

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

Date & Time: Thursday, January 11, 2018
9:00 a.m. – 11:30 a.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 12/14/17 Meeting Notes➤ Comment & Accept Agenda and 12/14/17 Meeting Notes
9:10 a.m.	Public Comment Opportunity
9:20 a.m.	2017/2018 Aquatic Fund Project Presentation <ul style="list-style-type: none">○ Lewis River 21 Phase II – Greg Robertson (USFS)
9:45 a.m.	Merwin Adult Fish Trap Efficiency (ATE) Study
10:45 a.m.	Study/Work Product Updates <ul style="list-style-type: none">○ 2017 Year-end Financial Reporting○ H&S Plan Update○ Woodland Release Ponds - Status○ Merwin Upstream Passage – Status○ Swift Floating Surface Collector – Status○ Lewis River In-Lieu Status
11:15 a.m.	<ul style="list-style-type: none">➤ Next Meeting's Agenda➤ Public Comment Opportunity Note: all meeting notes and the meeting schedule can be located at: http://www.pacificorp.com/es/hydro/hl/lr.html#
11:30 a.m.	Adjourn

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

Conference ID: 2625672

FINAL Meeting Notes
Lewis River License Implementation
Aquatic Coordination Committee (ACC) Meeting
January 11, 2018
Merwin Hydro Control Center

ACC Representatives Present (13)

Kim McCune, PacifiCorp
Chris Karchesky, PacifiCorp
Erik Lesko, PacifiCorp
Jeremiah Doyle, PacifiCorp
Tom Wadsworth, WDFW
Peggy Miller, WDFW
Eli Asher, Cowlitz Indian Tribe
Ruth Tracy, USDA Forest Service
Bryce Michaelis, USDA Forest Service
Michelle Day, NMFS
Steve Manlow, LCFRB
Jim Bryne, Trout Unlimited
Tim Romanski, USFWS

Guest (1)

Greg Robertson, USDA Forest Service

Calendar:

February 8, 2018	ACC Meeting	Conference Call
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Assignments from January 11, 2018	Status
McCune: Email the Aquatic Fund schedule next steps to the ACC and request any written questions not answered at today's meeting.	Complete – 1/11/18
McCune: Review Aquatic Fund process documents and advise if it addresses using funds to cover administrative costs.	Complete – 1/11/18
Robertson: Combine all aspects of the aquatic fund pre-proposal and full proposal into one final document.	Complete – 2/1/18
Karchesky: Write a brief memorandum outlining the 2018 Merwin Upstream Passage Adult Trap Efficiency – Winter Steelhead next steps and email to the ACC for its review and comment. Final approval will be requested from the ACC by close of business February 1, 2018.	Complete – 1/19/18
Karchesky/McCune: Email electronic copy of the final 2017 ATE Annual Report to the ACC after the February 2, 2018 conclusion of the 30-day review period.	Pending

Assignments from November 9, 2017	Status
McCune/Lesko: Schedule a tour of the Woodland Release Ponds for the ACC, when possible.	Schedule for April or May 2018

Opening, Review of Agenda and Meeting Notes

Erik Lesko (PacifiCorp) called the meeting to order at 9:10 a.m. and reviewed the agenda. No additional agenda topics were requested.

Lesko also reviewed the December 14, 2017 meeting notes. The meeting notes were approved without change at 9:15 a.m.

Public Comment

None

2017/2018 Aquatic Fund Project Presentation

Lewis River 21 Phase II Full Proposal can be viewed on the Lewis River website at the following location:

http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/acc/USFS_AQ_Fund_full_proposal_FINAL_DRAFT_121517.pdf

Greg Robertson (USFS) provided a PowerPoint presentation titled, “*Lewis River 21 Phase II Full Proposal Presentation*”, and can also be viewed on the Lewis River website at the following link:

http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/acc/LR21_Phase_II_ACC_Presentation_01112018.pdf

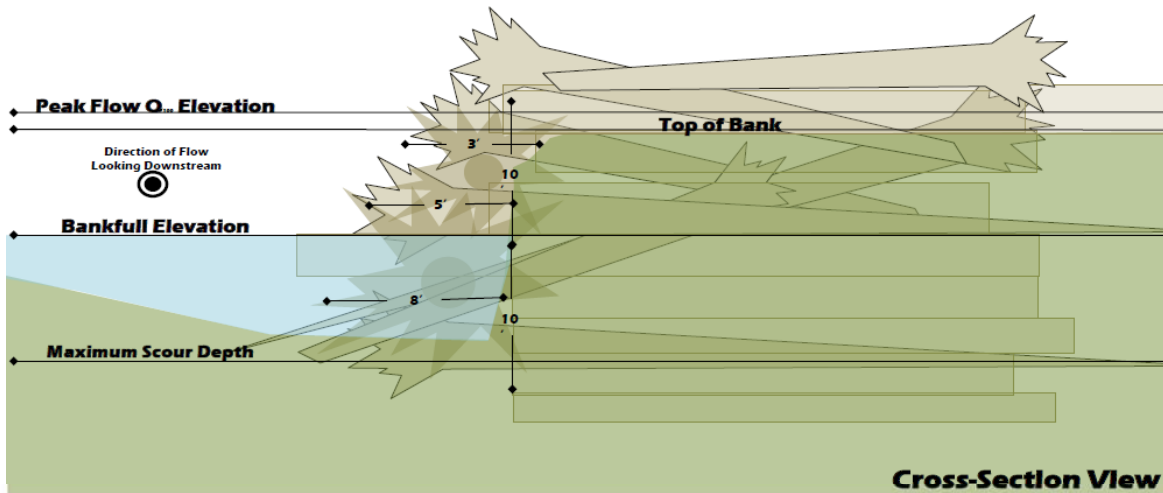
Robertson provided a review of the limiting life history and habitat factors, the project objectives to include:

- Stream Channel Habitat Structure
- Off Channel and Side Channel Habitat
- Floodplain function and channel migration processes

Discussion took place regarding placement of two upstream apex jams, base flow and channel bed to reduce cross-sectional area of channel and maintain side channel flow, to provide gravel deposition from reduced upstream hydraulic gradient when used in combination with structures on the margins of the channel and to increase floodplain function.

Robertson discussed and provided images of the conceptual design to reduce the risk of structure displacement and to address the risk of excessive bed scour (see conceptual design below).

Margin Structure Conceptual Design



Example of Apex Jam – Salmon River

The ACC representatives discussed or had questions about large woody debris structure types, conceptual design, augmenting existing wood, potential for more disconnect from main channel, public safety, the existing recreation trail affected by this project, concerns that reservoir cannot support additional fish production, concerns over increased predation and the inability for fish to leave the reservoir.

The ACC requested Robertson combine all aspects of the pre-proposal and full proposal into one final document for ACC review.

The ACC representatives also reviewed the Aquatic Fund Timeline and agreed to the following next steps:

ACC members provide written request for clarification of project information if questions not answered in previous meeting.	1 week after January ACC meeting (ACC agreed to COB 1/19/18)
Final Full Proposals due (ACC requests for clarification need to be included as an Appendix)	Late January (ACC agreed to COB 2/1/18)
Proposal Evaluation Sheet (Attachment D, Part B-E) Submitted to ACC for 30-day review	Early February (ACC agreed to COB 2/2/18)

McCune will email the Aquatic Fund schedule next steps to the ACC and request submittal of any written questions to her attention no later than close of business, January 19, 2018. McCune will then organize the questions/comments and email directly to Robertson for consideration and inclusion in the final project proposal on or before close of business February 1, 2018.

Furthermore, the ACC discussed concern about the administrative costs outlined in the full proposal document to include but not limited to travel, contract administration, public outreach and education. McCune expressed that she would review the Aquatic Fund process documents and advise if these documents specifically address administrative/overhead expenses.

2017 Merwin Upstream Passage Adult Trap Efficiency Evaluation, Winter Steelhead – Chris Karchesky (PacifiCorp)

PacifiCorp emailed a draft copy of the above-referenced study to the ACC January 3, 2018 with **comments due on or before February 2, 2018.**

As outlined in the Executive Summary this evaluation report describes results from the third year of a radio telemetry (RT) study designed to address the requirements of the Lewis River Aquatic Monitoring and Evaluation Plan (M&E Plan). The M&E Plan describes the need for an evaluation of the collection efficiency of the Merwin Dam adult fish trap for upstream migrating steelhead, spring Chinook and coho salmon. This evaluation report focuses on results evaluating collection efficiency of BWT winter steelhead. The M&E Plan defines a performance standard of 98% collection efficiency, or Adult Trap Efficiency (ATE), for fish that enter the Merwin Dam tailrace.

Additional core metrics used to evaluate Merwin Dam trap effectiveness in this evaluation report include: trap entrance efficiency (P_{EE}), which quantifies the proportion of fish entering the Merwin Dam tailrace that subsequently entered the trap and indicates the ability of fish to locate and enter the trap from the tailrace; and trap ineffectiveness (T_i), which is the difference between P_{EE} and ATE_{test} and is used to infer an operational or infrastructural weak link in upstream passage at the trapping device—a failure to capture fish once they have entered the trap rather than a failure to attract fish to the trap entrance.

The objectives of the 2017 Merwin ATE evaluation were to:

- Determine ATE_{test} for 2017 and compare this value to the performance standard of 98%.
- Evaluate directional movement of fish at the trap entrance.
- Determine if fish in the tailrace spend most of their time near the entrance of the trap or elsewhere.
- Evaluate the amount of time fish spend in the tailrace and compare to performance standards.
- Describe the movement and behavior of fish that do not enter the trap, and move back downstream.
- Evaluate fish condition (i.e., descaling and injury rates).
- Evaluate key operational or structural changes that could increase ATE, and estimate the relative benefits of each option.
- Evaluate the effectiveness of a fyke in preventing fish from exiting the trap.
- Compare passage metrics across study years and evaluate whether dam operations influence passage metrics
- Provide regulatory and biological context behind adult passage standards.

A final electronic copy of the 2017 ATE Annual Report will be provided to the ACC after conclusion of the 30-day review period.

Karchesky further provided a PowerPoint presentation titled, “*Merwin Upstream Passage Adult Trap Efficiency – Winter Steelhead 2017 Final Annual Report*”, and can also be viewed on the Lewis River website at the following link:

http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/acc/01112018_ACC_ATE_PowerPoint.pdf

Karchesky provided a cursory overview of the Merwin Upstream fish trap 5 main structures:

1. Attraction Water Supply (AWS) System
2. Fish Ladder
3. Fish Lift and Conveyance System
4. Presort Pond
5. Fish Sorting and Transport Building

The new Merwin Trap was designed as a phased project to ensure that migrating adults are not delayed. PacifiCorp is currently operating at Phase I – 400 cfs attraction flow at Entrance 1. The adult trap efficiency (ATE) serves as a trigger for implementation of any future improvements/phases. The ATE goal is 98% collection efficiency.

Karchesky further provided a brief overview of the previous trap efficiency studies (performed in 2015 & 2016) and discussed in detail the improvement in collection efficiency and considerable decrease in trap ineffectiveness (T_i) in 2017 after the V-Style Fyke was installed between Ladder Pools 1 & 2.

Table 1. 2017 values for P_{EE} , ATE_{test} , and T_i . Sample sizes (N) reflect the total number of tagged fish that were released in each study year. Key results from the 2017 study pertaining to the core passage metrics for winter steelhead

Study Year	Species	N	P_{EE} (BCA 95% CI)	ATE_{test} (BCA 95% CI)	T_i
2015	Winter steelhead	148	86% (79-90%)	61% (51-67%)	29%
	Spring Chinook	40	90%	38%	58%
	Coho Salmon	35	23%	9%	61%
2016	Winter steelhead	148	93% (87-96%)	73% (65-80%)	21%
	Spring Chinook	N/A	N/A	N/A	N/A
	Coho salmon	N/A	N/A	N/A	N/A
2017	Winter steelhead	150	83.5% (77-90%)	76.3% (70-84%)	8.6%
	Spring Chinook	N/A	N/A	N/A	N/A
	Coho salmon *				

- P_{EE} = Entrance Efficiency (proportion of fish that enter the tailrace that successfully pass into the trap entrance).
- ATE_{test} = Adult Trap Efficiency (proportion of fish that enter the tailrace that were successfully captured).
- T_i = Trap Ineffectiveness (proportion of fish that enter the trap that were not successfully captured).

Total river flow over three years of the study were also reviewed and the effects of flow relative to collection efficiency. Karchesky also discussed possible study biases associated with using trap non-naïve fish and not accounting for natural straying rates. Karchesky recommended that if a fourth year of study be conducted in 2018, that consideration be made for these possible influences. This could be done by collecting and tagging naïve fish in the lower river rather than using fish that have already entered and passaged the facility (non-naïve trap fish), which was done during the previous years.

Discussion occurred regarding steps moving forward and it was decided that an additional one year of study be conducted on winter steelhead in which the approved M&E study plan would be completed except that effort would be made in collecting a portion of test fish from the lower river (trap- naïve fish) rather than from the trap (trap non-naïve fish). Comparison could then be made to assess any potential trap bias affect. Tagging fish in the lower river would also help gain information on possible in system straying rates

Michelle Day (NMFS) informed the ACC attendees that PacifiCorp met with her and Ed Meyer (NMFS) in early January 2018 to review the 2017 Draft ATE Annual Report and to discuss how the new fyke installation worked. (PacifiCorp consulted with Meyer on the design of the new fyke). During this meeting, PacifiCorp also discussed steps for moving forward and the possibility of using naïve test fish to help offset any trap bias. **Day indicated that NMFS was good with the naïve test fish concept moving forwarding February 2018.**

Karchesky will prepare a brief memorandum outlining the 2018 next steps and email it to the ACC for review and comment. A final approval from the ACC will be requested by close of business February 1, 2018.

<Break 10:20am>

<Reconvene 10:30am>

2017 Aquatic Fund Year-end Accounting

Kim McCune (PacifiCorp) providing the following accounting as of December 31, 2017.

Lewis River License Implementation					
Lewis River Aquatics Fund - Resource Projects					
Sections 7.5, 7.5.1, 7.5.3, 7.5.3.1 & 7.7					
Release Date	Funds Received	Expense	Interest	Balance	Notes
12/31/2016				\$ 2,094,936.04	
4/20/2017	\$ 160,616.97	\$ -	\$ -	\$ 2,255,553.01	
12/31/2017	\$ -	\$ -	\$ 90,948.69	\$ 2,089,106.52	
		Total Spent to Date:		\$ (2,052,281.00)	
		Balance Remaining:		\$ 2,089,106.52	

Lewis River License Implementation					
Lewis River Aquatics Fund - Bull Trout					
Sections 7.5, 7.5.1, 7.5.3, 7.5.3.1 & 7.7					
Release Date	Funds Received	Expense	Interest	Balance	Notes
12/31/2016				\$ 698,924.17	
12/31/2017	\$ -	\$ -	\$ 29,399.17	\$ 728,323.34	
		Total Spent to Date:		\$ (234,547.92)	
		Balance Remaining:		\$ 728,323.34	

Lewis River License Implementation					
Lewis River LWD Fund - Haul					
Section 7.1.1					
Release Date	Funds Received	Funds Dispersed	Balance	Notes	
4/20/2016			\$ 1,013.42		
4/20/2017	\$ -	\$ (3,986.58)	\$ 1,013.42		
9/11/2017	\$ -	\$ (3,000.00)	\$ 13.42	Chilton Logging (Morris Trucking)	
		Total Spent to Date:		\$ (19,986.58)	
		Balance Remaining:		\$ 13.42	

Lewis River License Implementation					
Lewis River LWD Fund - Resource					
Section 7.1.1					
Release Date	Funds Received	Funds Dispersed	Balance	Notes	
12/26/2016			\$ 71,500.00		
		Total Spent to Date:		\$ (18,500.00)	
		Balance Remaining:		\$ 81,500.00	

Study/Work Product Updates

H&S Plan Update

Pushing for a final Annual Operating Plan by April 2018; a 30-day review will be provided to the ACC representatives at large. The next H&S Subgroup meeting is February 1, 2018.

Woodland Release Ponds/Construction Update

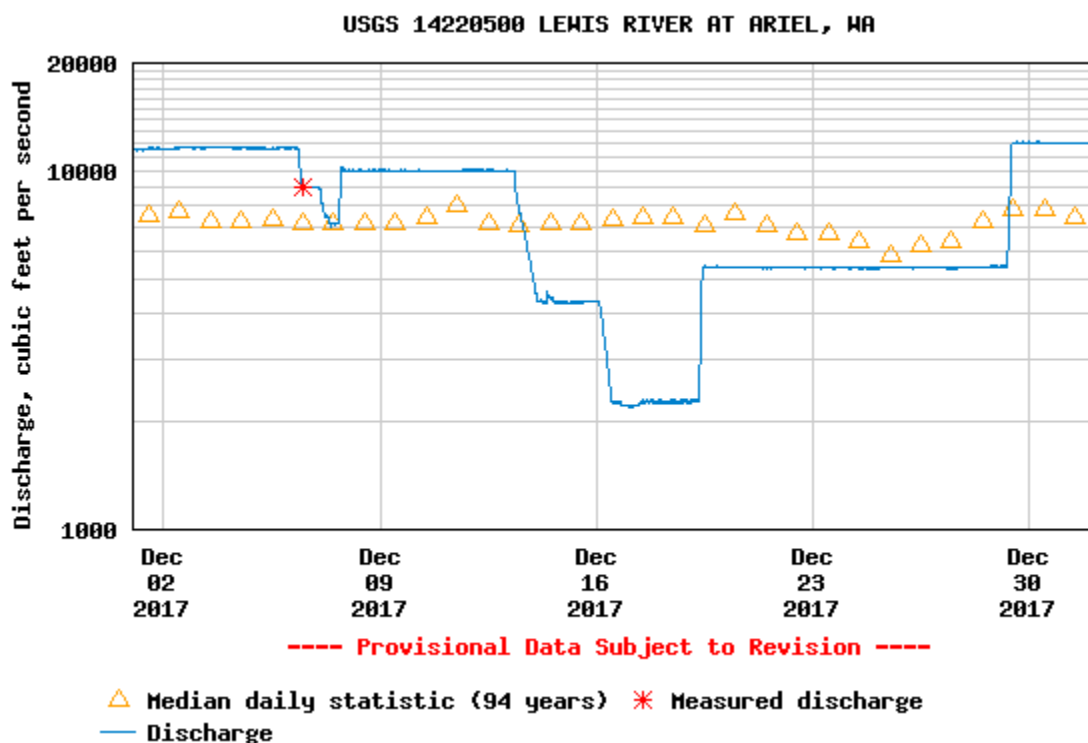
The Ponds are in use. Waiting for final SCADA and will complete the final FERC submittal of as-builts no later than March 31, 2018.

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

During the month of December, a total of 2,612 fish were captured at the Merwin Adult Fish Collection Facility. The vast majority of these fish were hatchery winter steelhead (2,275 – 87%).

The Merwin Dam adult fish trap ran continuously through the month of December. River flow varied below Merwin Dam ranging between 2,210 and 12,000 cfs throughout the month.

Discharge, cubic feet per second



Upstream Transport ([Attachment A](#))

Nine Blank Wire Tag (BWT) winter steelhead were transported upstream above Swift Dam in December 2017. Two additional fish were transported earlier this fall for a total of 11 BWT steelhead collected and transported this fall. These fish will be considered as part of the 2018 run year. Typically, late run winter steelhead in the North Fork Lewis River begin arriving at the trap in January and continue through early-May. A total of 599 BWT winter steelhead were transported as part of the 2017 run year earlier this spring.

PacifiCorp began transporting adult spring Chinook to the upper basin on May 18, 2017, with the last fish being transported in early-August. A total of 1,110 adults were transported and released at head of Swift Reservoir during the 2017 run year. A number of these fish were observed spawning throughout the upper basin and as far upstream as Lower Falls this fall. These were the first spring Chinook adults to be released in the upper basin since 2013, when about 600 adults were released above Swift Reservoir.

PacifiCorp began transporting early coho salmon to the upper basin on August 25, 2017. By the end of the December, a total of 6,499 early- and late-coho had been transported and released at the head of Swift Reservoir.

2017 Coho Salmon (thru December 2017)

Stock	Origin	Male	Female	Jacks	Total
Early (S-type)	Natural	910	1,141	18	2,069
Early (S-type)	Hatchery	765	752	16	1,533
Late (N-type)	Natural	71	88	23	182
Late (N-type)	Hatchery	1,384	1,329	2	2,715
TOTAL		3,130	3,310	23	6,499

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

The Swift Reservoir FSC was returned to full 24-hour service on October 20, 2017. During the month of December, 5,606 fish were collected; more than doubling the previous monthly record for December, which occurred in 2015 with just over 2,600 fish for the month. The largest percentage of the fish were coho parr and smolt (62%) and spring Chinook smolt (32%). The FSC ran continuously throughout the month of December, except when it was turned off between December 9 and December 13 due to high wind conditions.

In Lieu Fund – Status

Michelle Day (NMFS) informed the ACC attendees that NMFS' is moving forward with the Tribes and may begin government to government discussions as early as this month. Day further approved PacifiCorp to proceed with creating a draft FERC extension request for six (6) months for NMFS' review and approval.

Acclimation Program

PacifiCorp received approval from the FERC to decommission all three (3) ponds. PacifiCorp will proceed with the appropriate permitting needed.

Other

Tom Wadsworth (WDFW) informed the ACC representatives that Bryce Glaser has been appointed as the Region 5 Fish Program Manager, however, Wadsworth will continue to be the ACC representative on behalf of WDFW.

Agenda items for February 8, 2018

- January 11, 2018 Meeting Notes
- Floating Surface Collector Efficiency, Net Transition Structure (NTS)
- Study/Work Product Update

Adjourn 11:40am

Next Scheduled Meeting:

February 8, 2018
Conference Call
9:00 a.m. - 12:00 p.m.

Meeting Handouts & Attachments:

- Meeting Notes from 12/14/17
- Agenda from 1/11/18
- [Attachment A](#) - Lewis River Fish Passage Report (December 2017)

Lewis River Fish Passage Report

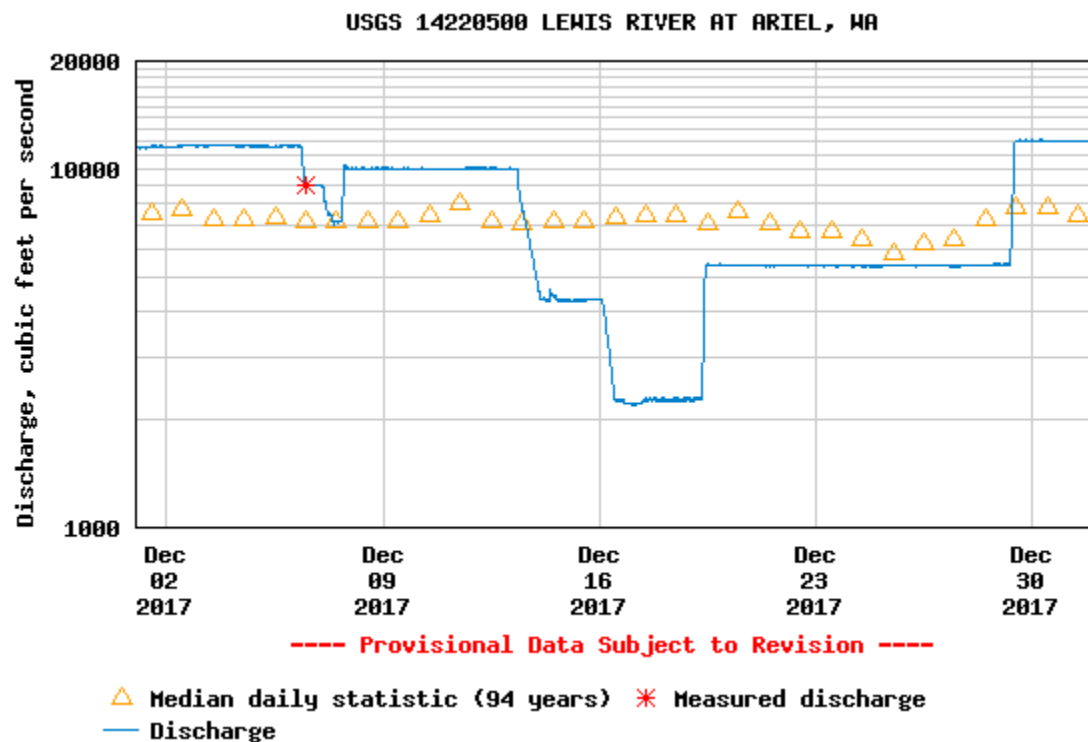
December 2017

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Upstream Transport

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Floating Surface Collector (FSC)

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[illegible]

²Total counts do not include recaptured salmon.

Fish Facility Report
Swift Floating Surface Collector
December 2017

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	2	117	85		2	212		1	8			17				444
02		182	36			49			14			5				286
03		57	42			32			6			10				147
04		21	38			18			10			18			2	107
05		139	36			19						14			1	209
06		14	63			33			9			8				127
07		269	61		1	35			2			7			4	379
08	6	49				1			2			1				59
09																
10																
11																
12																
13																
14	67	524	109			156			4			14		1	6	881
15	7	237	37		2	274		1				1				559
16	12	150	67		1	113						11				354
17	15	186	24		1	151						11			2	390
18	20	62	32		1	155	1	2	3			5				281
19	11	40	11			137			5			4				208
20		83	21		4	44			9			9				170
21		46	46		1	6			9			9				117
22	1	34	13		2	173			10			10				243
23	6	22	15			79			4			1			2	129
24		32	6		1	23			5			6			1	74
25		15	8			8			1							32
26		27	7		3	13						2				52
27		32	9			16						2				59
28		5				4			1			3				13
29	1	12			2	12			1			1			2	31
30	6	60	8		1	17						2	1			95
31		97	17			21			5			19			1	160

Monthly	154	2512	791	0	22	1801	1	4	108	0	0	190	1	1	21	5606
Total	3597	9576	14924	0	278	5515	19	73	1723	9	14	707	41	9	2900	39385

