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

Date & Time: **Thursday, August 13, 2015**
9:00 a.m. – 4:00 p.m.

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

Contacts: **Frank Shrier: (503) 320-7423**

Time	Discussion Item
9:00 a.m.	Welcome ➢ Review Agenda and 7/9/15 Meeting Notes ➢ Comment & accept Agenda and 7/9/15 Meeting Notes
9:15 a.m.	Dr. Al Chokhachy: Development of New Information to Inform Fish Passage Decisions at the Yale and Merwin Hydro Projects on the Lewis River
10:30 a.m.	**Break**
10:45 a.m.	Smolt releases at LRH; first pass water and release options – Kinne/Lesko
11:15 a.m.	Fish Release Procedure and Evaluation at Lewis River Hatchery
11:45 a.m.	Discuss reducing coho supplementation target (7,500) and use of early and late coho for adult supplementation to be consistent with the Salmon Recovery Plan upstream of Swift Dam.
12:00 p.m.	Study/Work Product Updates o Production Numbers for 2016 o Woodland Release Ponds - Status o Hatchery Upgrades – Status o H&S Plan Implementation - Status o Acclimation Ponds - Status o Merwin Upstream Passage – Status o Swift Floating Surface Collector – Status
12:15 p.m.	➢ 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#
12:30 p.m.	**Adjourn ACC Meeting**
1:00 p.m.	Monitoring and Evaluation (M&E) Subgroup o 90-day review of redline draft
4:00 p.m.	**Adjourn M&E Subgroup Meeting**

Join by Phone

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

Conference ID: 5687805

FINAL Meeting Notes
Lewis River License Implementation
Aquatic Coordination Committee (ACC) Meeting
August 13, 2015
Merwin Hydro Control Center
Ariel, WA

ACC Participants Present (21)
Chris Karchesky, PacifiCorp
Frank Shrier, PacifiCorp
Kim McCune, PacifiCorp
Erik Lesko, PacifiCorp
Todd Olson, PacifiCorp
Jeremiah Doyle, PacifiCorp
Mark Ferraiolo, PacifiCorp
Adam Haspiel, USDA Forest Service
Baker Holden, USDA Forest Service
Michelle Day, NMFS
Eric Kinne, WDFW
Peggy Miller, WDFW
Aaron Roberts, WDFW
Jim Byrne, WDFW
Diana MacDonald, Cowlitz PUD
Pat Frazier, LCFRB
Jim Malinowski, Fish First

Guests
Allen Thomas, Columbian
Kevin Malone, DJ Warren
Chris Clark, University of Washington
Dr. Robert Al-Chokhachy, USGS

Calendar:

September 10, 2015	ACC Meeting	Merwin Hydro
October 8, 2015	ACC Meeting	Merwin Hydro

Assignments from July 9, 2015 meeting	Status
McCune: Email the Capturing Habitat Restoration Actions in Ecosystem Diagnostics & Treatment (EDT) PowerPoint presentation to the ACC.	**Complete – 7/10/15**
McCune: Email the final document titled, *Operational Guidelines in Consideration of a 5-Day summer Work Schedule a the Merwin Fish Collection Facility* to the ACC.	**Complete – 7/17/15**
McCune: Distribute a copy of the updated Lewis River Synthesis Matrix CD to the ACC members upon completion.	**Pending**
ACC: Schedule an initial meeting in the month of October 2015 for the review of the Aquatic Fund Strategic Plan and Administrative Procedures 2016/2017 funding cycle.	**Pending**

McCune/Shrier: Submit a one year extension request to the FERC for the M&E Revised Plan.	**Complete – 8/19/15**
McCune: Provide an additional 7-day review and comment period to those ACC members not in attendance specific to the Aquatic Fund moratorium decision.	**Complete – 7/17/15**

Assignments from February 13, 2014 meeting (revised 7/9/15)	**Status**
Kinne: Work on securing the 2012, 2013 and 2014 lower river coho abundance survey data for tributaries. Provide this information to Erik Lesko (PacifiCorp).	**As of 7/9/15, this assignment is still pending.**

Opening, Review of Agenda and Meeting Notes
Frank Shrier (PacifiCorp) called the meeting to order at 9:10 a.m. and reviewed the agenda and assignments.

The July 9, 2015 meeting notes were reviewed and approved with housekeeping/clarification changes at 9:30 am.

Kim McCune (PacifiCorp) will finalize the July 9, 2015 meeting notes for posting to the Lewis River website.

Public Comment
None

Smolt Releases at Lewis River Hatchery; first pass water and release options
Eric Kinne (WDFW) informed the ACC that there is no update. The ACC requested adding this topic to the monthly agenda under Work Product Updates.

Fish Release Procedure and Evaluation at Lewis River Hatchery
Aaron Roberts (WDFW) informed the ACC that their fish health specialists decided to release 500,000 during the first week of August (50,000 acclimation fish are still at Speelyai and are on scheduled to be released in the upper basin in early October). The fish were released at a healthy stage, they looked great. Divers working on the lower intake said they saw the cloud of fish pass by.

Water temperature and weather will dictate the October release schedule.

Discuss reducing coho supplementation target (7,500) and use of early and late coho for adult supplementation to be consistent with the Salmon Recovery Plan upstream of Swift Dam
Erik Lesko (PacifiCorp) provided a cursory review of a memorandum (**Attachment A**) that was emailed to the ACC on July 29, 2015 for their review and consideration.

The memorandum outlines the reduction in the number of coho supplemented from 9,000 to 7,500 total adults upstream of Swift Dam, the addition of late (Type-N) coho as a supplementation species, and the proposed collection schedule of coho for supplementation from September 1 through December 31, 2015.

The ACC expressed concern about superimposition of bull trout spawning which will be a consideration of the Subgroup moving forward.

At 10:05am the ACC agreed with the proposed modifications to adult coho supplementation for the fall of 2015, as proposed by PacifiCorp in its July 29, 2015 memorandum.

Other
Shrier informed the ACC attendees that the current low water levels has carved a nice channel for coho spawning; if coho choose to spawn there, and the reservoir levels come up in the fall it will inundate the redds and the eggs will likely die. Shrier would like feedback regarding if this is a take issue to be concerned about. Shrier asked if the ACC has any thought regarding this matter as PacifiCorp would like be aware of any concerns over the situation before coho transport begins.

Consideration should be given for not releasing at Eagle Cliff and putting the fish up higher into the basin. PacifiCorp needs trucks and can work with the WDFW to address the logistics of transporting this number of fish. Perhaps shift the hauling later this year so not as many fish in the early part of the run.

General discussion took place about carcass/nutrient distribution, its value to the system and ESA listed species.

<Break 10:10am>
<Reconvene 10:20am>

Merwin-Yale EDT Analysis – Kevin Malone (DJ Warren)
Malone provided a review of the Merwin-Yale *Ecosystem Diagnostics & Treatment (EDT)* (see **Attachment B** for greater detail) for ACC review.

Malone expressed that the purpose of the analysis is to estimate adult salmon production potential for Merwin-Yale for:

- Spring Chinook
- Coho
- Steelhead

The methods include the following:

- Updating existing ecosystem diagnosis and Treatment Habitat Model
- Subbasin Planning
- USGS Habitat Surveys; 2014 -2015
- Assessment of Potential Anadromous Fish Habitat Upstream of Merwin Dam-2004 and,
- Converting to EDT3

Malone provided a cursory review of data used to determine spawning reaches, guidance criteria for setting spawning reaches for species, coho and steelhead spawning reaches.

Malone also reviewed other modeling parameters such as adult and juvenile dam passage survival rate, juvenile migration survival rate through the reservoirs and adult production by species and by reservoir.

Dr. Al-Chokhachy: Development of New Information to Inform Fish Passage Decisions at the Yale and Merwin Hydro Projects on the Lewis River
This PowerPoint presentation can be viewed on PacifiCorp's Lewis River website at the following link:
http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/Al-Chokhachy_Lewis_ACC_2015.pdf

Dr. Al-Chokhachy informed the ACC that today he would review the following project tasks, as more detailed in the PowerPoint presentation:

Task 2. Habitat assessment of tributaries to Yale Lake and Lake Merwin
Objectives and methods, quantify flow and thermal regimes in tributaries, assess tributary habitat and riparian conditions and channel unit attributes.

Task 4. Assess juvenile production potential and emigration success
Objectives and methods, determine emigration and factors influencing emigration timing into Swift reservoir, understand factors influencing tributary growth of wild coho, quantify travel times and survival to collection facility, evaluation travel behavior and near potential collection facilities, hydroacoustic surveys and results.

Task 5. Evaluation of Lake Merwin predator impacts
Objectives and methods, evaluation of Merwin reservoir predator impacts, estimate of abundance and size structure of predators, biological and diet data, thermal environment, predation potential and results.

<Break 12:10pm>
<Reconvene 12:20pm>

Study/Work Product Updates

Woodland Release Ponds
The Woodland Release Ponds will not be completed by December 26, 2015 due to Department of Natural Resources (DNR) land lease permitting. Per ACC instructions PacifiCorp is submitted an extension request letter to the FERC for an extension to 12/3/12016 or possibly 12/31/2017.

Hatchery Upgrades:
Two projects remain as part of Schedule 8.7 of the Settlement Agreement.

Speelyai Hatchery Intake Modifications – working on coffer dams; on schedule for 2015 completion.

Lewis River Downstream Intake - Project is still on schedule for completion by October 2015.

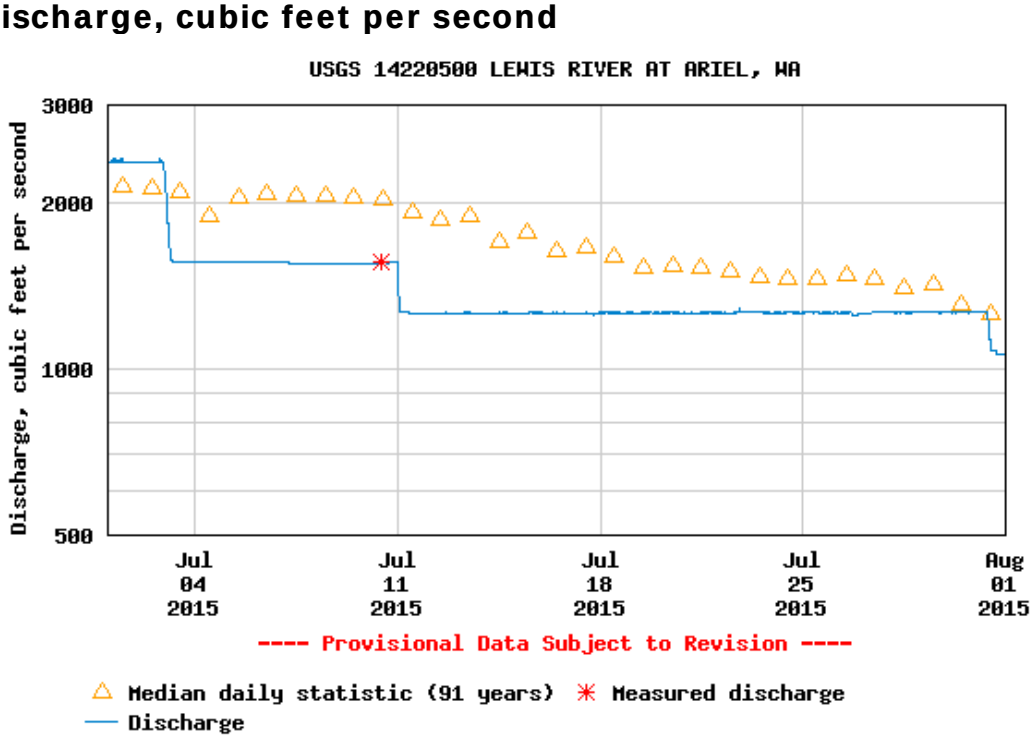
Acclimation Pond/Crab Creek
Under construction; in-water work complete; finishing grading and will be ready for fall 2015 if there is enough water.

Imprinting of Hatchery-Reared Salmon - freezing water and allowing it to melt over the incubation trays.
Shrier informed the ACC that PacifiCorp is expecting a proposal for this long-term study and will provide a copy to the ACC for its review.

Merwin Fish Collection Facility and General Operations (Attachment C)
During the month of July, a total 2,254 fish were captured at the Merwin Fish Collection Facility; the majority (95%) of these fish were hatchery summer steelhead (n=2,147) followed by hatchery spring Chinook (n=76). All summer hatchery steelhead handled for the first time at the Merwin Fish Collection Facility were either held for brood stock collection at the Merwin Hatchery or marked with an upper caudal clip and transported downstream by Washington Department of Fish and Wildlife as part of the angler recycling program. All recaptured summer steelhead were retained by Washington Department of Fish and Wildlife. All spring Chinook captured were transported to Speelyai Fish Hatchery for brood stock. Twenty wild sockeye salmon, seven wild summer steelhead, and one wild winter steelhead were captured and returned downstream. The Merwin Fish Collection Facility ran continuously throughout the month of July. Fish sorting operations were moved to a five day per week cycle during the month of July as approved by the Lewis River Aquatic Coordination Committee.

The Auxiliary Water Supply (AWS) system, which can boost attraction flow up to 400 cfs, was operated daily in addition to the Ladder Water Supply (LWS) throughout the month of July.

River flow below Merwin Dam ranged between approximately 2,370 cfs to 1,060 cfs during July.



Upstream Transport (Attachment C)
To date, 1,218 (741 m: 477 f) BWT winter steelhead have been transported and released upstream of Swift Reservoir (27 of which were captured via tangle net in the lower river as part

of the Hatchery and Supplementation Plan Monitoring). In addition, eight coastal cutthroat trout exceeding thirteen inches have been transported upstream of Swift Reservoir this year. No fish were transported upstream during the month of July.

Swift Floating Surface Collector (Attachment C)

A total of 43 fish were collected at the Swift Floating Surface Collector (FSC) during the month of July. The majority (98 percent) of these fish were juvenile coho (n=42), followed by one juvenile spring Chinook. Daily operation of the Swift Floating Surface Collector (FSC) was suspended on July 7, 2015 in accordance to summer operations protocols as approved by the Lewis River Aquatic Coordination Committee. The FSC is currently deballested for scheduled maintenance and annual inspections which will be performed over the next several months.

< Meeting adjourned at 12:35 p.m. >

Agenda items for September 10, 2015

- August 13, 2015 Meeting Notes
- Extra Habitat at Swift Discussion
- Shoreline Permit Application – Hyman structures
- Unexpected channel; coho spawning area; fish hauling – DECISION NEEDED
- Upstream Release strategy for Supplementation Coho - 2015 - Update & Discussion
- Study/Work Product Updates

Public Comment

None

Next Scheduled Meetings:

September 10, 2015	October 8, 2015
Merwin Hydro Control Center	Merwin Hydro Control Center
Ariel, WA	Ariel, WA
9:00 a.m. –3:00 p.m.	9:00 a.m. – 3:00 p.m.

Meeting Handouts & Attachments:

- Notes from 7/9/15
- Agenda from 8/13/15
- **Attachment A** – Proposed Modifications to Adult Coho Supplementation for the fall of 2015 Memo, dated July 29, 2015
- **Attachment B -** Merwin-Yale EDT Analysis PowerPoint Presentation – Kevin Malone
- **Attachment C -** Lewis River Fish Passage Report (July 2015)

To: Aquatic Coordination Committee (ACC) Members

From: Erik Lesko, PacifiCorp

Date: July 29, 2015

Re: Proposed Modifications to Adult Coho Supplementation for the fall of 2015

Dear ACC Members:

The Hatchery and Supplementation (H&S) subgroup met on July 21, 2015 to discuss the protocol for adult coho supplementation upstream of Swift Dam this fall. Some important modifications were proposed at this meeting and we have added time to the August 13, 2015 ACC meeting agenda to discuss these modifications. ACC review of these modifications is needed because they differ from language in either the H&S plan or *Settlement Agreement 8.4.3 – Stock Selection* (e.g., the use of only early coho). To help with our review and discussion, I have provided some background and discussion for each of the modifications as they relate to coho supplementation this fall upstream of Swift Dam. PacifiCorp would like to document ACC support of these three important changes so please come to the ACC meeting with your agency's input and a go or no-go vote on each one of these items.

1. Reduction in the number of coho supplemented from 9,000 to 7,500 total adults upstream of Swift Dam

Current target numbers for adult supplementation of coho (9,000) is based on initial EDT modeling that relied largely on opinion from local biologists and U.S. Forest Service staff. Recent distribution studies suggest that (1) most coho are not distributing successfully and (2) EDT estimates may have overestimated the carrying capacity. In addition, there is concern that large numbers of coho may lower spawner success of bull trout (e.g., redd superimposition). Lastly, while the low flow situation can change quickly in the fall, the expectation is that flows will be substantially below normal. Lower flows reduce available habitat especially for side channel and tributary spawners such as coho. For these reasons, the target value was reduced to 7,500 (about 20 percent) until revised EDT estimates are available.

Decision: Does your agency support reducing the EDT target to 7,500 coho until the new EDT results are made available?

2. The addition of late (Type-n) coho as a supplementation species

The H&S Plan and Lewis River Settlement Agreement identify only early coho as the reintroduction species (as opposed to late coho). However, the H&S subgroup agreed that early and late coho should be combined as one group for supplementation purposes. This change aligns the coho supplementation program with regional recovery planning efforts that do not differentiate between early and late coho (e.g., Lower Columbia River ESA Recovery Plan). PacifiCorp believes it makes more sense to consider the two runs of coho as one stock to be consistent with the Recovery Plan than to continue on a path that differs from the Plan. By incorporating late coho into the supplementation program, the supplementation period expands

from two months (September – October) to four months (September – December). This expansion will also expand the spawn timing of coho in the upper basin. Natural factors such as water temperature, water flow and turbidity will influence spawning success, and therefore (over time), naturally influence future run timing for natural origin coho. Other benefits include (1) a more flexible transportation schedule that can adapt better to actual run sizes and (2) more potential for coho to distribute into the upper basin due to the extended transportation window and variable flow conditions in the fall.

Decision: Does your agency support considering early and late coho as one stock for supplementation in the upper Lewis River watershed?

3. Proposed transport schedule for coho supplementation in 2015

Based on our H&S discussion, a draft transport schedule for coho was created that includes both early and late coho with a supplementation goal of 7,500. The schedule is based simply on actual trap counts of only natural origin coho over a period of years (Figure 1) and applying those proportions over the course of the run (Table 2).

Ideally, the collection schedule would include only natural origin recruit (NOR) coho, however, there are not enough NOR coho to achieve the target. Therefore, all available NOR coho would be transported upstream and hatchery origin recruit (HOR) coho would make up the remaining number for each two week period.

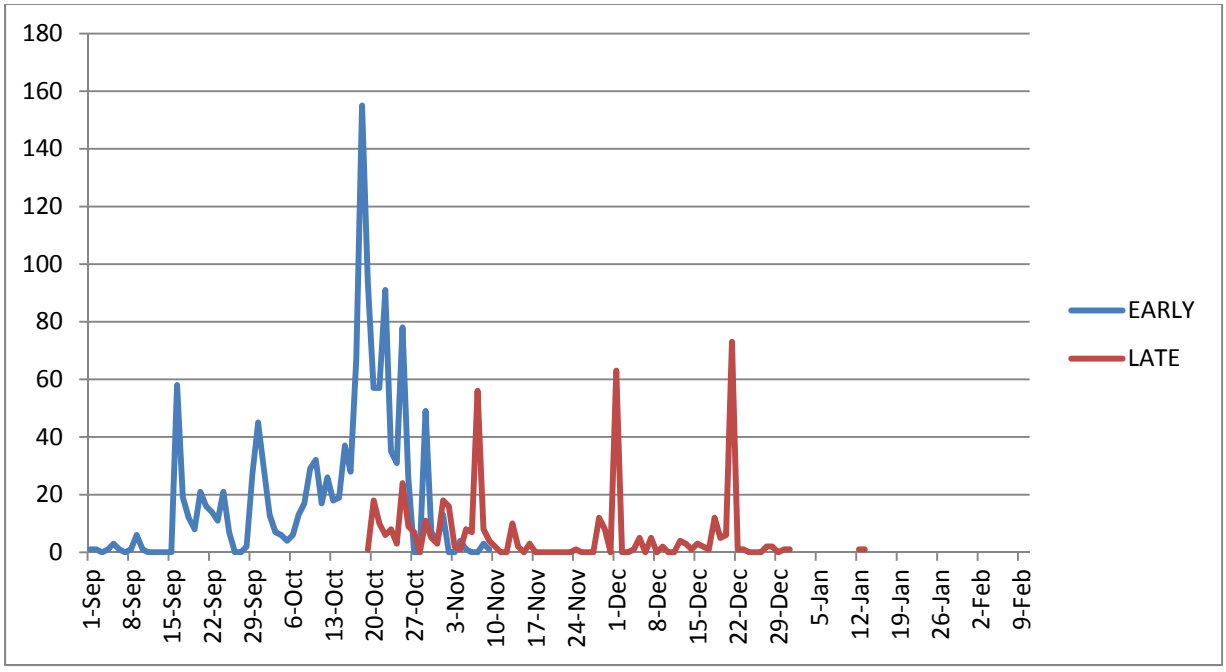


Figure 1. Daily counts for both early and late NOR coho at Merwin Dam (2010 – 2014) and the Lewis River ladder (2004 – 2010)

Table 1. Proposed collection rate of coho indicating relative and cumulative proportion by two-week period over the collection and transport window

Period	Number of Coho*	Relative Proportion	Cumulative Proportion
Sep 1-15	300	*0.04*	
Sep 16-30	1,200	*0.16*	*0.20*
Oct 1-15	1,300	*0.17*	*0.37*
Oct 16-31	2,000	*0.27*	*0.64*
Nov 1-15	600	*0.08*	*0.72*
Nov 16-30	800	*0.11*	*0.83*
Dec 1-15	700	*0.09*	*0.92*
Dec 16-31	600	*0.08*	*1.00*

*** Values based on supplementation goal of 7,500 adults**

Decision: Does your agency support the suggested collection rate of coho for the upper Lewis River supplementation program?

Merwin-Yale EDT Analysis

Merwin-Yale EDT Analysis

Purpose

- Estimate Adult Salmon Production Potential for Merwin-Yale
  - Spring Chinook
  - Coho
  - Steelhead

Method

- Update Existing Ecosystem Diagnosis and Treatment Habitat Model
  - Subbasin Planning
  - USGS Habitat Surveys – 2014 -2015
  - Aqu 4 – Assessment of Potential Anadromous Fish Habitat Upstream of Merwin Dam- 2004
  - Convert to EDT3

Data Used to Determine Spawning Reaches

Reach Name	Stream Order	Length of Accessible Stream Channel (ft)	Average Gradient	Maximum or Bankfull Width (ft)	Minimum Width (ft)	Estimated Streamflow (cfs)
			Merwin			
Marble Creek	2nd	40	22.5%	15.2	8.2	1.0
Cape Horn Creek	2nd	1,713	6.5%	44.0	13.0	5.0
Jim Creek	2nd	1,648	4.5%	40.4	11.7	4.0
Indian George Creek	2nd	4,921	5.8%	33.3	9.7	2.0
Buncombe Hollow Creek	2nd	3,709	3.3%	18.4	6.7	1.5
M4	1st	3,900	10.1%	11.5		0.5
Rock Creek	3rd	320	6.1%	47.5	37.0	20.0
Brooks Creek	2nd	10,341	4.0%	25.3	14.8	8.0
B1	2nd	2,650	7.0%	23.4	13.8	5.0
M14	2nd	6,507	2.5%	35.7	12.0	0.2
Canyon Creek	3rd	0	1.7%			
Total Merwin (ft)		35,749				
Total Merwin (mile)			6.77			
			Yale			
Siouxon Creek	4th	20,021	1.4%	93.2	66.0	150.0
North Siouxon Creek	3rd	2,204	5.2%	81.0	33.6	22.0
Speelyai Creek	3rd	24,144	5.9%	56.6	21.0	4.0
West Fork Speelyai	2nd	4,332	10.4%	36.8	12.9	
Y8	2nd	1,260	15.6%	23.4	5.7	0.5
Dog Creek	2nd	1,033	4.9%	52.0	3.6	0-1.0
Cougar Creek	3rd	12,804	1.6%	52.8	25.7	75
Panamaker Creek	2nd	1,283	5.8%	35.0	5.0	0.5
North Fork Lewis River (Lewis 12)	Bypass Reach	21,339	0.7%	68.4	7.9	
Ole Creek	3rd	5,467	1.9%	44.5	6.0	0-1.0
Rain Creek	2nd	4,685	3.6%	29.1	0.0	0
Total Yale (ft)		98,572				
Total Yale (mile)			18.67			

Guidance Criteria For Setting Spawning Reaches by Species

Spring Chinook
- Gradient < 7 percent
- Width > 12 ft
- 3rd Order Streams
- >10 cfs

Coho
- Gradient < 7 percent
- High Valley Width to Stream Width Ratio
- <20 cfs

Steelhead
- Gradient < 15 percent (Best 4-7 Percent)
- Width > 12 ft, or wetted width > 6.6 ft (WDFW)

Speelyai Reach 1- Upstream of Hatchery
- Reserved for Hatchery Operations

Spring Chinook Spawning Reaches

No Spring Production in Merwin – Speelyai 1 Reserved For Hatchery

Reach Name	Stream Order	Length of Accessible Stream Channel (ft)	Average Gradient	Maximum or Bankfull Width (ft)	Minimum Width (ft)	Estimated Streamflow (cfs)
Merwin						
Yale						
Siouxon Creek	4th	20,021	1.4%	93.2	66.0	150.0
North Siouxon Creek	3rd	2,204	5.2%	81.0	33.6	22.0
Cougar Creek	3rd	12,804	1.6%	52.8	25.7	75
North Fork Lewis River (Lewis 12)	Bypass Reach	21,339	0.7%	68.4	7.9	
Total Yale (ft)		56,368				
Total Yale (mile)		10.68				

Coho and Steelhead Spawning Reaches

Reach Name	Stream Order	Length of Accessible Stream Channel (ft)	Average Gradient	Maximum or Bankfull Width (ft)	Minimum Width (ft)	Estimated Streamflow (cfs)
Merwin						
Cape Horn Creek	2nd	1,713	6.5%	44.0	13.0	5.0
Jim Creek	2nd	1.648	4.5%	40.4	11.7	4.0
Indian George Creek	2nd	4,921	5.8%	33.3	9.7	2.0
Buncombe Hollow Creek	2nd	3,709	3.3%	18.4	6.7	1.5
Rock Creek	3rd	320	6.1%	47.5	37.0	20.0
Brooks Creek	2nd	10,341	4.0%	25.3	14.8	8.0
B1	2nd	2,650	7.0%	23.4	13.8	5.0
M14	2nd	6,507	2.5%	35.7	12.0	0.2
Total Merwin (ft)		31,809				
Total Merwin (mile)		6.02				
Yale						
Siouxon Creek	4th	20,021	1.4%	93.2	66.0	150.0
North Siouxon Creek	3rd	2,204	5.2%	81.0	33.6	22.0
Speelyai Creek	3rd	24,144	5.9%	56.6	21.0	4.0
West Fork Speelyai	2nd	4,332	10.4%	36.8	12.9	
Dog Creek	2nd	1,033	4.9%	52.0	3.6	0-1.0
Cougar Creek	3rd	12,804	1.6%	52.8	25.7	75
Panamaker Creek	2nd	1,283	5.8%	35.0	5.0	0.5
North Fork Lewis River (Lewis 12)	Bypass Reach	21,339	0.7%	68.4	7.9	
Ole Creek	3rd	5,467	1.9%	44.5	6.0	0-1.0
Rain Creek	2nd	4,685	3.6%	29.1	0.0	0
Total Yale (ft)		97,312				
Total Yale (mile)		18.4				

Other Modeling Parameters

Adult and Juvenile Dam Passage Survival Rate

- 98 Percent for Each Life Stage

Juvenile Migration Survival Rate Through Reservoirs
- ~ 90 Percent – Based on Swift Radio-Tag Studies

Yale Fish
- Migrate Through Yale and Merwin
- Speelyai Fish Migrate into Yale

Harvest – Turned Off

Adult Production by Species and Reservoir

- 98 Percent Passage Survival –Dams
- 90 Percent Survival – Reservoirs
- No Harvest

Reservoir	Subpopulation	Diversity	Productivity	Capacity	Abundance
Coho salmon		66.5%	4.68	5,865	4,560
	Lake Merwin	71.3%	4.94	906	722
	Lake Yale	61.8%	4.42	4,959	3,838
Spring Chinook		43.7%	9.27	1,905	1,700
	Lake Yale	43.7%	9.27	1,905	1,700
Winter Steelhead		55.2%	9.68	611	552
	Lake Merwin	59.3%	8.49	125	111
	Lake Yale	51.2%	10.87	486	441

Sustainable Population – 500?

98 Percent

Reservoir	Subpopulation	Diversity	Productivity	Capacity	Abundance	Juv. Productivity	Juv. Capacity	Juv. Abundance
Coho salmon		**73.9%**	**4.55**	**5,865**	**4,433**	**104.1**	**146,918**	**108,397**
	Brooks Creek	55.5%	4.74	234	185	109.6	6,548	4,950
	M14	98.1%	4.71	177	139	106.3	4,371	3,376
	Buncombe Hollow Creek	68.9%	4.76	84	66	118.1	2,223	1,732
	Indian George Creek	64.7%	4.33	180	139	95.8	4,703	3,474
	Jim Creek	77.3%	5.92	141	118	132.1	3,363	2,765
	Cape Horn Creek	90.0%	5.23	88	71	114.4	2,145	1,699
	Siouxon Creek	51.9%	4.36	1,465	1,129	99.7	35,160	26,791
	Speelyai Creek	39.7%	2.64	808	503	64.0	21,391	12,847
	Dog Creek	96.8%	2.98	489	325	69.4	12,380	7,990
	Cougar Creek	64.6%	5.18	475	383	120.8	13,169	10,252
	Ole Creek	79.6%	4.57	463	362	105.8	12,765	9,571
	Lewis 12	100.0%	5.12	1,259	1,013	113.1	28,698	22,951
Spring Chinook		**44.2%**	**9.38**	**1,905**	**1,696**	**318.1**	**96,567**	**81,700**
	Siouxon Creek	38.5%	8.99	857	762	297.5	40,520	34,373
	Cougar Creek	64.7%	10.36	325	293	332.8	16,158	13,863
	Lewis 12	29.3%	8.78	724	641	323.9	39,889	33,464
Winter Steelhead		**55.8%**	**8.71**	**611**	**543**	**149.1**	**14,138**	**12,052**
	Brooks Creek	66.0%	7.78	42	37	137.4	1,020	849
	M14	48.5%	10.36	19	17	169.3	407	356
	Buncombe Hollow Creek	47.5%	4.35	5	4	93.1	120	90
	Indian George Creek	59.5%	8.90	27	24	148.5	658	556
	Jim Creek	69.9%	8.25	20	18	136.9	459	385
	Cape Horn Creek	76.6%	8.28	12	11	140.7	279	235
	Siouxon Creek	60.6%	14.19	153	142	231.0	3,370	3,056
	Speelyai Creek	39.1%	6.77	127	108	113.0	2,840	2,304
	Dog Creek	35.1%	5.86	27	23	108.1	720	556
	Cougar Creek	60.9%	13.87	71	65	231.9	1,559	1,414
	Ole Creek	45.7%	7.61	38	33	134.8	935	773
	Lewis 12	60.5%	8.25	70	62	144.6	1,772	1,478

75 Percent Survival – Dam
~90 Percent Survival Reservoir – Swift Study
No Harvest

	Adult				Juvenile		
	Diversity	Productivity	Capacity	Abundance	Productivity	Capacity	Abundance
Coho	**47.3%**	**2.30**	**2,386**	**1,116**	**78.3**	**96,034**	**42,549**
Lake Merwin	62.6%	2.90	539	354	88.1	17,516	11,215
Lake Yale	31.9%	1.70	1,847	762	68.5	78,518	31,334
Spring Chinook	**37.4%**	**3.20**	**841**	**574**	**185.5**	**73,604**	**43,530**
Lake Yale	37.4%	3.20	841	574	185.5	73,604	43,530
Steelhead	**27.5%**	**5.00**	**241**	**192**	**126.2**	**8,757**	**6,462**
Lake Merwin	36.5%	5.30	75	61	117.9	2,248	1,710
Lake Yale	18.4%	4.70	166	131	134.4	6,509	4,752

Sustainable Population- 500?

		Adult				Juvenile		
Reservoir	Subpopulation	Diversity	Productivity	Capacity	Abundance	Juv. Productivity	Juv. Capacity	Juv. Abundance
Coho salmon		**52.4%**	**2.25**	**2,384**	**1,041**	**76.8**	**96,033**	**39,520**
	Brooks Creek	52.0%	2.80	144	93	86.9	4,950	3,072
	M14	69.7%	2.80	105	67	84.2	3,292	2,080
	Buncombe Hollow	60.0%	2.80	50	32	92.9	1,717	1,091
	Indian George Cre	62.7%	2.60	108	66	76.1	3,483	2,057
	Jim Creek	76.5%	3.40	81	57	101.8	2,484	1,741
	Cape Horn Creek	88.3%	3.00	51	34	87.5	1,591	1,040
	Siouxon Creek	36.6%	1.60	538	207	65.9	22,419	8,475
	Speelyai Creek	6.6%	1.40	297	80	57.1	13,303	3,387
	Dog Creek	20.2%	1.40	187	51	56.9	8,081	2,122
	Cougar Creek	48.4%	1.80	184	84	75.7	8,203	3,571
	Ole Creek	61.0%	1.60	184	73	67.4	8,238	3,069
	Lewis 12	46.5%	1.80	455	197	69.2	18,272	7,815
Spring Chinook		**37.4%**	**3.20**	**841**	**569**	**188.2**	**73,604**	**43,248**
	Siouxon Creek	35.2%	3.00	359	239	172.1	29,762	17,258
	Cougar Creek	51.5%	3.60	139	100	199.8	11,315	7,236
	Lewis 12	25.4%	3.00	343	230	192.7	32,527	18,754
Winter Steelhead		**26.8%**	**4.48**	**241**	**182**	**112.7**	**8,756**	**6,075**
	Brooks Creek	39.8%	4.90	25	20	112.7	781	581
	M14	31.2%	6.70	11	9	141.8	311	252
	Buncombe Hollow	33.9%	2.80	3	2	77.2	92	56
	Indian George Cre	34.5%	5.50	16	13	119.3	501	381
	Jim Creek	40.4%	5.00	12	9	109.0	350	261
	Cape Horn Creek	34.4%	5.00	7	6	112.4	213	160
	Siouxon Creek	24.2%	5.60	52	43	158.5	1,975	1,532
	Speelyai Creek	10.5%	2.80	42	27	76.6	1,591	893
	Dog Creek	11.7%	2.90	10	6	83.6	434	239
	Cougar Creek	24.7%	5.60	24	20	159.6	906	705
	Ole Creek	15.2%	3.30	14	9	98.0	555	347
	Lewis 12	20.7%	3.60	25	18	104.1	1,047	668

Lewis River Fish Passage Report

July 2015

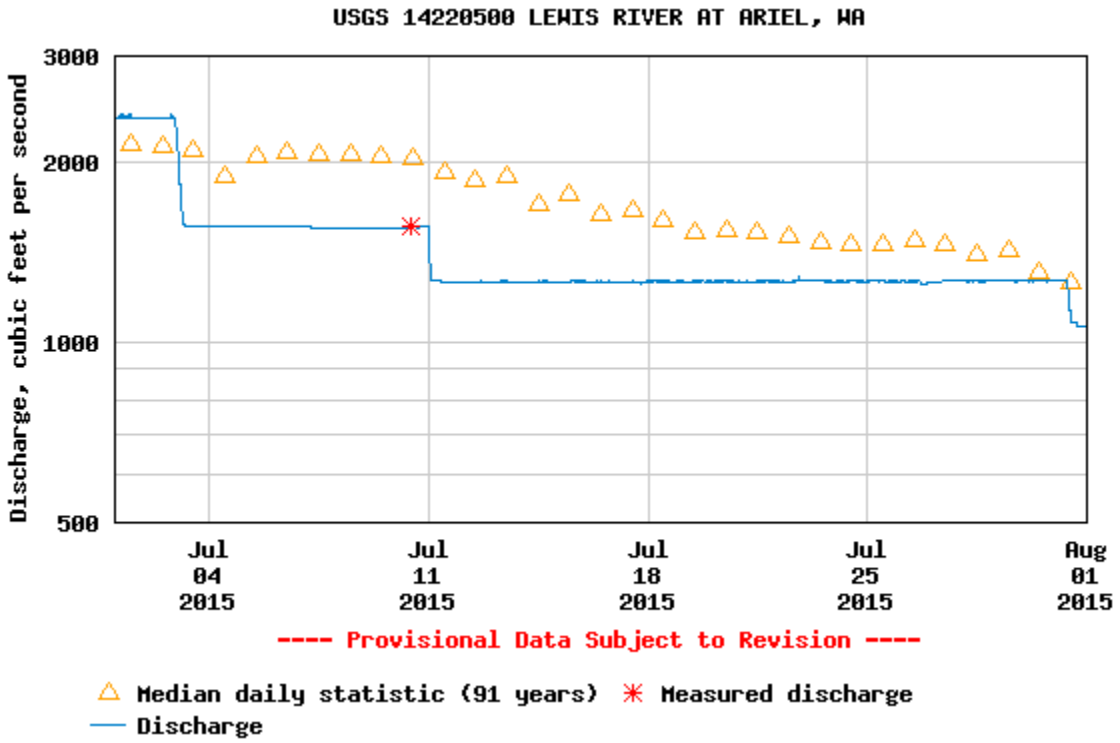
Merwin Fish Collection Facility and General Operations

During the month of July, a total 2,254 fish were captured at the Merwin Fish Collection Facility; the majority (95%) of these fish were hatchery summer steelhead (n=2,147) followed by hatchery spring Chinook (n=76). All summer hatchery steelhead handled for the first time at the Merwin Fish Collection Facility were either held for brood stock collection at the Merwin Hatchery or marked with an upper caudal clip and transported downstream by Washington Department of Fish and Wildlife as part of the angler recycling program. All recaptured summer steelhead were retained by Washington Department of Fish and Wildlife. All spring Chinook captured were transported to Speelyai Fish Hatchery for brood stock. Twenty wild sockeye salmon, seven wild summer steelhead, and one wild winter steelhead were captured and returned downstream. The Merwin Fish Collection Facility ran continuously throughout the month of July. Fish sorting operations were moved to a five day per week cycle during the month of July as approved by the Lewis River Aquatic Coordination Committee.

The Auxiliary Water Supply (AWS) system, which can boost attraction flow up to 400 cfs, was operated daily in addition to the Ladder Water Supply (LWS) throughout the month of July.

River flow below Merwin Dam ranged between approximately 2,370 cfs to 1,060 cfs during July.

Discharge, cubic feet per second



Upstream Transport

To date, 1,218 (741 m: 477 f) BWT winter steelhead have been transported and released upstream of Swift Reservoir (27 of which were captured via tangle net in the lower river as part of the Hatchery and Supplementation Plan Monitoring). In addition, eight coastal cutthroat trout exceeding thirteen inches have been transported upstream of Swift Reservoir this year. No fish were transported upstream during the month of July.

Swift Floating Surface Collector

A total of 43 fish were collected at the Swift Floating Surface Collector (FSC) during the month of July. The majority (98 percent) of these fish were juvenile coho (n=42), followed by one juvenile spring Chinook. Daily operation of the Swift Floating Surface Collector (FSC) was suspended on July 7, 2015 in accordance to summer operations protocols as approved by the Lewis River Aquatic Coordination Committee. The FSC is currently deballested for scheduled maintenance and annual inspections which will be performed over the next several months.

Fish Facility Report
Merwin Adult Trap
July 2015

Reporting Date	Spring Chinook [1]											
	AD-Clip			RT Recap		Wild			TOTAL			
	M	F	JK	M	F	M	F	JK	M	F	JK	
01-Jul	1	1							1	1	0	
02-Jul									0	0	0	
03-Jul	1	1	1						1	1	1	
04-Jul	1	2							1	2	0	
05-Jul	5	3							5	3	0	
06-Jul	1	1							1	1	0	
07-Jul	1	2		1		1			3	2	0	
08-Jul									0	0	0	
09-Jul		1							0	1	0	
10-Jul			1						0	0	1	
11-Jul												
12-Jul												
13-Jul	7	3	3						7	3	3	
14-Jul	1	2				1			2	2	0	
15-Jul	1	2							1	2	0	
16-Jul	2	2							2	2	0	
17-Jul	5	2		1					6	2	0	
18-Jul												
19-Jul												
20-Jul	1	5							1	5	0	
21-Jul		2							0	2	0	
22-Jul	1	1							1	1	0	
23-Jul									0	0	0	
24-Jul		1	1						0	1	1	
25-Jul												
26-Jul												
27-Jul	2	1							2	1	0	
28-Jul	1	2							1	2	0	
29-Jul		2							0	2	0	
30-Jul									0	0	0	
31-Jul	1								1	0	0	
Monthly	32	36	6	2	0	2	0	0	36	36	6	
Annual	336	302	27	6	3	8	10	4	344	312	31	

Reporting Date	Early Coho																
	AD-Clip			RT Recap		CWT			Wild			Wild Recap			TOTAL [3]		
	M	F	JK	M	F	M	F	JK	M	F	JK	M	F	JK	M	F	JK
01-Jul															0	0	0
02-Jul															0	0	0
03-Jul															0	0	0
04-Jul															0	0	0
05-Jul															0	0	0
06-Jul															0	0	0
07-Jul															0	0	0
08-Jul															0	0	0
09-Jul															0	0	0
10-Jul															0	0	0
11-Jul																	
12-Jul																	
13-Jul															0	0	0
14-Jul															0	0	0
15-Jul															0	0	0
16-Jul															0	0	0
17-Jul															0	0	0
18-Jul																	
19-Jul																	
20-Jul															0	0	0
21-Jul															0	0	0
22-Jul															0	0	0
23-Jul															0	0	0
24-Jul															0	0	0
25-Jul																	
26-Jul																	
27-Jul															0	0	0
28-Jul															0	0	0
29-Jul															0	0	0
30-Jul															0	0	0
31-Jul															0	0	0
Monthly	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	0	0	0	0	0

Reporting Date	Late Coho														
	AD-Clip			CWT			Wild			Wild Recap			TOTAL [3]		
	M	F	JK	M	F	JK	M	F	JK	M	F	JK	M	F	JK
01-Jul													0	0	0
02-Jul													0	0	0
03-Jul													0	0	0
04-Jul													0	0	0
05-Jul													0	0	0
06-Jul													0	0	0
07-Jul													0	0	0
08-Jul													0	0	0
09-Jul													0	0	0
10-Jul													0	0	0
11-Jul															
12-Jul															
13-Jul													0	0	0
14-Jul													0	0	0
15-Jul													0	0	0
16-Jul													0	0	0
17-Jul													0	0	0
18-Jul															
19-Jul															
20-Jul													0	0	0
21-Jul													0	0	0
22-Jul													0	0	0
23-Jul													0	0	0
24-Jul													0	0	0
25-Jul															
26-Jul															
27-Jul													0	0	0
28-Jul													0	0	0
29-Jul													0	0	0
30-Jul													0	0	0
31-Jul													0	0	0
Monthly	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Annual	3	2	1	0	0	0	1	1	0	0	0	0	4	3	1

Reporting Date	S. Steelhead						W. Steelhead								Fall Chinook								
	Fresh		Recap		Wild		AD-Clip		BWT		RT Recap		Wild		AD-Clip			Wild			Recap		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	JK	M	F	JK	M	F	JK
01-Jul	11	22	2	14																			
02-Jul	9	15	4	13																			
03-Jul	24	33	5	9																			
04-Jul	17	19	5	13									1										
05-Jul	14	17	6	12																			
06-Jul	11	19	8	11		1																	
07-Jul	14	30	5	12																			
08-Jul	13	30	11	17																			
09-Jul	16	26	6	12																			
10-Jul	13	42	9	19																			
11-Jul																							
12-Jul																							
13-Jul	38	79	25	35	1	1																	
14-Jul	3	12	1	11																			
15-Jul	11	25	3	15																			
16-Jul	16	33	5	11																			
17-Jul	22	19	13	10																			
18-Jul																							
19-Jul																							
20-Jul	21	78	20	45		1																	
21-Jul	22	31	4	11																			
22-Jul	24	45	3	20																			
23-Jul	25	50	11	16																			
24-Jul	17	45	13	29																			
25-Jul																							
26-Jul																							
27-Jul	43	100	15	57																			
28-Jul	29	44	7	24		1																	
29-Jul	14	38	6	15		2																	
30-Jul	48	67	10	24																			
31-Jul	25	47	11	18																			
Monthly	500	966	208	473	1	6	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
Annual	735	1284	287	614	1	7	647	430	743	504	51	38	40	28	0	0	0	0	0	0	0	0	0

Reporting Date	Sockeye [2]		Chum		Cutthroat (>13 inches)	Cutthroat (< 13 inches)	Rainbow (< 20 inches)	Bull Trout (> 13 inches)	Bull Trout (< 13 inches)	Daily Total
	M	F	M	F						
01-Jul	1									52
02-Jul										41
03-Jul										74
04-Jul										58
05-Jul										57
06-Jul										52
07-Jul										66
08-Jul	1	1								73
09-Jul										61
10-Jul										84
11-Jul										
12-Jul										
13-Jul		2								194
14-Jul										31
15-Jul	1	1								59
16-Jul	1									70
17-Jul		1								73
18-Jul										
19-Jul										
20-Jul		1								172
21-Jul	1	1								72
22-Jul	2									96
23-Jul										102
24-Jul	1	3								110
25-Jul										
26-Jul										
27-Jul		1								219
28-Jul		1								109
29-Jul										77
30-Jul	1									150
31-Jul										102
Monthly	9	12	0	0	0	0	0	0	0	2254
Annual	9	12	0	0	8	0	11	0	0	6153

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

[2] Juvenile sockeye are unsexed and recorded as males.

[3] Total counts do not include recaptured salmon.

PACIFICORP ENERGY
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Monday, August 3rd, 2015

Fish Facility Report

Swift Floating Surface Collector

July 2015

	Coho			Chinook			Steelhead				Cutthroat			Bull Trout			Planted	
Day	**fry**	**parr**	**smolt**	**fry**	**parr**	**smolt**	**fry**	**parr**	**smolt**	**kelt**	**fry**	**< 13 in**	**> 13 in**	**fry**	**< 13 in**	**> 13 in**	**Rainbow**	**Total**
01	0	0	31	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**31**
02	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**2**
03	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
04	0	1	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**6**
05	0	0	3	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**4**
06	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
07	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**0**
08																		
09																		
10																		
11																		
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27																		
28																		
29																		
30																		
31																		
Monthly	0	1	41	0	0	1	0	0	0	0	0	0	0	0	0	0	0	**43**
Annual	5824	4240	23178	0	189	4228	0	22	1199	31	1	594	48	0	14	1	1848	**41416**

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Monday, August 3rd, 2015