

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

Date & Time: Thursday, July 12, 2018
9:00 a.m. – 11:15 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 6/14/18 Meeting Notes ➤ Comment & Accept Agenda and 6/14/18 Meeting Notes
9:10 a.m.	Public Comment Opportunity
9:20 a.m.	Hatchery & Supplementation Annual Operating Plan - Presentation
10:00 a.m.	ATE Coho Salmon in 2018
10:30 a.m.	Study/Work Product Updates <ul style="list-style-type: none"> ○ ATE Update ○ Aquatic Fund Process Review – Identify changes needed ○ H&S Subgroup Action Items ○ In Lieu Fund Update ○ Merwin Upstream Passage – Status ○ Swift Floating Surface Collector – Status ○ Acclimation Pond Removal – Status
11:00 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#
11:15 a.m.	Adjourn

**PLEASE BRING YOUR LUNCH IN THE EVENT
THE MEETING EXTENDS BEYOND NOON**

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
July 12, 2018
Merwin Hydro Control Center

ACC Representatives Present (14)

Kim McCune, PacifiCorp
 Chris Karchesky, PacifiCorp
 Erik Lesko, PacifiCorp
 Mark Ferraiolo, PacifiCorp
 Levi Pienovi, PacifiCorp
 Tom Wadsworth, WDFW
 Aaron Roberts, WDFW
 Peggy Miller, WDFW
 Sam Gibbons, WDFW
 Steve West, LCFRB
 Tim Romanski, USFWS
 Eli Asher, Cowlitz Indian Tribe
 Amanda Froberg, Cowlitz PUD
 Joshua Ashline, NMFS

Calendar:

August 9, 2018	ACC Meeting	HCC
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Assignments from July 12, 2018	Status
McCune: On behalf of USFWS distribute a copy of the three University of Washington publications related to northern pikeminnow predation impacts and prey supply and consumption demand of resident fishes.	Complete – 7/13/18
McCune: Email the aquatic fund packet, guidelines, etc. to the ACC for review so they can be prepared with their comments/edits by the August 9, 2018 ACC meeting.	Complete – 7/12/18
Karchesky - A decision is requested from the ACC on how to proceed with winter steelhead Adult Trap Efficiency (ATE) at Merwin Dam no later than December 13, 2018.	

Opening, Review of Agenda and Meeting Notes

Erik Lesko (PacifiCorp) called the meeting to order at 9:05a.m. and reviewed the agenda. No additional topics were added.

Lesko also reviewed the June 14, 2018 meeting notes. The meeting notes were approved with minor clarifying changes at 9:30 a.m.

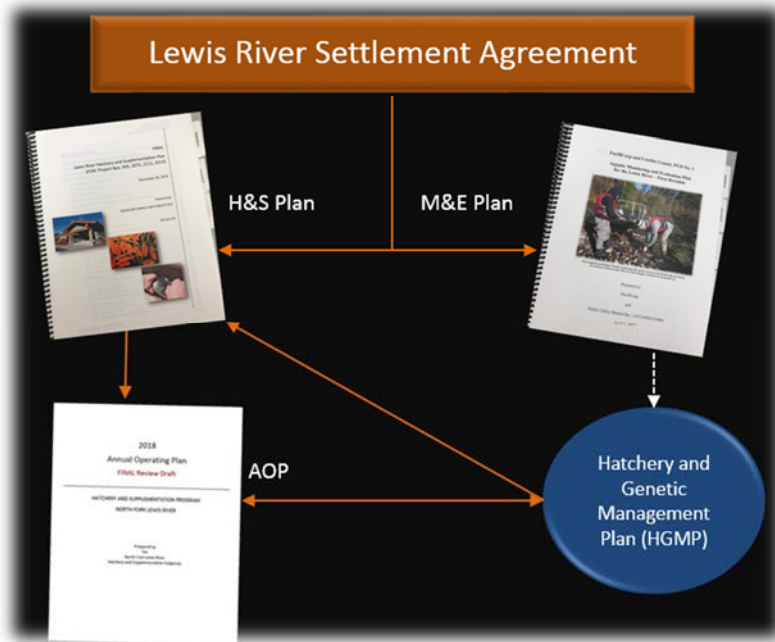
Public Comment

None

Hatchery & Supplementation Annual Operating Plan – Presentation (see [Attachment A](#) for further detail and illustrations)

Lesko informed the ACC attendees that the Draft Hatchery and Supplementation 2018 Annual Operating Plan was approved by the Subgroup May 31, 2018. Thereafter, PacifiCorp provided the Subgroup approved draft to the ACC July 3, 2018 for a 30-day review and comment period. Comments are due on or before close of business August 3, 2018.

Lesko provided a PowerPoint presentation illustrating the complexities of the myriad of plans and the timing of each. The AOP is updated annually, the H&S Plan and M&E are updated every five (5) years. The HGMP has yet to be completed but all Plans must be consistent with the HGMP. Thus, the H&S Subgroup has focused its efforts on updating and submitting HGMP's.



Lesko provided an overview of the Hatchery and Supplementation Program including the following:

Late winter steelhead program (broodstock and transport collection) to include the following:

- Use of only native broodstock
- All broodstock genetically sampled to confirm origin
- Juveniles are reared at Merwin Hatchery and released the following May as yearlings
- Each smolt receives a blank wire tag (snout) to identify it as a program fish
- Program adult returns transported upstream to spawn naturally

Lesko reviewed the 2017 genetic assignment data. Caudal fin clips are taken from each potential brood and sent to the NOAA genetics lab to determine origin of fish. See [Attachment A](#) for proportion percentage and stock assignment for 2017.

Lesko discussed the issue of residual steelhead that remain in the Lewis River after release. Some individuals have been captured as many as three different years. Residualism is a concern for all species and will be discussed as part of the 2019 Annual Operating Plan.

New for 2018 – Spring Chinook Rearing Strategies

Lesko providing the following table of spring chinook rearing strategies developed by the H&S Subgroup to address low SAR exhibited by spring Chinook in recent years. Other issues being evaluated include water quality, specifically TDG and temperature, at the new rearing ponds at Lewis River Hatchery. A portion of all release groups will be snout tagged with CWT's. This is a long term effort, but the goal is to develop and understand rearing strategies that will provide benefits to SAR's to meet both broodstock needs and upriver supplementation targets.

Group	Release Month	Transfer Month to Lewis River Hatchery	Size (fpp)	Total Number at Ponding	Number Tagged	Planting Goal
1	February	June	8	200,000	75,000	150,000
2	February	December	12	200,000	75,000	175,000
3	February	December	8	170,000	75,000	150,000
4	October	June	12	950,000	75,000	825,000
5	June	NA	130	52,000	50,440	50,000
				1,572,000	350,440	1,350,000*

* Includes acclimation program smolts

Created last group release from Speelyai hatchery. The strategy of varied releases to gather additional data.

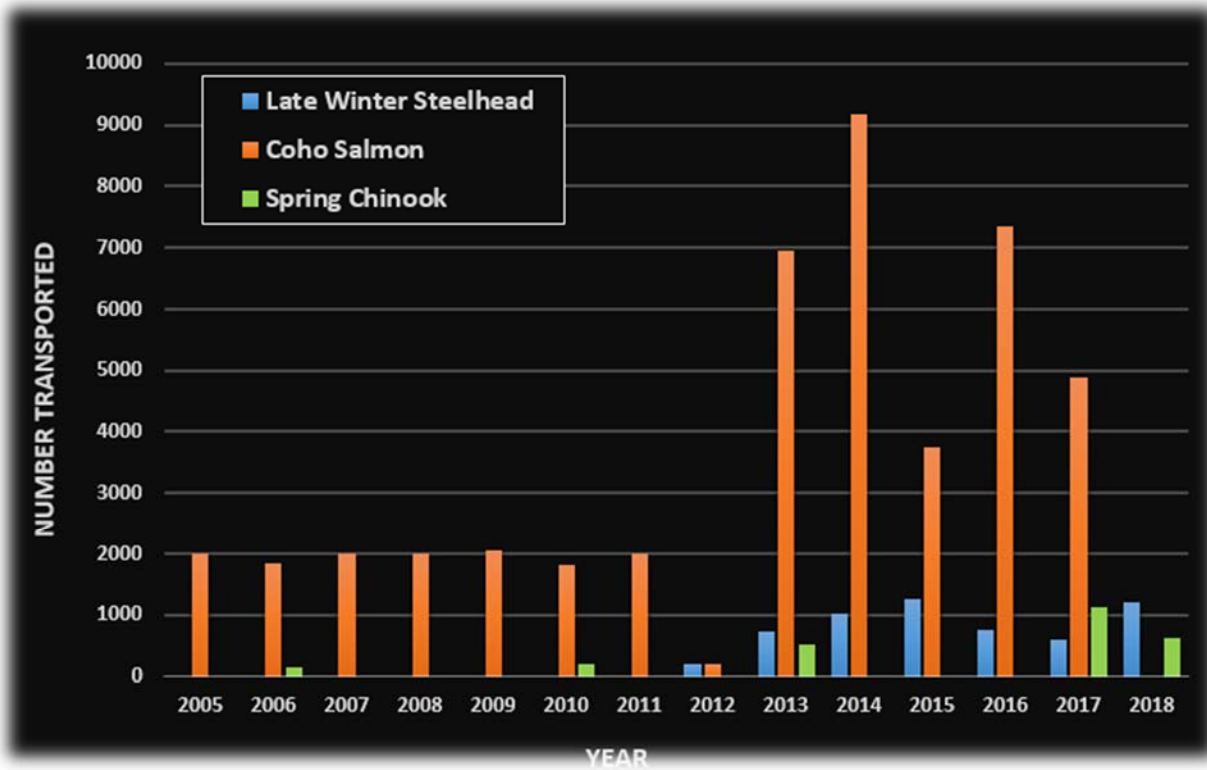
Sam Gibbons (WDFW) asked to have the June release (130 fpp) reviewed as it may be too small. There was also some discussion on whether there would be a June release in 2019. Group 5 depends on the availability of broodstock and while the H&S subgroup recommends this release group there may not be adequate broodstock to meet this target in 2019. Lesko stated the H&S subgroup will review this table at the next meeting to finalize any remaining issues.

Lesko reviewed adult abundance (steelhead red surveys) as detailed in the table below from 2008 - 2017. If water conditions are satisfactory redd surveys are conducted on a weekly basis between March 1 and June 30 every year. Redd surveys provide the number of natural spawners downstream of Merwin Dam and their spawning distribution. Adult salmon abundance relies on carcass surveys rather than redd surveys as all salmon die after spawning.

Year	Number of Redds observed	Spawner Estimate	Observed sex ratio (females : males)	Spawner Estimate (Corrected)
2008	131	212		
2009	176	286		
2010	248	402		
2011	108	174		
2012	343	556		
2013	456	739	1:1.43	898
2014	364	590	1:0.80	531
2015	384	622	1:1.46	765
2016	NA	NA	1:0.97	NA
2017	NA	NA	1:1.17	NA

Screw trap operations were briefly discussed as the primary means to estimate juvenile migration abundance and timing.

And lastly, Lesko indicated that a primary goal of this program is to achieve self-sustaining populations upstream of Swift Dam. This goal relies on the ability to provide supplementation upstream. The graph below illustrates that while goals are typically met for both steelhead and coho, spring Chinook supplementation remains a concern for the program meeting its goals.



Break 10:05am
 Reconvene 10:20am

ATE Coho Salmon in 2018

Chris Karchesky (PacifiCorp) provided a brief update to the ACC regarding the status of the Adult Trap Efficiency (ATE). He stated that the field portion of the 2018 winter steelhead evaluation had come to a close, and that the contractor was currently summarizing the data into the final report (expected to be out for ACC review this fall). The overall estimate for ATE (92%) was higher in 2018 than during any previous evaluation for winter steelhead since 2015. Karchesky explained that this was contributed to the addition of the fyke after the 2016 study, which was designed to prevent fish from moving out of the trap and back into the tailrace. He also mentioned that river flow during the 2018 study was normal (average) compare to the extreme high flow conditions observed during the 2017 study.

Summary of 2018 passage data for winter steelhead at Merwin Dam (preliminary).

Metric	Naïve	Non-Naïve	Non-Naïve ₂	Total Value
Tagged Fish (n)	19	73	7	99
Entered Tailrace (M)	16	67	5	88
Entered Trap (T)	16	66	4	86
Captured (C)	16	61	4	81
$P_{EF} (T/M)$	100%	99%	80%	98%
$ATE_{test} (C/M)$	100%	91%	80%	92%
$T_i ((T-C)/T)$	0%	8%	0%	6%

- Trap **Naïve** fish (i.e., fish captured by tangle netting downstream of Merwin Dam – these fish presumably never entered the trap at Merwin Dam);
- Trap **Non-Naïve** fish (i.e., fish captured from the fish trap at Merwin Dam and released at the Boat Launch);
- Trap **Non-Naïve₂** fish (i.e., trap Naïve fish that were captured at Merwin Dam and then released downstream at the Boat Launch); and
- A **Total** value representing all tagged fish combined (i.e., Naïve, Non-Naïve, and Non-Naïve₂).

Karchesky went on to discuss conducting a similar ATE evaluation to compare trap naïve vs. trap non-naïve fish using adult coho salmon in fall 2018. Based on passage data comparing the two groups of winter steelhead, there appeared to be a statistical difference between tagging fish that had not yet passed and those that had previously passed the facility before tagging. Karchesky indicated that there was value in assessing this behavioral difference in adult coho given that in previous evaluations using trap non-naïve coho had unrealistically low collection efficiencies. PacifiCorp will plan to conduct a similar study using trap naïve and trap non-naïve study fish in fall 2018 using adult coho.

Karchesky asked the ACC if it made sense to continue testing ATE using hatchery origin fish or whether it made more sense to postpone further testing (after the 2018 coho study) until adults from the upper basin began returning in higher numbers? His thought was that the use of hatchery fish not originating from the upper basin likely has some effect of collection efficiency. A discussion on the value of using hatchery fish occurred.

The ACC decided that this should be further discussed and that postponing further evaluation of ATE at the Merwin Trap until upper basin fish beginning return should be considered. Further discussion regarding adult ATE will be scheduled during the December 13, 2018 ACC meeting and once results of the coho study are available.

Summary of results of Adult Trap Efficiency studies conducted at the Merwin Fish Passage Facility since 2015.

Study Year	Species	N	Entrance Efficiency P _{EE} (BCA 95% CI)	Adult Trap Efficiency ATE _{test} (BCA 95% CI)	Trap Ineffectiveness 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	149	70.0% (60-83%)	76.3% (70-84%)	8.6%
2018	Winter steelhead ¹	73	99% (-)	91% (-)	8.0%
	Spring Chinook	N/A	N/A	N/A	N/A
	Coho Salmon ²	***	***	***	***

¹ Numbers represent non-naïve fish; naïve fish (N=19) had P_{EE} = 100% and ATE = 100%.

² Adult coho ATE in fall 2018? Evaluate trap non-naïve vs. naïve fish?

Study/Work Product Updates

Aquatic Fund Process Review – Identify Changes Needed

Due to several absentee ACC representatives this topic will be tabled until the August ACC meeting. McCune will email the aquatic fund packet, guidelines, etc. to the ACC for review so they can be prepared with their comments/edits by the August 9, 2018 ACC meeting. McCune noted that review and approval of any changes must take place at the meeting as the 2018/2019 Aquatic Fund Announcement must be made available to interested parties no later than Friday, August 31, 2018.

In Lieu Fund Update

Tim Romanski (USFWS) informed the ACC attendees that he will be meeting with the Yakama Nation next week and they have met a couple of times with the Cowlitz Indian Tribe. Romanski also communicated that he wanted the ACC to have a copy of the three University of Washington publications related to northern pikeminnow predation impacts and prey supply and consumption demand of resident fishes. Romanski requested PacifiCorp distribute the documents via email to the ACC on behalf of USFWS. Romanski indicated that the intent of the Services is to meet the August 23, 2018 deadline.

Acclimation Pond Removal

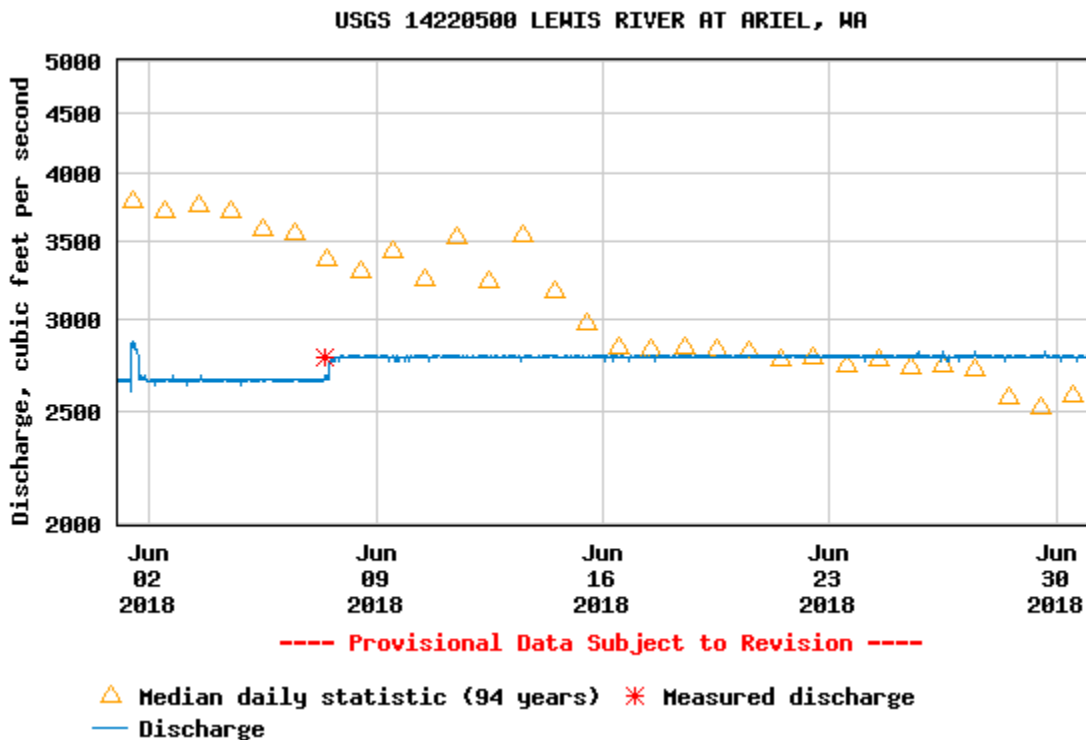
PacifiCorp is diligently working to complete decommission of Muddy acclimation site this year.

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

During the month of June, a total of 1,143 fish were captured at the Merwin Dam Adult Fish Collection Facility. The majority of these fish were summer steelhead (972 – 85%). A total of 1,996 spring Chinook have been captured at the Merwin Trap through June 2018. While a few winter steelhead (n=6) continued to arrive at the trap early in the month, no winter steelhead have been capture since June 11.

River flow varied below Merwin Dam ranging between 2,650 and 2,860 cfs throughout the month.

Discharge, cubic feet per second



Upstream Transport ([Attachment B](#))

Nine Blank Wire Tag (BWT) winter steelhead were transported upstream above Swift Dam in December 2017. Two additional fish were transported earlier in the fall for a total of 11 BWT steelhead collected and transported in fall/winter 2017. Through June 2018, an additional 1,216 BWT winter steelhead were transported upstream for a total of 1,227 fish transported as part of the 2018 run year.

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

* Through June 30, 2018.

A total of 633 adult spring Chinook have been transported upstream as part of the 2018 run year so far. Of these fish, 267 were transported from the Merwin Dam Fish Collection Facility with an additional 366 fish being transported from the Lewis River Hatchery. Transported upstream were 153 females, 450 Males, and 30 jacks. By the end of June, all surplus adult spring Chinook previously being held at Lewis River Hatchery have been distribution into the upper basin or used as brood stock.

Swift Floating Surface Collector (Attachment B)

During the month of June, 15,066 fish were collected in 2018. The largest percentage of these fish was juvenile coho salmon (92%). The FSC ran continuously throughout the month of June. Total numbers collected at the Swift FSC from January through June by operation year are shown below:

Species (parr/smolt)	YTD: 6/30/2013	YTD: 6/30/2014	YTD: 6/30/2015	YTD: 6/30/2016	YTD: 6/30/2017	YTD: 6/30/2018
Coho	14,660	7,262	33,200	59,394	12,963	38,716
Chinook	959	810	4,416	3,422	738	4,517
Steelhead	161	493	1,221	2,137	1,565	7,871

PacifiCorp continues its efforts to identify better debris management by adding additional modifications to the FSC. PacifiCorp is currently staging for its summer outage due to increasing water temperatures. In addition, the FSC will not be deballasted this year as the maintenance will take place in water with a diver contract.

Other

In response to a request from PacifiCorp, Tom Wadsworth (WDFW) provided the following stranding location detail relating to a viewing by WDFW staff on the river bank May 19, 2018.

The main location was here: N45° 55' 59.89", W122° 39' 11.99"

There were also fish found stranded near here: N45° 56' 15.4", W122° 38' 30.2"

Agenda items for August 9, 2018

- July 12, 2018 Meeting Notes
- Aquatic Fund Process Review
- In Lieu Fund Update
- Study/Work Product Update

Adjourn 11:30am

Next Scheduled Meeting:

August 9, 2018
HCC
9:00 a.m. - 12:00 p.m.

Meeting Handouts & Attachments:

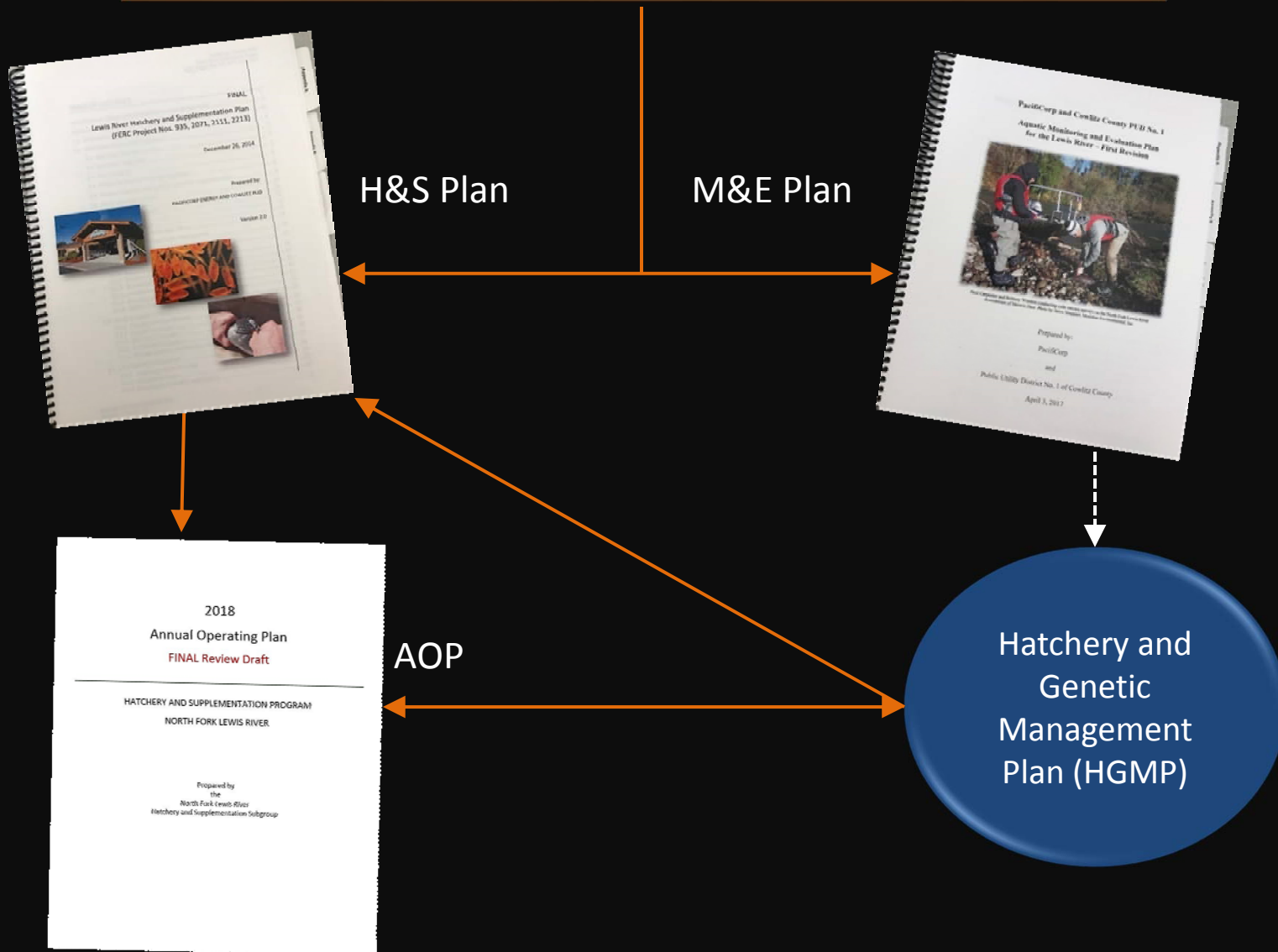
- Meeting Notes from 6/14/18
- Agenda from 7/12/18
- **Attachment A** – Hatchery & Supplementation Annual Operating Plan – PowerPoint Presentation
- **Attachment B** – Lewis River Fish Passage Report (June 2018)

2018
Annual Operating Plan
FINAL Review Draft

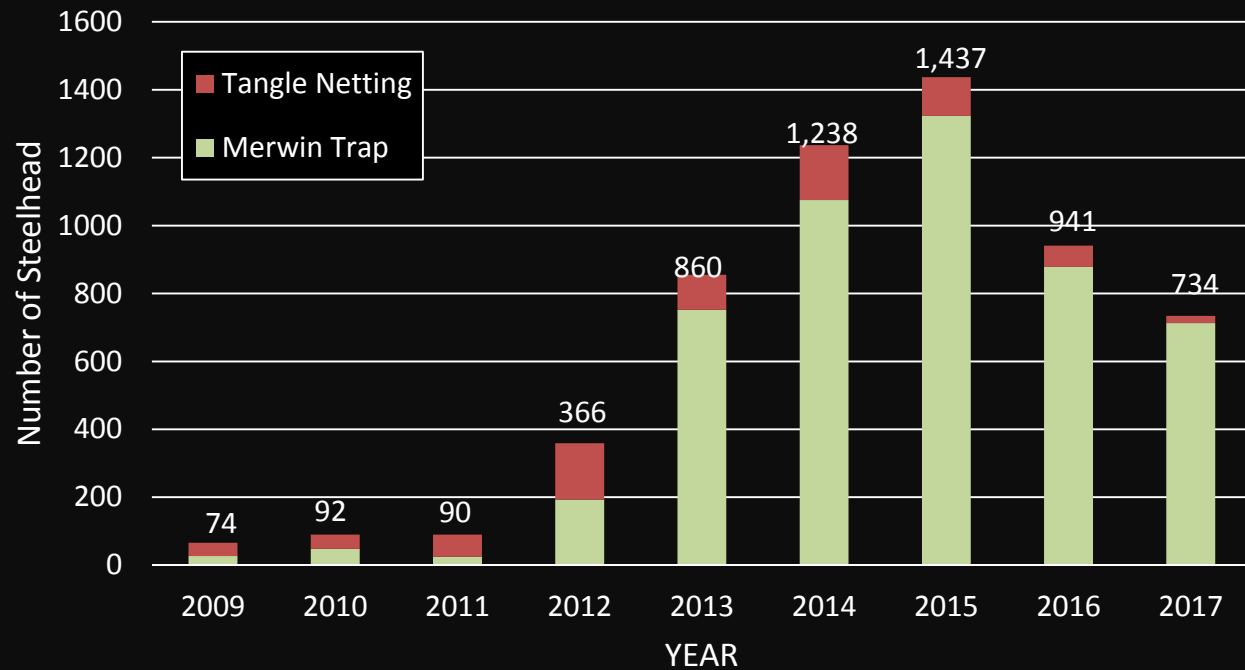
HATCHERY AND SUPPLEMENTATION PROGRAM
NORTH FORK LEWIS RIVER

Prepared by
the
North Fork Lewis River
Hatchery and Supplementation Subgroup

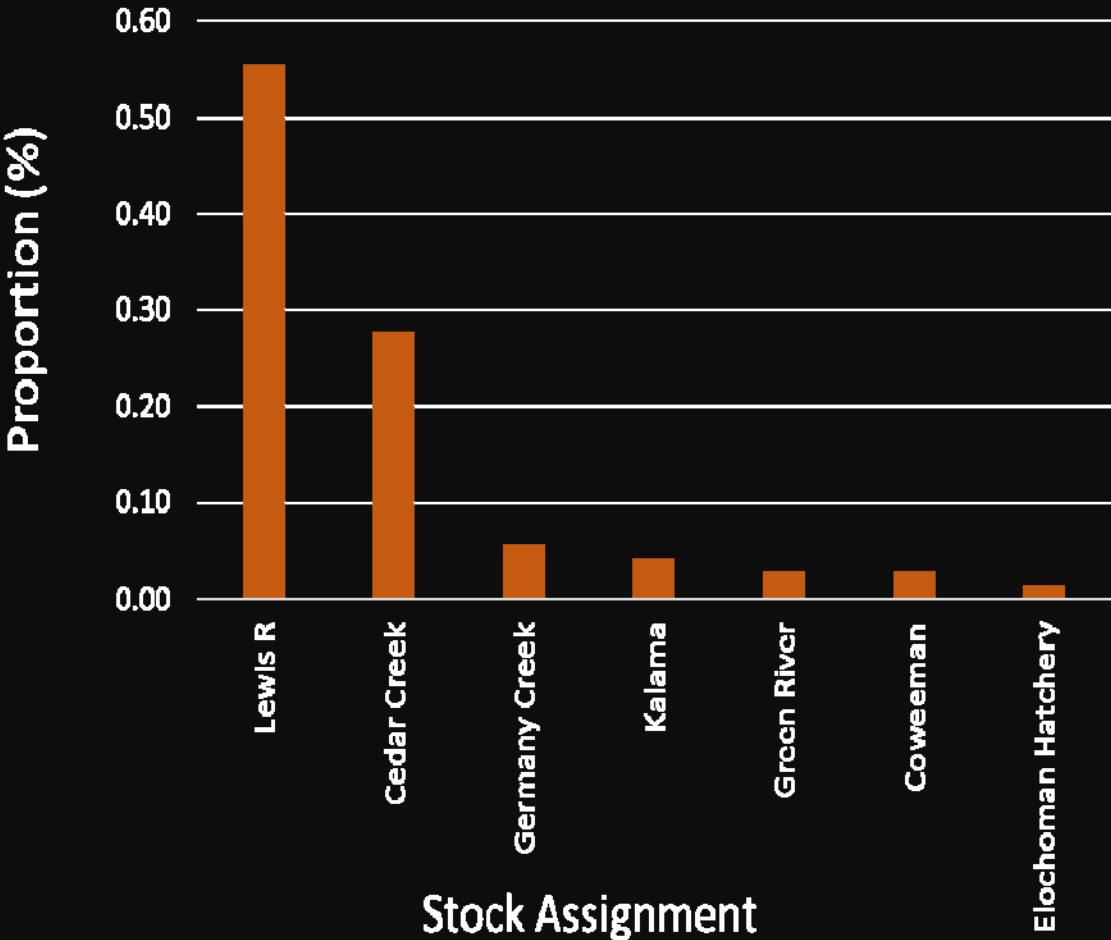
Lewis River Settlement Agreement



Late Winter Steelhead Program (Broodstock and Transport Collection)



Genetic Assignment and Scale Analysis



Residuals?



New for 2018!

Spring Chinook Rearing Strategies

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	1,572,000	350,440	1,350,000*
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* Includes acclimation program smolts

Adult Abundance (Steelhead Redd Surveys)



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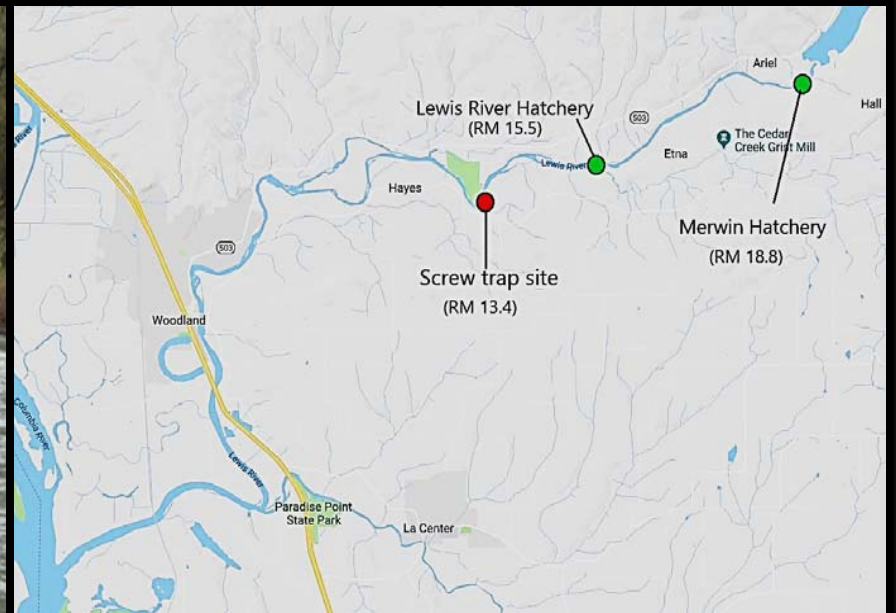
Adult Abundance (Chinook and Coho Carcass Surveys)



- **Spawning Distribution**
- **Estimates of pHOS**
- **Estimates of Spawning Success**

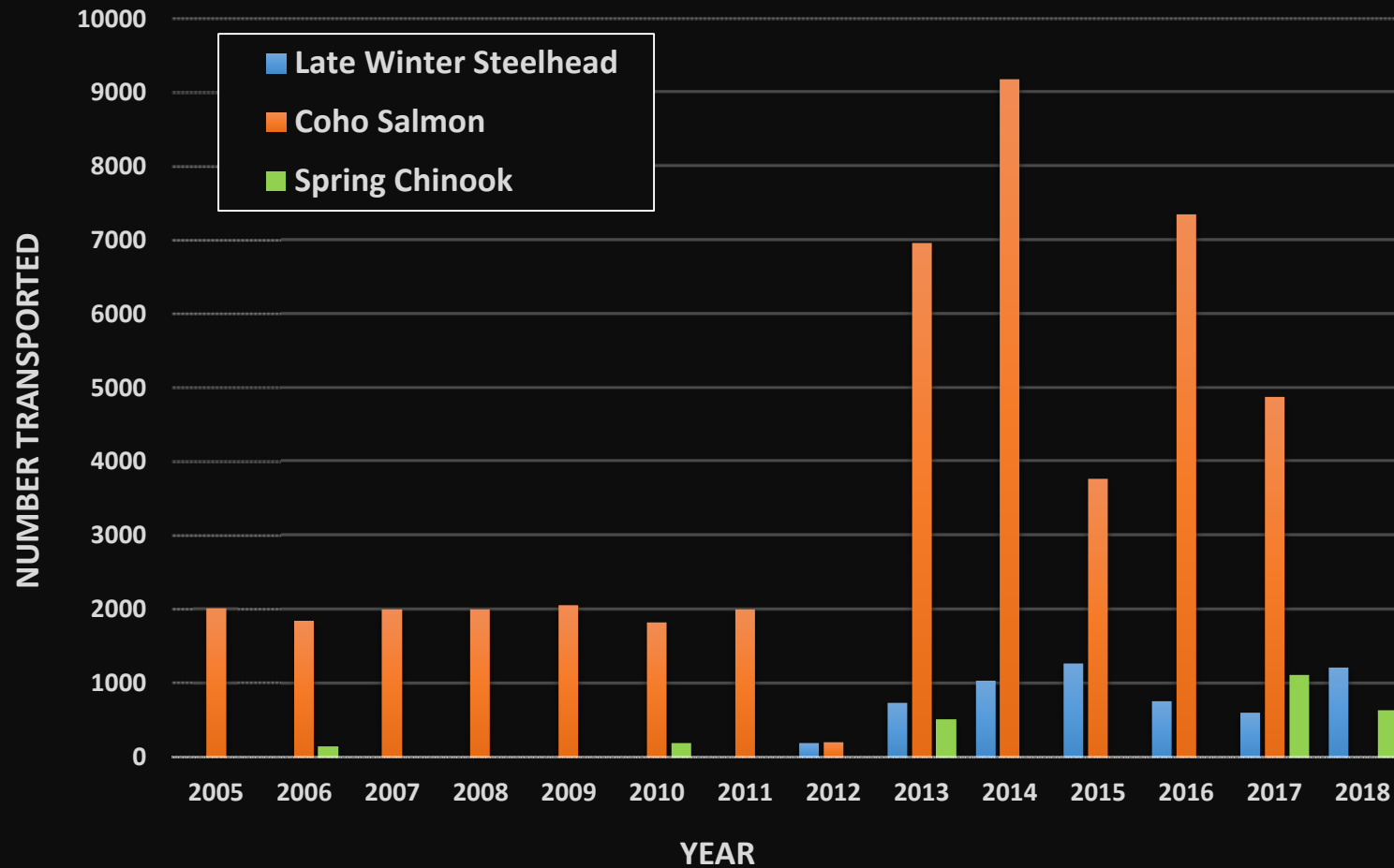


Juvenile Abundance (Screw trap Operations)



SPECIES	TRAP EFFICIENCY	ESTIMATE	95% CI +/-
Coho (NOR)	0.01	62,075	25,557
Coho (HOR)	0.01	811,302	314,270
Chinook (NOR)	0.013	14,763	5,018
Chinook (WDFW Tagging)	0.013	2,114	1,494
Steelhead (NOR)	0.012	6,866	2,652
Steelhead (HOR)	0.012	14,941	5,093
Cutthroat (NOR)	0.012	3,420	1,541

Adult supplementation upstream of Swift Dam



Lewis River Fish Passage Report

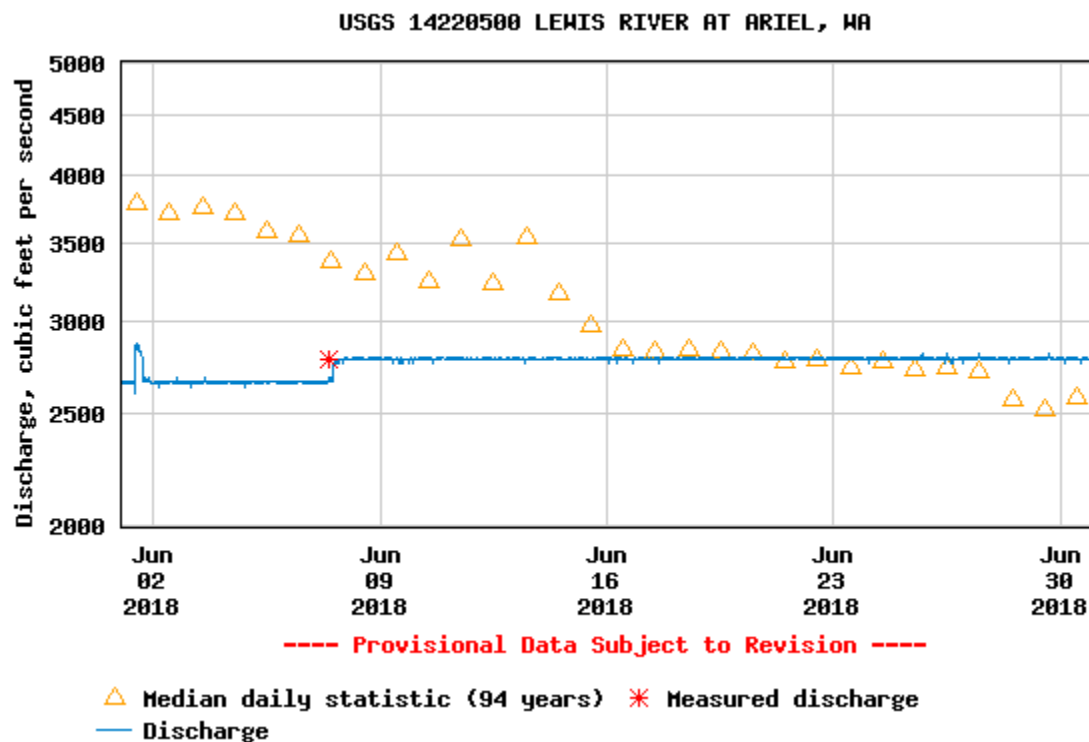
June 2018

Merwin Fish Collection Facility and General Operations

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Discharge, cubic feet per second



Upstream Transport

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Floating Surface Collector (FSC)

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Chinook	959	810	4,416	3,422	738	4,517
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Fish Facility Report
Swift Floating Surface Collector
June 2018

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	1	8	1057			12			28			49			23	1178
02			1433			28		4	57			36			12	1570
03	6	3	606			12			42			8			8	685
04	1		770			12			32			9			12	836
05			789		8	8			13			12			32	862
06			474	1	1				28			12			36	552
07			466	1	5	24			4			8			16	524
08	1	1	933	1		9	1		4						37	987
09	9	1	602	1		15			12			4			16	660
10	6	1	385	1	7	8			8	1					24	441
11	1	41	623	1	7	4			12			8			16	713
12		2	250			5			1	1		4			21	284
13		2	194			1			9						9	215
14	1		403	1	2				10			17				434
15		2	303	1	9			1	2			4			24	346
16	3		128	2	6										4	143
17	5	2	429		11	1			4			1		1	12	466
18	2	5	680		2				1						4	694
19		1	236		10				4							251
20	2	5	368		8	4						4			8	399
21		1	345		1	8										355
22			698						8						18	724
23		6	277		9										4	296
24		2	256		19	12			8							297
25			211		1	1			1			4				218
26			435		4				4						20	463
27			98		9	2									4	113
28		25	108		52				8			4				197
29	1	13	104		14	4									4	140
30		10	13													23

Monthly	39	131	13674	10	185	170	1	5	300	2	0	184	0	1	364	15066
Total	848	3582	34286	31	440	4046	7	14	7850	10	3	824	17	6	2072	54036

