FINAL Meeting Notes
Lewis River License Implementation
Aquatic Coordination Committee (ACC) Meeting
April 14, 2016
Merwin Hydro Control Center

ACC Participants Present (27)
Todd Olson, PacifiCorp
Chris Karchesky, PacifiCorp
Frank Shrier, PacifiCorp (via conference)
Erik Lesko, PacifiCorp
Kim McCune, PacifiCorp
Mark Ferraiolo, PacifiCorp
Jeremiah Doyle, PacifiCorp
Aaron Roberts, WDFW
Peggy Miller, WDFW
Pat Frazier, WDFW
Bryce Glaser, WDFW
Michelle Day, NMFS
Shannon Wills, Cowlitz Indian Tribe (via conference)
Eric White, Cowlitz Indian Tribe
Diana Gritten-MacDonald, Cowlitz PUD
Amanda Froberg, Cowlitz PUD
Michelle Day, NMFS
Mark Celedonia, USFWS (via conference)
Steve Manlow, LCFRB

Guests
Al Thomas, Columbian
Eli Asher, Cowlitz Indian Tribe
Phil Roni, Cramer Fish Sciences
Karl Dickman, ICF International
Kevin Malone, D.J. Warren
Mike Bonoff, MB&G
Robert Al-Chokhachy, USGS
Pete McHugh, Eco Logical Research

Calendar:

May 12, 2016	ACC Meeting	Merwin Hydro
(TBD)	ACC Meeting (Aquatic Fund Subgroup)	Merwin Hydro

Assignments from April 14, 2016	**Status**
Celedonia & Doyle: Flesh out a Yale HPP study plan and bring back to the ACC for its review.	**ACC agreed to postpone until Feb. 2017**

Assignments from February 11, 2016	Status
Frazier: Submit extension request details to McCune for the 2013 Survey of BT Stream Habitat Aquatic Fund Project.	**Pending**

Opening, Review of Agenda and Meeting Notes
Diana Gritten-MacDonald (Cowlitz PUD) called the meeting to order at 9:05 a.m. and reviewed the agenda. Additions to the agenda include the following:

Discussion about the following outstanding assignment:

1.

Assignments from February 13, 2014 meeting (revised 9/10/15)
Frazier: Work on securing the 2012, 2013 and 2014 lower river coho abundance survey data for tributaries. Provide this information to Erik Lesko (PacifiCorp).

2. Yale Reservoir Bull Trout Presentation; 7.4 Habitat Preparation Plan (Yale)

The March 10, 2016 meeting notes were reviewed and approved with minor clarification changes at 9:15am.

Public Comment
None

Introduction
Todd Olson (PacifiCorp) communicated to the ACC attendees and guests that PacifiCorp requested each consultant in attendance today provide an overview of what the consultants are doing and what they have found over the course of the fish passage studies. Olson also stated that a draft report (inclusive of all studies) will be submitted to the ACC in late April 2016 for a 30-day review and comment period. Upon completion of the 30-day review period all reports will be submitted to the Services. In response to an inquiry from WDFW, Olson replied that the ACC will have opportunity to comment and ask questions for inclusion into the final report that is submitted to the FERC on or before June 26, 2016.

Development of New Information to Inform Fish Passage Decisions at the Yale and Merwin Hydro Projects on the Lewis River – Dr. Robert Al-Chokhachy, USGS
Dr. Robert Al-Chokhachy (USGS) provided a PowerPoint presentation titled, *Development of New Information to Inform Fish Passage Decisions at the Yale and Merwin Hydro Projects on the Lewis River* and spoke to the six tasks below. Further detail can be viewed on the Lewis River website at the following link:
http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/acc/USGS_April%202016.pdf

Task 1: Benchmark of existing fish passage facilities: Review NW fish passage facilities per fish passage metrics of mortality, fish injury, etc.

Task 1 Summary

- Injury rates (upstream and downstream) appear to be relatively low for most year/species

- Proportion of emigrants collected at sites is highly variable-years, sites, species
- Efforts to improve collection are underway-pattern that has continued at other facilities (e.g., Cowlitz Falls).

Task 2: Habitat assessment of Yale and Merwin tributaries: Identify upstream fish barriers to establish extent of available habitat. Delineate aquatic habitat types (i.e., habitat quality) for all tributaries to Merwin and Yale reservoirs, and select upstream of Swift tributaries.

Task 2 Summary

- Empirical data used to parameterize EDT model including new data (USGS), USGS, and Meridian
- High quality of habitat in tributaries
- The extent of habitat in Lake Merwin is low suggesting limited capacity for reintroductions

USGS Task 3: Assessment of adult spawning success in tributaries: Place "test adults" in Yale and Merwin to assess where fish go and whether they can successfully spawn. Due to limited fish returns and hatchery broodstock requirements and re-introduction program upstream of Swift; only 300 coho were placed into Merwin reservoir in 2014. No coho available in 2015; unlikely coho will be available in 2016.

Task 3 Summary

- Test fish and empirical data from Swift suggest variety of habitats (spatially) will be utilized by reintroduced anadromous Salmon
- Habitat is generally in good condition-spawning gravel in some locations may be too large, but fines are not limiting
- Lack of YOY in tributaries with spawning may be due to early life-state emigration, leading to increased reservoir rearing and potential predation effects.

USGS Task 4: Juvenile production potential and emigration success in tributaries: Monitor juvenile production and emigration success during their time in tributaries and reservoirs. Determine factors associated with emigration patterns and quantify travel times through reservoirs. Identify potential collection locations.

Task 4 Summary

- Proportion of fish collected (remains low)
- Emigration time; Juvenile Coho is ~ 5 weeks (highly variable) and Spring Chinook = > 2 months
- Test release data suggest relatively rapid migrations
- Together results suggest difficulties of fish "finding" collector

USGS Task 5: Evaluation of Merwin predator impacts: Determine types and abundance of predators that exist in Merwin reservoir. Quantify predation potential of anadromous juveniles through foodweb studies. Results identify a significant population of northern pikeminnow (a major predator on salmon/steelhead smolts). Modeling efforts that integrate field data from individual Tasks and quantify feasibility of anadromous reintroductions in Merwin and Yale have been initiated.

Task 5 Summary

- Tiger Muskellunge appear to have significant effect on size structure of northern pikeminnow (NPM)
- NPM population of piscivorous fish remains relatively large
- Estimates of juvenile Salmon predation, even seasonal appears to be high

USGS Task 6: Assess anadromous/resident fish interactions: Determine if salmon and steelhead adversely affect resident fish such as bull trout. Conversely, determine if resident fish have adverse effect on salmon/steelhead. Lab work is being finalized for foodweb studies. Modeling efforts that integrate field data to assess interactions are underway and collaboration with local Bull Trout Working Group is occurring.

Task 6 Summary

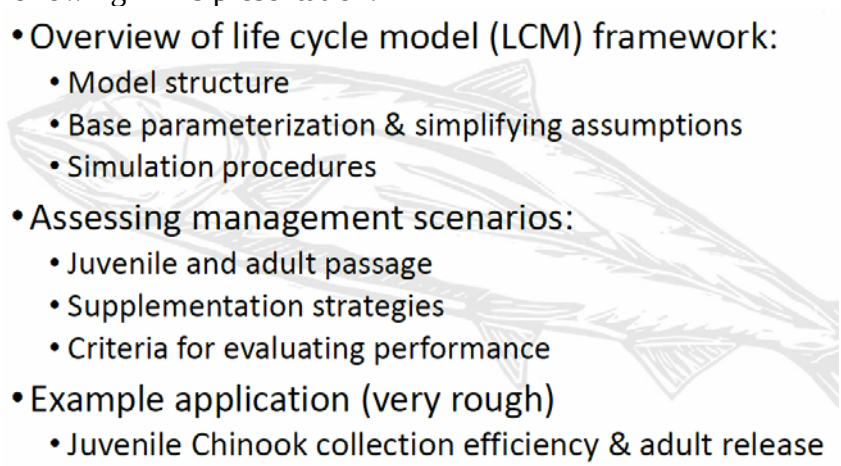
- Few coho observed during 2013 – 2014 snorkel surveys
- Relatively low abundance compared to coastal cutthroat trout
- Superimposition found on 3 of the 23 bull trout redds during 2014; no data for 2015

Dr. Al-Chokhachy requested that if the ACC have any questions please send them via email to: ral-chokhachy@usgs.gov

<Break 11:20am>
<Reconvene 11:30am>

A Life Cycle Model for Assessing Lewis River Fish Reintroduction Scenarios – Pete McHugh, Eco Logical Research

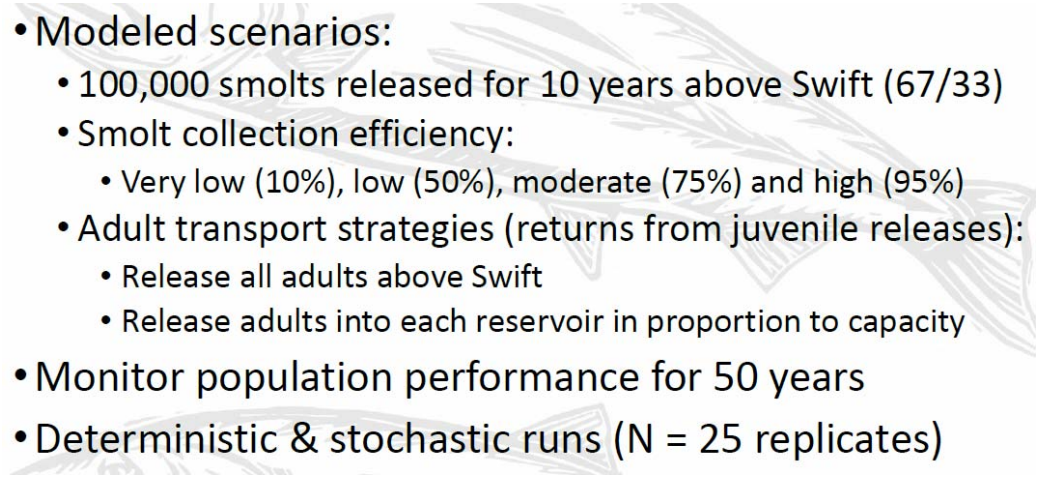
Pete McHugh (Eco Logical Research) provided a PowerPoint presentation titled, *A Life Cycle Model for Assessing Lewis River fish Reintroduction Scenarios.* McHugh addressed the following in his presentation:



Further detail can be viewed on the Lewis River website at the following link: http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/acc/EcoLogical_April%202016.pdf

In addition, McHugh reviewed the spatial structure for the North Fork Lewis River, population segments, and other life cycle model features such as the model range of supplementation strategies, and model H/N fitness differential such as survival and fecundity.

McHugh reviewed a spring Chinook example application of how does different passage (juvenile) and adult release (destination) strategies affect reintroduction success. The modeled scenarios are as follows:



Important to note the parameter assumptions and initial insights (see PowerPoint presentation, pages 16-22).

Caveat: the runs are mostly for demonstration; placeholders were used for several parameters

The next steps include:

- Finalizing inputs & modeling decisions
- Set models up for coho and steelhead
- Construct final list of scenarios of interest to the ACC
- Run all and prepare report

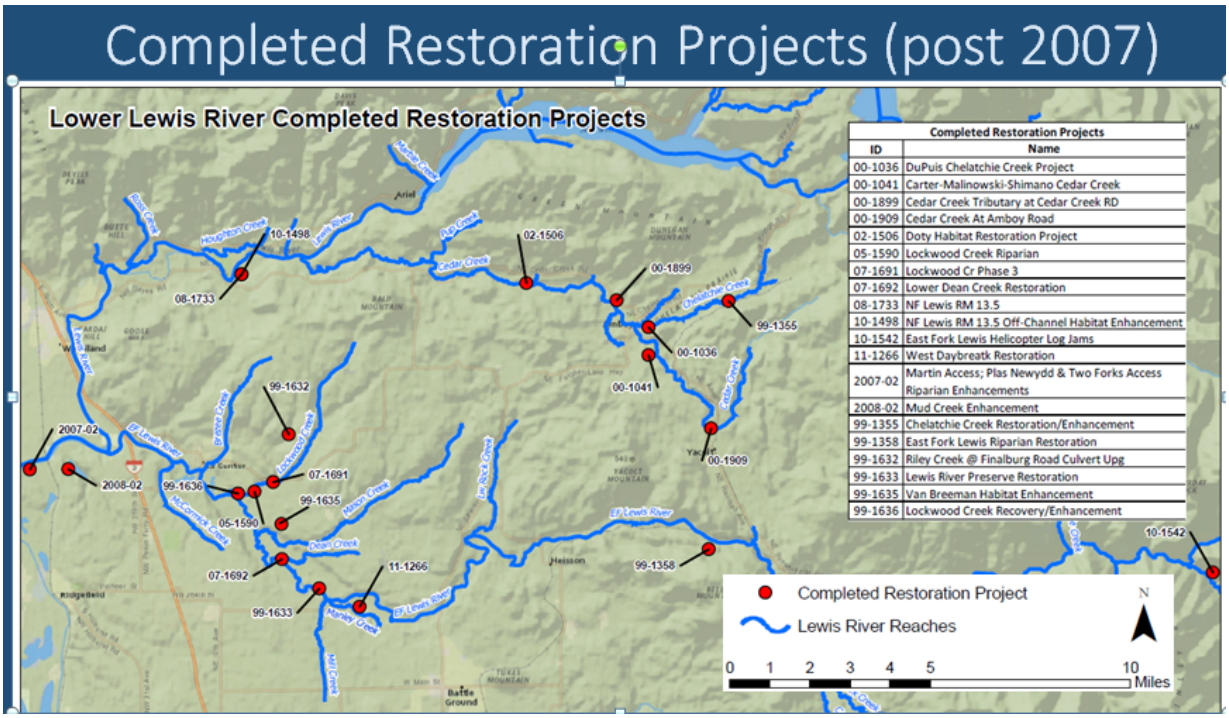
Working Lunch
<Break 12:15pm>
<Reconvene 12:20pm>

Lewis River Restoration Project Verification – Mike Bonoff, Mason Bruce & Girard
Mike Bonoff (Mason, Bruce & Girard) provided a PowerPoint presentation titled, *Lewis River Restoration Project Verification* and addressed the identification of projects reviewed and overviewed and how this information is incorporated into the Ecosystem Diagnosis Treatment3 (EDT) model. Further detail can be viewed on the Lewis River website at the following link: http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/acc/MBG_April%202016.pdf

Bonoff informed the ACC attendees that the initial phase of EDT modeling was designed to:

- Verify that project restorations since 2007 are in place and functioning based on descriptions provided by the LCFRB website
- Parameterize those projects to provide input to the model
- Develop conceptual models to link effectiveness of restoration strategies (e.g., riparian restoration) to EDT attributes
- Identify sources of information on culvert and passage barriers in the Lewis River that can be incorporated into the Lewis River EDT model.

Bonoff spoke to 20 restoration projects that were identified, visited and verified as detailed in the map and project summary below:



Project No.	Project Name	In-Channel Treatment	Riparian Restoration	LWD	Culvert/Barrier Removal or Modification	Side Channel Amendment	Livestock Management
00-1036	DuPuis Chelatchie Creek Project	✓		✓			
00-1041	Carter-Malinowski-Shimano Cedar Creek	✓		✓			
00-1899	Cedar Creek Tributary at Cedar Creek Road				✓		
00-1909	Cedar Creek at Amboy Road				✓		
02-1506	Doty Habitat Restoration Project	✓	✓	✓		✓	
05-1590	Lockwood Creek Riparian	✓	✓	✓		✓	
07-1691	Lockwood Cr Phase 3		✓	✓	✓	✓	
07-1692	Lower Dean Creek Restoration		✓	✓			
08-1733	North Fork Lewis Rivermile 13.5	✓		✓			
10-1498	NF Lewis RM 13.5 Off-Channel Habitat Enhancement	✓	✓	✓		✓	
10-1542	East Fork Lewis Helicopter Log Jams			✓			
11-1266	West Daybreak Restoration Project	X	✓	✓		✓	
99-1355	Chelatchie Creek Restoration/Enhancement		✓				✓
99-1358	East Fork Lewis Riparian Restoration		✓		✓	✓	
99-1632	Riley Creek at Finalburg Road Culvert Upgrade				✓		
99-1633	Lewis River Preserve Restoration		X				
99-1635	Van Breeman Habitat Enhancement		✓				✓
99-1636	Lockwood Creek Recovery/Enhancement		✓				✓
2007-02	Martin Access; Plas Newydd & Two Forks Access Riparian Enhancements		✓	✓			
2008-02	Mud Creek Enhancement			X			
	Totals	6	11	11	5	6	3

Of the 20 projects verified 17 are complete, intact and functioning as described in the Lower Columbia Fish Recovery Board/Salmon Port with three exceptions which is detailed further in the PowerPoint presentation beginning on pages 10 - 13:

- West Daybreak
- Lewis River Preserve
- Plas Newydd Allen (Mud) Creek Component

Bonoff addressed attribute revisions to habitat quality such as benthic richness, predation risk and woody debris. All revisions made to the EDT3/Preliminary benchmarking are complete.

Lewis River EDT3 Model – Kevin Malone, D.J. Warren

Kevin Malone (D.J. Warren) provided a PowerPoint presentation titled, *Upper Lewis EDT Analysis* and reviewed the assumptions and subgroup resolutions and the results of initial model run. Further detail can be viewed on the Lewis River website at the following link: http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/acc/Malone_April%202016.pdf

Malone also reviewed estimates of fish production by geographic area (Merwin, Yale and Swift), estimates of fish production by stream and habitat limiting factors (see pages 4-11 of the above-referenced PowerPoint).

Identification of Restoration Alternatives in North Fork of Lewis River – Phil Roni, Cramer Fish Sciences

Phil Roni (Cramer Fish Sciences) provided a PowerPoint presentation titled, *Identification of Restoration Alternatives in the North Fork of Lewis River.* Roni discussed the following four (4) tasks. Further detail can be viewed on the Lewis River website at the following link: http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/acc/CramerFish_April%202016.pdf

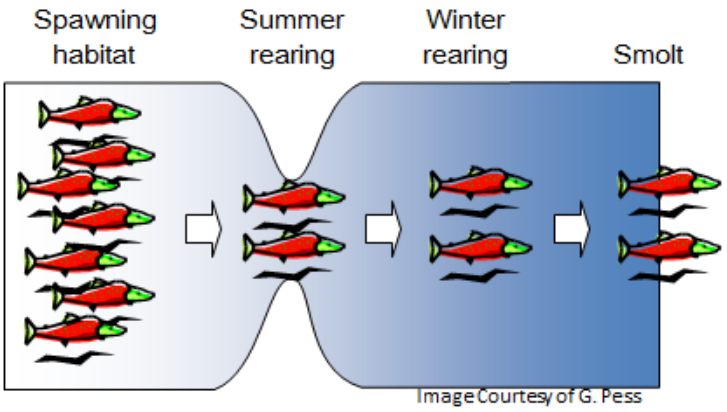
Task 1: Review existing data relative to the physical and biological environment of the Lewis River basin and the life history of Lewis River stocks of coho, spring Chinook and winter steelhead.

Data Sources vs Restoration Steps

Description of Data/Info	Data type: Report	Data type: GIS, Excel, etc.	Data type: Geographic Coverage	Provides data to assist with: Assess condition	Provides data to assist with: Limiting life-stage or habitat	Provides data to assist with: Rest. I.D.	Provides data to assist with: Prioritiz-ation	Provides data to assist with: Back-ground Info
Fish or Habitat Models								
EDT outputs and source data		X	Basin	X	X		X	X
Salmon PopCycle Model	X	X	Basin					X
Assessments								
Integrated Watershed Assessment	X	X	Basin	X				X
Shoreline Master Plan, B.A.s, etc.	X		NF. Lewis					X
Recovery Planning reports/data	X		Lower			X	X	X
Watershed Assessment Models	X	X	Basin	X		X		
LWD assessment	X		Lower					
Channel types		X	Basin					
Monitoring Data								
Habitat and LWD surveys (USGS)		X	Upper Basin	X		X		X
Parr, smolt, spawner etc. surveys	X	X	Various					X
Other habitat survey data	X		Various					X

Task 2: Identify limiting factors (life stage and habitat type) for fish populations of interest with respect to spawning, rearing and migration (see pages 8 – 22 of the above-referenced PowerPoint).

2. Limiting Life Stage and Habitat



Task 3: Identify and develop potential actions that (1) are feasible and practical for implementation and (2) maximize EDT estimates of productivity, abundance or capacity of fish populations of interest equal to or greater than fish passage alternatives into Merwin and Yale reservoirs. Ron reviewed the following potential restoration opportunities:

- EDT highest priority reaches & outputs (ICF)
- Limiting habitat and life stage (Limiting factors analysis)
- Watershed assessment data from previous analysis on riparian, sediment, and hydrologic condition (Fullerton et al. 2010)

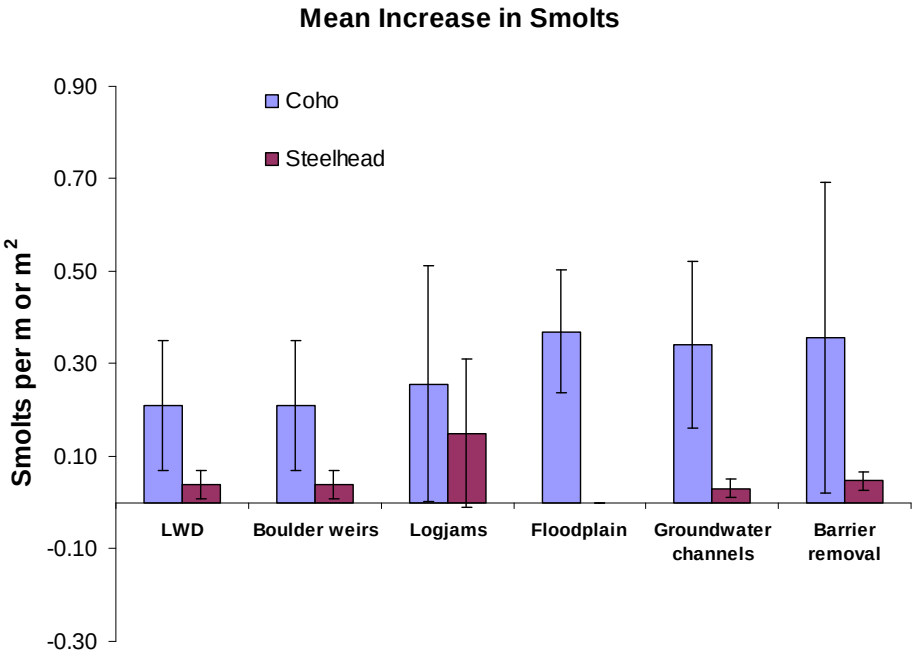
- Geomorphic channel characteristics (Beechie and Imaki 2014)
- Watershed processes and habitats improved by restoration strategies (Roni et al. 2013)
- Information on specific reaches from previous recovery planning efforts (Keefe et al. 2004; LCFRB 2010).

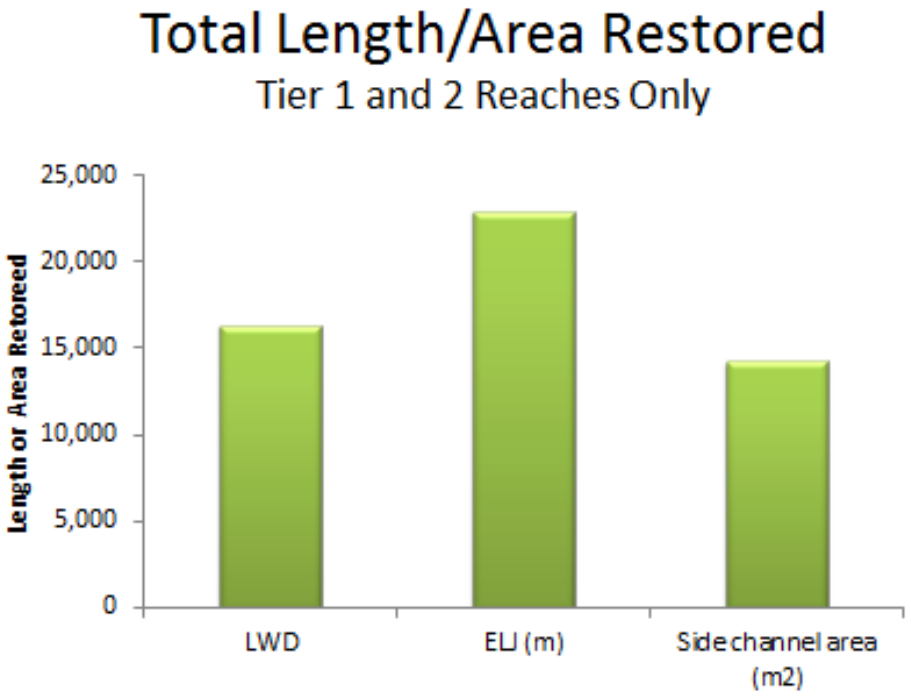
Task 3 Summary

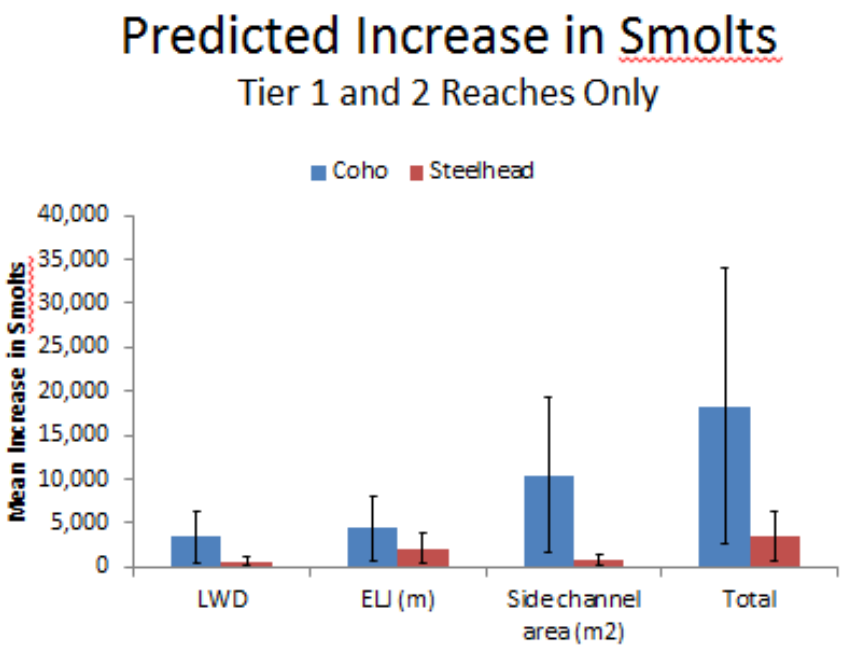
- There is considerable existing data; adequate for Tasks 2 and 3
- Limiting habitat & life stage; rearing is limiting above Swift
- Restoration opportunities; they vary by subbasin and reach
- Data needs to refine estimates
  - ✓ Historical habitat loss/conditions
  - ✓ Habitat and fish use
  - ✓ Site visits to confirm restoration

Task 4: Identify pathway/process to refine potential actions.

Lastly, Roni addressed the following additional analysis underway which was determined by current conditions only.







Yale Reservoir Bull Trout – Jeremiah Doyle, PacifiCorp

Jeremiah Doyle (PacifiCorp) provided a PowerPoint presentation titled, *Yale Reservoir Bull Trout, an Overview of Data Collected to Date.* Doyle discussed the following four (4) bullet point/background. Further detail can be viewed on the Lewis River website at the following link:

http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/acc/Doyle_April%202016.pdf

- Cougar Creek bull trout one of three local populations in the Lewis River basin. Other two in Swift Reservoir (Pine and Rush)
- All three analyzed and found to be genetically distinct from each other
- Cougar Creek has experienced introgression from populations upstream, but distinct Cougar strain still exists
- Cougar Creek only known available bull trout spawning habitat within Yale Reservoir

The study area is illustrated in the following Google Earth image:

28 km of accessible anadromous habitat, mainly located in the following tributaries:

- Speelyai Creek 7.5 km
- Siouxon Creek 6.4 km
- Swift Bypass Reach 4.9 km
- Cougar Creek 2.7 km

Doyle spoke to the annual bull trout monitoring activities and the historical data collected from these activities (see pages 4 – 6 of the above-referenced PowerPoint).

The number of unique detections by year at PIT antenna located near the mouth of Cougar Creek (August – October) was reviewed and the historical numbers of bull trout collected from within the Swift Bypassed Reach, as well as numbers transported to Swift Reservoir.

Doyle also reviewed the following concerns:

- Small population, based off of data collected to date likely <100 spawners
- Extremely small length of total available spawning habitat, 2.7 km, have volitionally sequestered themselves to only the upper 1.5 km, further truncating available habitat

- Observations of bull trout to bull trout redd superimposition have been documented 7 out of the last 9 spawning seasons, lending speculation that with concern to bull trout the available spawning habitat may be fully-seeded
- We know from direct observations within tributaries to Swift Reservoir that bull trout are susceptible to deleterious impacts from interactions with reintroduced anadromous coho (redd superimposition)
- EDT3 is estimating a production of 217 coho adults from Cougar Creek, which would grossly outnumber even the highest bull trout spawner count from the last 9 seasons (2008=29 redds)

And lastly, Doyle reviewed possible data collection in coordination with the Habitat Preparation Plan released coho:

- Bull trout redd surveys are performed weekly of Cougar Creek starting mid-September, these could be extended to encompass later spawning coho timeframe
- Similar to work conducted in P8 of the Pine Creek system in order evaluate bull trout/coho interactions, identified bull trout redds would be delineated and revisited throughout the coho spawning timeframe to assess for redd superimposition
- Could potentially tag all released coho with half-duplex PIT tags and leave PIT antenna at the mouth of Cougar Creek in place through the coho spawning season
- Could also tag a portion of released coho adults with radio tags to assess other areas of use throughout the reservoir
- Pilot Study-all collected data would be analyzed and Reported on by first week of December 2016 to help inform reintroduction decision-making process

M&E Update
Shrier informed the ACC attendees that the M&E Subgroup is working on Section 2; the next meeting is scheduled for April 26, 2016. He emailed the next version with the intent to review at least two sections per month in order to meet the December 31, 2016 FERC filing deadline.

Study/Work Product Updates

Woodland Release Ponds
Shrier informed the ACC that PacifiCorp has received the draft HPA from WDFW. The construction start date pivots on Washington Dept. of Ecology approval once all permits are received. Then the permitting process with WDNR begins It is not likely that construction will commence until July 2017.

Acclimation Pond/Muddy River & Crab Creek
Shrier communicated to the ACC attendees that the Crab Creek site appears to be functional but we are waiting for the water to come down. We are looking at direct release again for the Muddy River and Clear Creek. PacifiCorp need the requirement from the Forest Service of what needs to be done with the intake that in in the middle of the Muddy River.

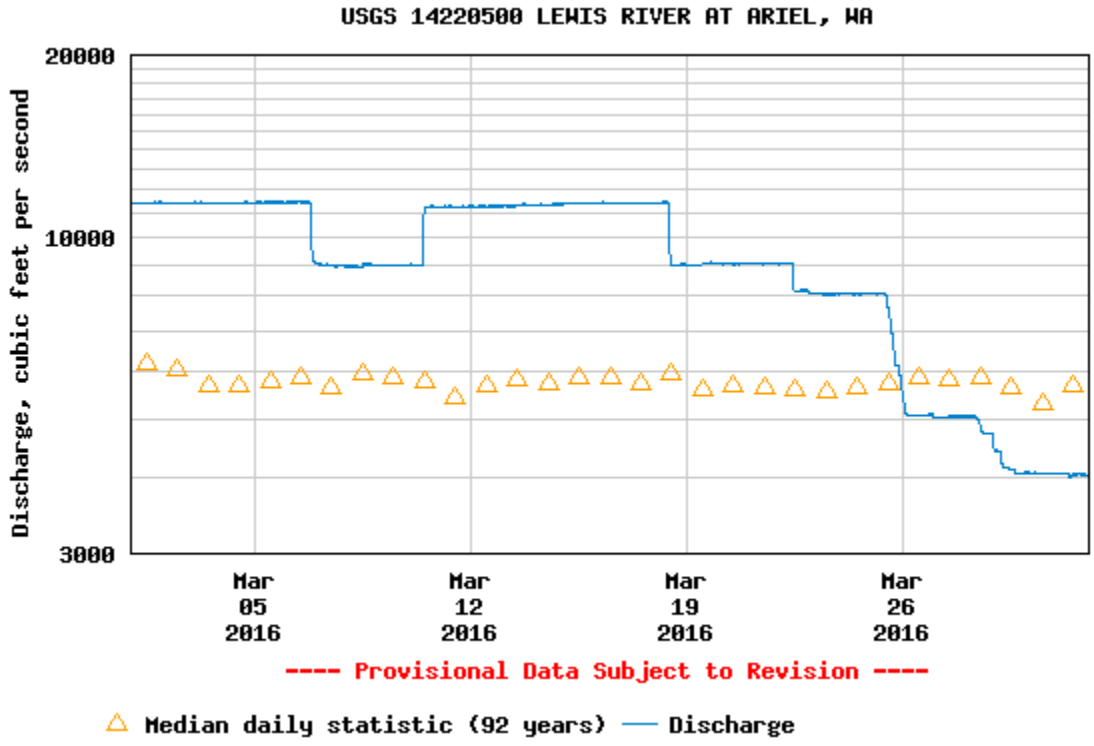
Merwin Fish Collection Facility and General Operations (Attachment A)
During the month of March, a total 363 fish were captured at the Merwin Fish Collection Facility; the majority (81%) of these fish were blank wire tag (BWT) winter steelhead (n=294) followed by hatchery winter steelhead (n=60). Sixty-six BWT winter steelhead were radio

tagged and returned downstream as part of the Merwin trap efficiency study. All hatchery fish were given to Washington Department of Fish and Wildlife. WDFW also retrieved four wild winter steelhead and three hatchery spring Chinook for brood stock. Two hundred twenty-eight BWT winter steelhead and two cutthroat trout greater than thirteen inches were transported upstream of Swift Dam.

The Merwin trap was out of commission March 10th – March 13th for scheduled maintenance and repair to the fish hopper cable. The trap ran continuously the remainder of the month following cable repairs. The Auxiliary Water Supply (AWS) system, which can boost attraction flow up to 400 cfs, was operated daily.

An outage of the Merwin Trap is planned for the April 19-20th, to install an acoustic camera in pool 1-4. The camera will be used to assess adult fish behavior in relation to the fish crowder and hopper assembly. This information will be reported in the 2016 ATE study report. It is anticipated that camera will be install for the next three-weeks. River flow below Merwin Dam ranged between approximately 4,040 cfs to 11,500 cfs during March.

Discharge, cubic feet per second



Upstream Transport (Attachment A)

For calendar year 2016, three hundred sixteen blank wire tag winter steelhead (three of which were captured at Lewis River Fish Hatchery), six hatchery coho, and six cutthroat trout greater than thirteen inches in length have been transported upstream.

Swift Floating Surface Collector (Attachment A)

A total of 3,423 fish were collected at the FSC during the month of March and 2,824 target species were transported downstream. The majority (72 percent) of these fish were coho (n=2,469), followed by planted rainbow (n=593), spring Chinook (n=264), cutthroat (n=63),

steelhead (n=28), and bull trout (n=6). All planted rainbow and residential bull trout were returned to Swift Reservoir. Operations at the FSC were suspended March 3rd – March 16th for scheduled installation of the new fish guide net. The FSC was turned back on March 16, 2016 following installation.

Habitat Preparation Plan (HPP) for Yale 2016

In response to the email exchange below the ACC discussed concerns and future study ideas specific to not enough coho in 2016 based on fish returns now and how it relates to the Yale HPP.

From: Celedonia, Mark [mailto:mark_celedonia@fws.gov]
Sent: Thursday, March 24, 2016 2:43 PM
To: McCune, Kimberly
Cc: HML LRN (Roberts, Aaron); (michael_hudson@fws.gov); (Timothy_Whitesel@fws.gov); Bob Rose (rosb@yakamafish-nsn.gov); Bryce Glaser; Bryce Michaelis; David Howe; Diana MacDonald; Doyle, Jeremiah; Ed Meyer; Eli Asher (easher@cowlitz.org); Ferraiolo, Mark; Fish First (j.malinowski@ieee.org); Frazier, Patrick A (DFW); James Bryne; Jeff Breckel; Kale Bentley; Karchesky, Chris; Karen Adams; Ken Weiman (kwieman@fs.fed.us); Lesko, Erik; Mariah Stoll-Smith Reese; Melody Tereski; Michael Garrity; Michelle Day; Olson, Todd; Patrick Lee; Peggy Miller; Rhidian Morgan (rmmorgan@pnfarm.com); Ruth Tracy; Samagaio, James; Serdar. Carol; Shannon Wills; Shrier, Frank; Steve Manlow; Taylor Aalvik (taylor.a@cowlitz.org); Weatherly, Briana
Subject: Re: 7.4 Habitat Preparation Plan - Yale; Postpone until 2017

Hi Kim,

I would like to suggest the possibility of planting some number of surplus coho into Yale Reservoir for the purposes of performing preliminary evaluations / pilot studies of coho-bull trout interactions. Indications from planting coho in the upper watershed raise concerns about spawning ground competition, redd superimposition, and juvenile rearing habitat competition. With the small number of bull trout in Yale/Cougar and the small quantity of spawning and rearing habitat available in Cougar Creek, these are important issues to consider and study, and it would be incumbent upon us to take every advantage of any opportunities to explore this issue and collect additional data. PacifiCorp already performs spawning ground surveys in Cougar Creek, so it does not seem like it would be too onerous to look for signs of spawning ground competition and redd superimposition while there. Thus, I would like to propose the following:

- That the ACC consider planting excess adult coho this fall into Yale Reservoir.
- In determining the potential benefit of planting excess coho in the reservoir this fall, the ACC may consider what types of data PacifiCorp and others can collect that will be useful for future discussions regarding this issue. In addition to the spawning ground surveys, some surveys of juvenile rearing habitat overlap / spatial segregation / microhabitat selection between the two species would also be beneficial.

If the ACC agrees, a next step will be to determine a maximum number for planting. I recognize that coho returns are not supposed to be too good this year, but I think it would be wise to establish a maximum number for the entire run, and perhaps a weekly/biweekly (?) maximum as well. We would also have to decide on a release location.

Please let me know if there are any questions.

Many thanks,

-Mark

Mark Celedonia, MES, FP-C
Consultation Biologist

U.S. Fish and Wildlife Service
510 Desmond Dr., SE, Suite 102
Lacey, WA 98503

The ACC attendees agreed to consider creating a study plan around the Yale HPP; placement of coho and timing of the Yale HPP. Mark Celedonia and Jeremiah Doyle (PacifiCorp) will flesh out a study plan and bring back to the ACC for its review.

WDFW Assignments from February 13, 2014 meeting
Bryce Glaser (WDFW) communicated that WDFW did not conduct tributary surveys in 2013 and 2014. However, WDFW did conduct in 2012 but the tributary surveys are not contractual deliverables between WDFW and PacifiCorp.

Glaser would like a list of all WDFW outstanding deliverables from PacifiCorp that also includes an entire list of all incomplete tasks that PacifiCorp is to provide WDFW rather than just the WDFW tributary survey assignment.

Lesko indicated that all tributary data collected by its contractors has been provided to WDFW for inclusion into their lower Columbia River abundance estimate. With respect to 2012, PacifiCorp will need to review the original scope of work to determine whether abundance estimates were included for tributaries as a deliverable. Regarding the reporting of Lewis River tributary abundance for coho, PacifiCorp has been following GRTS methodology developed by WDFW for surveys. It was our understanding that if PacifiCorp is conducting these surveys as part of the overall lower Columbia River evaluation that this information would be included as part of our annual reporting.
PacifiCorp agreed to discuss this issue further with WDFW outside the ACC to resolve this data gap moving forward.

General discussion took place regarding options to gather that data, such as an Excel spreadsheet that becomes part of meeting notes and whether this information will be captured at the ACC level or within a Subgroup of the ACC.

Other
Glaser informed the ACC attendees that WDFW intends to withdraw its smolt trapping operations permit for 2016 since their staff is no longer performing the work.

There was concern from ACC members whether PacifiCorp (and its contractors) are adequately covered under the current biological opinion 4(d) rule for Lewis River operations regarding take of listed species through monitoring and evaluation activities, smolt and adult trapping, etc. PacifiCorp will review the existing biological opinion and have it as an agenda item for discussion at the next ACC meeting.

< Meeting adjourned at 4:00 p.m. >

Agenda items for May 12, 2016
- April 14, 2016 Meeting Notes
- M&E Update
- Update on Release Pond Permit(s)
- Study/Work Product Updates

Next Scheduled Meetings:

TBD	May 12, 2016
Aquatic Fund Subgroup (HCC)	Merwin Hydro Control Center (HCC)
Ariel, WA	Ariel, WA
	9:00 a.m. – 3:00 p.m.

Meeting Handouts & Attachments:

- Meeting Notes from 3/10/16
- Agenda from 4/14/16
- **Attachment A -** Lewis River Fish Passage Report (March 2016)

Lewis River Fish Passage Report

March 2016

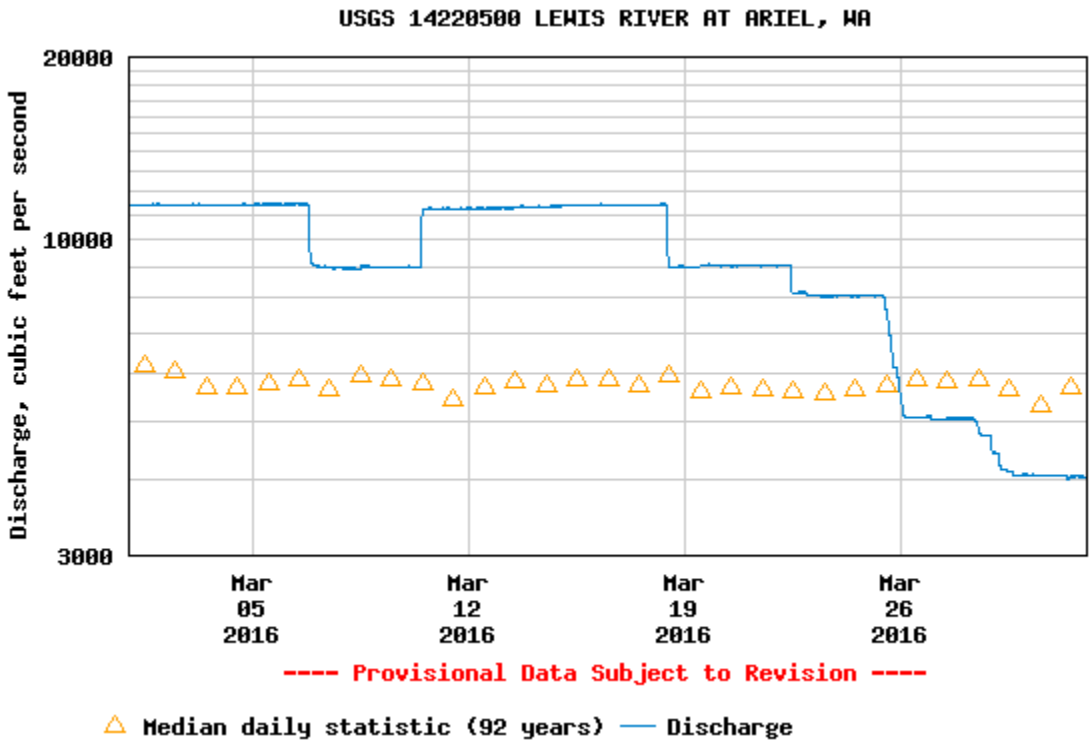
Merwin Fish Collection Facility and General Operations

During the month of March, a total 363 fish were captured at the Merwin Fish Collection Facility; the majority (81%) of these fish were blank wire tag (BWT) winter steelhead (n=294) followed by hatchery winter steelhead (n=60). Sixty-six BWT winter steelhead were radio tagged and returned downstream as part of the Merwin trap efficiency study. All hatchery fish were given to Washington Department of Fish and Wildlife. WDFW also retrieved four wild winter steelhead and three hatchery spring Chinook for brood stock. Two hundred twenty-eight BWT winter steelhead and two cutthroat trout greater than thirteen inches were transported upstream of Swift Dam.

The Merwin trap was out of commission March 10th – March 13th for scheduled maintenance and repair to the fish hopper cable. The trap ran continuously the remainder of the month following cable repairs. The Auxiliary Water Supply (AWS) system, which can boost attraction flow up to 400 cfs, was operated daily.

River flow below Merwin Dam ranged between approximately 4,040 cfs to 11,500 cfs during March.

Discharge, cubic feet per second



Upstream Transport

For calendar year 2016, three hundred sixteen blank wire tag winter steelhead (three of which were captured at Lewis River Fish Hatchery), six hatchery coho, and six cutthroat trout greater than thirteen inches in length have been transported upstream.

Swift Floating Surface Collector

A total of 3,423 fish were collected at the FSC during the month of March and 2,824 target species were transported downstream. The majority (72 percent) of these fish were coho (n=2,469), followed by planted rainbow (n=593), spring Chinook (n=264), cutthroat (n=63), steelhead (n=28), and bull trout (n=6). All planted rainbow and residential bull trout were returned to Swift Reservoir. Operations at the FSC were suspended March 3rd – March 16th for scheduled installation of the new fish guide net. The FSC was turned back on March 16th following installation.

Fish Facility Report
Merwin Adult Trap
March 2016

Reporting Date	Spring Chinook[1] AD-Clip			RT Recap		Wild			TOTAL[2]			Early Coho AD-Clip			RT Recap		CWT			Wild			Wild Recap			TOTAL[2]		
	M	F	JK	M	F	M	F	JK	M	F	JK	M	F	JK	M	F	M	F	JK	M	F	JK	M	F	JK	M	F	JK
01-Mar									0	0	0															0	0	0
02-Mar									0	0	0															0	0	0
03-Mar									0	0	0															0	0	0
04-Mar									0	0	0															0	0	0
05-Mar									0	0	0															0	0	0
06-Mar									0	0	0															0	0	0
07-Mar									0	0	0															0	0	0
08-Mar									0	0	0															0	0	0
09-Mar									0	0	0															0	0	0
10-Mar																												
11-Mar																												
12-Mar																												
13-Mar																												
14-Mar									0	0	0															0	0	0
15-Mar									0	0	0															0	0	0
16-Mar		1							0	1	0															0	0	0
17-Mar									0	0	0															0	0	0
18-Mar									0	0	0															0	0	0
19-Mar	1								1	0	0															0	0	0
20-Mar									0	0	0															0	0	0
21-Mar									0	0	0															0	0	0
22-Mar									0	0	0															0	0	0
23-Mar									0	0	0															0	0	0
24-Mar									0	0	0															0	0	0
25-Mar									0	0	0															0	0	0
26-Mar	1								1	0	0															0	0	0
27-Mar									0	0	0															0	0	0
28-Mar									0	0	0															0	0	0
29-Mar									0	0	0															0	0	0
30-Mar									0	0	0															0	0	0
31-Mar									0	0	0															0	0	0
Monthly	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
Annual	**2**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**1**	**0**	**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			RT Recap			TOTAL[2]			S. Steelhead Fresh		Recap		Wild		W. Steelhead AD-Clip		BWT		RT Recap		Wild	
	M	F	JK	M	F	JK	M	F	JK	M	F	JK	M	F	JK	M	F	M	F	M	F	M	F	M	F	M	F	M	F
01-Mar													0	0	0							1	1	2					
02-Mar													0	0	0							1	1	3	2				
03-Mar													0	0	0								1	4	5		1		
04-Mar													0	0	0							1		1					
05-Mar													0	0	0							1	1	8	6				
06-Mar													0	0	0							2		8	4				
07-Mar													0	0	0									5	2				
08-Mar													0	0	0							3		6	6				1
09-Mar													0	0	0							2	2	3	2				
10-Mar																													
11-Mar																													
12-Mar																													
13-Mar																													
14-Mar													0	0	0							2	2	4	6				
15-Mar													0	0	0								1		5				
16-Mar													0	0	0							3	1	4	7				
17-Mar													0	0	0							1		5	6				
18-Mar													0	0	0							2		6	4			1	
19-Mar													0	0	0								2	10	16	1			
20-Mar													0	0	0							2	4	12	4				
21-Mar													0	0	0							1		7	10	1	1		
22-Mar													0	0	0							1		4	5		1		
23-Mar													0	0	0									6	5	1		1	
24-Mar													0	0	0								1	2	3	1			
25-Mar													0	0	0							1	3	4	3	1			1
26-Mar													0	0	0								3	5	7				
27-Mar													0	0	0							2	1	1	8	1			
28-Mar													0	0	0							4		1	5				
29-Mar													0	0	0							1		9	10	1			
30-Mar													0	0	0								2	5	11		1		
31-Mar													0	0	0							3		9	6		1		
Monthly	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**34**	**26**	**134**	**148**	**7**	**5**	**2**	**2**
Annual	**6**	**8**	**0**	**2**	**3**	**1**	**1**	**0**	**0**	**0**	**0**	**0**	**9**	**11**	**1**	**0**	**0**	**0**	**0**	**0**	**1**	**440**	**470**	**199**	**173**	**7**	**5**	**5**	**3**

Reporting Date	Fall Chinook AD-Clip			Wild			Recap			Sockeye		Chum		Pink		Cutthroat (>13 inches)	Cutthroat (< 13 inches)	Rainbow (< 20 inches)	Bull Trout (> 13 inches)	Bull Trout (< 13 inches)	Daily Total
	M	F	JK	M	F	JK	M	F	JK	M	F	M	F	M	F						
01-Mar																					4
02-Mar																					7
03-Mar																					11
04-Mar																					2
05-Mar																					16
06-Mar																					14
07-Mar																					7
08-Mar																					16
09-Mar																					9
10-Mar																					
11-Mar																					
12-Mar																					
13-Mar																					
14-Mar																1					15
15-Mar																					6
16-Mar																					16
17-Mar																					12
18-Mar																					13
19-Mar																					30
20-Mar																					22
21-Mar																					20
22-Mar																					11
23-Mar																					13
24-Mar																1					8
25-Mar																					13
26-Mar																					16
27-Mar																					13
28-Mar																					10
29-Mar																					21
30-Mar																					19
31-Mar																					19
Monthly	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**363**
Annual	**0**	**0**	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**18**	**0**	**0**	**1352**

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

[2] Total counts do not include recaptured salmon.

Friday, April 1st, 2016

BERKSHIRE HATHAWAY ENERGY

Fish Facility Report
Swift Floating Surface Collector
March 2016

	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	190	53	0	2	25	0	0	1	0	0	4	0	0	0	0	3	**278**
02	0	109	29	0	13	9	0	0	0	0	0	0	0	0	0	0	13	**173**
17	0	160	118	0	19	31	0	0	1	0	0	10	1	0	0	0	28	**368**
18	0	91	227	0	14	25	0	0	1	0	0	8	0	0	0	1	72	**439**
19	0	75	313	0	6	31	0	1	0	0	0	0	0	0	0	2	40	**468**
20	0	72	117	0	0	21	0	0	10	0	0	12	0	0	0	0	13	**245**
21	0	51	12	0	0	0	0	0	1	0	0	0	0	0	0	0	13	**77**
22	0	33	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2	**37**
23	0	12	7	0	0	2	0	0	1	0	0	1	0	0	0	0	5	**28**
24	0	22	3	0	1	0	0	0	0	0	0	0	0	0	0	0	9	**35**
25	0	24	8	0	1	1	0	0	0	0	0	1	0	0	0	0	16	**51**
26	0	24	45	0	0	0	0	0	4	0	0	7	0	0	0	0	47	**127**
27	0	20	39	0	1	2	0	1	3	0	0	4	0	0	0	1	39	**110**
28	0	9	50	0	1	5	0	0	1	0	0	2	0	0	0	0	45	**113**
29	0	46	170	0	3	3	0	0	0	0	0	6	0	0	0	1	106	**335**
30	0	20	146	0	1	19	0	0	2	0	0	3	0	0	0	0	84	**275**
31	0	7	166	0	1	26	0	0	1	0	0	4	0	0	0	1	58	**264**
Monthly	0	965	1504	0	64	200	0	2	26	0	0	62	1	0	0	6	593	**3423**
Annual	1	9004	5968	0	501	2331	0	17	98	0	2	219	14	0	6	17	856	**19034**

BERKSHIRE HATHAWAY ENERGY

Friday, April 1st, 2016