

# LEWIS RIVER AQUATIC COORDINATION COMMITTEE

Facilitator: ERIK LESKO  
503-412-8401

Location: TEAMS MEETING ONLY

Date: June 10, 2021

Time: 9:30 AM – 11:00 AM

## Agenda Items

- 9:30 a.m. Welcome
- Review Agenda, ACC 5/13/21 Meeting Notes
  - Comment & Accept Agenda, 5/13/21 Meeting Notes
- 10:00 a.m. Public Comment Opportunity
- 10:15 a.m. LFEG; Nutrient Enhance Project Review of Numbers and Carcass distribution
- 10:45 a.m. Study/Work Product Updates
- Flows/Reservoir Conditions Update
  - Swift Survey's at Northwoods Update
  - ATS Update
  - Fish Passage Update
- 11:00 a.m.
- Next Meeting's Agenda
  - Public Comment Opportunity
- Note: all meeting notes and the meeting schedule can be located at:  
<https://www.pacificorp.com/energy/hydro/lewis-river/acc-tcc.html>
- 11:30 a.m. **Meeting adjourn**

Microsoft Teams meeting

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**Phone Conference ID: 867 438 35#**

**FINAL Meeting Notes  
Lewis River License Implementation  
Aquatic Coordination Committee (ACC) Meeting  
June 10, 2021  
TEAMS Meeting Only**

**ACC Representatives Present (13)**

Bridget, Moran, American Rivers  
Eli Asher, Cowlitz Indian Tribe  
Amanda Froberg, Cowlitz PUD  
Steve West, LCFRB  
Scott Anderson, NMFS  
Logan Negherbon, NMFS  
Kim McCune, PacifiCorp  
Chris Karchesky, PacifiCorp  
Erik Lesko, PacifiCorp  
Jim Byrne, Trout Unlimited  
Kate Day, USFS  
Peggy Miller, WDFW  
Bill Sharp, Yakama Nation

**Guest (1)**

Maurice Frank, LCFEG

**Calendar:**

July 8, 2021	ACC Meeting	TEAMS Meeting
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<b>Assignments from June 10, 2021</b>	<b>Status</b>
Lesko: Discuss concern with Phil Roni of putting fish carcasses above Swift dam and would this bias his study then report back to the ACC at the July meeting.	<b>Complete – 6/15/2021</b>
Lesko/McCune: Email the 2021 proposed fish surveys near the Northwoods area of Swift Reservoir to the ACC.	<b>Complete – 6/15/21</b>

<b>Assignments from December 10, 2020</b>	<b>Status</b>
Lesko: Follow up first of the year with Matt Harding from Northwoods neighborhood to discuss fish stranding survey schedule.	<b>Complete</b>

<b>Assignments from August 13, 2020</b>	<b>Status</b>
Romanski: Jim Byrne (Trout Unlimited) requested Tim Romanski (USFWS) investigate why it was decided in 2005 and find out how and why the Merwin trap design was settled on and specified.	<b>Ongoing</b>

**Opening, Review of Agenda and Meeting Notes**

Erik Lesko (PacifiCorp) called the meeting to order at 9:35am and reviewed the agenda. Lesko also reviewed the May 13, 2021 meeting notes. The meeting notes were approved at 9:40am with clarifying edits from WDFW and housekeeping changes only.

Kim McCune (PacifiCorp) noted that she neglected to add the Nutrient Enhancement – Carcass Distribution topic to the agenda but we will be discussing that topic today.

**Public Comment Opportunity**

None

**LFEG; Nutrient Enhance Project Review of Numbers and Carcass Distribution**

PacifiCorp provided the ACC a 30-day review and response period on May 18, 2021 with comments due on or before June 4, 2021, specific to ACC approval of allocation, location and timing of carcass and analogs, and included a proposed carcass distribution table (see Table 1 below). Specific responses were received from LCFRB and WDFW, which Lesko reviewed with the ACC (**Attachment A**).

Applicant	Project Title	Decision to Fund	Funding
Lower Columbia Fish Enhancement Group (LCFEG)	SW Washington Nutrient Enhancement Coalition: Lewis River Support	Approved; conditioned on ACC and/or ATS approval regarding allocation, location and timing of carcass and analogs.	\$143,966 (Resource funds)

**Table 1. Proposed numbers and distribution of salmon carcasses for the approved Lewis River aquatics fund project:**

*SW Washington Nutrient Enhancement Coalition: Lewis River Support*

Sites	Numbers and Distribution
<b>Upstream of Swift Dam</b>	<b>Up to 2,000 adult carcasses per year (~8,000 over 4 years)</b>
<i>Muddy River Bridge</i>	Equal Distribution
<i>Clear Creek Bridge</i>	
<i>Curly Creek Bridge</i>	
<i>FS 90 Bridge (~lower falls)</i>	
<b>North Fork Lewis River - Downstream of Merwin Dam</b>	<b>Up to 3,000 adult carcasses per year (~12,000 over 4 years)</b>
<i>Merwin Boat Launch</i>	Equal Distribution <sup>1</sup>
<i>Cedar Creek Boat Launch</i>	
<i>Happa Boat Launch</i>	
<i>Island Boat Launch</i>	
<i>Private landowners (various)</i>	

WDFW noted that they would like all of the proposed carcasses (5,000 per year) be placed in the upper watershed (see **Attachment A** – carcass allocation table and comment matrix). There is a potential for increased cost but Lesko indicated he will refer to the project manager (Maurice Frank) for his response to WDFW request. Secondly, WDFW comments about allocation into Yale and Swift have not been discussed or approved by the ACC. PacifiCorp agrees that other upstream of Swift locations would be helpful to add, but Big and Little creeks are not easily accessible. Pine could be a site with landowner approval just upstream of P8.

Peggy Miller (WDFW) confirmed that WDFW did suggest that all carcasses go upstream of Swift at the May ACC meeting and WDFW's suggested allocation can be discussed and modified as long as the ACC approves of such. In addition, WDFW does not propose to increase or change funding. We are expecting large returns and there is already a lot of carcasses that will remain in the lower river. WDFW does suggest that if the carcasses can't go upstream for some logistical reason (snow, access, etc.) then they suggest putting them in the East Fork, but they want the allocation to fit within the funds provided to LCFEG.

Kate Day (USFS) expressed that the Forest Service has no issues with permitting fish in additional tributaries. The USFS can work directly with Maurice Frank. In addition, the cap that is currently in the permit is something that the USFS can also change. The Forest Service is open to any kind of appropriate treatments and they will permit it.

Lesko expressed that it sounds like we have three (3) issues/options:

1. All fish upstream of Swift Dam
2. Portion of fish into Yale and Merwin Reservoir systems
3. East Fork Lewis River

The ACC does not object taking the fish from the downstream sites and moving them all upstream above Swift dam, however, Steve West (LCFRG) noted that how does the distribution of fish upstream play into Phil Roni's In Lieu work above Swift? Jim Byrne (Trout Unlimited) also has the same concern that an additional treatment could confound the scientific results of Roni's current ongoing study above Swift dam... i.e., if there is an increase in fish is this an increase due to the rehabilitation project or would it be due to the increased carcasses in the area? Miller concurred with others that the Utilities will discuss with Roni before a decision is made about putting fish upstream. Lesko will discuss this concern further with Phil Roni about the effects of putting carcasses above Swift. Eli Asher (Cowlitz Indian Tribe) expressed that we are talking about a relatively small proportion of carcasses vs live fish being transported upstream. He does not think it's a big deal to put carcasses above Swift but if we do have some sort of monitoring study going on up there it seems that we could adjust for that.

**The ACC does not object to moving the fish upstream, however, this is pending further clarification from Phil Roni's monitoring study associated with the In Lieu Decision, and if the addition of carcasses above Swift would adversely affect this effort.**

Maurice Frank (LCFEG) communicated that if all fish are distributed above Swift Dam, it would not affect the logistics or the budget too much. LCFEG is open to the options and very flexible on the topic.

Lesko noted that in accordance with the Lewis River Settlement Agreement the preference is for the fish to be distributed in the North Fork Lewis River and not the East Fork. The ACC did not fully discuss or approve potential alternate release sites. Approval of alternate release sites will be added to the July ACC agenda.

Miller reiterated that WDFW does not support the use of analogs for this project. Asher too does not support the use of analogs but does support the use of carcasses. Maurice Frank expressed that use of analogs was optional from the beginning, so it was not an activity that was set in stone. If analogs were to be used LCFEG would have consulted with WDFW prior to analog use. **LCFEG**

**will leave the use of analogs completely out of this approved project.** The ACC agreed that for future Aquatic Fund cycles they need to take earlier action on topics such as this rather than evaluating conditional approvals late in the process.

## Study/Work Product Updates

### Flows/Reservoir Conditions Update

Merwin – down 3.5’

Yale – down 11.0’ (1’ with dam safety reduction)

Swift – down 1.5’

Total hole– 15.69’ (5.69 with Yale dam safety reduction)

Natural flow at Merwin is unknown due to data error; outflow is 2,780 cfs (FERC minimum is currently 2,700 cfs. July 1st the minimum outflow from Merwin will be reduced to 2,300 cfs.

### Swift Survey’s at Northwoods Update

Lesko provide an informal memorandum outlining proposed fish surveys near the Northwoods area of Swift Reservoir for 2021 (see [Attachment B](#) for further detail specific to methods, pool formation timing and location, etc.) to investigate isolated pools that draft in the summer-time.

*Survey Timing and Frequency* - A minimum of three surveys will be conducted in 2021 to collect and sample fish, identify the formation of pools relative to reservoir elevation and determine the number and approximate dimensions of each isolated pool identified and surveyed during each survey. Survey timing depends on actual reservoir elevations in 2021. In 2020, surveys were conducted at elevations of 989.3 feet (July 31) and 987.0 feet (August 21). Isolated pools were identified on each survey. However, during the first survey, it was believed that pools may form at reservoir elevations higher than 990 feet. Therefore, a survey will be performed when the reservoir elevation is between 991 and 992 feet to determine if pool formation occurs higher than 990 feet. Any pools present will be sampled for fish collection. Two additional surveys are proposed at similar elevations sampled in 2020 to compare captures and any differences in pool formation Table 1.

**Table 1. Desired reservoir elevation and approximate survey date for each of the three proposed surveys in 2021.**

Survey No.	Reservoir Elevation (ft, msl)	Approximate Survey Time
1	991-992	July 16, 2021
2	989-990	July 31, 2021
3	986-987	August 15, 2021

### ATS Update

ATS is still working on the 2021 and 2022 Annual Operating Plan (AOP). The December 2020 H&S Plan filed with the FERC has not yet been approved, but we expect the FERC approval later this year. So, we are currently operating under the 2014 H&S Plan and have developed a working draft of the 2021 AOP that is very similar to previous AOP operating under the 2014 H&S Plan. The ATS is currently working on drafting the 2022 Annual Operating Plan that incorporates the monitoring objectives and metrics of the new 2020 H&S Plan as we fully expect and anticipate FERC approval of the Plan this year. The ATS is working toward having a 2022 AOP finalized by the end of this year.

The Lewis River M&E Monitoring Evaluation Plan review and revisions process is underway. This process occurs at a minimum of every five (5) years to determine if modifications to the M&E Plan are warranted (per Section 9.1 of the Lewis River Hydroelectric Projects Settlement Agreement). The ATS will begin reviewing the proposed draft plan in early July and will continue to do so over the following three months. It is anticipated that the revised M&E Plan will be provided to the ACC for 90-day review in November 2021.

### **Fish Passage Update**

Chris Karchesky (PacifiCorp) informed the ACC that fish passage throughout the Lewis River Project is in full swing. Adult spring Chinook are still arriving and being collected at the Merwin Fish Trap, although are beginning to taper off as expected. Brood stock collection for female HOR spring Chinook is still occurring, but all male HOR fish are now being transported upstream along with NOR fish. Karchesky indicated that were approximately 500 adult spring Chinook upstream to-date, although most of those fish are HOR males or jacks. He mentioned that a few winter steelhead were still coming in, but their numbers have tapered off considerably as the run is winding down. Total winter steelhead transported upstream this year was considerably lower than in previous years. Currently sitting at just over 300 adults upstream with about half of those being true wilds and half being supplement fish (Blank Wire Tag fish).

Karchesky said that number of out-migrants being collected at the FSC daily were continuing to be high with over 5,000 fish coming in last weekend. At this point most fish coming out are coho and a few spring Chinook and steelhead. The majority of spring Chinook came out in March and early-April, whereas steelhead peaked in early-May. About 6,000 steelhead juveniles have been transported downstream to-date this year, which second only to the 2018 migration year when about 8,000 were collected. The FSC will continue to operate until water temperature increase and fish numbers taper off. This typically occurs sometime mid-July.

### **Excerpts from the May Fish Passage Report ([Attachment C](#))**

#### **Merwin Fish Collection Facility and General Operations**

During the month of May, a total of 650 fish were captured at the Merwin Dam Adult Fish Collection Facility (MFCF). The monthly catch was predominantly spring Chinook (74.0%) and winter steelhead (22.9%). All hatchery origin (HOR) spring Chinook were transported to Lewis River hatchery for broodstock or to be held for possible upstream transport in the future. All natural origin (NOR) adults were transported upstream.

The MFCF remained operational throughout the month of May. However, fish sorting and transport occurred weekdays only for the first half of the month due to logistical constraints for transporting HOR spring Chinook to Lewis River Hatchery on the weekends. Flows below Merwin Dam remained flat for the majority of the month before increasing to 4,200 cfs on May 30<sup>th</sup> (Figure 1).

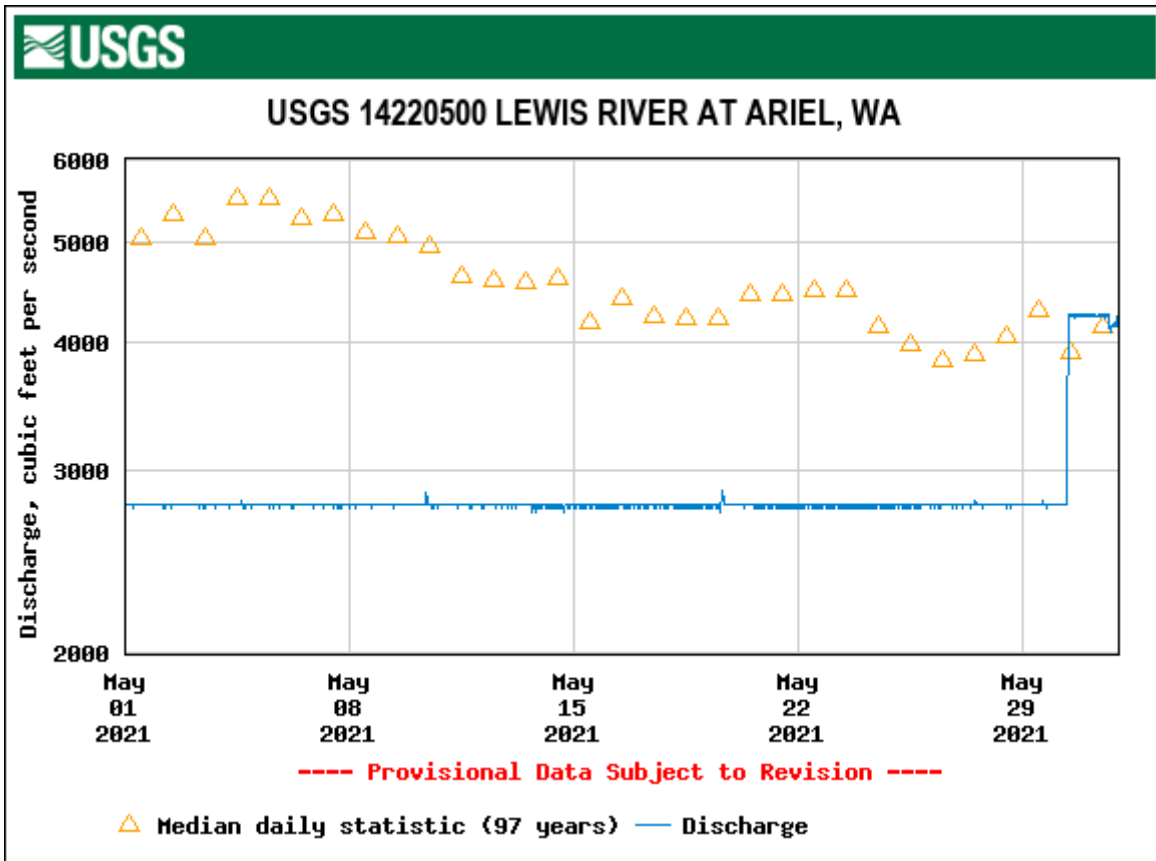
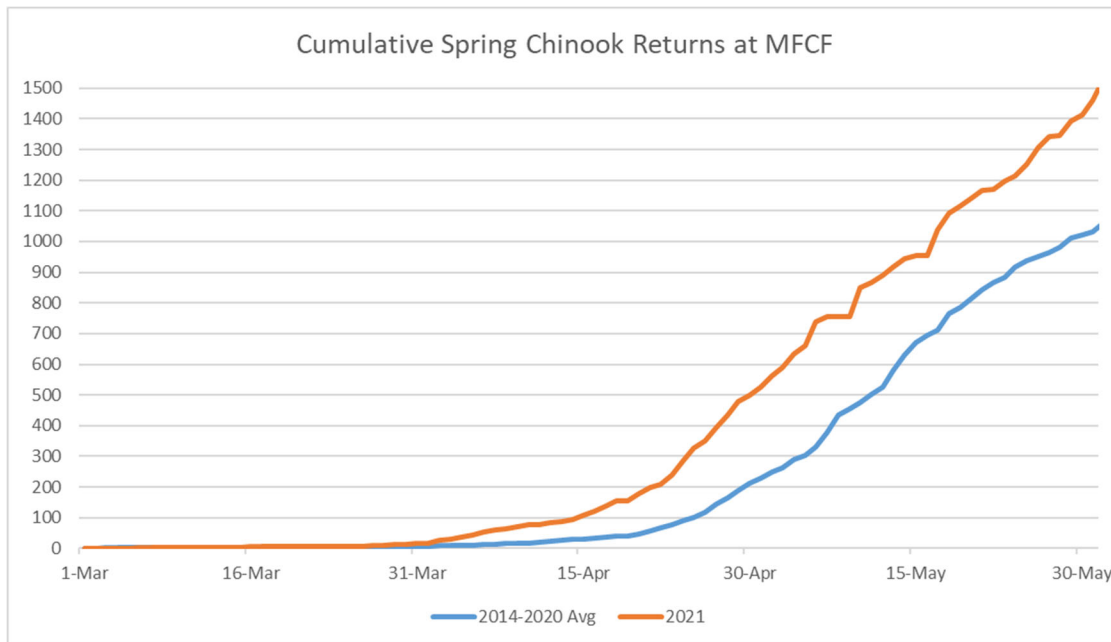


Figure 1. Discharge in cubic feet per second recorded at the USGS Ariel, WA gauge (14220500) located immediately downstream of Merwin Dam.

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

A total of total of 295 adult fish were transported upstream in May, which was an increase from April's upstream transport total of 160. Spring Chinook composed the majority of fish transported upstream in May (n=223), followed by winter steelhead (n=66) and cutthroat (n=6). Spring Chinook collection totals at the MFCF remain above the 2014-2020 average (Figure 2), while upstream transport for winter steelhead remains below the 2012-2020 average (Table 1).



**Figure 2. Cumulative number of Spring Chinook collected at Merwin Adult Fish Collection Facility in 2021, relative to the 2014-2020 average.**

**Table 1. Total number of adult winter steelhead transported upstream of Swift Dam by run-year.**

<b>Run Year</b>	<b>Male</b>	<b>Female</b>	<b>Total adult winter steelhead taken upstream of Swift Dam</b>
<b>2012</b>	141	48	<b>189</b>
<b>2013</b>	440	301	<b>741</b>
<b>2014</b>	452	581	<b>1,033</b>
<b>2015</b>	746	477	<b>1,223</b>
<b>2016</b>	378	376	<b>754</b>
<b>2017</b>	331	261	<b>592</b>
<b>2018</b>	682	535	<b>1,227</b>
<b>2019</b>	527	486	<b>1,013</b>
<b>2020</b>	517	535	<b>1,052</b>
<b>2021</b>	122	188	<b>310</b>



By the end of May, 310 winter steelhead (206 BWT/104 NOR), 265 spring Chinook (156 NOR adults/109 HOR jacks), 83 coho (from 2020 run year), and 31 cutthroat trout have been transported upstream of Swift Dam.

**Floating Surface Collector (FSC) (Attachment C)**

The Swift Reservoir Floating Surface Collector (FSC) ran continuously throughout the month of May. A total of 24,910 out-migrants were collected in May, a 730% increase over April’s total of 3,410. The majority (73.4%) of the fish collected in May were juvenile coho (n=18,280), followed by steelhead (n=4,371), planted rainbow trout (n=1,682), spring Chinook (n=188), cutthroat trout (n=370), and bull trout (n=1; bull trout was returned to the reservoir). The collection totals observed in May 2021 are consistent with previous years except when compared with 2019 totals when a record number of out-migrants were collected and passed downstream (Table 2).

**Table 2. Number of coho, Chinook, and steelhead juveniles transported downstream from the Swift Floating Surface Collector by run-year.**

Run Year	May Collection Numbers by Run Year at Swift FSC				
	Coho	Chinook	Steelhead	Cutthroat	TOTAL
<b>2013</b>	7,358	377	100	264	<b>8,099</b>
<b>2014</b>	2,435	216	311	515	<b>3,477</b>
<b>2015</b>	14,912	1,938	887	333	<b>18,070</b>
<b>2016</b>	23,799	233	1,392	551	<b>25,975</b>
<b>2017</b>	12,963	738	1,565	149	<b>15,415</b>
<b>2018</b>	18,965	190	6,651	329	<b>26,135</b>
<b>2019</b>	55,788	2,753	2,321	473	<b>61,335</b>
<b>2020</b>	11,870	1,104	2,356	245	<b>15,575</b>
<b>2021</b>	18,280	188	4,371	370	<b>23,209</b>

**Agenda items for July 8, 2021**

- Review June 10, 2021 Meeting Notes **(ACC COMMENTS DUE June 29, 2021)**
- LCFEG Nutrient Enhancement; Carcass Allocation Discussion/Decision
- Cougar Creek WSDOT Project; Bull Trout
- Study/Work Product Updates

*Adjourn 11:00am*

**Next Scheduled Meeting:**

<b>July 8, 2021</b>
TEAMS Call Only
9:30 a.m. – 11:00 a.m.

**Meeting Handouts & Attachments:**

- Meeting Notes from 5/13/2021
- Agenda from 6/9/2021
- **Attachment A** - Nutrient Enhance Project Review of Numbers and Carcass Distribution
- **Attachment B** - Proposed 2021 fish surveys near the Northwoods area of Swift Reservoir
- **Attachment C** - Lewis River Fish Passage Report (May 2021)

**ATTACHMENT A – LCFEG Nutrient Enhancement Carcass Allocation Comment Matrix**

Sites	Numbers and Distribution	WDFW Comments	Utilities Comments
<b>Upstream of Swift Dam</b>	Up to 2,000 adult carcasses per year (~8,000 over 4 years)	All (5,000 per year) of the proposed carcasses should be placed in the upper watershed. Based on stream size and the proposed placement location's proximity to the confluence of the Lewis, Curly Creek should not receive as many carcasses as the Muddy. In addition to the proposed locations, other carcass placement areas/locations could include: Pine, Little, and Big Creeks, as well as at Lower Falls, the terminus of anadromous distribution. While the proposal states “upstream of Swift Dam”, we could also support inclusion of tributaries to Yale and Merwin reservoirs when sites above Swift are unavailable. The added nutrients in these locations may provide a benefit to resident fish in these reservoirs including resident trout, kokanee, and bull trout. If so, there is access on Cougar, Siouxon and Canyon Creeks. 5,000 carcasses per year is a significant amount of ocean derived nutrients in these areas (i.e. above Swift, Yale and Merwin) that have been deficient for many years. The more spatially and temporally dispersed during the natural spawning timing, the better.	If ALL carcasses/analogs are placed upstream this would cause the project to exceed the approved funding amount. To remain within budget, the number of trips and carcasses distributed would need to be reduced (requires consensus?). Allocation into Yale and Swift have not been discussed or approved by the ACC. Agree that other upstream of Swift locations would be helpful to add, but Big and Little creeks are not accessible. Pine could be a site with landowner approval just upstream of P8?
Muddy River Bridge	Equal Distribution		
Clear Creek Bridge			
Curly Creek Bridge			
FS 90 Bridge (~lower falls)			
<b>North Fork Lewis River - Downstream of Merwin Dam</b>	Up to 3,000 adult carcasses per year (~12,000 over 4 years)	The large recent annual returns and forecasted numbers of returning natural origin fall Chinook and coho (both hatchery and natural origin) to the lower Lewis suggest that the lower river	The distribution of carcasses downstream of Merwin has been approved by the ACC. The allocation, location within each area and timing of those carcasses has not.

Merwin Boat Launch	Equal Distribution <sup>1</sup>	likely has sufficient naturally occurring carcasses and is a low priority for additional artificial augmentation. The artificial augmentation of carcasses in the lower river can also be problematic for crews who are conducting carcass tagging operations. The addition of carcasses to an area where adult escapement monitoring studies are being conducted may confound these research operations by interfering with carcass recovery and peak counts. Even if the tails are cut, they may be counted as previously sampled naturally occurring fish . In the lower Lewis, all of the proposed release locations are areas where carcasses do not mobilize well, so this addition of nutrients may result in unnatural accumulations of unnecessary carcasses. The “various private landowners” category is vague and in the past, this disposal method has resulted in large piles of carcasses in off channel coves where the distribution of carcasses was hampered by lack of flows. This may result in an anoxic conditions which may hamper the utilization of placed nutrients as well as negatively impact existing fauna. If there needs to be a lower river distribution due to dangerous road conditions or extreme weather, the use of the East Fork Lewis or other tributaries and locations described in the existing nutrient enhancement plan developed with WDFW should be used.	<b>PROPOSAL - If the ACC changed the allocation of carcasses to upstream of Swift only and used only analogs downstream of Merwin during the spring as proposed in the plan - would this be acceptable (with no change to budget)?</b> Not sure about the problem with cut tails. they should not be counted as the cut tail denotes it as previously sampled. Agree that various landowner needs more clarification.
Cedar Creek Boat Launch			
Happa Boat Launch			
Island Boat Launch			
Private landowners (various)			
<sup>1</sup> Distribution may be skewed due to run size, however, priority is given to the most upstream sites		What does skewed due to run size mean? For the greatest benefit, all carcasses, should be placed in the upper Lewis above Merwin	Large run sizes may lead to more carcasses placed in more accessible upriver sites such as Merwin Boat

	Dam, with the priority above Swift Dam.	Ramp and not equal distribution
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**GENERAL COMMENTS**

WDFW	The preferred method of nutrient enhancement is through natural dispersal of carcasses through spawning activities during the natural timeframe. The short-term addition of carcasses during the proposed timeframe is not felt to cause detriment, but the long-term benefit is likely negligible. This proposal does not describe a detailed plan for use of carcass analogs (i.e., what, when, where, how much/many) that has been reviewed and approved by Washington Dept of Ecology (WDOE) and WDFW. At this time, WDFW does not approve the use of carcass analogs for this project.	The proposal suggests the use of 15 to 20,000 lbs. of analogs (SCA) over the 4-year period in spring of each year. The use of analogs was approved by the ACC - pending permit approval from WDOE.
LCFRB	Per our previous comments, it is highly uncertain whether the proposed carcass placement would produce sustainable, long-term benefits to ESA-listed species, especially in the upper watershed where the overriding recovery bottlenecks include juvenile collection efficiency. It is also uncertain whether carcass placement above swift reservoir could confound evaluation of fish responses to habitat work if the in-lieu program proceeds. To our knowledge these uncertainties have not been resolved since completion of the project evaluation process. While we did not vote to block this project given the broader support it receives, including building community support for broader recovery efforts, we remain concerned that the investment in this project may not substantively contribute to the goals of the ACC program relating to recovery. It could also reduce funding available for projects with a higher degree of biological benefit in the long term. We are not voting to block this project, but would like our comments reflected in the record. We have no additional comments relating to this request.	Comment to be noted

June 7, 2021

To: Aquatic Coordination Committee (ACC)  
From: Erik Lesko, PacifiCorp  
Subject: Proposed fish surveys near the Northwoods area of Swift Reservoir - 2021

## Background

Fish surveys were initiated near the Northwoods area of Swift Reservoir in the summer of 2020. These surveys were completed at the request of Matt Harding (Northwoods resident) and later agreed to by the ACC. Results from these surveys were presented to the ACC in September 2020 and are attached to this proposal for reference (Attachment 1). After review of the results, the Utilities and the ACC agreed to continue surveys in 2021.

The purpose of the surveys in 2020 were to collect, identify and document fish species present in isolated pools that form in the Northwoods area (Figure 1). Isolated pools begin to form during the summer months when drafting of Swift Reservoir (Swift) is necessary to meet FERC required minimum stream flows downstream of Merwin Dam (See FERC license and Section 6.2.4 of the Lewis River Settlement Agreement). The rate of drafting depends primarily on the rate of natural (summer) inflow into Swift, which depends on variables such as the volume and water content of upstream snowpack and seasonal precipitation available each year.



Figure 1. General location of survey area.

## Proposed Activities

The Utilities propose continuing the fish surveys in the Northwoods area in 2021 to 1) expand our existing database from 2020, specifically the number and species composition present in isolated pools; 2) identify specific reservoir elevation(s) when pools become isolated and 3) inventory the number, location and approximate size (and volume) of each isolated pool identified.

## Methods

### **Survey Timing and Frequency**

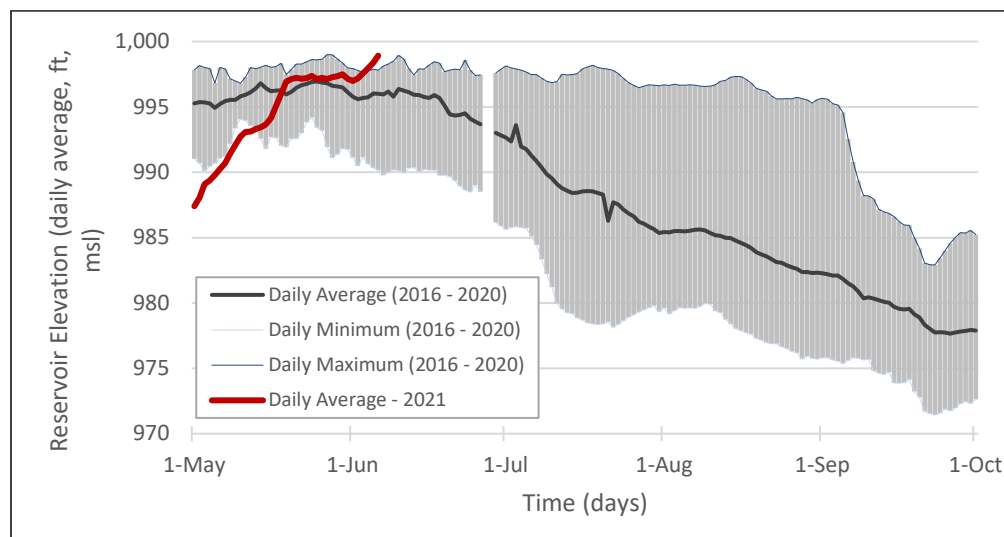
A minimum of three surveys will be conducted in 2021 to collect and sample fish, identify the formation of pools relative to reservoir elevation and determine the number and approximate dimensions of each isolated pool identified and surveyed during each survey.

Survey timing depends on actual reservoir elevations in 2021. In 2020, surveys were conducted at elevations of 989.3 feet (July 31) and 987.0 feet (August 21). Isolated pools were identified on each survey. However, during the first survey, it was believed that pools may form at reservoir elevations higher than 990 feet. Therefore, a survey will be performed when the reservoir elevation is between 991 and 992 feet to determine if pool formation occurs higher than 990 feet. Any pools present will be sampled for fish collection. Two additional surveys are proposed at similar elevations sampled in 2020 to compare captures and any differences in pool formation (Table 1).

**Table 1. Desired reservoir elevation and approximate survey date for each of the three proposed surveys in 2021.**

Survey No.	Reservoir Elevation (ft, msl)	Approximate Survey Time
1	991-992	July 16, 2021
2	989-990	July 31, 2021
3	986-987	August 15, 2021

Figure 2 provides average daily reservoir elevations including the minimum and maximum average daily elevations observed between 2016 and 2020 (May 1 to October 1). Figure 2 also provides the current reservoir elevation relative to previous years. Based on the average drafting rates observed for the past 5 years (about 2 inches per day) in the summer, we can approximate the timing of each survey in 2021 (Table 1). The actual survey time will require routine observations of the reservoir elevation relative to natural inflow to determine the exact date for each survey.



**Figure 2. Average, minimum and maximum daily Swift reservoir elevation between May 1 and October 1 for the years 2016 – 2020. Average daily Swift Reservoir elevation for 2021 (May 1 to June 6).**

***Fish enumeration and species composition***

Fish collection will rely primarily on backpack electrofishers in combination with stick seines to concentrate fish present in each isolated pool observed. Seines may also be used exclusively for fish collection in certain pools that have specific or favorable characteristics (e.g., smooth substrate without large wood or boulders).

All fish collected will be enumerated by species and up to 30 individuals of each salmonid species will be measured for fork length. All captured fish will be moved to the open reservoir after sampling. Photographs will be taken from a subsample of fish collected from each observed pool to help determine life stage of captures (e.g., fry, parr, smolt).

***Pool formation timing and location***

The number of isolated pools present during each survey will be counted and center location marked with handheld GPS unit. The evaluation area will include the area from the Northwoods docks upstream to the Eagle Cliff Bridge and include any dewatered areas east of the main channel of the North Fork Lewis River (see Figure 1).

***Pool volume***

For each survey, each isolated pool observed will be measured for average length and width using a handheld laser range finder and multiple points depending on the size and shape of the pool. Average depth will be measured using a surveyor's pole or suitable alternative.

**Reporting**

PacifiCorp will summarize all data collected and provide a summary report to the ACC which will include the 2020 data for comparison purposes. This report should be available in the fall of 2021 for ACC review.





August 31, 2020

To: Joshua Ashline, NOAA  
Tim Romanski, USFWS

From: Erik Lesko, PacifiCorp

Subject: Results from 2020 fish surveys of Northwoods area - Swift Reservoir

### Introduction and Background

The Lewis River Aquatic Coordination Committee (ACC) meets on a monthly basis to coordinate implementation activities as part of the Lewis River Settlement Agreement. ACC meetings are generally closed to the public, however, each meeting agenda provides a specific time for public input.

During our November, 14, 2019 ACC meeting, Matt Harding – a Northwoods Community Member, provided pictures taken in July, 2019. These pictures showed what appeared to be three-spine sticklebacks (*Gasterosteus aculeatus*) in isolated pools near the Northwoods boat docks on Swift Reservoir. Mr. Harding expressed concern that these pools become isolated as the reservoir is drafted during the summer months. Mr. Harding indicated that a biologist (no name provided) observed one salmonid (unknown species) and one lamprey at the time the pictures were taken (no picture provided).

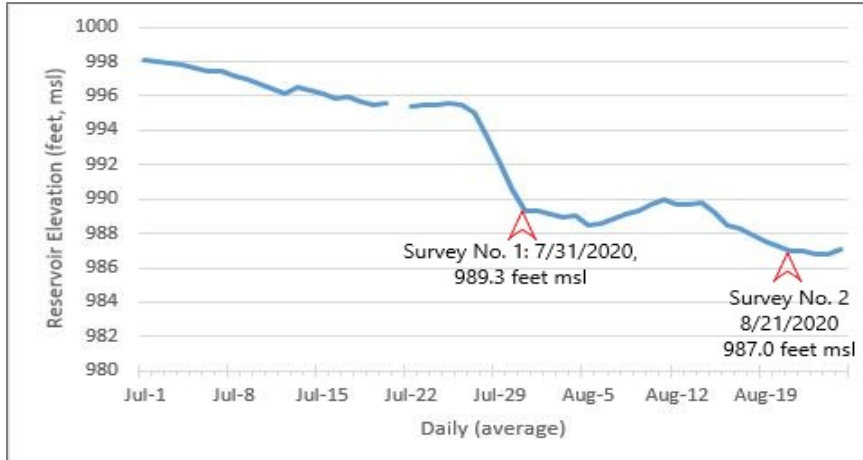
Due to the uncertainty in determining the species present in these isolated pools, the ACC agreed that biologists from PacifiCorp would coordinate with Mr. Harding to conduct a survey or surveys of the area in the summer of 2020 to identify fish species and overall species composition in the isolated pools near the Northwoods Community.

### Methods

Two surveys were conducted in the Northwoods area (Figure 1) based on reservoir elevations (Figure 2).



Figure 1. Location of survey area.



**Figure 2. Swift Reservoir daily pool elevations: July 1 – August 25, 2020**

Survey 1: July 31, 2020. PacifiCorp fish biologists Mark Ferraiolo and Erik Lesko accessed the site by boat. Reservoir elevation was 989.3 feet (10.7 feet down from full pool). The purpose of this survey was to visually observe and identify (if possible) any fish species observed in isolated pools surrounding the Northwoods area.

Survey 2: August 21, 2020. PacifiCorp biologist Erik Lesko along with Matt Harding, another Northwoods Community Member (Tom) and two environmental biologists that work with Matt (Hannah Mortensen and Sophie Ernst) surveyed the area with a backpack electrofisher (Smith-Root LR-24) operated by Erik Lesko. The team conducted single pass collection method in all observed pools that were isolated from the reservoir. Reservoir elevation was 987.0 feet representing a net loss of 2.30 feet of reservoir elevation between surveys 1 and 2.

## Results

### Survey No. 1 (visual survey): July 31, 2020

There were six (6) isolated pools (no connection to the reservoir) present and some areas that had recently dewatered. We observed (about 200) larval/fry life stage fish which appeared to be predominately sticklebacks and possibly some suckers in isolated pools. Approximately 60 of the total sticklebacks observed were mortalities (see photos). We also observed (less than a dozen) live salmonid fry which were either steelhead (rainbow) or cutthroat trout. We measured water depth out from the docks in the reservoir that was still connected and it was roughly 3 to 4 feet deep – indicating that additional isolated pools may form at reservoir elevations around 986 feet. Numerous bird and raccoon tracks were observed surrounding the isolated pools.

**Survey 1: Photos**

Isolated Pools



Three-spine stickleback fry



Survey No. 2 (electrofisher survey): August 21, 2020

There were five (5) isolated pools present at the time of the survey. Fish were collected in two of the five pools surveyed. Species captured included the following:

Species	Number Captured	Number Observed (estimated)
Three-spine Stickleback ( <i>Gasterosteus aculeatus</i> )	10	250
Coho Salmon ( <i>Oncorhynchus kisutch</i> )	60	120
Sculpin ( <i>Cottidae</i> sp.)	15	70
Bull Trout ( <i>Salvelinus confluentus</i> )	1	1

All captured fish were released into the reservoir.



**Survey 2: Photos**

Northwoods docks



Isolated pools



Coho Salmon



Bull Trout (~150 mm)





# Lewis River Fish Passage Report

## May 2021

### Merwin Fish Collection Facility and General Operations

During the month of May, a total of 650 fish were captured at the Merwin Dam Adult Fish Collection Facility (MFCF). The monthly catch was predominantly spring Chinook (74.0%) and winter steelhead (22.9%). All hatchery origin (HOR) spring Chinook were transported to Lewis River hatchery for broodstock or to be held for possible upstream transport in the future. All natural origin (NOR) adults were transported upstream.

The MFCF remained operational throughout the month of May. However, fish sorting and transport occurred weekdays only for the first half of the month due to logistical constraints for transporting HOR spring Chinook to Lewis River Hatchery on the weekends. Flows below Merwin Dam remained flat for the majority of the month before increasing to 4,200 cfs on May 30<sup>th</sup> (Figure 1).

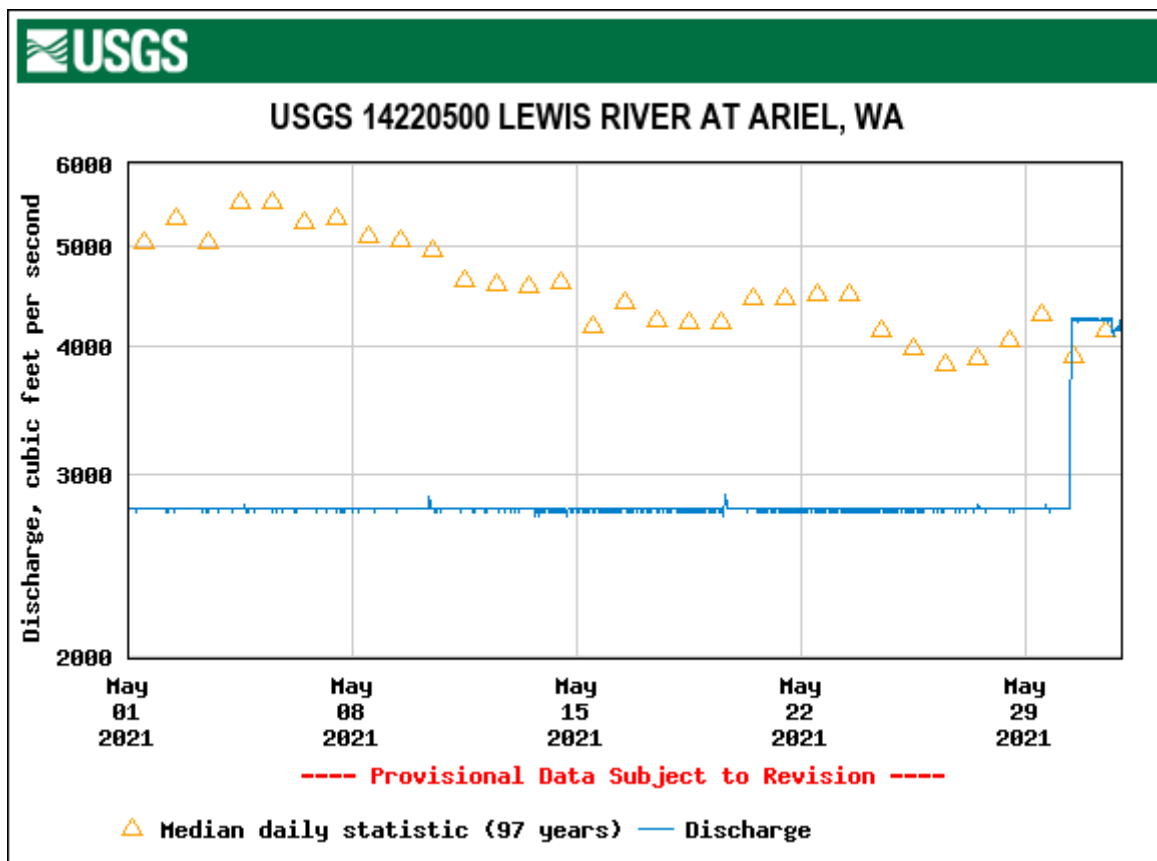
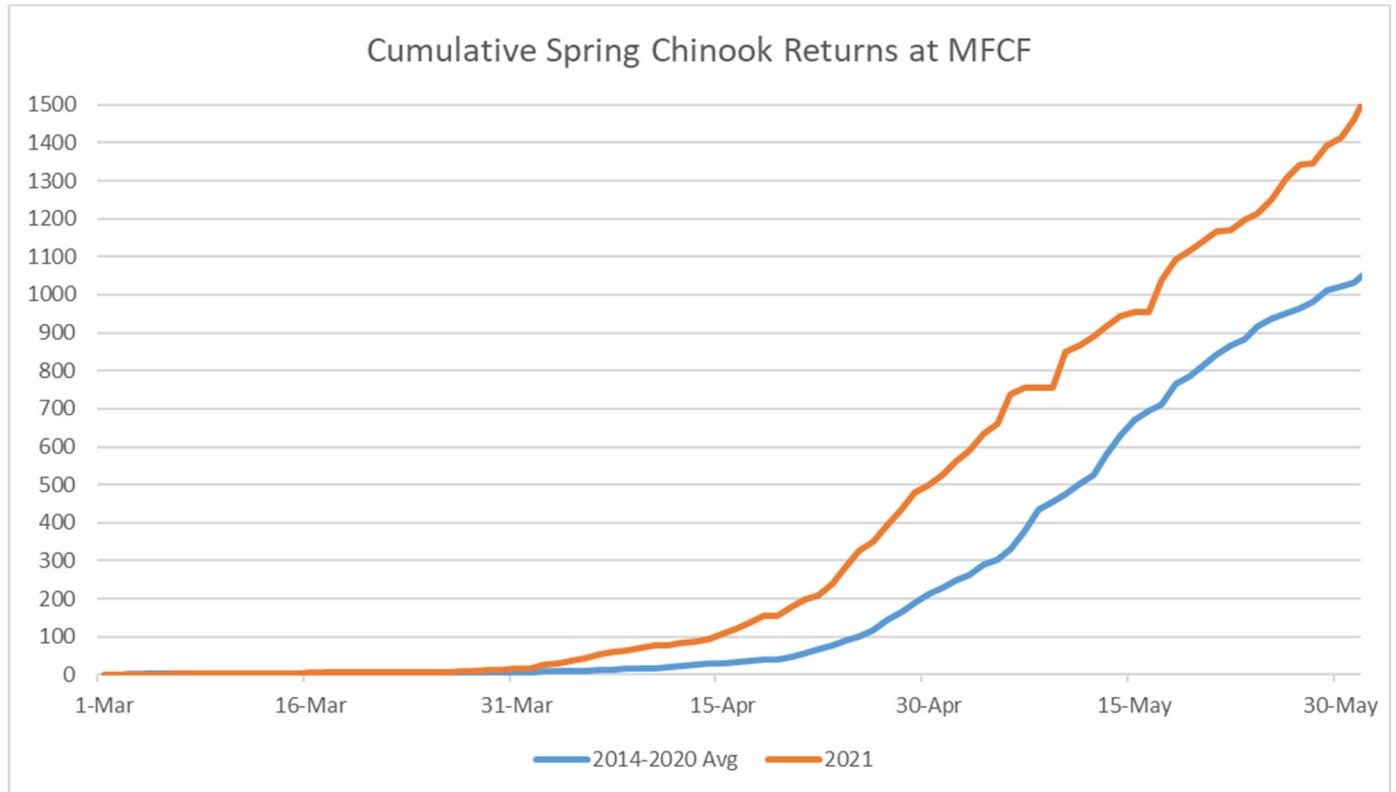


Figure 1. Discharge in cubic feet per second recorded at the USGS Ariel, WA gauge (14220500) located immediately downstream of Merwin Dam.

## Upstream Transport

A total of total of 295 adult fish were transported upstream in May, which was an increase from April's upstream transport total of 160. Spring Chinook composed the majority of fish transported upstream in May (n=223), followed by winter steelhead (n=66) and cutthroat (n=6). Spring Chinook collection totals at the MFCF remain above the 2014-2020 average (Figure 2), while upstream transport for winter steelhead remains below the 2012-2020 average (Table 1).



**Figure 2.** Cumulative number of Spring Chinook collected at Merwin Adult Fish Collection Facility in 2021, relative to the 2014-2020 average.

**Table 1.** Total number of adult winter steelhead transported upstream of Swift Dam by run-year.

Run Year	Male	Female	Total adult winter steelhead taken upstream of Swift Dam
2012	141	48	189
2013	440	301	741

<b>2014</b>	452	581	<b>1,033</b>
<b>2015</b>	746	477	<b>1,223</b>
<b>2016</b>	378	376	<b>754</b>
<b>2017</b>	331	261	<b>592</b>
<b>2018</b>	682	535	<b>1,227</b>
<b>2019</b>	527	486	<b>1,013</b>
<b>2020</b>	517	535	<b>1,052</b>
<b>2021</b>	122	188	<b>310</b>

By the end of May, 310 winter steelhead (206 BWT/104 NOR), 265 spring Chinook (156 NOR adults/109 HOR jacks), 83 coho (from 2020 run year), and 31 cutthroat trout have been transported upstream of Swift Dam.

### **Floating Surface Collector (FSC)**

The Swift Reservoir Floating Surface Collector (FSC) ran continuously throughout the month of May. A total of 24,910 out-migrants were collected in May, a 730% increase over April's total of 3,410. The majority (73.4%) of the fish collected in May were juvenile coho (n=18,280), followed by steelhead (n=4,371), planted rainbow trout (n=1,682), spring Chinook (n=188), cutthroat trout (n=370), and bull trout (n=1; bull trout was returned to the reservoir). The collection totals observed in May 2021 are consistent with previous years except when compared with 2019 totals when a record number of out-migrants were collected and passed downstream (Table 2).

**Table 2. Number of coho, Chinook, and steelhead juveniles transported downstream from the Swift Floating Surface Collector by run-year.**

<b>Run Year</b>	<b>May Collection Numbers by Run Year at Swift FSC</b>				
	<b>Coho</b>	<b>Chinook</b>	<b>Steelhead</b>	<b>Cutthroat</b>	<b>TOTAL</b>
<b>2013</b>	7,358	377	100	264	<b>8,099</b>
<b>2014</b>	2,435	216	311	515	<b>3,477</b>
<b>2015</b>	14,912	1,938	887	333	<b>18,070</b>



<b>2016</b>	23,799	233	1,392	551	<b>25,975</b>
<b>2017</b>	12,963	738	1,565	149	<b>15,415</b>
<b>2018</b>	18,965	190	6,651	329	<b>26,135</b>
<b>2019</b>	55,788	2,753	2,321	473	<b>61,335</b>
<b>2020</b>	11,870	1,104	2,356	245	<b>15,575</b>
<b>2021</b>	18,280	188	4,371	370	<b>23,209</b>



**Fish Facility Report**  
**Swift Floating Surface Collector**  
**May 2021**

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
1			139			45		1	174	1				0	40	400
2		4	354			16		7	96	2		8		0	40	527
3	1	9	408			8		1	242	1		13		0	45	728
4		4	244			4			158			4		0	119	533
5		25	333			28		4	201	1				0	62	654
6			171			10			64	2		8		0	32	287
7	1		168	1		4		1	151			1		0	77	404
8	1		304			0			82					0	78	465
9		2	392			0			228			17		0	20	659
10			416		4	0			240			5	1	0	40	706
11			305			4			175			8	1	0	23	516
12		3	347			0			159	1		13		0	25	548
13		3	359			1			133			1	4	0	26	527
14		36	430			0			93					0	24	583
15	3	25	1247		10	1		5	187			9		0	13	1500
16		2	1392		5	4		3	209					0	33	1648
17		16	1354			0		4	228	2				0	40	1644
18			446			0		2	46					0	35	529
19		8	2003			4		4	279	4		26		0	55	2383
20		4	1393			4			192			20	1	0	20	1634
21		36	997			8		1	104	2		7		0	34	1189
22		15	456			11		1	211			9		0	20	723
23			229			0			101			10		0	24	364
24			168			0			36			24		0	26	254
25		1	304			4			159	1		29		1	7	506
26	10		693			3			129			40		0	27	902
27			463		1	0			57			50	1	0	82	654
28			592		1	1			28			32		0	132	786
29		44	1181		5	0		4	85	1		2		0	315	1637
30		9	559			0			76			12	2	0	99	757
31			171		1	0		2	8			12		0	69	263
<b>Monthly</b>	16	246	18018	1	27	160	0	40	4331	18	0	360	10	1	1682	24910
<b>Total</b>	290	3973	20040	11	65	1830	8	122	5028	27	3	565	16	6	2427	34411