy to collect broodstock; WDFW is tracking a bit ahead of the broodstock collection curves by a week or two due to the need to collect all fish with a CWT in them.

Karchesky asked if there are any general trends region-wide that explain why numbers are higher than expected for spring Chinook salmon this year. Glaser said, overall, it appears that these brood years likely experienced better marine survival than predicted; the TAC has updated the run forecast several times this season due to an increase in returns above expectations.

Swift Floating Surface Collector (see also Attachment D)
Chris Karchesky reported that the Swift Reservoir FSC was currently in operation. He said the collection numbers have remained lower than expected throughout much of the month May. Cooler than average water temperatures may likely be the reason for the slow start. Karchesky reminded the ACC that it has been very cool and even some snow in April, with a lot of water passing through creating a lot of insulation in the reservoir. The collector has been ranging from 3,000 to 4,000 fish per day in the last week of May, but there has been a recent drop-off in numbers with the cooler weather this past week. Outreach to other facilities in Oregon suggests this slow-down in outmigration occurred at other facilities as well.

Annual Operations Report
Lesko said the 30-day comment period on the Annual Operations Report closed last Monday, June 6. No comments were received and the report is currently in technical editing. The utilities expect to submit the final report to the FERC in the next week or so.

Lewis River Fish Passage
See Attachment E.

Services Update on Fish Stranding Above Swift Dam
No update was available.

Public Comment Opportunity
None present.

Site Tour of USFS Restoration Projects
Lesko said there was interest in scheduling a site tour of ongoing USFS aquatic restoration projects upstream of the Swift project in Summer 2022. Lesko proposed that a site visit be paired with the July or August ACC meeting. Kyle Wright confirmed that would work for the USFS staff. Wright said USFS has a few completed projects and active projects in mind for visiting. Lesko and Montgomery will consider the ACC agenda for July (or August) and send out a Doodle poll to the ACC in the next week to confirm whether this approach would work for ACC members.

Agenda Items for July 14, 2022
- Review June 9, 2022, Meeting Notes
- Yale Habitat Preparation Plan
- Approval of Swift Stranding Plan

- Approval of Aquatic Fund Process revisions
- Compensatory Mitigation Discussion (tentative)
- USFWS update on fish stranding above Swift (tentative)
- Study/Work Product Updates

Adjourn 11:55 am

Next Scheduled Meeting

July 14, 2022
TBD – Potential Field Visit or Teams Call
9:30 a.m. – 12:00 p.m.

Meeting Handouts & Attachments

- Meeting Notes from 5/12/2022
- Agenda from 6/9/2022
- **Attachment A –** Swift Reservoir Stranding Monitoring plan
- **Attachment B –** Proposed Changes to Aquatic Fund Process
- **Attachment C –** Merwin Adult Trap Collection Report (May 2022)
- **Attachment D –** Swift FSC Facility Collection Report (May 2022)
- **Attachment E –** Lewis River Fish Passage Report (May 2022)

PACIFICORP
A BERKSHIRE HATHAWAY ENERGY COMPANY

May 26, 2022

To: Aquatic Technical Subgroup (ATS)

From: Erik Lesko, PacifiCorp

Subject: Proposed Swift Reservoir fish surveys - 2022

I. Purpose

The purpose of ongoing Swift Reservoir surveys in 2022 is improve our understanding of the extent of fish stranding and isolated pool formation and duration relative to natural drafting of Swift Reservoir during the summer. Data from these surveys are intended to assist the Services in determining risks of Swift Reservoir fish stranding on listed populations.

Specific Objectives in 2022 include:

1) Capture, sample and release stranded fish from isolated pools in the Northwoods area into Swift Reservoir (fish recovery)
2) Identify and document the spatial and temporal characteristics of isolated pool formation compared to specific reservoir elevations in the Northwoods area.
3) Identify additional potential stranding areas in Swift Reservoir.
4) Seasonal and continuous water temperature monitoring in the 'old' Lewis River channel

~~I.~~II. Background

Four investigative fish surveys were completed in the Northwoods area of Swift Reservoir between 2020 and 2021 (Attachment A). The purpose of these surveys was to collect, identify and document fish species present in isolated pools that form in the Northwoods area at various reservoir elevations (Figure 1).

The predominant salmonid species captured during both years were coho salmon (408) followed by rainbow or cutthroat trout (13) and bull trout (10). Most of these captures occurred in what is referred to as the 'old river channel'. This channel is visible at reservoir elevations of at least 989 feet (Figures 2 - 4). The channel is fed through hyporheic flows (Figure 3) from the North Fork Lewis River and maintains a stable water temperature (64° F on August 5, 2021) relative to isolated pools that form during summer drafting of the reservoir. Currently, there are questions as to ~~It is not known~~ whether this channel (when or what parts of it) becomes dewatered ~~in late summer~~ as the reservoir continues to draft and flows in the North Fork Lewis River naturally decrease to summer minimum flow levels.

A number of pools also begin to form and become isolated (from the reservoir) in the Northwoods area at various reservoir elevations (generally between reservoir elevations between 980 and 990) during the summer months. Reservoir elevations in Swift are influenced by turbine outflow ~~generation demands~~, natural inflows into Swift and compliance with minimum

Commented [CP1]: Is it clear to the ACC what actions may be needed to mitigate or remove the stranding issue? I assume changes in how fast and when the reservoir is drained would be options, but if these have not been discussed, there might be a need to bring it up.

Commented [LE(2R1]: Not really – other than some informal discussions proposed at the ACC, such as, regrading the sand bar and the most recent Aquatic Fund proposal to improve connectivity of the old river channel at Northwoods. In the end, we will be looking to the Services to determine take or RPM's

Commented [WDFW3]: Overall comment - What is the purpose/goal/objective of this work? To know when to rescue fish? Quantify loss? Determine dam operation impact? Without a stated objective, difficult to assess whether the approach and subsequent information collected will provide any benefit for future actions.

General comments:
-Fish rescue can provide population level benefits in specific situation but in many cases it doesn't (again, what's the purpose of these activities)
-To quantify loss, why not to conduct mark-recapture surveys as soon as pools form. If a sub-set of pools do not completely dry up, conduct follow-up surveys to measure survival.
-Not a lot of information on how this data will be analyzed. Compare flight photos, rescue fish…how will that support the purpose/goal/objective?
-There are factors that can't be controlled and are not being taken into consideration. Effects of air temperature on dewatering after pools are isolated…elevation may not drop farther but high air temps may have impact on mortality ...

Commented [LE(4R3]: See added section I. Purpose

Commented [WDFW5]: Are there temperature data that supports this (maintains/stable)?

Commented [LE(6R5]: Added section using Hobo temp logger in old river channel.

Commented [HJA(7]: If there is no thermal data, maybe as part of this plan, the Utilities could station a couple of Hobo loggers to collect thermal data over the summer.

Commented [LE(8R7]: added

Commented [LE(9]: We know this channel remains watered and supports fish until at least early August.

Commented [WDFW10]: Could use more description to improve accuracy. Improve wording? What factors may play into the isolation and desiccation of isolated pools? ...

Commented [LE(11R10]: Formation and duration of isolated pools is directly related to reservoir elevations. Drone surveys are intended to correlate pool formation and duration to reservoir elevations

Commented [KB12]: Below 980 and all pools dry up? Or is this what is hypothesized and is going to be better measured?

Commented [LE(13R12]: Hypothesized and validated trough drone surveys under a broad range of reservoir elevations.

Commented [LE(14]: Generation demands is not specific as the units may be operated for reasons other than demand such as grid reliability.

stream flow requirements downstream of Merwin Dam (See FERC license and Section 6.2.4 of the Lewis River Settlement Agreement).

Figure 1. General location of fish recovery surveys 2020 and 2021.

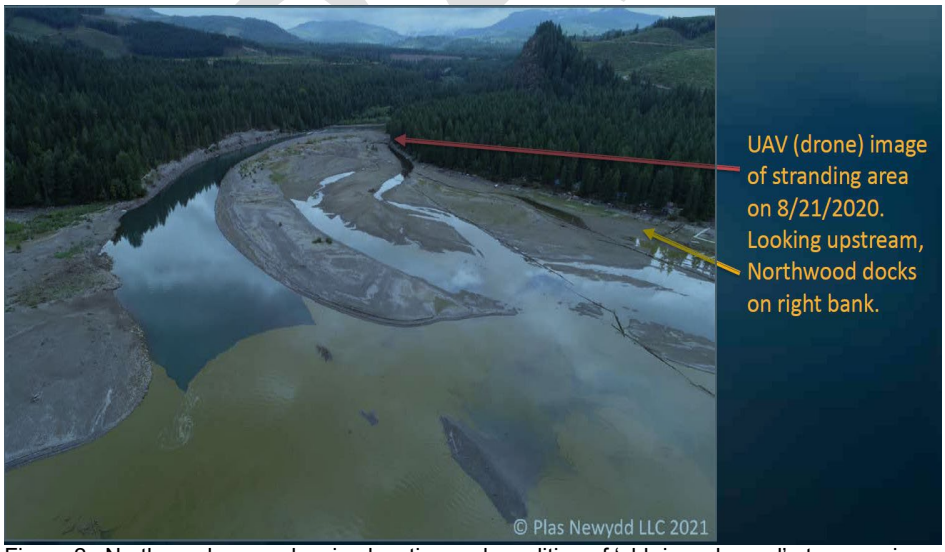


Figure 2. Northwoods area showing location and condition of 'old river channel' at reservoir elevation 987 feet, August 21, 2020.

Figure 3. Start of old river channel fed by hyporheic flows from the North Fork Lewis River, July 12, 2021 at reservoir elevation of 988.5 feet.

Figure 4. Lower end of old river channel showing puddled portions of the old river channel, August 5, 2021 at reservoir elevation of 980.5 feet.

~~II.~~III. Proposed Activities in 2022

The Utilities propose the following evaluations in 2022 to develop a more complete understanding of observed and potential fish stranding in Swift Reservoir. ~~1) the relationship between reservoir elevation and the spatial and temporal characteristics of isolated pool formation and 2) continued documentation of relative abundance, composition and life stage of fish species present in isolated pools and the old river channel.~~.

1) The use of drones to determine the relationship between reservoir elevation and pool formation at the Northwoods area
2) Northwoods fish recovery surveys
3) Assessment of potential stranding area near the Drift Creek Island
4) Monitoring of water temperature in the old Lewis River Channel

1. Relationship between reservoir elevation and pool formation at Northwoods area in Swift Reservoir

Commented [WDFW15]: Identify geographic scope up front. Will surveys (spatial and temporal pool formation) be done in other areas of the reservoir besides the Northwoods area ('old river channel') to determine the geographic scope of the issue? Area around Drift Creek Island will be surveyed. Consider using bathymetry to identify other areas that may be impacted by drawdown and could be surveyed in future years. As proposed, limited information will be available for the Services to make their determination.

Commented [LE(16R15]: We did review existing bathymetry along with experience on the reservoir. The only other area that has potential for isolated pool formation is Swift Creek although this is limited by geomorphology.

The ability of survey crews to define when pools begin to form and when those pools become dewatered has been an ongoing challenge. To assist in understanding this dynamic between reservoir elevations and pool formation, PacifiCorp proposes the use of multiple drone surveys of the Northwoods area in 2022. Drone surveys will provide time lapse imagery to evaluate spatial and temporal attributes of pool formation, distribution and dewatering over the course of about 8 months and over a broad range of reservoir elevations in the Northwoods area. This information will assist survey crews in scheduling fish surveys at times when pools first become isolated rather than when pools have been isolated and subject to predation for prolonged periods. ~~during ideal conditions. That is, pools rather than dewatering when the potential for predation (e.g., from mustelids and avians) is higher~~. Note: this information will not be available until 2023.

Drone surveys will be performed by PacifiCorp Wildlife Biologist and certified drone pilot Summer Peterman.

Frequency and duration

Drone surveys will occur throughout the spring, summer and fall of 2022. While there is no set flight schedule, it is anticipated that by conducting as many flights as possible during the remainder of 2022, a robust collection of drone images and videos will be available over a broad range of reservoir elevations as Swift Reservoir fills (spring and summer) and drafts (summer and fall) over the survey period.

2. Northwoods Fish Recovery Surveys

In 2022, the Utilities propose continuing the fish ~~salvage~~recovery surveys in the Northwoods area to expand existing databases from the 2020 and 2021 surveys (Figure 5). Surveys will follow the same methodology as previous surveys using electrofisher(s) and documenting the number, species and lengths of all species captured from isolated pools, including the old river channel. ~~Based on past observations, surveys will be conducted between reservoir elevations of 980 and 990 feet~~.

Fish Collection

Fish collection will rely primarily on backpack electrofishers in combination with stick seines to concentrate fish present in each isolated pool observed. Seines may also be used exclusively for fish collection in certain pools that have specific or favorable characteristics (e.g., smooth substrate without large wood or boulders).

All fish collected will be enumerated by species and up to 30 individuals of each salmonid species will be measured for fork length. All captured fish will be moved to the edge of the open reservoir using 5-gallon pails for sampling and release. Photographs will be taken from a subsample of fish collected from each observed pool to determine life stage of captures (e.g., fry, parr, smolt).

Pool identification and information

The number of isolated pools observed during each survey will be counted and location marked with handheld GPS unit. Survey crews will also record average depth, water temperature and surface area (using laser range finder) of each pool observed at the time of each survey.

Commented [WDFW17]: Clarify intent. Elevation dropping and pools are forming. At the same the channel is dewatering to form the pools. Predation will increase as pool levels isolate and condense fish and access to fish is easier. That could be during dewatering.
Do you mean dewatered (mud/dry) when predation has already occurred?
Also, how will you determine predation from drone flights? If you're hoping to capture photos of predators in the act, the noise may displace the predators unless they are habituated to the sound.

Commented [LE(18R17]: Added clarifying text. Intent is to select optimal timing of on the ground surveys. That is, when pools first become isolated. Predation is assumed once fish are isolated from reservoir. Drone is not able to assess predation, however predation signs are noted for on the ground surveys.

Commented [HJA(19]: Is there a target number of flights? Maybe 2 per week once the reservoir reaches 990(?) feet

Commented [LE(20R19]: Based on availability of drone operator who is on site most of the summer. However, we can define this better.

Commented [HJA(21]: And stick seines?

Commented [LE(22R21]: Stick seines have not been useful on prior surveys. But this may change if we are able to time surveys better when pools first become isolated.

Commented [HJA(23]: What happens below 980 feet? Are there additional pools that isolate?

Commented [LE(24R23]: This is based on bathymetry and our survey in august 2021 where there were no isolated pools in the Northwoods area except for the old river channel. Again, drone imagery will verify.

Commented [CP25]: Is it clear to the ACC how this will be done? I assume something like 5 gal buckets, which is fine over a short distance, but if there are long differences, there may need to be other methods used.

Commented [LE(26R25]: Sampling occurs at the reservoir edge and we use 5-gallon buckets to move fish from the pools to the sampling area because the reservoir is within 150 meters of pools sampled.

Commented [WDFW27]: Perimeter measurements would be helpful to capture change in size and shape through time. If possible, keep drone flights at same elevation and angle each flight so pools can be digitized and change captured and compared.

Commented [LE(28R27]: Great idea, Will note this comment during my check in with drone operator.

Frequency and Duration

Based on past surveys (Table 1), it is known that isolated pools in the Northwoods area begin to form at reservoir elevations less than 990. It is also known that the old river channel becomes puddled at the lower end at reservoir elevations of 980.5 or less. Drone footage should help define whether the old river channel becomes dewatered at elevations less than 980.

Commented [HJA(29]: Are there fish that become entrained at these lower pools even though they are further away from the hyporheic flows at the head of the channel?

Commented [LE(30R29]: Yes, we believe that the entire length of this channel holds fish and therefore puddling will isolate fish within portions of the channel.

Table 1 Previous fish surveys conducted in 2020 and 2021 in the Northwoods area

Survey Date	Reservoir Elevation (feet, msl)
July 31, 2020	989.3
August 21, 2020	987.0
July 12, 2021	988.5
August 5, 2021	980.5

A minimum of two Northwoods fish recovery surveys will be conducted in 2022 to complement existing fish recovery data documented in 2020 and 2021. Target elevations to conduct these surveys will include a high reservoir elevation to remove fish from isolated pools between 985 and 989 and a lower reservoir elevation similar to 2021 of between 980 and 985. This lower elevation survey is intended to remove all fish from the old river channel.

Commented [WDFW31]: May want to add a component of air temperature to the decision when to conduct second or additional surveys.

Commented [LE(32R31]: Not sure how air temperature is and indicator of timing for surveys

Table 2. Proposed surveys in Swift Reservoir at desired reservoir elevations during 2022.

Survey No.	Survey Area	Survey Type	Desired Reservoir Elevation (ft, msl)	Anticipated Survey Time
1	Northwoods	Fish Recovery	985-989	July 1 – July 30
2	Northwoods	Fish Recovery	980-985	July 20 – August 15

3. Assessment of potential stranding area near Drift Creek Island

A visual survey will be conducted near the island just outside of the Drift Creek Bay area (Figure 5 and 6). The purpose of this survey is to inspect and assess whether this area represents an observed or potential stranding area for juveniles. This will be determined by documenting the presence and GPS location of any isolated pooling and an inspection of all low elevation areas within the survey area (Figure 6). Potential stranding areas will be identified by comparing observed topography with existing bathymetry data. Identified potential stranding areas will be inspected for the documented using the same procedure described for documenting pool information at the Northwoods area.

Commented [HJA(33]: Only 1 survey?

Commented [LE(34R33]: Based on bathymetry data – yes.

Figure 5. General location of additional survey area (Drift Creek Island) relative to Northwoods survey area in Swift Reservoir

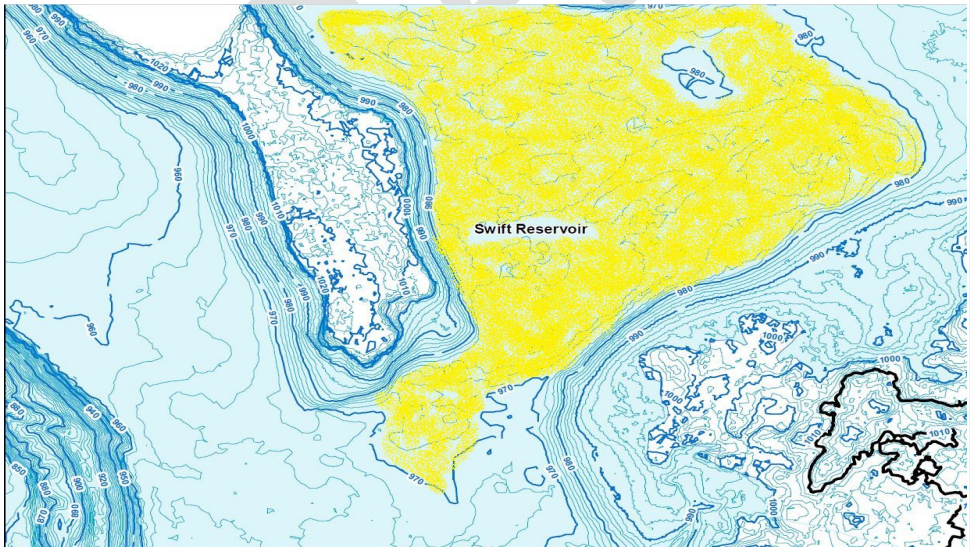


Figure 6. Detailed location of proposed Drift Creek Island inspection area

Frequency and Duration

Based on bathymetry data, the survey of the Drift Creek Island area will occur at reservoir elevation of approximately 975 feet.

Table 3. Proposed survey time of Drift Creek Island Area

Survey No.	Survey Area	Survey Type	Desired Reservoir Elevation (ft, msl)	Anticipated Survey Time
1	Drift Creek Island Area	Inspection	975	August 1 -Sep 30

4. Water Temperature monitoring in the old Lewis River channel

During surveys in 2021, a channel was identified that received hyporheic flows form the North Fork Lewis River. This channel supports the majority of fish captures during each survey conducted in 2020 and 2021. Installing a temperature monitoir in this channel provides information on whether the temperatures in the channel remain stable and supportive of fish life until reservoir levels inundate this channel.

Water temperature in the old Lewis River channel in the Northwoods area will be continuously monitored using a Hobo type data logger. The logger will be placed within the main pool identified during the August 5, 2021 survey (Figure 7). The logger will be set to record temperature every hour for the period of the evaluation.

Figure 7. Proposed placement location (red circle) of temperature logger in the old Lewis River channel (Northwoods Area).

Frequency and Duration

Survey Area	Survey Type	Anticipated Survey Time
Old Lewis River Channel	Temperature Monitoring	Continuous, July 1 - Nov 1

~~III.~~IV. Deliverables

A report will be prepared and made available to the ACC in January 2023. The report will provide the following:

1) All time stamped and geolocated drone imagery available including the corresponding reservoir elevation (hourly average) for each image provided in the report.
2) Summary and raw data from fish rescue efforts in the Northwoods area including total number of captures by survey, location and species, fork lengths (up to 30) for each species captured on each survey date, images of fish sampled.
3) A description of all pools identified during foot surveys at Northwoods including measured physical characteristics
4) Description and discussion of observed and potential stranding area within the Drift Creek Island area including physical measurements of observed and potential pools and images.
5) Chart(s) illustrating hourly water temperature recorded in the old Lewis River channel

Proposed Changes to Aquatic Fund Process

- Revisions to Evaluation Questions
- Pre-proposal and ACC liaison support to applicants
- Earlier engagement between ACC and project applicants

PROPOSED REVISIONS TO EVALUATION QUESTIONS

1. *Modify questions from negative to positive phrasing to maintain consistency with scoring template (10 = strongly agree, 1 = strongly disagree)*

2. *Binary answers to questions (i.e., yes/no) need to be scalable with the scoring template (e.g., how 'big' is the YES or NO?)*

3. *Minor word smithing to reduce ambiguity of questions*

	Existing Evaluation Questions	Proposed Evaluation Questions
1	Does the project provide direct benefit(s) to priority species and habitat reaches?	No Changes
2	Does the project lead to or provide tangible, on the ground benefits?	No Changes
3	Does the project address a limiting factor(s) to the target species without adversely impacting other species, life history stages, or habitat processes?	No Changes
4	Does the proposal apply appropriate and proven methods, designs and technologies?	Does the proposal apply reasonable and proven methods, designs or technologies?
5	Are the project objectives identified appropriate and justified given the proposed scope and schedule?	Are the project objectives reasonable based on the proposed scope and schedule?
6	Does the project describe and consider long term benefits and influences (e.g., watershed processes, hydro operations, climate change, etc.)?	No Changes
7	To what extent do constraints or contingencies affect project implementation (e.g., permitting, legal, location, funding, etc)?	Does the proposal resolve identified or anticipated constraints or contingencies (e.g., permitting, funding, legal, etc.)?
8	Is the probability of success high, medium or low?	Does the project have a high probability of success? (*in meeting project objectives?*)
9	How qualified and experienced is the project team in successfully completing projects of similar scope, nature, and magnitude?	Do the qualifications and experience of the team support successful completion of the project?
10	To what extent would other habitat protection, assessments, or restoration actions in the watershed positively impact or compliment the project?	Are there other habitat protection or restoration actions in the watershed that would benefit or compliment this project?
11	To what extent do other funding sources support the project (e.g., matching contributions, in-kind participation, grants, etc.)?	Does the project include additional funding sources (e.g., grants, mathcing contributions, in-kind participation, etc.)
12	Are project costs reasonable by work effort and type (administration, permitting, goods and services, rentals, labor, contracts, etc.)?	Is the project budget reasonable based on the proposed scope of proposal?
13	Are the total costs justified based on expected short and long-term benefits to fish?	Is the project budget reasonable based on the anticipated short and long-term benefits to fish?
14	To what extent is maintenance required after project completion?	Is the anticipated level of post-project maintenance reasonable given the size and scope of the proposal?

Pre-project assistance to applicants (if requested)

PacifiCorp will:

- Act as liaison between applicants and ACC during development of draft proposals
- Inform applicants on aquatic funding procedures, requirements and resources needed to manage projects if approved (e.g., appropriating funds, contractor management, etc.)
- Identify special concerns or potential ‘fatal flaws’ of conceptual proposals

PacifiCorp will NOT:

- Provide technical review of draft proposals
- Deny draft proposals

Recommendations to encourage early engagement between ACC and applicants

- ACC Representatives should review each draft proposal prior to presentation meeting and be prepared to verbally identify special concerns and any potential ‘fatal flaws’ to applicants at the presentation meeting (November 10, 2022)

- ACC Representatives follow up with written comments identifying any unresolved special concerns or fatal flaws to applicants (Dec 2, 2022)

2022/2023 Aquatic Fund Schedule

Activity	Milestone Date	Notes
Request for proposals distributed along with landowner acknowledgement form (Announcement Letter)	Jul 1, 2022	Provides more time for applicants to develop proposals. Include evaluation criteria in letter.
Utilities act as liaison between applicants and ACC	*Jul 1 - Oct 20, 2022*	Intended to help support public applicants that are new to the process in developing complete proposals and to ensure the applicants are aware of the requirements prior to submittal.
Draft proposals due to ACC	Oct 21, 2022	
Conduct Proposed Project Information Meeting (applicant presentations)	Nov 10, 2022	ACC should be prepared to identify potential fatal flaws in the proposals (cost, technical, priority objectives). More engagement needed here
ACC members submit written request for clarification of project information if questions not answered during presentation meeting	Dec 2, 2022	Written questions should address any ongoing fatal flaws that may preclude a vote approving the applicants proposal.
Final proposals due	Dec 30, 2022	
Full proposals and Evaluation template submitted to ACC for 30-day review and scoring	Jan 5, 2023	
Scoring template due to Utilities	Feb 2, 2023	
Distribute combined scores to ACC	Feb 3, 2023	
Conduct Project Selection Meeting*	Feb 9, 2023	
Provide additional 7-day review period for absentee ACC participants	Feb 10, 2023	
Submit project selection report to the FERC	Apr 15, 2023	

Lewis River Fish Passage Report

May 2022

Merwin Fish Collection Facility and General Operations

During the month of May, a total of 2,861 fish were captured at the Merwin Dam Adult Fish Collection Facility (MFCF); over twice the April total of 1,310. The majority of the fish collected in May were Spring Chinook (n= 2,646), followed by summer steelhead (n= 129), winter steelhead, (n= 83), and cutthroat trout (n= 3). The 2022 Spring Chinook totals remain considerably higher than the 2014 – 2021 average (Figure 1).

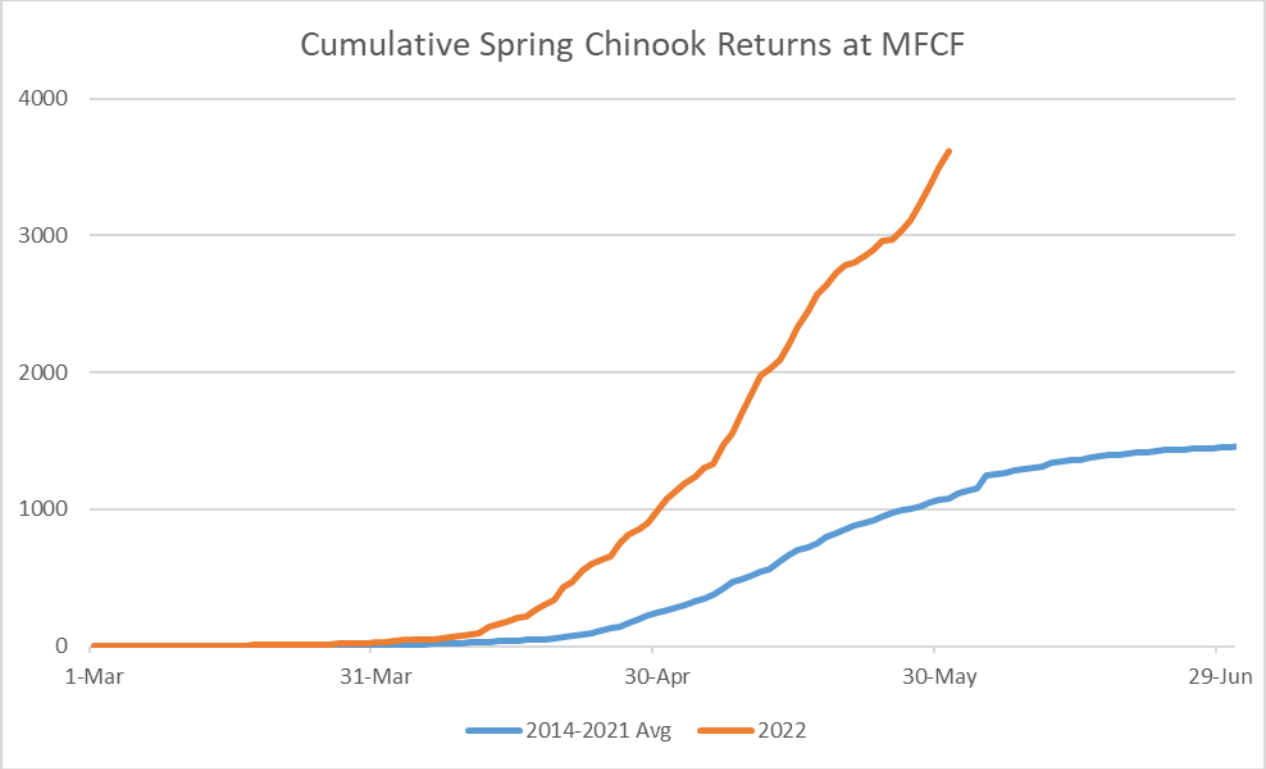


Figure 1. Cumulative Spring Chinook returns to the Merwin Dam Adult Fish Collection Facility, 2022.

The MFCF ran continuously for the month of May. Flows below Merwin Dam varied throughout the month, and ranged from approximately 4,000 cfs. to approximately 8,500 cfs. (Figure 2).

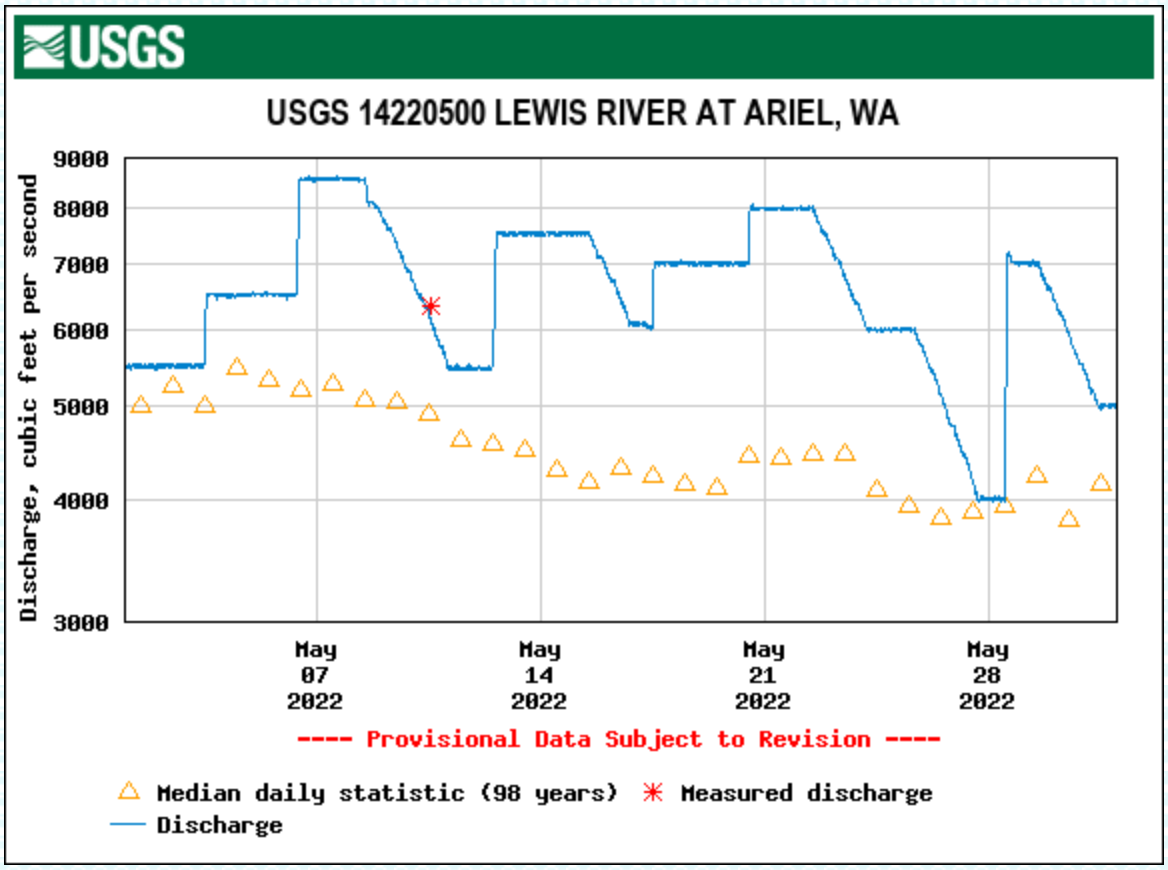


Figure 2. Discharge in cubic feet per second recorded at the USGS Ariel, WA gauge (14220500) located immediately downstream of Merwin Dam.

Five Spring Chinook and two winter steelhead collected at the MFCF in May had been previously PIT tagged as juveniles at the Swift FSC. One Cutthroat trout that had been previously tagged at the Merwin Trap back on November 27, of 2021, transported above Swift Dam and then recaptured at the Swift FSC on November 29, 2021, and transported back downstream, was recaptured again at the Merwin Trap. Since January 2022, a total of eight adult wild winter steelhead, seven spring Chinook, and two cutthroat trout had been captured at the Merwin Trap had been previously PIT tagged.

Upstream Transport

A total of total of 2,298 adult fish were transported above Swift Dam this month, marking a considerable increase over the April total of 513. Spring Chinook made up the majority of the transported fish (n= 2,228) followed by Blank Wire Tag steelhead (n= 41), NOR winter steelhead (n= 26), and cutthroat trout (n= 3). Of the fish transported upstream in May, 1,991 were collected at the MFCF, while 307 were supplied by Lewis River Hatchery. For calendar year 2022 to-date, 2,438 Spring Chinook (2,065 HOR/ 373 NOR), 569 winter steelhead (446 BWT/ 123 NOR), ten cutthroat trout, and eight NOR coho have been transported upstream of Swift Dam.

Floating Surface Collector (FSC)

The Swift Reservoir Floating Surface Collector (FSC) was operated continuously throughout the month of May. A total of 29,508 fish were collected this month; a nearly five-fold increase over the April total of 5,352. Coho were the most predominant species collected in May (n= 23,450), followed by juvenile steelhead (n= 3,604), hatchery rainbow trout (n= 1,909), cutthroat trout (n= 466), spring Chinook (n= 65), steelhead kelts (n= 10), and Bull Trout (n= 4) (Table 1). All Bull Trout were returned to Swift Reservoir.

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

Run Year	May Collection Totals by Run Year at Swift FSC				
	Coho	Chinook	Steelhead	Cutthroat	**TOTAL**
2013	7,358	377	100	264	**8,099**
2014	2,435	216	311	515	**3,477**
2015	14,912	1,938	887	333	**18,070**
2016	23,799	233	1,392	551	**25,975**
2017	12,963	738	1,565	149	**15,415**
2018	18,965	190	6,651	329	**26,135**
2019	55,788	2,753	2,321	473	**61,335**
2020	11,870	1,104	2,356	245	**15,575**
2021	18,280	188	4,371	370	**23,209**
2022	23,450	65	3,604	466	**27,585**

The observed length frequencies for coho and steelhead encompassed a broad spectrum during the month of May (Figures 3 and 4). Too few Chinook lengths were taken to make meaningful inference this month.

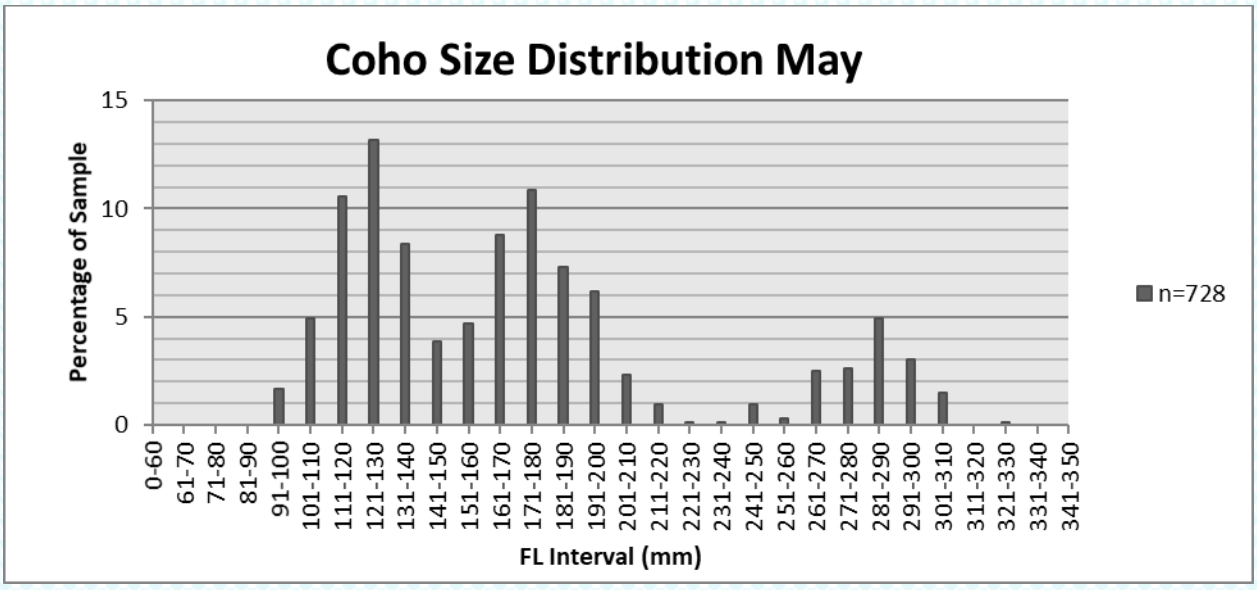


Figure 3. Observed length frequency distribution of coho collected at the Swift FSC during the month of May, 2022.

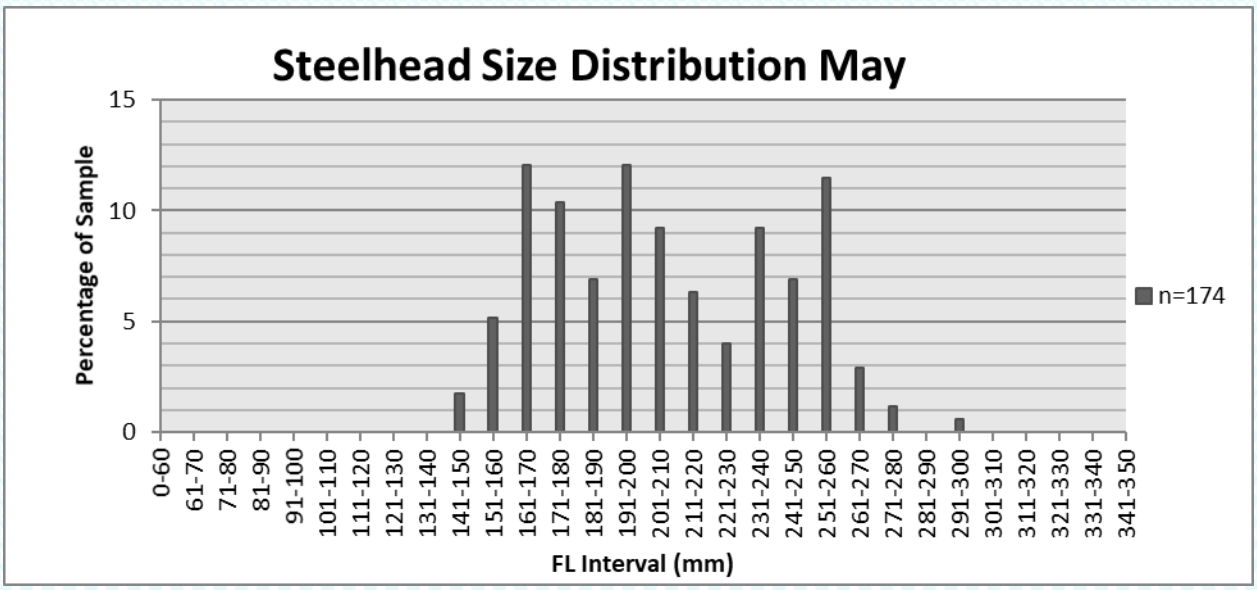


Figure 4. Observed length frequency distribution of steelhead collected at the Swift FSC during the month of May, 2022.

Fish Facility Report

Merwin Adult Trap

May 2022

Reporting Date	Spring Chinook (1) AD-Clip M	AD-Clip F	AD-Clip JK	Wild M	Wild F	Wild JK	Recap M	Recap F	Recap JK
1-May	41	44	1	4	4				
2-May	29	24	2	6	1				
3-May	24	27		6					
4-May	15	19	2	5	3				
5-May	23	30	3	6	4				
6-May	16	13	1	1					
7-May	67	55	2	6	5				
8-May	44	30	5	4	4				
9-May	69	47	9	9	3				
10-May	66	62	7	12	4	1			
11-May	53	58	10	4	5				
12-May	21	18	4	1	2	1			
13-May	36	18	4	5	2	1			
14-May	55	43	4	7	5				
15-May	49	64	11	4	3				
16-May	46	41	12	7	4				
17-May	49	56	9	7	4				
18-May	27	29	3	1	2				
19-May	34	44	12	2	2				
20-May	27	28	3	2	1				
21-May	12	12	2	1	1				
22-May	20	19	1	2	2				
23-May	36	16	2	1					
24-May	36	16	9	2					
25-May	3	4							
26-May	28	28	9	2					
27-May	31	26	12	3	2	1			
28-May	56	56	12	4	5				
29-May	57	45	10	6	5				
30-May	62	54	5	6	3	1			
31-May	58	35	10	6	6				
Monthly	**1190**	**1061**	**176**	**132**	**82**	**5**	**0**	**0**	**0**
Annual	**1602**	**1445**	**217**	**221**	**144**	**6**	**0**	**0**	**0**

Reporting Date	Early Coho AD-Clip M	AD-Clip F	AD-Clip JK	CWT M	CWT F	CWT JK	Wild M	Wild F	Wild JK	Recap M	Recap F	Recap JK	Late Coho AD-Clip M	AD-Clip F	AD-Clip JK	CWT M	CWT F	CWT JK	Wild M	Wild F	Wild JK	Recap M	Recap F	Recap JK
1-May																								
2-May																								
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Monthly	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Annual	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**1**	**0**	**0**	**0**	**5**	**1**	**3**	**0**	**0**	**0**

Reporting Date	S. Steelhead Fresh M	Fresh F	Recap M	Recap F	Wild M	Wild F	W. Steelhead AD-Clip M	AD-Clip F	BWT M	BWT F	Recap M	Recap F	Wild M	Wild F
1-May									4	4	1		2	
2-May									1	3				1
3-May									1	3			2	1
4-May									3	1				1
5-May	1								1	1				
6-May	2	1							1	1			1	
7-May	3								1				1	4
8-May	1	1							1	1			1	
9-May	3	2							2	1			2	4
10-May	2	3							3	1				1
11-May	2	1												2
12-May	2								1				1	
13-May		2							1				1	1
14-May		2											2	
15-May	1	3								1			3	
16-May		4											3	
17-May	5	4							3	1				
18-May	1	1												1
19-May	4	3												2
20-May		1												
21-May	2	7											1	
22-May	2	1												
23-May														
24-May	2	4												1
25-May	2												1	
26-May	4	8												
27-May	2	2							1					
28-May	7	4												
29-May	2	1												
30-May	6	14												
31-May	1	3												
Monthly	**57**	**72**	**0**	**0**	**0**	**0**	**0**	**0**	**24**	**18**	**1**	**0**	**21**	**19**
Annual	**57**	**72**	**0**	**0**	**0**	**0**	**377**	**290**	**306**	**146**	**3**	**0**	**81**	**88**

Reporting Date	Fall Chinook AD-Clip M	AD-Clip F	AD-Clip JK	Wild M	Wild F	Wild JK	Recap M	Recap F	Recap JK	Sockeye M	Sockeye F	Chum M	Chum F	Pink M	Pink F	Cutthroat	Rainbow (< 20 inches)	Bull Trout	Daily Total
1-May																			105
2-May																			67
3-May																			64
4-May																			49
5-May																			69
6-May																			37
7-May																			144
8-May																			92
9-May																			151
10-May																			162
11-May																			135
12-May																			51
13-May																			71
14-May																			118
15-May																1			140
16-May																			117
17-May																			138
18-May																			65
19-May																			103
20-May																1			63
21-May																			38
22-May																			47
23-May																			55
24-May																			70
25-May																			10
26-May																			79
27-May																			80
28-May																1			145
29-May																			126
30-May																			151
31-May																			119
Monthly	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**3**	**0**	**0**	**2861**
Annual	**0**	**0**	**0**	**5**	**2**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**13**	**0**	**0**	**5086**

1 Only hatchery verses wild distinctions are currently being made. All hatchery fish are labeled as "AD-Clip".

2 Total counts do not include recaptured salmon.

Fish Facility Report

Swift Floating Surface Collector

May 2022

	Coho			Chinook			Steelhead				Cutthroat			Bull	Planted	
Day	**fry**	**parr**	**smolt**	**fry**	**parr**	**smolt**	**fry**	**parr**	**smolt**	**kelt**	**fry**	**<13 in**	**> 13 in**	**Trout**	**Rainbow**	**Total**
1	7	23	122			4		1	49	1		4	4	0	67	**282**
2		3	172			5			90	3		2		0	66	**341**
3	8		100			3			6					0	23	**140**
4	8		151	1		5			54			2		0	43	**264**
5	51		266			5			99			6		1	65	**493**
6			57			2			23	1		2		0	26	**111**
7	44		80			0			30					0	16	**170**
8	19	2	188			0			64			3	2	0	40	**318**
9		10	294			3			86					0	64	**457**
10			206			1			90	2				0	49	**348**
11	1	35	160			0			179			4		0	37	**416**
12			46			1			32			2		0	5	**86**
13	1		89			1			44			2		0	10	**147**
14			200			0			128			5		0	12	**345**
15			281			1			215			7	1	0	16	**521**
16		17	71			0			38					0	6	**132**
17		32	628			0			152			4	5	0	43	**864**
18			749			0		1	277			34	3	0	73	**1137**
19	3		287			0		1	32			2	4	0	28	**357**
20			631			2			127			11	1	0	36	**808**
21	2		942			0			259			20	10	0	55	**1288**
22			571			0			87					0	25	**683**
23	2		975			0			167	1		32	3	0	41	**1221**
24	7		1069			0			87			28	4	2	62	**1259**
25			326			0			27			40		0	51	**444**
26	9		1420			0			212			63		0	36	**1740**
27	4		1625	1		10			159			43	2	1	118	**1963**
28	46		2716		20	0			200			20		0	121	**3123**
29	6		2634			0			180					0	155	**2975**
30	5		4232			0			111			26		0	394	**4768**
31	5		1812			0			297	2		15	50	0	126	**2307**
Monthly	228	122	23100	2	20	43	0	3	3601	10	0	377	89	4	1909	**29508**
Total	614	14147	29123	40	163	1544	5	21	4396	10	2	520	104	12	3631	**54332**