

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

Date & Time: Thursday, June 14, 2018
9:00 a.m. – 11:45 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 5/9/17 Meeting Notes ➤ Comment & Accept Agenda and 5/9/17 Meeting Notes
9:10 a.m.	Public Comment Opportunity
9:20 a.m.	Spring Chinook Acclimation Program Releases; discuss recommendations from H&S Subgroup regarding new release strategy
10:00 a.m.	Land Locked Salmon; harvest regulations
10:20 a.m.	Study/Work Product Updates <ul style="list-style-type: none"> ○ Independent Comprehensive Review (H&S Program) ○ Aquatic Fund Process Review – Identify changes needed ○ In Lieu Fund Update ○ Merwin Upstream Passage – Status ○ Swift Floating Surface Collector – Status ○ Acclimation Pond Removal – Status
11:30 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#
11:45 a.m.	Adjourn

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

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Conference ID: 2625672

FINAL Meeting Notes
Lewis River License Implementation
Aquatic Coordination Committee (ACC) Meeting
June 14, 2018
Merwin Hydro Control Center

ACC Representatives Present (13)

Kim McCune, PacifiCorp
 Chris Karchesky, PacifiCorp
 Erik Lesko, PacifiCorp
 Mark Ferraiolo, PacifiCorp
 Tom Wadsworth, WDFW
 Aaron Roberts, WDFW
 Sam Gibbons, WDFW
 Ruth Tracy, USDA Forest Service (via conference)
 Greg Robertson, USDA Forest Service (via conference)
 Steve West, LCFRB
 Jim Byrne, Trout Unlimited
 Tim Romanski, USFWS
 Eli Asher, Cowlitz Indian Tribe

Calendar:

July 12, 2018	ACC Meeting	HCC
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Assignments from June 14, 2018	Status
Karchesky/McCune - Due to the absenteeism of several ACC Representatives the ACC agreed that an additional 7-day review period is appropriate for the LR Acclimation Program Release Strategy.	Complete – 6/18/18
Lesko/McCune - Due to the absenteeism of several ACC Representatives the ACC agreed that an additional 7-day review period is appropriate for the H&S Program Comprehensive Review extension request.	Complete – 6/18/18

Assignments from May 10, 2018	Status
Lesko - Provide summary of 2018 AOP activities to ACC including results from radio telemetry and morphological smolt sampling at the hatcheries by the July 12, 2018 ACC meeting.	Complete – 7/12/18
Karchesky - Create a draft memorandum for the H&S subgroup to review outlining a revised plan for the spring Chinook supplementation program over the next 5 years. The memorandum will address reallocation of the upper basin juvenile acclimation fish to being released below Merwin Dam, evaluation of juvenile release and tagging strategy, ongoing and revised monitoring program, and seed planting.	Complete – 6/14/18

Opening, Review of Agenda and Meeting Notes

Erik Lesko (PacifiCorp) called the meeting to order at 9:06a.m. and reviewed the agenda. Lesko asked if the ACC would like to add any topics. Tom Wadsworth (WDFW) would like to add discussion around the down-ramping that took place downstream of Merwin Dam on May 18 & 19, 2018.

Lesko also reviewed the May 9, 2018 meeting notes. Tom Wadsworth (WDFW) requested a few clarifying changes which were adopted into the draft notes.

The meeting notes were approved with all requested changes at 9:15 a.m.

Public Comment

None

Land Lock Salmon; review of current harvest regulations on Swift Reservoir

During the April 12, 2018 ACC Meeting, the ACC requested that PacifiCorp provide general information regarding 2-year old coho juveniles (aka. “Super Smolt”) present in Swift Reservoir. This information was requested to clarify for discussing the current land-lock salmon regulation for the recreational fishery in Swift Reservoir.

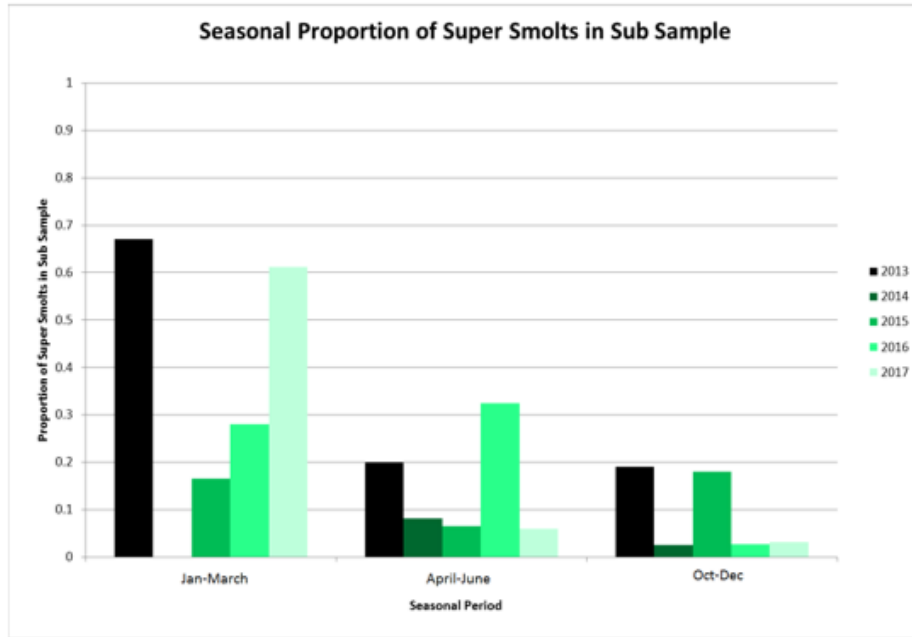
Mark Ferraiolo (PacifiCorp) provided a PowerPoint presentation, title ACC Super Smolt ([Attachment A](#)) per the ACC request and addressed the following:

What are super smolts?

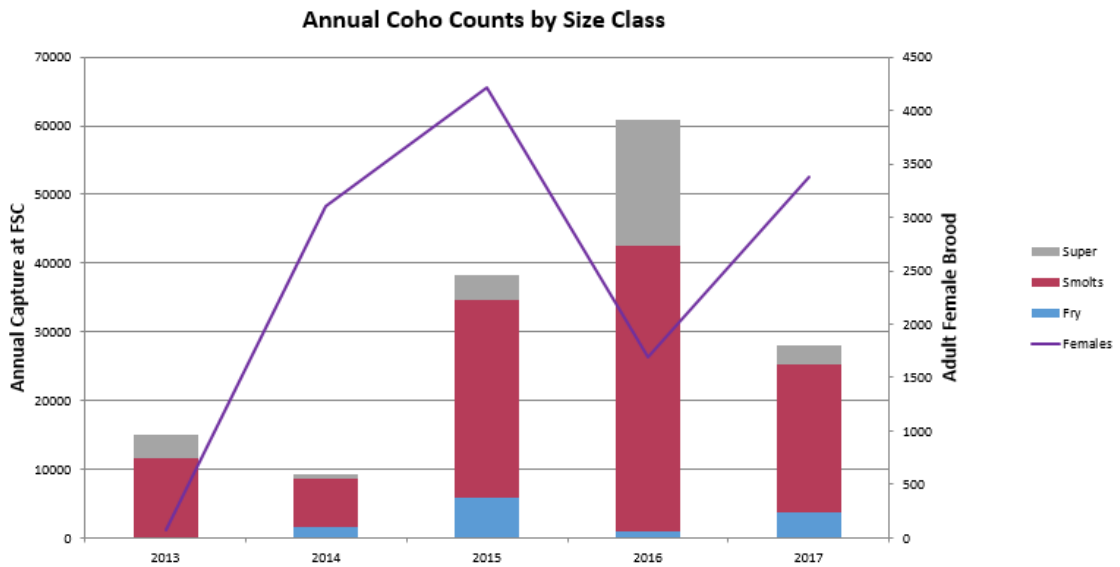
- Coho that have ‘missed’ the general migration at about 1.5 years of age and end up over summering/wintering (220mm or larger).

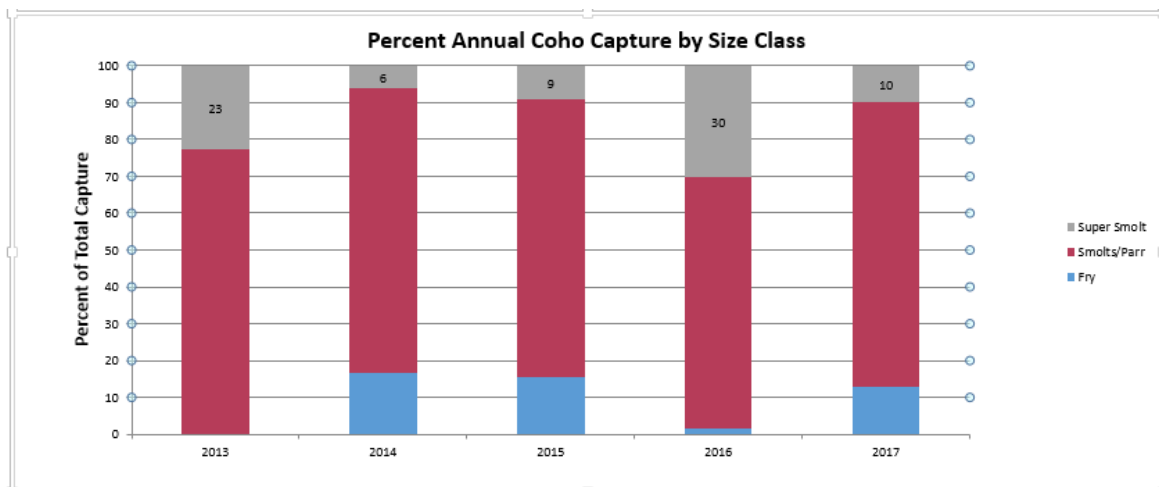


Seasonal distribution for collecting super smolts.



Number of super smolts captured annually and compared to overall coho migrants.





Collection Efficiency results on super smolts.

- Limited data, 2017 is the only year with available data and was done with a small sample.
- 102 super smolts PIT tagged and released at head of Swift.
- 11 were recaptured in 2017 giving a CE for super smolts of about 12%.
- Collection efficiency discrepancy between smolts and super smolts.
- Coho smolts had CE of about 24%.
- Back calculating (bootstrapped) for population estimate gives 25,400 super smolts and 93,800 smolts in 2017.

Are super smolts contributing to adult returns?

- In short, yes.
- Limited data available. 2017 was the first year we saw returning PIT tagged super smolts. Tagging began in 2016.
- Morphology of returning super smolts was in between adults and jacks.
- Noticeable amount of these ‘tween’ returns that were both male and female, not just jacks but jennies as well.
- 2018 and coming years should give us more clarity of the contribution super smolts have on adult returns.

What are the unknowns and what further information should we seek?

- Are super smolts going to mature and return as true adult coho.
- We’ll have a better idea in 2018 given 2017 was the first season of returning super smolts.
- If super smolts are a substantial contribution to adult returns, what effect does angler harvest have?
- Are super smolts predatory on other key species above Swift?
- Continue to PIT tag and monitor.
- As collection efficiency overall at the Swift Reservoir Floating Surface Collector continues to improve, then the number of super smolts should decline.

The ACC agreed to leave the present harvest regulations in place since the data available are limited. However, the ACC is interested in seeing future year results. In addition, the ACC is agreed to have the H&S Subgroup address what information needs to be collected, etc.

Lewis River Acclimation Program – Release Strategy and Monitoring Plan Recommendations from the H&S Subgroup

Chris Karchesky (PacifiCorp) informed the ACC attendees that the Hatchery and Supplementation Subgroup discussed the release strategies of Acclimation Program spring Chinook and considered three (3) strategies proposed in a PacifiCorp memo provided to the Subgroup (see excerpt below and **Attachment B**.) The ACC agreed that Option 3 should be implemented for fish currently being held at Speelyai Hatchery, and that Option 1 should be implemented beginning with Brood Year 2018 (released in year 2019) subject to annual review by the H&S Subgroup.

For the 2018 release group only (Option 3): Acclimation program spring Chinook currently being held at Speelyai Hatchery will be released in November 2018 at the Woodland Release Ponds. Because of their current size, they cannot be integrated into the ongoing release strategy evaluation. All smolts will retain their adipose fins but will be differentially marked with a ventral fin clip (side to be determined) to identify this group from true NOR's upon their return as adults.

For release groups after 2018 (Option 1): Beginning with the 2018 Brood Year, acclimation program fish will be fully integrated into the hatchery spring Chinook program. There will be no differential mark associated with these fish and spawning crosses involving NOR spring Chinook will end. This strategy will increase hatchery production of spring Chinook released into the North Fork Lewis River from 1.25 to 1.35 million per year.

The H&S Subgroup will continue to monitor the program on an annual basis and make recommendations to the ACC when appropriate or modifications are warranted.

Due to the absenteeism of several ACC Representatives at the June 14, 2018 meeting, the ACC agreed that an additional 7-day review period is appropriate.

Break 10:50am

Reconvene 10:55am

Study/Work Product Updates

Independent Comprehensive Review (H&S Program)

Lesko noted that since the H&S Plan will undergo a rewrite in 2019, the H&S Subgroup agreed that it would be more appropriate to extend the Independent Comprehensive Review until a revised draft is available in 2019. WDFW also noted that Consultation for the Lewis River Hatchery and Genetic Management Plans (HGMP's) is scheduled to occur in early 2019, which may modify certain aspects (e.g., objectives) of the plan. Lesko requested the ACC approve delaying the independent comprehensive review of the H&S program until December 31, 2019. This extension also requires approval from the FERC.

The ACC approved submitting an extension request to the FERC for a revised deadline of December 31, 2019.

Due to several absentee ACC representatives at the meeting today an additional 7-day review period will be provided to all ACC Representatives.

Aquatic Fund Process Review – Identify Changes Needed

Due to several absentee ACC representatives this topic will be tabled until the July ACC meeting.

In Lieu Fund Update

Tim Romanski (USFWS) informed the ACC attendees that personnel from USFWS and NMFS (Services) met with the Tribes on more than one occasion. The Services will brief their agency heads and are working toward a decision prior to the August 23, 2018 deadline. On official dual letterhead, the Services will notify the FERC and the ACC of its decision.

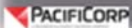
2018 Merwin Adult Trap Efficiency

Karchesky (PacifiCorp) reported a summary of detection data for adult steelhead tagged as part of the ongoing 2018 Adult Trap Efficiency Study at Merwin Dam for ACC review (see PowerPoint slide below):

Update: 2018 Merwin Adult Trap Efficiency

Metric	Naïve	Non-Naïve	Non-Naïve ₂	Total Value
Tagged Fish (n)	19	73	7	99
Entered Tailrace (M)	16	72	5	93
Entered Trap (T)	16	70	4	90
Captured (C)	16	65	4	85
$P_{EE} (T/M)$	100%	97%	80%	97%
$ATE_{test} (C/M)$	100%	90%	80%	91%
$T_{2} ((T-C)/T)$	0%	7%	0%	6%

- Summary (as of June 6) of detection data for steelhead tagged at Merwin Dam and in the Lewis River.
 - 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).



FSC/Swift Collection Efficiency

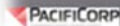
Karchesky (PacifiCorp) provided a brief overview of the ongoing 2018 Swift FSC Collection Efficiency Evaluation on out-migrating smolts. He provided the PowerPoint slide below for ACC review. Karchesky also provided an example video of the acoustic camera currently deployed immediately outside the entrance of the FSC to look at the smolt behavior. The video showed a large number of smolts holding just outside the entrance. Karchesky indicated that the video will be review to gain further knowledge of smolt behavior as they transition into the FSC.

2018 Swift FSC Collection Efficiency

Update:

2018 (..so far)	Released	Recaptured	CE	95% CI
Coho	484	175	36%	+/- 4%
Steelhead	227	135	49%	+/- 6%
Chinook	396	94	24%	+/- 4%

- Running estimates based on no. released (head of Swift Res.) vs. recaptured (at FSC) of PIT Tags, and have not been corrected for reservoir survival and detection at Zone of Influence. Also, do not account of any fish collected later in spring and upcoming fall.
- Final estimates from last year (2017):
 - Coho 26.7% (+/- 3.4%)
 - Steelhead 19.7% (+/- 3.8%)
 - Chinook 11.3% (+/- 4%)



Acclimation Pond Removal

All permits are in hand for decommissioning the Muddy site this year. Clear Creek and Crab are scheduled for decommissioning in 2019.

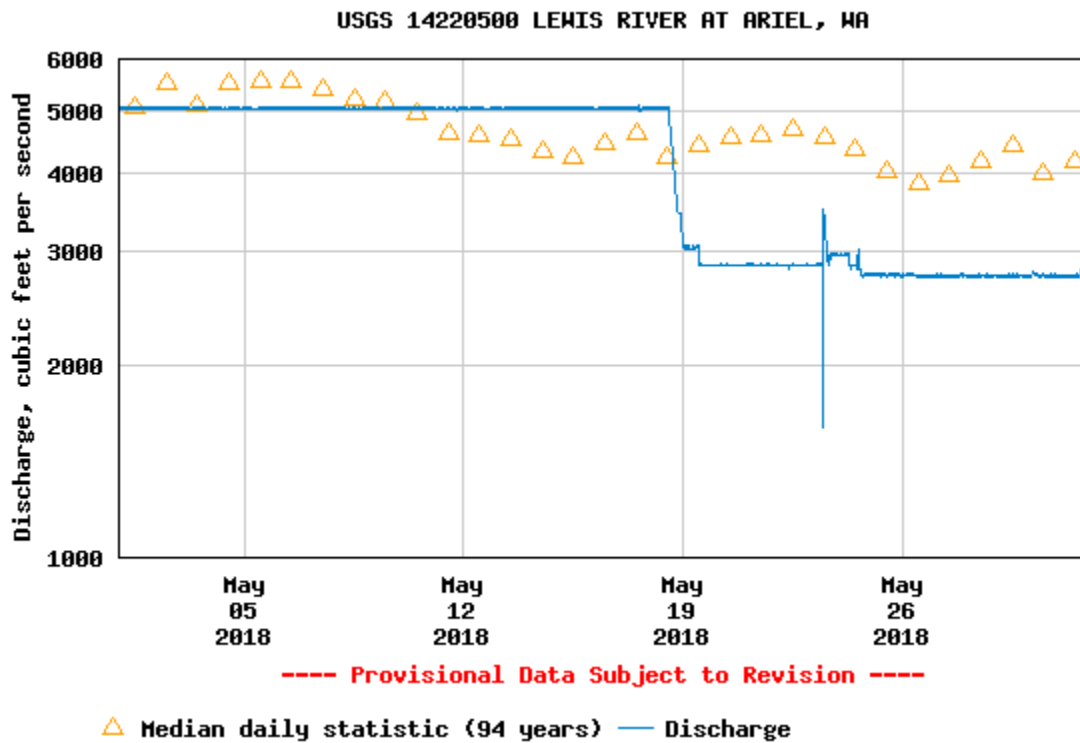
Merwin Fish Collection Facility and General Operations ([Attachment C](#))

During the month of May, a total of 1,491 fish were captured at the Merwin Dam Adult Fish Collection Facility. The majority of these fish were spring Chinook (1,217 – 84%).

The Merwin Dam Adult Fish Facility lift and conveyance system ran continuously through the month of May expect for two unscheduled outages for emergency repairs. The trap was unexpectedly shut down on the afternoon of May 10, 2018 due to the failure of the fish hopper hoist block. The block was replaced and the trap was put back in service May 14, 2018. During the unscheduled outage, additional damage to the cabling system was discovered and the trap was shut down again May 17, 2018 to make these repairs. The trap was put back in service May 21, 2018. On May 5 and 6 the fish lift and conveyance system remained in service, however fish remained in the sorting pond until they could be processed and transported to Lewis River Hatchery May 7, 2018.

River flow varied below Merwin Dam ranging between 1,590 and 5,070 cfs throughout the month.

Discharge, cubic feet per second



Karchesky informed that ACC that PacifiCorp is planning to take the Merwin Fish Collection Facility offline for a week in early August, 2018 to perform annual maintenance on the lift and conveyance system. Additional information on this outage will be provided at the July ACC Meeting.

Upstream Transport ([Attachment C](#))

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 May 2018, an additional 1,214 BWT winter steelhead were transported upstream for a total of 1,225 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*	658	475	1,225

* Through May 31, 2018.

A total of 463 adult spring Chinook have been transported upstream as part of the 2018 run year so far. Of these fish, 263 were transported from the Merwin Dam Fish Collection Facility with an additional 200 fish being transported from the Lewis River Hatchery. Transported upstream were 151 females, 289 Males, and 20 jacks. By the end of May, there are still about 400 adult spring Chinook being held at Lewis River Hatchery for eventual distribution into the upper basin. These remaining fish will be taken upstream once hatchery brood stock collection has been collected. Additional details regarding this decision process can be found in Section B - 2.2 in the 2018 Hatchery and Supplementation Annual Operating Plan (AOP).

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

During the month of May, 26,686 fish were collected in 2018. The largest percentage of these fish was juvenile coho salmon (77%). The FSC ran continuously throughout the month of May. Total numbers collected at the Swift FSC from January through May by operation year are shown below:

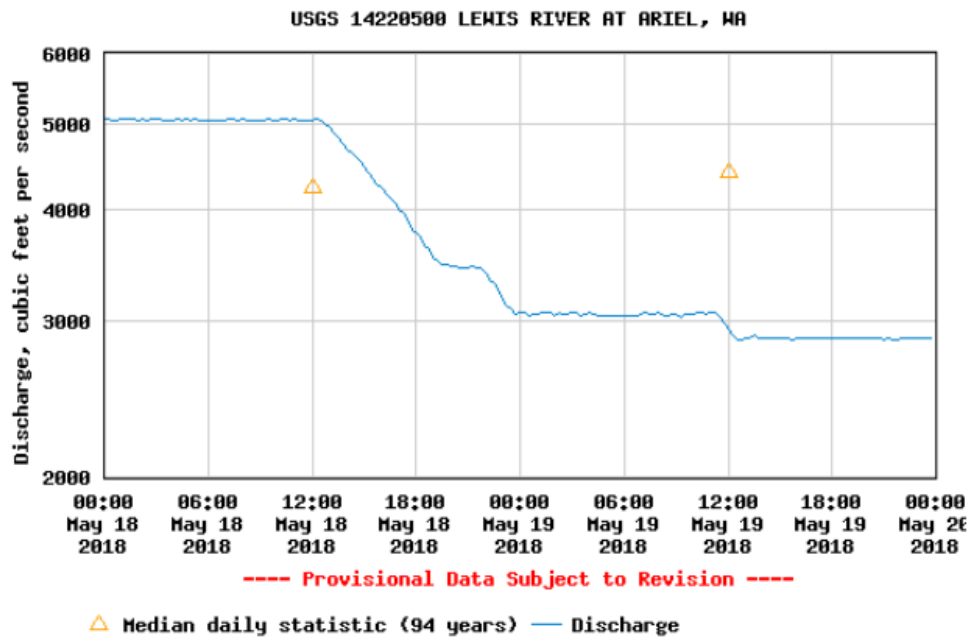
Species (parr/smolt)	YTD: 4/30/2013	YTD: 4/30/2014	YTD: 5/30/2015	YTD: 5/30/2016	YTD: 5/30/2017	YTD: 5/30/2018
Coho	9,243	<i>Na</i>	14,912	49,276	5,528	24,641
Chinook	663	<i>Na</i>	4,116	3,347	687	4,147
Steelhead	112	<i>Na</i>	1,069	2,006	1,092	7,553

Other

May downramping event – Tom Wadsworth (WDFW) expressed that WDFW staff noticed 100s of dead juvenile salmonids on the shoreline near the Lewis River golf course in an area with a slight depression/gravel bar, and requested more detail regarding the causes(s) for the event on May 18th and 19th, 2018 (see USGS gage reading below).

Discharge, cubic feet per second

Most recent instantaneous value: 2780 06-18-2018 10:00 PDT



Lesko viewed the above USGS gage reading prior to the meeting and confirmed with internal staff that PacifiCorp was in compliance with both the sunset/sunrise provisions and ramping rate restrictions stipulated in the FERC license.

Lesko thought that perhaps the juvenile fish mortality during the scheduled downramping was an isolated incident but would like WDFW to pinpoint the stranding location and email it to Lesko for review.

Agenda items for July 13, 2018

- June 14, 2018 Meeting Notes
- Aquatic Fund Process Review
- ATE Update
- In Lieu Fund Update
- Annual Operating Plan (AOP) Update – tentative
- ATE Coho Salmon in 2018
- Study/Work Product Update

Adjourn 11:55am

Next Scheduled Meeting:

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

Meeting Handouts & Attachments:

- Meeting Notes from 5/9/18
- Agenda from 6/14/18
- **Attachment A** – ACC Super Smolt PowerPoint Presentation
- **Attachment B** - Lewis River Acclimation Program – Release Strategy Memo to the H&S Subgroup, May 30, 3018
- **Attachment C** - Lewis River Fish Passage Report (May 2018)

Swift Reservoir Residual/Super Smolt Coho

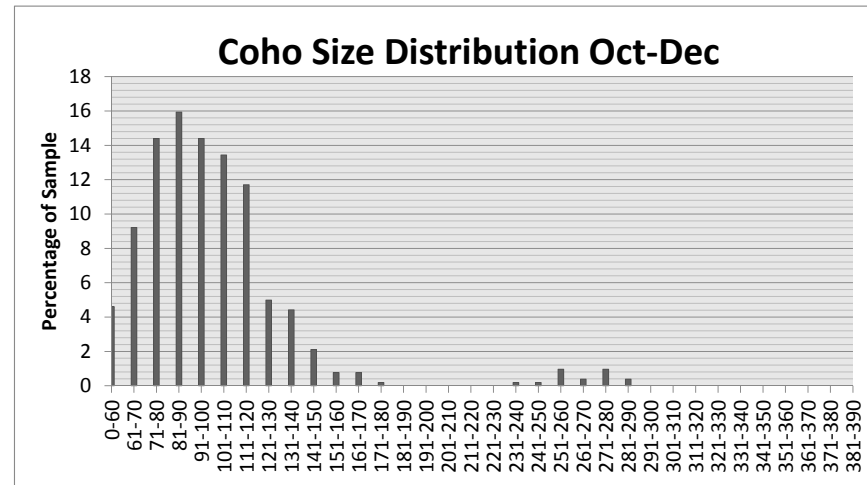
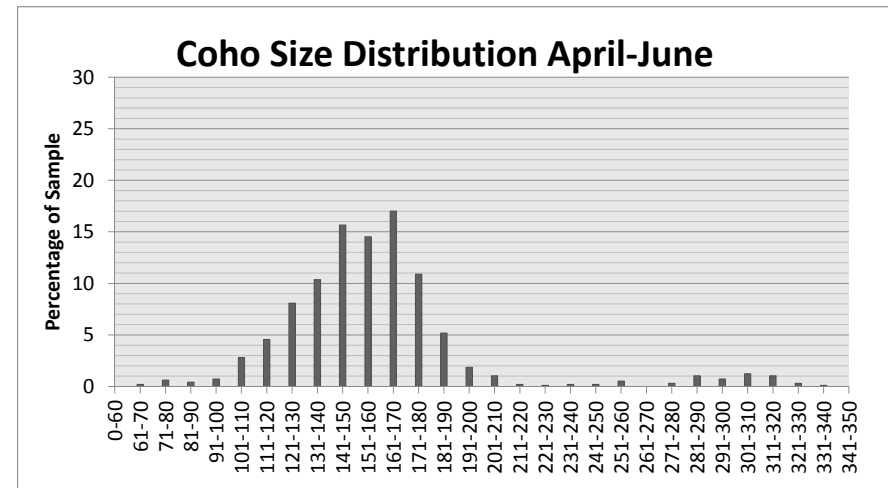
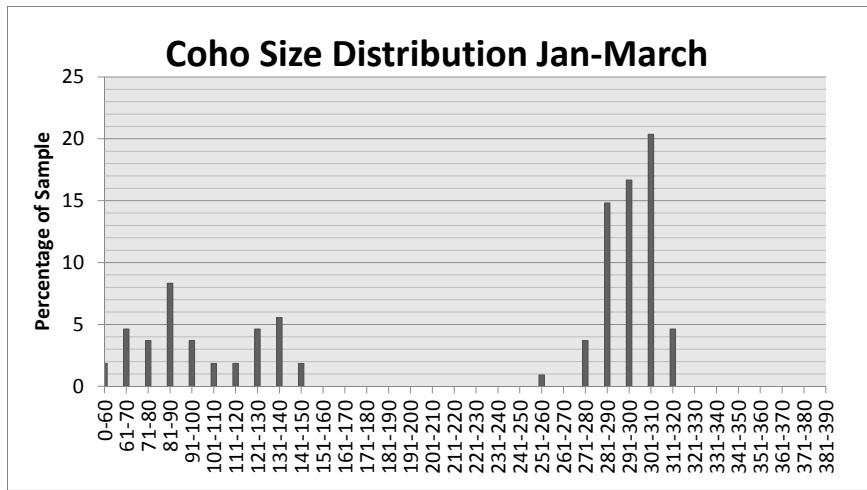
- What are super smolts?
- Seasonal distribution for collecting super smolts.
- Number of super smolts captured annually and compared to overall coho migrants.
- Collection Efficiency results on super smolts.
- Are super smolts contributing to adult returns?
- What are the unknowns and what further information should we seek?

What are they?

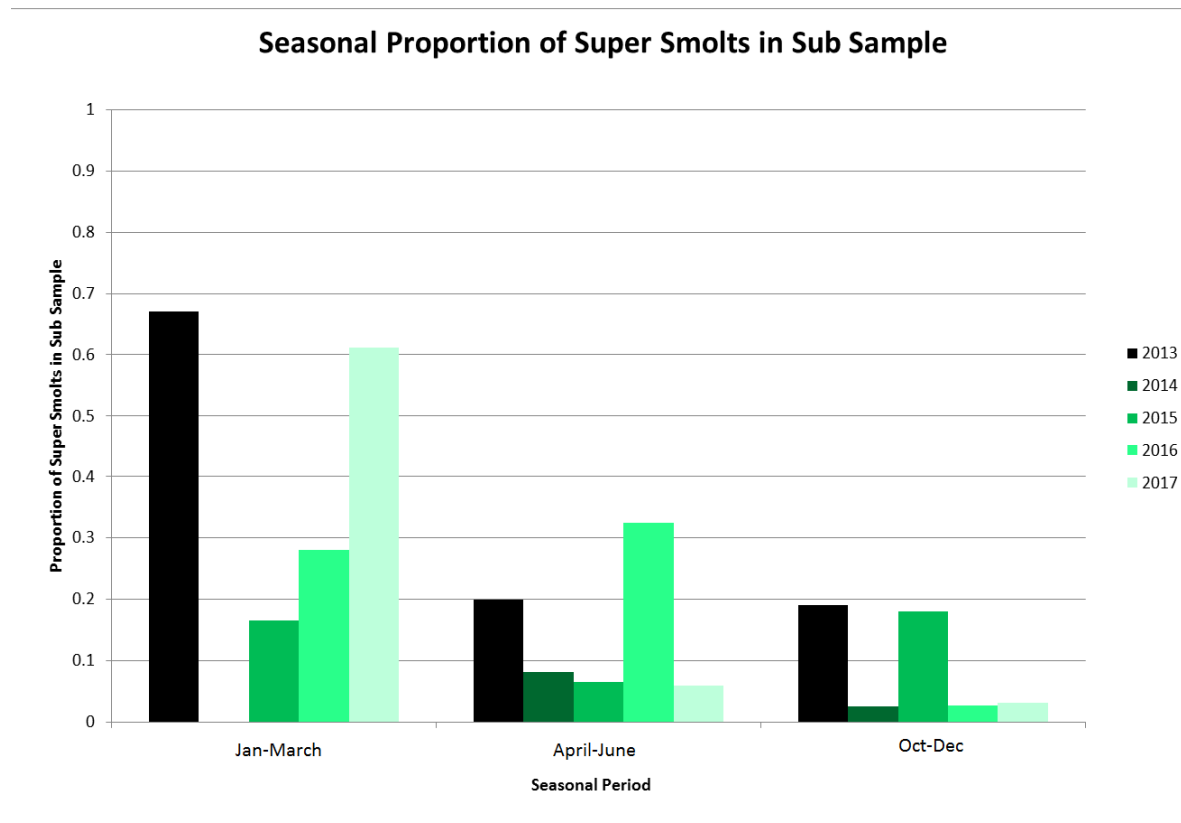
- Coho that have 'missed' the general migration at about 1.5 years of age and end up over summering/wintering.



Length Distribution of Coho 2017

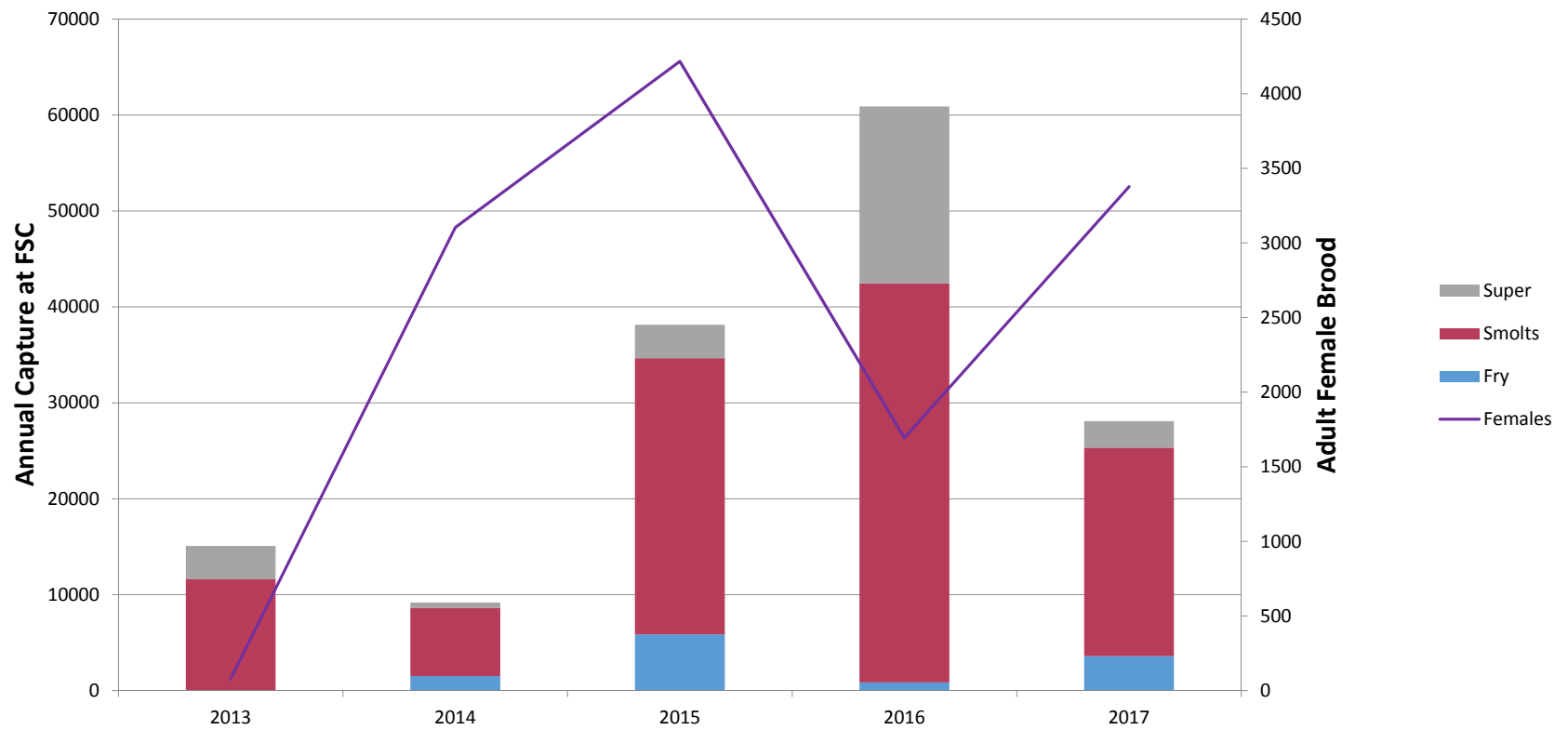


Seasonal Distribution of Super Smolt Collection

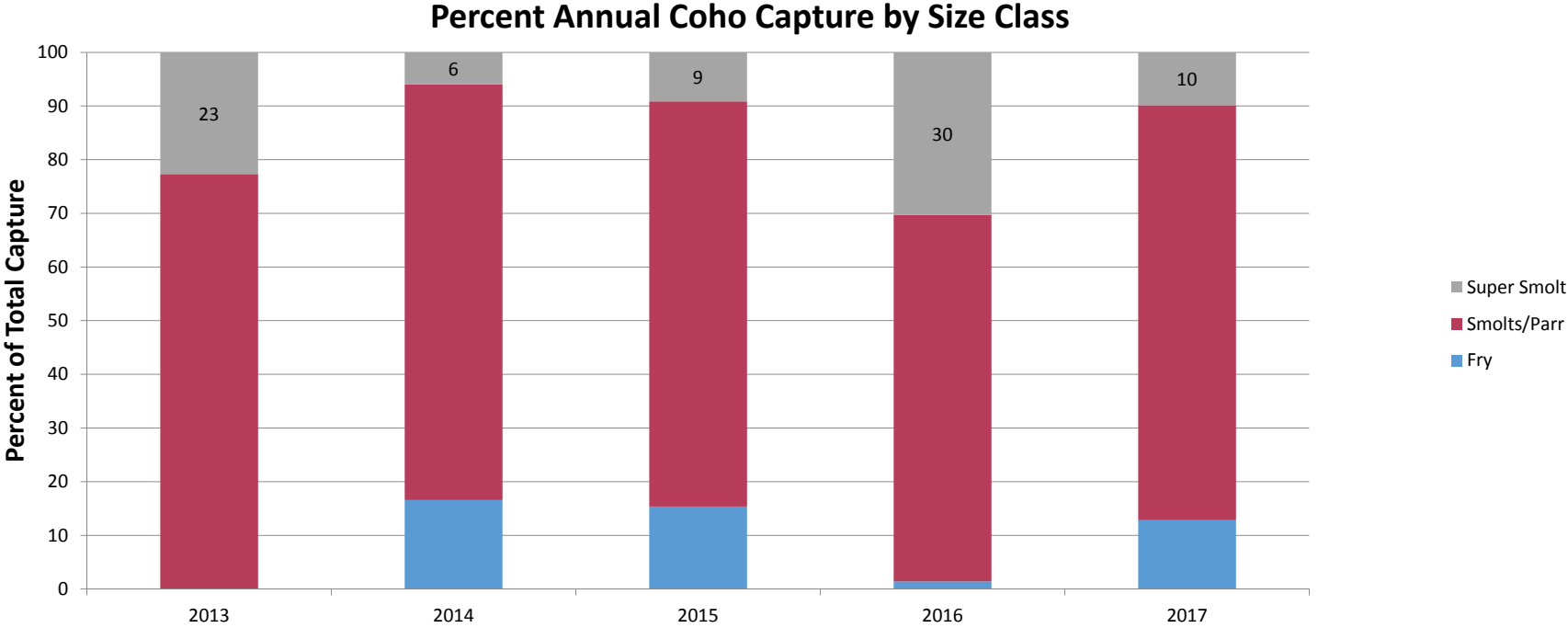


Annual Capture of Coho at FSC

Annual Coho Counts by Size Class



Annual Proportion of Capture that are Super Smolts



Super Smolt Collection Efficiency

- Limited data, 2017 is the only year with available data and was done with a small sample.
- 102 super smolts PIT tagged and released at head of Swift.
- 11 were recaptured in 2017 giving a CE for super smolts of about 12%.
- Collection efficiency discrepancy between smolts and super smolts.
- Coho smolts had CE of about 24%.
- Back calculating (bootstrapped) for population estimate gives 25,400 super smolts and 93,800 smolts in 2017.

Do Super Smolts Contribute to Adult Returns?

- In short, yes.
- Limited data available. 2017 was the first year we saw returning PIT tagged super smolts.
- Returning super smolts were not quite adults and not quite jacks.
- Noticeable amount of these 'tween' returns that were both male and female, not just jacks but jennies as well.
- 2018 and coming years should give us more clarity of the contribution super smolts have on adult returns.

Unknowns and Future Efforts.

- Are super smolts going to mature and return as true adult coho.
 - We'll have a better idea in 2018 given 2017 was the first season of returning super smolts.
 - If super smolts are a substantial contribution to adult returns, what effect does angler harvest have?
- Are super smolts predatory on other key species above Swift?
- Continue to PIT tag and monitor.
- Questions?

MEMO
DRAFT: Lewis River Acclimation Program – Release Strategy Memo to the H&S Subgroup
Prepared by PacifiCorp

May 30, 2018

Introduction

The original spring Chinook acclimation program called for 100,000 juvenile spring Chinook salmon to be released at acclimation sites upstream of Swift Dam. Due to poor performance of the acclimation facilities combined with substantial damage sustained during recent high water events, all sites are in the process of being decommissioned. The primary purpose of acclimating spring Chinook juveniles to the upper basin above Swift Dam was to promote the distribution of returning adults spawners throughout the available spawning habitat upstream of Swift Dam. As naïve spring Chinook adults transported above Swift Dam in 2017 spawned widely across the available habitat (throughout the upper Lewis River, Muddy River watershed, and Swift Reservoir tributaries), it appears that acclimation of juvenile spring Chinook may not be necessary to accomplish this primary acclimation goal. Therefore the ACC H&S Subgroup recommended releasing the 100,000 juvenile spring Chinook salmon (formerly allocated for the upper basin acclimation sites) downstream of Merwin Dam in 2018 and into the near future. The purpose of this draft memorandum is to briefly describe potential approaches for the spring Chinook supplementation program over the next 5 years (2019 – 2024) and provide a starting point for discussion at the May 31, 2018 H&S Subgroup meeting. It is intended that the subgroup will make a final discussion at the meeting regarding the reallocation of the upper basin juvenile spring Chinook acclimation fish to being released below Merwin Dam, evaluation of juvenile release and tagging strategy, and ongoing monitoring programs for adult spawning distribution and juvenile production.

Proposed 2018 Release Strategy

The 100,000 juvenile spring Chinook currently being held at Speelyai Hatchery for 2018 release have not been tagged and still have adipose-fins intact. The original intent was for these fish to be direct-released throughout the upper basin in July and August 2018. The target size for fish at release was set at approximately 52 fish to the pound.

Given their projected size this fall, two potential release strategies for the 2018 fish release include: 1) incorporating them into the October release already developed and outlined in the 2018 Hatchery and Supplementation Program Annual Operating Plan (AOP); or 2) releasing them independently this fall and in parallel with the observed out-migration period for spring Chinook captured upstream of Swift Dam (which generally peaks in late-November). For the first strategy, the 100,000 fish would be transported to Lewis River Hatchery and incorporated into the October release group. For releasing fish independently, the proposed release strategy consists of releasing approximately 25,000 smolts per week to the Woodland Release Ponds. The capacity of the release ponds is approximately 76,000 fish of the expected size range of spring Chinook juveniles to be released. As each batch of 25,000 smolts are released to the release ponds, they would be able to volitionally migrate out of the ponds to the North Fork Lewis River for a 6 day period. On the 7th day, they would be force released, and the new batch of 25,000 smolts would be transport from Speelyai Hatchery and added to the ponds, continuing with the 1 week volitional then force release strategy for each group. The first release would occur the first week

in November. All fish would be released by the first week of December. Under the original acclimation program (i.e. releasing the 100,000 spring Chinook upstream of Swift Dam), approximately 15% (15,000) of these fish would have received a PIT Tag to be later detected at the Swift Reservoir Floating Surface Collector to assess acclimation pond success. Because these fish will now be released below Merwin Dam, it will need to be decided whether a similar proportion of these fish will still need to be tagged and what purpose that information will serve. As returning adults, these fish would not be available to angler harvest, thus increasing the number of potential adults available for transport upstream of Swift Dam to spawn.

Proposed 2019 – 2024 Marking and Release Strategy

Option 1: Full Integration into Existing Hatchery Program (Adipose Clipped)

Under this option, the 100,000 spring Chinook, formerly allocated to the acclimation program above Swift Dam, would be completely integrated into the overall spring Chinook hatchery program releases downstream of Merwin Dam, increasing the total program production from 1.25 million to 1.35 million fish. This would remain a segregated program; any NOR adult spring Chinook that return to spawn over the next five years would be taken upstream and not used for brood stock. Marking and monitoring of the total program fish would follow the strategy outlined in the Hatchery and Supplementation Program Annual Operating Plan (AOP). The monitoring and evaluation strategy in the AOP will eventually determine the release strategy with the best survival results. This strategy minimizes logistical hurdles of segregating the 100,000 spring Chinook at the hatchery and separately marking them from other program fish releases. As some of the total program fish are adipose fin clipped and available for harvest, there would be some increased harvest of the adults produced by the addition of the 100,000 juveniles to the total program release (compared to if these fish were not marked as under the existing acclimation program or proposed 2018 release). However, the addition of these fish to the overall hatchery releases should provide additional returns to support broodstock and adult supplementation targets.

Option 2: Full Integration into Existing Hatchery Program (Adipose Intact)

Under this Option, 100,000 spring Chinook would not be adipose clipped, but releases would still be spread over the same time period as the general program releases (until monitoring under the AOP identifies the optimal release strategy). Not marking these fish would be consistent with the acclimation program strategy in that Option 2 would minimize angler harvest of the adult returns from these 100,000 fish further increasing adults available for upstream adult supplementation. Under Option 2, the program would also remain segregated; any NOR adult spring Chinook that return to spawn over the next five years would be taken upstream and not used for brood stock.

Option 3: Separated from Existing Hatchery Program (Adipose Intact yet Differentially Marked)

Under this option, a portion of the returning NOR adults would be used as parental stock to produce 100,000 spring Chinook smolts (similar to the original acclimation program), which would then be released below Merwin Dam. The 100,000 smolts would be differentially marked from other program fish so as to not be available to angler harvest and so that they could be specifically identified for transport as adults to spawn upstream of Swift Dam. This would entail segregation in the hatchery and application of a differential external mark from other program fish causing logistical constraints. As CWT and adipose fin clip combinations are already allocated to other program fish, a different external visual mark would be required. Previous studies have shown some decreased survival (below the survival

observed for adipose clip/CWT marked fish) for various salmonid species using other marks, such as ventral or pectoral fin clips, and maxillary clips (Jones and Bottomley 1997); however, Jones and Bottomley (1997) and Olson and Cates (undated) failed to detect a difference in survival between fin clip mark types in spring Chinook, though low sample size and low overall adults survival was acknowledge in both studies. Conservatively, it should be assumed that some decreased smolt to adult survival may occur under Option 3 compared to Option 1 and Option 2, by using a fin clip or maxillary clip, other than the adipose fin. However, adult returns of these (supplementation) fish could be differentiated as HOR from other unclipped (NOR) returns.

Monitoring and Adaptive Management

Ongoing Adult Spawning Distribution and Juvenile Production Monitoring

The spawn timing, distribution, and abundance of transported adult spring Chinook upstream of Swift Dam will continue to be monitored as described in Objective 15 of the current the Monitoring and Evaluation Plan for the Lewis River (as has been done since 2012 for transported anadromous fish). Juvenile spring Chinook production resulting from the spawning of these transported adult spring Chinook will continue to be evaluated by operating the screw trap at Eagle Cliff and collection at the Swift Floating Surface Collector as described in Objectives 6, 7 and 8 of the current Monitoring and Evaluation Plan for the Lewis River.

Adaptive Management

If annual spawning surveys (Objective 15) show that transported spring Chinook are not distributing throughout the available spawning habitat upstream of Swift Dam, contrary to the 2017 spawning survey results, then an acclimation release strategy for the 100,000 juvenile spring Chinook to the basin upstream of Swift Dam will be re-visited by the H&S subgroup as part of annual planning.

References

Jones, R.N., and R. Bottomley 1997. An evaluation of adipose fin clip versus left ventral fin clip as mass marks for hatchery spring Chinook salmon at Kooskia National Fish Hatchery, Idaho, dated May 1997. https://www.fws.gov/lsnakecomplan/Reports/FWS_Field_Stations/Idaho%20FRO-Project%20Reports/FINCLIP.Kooskia.pdf

Olson, D.E., and B.C. Cates. Undated. Differential performance of ventral fin clipped and adipose fin clipped/coded-wire tagged spring Chinook salmon at Warm Springs National Fish Hatchery, Oregon (1987-1989 brood year). <https://www.fws.gov/columbiariver/publications/VENTRALFINCLIP.pdf>

Lewis River Fish Passage Report

May 2018

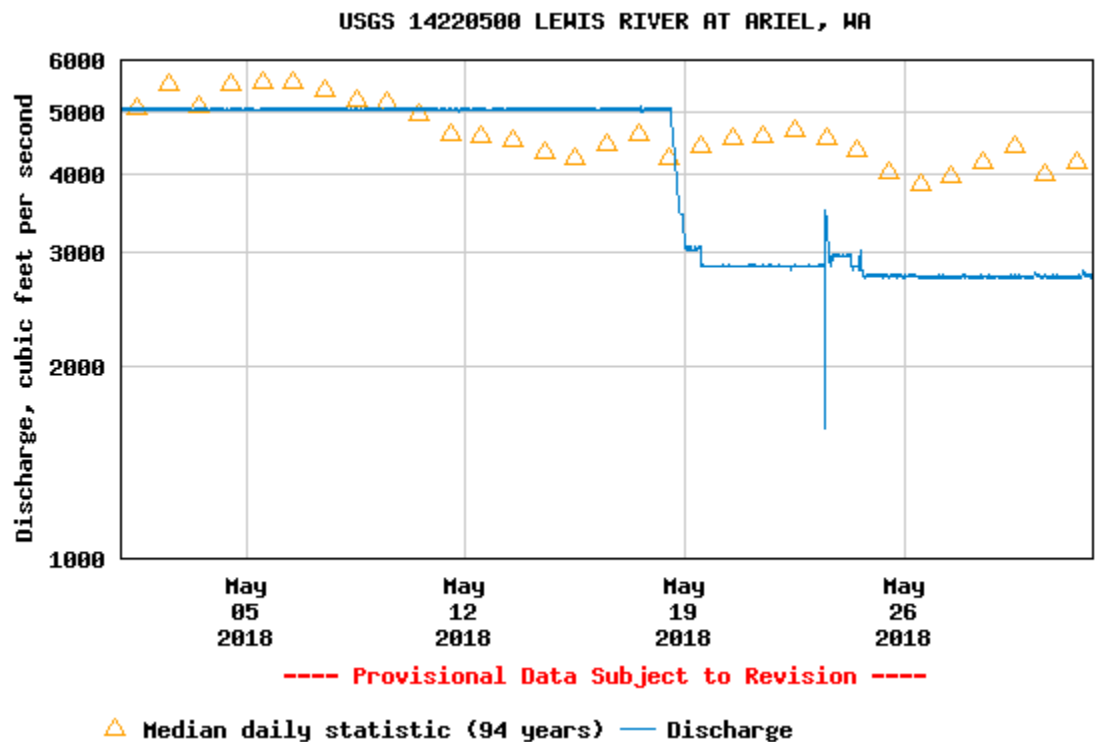
Merwin Fish Collection Facility and General Operations

During the month of May, a total of 1,491 fish were captured at the Merwin Dam Adult Fish Collection Facility. The majority of these fish were spring Chinook (1,217 – 84%).

The Merwin Dam Adult Fish Facility lift and conveyance system ran continuously through the month of May except for two unscheduled outages for emergency repairs. The trap was unexpectedly shut down on the afternoon of May 10, 2018 due to the failure of the fish hopper hoist block. The block was replaced and the trap was put back in service on May 14, 2018. During the unscheduled outage, additional damage to the cabling system was discovered and the trap was shut down again on May 17, 2018 to make these repairs. The trap was put back in service on May 21, 2018. On May 5 and 6 the fish lift and conveyance system remained in service, however fish remained in the sorting pond until they could be processed and transported to Lewis River Hatchery on May 7, 2018.

River flow varied below Merwin Dam ranging between 1,590 and 5,070 cfs throughout the month.

Discharge, cubic feet per second



Upstream Transport

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 May 2018, an additional 1,214 BWT winter steelhead were transported upstream for a total of 1,225 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*	658	475	1,225

* Through May 31, 2018.

A total of 463 adult spring Chinook have been transported upstream as part of the 2018 run year so far. Of these fish, 263 were transported from the Merwin Dam Fish Collection Facility with an additional 200 fish being transported from the Lewis River Hatchery. Transported upstream were 151 females, 289 Males, and 20 jacks. By the end of May, there are still about 400 adult spring Chinook being held at Lewis River Hatchery for eventual distribution into the upper basin. These remaining fish will be taken upstream once hatchery brood stock collection has been collected. Additional details regarding this decision process can be found in Section B - 2.2 in the 2018 Hatchery and Supplementation Annual Operating Plan (AOP).

Floating Surface Collector (FSC)

During the month of May, 26,686 fish were collected in 2018. The largest percentage of these fish was juvenile coho salmon (77%). The FSC ran continuously throughout the month of May. Total numbers collected at the Swift FSC from January through May by operation year are shown below:

Species (parr/smolt)	YTD: 4/30/2013	YTD: 4/30/2014	YTD: 5/30/2015	YTD: 5/30/2016	YTD: 5/30/2017	YTD: 5/30/2018
Coho	9,243	<i>Na</i>	14,912	49,276	5,528	24,641
Chinook	663	<i>Na</i>	4,116	3,347	687	4,147
Steelhead	112	<i>Na</i>	1,069	2,006	1,092	7,553

Fish Facility Report
Swift Floating Surface Collector
May 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	2	1	143			4			182			2			14	348
02		2	162						197			2			29	392
03		4	249		2	8			474			5			22	764
04		4	257			5			256			6			11	539
05		8	564			12			528			4			76	1192
06	11		34			2			191			1			36	275
07	8	26	324		4	4			179			13			48	606
08	21	35	457			12			473			29			32	1059
09	12	33	30			9			180			8		1	8	281
10	4	41	525			1		1	276			4			4	856
11		16	498						317		2	8			17	858
12		17	1081			6			626			12			5	1747
13		65	801						227						40	1133
14	1	18	424						65	1					13	522
15		19	276					1	139							435
16			730		4	5			150			12			2	903
17			1002			4			277			8				1291
18		4	1113			8			253			8	1		12	1399
19		5	1045						196			4			13	1263
20	3	49	757	1	3			2	142			16			41	1014
21		8	1015		4	16			282			12		1	22	1360
22		25	898			8			219			22			14	1186
23		44	900						136			12			14	1106
24		37	1119			8			88			4	4		20	1280
25		24	440			1			121			4			6	596
26			840	1		4			96			52	3		9	1005
27		9	688			4			52			20			10	783
28	1	40	448			9			85			14			8	605
29	4	44	760		1	4	1		102			12			2	930
30		35	663	2	6	16			57			25			8	812
31		14	28			12			80						12	146
Monthly	67	627	18271	4	24	162	1	4	6646	1	2	319	8	2	548	26686
Total	809	3411	20421	21	252	3874	3	9	7541	8	3	636	17	5	1708	38718

