

**Lewis River Hydroelectric Projects Settlement Agreement
Aquatic Coordination Committee (ACC)
Meeting Agenda**

Date & Time: **Thursday, August 8, 2019**
9:00 a.m. – 1:45 p.m.

Place: **Merwin Hydro Control Center**
105 Merwin Village Court
Ariel, WA 98603

Contacts: **Erik Lesko: (503) 412-8401**

Time	Discussion Item
9:00 a.m.	Welcome <ul style="list-style-type: none"> ➤ Review Agenda and ACC 7/11/19 Meeting Notes ➤ Comment & Accept Agenda and 7/11/19 Meeting Notes
9:10 a.m.	Public Comment Opportunity
9:15 a.m.	In Lieu Update and Review of Plans <ul style="list-style-type: none"> ➤ Draft Merwin In-Lieu Strategic Plan (45 minutes)
10:00 a.m.	Break
10:15 a.m.	In Lieu Update and Review of Plans <ul style="list-style-type: none"> ➤ Draft Monitoring Plan (45 minutes) ➤ Draft Bull Trout Fish Passage Plan and Drawings (45 minutes)
11:45 a.m.	Lunch
12:15 p.m.	SA 8.2.6 Scope of Work for Comprehensive Periodic Review; Update on Consultants
12:45 p.m.	Project Proposal; Nutrient Enhancement Update
1:00 p.m.	Study/Work Product Updates <ul style="list-style-type: none"> ○ Flow/Reservoir Conditions Update
1:30 p.m.	<ul style="list-style-type: none"> ➤ Next Meeting's Agenda ➤ Public Comment Opportunity <p>Note: all meeting notes and the meeting schedule can be located at: http://www.pacificorp.com/es/hydro/hl/lr.html#</p>
1:45 p.m.	Adjourn

PLEASE BRING YOUR LUNCH

Join by Phone
+1 (503) 813-5252 [Portland, Ore.]
+1 (855) 499-5252 [Toll Free]
Conference ID: 6325627

FINAL Meeting Notes
Lewis River License Implementation
Aquatic Coordination Committee (ACC) Meeting
August 8, 2019
Merwin Hydro Control Center, Ariel, WA

ACC Representatives Present (17)

Kim McCune, PacifiCorp
 Chris Karchesky, PacifiCorp
 Todd Olson, PacifiCorp
 Erik Lesko, PacifiCorp
 Jeremiah Doyle, PacifiCorp
 Briana Weatherly, PacifiCorp
 Ian McGrath, PacifiCorp
 Mark Ferraiolo, PacifiCorp
 Levi Pienovi, PacifiCorp
 Eli Asher, Cowlitz Indian Tribe
 Joshua Ashline, NMFS
 Bryce Glaser, WDFW
 Peggy Miller, WDFW
 Aaron Roberts, WDFW
 Kevin Young, WDFW
 Jim Byrne, Trout Unlimited
 Amanda Froberg, Cowlitz PUD

Guests (3)

Frank Postlewaite, R2 Resource Consultants
 Mike Bonoff, Meridian Environmental
 Phil Roni, Cramer Fish Sciences

Calendar:

September 12, 2019	ACC Meeting	Merwin HCC
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Assignments from August 8, 2019, 2019	Status
McCune – Email the Roni et.al 2018 reference in the Draft Monitoring Plan to the ACC.	Complete - 8/8/19
McCune – Email new PacifiCorp ACC & TCC website links to the ACC.	Complete - 8/8/19

Assignments from July 11, 2019	Status
Lesko: Add 2018 spring Chinook distribution detection data and provide to the ACC, per Tom Wadsworth request.	Pending

Assignments from June 13, 2019	Status
Wadsworth: Schedule bull trout subgroup meeting end of July, 2019	Pending

Parking Lot Items	Status
Tracy: Stage 0 webinar PowerPoint presentation to ACC.	Tentative – Fall 2019
All: What are things to focus on; Salmon Port	

Opening, Review of Agenda and Meeting Notes

Erik Lesko (PacifiCorp) called the meeting to order at 9:10am and reviewed the agenda. PacifiCorp wishes to add a flow/river conditions update to the agenda. Lesko also reviewed the July 11, 2019 meeting notes and assignments. The meeting notes were approved at 9:15am with minor housekeeping and clarifying changes received from Tom Wadsworth (WDFW).

Public Comment

None

In Lieu Update and Review of Plans

Draft Merwin In-Lieu Strategic Plan PowerPoint – Mike Bonoff (Meridian Environmental) provided a PowerPoint presentation to the ACC attendees to review the Draft Lewis River Merwin In-Lieu Program Strategic Plan that was emailed to the ACC for a 30-day review and comment period August 1, 2019. Comments are due September 3, 2019. A link to the presentation is provided below for convenience of the reader:

Lewis River Merwin In-Lieu Program Strategic Plan PowerPoint
https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/lewis-river/license-implementation/acc/08082019_Merwin_In-Lieu_Strategic_Plan_ACC.pdf

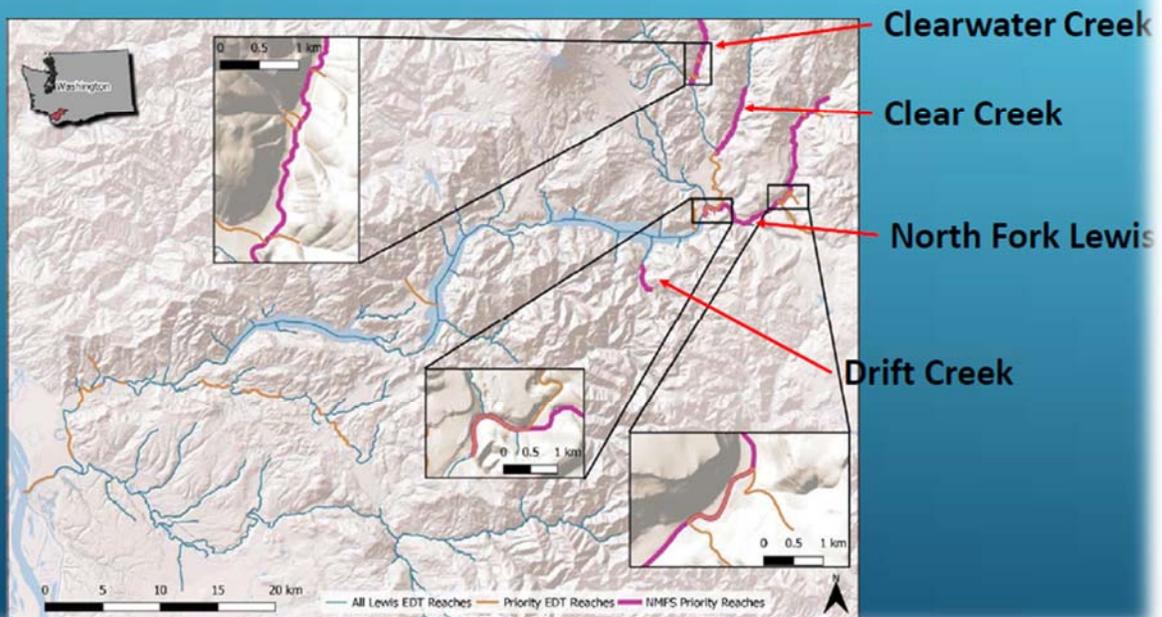
Bonoff addressed the background of the In-Lieu Fund and the Services (USFWS & NMFS) preliminary decision rendered on April 12, 2019. The following program goals and direction of the Services was reviewed and discussed.

- Increase adult Chinook salmon, coho salmon, and winter steelhead abundance in the North Fork of the Lewis River
- Achieve genetically viable, self-sustaining, naturally reproducing, harvestable populations above Merwin Dam greater than minimum viable populations.

Bonoff noted that the Services decided to focus Merwin In-lieu habitat restoration monies on stream reaches upstream of Swift Reservoir known to support all three listed species (coho, winter steelhead, and spring Chinook) since reintroduction efforts began in 2012. The reaches include:

- Clearwater River (8.37 km)
- Clear Creek (22.96 km)
- North Fork of the Lewis River (22.69 km)
- Drift Creek (1.52 km)

NMFS Priority Reaches



Joshua Ashline (NMFS) expressed that the 4 reaches were selected by the NMFS local office. Each reach supports all 3 species of endangered salmonids and are NMFS' recommendations. The decision was based extensively on the EDT analysis and the highest abundance gains for 3 listed species. Jim Byrne (Trout Unlimited) expressed concern with NMFS selecting these reaches without input from the ACC, and noted he is not satisfied with the level of communication and consultation between the parties.

Bonoff briefly reviewed the Strategic Plan organizational structure and the Utilities roles and responsibilities:

Merwin In-Lieu Strategic Plan - Organization

- Outlines roles and responsibilities
- Reviews progress to date and steps to complete a Habitat Restoration Plan
- Implementation/Program Administration - (Oversight, permitting, methods to identify, prioritize, approve, and implement aquatic habitat improvement projects based on biological benefits, cost, and certainty of success)

Roles and Responsibilities - Utilities

- Responsible and accountable to FERC to ensure restoration actions comply with project licenses (including the Lewis River Settlement Agreement, Biological Opinions, Clean Water Act Certificate, etc.).
- Provide funding into the program per the Lewis River Settlement Agreement.

Eli Asher (Cowlitz Indian Tribe) said he was confused about the request for proposal (RFP) and bid process. Who is responsible for the design of restoration projects? Bonoff responded that designs will be prepared prior to distribution of RFPs. The RFP will be issued for specific designs

identified for treatment areas. Todd Olson (PacifiCorp) said that individual treatments will be determined for specific reaches. It will be the program administrator’s responsibility to lead the effort to identify, design and permit habitat treatments. The RFP is then issued to the restoration firms, construction firms, etc. The ACC will then review the bid results and approve expenditures from the Merwin In-Lieu Fund.

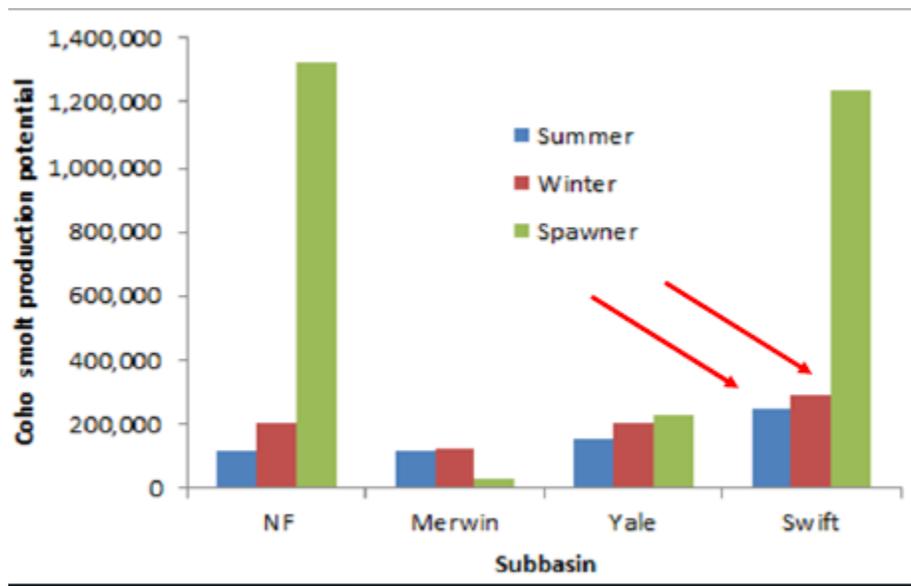
For those ACC members who want to participate, a technical advisory committee can be formed.

For more detail regarding roles and responsibilities of the program administrator, technical advisory committee (TAC) and the Aquatic Coordination Committee please see the Lewis River Merwin In-Lieu Strategic Plan (ILP) PowerPoint at the following link:

https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/lewis-river/license-implementation/acc/08082019_Merwin_In-Lieu_Strategic_Plan_ACC.pdf

Bonoff further explained that a Habitat Restoration Plan (HRP) will be developed following a final decision by the Services on the Merwin ILP, which is anticipated in 2020. The current In-Lieu Plan provides goals, objectives, and a framework for the HRP and builds on the New Information studies.

Limiting factors were also briefly discussed, including the bottlenecks identified for production in Lewis River subbasins and priority reaches. It also guides habitat restoration strategies and provides a focus on increasing the amount and quality of summer and/or winter rearing habitat.



Bonoff informed the ACC that the EDT model outputs identified the 25 highest priority reaches throughout the basin (16 upstream of Swift) that would produce the largest increase in spring Chinook, coho, and steelhead. The watershed assessment identified degraded habitat (e.g., lack of wood or pools, high fine sediment), disrupted watershed processes (e.g., high road density, disconnected floodplain, loss of side channels). The watershed assessment is coupled with limiting factors analyses to determine limiting life-stage and habitat for spring Chinook, coho, and steelhead, leading to initial restoration opportunities.

Priority Reaches Upstream of Swift

Reach	Restoration Measure Recommended	Rational for Selecting Restoration Measure
Lewis 18 (NMFS)	LWD	Low LWD and percent pool
Lewis 19 (NMFS)	LWD, side channels	Low LWD, percent pool and channel type
Lewis 20 (NMFS)	To be determined	
Lewis 21 (NMFS)	LWD, road restoration	Low percent pool, LWD, high sediment yield
Lewis 22 (NMFS)	To be determined	
Lewis 23 (NMFS)	To be determined	
Drift Creek (NMFS)	To be determined	
Swift Campground Creek	Roads	High percent fines, campground area
Muddy R 1	Side channels, LWD	Low LWD scores, and island braided channel type
Clear Creek Lower (NMFS)	To be determined	
Clearwater Creek (NMFS)	To be determined	
Clearwater Tribs	NA (high levels of fines appears to be due to headwaters in blast zone of Mt. St. Helens.	Mt. St. Helens blast zone appears to be source of sediment
Rush Creek	Protection (steep channel)	Steep channel
Little Creek	LWD	Poor LWD and pool area
Spencer Creek	LWD	Poor LWD and pool area
Crab Creek	LWD	Poor LWD and pool area

Bonoff reviewed project prioritization/ranking to include discussion about similar approaches in the region such as Colville Tribe Upper Columbia and Sanpoil Habitat Restoration Plan and Tacoma Power Cowlitz Restoration and Recovery Program. The ACC expressed that the Tacoma Power project is in its infancy and it may be premature to model after this program.

Implementation of the process after RFP issuance was discussed to include but not limited to:

- Pre-proposal meetings with PA staff
- Site visits with potential contractors
- Proposal presentations by short-listed applicants
- Development of comment matrices by TAC members and PA staff
- Evaluation of proposals
- State, County, critical areas, SEPA and a variety of other County and State permitting
- Implementation of progress reporting

And lastly, Bonoff reviewed the implementation of adaptive management.

- Review pace/cost of restoration, revisit priorities annually.
- Review implementation monitoring to incorporate lessons learned/maximize project physical and biological effectiveness.
- Monitor other regional efforts and effectiveness monitoring programs elsewhere in the region, Columbia River Basin and Salmon Recovery Funding Board effectiveness monitoring.

<Break 10:00am>

<Reconvene 10:15am>

In Lieu Update and Review of Plans

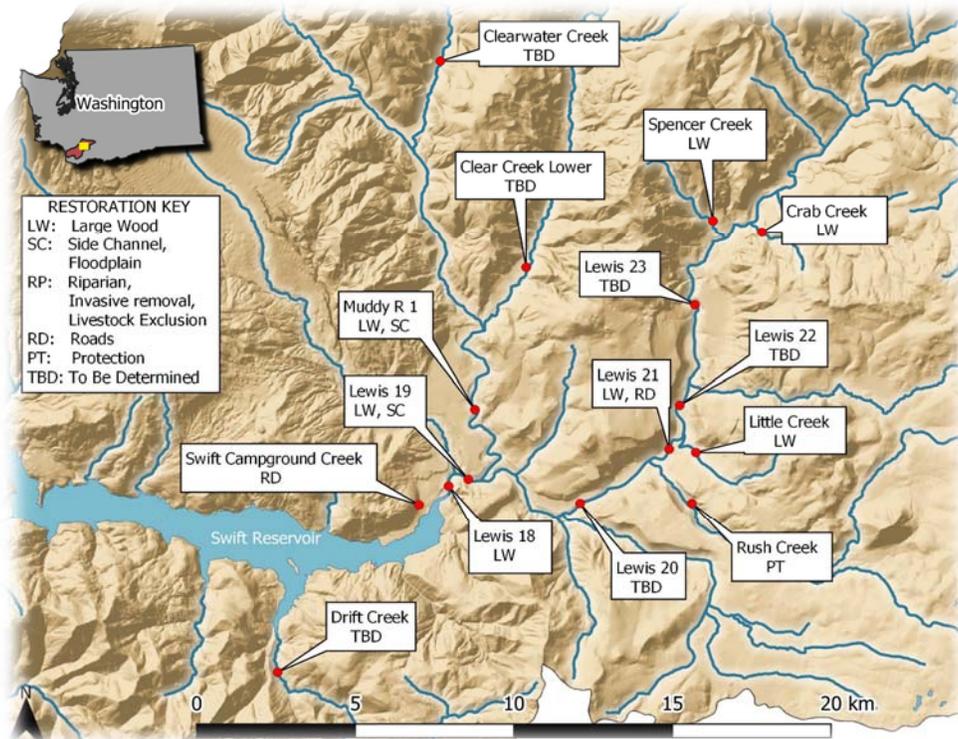
Draft Lewis River Implementation Monitoring Plan PowerPoint – Dr. Phil Roni (Cramer Fish Sciences) provided a PowerPoint presentation to the ACC attendees to review the Draft Lewis

River Implementation Monitoring Plan that was emailed to the ACC for a 30-day review and comment period August 1, 2019. Comments are due September 3, 2019. A link to the presentation is provided below for convenience of the reader:

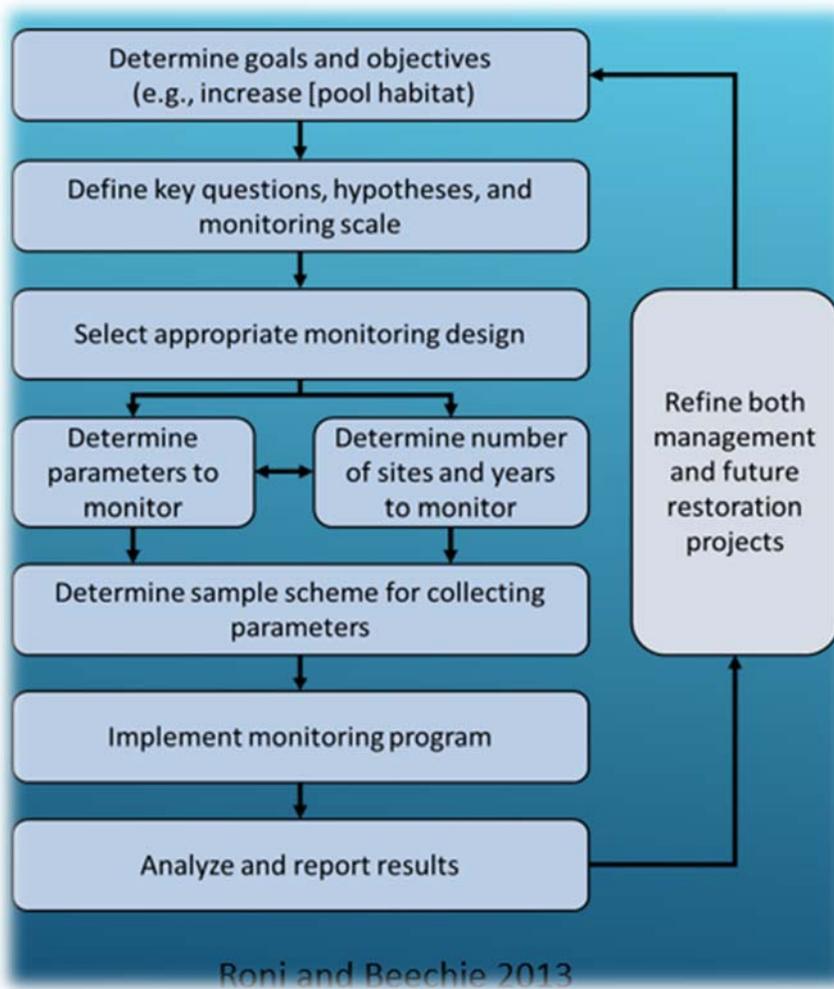
Lewis River Basin Implementation Monitoring Plan PowerPoint

https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/lewis-river/license-implementation/acc/08082019_LR_Basin_Imp_Monitor_Plan_ACC.pdf

Roni provided a cursory review of the initial proposed restoration treatments to include floodplain restoration to create and reconnect side channels, large wood (LW) placement to increase pools, complexity, & cover, riparian planting to increase shade and organic material and road removal or restoration to reduce instream sediment.



He addressed the implementation and outline of the monitoring plan to include the following:



The Plan will determine whether restoration projects were built as intended and have met their design and physical habitat objectives, both at the project level and reach scale, was each project implemented as originally designed and if not, why? Did each project have the desired physical response within the target time frame, e.g., 3-5 years post-treatment? Is the suite of projects implemented across a reach (~2 to 10 kilometers in length) leading to desired improvements in physical habitat (pool and side channel area) across response reaches? For large wood and floodplain restoration projects, has the number of juvenile fish increased in restored vs. unrestored reaches in summer or winter?

Roni discussed parameters and protocols and methods of remote sensing such as Lidar (drone or fixed wing) plus traditional field survey methods. Topographic data will be examined as to why or why not the project did not led to the desired outcome.

Restoration Type	Survey type (protocol)	Parameters and metrics
Large wood placement	Large wood	Number, length, width, volume, location, function
	Channel morphology and topography	Habitat type (e.g., pool, riffle, glide, cascade), area, and volume, residual pool depth
	Snorkel surveys	Juvenile fish abundance by species (fish/m ²) (Summer and Winter)
Floodplain restoration	Large wood	Number, length, width, volume, location, function
	Channel morphology and topography	Habitat type, area, and volume, residual pool depth; MQI, change in DEM, geomorphic change, GUT; side channel length, area, number of junctions, ratio, wetted area at bankfull flow
	Snorkel surveys	Juvenile fish abundance by species (fish/m ²) (Summer and Winter)
Road removal	Channel Morphology/Long-profile	Residual pool depth, Long-profile habitat survey
	Sediment (egg boxes, bulk samples, pebble counts)	Percent fines bulks samples, depth to fines (V*), scour and fine sediment infiltration, sediment size
Riparian planting	Plant survival	Planting survival, growth, browse damage

Next steps include finalizing the Lewis River ILP, then finalizing the monitoring plan based on specifics of the ILP, refine field methods and sampling methods and begin collecting baseline/pre-project data.

Asher commented that the draft monitoring plan is inconsistent with the April 12, 2019 letter from NOAA Fisheries. The draft does not address population level monitoring. Bryce Glaser (WDFW), agreed with Asher’s comments and noted that the Services could clarify the intent of their letter; however, he feels that monitoring needs to be done to compare to the EDT model results; this will inform the Yale decision. He also indicated there was specific reference to use of a BACI design in NOAA’s letter.

In Lieu Update and Review of Plans

Draft Lewis River Bull Trout Fish Passage Plan PowerPoint and Conceptual Drawings – Jeremiah Doyle (PacifiCorp) provided a PowerPoint presentation to the ACC attendees to review the Draft Bull Trout Passage Plan that was emailed to the ACC for a 30-day review and comment period August 1, 2019. Comments are due September 3, 2019. A link to the presentation is provided below for convenience of the reader:

Lewis River Bull Trout Passage In-Lieu of Anadromous Fish Passage PowerPoint
https://www.pacificorp.com/content/dam/pcorp/documents/en/pacificorp/energy/hydro/lewis-river/license-implementation/acc/Bull_Trout_Passage_Plan_812019.pdf

Doyle informed the ACC attendees that Settlement Agreement Section 4.10 specifically calls for bull trout collection facilities at four different locations (see image also of locations below and at the link provided above):

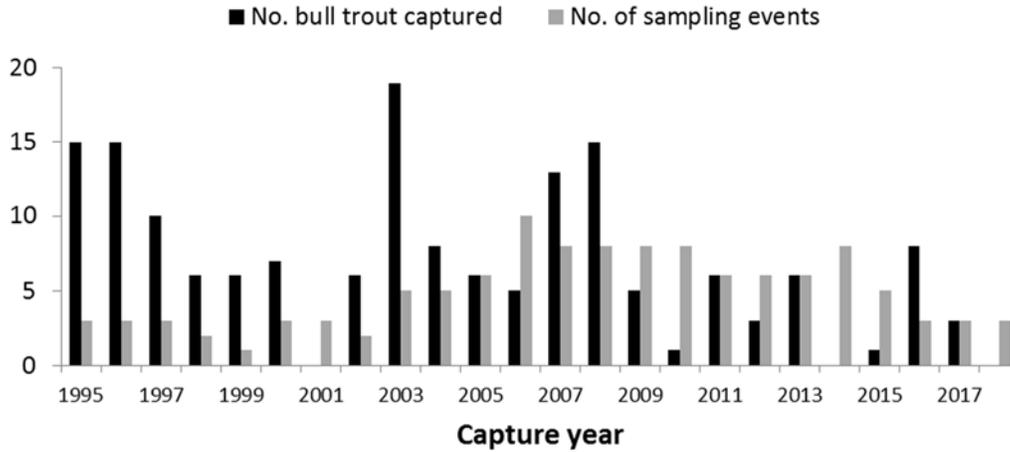
- Merwin downstream (on hold per USFWS Preliminary Determination Notice concerning Merwin In-Lieu, will revisit after 2024)
- Merwin Upstream
- Yale Downstream
- Yale Upstream



Doyle reviewed the expected trap encounters at Merwin Upstream, and fish capture methods consisting of tangle nets, purse seines, and angling.

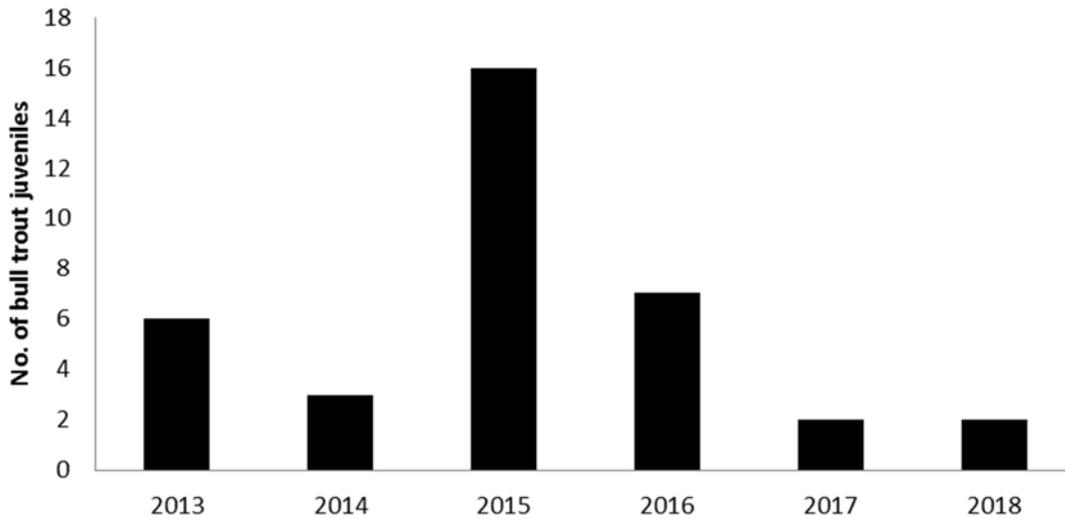
Each ACC representative in attendance received a hard copy of the Bull Trout Passage conceptual drawings. Byrne noted that he wanted more up front discussions on fish passage design. USFWS input on this topic is needed soon, before things go too far. The Bull Trout Working Group should also engage.

Bull trout captured in the Yale tailrace of Merwin Reservoir



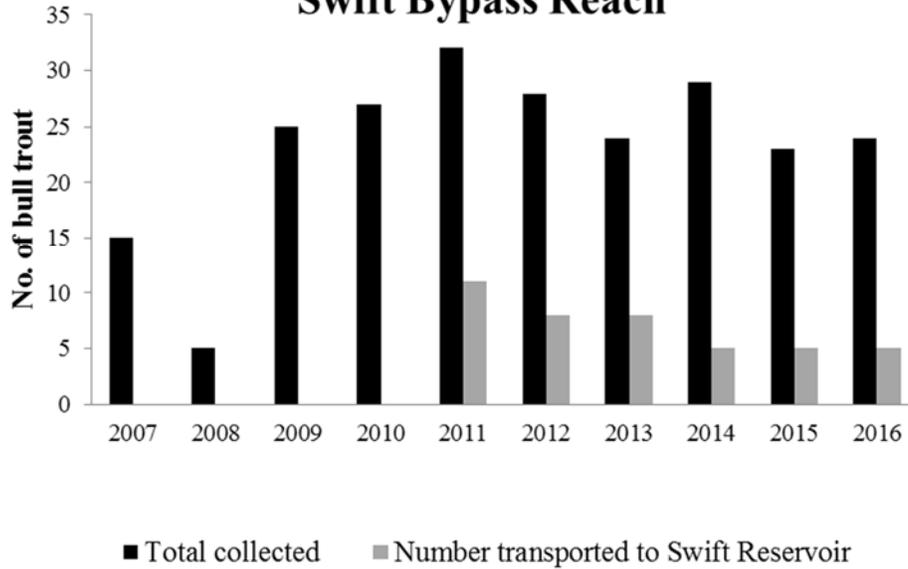
Yale downstream there was no juvenile bull trout migration data available for Yale bull trout subpopulation, Swift juvenile bull trout migration (Floating Surface Collector) was used as a surrogate. Data suggests Swift populations likely 4-5 times larger than Cougar.

Swift floating surface collector juvenile bull trout collection by year



Yale upstream data collection methods included tangle nets and angling.

Collected and transported bull trout from the Swift Bypass Reach



The upstream trapping protocols include the following:

- Both Yale Tailrace and Swift Bypass Reach facilities operated seasonally, May-October
- Traps operated 24/7 during seasonal timeframe
- Each location checked once daily
- After PIT tag and bio data, captured bull trout transported into next upstream reservoir

Downstream trapping protocols include:

- Yale forebay trap operated seasonally, March-June
- Trap operated 24/7 during seasonal timeframe
- When in operation, checked once daily
- After tag and bio data, maiden tagged juveniles released back into Yale Reservoir at Yale Park. If recaptured, then taken downstream to Woodland Release Ponds and released to North Fork Lewis
- As there will be no downstream trap concurrently in operation in Merwin for the first couple of years, we wouldn't want to release Yale forebay captures downstream into Merwin Reservoirs

Document Title	Date to Parties	Comments Due	Date to ACC	Date to SA Parties	Review w	Comments Due	Due to FERC	Notes	Completed
Draft In-Lieu Program Strategic Plan (ACC Review)			8/1/2019		30 days	9/3/2019		Presentation to ACC on August 8, 2019	
Draft In-Lieu Program Monitoring Plan (ACC Review)			8/1/2019		30 days	9/3/2019		Presentation to ACC on August 8, 2019	
Draft Bull Trout Fish Passage Concepts and Plan (Bull Trout Working Group Review)	7/22/2019	9/3/2019							
Draft Bull Trout Fish Passage Concepts and Plan (ACC Review)			8/1/2019			9/3/2019		Presentation to ACC on August 8, 2019	
Draft Application for FERC License Amendments (includes Strategic Plan, Monitoring Plan and Bull Trout Fish Passage Plan with Preliminary (30%) Designs)			9/12/2019	9/12/2019	90 days	12/12/2019		Draft Application will include ACC comment matrix on Draft In-Lieu Fund Program Strategic Plan and Monitoring Plan. These documents will be revised accordingly and included in Draft Application package.	
Draft Biological Evaluation for FERC License Amendments			9/12/2019	9/12/2019	90 days	12/12/2019			
Application for FERC License Amendments							2/12/2020		

Doyle noted that the disposition of fish collected in the Yale downstream trap needed discussion. Byrne expressed that any bull trout of any size collected in the downstream trap should be transported downstream.

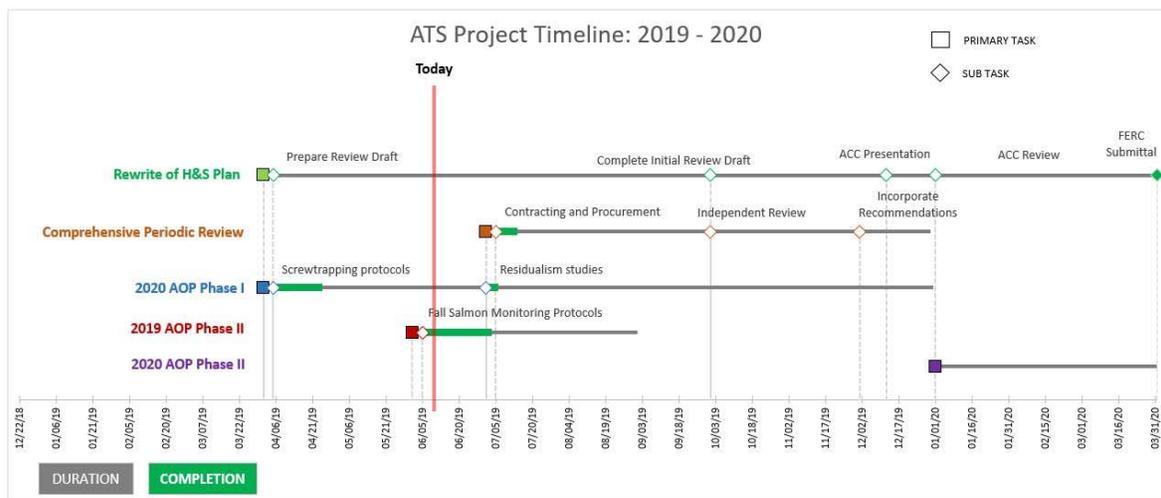
Frank Postlewaite (R2 Resource Consultants), walked the ACC through the bull trout fish passage conceptual designs. Discussion included depth of pump intake for the Merwin Upstream trap, what impact does reservoir drawdown have on facility? Is the location too noisy? Does it have enough attraction flow? How to deal with potentially large numbers of kokanee? Glaser noted that the Settlement Agreement indicates all facilities need to be operational year around, and need to have the ability for performance testing, which is different than what is proposed. Discrepancies will be addressed at the next design level.

Lunch <12:35pm>

Reconvene <12:50pm>

SA 8.2.6 Scope of Work for Comprehensive Periodic Review; Update on Consultants

On August 7, 2019 PacifiCorp emailed the ACC a Statement of Qualifications for HDR and DJ Warren, two qualified consultants selected to bid on the Comprehensive Periodic Review project. After considerable conversation about qualifications, and PacifiCorp's procurement process Lesko requested the support of the ACC to move forward and submit the scope of work to both consultants and request a bid in order to stay on schedule.

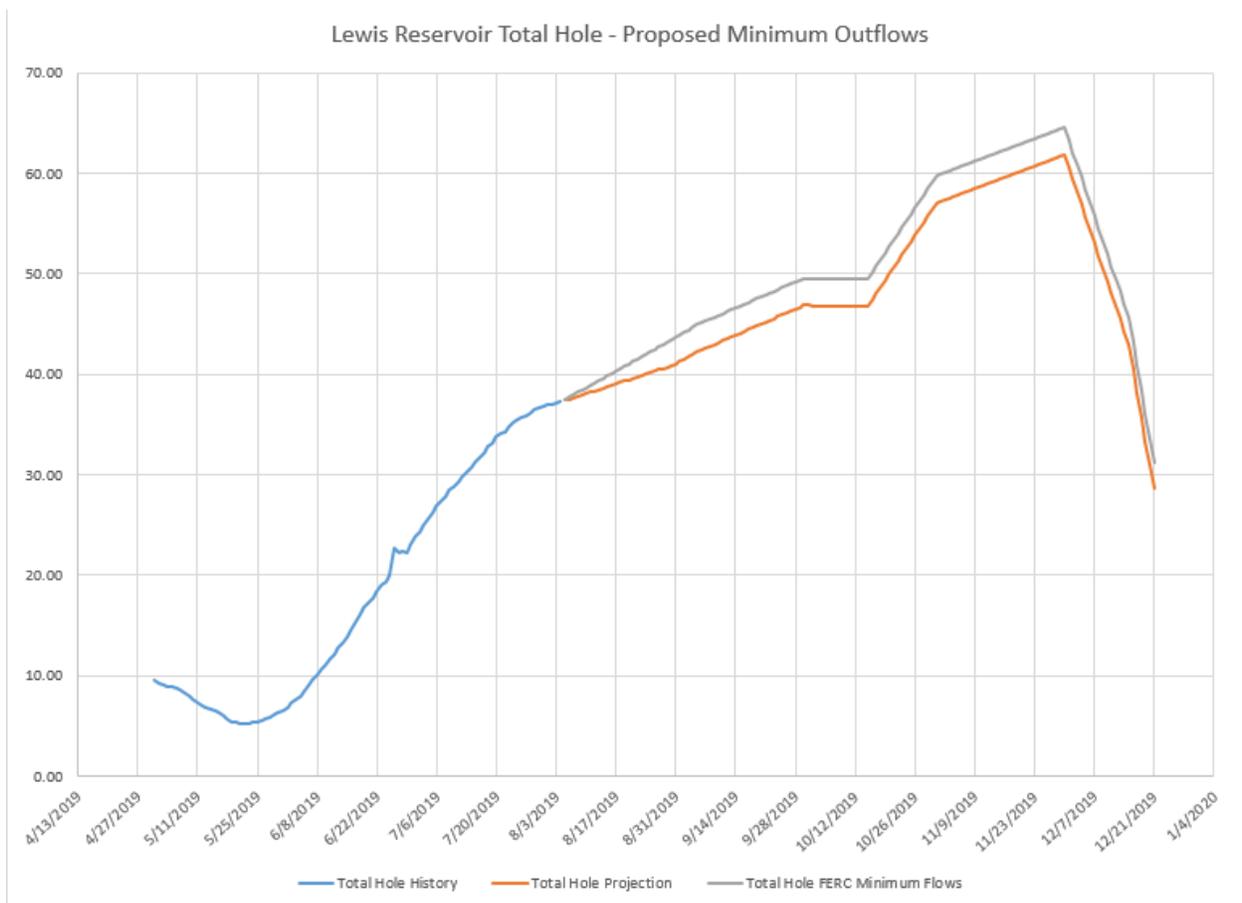


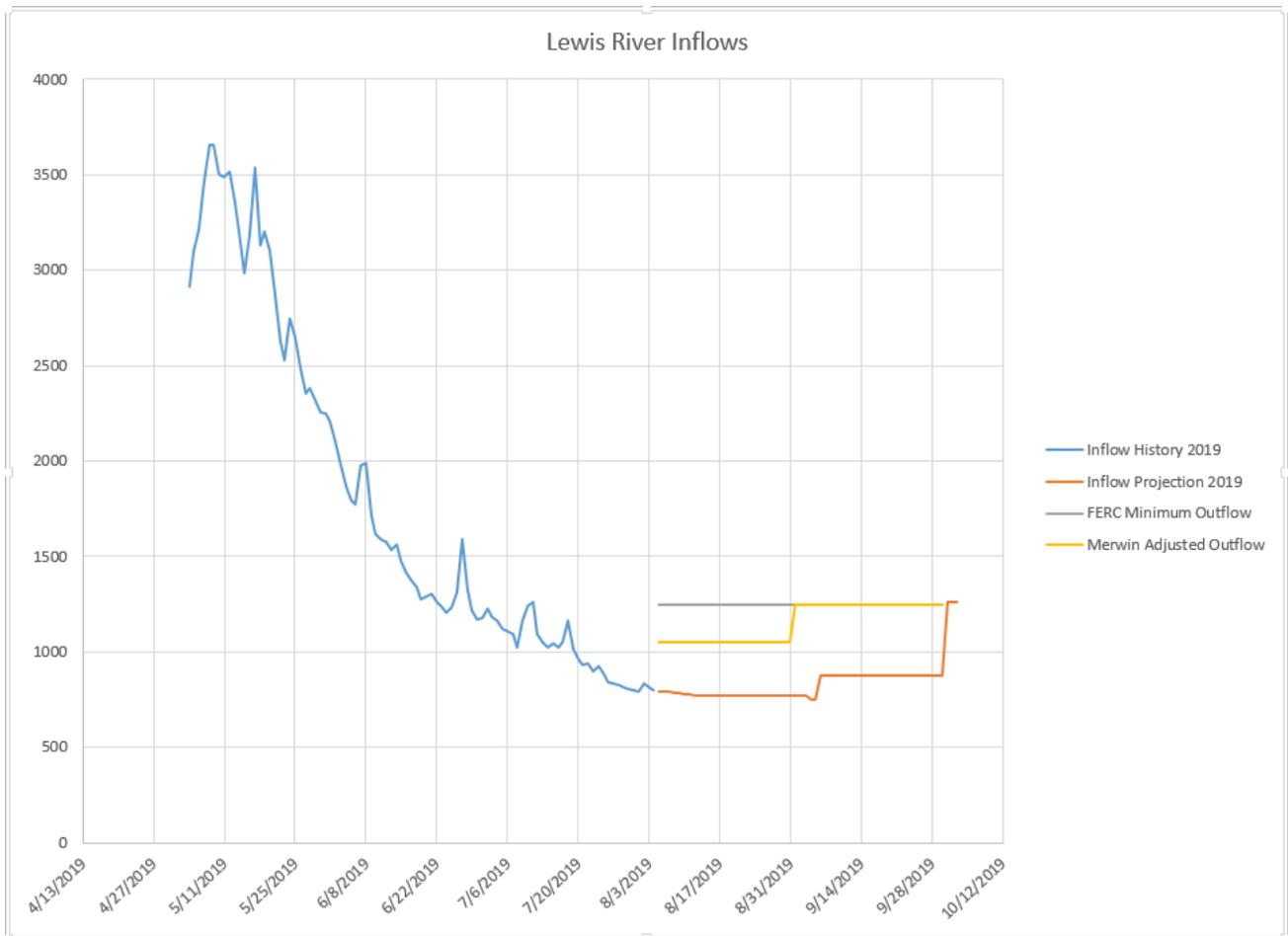
The ACC agreed that PacifiCorp should send a scope of work to both DJ Warren and HDR to solicit informal bids from both firms.

The ACC further requested to have the opportunity to assess their qualifications of each but would like input on the final selection. PacifiCorp will provide bids received to the ACC prior to our September meeting.

Flows/Reservoir Conditions

In response to a request from Tom Wadsworth (WDFW), Briana Weatherly (PacifiCorp) informed the ACC that the reservoirs were full in early May (about 5' of draft on all reservoirs (green line). The FERC minimum outflow is 1,200 cfs. We are currently at 1,050 cfs (orange line). PacifiCorp is projecting we will be at the red line the end of September, 2019. PacifiCorp proposes to continue 1,000 cfs outflows through August 31, 2019 then bump back up to 1,200 cfs through October 15, 2019, then up to approximately 2,400 cfs.





Reservoir hole between the 3 reservoirs is indicated by the grey line as the projected hole without revised minimum flows. And the orange color is the current hole.

Project Proposal; Nutrient Enhancement Update

Chris Karchesky (PacifiCorp) informed the ACC attendees that the ATS group is working with Wadsworth and Ruth Tracy (USFS) on the details of the project's volunteer groups. The goal is to present to the ACC for approval at the September ACC meeting. Sites for the project have been identified which are all on Forest Service lands. Currently the groups involved are Clark Skamania Fly Fishers, PacifiCorp, USFS and WDFW. Fish First is an additional possible participant.

Study/Work Product Updates

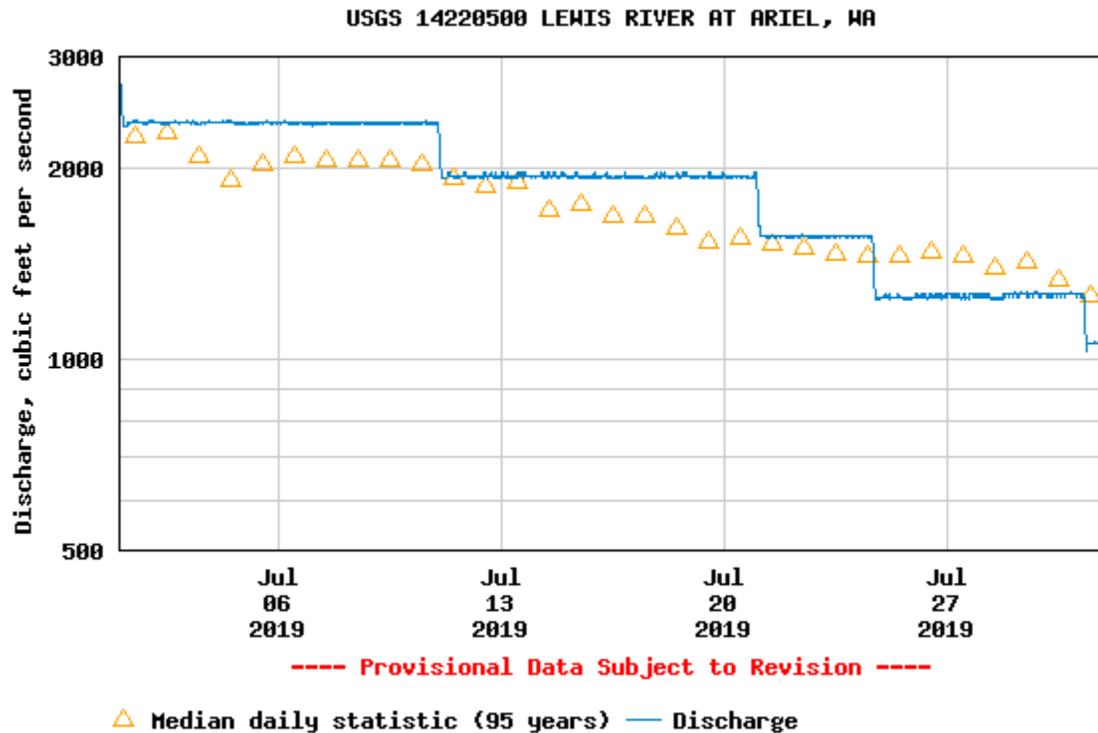
Merwin Fish Collection Facility and General Operations ([Attachment A](#))

During the month of July, a total of 828 fish were captured at the Merwin Dam Adult Fish Collection Facility. The majority of these fish were hatchery summer steelhead (90%). Seven hundred fifty seven (757) adult spring Chinook and 221 jacks had been captured through the month of July. This number is down from last year (2018) when nearly 2,000 adult spring Chinook had been collected by the end of July (n = 1,978).

The Merwin Dam Fish Collection Facility was taken out of operation on July 25, 2019 for annual maintenance. Other than during this outage, the facility ran continuously during the month of July.

River flow below Merwin Dam decreased from 2,330 cfs on July 1, 2019 to 1,060 cfs July 31, 2019 (Table 1).

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



Upstream Transport ([Attachment A](#))

Eight (8) Blank Wire Tag (BWT) winter steelhead were captured by the end of December 2018 and were transported upstream as part of the 2019 run year. An additional 38 adults were taken upstream in January 2019 and another 30 in February, 106 in March, 705 in April, 110 in May, and 4 in June for a total of 1,001 BWT winter steelhead transported as part of the 2019 run year. Twelve (12) additional winter steelhead of natural origin (NOR) containing PIT tags from the upper basin were also transported upstream as part of the 2019 run year. A combined total of 1,013 adult winter steelhead have been transported upstream of Swift Dam as part of the 2019 run year (Table 2).

Table 2. Total number of adult winter steelhead transported upstream of Swift Dam in 2019.

Run Year	Male	Female	Total adult winter steelhead taken upstream of Swift Dam
2012	141	48	189
2013	440	301	741

2014	452	581	1,033
2015	746	477	1,223
2016	378	376	754
2017	331	261	592
2018	682	535	1,227
2019	527	486	1,013

Twenty three (33) NOR (12 female/12 male/9 jack) and an additional 76 hatchery origin jack (HOR) spring Chinook have been taken upstream through June 2019.

Swift Floating Surface Collector ([Attachment A](#))

Daily collection numbers of juvenile out-migrants continued to decline from the end of June into early July. A total number of 2,073 juveniles were collected and transported downstream during the month. This decline in daily collection numbers is consistent with previous years and coincides with increasing water temperature at the surface of the reservoir. The Swift FSC was shut down for summer maintenance on July 22, 2019. It is anticipated that the Swift FSC will return to service in early-October.

Table 3. Total number of out-migrating salmonids (by species) collected at the Swift FSC and transported downstream of Merwin Dam during the month of July since 2013.

Run Year	FSC Turned Off for Summer Maintenance	June Collection Numbers by Run Year at Swift FSC				
		Coho	Chinook	Steelhead	Cutthroat	TOTAL
2013	NA	190	17	1	16	224
2014	NA	383	95	20	10	508
2015	July 7	42	1	0	0	43
2016	July 14	340	0	30	4	374
2017	July 21	739	7	15	3	764
2018	July 16	429	52	18	6	505
2019	July 22	1,454	575	17	27	2,073

Record numbers of fish collected at the Swift FSC in spring 2019 with a total of 105,337 out-migrants along with an additional 4,404 planted rainbow trout, and 54 adult steelhead kelts collected by the time the FSC was shut down in late-July. The total number of out-migrants

collected at the Swift FSC this spring has exceeded all other previous years of operation (i.e., since 2013).

As a reminder, the entrance of the Swift FSC was modified in January 2019 with a new false floor within the Net Transition Structure (NTS). This was done to increase the entrance water velocity of the NTS and improve the hydraulic signature at the front of the vessel. A detailed presentation regarding this work was provided at the October 11, 2018 Aquatics Coordination Meeting. A copy of those meeting notes can be found online at:

http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/acc/10112018_ACC_MN.pdf

The ongoing collection efficiency evaluation using a combination of acoustic and PIT tagged fish will help assess whether increasing the velocity at the entrance has improved collection of juvenile fish for all transport species. The field portion of this study was completed this month and preliminary results are anticipated at the September 12, 2019 Aquatic Coordination Committee (ACC) Meeting.

Bull Trout Subgroup Update

The Bull Trout Subgroup did not meet as planned on August, 1, 2019 due to scheduling conflicts with most of the group's members.

Agenda items for September 12, 2019

- August 8, 2019 Meeting Notes
- Floating Surface Collector Update (45 minutes)
- SA 8.2.6 Scope of Work for Comprehensive Periodic Review; Scope of Work/Review Bids
- Project Proposal; Nutrient Enhancement Update
- In Lieu Update.
- Flows/Reservoir Conditions Update
- Study/Work Product Update

Adjourn 1:45pm

Next Scheduled Meeting:

September 12, 2019
Merwin HCC
9:00 a.m. – 3:00 p.m.

Meeting Handouts & Attachments:

- Meeting Notes from 7/11/19
- Agenda from 8/8/19
- **Attachment A** – Lewis River Fish Passage Report (July 2019)

Lewis River Fish Passage Report

July 2019

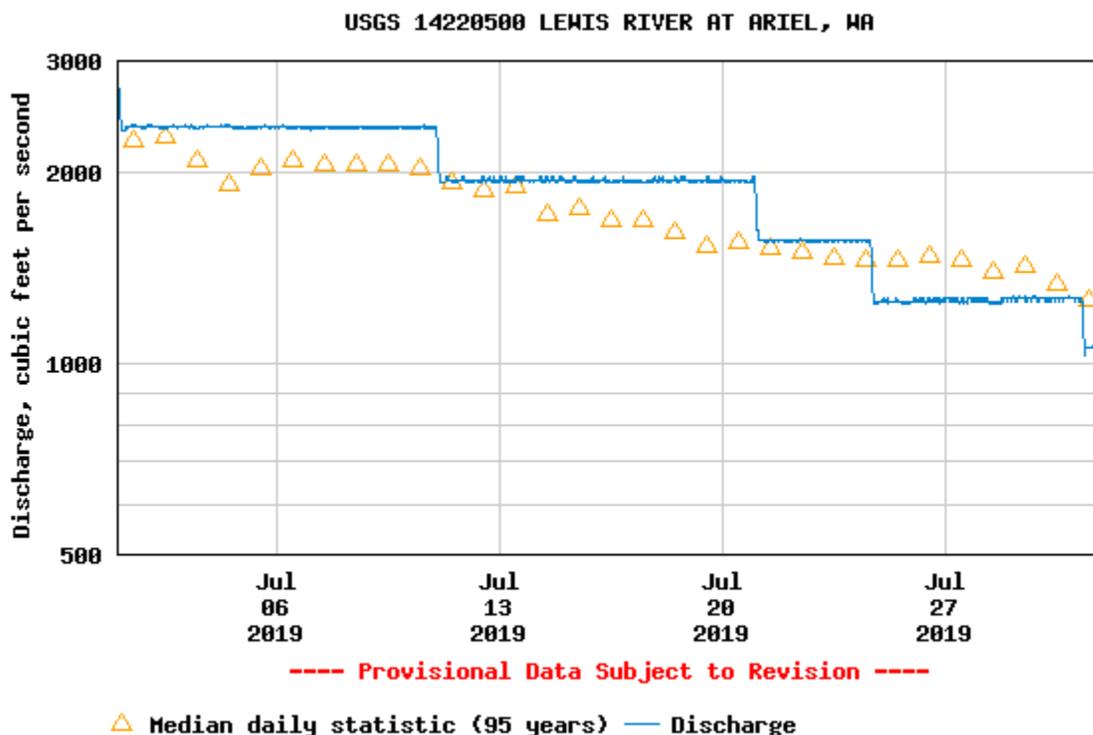
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Table 1. Discharge in cubic feet per second recorded at the USGS Ariel, WA gauge (14220500) located immediately downstream of Merwin Dam.



Upstream Transport

Eight (8) Blank Wire Tag (BWT) winter steelhead were captured by the end of December 2018 and were transported upstream as part of the 2019 run year. An additional 38 adults were taken upstream in January 2019 and another 30 in February, 106 in March, 705 in April, 110 in May, and 4 in June for a total of 1,001 BWT winter steelhead transported as part of the 2019 run year. Twelve (12) additional winter steelhead of natural origin (NOR) containing PIT tags from the upper basin were also transported upstream as part of the 2019 run year. A combined total of 1,013 adult winter steelhead have been transported upstream of Swift Dam as part of the 2019 run year (Table 2).

Table 2. Total number of adult winter steelhead transported upstream of Swift Dam in 2019.

Run Year	Male	Female	Total adult winter steelhead taken upstream of Swift Dam
2012	141	48	189
2013	440	301	741
2014	452	581	1,033
2015	746	477	1,223
2016	378	376	754
2017	331	261	592
2018	682	535	1,227
2019	527	486	1,013

Twenty three (33) NOR (12 female/12 male/9 jack) and an additional 76 hatchery origin jack (HOR) spring Chinook have been taken upstream through June 2019.

Floating Surface Collector (FSC)

Daily collection numbers of juvenile out-migrants continued to decline from the end of June into early July. A total number of 2,073 juveniles were collected and transported downstream during the month. This decline in daily collection numbers is consistent with previous years and coincides with increasing water temperature at the surface of the reservoir. The Swift FSC was shut down for

summer maintenance on July 22, 2019. It is anticipated that the Swift FSC will return to service in early-October.

Table 3. Total number of out-migrating salmonids (by species) collected at the Swift FSC and transported downstream of Merwin Dam during the month of July since 2013.

Run Year	FSC Turned Off for Summer Maintenance	June Collection Numbers by Run Year at Swift FSC				
		Coho	Chinook	Steelhead	Cutthroat	TOTAL
2013	NA	190	17	1	16	224
2014	NA	383	95	20	10	508
2015	July 7	42	1	0	0	43
2016	July 14	340	0	30	4	374
2017	July 21	739	7	15	3	764
2018	July 16	429	52	18	6	505
2019	July 22	1,454	575	17	27	2,073

Record numbers of fish collected at the Swift FSC in spring 2019 with a total of 105,337 out-migrants along with an additional 4,404 planted rainbow trout, and 54 adult steelhead kelts collected by the time the FSC was shut down in late-July. The total number of out-migrants collected at the Swift FSC this spring has exceeded all other previous years of operation (i.e., since 2013).

As a reminder, the entrance of the Swift FSC was modified in January 2019 with a new false floor within the Net Transition Structure (NTS). This was done to increase the entrance water velocity of the NTS and improve the hydraulic signature at the front of the vessel. A detailed presentation regarding this work was provided at the October 11, 2018 Aquatics Coordination Meeting. A copy of those meeting notes can be found online at:

http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/acc/10112018_ACC_MN.pdf

The ongoing collection efficiency evaluation using a combination of acoustic and PIT tagged fish will help assess whether increasing the velocity at the entrance has improved collection of juvenile fish for all transport species. The field portion of this study was completed this month and preliminary results are anticipated at the September 12, 2019 Aquatic Coordination Committee (ACC) Meeting.

Fish Facility Report
Swift Floating Surface Collector
July 2019

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
01	5	32	174	4	52	0	1	0	0	0	0	10	0	0	0	278
02	2	34	44	3	47	0	0	0	0	1	0	0	0	0	1	132
03	0	19	358	0	42	2	0	0	0	0	0	0	0	0	0	421
04	0	61	52	0	61	22	0	0	0	0	0	0	0	0	0	196
05	2	21	34	0	26	11	0	0	0	1	0	0	0	0	0	95
06	0	20	27	0	8	20	0	0	0	1	0	0	0	0	0	76
07	0	30	96	0	13	13	0	0	0	0	0	10	0	0	0	162
08	0	48	144	0	39	0	0	0	0	0	0	0	0	0	0	231
09	0	10	40	0	10	20	0	0	0	0	0	0	0	0	0	80
10	0	53	1	0	6	1	0	0	0	1	0	0	0	0	1	63
11	1	24	1	0	58	3	0	0	10	0	0	0	0	0	0	97
12	0	10	9	0	8	3	0	0	0	0	0	0	0	0	0	30
13	0	9	8	0	6	1	2	0	0	0	0	0	0	0	0	26
14	0	13	21	0	5	5	0	0	0	0	0	1	0	0	0	45
15	0	6	10	0	10	2	0	0	0	0	0	1	0	0	0	29
16	0	2	2	0	7	1	0	0	0	0	0	1	0	0	0	13
17	0	6	0	0	5	2	0	0	0	0	0	0	0	0	0	13
18	0	8	4	0	16	28	1	2	1	0	0	3	0	0	0	63
19	0	3	5	0	4	6	0	0	0	0	0	1	0	0	0	19
20	0	2	0	0	2	0	0	0	0	0	0	0	0	0	0	4
21	0	3	0	0	0	2	0	0	0	0	0	0	0	0	0	5
22	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
23																0
24																0
25																0
26																0
27																0
28																0
29																0
30																0
31																0

Monthly	10	414	1030	7	425	143	4	2	11	4	0	27	0	0	2	2079
Total	2766	2772	89813	64	2567	3598	7	56	2848	54	0	806	43	2	4404	109800

