

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

**Date & Time:** Thursday, February 11, 2016  
9:00 a.m. – 3:00 p.m.

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

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

| <b>Time</b>       | <b>Discussion Item</b>   |
|-------------------|--|
| 9:00 a.m.         | Welcome <ul style="list-style-type: none"> <li>➤ Review Agenda and ACC 1/14/16 Meeting Notes</li> <li>➤ Comment &amp; Accept Agenda and 1/14/16 Meeting Notes</li> </ul>   |
| 9:10 a.m.         | Public Comment Opportunity   |
| 9:20 a.m.         | M&E Update   |
| <b>10:00 a.m.</b> | <b>Break</b>   |
| 10:15 a.m.        | EDT Presentation as it relates to fish habitat– Phil Roni/Kevin Malone   |
| 11:15 a.m.        | 2015 Fish Passage Overview   |
| 12:00 p.m.        | Study/Work Product Updates <ul style="list-style-type: none"> <li>○ Smolt releases at LRH; first pass water and release options</li> <li>○ Woodland Release Ponds - Status</li> <li>○ Acclimation Ponds - Status</li> <li>○ Merwin Upstream Passage – Status</li> <li>○ Swift Floating Surface Collector – Status</li> </ul> |
| 12:15 p.m.        | <ul style="list-style-type: none"> <li>➤ Next Meeting’s Agenda</li> <li>➤ Public Comment Opportunity</li> </ul> Note: all meeting notes and the meeting schedule can be located at:<br><a href="http://www.pacificorp.com/es/hydro/hl/lr.html#">http://www.pacificorp.com/es/hydro/hl/lr.html#</a>                           |
| <b>12:30 p.m.</b> | <b>Working Lunch/Adjourn ACC Meeting</b>   |
| 1:00 p.m.         | Monitoring and Evaluation (M&E) Subgroup <ul style="list-style-type: none"> <li>○ Ongoing discussion by section including Ocean recruits</li> </ul>  |
| <b>3:00 p.m.</b>  | <b>Adjourn M&amp;E Subgroup Meeting</b>  |

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

**Conference ID: 848594**

**FINAL Meeting Notes**  
**Lewis River License Implementation**  
**Aquatic Coordination Committee (ACC) Meeting**  
**February 11, 2016**  
**Merwin Hydro Control Center**

**ACC Participants Present (22)**

Chris Karchesky, PacifiCorp  
 Frank Shrier, PacifiCorp  
 Erik Lesko, PacifiCorp  
 Todd Olson, PacifiCorp  
 Kim McCune, PacifiCorp (via conference)  
 Mark Ferraiolo, PacifiCorp  
 Baker Holden, USDA Forest Service (via conference)  
 Ruth Tracy, USDA Forest Service  
 Bryce Michaelis, USDA Forest Service  
 Aaron Roberts, WDFW  
 Bryce Glaser, WDFW  
 Peggy Miller, WDFW  
 Pat Frazier, WDFW  
 Michelle Day, NMFS  
 Shannon Wills, Cowlitz Indian Tribe (via conference)  
 Jim Malinowski, Fish First  
 Jeff Breckel, LCFRB  
 Steve Manlow, LCFRB  
 Diana Gritten-MacDonald, Cowlitz PUD

**Guests**

Al Thomas, Columbian  
 Phil Roni, Cramer Fish Sciences  
 Eli Asher, Cowlitz Indian Tribe

**Calendar:**

|                |                                     |              |
|----------------|-------------------------------------|--------------|
| March 10, 2016 | ACC Meeting                         | Merwin Hydro |
| March (TBD)    | ACC Meeting (Aquatic Fund Subgroup) | Merwin Hydro |

| <b>Assignments from February 11, 2016</b>  | <b>Status</b>   |
|--|-----------------|
| McCune: Olson requested the ACC attendees to give thought to EDT data questions to share with Phil Roni and email to Kim McCune and she will track all the requested data. | <b>Complete</b> |

| <b>Assignments from December 10, 2015</b>   | <b>Status</b>                                   |
|---|---|
| Frazier: Advise Shrier of available dates specific to the EDT subgroup meetings in January and February 2016. | <b>Complete –<br/>Scheduled for<br/>2/19/16</b> |

| Assignments from February 13, 2014 meeting (revised 9/10/15)   | Status   |
|--|--|
| Frazier: Work on securing the 2012, 2013 and 2014 lower river coho abundance survey data for tributaries. Provide this information to Erik Lesko (PacifiCorp). | Pending as of 2/11/16<br>(Frazier noted he is working to get this done by April 1, 2016 meeting) |

### Opening, Review of Agenda and Meeting Notes

Frank Shrier (PacifiCorp) called the meeting to order at 9:15 a.m. and reviewed the agenda and January 11, 2016 meeting notes and assignments.

The January 11, 2016 meeting notes were reviewed and approved with minor housekeeping changes at 9:30am.

### Public Comment

None

### M&E Update

Shrier informed the ACC attendees that the M&E update is progressing; going back through up to Objective 14 (there is a total of 22 objectives). Once the M&E Subgroup has completed its review the document will be submitted to the ACC for a 90-day review for final submittal to the FERC on or before 12/31/16.

### EDT Presentation as it relates to fish habitat – Phil Roni, Cramer Fish Sciences

Todd Olson (PacifiCorp) noted that an EDT model meeting had been conducted to review the new habitat survey information collected by USGS for Merwin and Yale reservoir tributaries. The next EDT meeting will take place February 19, 2016 to continue the review of EDT parameters and discuss model assumptions.

Olson then informed ACC attendees that PacifiCorp as part of the Future Fish Passage Project is taking a larger look at the Lewis River watershed specifically issues and opportunities related to fish habitat and fish production; how does the Lewis River basin look and opportunities for restoration. To assist, PacifiCorp has hired Dr. Phil Roni, Cramer Fish Sciences.

Dr. Roni provided a PowerPoint presentation titled, *Identification of Restoration Alternatives in North Fork of Lewis River* to update the ACC on the objectives, and 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/LR\\_ACC\\_EDT\\_presen.pdf](http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/acc/LR_ACC_EDT_presen.pdf)

Roni reviewed the objectives and tasks to include:

- Assimilate and evaluate current data and utility for identifying restoration opportunities in NF and Lower Lewis
- Limiting life-stage and habitat x species
- Identify potential restoration opportunities

Cramer Fish Sciences reviewed and assessed existing data from at least 50 reports and restoration opportunities, steps in the restoration process and adaptive management were discussed to include goals of different assessments vs restoration steps.

Jim Malinowski (Fish First) inquired if Cramer Sciences had data regarding carcasses in Cedar Creek and nutrient enhancement on the Lewis River or if any data is available. Roni replied that if any data are available it might be from WDFW. Malinowski wants nutrient enhancement to be a major part of the assessment. Roni indicated that he will definitely look at this if data is available.

Roni addressed data gaps such as:

- Historical habitat/channel/floodplain
- Consistent/detailed habitat data for Lower NF and Mainstem Lewis
- Summer and winter fish use data
- Other sediment/riparian data sources
  - Other than NOAA data

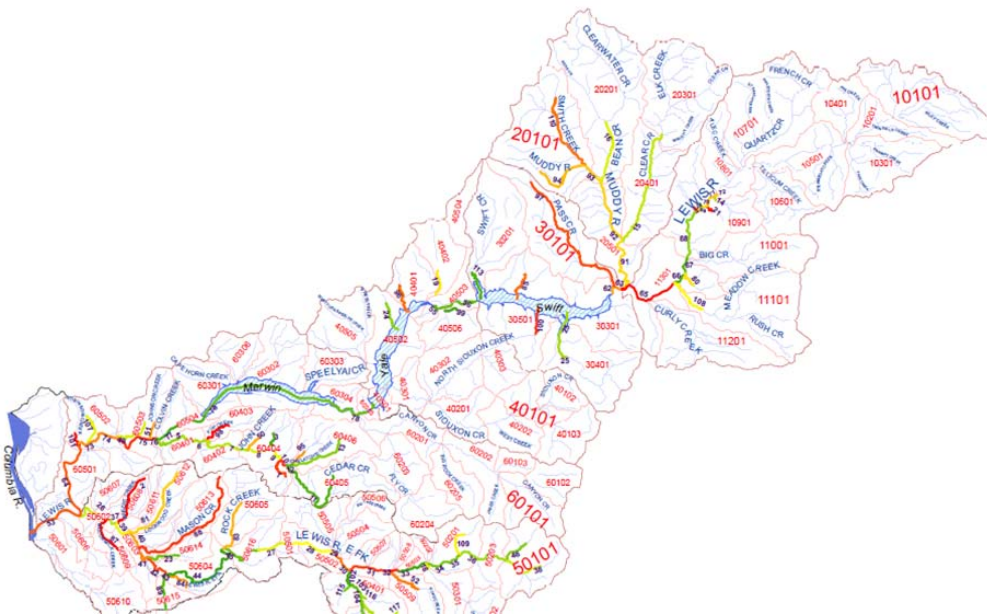
Also discussed was what habitat and life stage might be limiting.

Cramer Sciences is looking at feasibility for different species for Coho (Habitat data – yes, USGS and EDT outputs, fish data – published values), Spring Chinook and Steelhead.

Identification of potential restoration opportunities will come from NOAA data (channel types and Fullerton/Steel assessment and model outputs), EDT reaches and priorities and USGS data for EDT inputs.

Roni reviewed the expected results to include initial priority reaches, underlying causes of degradation and potential restoration/habitat improvement actions by reach.

## EDT Reach Outputs



In summary, Roni expressed while sub-basin/recovery planning efforts have provided some cursory estimates of the loss of habitat prior to the early 1900's, detailed information on the historic channel conditions for the mainstem North Fork and Lower Lewis was not located. This information would be very helpful for identification of historic habitat loss and loss in fish production due to channelization and agricultural development, to identify potential restoration opportunities, and also to assess what may have historically limited fish production.

Olson noted that once the EDT subgroup feels comfortable with all assumptions we can move forward with the EDT output. Consultants and EDT subgroup are working toward getting all data out to the ACC by April 2016 for its 30-day review and comment period.

Olson requested the ACC attendees to give thought to data questions to share with Phil Roni and email to Kim McCune and she will track all the requested data.

*Break 10:55am*

*Reconvene 11:00am*

### **2015 Fish Passage Overview – Chris Karchesky, PacifiCorp**

Karchesky provided a PowerPoint presentation titled, *Lewis River fish Passage Program 2015 Review* to update the ACC on the 2015 fish passage activities. 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/ACC%20Annual%20Fish%20Passage%20-%20Feb%202016.pdf](http://www.pacificorp.com/content/dam/pacificorp/doc/Energy_Sources/Hydro/Hydro_Licensing/Lewis_River/li/acc/ACC%20Annual%20Fish%20Passage%20-%20Feb%202016.pdf)

Karchesky noted that this PowerPoint is intended as an overview only; however, significant detail will be included in the 2015 annual Fish passage report which will be made available in March 2016.

Karchesky addressed noteworthy environmental conditions and procedural changes in 2015 such as extreme flow conditions, established floating surface collector outage period, inclusion of late-run coho upstream and the release of acclimation fish from Spring to Fall releases.

**Merwin Fish Collection Facility – Collection Numbers (down from over 30,000 in 2014)**

| Characteristic       | AD Clip |      |     | CWT |     |    | Wild |     |    | Wild Recap |   |   | Wild-BWT |     | Recap |      | Misc      | Total        | %             |            |
|----------------------|---------|------|-----|-----|-----|----|------|-----|----|------------|---|---|----------|-----|-------|------|-----------|--------------|---------------|------------|
|                      | M       | F    | J   | M   | F   | J  | M    | F   | J  | M          | F | J | M        | F   | M     | F    | Not sexed |              |               |            |
| Spring Chinook       | 366     | 327  | 30  |     |     |    | 14   | 15  | 5  |            |   |   |          |     | 6     | 3    |           | 766          | 5             |            |
| Fall Chinook         | 239     | 286  | 6   |     |     |    | 102  | 139 | 31 | 6          | 2 |   |          |     |       |      |           | 811          | 5             |            |
| Early Coho           | 123     | 147  | 544 | 74  | 103 | 76 | 24   | 34  | 17 |            |   |   |          |     | 2     |      |           | 1,144        | 7             |            |
| Late Coho            | 933     | 771  | 256 | 142 | 115 | 24 | 21   | 14  | 16 |            |   |   |          |     | 1     |      |           | 2,293        | 15            |            |
| Summer Steelhead     | 1471    | 2651 |     |     |     |    | 7    | 18  |    |            |   |   |          |     | 681   | 1428 |           | 6,256        | 40            |            |
| Winter Steelhead     | 1522    | 1249 |     |     |     |    | 41   | 31  |    |            |   |   | 748      | 504 | 51    | 38   |           | 4,184        | 27            |            |
| Sockeye Salmon       | 1       |      |     |     |     |    | 14   | 17  |    | 1          | 1 |   |          |     |       |      |           | 34           | 0             |            |
| Chum Salmon          |         |      |     |     |     |    |      |     |    |            |   |   |          |     |       |      |           | 0            | 0             |            |
| Pink Salmon          | 1       |      |     |     |     |    |      |     |    |            |   |   |          |     |       |      |           | 1            | 0             |            |
| Cutthroat (>13 in)   |         |      |     |     |     |    |      |     |    |            |   |   |          |     |       |      | 31        | 31           | 0             |            |
| Cutthroat (< 13 in)  |         |      |     |     |     |    |      |     |    |            |   |   |          |     |       |      | 2         | 2            | 0             |            |
| Rainbow (< 20 in)    |         |      |     |     |     |    |      |     |    |            |   |   |          |     |       |      | 75        | 75           | 0             |            |
| Bull Trout (> 13 in) |         |      |     |     |     |    |      |     |    |            |   |   |          |     |       |      |           | 0            | 0             |            |
| Bull Trout (< 13 in) |         |      |     |     |     |    |      |     |    |            |   |   |          |     |       |      |           | 0            | 0             |            |
|                      |         |      |     |     |     |    |      |     |    |            |   |   |          |     |       |      |           | <b>Total</b> | <b>15,597</b> | <b>100</b> |

**Upstream Transport Numbers for key species in 2015 compared to previous years.**

| Species (Adults)               | 2012 | 2013  | 2014  | 2015         |
|--------------------------------|------|-------|-------|--------------|
| Coho<br>(Early & Late in 2015) | 206  | 7,035 | 9,179 | <b>3,754</b> |
| Winter Steelhead               | 189  | 741   | 1,033 | <b>1,223</b> |
| Spring Chinook                 | 0    | 579   | 0     | <b>0</b>     |
| Coastal Cutthroat Trout        | -    | -     | 42    | <b>31</b>    |

Karchesky reviewed the charts that illustrate the male/female ratios for Winter Steelhead and Coho and noted the upstream passage survival percentages (goal of 99.5% for all transport species).

### Upstream Transport Survival

| Species           | Transported  | Morts    | Survival     |
|-------------------|--------------|----------|--------------|
| Coho              | 3,754        | 0        | 100%         |
| Winter Steelhead  | 1,223        | 6        | 99.9%        |
| Spring Chinook    | 0            | 0        | 100%         |
| Coastal Cutthroat | 31           | 0        | 100%         |
| <b>TOTAL</b>      | <b>5,008</b> | <b>6</b> | <b>99.9%</b> |

Karchesky reviewed results of seed plant efforts for the both winter steelhead and coho salmon. This effort was done to improve distribution of these adult species into the upper basin. Previous observations indicated that adults released at the head of Swift Reservoir (Eagle Cliff) show little distribution into the upper watershed. Releasing fish at three upper locations (Muddy River Bridge, Clear Creek Bridge, and the Upper Lewis near Crab Creek) improved distribution of these species throughout the upper basin. Also included in the PowerPoint is a Google earth view of radio tagged Steelhead detections in 2014 (all released at Eagle Cliff) and then in 2015 which were released at Eagle Cliff, Muddy River, Clear Creek and Upper Lewis. Coho detections from November 20, 2015 and December 30, 2015 are also provided specific to fish released at Swift Forest Camp, Eagle Cliff, Muddy river, Clear Creek and Upper Lewis.

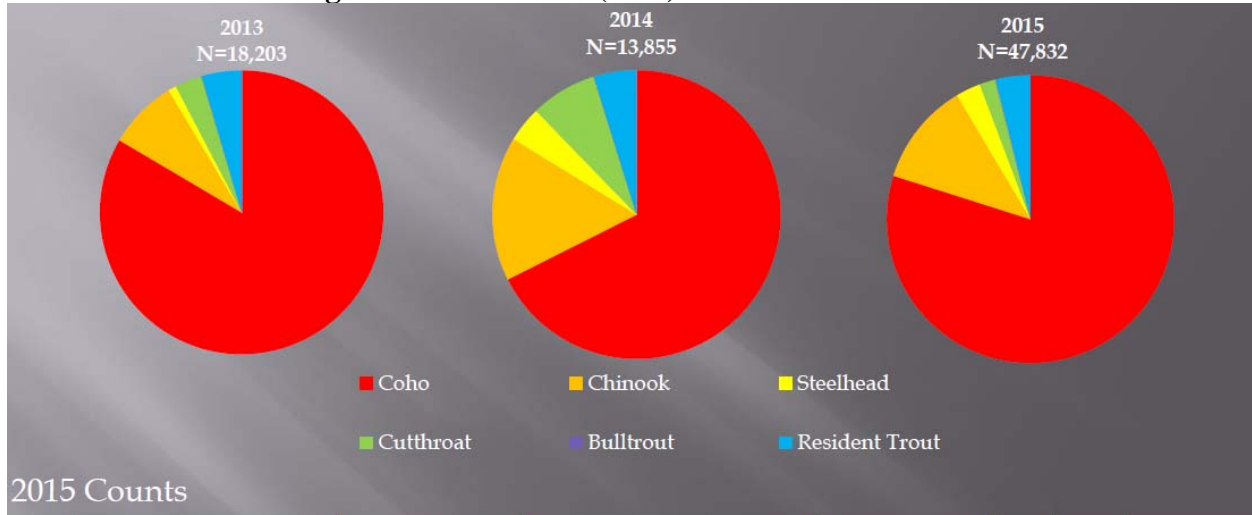
### Seed Plant Releases by Location for Winter Steelhead and Coho Salmon

| Winter Steelhead | Eagle Cliff  | Muddy River Bridge | Clear Creek Bridge | Upper Lewis (Crab Creek) | Total        |
|------------------|--------------|--------------------|--------------------|--------------------------|--------------|
| Untagged         | 1,047        | 28                 | 31                 | 34                       | 1,140        |
| Radio Tagged     | 44           | 12                 | 12                 | 15                       | 83           |
| <b>Total</b>     | <b>1,091</b> | <b>40</b>          | <b>43</b>          | <b>49</b>                | <b>1,223</b> |

| Coho         | Eagle Cliff  | Muddy River Bridge | Clear Creek Bridge | Upper Lewis (Crab Creek) | Total        |
|--------------|--------------|--------------------|--------------------|--------------------------|--------------|
| Untagged     | 3,249        | 124                | 146                | 106                      | 3,625        |
| Radio Tagged | 49           | 30                 | 18                 | 32                       | 129          |
| <b>Total</b> | <b>3,298</b> | <b>154</b>         | <b>164</b>         | <b>138</b>               | <b>3,754</b> |

Karchesky also informed the ACC attendees that the Adult Trap Efficiency (ATE) goal is 98% for all transport species and the results of the 2015 study year will be provided at the March 2016 ACC meeting.

### Swift Reservoir Floating Surface Collector (FSC) – Collection Numbers



2015 Counts

| Month        | Coho  |       |        |       | Chinook |      |       | Steelhead |      |       |                   |      | Cutthroat |          |          | Bull Trout | Res. Trout | Total Trapped |
|--------------|-------|-------|--------|-------|---------|------|-------|-----------|------|-------|-------------------|------|-----------|----------|----------|------------|------------|---------------|
|              | Fry   | Parr  | Smolt  | Adult | Fry     | Parr | Smolt | Fry       | Parr | Smolt | Adult (Pre-spawn) | Kelt | Fry       | < 13 in. | > 13 in. |            |            |               |
| <b>Total</b> | 5,860 | 6,729 | 25,555 | 35    | 0       | 230  | 5,305 | 5         | 47   | 1,282 | 16                | 31   | 17        | 776      | 48       | 20         | 1,876      | 47,832        |

### Downstream Transport Numbers for key species in 2015 compared to previous years.

| Species (Out-migrants)  | 2013   | 2014  | 2015   |
|-------------------------|--------|-------|--------|
| Coho                    | 15,074 | 7,588 | 31,919 |
| Winter Steelhead        | 166    | 539   | 1,324  |
| Spring Chinook          | 1,431  | 2,164 | 5,401  |
| Coastal Cutthroat Trout | 556    | 857   | 811    |



The 2015 data also includes cumulative run timing curves by life-stage for all species in 2015.

### Injury and Survival

$$CS = (S_{\text{-collection}}) + (S_{\text{-transportation}})$$

| Species    | Life-Stage | Sampled | Mortality | Survival |
|------------|------------|---------|-----------|----------|
| Coho       | Fry        | 5,860   | 0         | 100%     |
|            | Smolt      | 32,284  | 365       | 98.9%    |
| Chinook    | Fry        | 0       | 0         | NA       |
|            | Smolt      | 5,532   | 134       | 97.6%    |
| Steelhead  | Fry        | 5       | 0         | 100%     |
|            | Smolt      | 1,329   | 5         | 99.6%    |
| Cutthroat  | Smolt      | 824     | 11        | 98.7%    |
| Bull Trout | All        | 20      | 1         | 95.0%    |

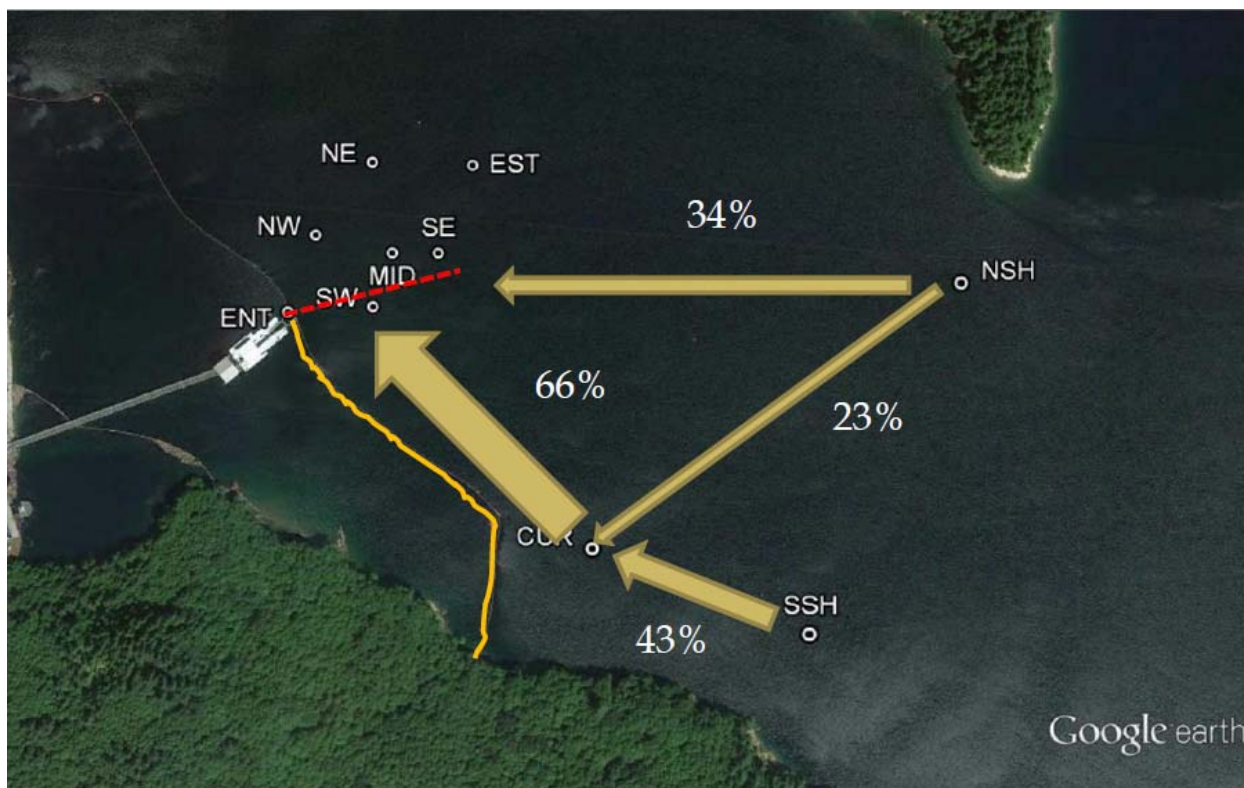
Injury goal of less than or equal to 2% for out-migrating fish collected at the FSC and a collection survival (CS) goal of 99.5% for smolts and 98% for Fry.

### Collection Efficiency for juvenile out-migrants at the Swift Floating Surface Collector

| Metric                                   | Coho Salmon | Spring Chinook | Steelhead | Total |
|--|-------------|----------------|-----------|-------|
| Total Tagged (n)                         | 139         | 14             | 47        | 200   |
| Detected at ZOI                          | 110         | 6              | 43        | 159   |
| P <sub>RES</sub>                         | 79.1%       | 42.9%          | 91.5%     | 79.5% |
| Captured at FSC                          | 13          | 0              | 8         | 21    |
| Collection Efficiency (P <sub>CE</sub> ) | 11.8%       | 0.0%           | 18.6%     | 13.2% |

Collection efficiency (CD) standard of 95% for all out-migrating species.

And lastly, Karchesky provided a Google earth image of fish behavior upstream of the floating surface collector. These results were used to design the Swift Guide Net that is scheduled to be installed early March 2015.



## Study/Work Product Updates

### Woodland Release Ponds

Shrier informed the ACC that the City of Woodland could provide permit approval by the end of the month. PacifiCorp is working on the facility water right simultaneously. The next step is to submit applications to Ecology (storm water permit) and WDFW (HPA) then everything to the Department of Natural Resources (DNR). Shrier said PacifiCorp will encourage DNR to treat this application as a priority in order that the release pond can begin construction in 2016 and he would like ACC members to do the same.

### Acclimation Pond/Crab Creek

PacifiCorp needs to determine if there is damage to the Crab Creek acclimation pond. There is definitely significant damage to the Clear Creek facility.

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

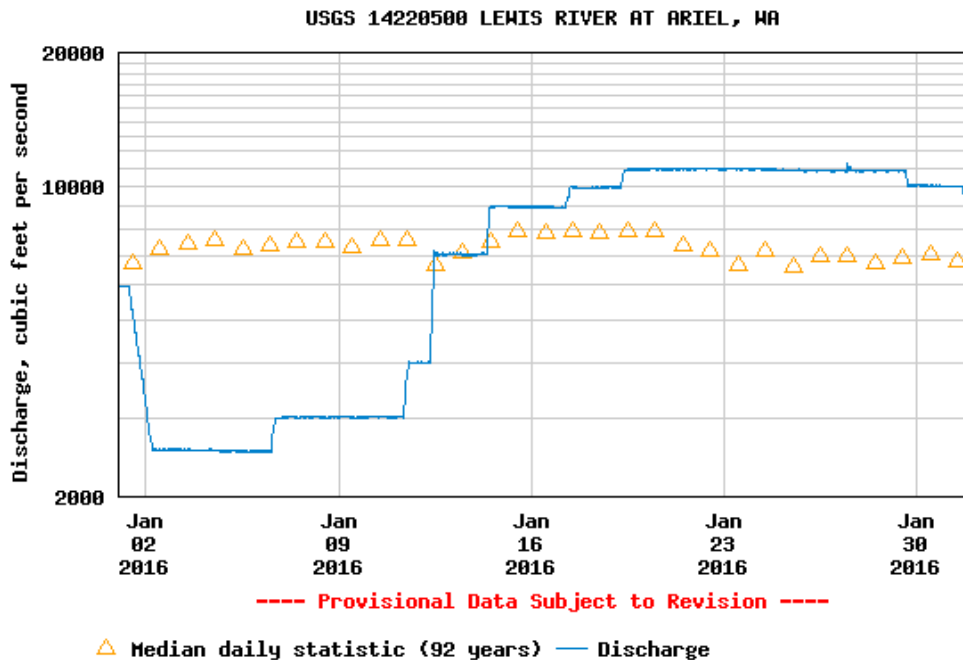
Chris Karchesky (PacifiCorp) reported during the month of January, a total 789 fish were captured at the Merwin Fish Collection Facility; the majority (94%) of these fish were hatchery winter steelhead (n=744) followed by late run hatchery coho (n=20). All hatchery fish were given to Washington Department of Fish and Wildlife (in exception to six late run coho designated for upstream transport). WDFW also retrieved one wild adult coho for brood stock. Fifteen resident rainbow trout less than twenty inches were captured at Merwin trap and returned downstream. Six blank wire tag (BWT) winter steelhead, six late run coho, and three cutthroat trout greater than thirteen inches were transported upstream of Swift Dam.

The Merwin trap was inoperable on January 3, 2016 due to ice buildup in the presort pond. Ice was broken up the following day and the Merwin trap was put back into service. In addition, operations were suspended on January 6, 2016 for scheduled modifications to the fish hopper;

the Merwin trap was put back into service the same day. The trap ran continuously following modifications to the fish hopper and throughout warranty work carried out in the fish sorting room from January 16, 2016 through January 24, 2016; during this time, fish were captured daily and held in the presort pond (which can hold up to 3,000 adult fish). Fish sorting resumed January 25, 2016 following the completion of warranty work. 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 2,510 cfs to 11,000 cfs during January.

### Discharge, cubic feet per second



### Upstream Transport ([Attachment A](#))

For calendar year 2016, six blank wire tag winter steelhead (all males), six hatchery coho (3 m: 3 f), and three cutthroat trout greater than thirteen inches in length have been transported upstream.

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

A total of 7,787 fish were collected at the FSC during the month of January and 7,661 target species were transported downstream. The majority (77 percent) of these fish were coho (n=5,993), followed by spring Chinook (n=1,537), planted rainbow (n=113), cutthroat (n=89), steelhead (n=42), and bull trout (n=13). All planted rainbow and residential bull trout were returned to Swift Reservoir. Operations at the FSC were suspended on December 30, 2015 through January 6, 2016 due to heavy debris loading following recent flooding in the upper tributaries.

< Meeting adjourned at 11:40 a.m. >

**Agenda items for March 10, 2016**

- February 11, 2016 Meeting Notes
- M&E Update
- Update on Release Pond Permit
- Cramer Fish Sciences to talk about 2015 Adult Telemetry Evaluation Study Results.
- Study/Work Product Updates

**Next Scheduled Meetings:**

|                             |                                   |
|-----------------------------|-----------------------------------|
| March 10, 2016              | April 14, 2016                    |
| Aquatic Fund Subgroup (HCC) | Merwin Hydro Control Center (HCC) |
| Ariel, WA                   | Ariel, WA                         |
| 12:00 p.m. – 3:00 p.m.      | 9:00 a.m. – 3:00 p.m.             |

**Meeting Handouts & Attachments:**

- Meeting Notes from 1/14/16
- Agenda from 2/11/16
- **Attachment A** - Lewis River Fish Passage Report (January 2016)

# Lewis River Fish Passage Report

## January 2016

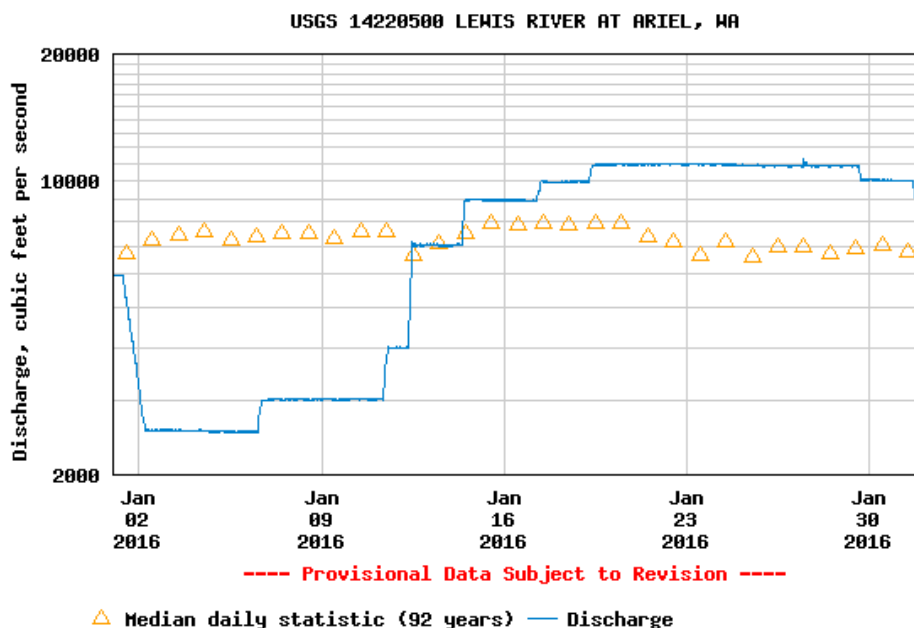
### Merwin Fish Collection Facility and General Operations

During the month of January, a total 789 fish were captured at the Merwin Fish Collection Facility; the majority (94%) of these fish were hatchery winter steelhead (n=744) followed by late run hatchery coho (n=20). All hatchery fish were given to Washington Department of Fish and Wildlife (in exception to six late run coho designated for upstream transport). WDFW also retrieved one wild adult coho for brood stock. Fifteen resident rainbow trout less than twenty inches were captured at Merwin trap and returned downstream. Six blank wire tag (BWT) winter steelhead, six late run coho, and three cutthroat trout greater than thirteen inches were transported upstream of Swift Dam.

The Merwin trap was inoperable on January 3, 2016 due to ice buildup in the presort pond. Ice was broken up the following day and the Merwin trap was put back into service. In addition, operations were suspended on January 6, 2016 for scheduled modifications to the fish hopper; the Merwin trap was put back into service the same day. The trap ran continuously following modifications to the fish hopper and throughout warranty work carried out in the fish sorting room from January 16, 2016 through January 24, 2016; during this time, fish were captured daily and held in the presort pond (which can hold up to 3,000 adult fish). Fish sorting resumed January 25, 2016 following the completion of warranty work. The Auxiliary Water Supply (AWS) system, which can boost attraction flow up to 400 cfs, was operated daily.

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### Discharge, cubic feet per second



### **Upstream Transport**

For calendar year 2016, six blank wire tag winter steelhead (all males), six hatchery coho (3 m: 3 f), and three cutthroat trout greater than thirteen inches in length have been transported upstream.

### **Swift Floating Surface Collector**

A total of 7,787 fish were collected at the FSC during the month of January and 7,661 target species were transported downstream. The majority (77 percent) of these fish were coho (n=5,993), followed by spring Chinook (n=1,537), planted rainbow (n=113), cutthroat (n=89), steelhead (n=42), and bull trout (n=13). All planted rainbow and residential bull trout were returned to Swift Reservoir. Operations at the FSC were suspended on December 30, 2015 through January 6, 2016 due to heavy debris loading following recent flooding in the upper tributaries.



**Fish Facility Report**  
**Swift Floating Surface Collector**  
**January 2016**

| 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 | fry        | < 13 in | > 13 in |                 |       |
| 01  |      |      |       |         |      |       |           |      |       |      |           |         |         |            |         |         |                 |       |
| 02  |      |      |       |         |      |       |           |      |       |      |           |         |         |            |         |         |                 |       |
| 03  |      |      |       |         |      |       |           |      |       |      |           |         |         |            |         |         |                 |       |
| 04  |      |      |       |         |      |       |           |      |       |      |           |         |         |            |         |         |                 |       |
| 05  |      |      |       |         |      |       |           |      |       |      |           |         |         |            |         |         |                 |       |
| 06  |      |      |       |         |      |       |           |      |       |      |           |         |         |            |         |         |                 |       |
| 07  | 0    | 72   | 36    | 0       | 6    | 147   | 0         | 0    | 2     | 0    | 0         | 1       | 0       | 0          | 0       | 0       | 5               | 269   |
| 08  | 0    | 152  | 64    | 0       | 12   | 262   | 0         | 0    | 1     | 0    | 0         | 6       | 1       | 0          | 3       | 0       | 9               | 510   |
| 09  | 0    | 97   | 135   | 0       | 6    | 94    | 0         | 1    | 3     | 0    | 0         | 1       | 0       | 0          | 2       | 1       | 3               | 343   |
| 10  | 0    | 52   | 58    | 0       | 13   | 121   | 0         | 2    | 0     | 0    | 0         | 1       | 0       | 0          | 0       | 0       | 3               | 250   |
| 11  | 0    | 79   | 42    | 0       | 31   | 166   | 0         | 0    | 1     | 0    | 1         | 2       | 0       | 0          | 0       | 0       | 0               | 322   |
| 12  | 0    | 64   | 17    | 0       | 21   | 56    | 0         | 0    | 0     | 0    | 0         | 2       | 0       | 0          | 0       | 0       | 1               | 161   |
| 13  | 0    | 10   | 81    | 0       | 0    | 69    | 0         | 0    | 0     | 0    | 0         | 4       | 0       | 0          | 0       | 2       | 2               | 168   |
| 14  | 0    | 136  | 142   | 0       | 10   | 61    | 0         | 0    | 2     | 0    | 0         | 5       | 1       | 0          | 0       | 1       | 12              | 370   |
| 15  | 0    | 110  | 44    | 0       | 7    | 27    | 0         | 0    | 0     | 0    | 0         | 1       | 0       | 0          | 0       | 0       | 4               | 193   |
| 16  | 0    | 19   | 212   | 0       | 0    | 20    | 0         | 0    | 0     | 0    | 0         | 1       | 0       | 0          | 0       | 0       | 3               | 255   |
| 17  | 0    | 23   | 153   | 0       | 0    | 13    | 0         | 2    | 3     | 0    | 0         | 2       | 0       | 0          | 0       | 0       | 5               | 201   |
| 18  | 0    | 38   | 23    | 0       | 2    | 1     | 0         | 0    | 0     | 0    | 0         | 1       | 0       | 0          | 0       | 0       | 0               | 65    |
| 19  | 0    | 92   | 51    | 0       | 5    | 19    | 0         | 0    | 2     | 0    | 0         | 2       | 0       | 0          | 0       | 0       | 3               | 174   |
| 20  | 1    | 123  | 99    | 0       | 0    | 74    | 0         | 0    | 2     | 0    | 0         | 2       | 2       | 0          | 0       | 0       | 6               | 309   |
| 21  | 0    | 247  | 80    | 0       | 5    | 4     | 0         | 0    | 3     | 0    | 0         | 5       | 0       | 0          | 0       | 0       | 0               | 344   |
| 22  | 0    | 268  | 76    | 0       | 5    | 2     | 0         | 0    | 1     | 0    | 0         | 1       | 0       | 0          | 0       | 1       | 3               | 357   |
| 23  | 0    | 271  | 39    | 0       | 7    | 0     | 0         | 0    | 1     | 0    | 0         | 6       | 0       | 0          | 0       | 0       | 3               | 327   |
| 24  | 0    | 359  | 63    | 0       | 2    | 1     | 0         | 0    | 2     | 0    | 0         | 6       | 0       | 0          | 0       | 0       | 0               | 433   |
| 25  | 0    | 308  | 162   | 0       | 9    | 25    | 0         | 0    | 6     | 0    | 0         | 4       | 0       | 0          | 0       | 0       | 0               | 514   |
| 26  | 0    | 208  | 134   | 0       | 5    | 42    | 0         | 0    | 0     | 0    | 0         | 3       | 1       | 0          | 0       | 1       | 7               | 401   |
| 27  | 0    | 148  | 113   | 0       | 8    | 47    | 0         | 0    | 2     | 0    | 1         | 0       | 0       | 0          | 0       | 0       | 5               | 324   |
| 28  | 0    | 117  | 85    | 0       | 0    | 46    | 0         | 0    | 0     | 0    | 0         | 1       | 0       | 0          | 0       | 0       | 6               | 255   |
| 29  | 0    | 199  | 329   | 0       | 1    | 53    | 0         | 0    | 0     | 0    | 0         | 1       | 1       | 0          | 0       | 1       | 12              | 597   |
| 30  | 0    | 129  | 186   | 0       | 1    | 12    | 0         | 0    | 0     | 0    | 0         | 7       | 2       | 0          | 0       | 1       | 12              | 350   |
| 31  | 0    | 114  | 133   | 0       | 0    | 19    | 0         | 0    | 6     | 0    | 0         | 14      | 0       | 0          | 0       | 0       | 9               | 295   |

|                |   |      |      |   |     |      |   |   |    |   |   |    |   |   |   |   |     |             |
|----------------|---|------|------|---|-----|------|---|---|----|---|---|----|---|---|---|---|-----|-------------|
| <b>Monthly</b> | 1 | 3435 | 2557 | 0 | 156 | 1381 | 0 | 5 | 37 | 0 | 2 | 79 | 8 | 0 | 5 | 8 | 113 | <b>7787</b> |
| <b>Annual</b>  | 1 | 3435 | 2557 | 0 | 156 | 1381 | 0 | 5 | 37 | 0 | 2 | 79 | 8 | 0 | 5 | 8 | 113 | <b>7787</b> |



Monday, February 1st, 2016