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Report Period: April 16<sup>th</sup> to April 30<sup>th</sup>, 2023

Report No.: 2023 Willamette RST Bi-Weekly Report 04/16-04/30 by EAS

**Re: WILLAMETTE VALLEY FISH PASSAGE MONITORING VIA ROTARY SCREW TRAPS**

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## Project Schedule

**Table 1. Project Schedule**

Site	Task	Start	End	Days
Big Cliff Dam RST	Operation	12/01/2021	02/15/2022	656
Big Cliff Dam RST	Operation	03/15/2022	10/15/2022	
Big Cliff Dam RST	Operation	10/15/2022	12/15/2022	
Big Cliff Dam RST	Operation	12/15/2022	3/15/2023	
Big Cliff Dam RST	Operation	3/16/2023	10/15/2023	
Big Cliff Dam Tailrace	Trap Efficiency Release (1,000 Fish)	12/22/2021	12/22/2021	1
Big Cliff Dam Tailrace	Temporary Trap Removal and Install	05/06/2022	05/13/2022	8
Big Cliff Dam Tailrace	Trap Efficiency Release (1,000 Fish)	05/25/2022	05/25/2022	1
Big Cliff Dam Tailrace	Trap Efficiency Release (1,000 Fish)	08/09/2022	08/09/2022	1
Big Cliff Dam Tailrace	Trap Efficiency Release (1,000 Fish)	09/30/2022	09/30/2022	1
Big Cliff Dam Tailrace	Trap Efficiency Release (500 Fish)	10/13/2022	10/13/2022	1
Big Cliff Dam Tailrace	Trap Efficiency Release (535 Fish)	10/24/2022	10/24/2022	1
Big Cliff Dam Tailrace	Trap Efficiency Release (549 Fish)	11/02/2022	11/02/2022	1
Big Cliff Dam Tailrace	Trap Efficiency Release (510 Fish)	11/16/2022	11/16/2022	1
Big Cliff Dam Tailrace	Trap Efficiency Release (502 Fish)	12/14/2022	12/14/2022	1
Big Cliff Dam Tailrace	Trap Efficiency Release (1,010 Fish)	12/19/2022	12/19/2022	1
Big Cliff Dam Tailrace	Trap Efficiency Release (1,014 Fish)	12/21/2022	12/21/2022	1
Big Cliff Dam Tailrace	Trap Efficiency Release (704 Fish)	12/27/2022	12/27/2022	1
Big Cliff Dam Tailrace	Trap Efficiency Release (452 Fish)	12/29/2022	12/29/2022	1
Big Cliff Dam Tailrace	Trap Efficiency Release (500 Fish)	01/25/2023	01/25/2023	1
Big Cliff Dam Tailrace	Trap Efficiency Release (500 Fish)	02/17/2023	02/17/2023	1
Big Cliff Dam Tailrace	Trap Efficiency Release (2,968 Fish)	03/07/2023	03/07/2023	1

Big Cliff Dam Tailrace	Trap Efficiency Release (541 Fish)	03/10/2023	03/10/2023	1
Big Cliff Dam Tailrace	Trap Efficiency Release (498 Fish)	04/28/2023	04/28/2023	1
Green Peter Tailrace- Middle Santiam River RST	Trap Install	03/02/2022	03/02/2022	1
Green Peter Tailrace- Middle Santiam River RST	Operation	03/03/2022	05/07/2022	66
Green Peter Tailrace- Middle Santiam River RST	Operation	03/14/2023	11/30/2023	261
Green Peter Tailrace- Middle Santiam River RST	Trap Efficiency Release (643 Fish)	03/29/2022	03/29/2022	1
Green Peter Tailrace- Middle Santiam River RST	Trap Efficiency Release (521 Fish)	04/30/2022	04/30/2022	1
Green Peter Tailrace- Middle Santiam River RST	Temporary Trap Removal	05/12/2022	05/12/2022	1
Green Peter Tailrace- Middle Santiam River RST	Trap Install	03/14/2023	03/14/2023	1
Green Peter Tailrace- Middle Santiam River RST	Anchor Install	3/23/2023	3/31/2023	8
Foster Dam Head of Reservoir- South Santiam River RST	Trap Install	03/16/2022	03/16/2022	1
Foster Dam Head of Reservoir- South Santiam River RST	Operation	03/16/2022	06/30/2022	107
Foster Dam Head of Reservoir- South Santiam River RST	Trap Removal	07/01/2022	07/01/2022	1
Foster Dam Head of Reservoir- South Santiam River RST	Trap Install	09/02/2022	09/02/2022	1
Foster Dam Head of Reservoir- South Santiam River RST	Operation	09/02/2022	11/30/2022	90
Foster Dam Head of Reservoir- South Santiam River RST	Trap Removal	12/01/2022	12/01/2022	1
Foster Dam Head of Reservoir- South Santiam River RST	Trap Install	01/30/2023	01/30/2023	1
Foster Dam Head of Reservoir- South Santiam River RST	Operation	02/01/2023	11/30/2023	302
Foster Dam Head of Reservoir- South Santiam River RST	Trapping Efficiency Release (1000 fish)	09/29/2022	09/29/2022	1
Foster Dam Head of Reservoir- South Santiam River RST	Trapping Efficiency Release (840 fish)	10/25/2022	10/25/2022	1
Foster Dam Head of Reservoir- South Santiam River RST	Trapping Efficiency Release (1006 fish)	11/01/2022	11/01/2022	1
Foster Dam Head of Reservoir- South Santiam River RST	Trapping Efficiency Release (1007 fish)	11/09/2022	11/09/2022	1
Foster Dam Head of Reservoir- South Santiam River RST	Trapping Efficiency Release (1009 fish)	11/15/2022	11/15/2022	1

Foster Dam Head of Reservoir- South Santiam River RST	Trapping Efficiency Release (933 fish)	11/22/2022	11/22/2022	1
Foster Dam Head of Reservoir- South Santiam River RST	Trap Removal	12/06/2022	12/06/2022	1
Foster Dam Head of Reservoir- South Santiam River RST	Trap Install	1/31/2023	1/31/2023	1
Foster Dam Head of Reservoir- South Santiam River RST	Trapping Efficiency Release (1005 fish)	02/27/2023	02/27/2023	1
Foster Dam Head of Reservoir- South Santiam River RST	Trapping Efficiency Release (995 fish)	03/09/2023	03/09/2023	1
Foster Dam Head of Reservoir- South Santiam River RST	Trapping Efficiency Release (1,025 fish)	03/15/2023	03/15/2023	1
Cougar Dam RST	Operation	11/30/2021	11/30/2022	730
Cougar Dam RST	Operation	11/30/2022	11/30/2023	
Cougar Dam	Trap Efficiency Release (1,200 Fish, 600 per route)	01/19/2022	01/19/2022	1
Cougar Dam	Trap Efficiency Release (735 Fish, ~365 per route)	04/20/2022	04/20/2022	1
Cougar Dam	Trap Efficiency Release (993 Fish, RO route)	05/15/2022	05/15/2022	1
Cougar Dam	Trap Efficiency Release (500 Fish, PH route)	07/19/2022	07/19/2022	1
Cougar Dam	Trap Efficiency Release (501 Fish, PH route)	08/11/2022	08/11/2022	1
Cougar Dam	Trap Efficiency Release (442 Fish, RO route)	10/14/2022	10/14/2022	1
Cougar Dam	Trap Efficiency Release (504 Fish, RO route)	11/22/2022	11/22/2022	1
Cougar Dam	Trap Efficiency Release (506 Fish, RO route)	12/13/2022	12/13/2022	1
Cougar Dam	Trap Efficiency Release (1,015 Fish, RO route)	12/15/2022	12/15/2022	1
Cougar Dam	Trap Efficiency Release (500 Fish, RO route)	12/20/2022	12/20/2022	1
Cougar Dam	Trap Efficiency Release (445 Fish, RO route)	12/28/2022	12/28/2022	1
Cougar Dam	Trap Efficiency Release (843 Fish, PH route)	01/12/2023	01/12/2023	1
Cougar Dam	Trap Efficiency Release (500 Fish, RO route)	01/30/2023	01/30/2023	1
Cougar Dam	Trap Efficiency Release (511 Fish, RO route)	3/23/2023	3/23/2023	1
Cougar Dam	Trap Efficiency Release (500 Fish, PH route)	3/23/2023	3/23/2023	1
Cougar Dam	Trap Efficiency Release (491 Fish, RO route)	3/30/2023	3/30/2023	1
Cougar Dam	Trap Efficiency Release (497 Fish, PH route)	3/30/2023	3/30/2023	1
Cougar Dam	Trap Efficiency Release (500 Fish, RO route)	4/18/2023	4/18/2023	1
Cougar Dam	Trap Efficiency Release (197 Fish, PH route)	4/18/2023	4/18/2023	1

Cougar Dam Head of Reservoir	Highline and Trap Install	03/07/2022	03/07/2022	1
Cougar Dam Head of Reservoir	Operation	03/08/2022	06/30/2022	115
Cougar Dam Head of Reservoir	Trap Efficiency Release (806 Fish)	03/18/2022	03/18/2022	1
Cougar Dam Head of Reservoir	Trap Efficiency Release (500 Fish)	05/19/2022	05/19/2022	1
Cougar Dam Head of Reservoir	Trap Efficiency Release (515 Fish)	06/23/2022	06/23/2022	1
Cougar Dam Head of Reservoir	Trap Removal	07/01/2022	07/01/2022	1
Cougar Dam Head of Reservoir	Highline Install	09/14/2022	09/14/2022	1
Cougar Dam Head of Reservoir	Trap Install	09/16/2022	09/16/2022	1
Cougar Dam Head of Reservoir	Operation	09/16/2022	11/30/2022	76
Cougar Dam Head of Reservoir	Trap Efficiency Release (551 Fish)	09/22/2022	09/22/2022	1
Cougar Dam Head of Reservoir	Trap Efficiency Release (608 Fish)	10/5/2022	10/5/2022	1
Cougar Dam Head of Reservoir	Trap Efficiency Release (721 Fish)	11/10/2022	11/10/2022	1
Cougar Dam Head of Reservoir	Trap Efficiency Release (719 Fish)	11/16/2022	11/16/2022	1
Cougar Dam Head of Reservoir	Trap Efficiency Release (752 Fish)	11/23/2022	11/23/2022	1
Cougar Dam Head of Reservoir	Trap Efficiency Release (620 Fish)	11/29/2022	11/29/2022	1
Cougar Dam Head of Reservoir	Trap Removal	11/30/2022	11/30/2022	1
Cougar Dam Head of Reservoir	Trap Install	1/31/2023	1/31/2023	1
Cougar Dam Head of Reservoir	Trap Efficiency Release (506 Fish)	4/14/2023	4/14/2023	1
Dexter Dam Tailrace RST	Highline Install	03/02/2022	03/02/2022	1
Dexter Dam Tailrace RST	Trap Install	03/03/2022	03/03/2022	1
Dexter Dam Tailrace RST	Operation	03/07/2022	12/16/2022	649
Dexter Dam Tailrace RST	Operation	12/16/2022	12/16/2023	
Dexter Dam Tailrace RST	Trap Efficiency Release (988 Fish)	03/23/2022	03/23/2022	1
Dexter Dam Tailrace RST	Trap Efficiency Release (1000 Fish)	05/04/2022	05/04/2022	1
Dexter Dam Tailrace RST	Trap Efficiency Release (1019 Fish)	05/24/2022	05/24/2022	1
Dexter Dam Tailrace RST	Trap Efficiency Release (981 Fish)	07/21/2022	07/21/2022	1
Dexter Dam Tailrace RST	Trap Efficiency Release (1007 Fish)	10/26/2022	10/26/2022	1
Dexter Dam Tailrace RST	Trap Efficiency Release (775 Fish)	11/01/2022	11/01/2022	1
Dexter Dam Tailrace RST	Trap Efficiency Release (991 Fish)	11/17/2022	11/17/2022	1
Dexter Dam Tailrace RST	Trap Efficiency Release (1,010 Fish)	12/06/2022	12/06/2022	1
Dexter Dam Tailrace RST	Trap Efficiency Release (1,025 Fish)	12/15/2022	12/15/2022	1

Dexter Dam Tailrace RST	Trap Efficiency Release (1,200 Fish)	3/16/2023	3/16/2023	1
Dexter Dam Tailrace RST	Trap Efficiency Release (1,199 Fish)	3/29/2023	3/29/2023	1
Lookout Dam Tailrace RSTs	Operation	03/15/2022	07/31/2022	366
Lookout Dam Tailrace RSTs	Operation	08/01/2022	10/17/2022	
Lookout Dam Tailrace RSTs	Operation	10/17/2022	3/15/2023	
Lookout Dam Tailrace RSTs	Trap Efficiency Release (1,013 fish, PWR route)	04/13/2022	04/13/2022	1
Lookout Point Head of Reservoir RST	Trap Install	03/06/2022	03/06/2022	1
Lookout Point Head of Reservoir RST	Operation	03/07/2022	12/16/2022	651
Lookout Point Head of Reservoir RST	Operation	12/16/2022	12/16/2023	
Lookout Point Head of Reservoir RST	Trap Efficiency Release (993 fish)	04/05/2022	04/05/2022	1
Lookout Point Head of Reservoir RST	Trap Efficiency Release (989 fish)	04/14/2022	04/14/2022	1
Lookout Point Head of Reservoir RST	Trap Efficiency Release (1007 fish)	05/18/2022	05/18/2022	1
Lookout Point Head of Reservoir RST	Trap Efficiency Release (1005 fish)	07/20/2022	07/20/2022	1
Lookout Point Head of Reservoir RST	Trap Efficiency Release (506 fish)	10/27/2022	10/27/2022	1
Lookout Point Head of Reservoir RST	Trap Efficiency Release (510 fish)	11/17/2022	11/17/2022	1
Lookout Point Head of Reservoir RST	Trap Efficiency Release (510 fish)	12/12/2022	12/12/2022	1
Lookout Point Head of Reservoir RST	Trap Efficiency Release (516 fish)	01/13/2023	01/13/2023	1
Fall Creek Dam Tailrace RST	Operation	03/15/2022	07/15/2022	123
Fall Creek Dam Tailrace RST	Operation	10/15/2023	03/15/2023	275
Fall Creek Dam Tailrace RST	Operation	03/15/2023	07/15/2023	
Fall Creek Dam Tailrace RST	Trap Efficiency Release (518 fish)	06/08/2022	06/08/2022	1
Fall Creek Dam Tailrace RST	Trap Efficiency Release (513 fish)	06/30/2022	06/30/2022	1
Fall Creek Dam Tailrace RST	Trap Efficiency Release (500 fish)	07/13/2022	07/13/2022	1
Fall Creek Dam Tailrace RST	Deployment	10/15/2022	10/15/2022	1
Fall Creek Head of Reservoir RST	Trap and Highline Install	01/11/2022	01/11/2022	1
Fall Creek Head of Reservoir RST	Operation	01/02/2022	05/31/2022	150
Fall Creek Head of Reservoir RST	Removal	06/02/2022	06/02/2022	1
Fall Creek Head of Reservoir RST	Highline Install	1/17/2023	1/17/2023	1
Fall Creek Head of Reservoir RST	Trap Install	1/18/2023	1/18/2023	1
Fall Creek Head of Reservoir RST	Operation	1/18/2023	05/30/2023	132
Hills Creek Dam RO and PWR	Deployment	10/12/2021	10/12/2021	1
Hills Creek Dam RO	Operation	10/15/2021	03/01/2022	138
Hills Creek Dam PWR	Operation	10/15/2021	03/01/2022	138

Hills Creek Dam	Trap Efficiency Release (1,200 fish, 600 per route)	01/6/2022	01/6/2022	1
Hills Creek Dam	Trap Efficiency Release (1,200 fish, 600 per route)	02/16/2022	02/16/2022	1
Hills Creek Dam	Trap Efficiency Release (1,200 fish, 600 per route)	02/23/2022	02/23/2022	1
Hills Creek Dam RSTs	Trap Removal	03/01/2022	03/01/2022	1
Hills Creek Dam RSTs	Trap Install	09/14/2022	09/14/2022	1
Hills Creek Dam RSTs	Deployment	9/15/2022	9/15/2022	1
Hills Creek Dam RO	Operation	09/15/2022	06/30/2023	289
Hills Creek Dam PWR	Operation	09/15/2022	06/30/2023	289
Hills Creek Dam	Trap Efficiency Release (514 fish, PWR Route)	12/07/2022	12/07/2022	1
Hills Creek Dam	Trap Efficiency Release (516 fish, RO Route)	12/13/2022	12/13/2022	1
Hills Creek Dam	Trap Efficiency Release (482 fish, RO Route)	02/25/2023	02/25/2023	1
Hills Creek Dam	Trap Efficiency Release (528 fish, PWR Route)	02/25/2023	02/25/2023	1
Hills Creek Dam	Trap Efficiency Release (506 fish, PWR Route)	4/26/2023	4/26/2023	1

## Summary of Rotary Screw Trap Data

Rotary screw traps (RSTs) have been operated at eleven locations in the southern Willamette River watershed. For this reporting period, traps were operated at the following seven locations: Big Cliff Dam, Cougar Dam, Fall Creek Dam, Dexter Dam Tailrace, Lookout Dam Tailrace, Lookout Point Head of Reservoir, and Hills Creek Dam. The trap in the Fall Creek Dam RO channel resumed sampling on October 15<sup>th</sup>. The Green Peter Dam Tailrace- Middle Santiam trap was removed on May 12<sup>th</sup> due to damage incurred to the highline.

The RST's at Big Cliff Dam and Lookout Dam Tailrace started sampling on March 15<sup>th</sup>. On March 1<sup>st</sup> the Middle Fork Willamette River below Hills Creek Dam RST's were removed for the sampling season in conjunction with the end of RO spill and to prioritize the limited number of screw traps to other locations. Sampling at Hills Creek Dam resumed on September 15<sup>th</sup>.

Below Dam sites that include both RO and PWR to monitor passage routes include South Fork McKenzie River below Cougar Dam and on the Middle Fork of the Willamette River in the Lookout Dam Tailrace, and Hills Creek Dam. Below dam sites that include one RST to monitor passage include Big Cliff Dam, Green Peter Tailrace- Middle Santiam, the Middle Fork of the Willamette River below Dexter Dam and Fall Creek Dam Tailrace which is a tributary on the Middle Fork of the Willamette. At the Green Peter Dam Tailrace, the single RST is placed to sample fish passing through spillways, regulating outlets, and powerhouse outlets. The RST at Dexter Dam is placed to monitor fish passage through the spillways and powerhouse outlets. The RST in the Fall Creek Dam Tailrace is placed in a position to sample fish passing through the regulating outlet.

The RST on the North Santiam River below Big Cliff Dam was not sampled while fish passage measures were not being implemented from 16 February 2022 to 14 March 2022. Sampling resumed on 15 March 2022 in accordance with Task 2.2.

Above reservoir sites include Fall Creek Head of Reservoir, Lookout Point Head of Reservoir on the Middle Fork Willamette River, Foster Dam Head of Reservoir- South Santiam, and Cougar Dam Head of Reservoir on the South Fork McKenzie.

Sampling start dates are included in Table 2, and season total collection numbers are displayed in Table 3. The locations of the RST's are depicted in Figures 1 through 11.



Imagery Source: 2021, ESRI.



**FIGURE 1**  
Big Cliff Dam

● RST Locations

500 Feet





Imagery Source: 2021, ESRI.



**FIGURE 2** Green Peter Tailrace - Middle Santiam River

● RST Locations

500 Feet



**EAS** ENVIRONMENTAL ASSESSMENT SERVICES  
 Wholly Owned Subsidiary of Natives of Kodiak



Imagery Source: 2021, ESRI.



**FIGURE 3** Foster Dam Head of Reservoir - South Santiam River

● RST Locations

500 Feet





**FIGURE 4**  
Cougar Dam

● RST Locations

500 Feet





**FIGURE 5**  
Cougar Dam Head of Reservoir

● RST Locations

500 Feet





Imagery Source: 2021, ESRI.



**FIGURE 6**  
Fall Creek Dam Tailrace

● RST Locations

500 Feet





**FIGURE 7**  
Fall Creek Head of Reservoir

● RST Locations

———— 500 Feet





Imagery Source: 2021, ESRI.



**FIGURE 8**  
Dexter Dam Tailrace

● RST Locations

500 Feet



**EAS** ENVIRONMENTAL ASSESSMENT SERVICES  
 Wholly Owned Subsidiary of Natives of Kodiak



Imagery Source: 2021, ESRI.



**FIGURE 9**  
Lookout Dam Tailrace

● RST Locations

500 Feet





Imagery Source: 2021, ESRI.



**FIGURE 10**  
Lookout Point Head of Reservoir

● RST Locations

500 Feet



**EAS** ENVIRONMENTAL ASSESSMENT SERVICES  
  
 Wholly Owned Subsidiary of Natives of Kodiak



**FIGURE 11**  
Hills Creek Dam

● RST Locations

500 Feet



**Table 2. Sampling Dates for Reporting Period**

Site	Total Sampling Period Start	Current Reporting Period Start	Current Reporting Period End	Days Sampled This Period	Total Days Sampled
Big Cliff Dam	12/1/2021	4/16/2023	4/30/2023	14	441
Green Peter Dam	3/14/2023	4/16/2023	4/30/2023	14	38
Foster Dam Head of Reservoir – South Santiam	2/1/2023	4/16/2023	4/30/2023	13	84
Cougar Dam PH	12/1/2021	4/16/2023	4/30/2023	14	405
Cougar Dam RO	12/1/2021	4/16/2023	4/30/2023	14	405
Cougar Dam Head of Reservoir	2/1/2023	4/16/2023	4/30/2023	14	65
Fall Creek Dam Tailrace	3/15/2022	4/16/2023	4/30/2023	14	250
Fall Creek Head of Reservoir	1/18/2023	4/16/2023	4/30/2023	12	79
Dexter Dam Tailrace	3/7/2022	4/16/2023	4/30/2023	14	407
Lookout Point Dam PH	3/15/2022	4/16/2023	4/30/2023	12	377
Lookout Point Dam Spill	3/15/2022	4/16/2023	4/30/2023	12	377
Lookout Point Head of Reservoir	3/10/2022	4/16/2023	4/30/2023	0	345
Hills Creek Dam	9/16/2022	4/16/2023	4/30/2023	14	225

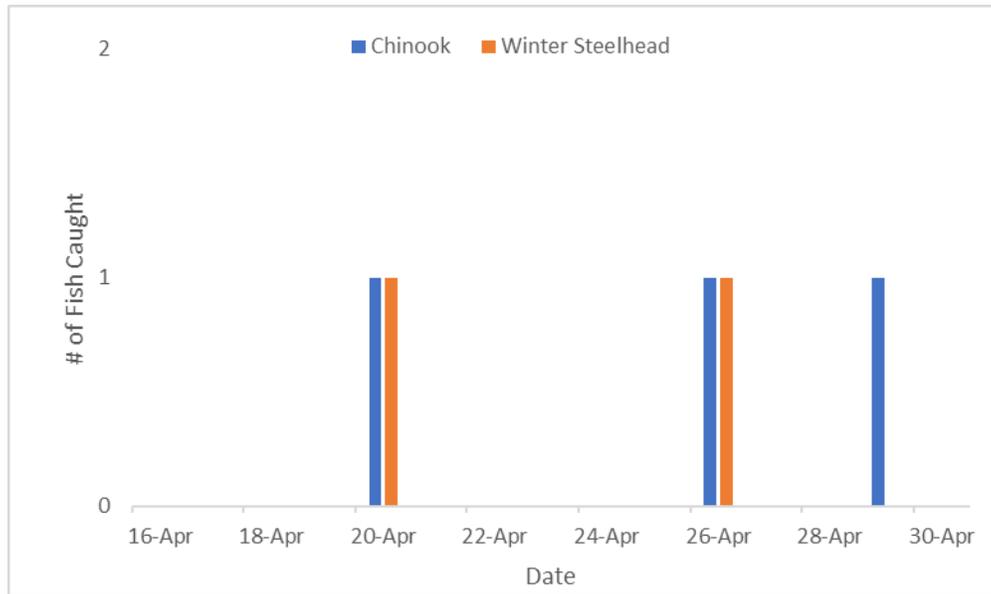
**Table 3. Willamette Valley Rotary Screw Trap Monitoring Catch Summary**

Site	Species	Catch (Reporting Period)	Recaptures (Reporting Period)	Total Catch	Total Recaptures
Big Cliff Dam	CHS	3	32	1416	851
Big Cliff Dam	STW	2	0	120	0
Green Peter Tailrace- Middle Santiam	CHS	4	0	8	13
Green Peter Tailrace- Middle Santiam	STW	1	0	3	0
Foster Dam Head of Reservoir- South Santiam	CHS	21	0	690	742
Foster Dam Head of Reservoir- South Santiam	STW	3	0	238	7
Cougar Dam	CHS	336	31	3752	878
Cougar Dam Head of Reservoir	CHS	579	2	1542	330
Fall Creek Dam Tailrace	CHS	7	0	62	11
Fall Creek Head of Reservoir	CHS	0	0	147	0
Dexter Dam Tailrace	CHS	0	0	101	128
Lookout Point Dam	CHS	15	0	107	2
Lookout Point Head of Reservoir	CHS	0	0	168	225
Hills Creek Dam	CHS	40	74	501	126

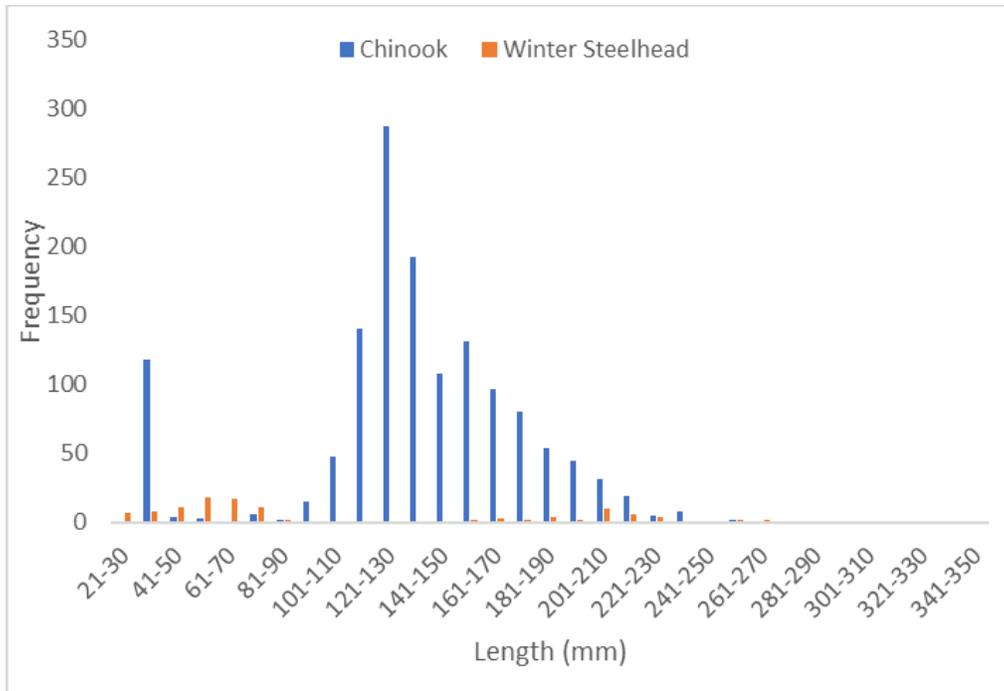
## North Santiam – Big Cliff Dam

### Target Species

This reporting period began on April 16<sup>th</sup> and ended on April 30<sup>th</sup>. There were a total of 3 Chinook Salmon (CHS) and 2 Winter Steelhead (STW) captured during the 14-day sampling period (Figure 12). Sampling duration was 100% for the RST. Table 4 provides life stage, length, and weight data for all Chinook Salmon and Winter Steelhead that have been caught at the Big Cliff Dam site to-date and for the reporting period. Figure 13 shows length frequency data to-date.



**Figure 12. Chinook and Winter Steelhead Captured per day 04/16/2023 to 04/30/2023 (Big Cliff)**



\*Figure does not include fish without heads

**Figure 13. Length Frequency of Juvenile Chinook and Winter Steelhead Sampled Season To-Date (Big Cliff)**

### Trapping Efficiency

A total of 498 bismarck brown dyed and adipose clipped juvenile hatchery chinook were released on 4/28/2023 below Big Cliff Dam. Recaptures occurred through the end of the reporting period and will be reported in the next reporting period.

ODFW released a total of 2,968 bismarck brown dyed juvenile hatchery Chinook (fry) on 3/7/2023 below Big Cliff Dam. A total of 60 fish were recaptured in the 8 ft trap. Trapping efficiency was 2.02%.

Big Cliff Dam	Release #	Recapture #	Capture Efficiency
8ft Trap	2,968	60	2.02% (60/2,968)

A total of 541 juvenile hatchery Chinook (yearlings) were AD clipped and Bismarck brown dyed and released on 3/10/2023 below Big Cliff Dam. A total of 112 fish were recaptured in the 8ft trap. Trapping efficiency was 20.7%.

Big Cliff Dam	Release #	Recapture #	Capture Efficiency
8ft Trap	541	112	20.7% (112/541)

Trapping efficiency fish displayed minor descaling and fin damage.

**Table 4. Descriptive Statistics of Target Species Captured at Big Cliff Dam Season To-Date**

To-Date (Since Dec. 01, 2021)										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Big Cliff	PWR	CHS	Fry	123	29	48	36.1	1.2	1.4	1.3
		CHS	Parr	34	55	136	94.9	1.8	30.0	10.5
		CHS	Smolt	1257	74	283	146.6	5.4	253.5	37.2
		STW	Fry	31	21	69	40.3	1.1	3.4	1.7
		STW	Parr	46	51	131	69.1	1.3	49.5	5.5
		STW	Smolt	43	157	350	215.5	36.1	442.0	106.0

\*Fish that were missing heads are not included in length and weight calculations.

April 16-30, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Big Cliff	PWR	CHS	Fry	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Parr	1	104	104	104	14.2	14.2	14.2
		CHS	Smolt	2	121	157	139.0	19.7	48.2	34.0
		STW	Fry	0	N/A	N/A	N/A	N/A	N/A	N/A
		STW	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		STW	Smolt	2	202	251	226.5	61.5	146.1	103.8

\*Fish that were missing heads are not included in length and weight calculations.

### 24-Hour Post Collection Holding Trial

3 Spring Chinook and 1 Winter Steelhead were captured during the current reporting period and held for 24 hours. 0 Chinook (0.0%) and 0 Winter Steelhead (0.0%) died in holding.

### Injuries and Copepod Infection

Partial descaling <20% was observed in 3 of the 3 Chinook captured (100.0%), 0 displayed descaling >20% (0.0%), 2 displayed body injury (66.7%), 0 had eye injury (0.0%), 1 had copepods present in the branchial cavity (33.3%) and 2 had copepods on fins (66.7%). 2 Chinook displayed gas bubble disease (66.7%). There were 0 mortalities (0.0%).

Partial descaling <20% was observed in 2 of the 2 Winter Steelhead captured (100.0%) and 1 displayed descaling >20% (50.0%), 2 displayed body injury (100.0%), 0 had eye injury (0.0%), 1 had copepods present in the branchial cavity (50.0%) and 2 had copepods on fins (100.0%). 0 Winter Steelhead displayed gas bubble disease (0.0%). There was 1 mortality (50.0%). Injury data is summarized in Table 5.

**Table 5. Number of Descaled, Bodily/Eye Injured, Copepod Infected and Dead Chinook Salmon and Winter Steelhead for Sampling Period. (Big Cliff Dam).**

Site	Species	# Fish Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Big Cliff Dam	Chinook	3	3	0	2	0	1	2	0
	Winter Steelhead	2	2	1	2	0	1	2	1

### Collected DNA and Scale Samples

For the reporting period, scales and DNA were collected from 3 Spring Chinook and 2 Winter Steelhead. The other targets captured did not meet length criteria for DNA sampling or were too descaled/damaged to collect samples.

### PIT Tags

No Spring Chinook or Winter Steelhead were PIT tagged during this reporting period. The first 60 target fish per week are prioritized for the 24-Hour Post Collection Holding Study. These fish are not tagged to not bias the results of the holding study. More information regarding PIT tagged fish can be found in Appendix D.

### Non-Target Species

22 non-targets were captured during this sampling period. A summary of non-target species catch and mortality numbers for 2023 are listed in Table 6.

**Table 6. Summary of Non-target Species (Big Cliff Dam).**

Species	PWR Capture	PWR Mortality	Season Total	Season Total Mortality
Bluegill	1	0	2	0
Brown Bullhead	0	0	0	0
Chinook (Adult)	0	0	0	0
Chinook (clipped)	0	0	2	1
Cutthroat Trout	0	0	0	0
Dace	0	0	0	0
Kokanee	21	2	89	10
Kokanee (clipped)	0	0	2	0
<i>O. mykiss</i> (clipped)	0	0	0	0
Pumpkinseed	0	0	12	0
Unknown	0	0	0	0
Mountain Whitefish	0	0	0	0
Sculpin	0	0	0	0
<b>Totals</b>	<b>22</b>	<b>2</b>	<b>97</b>	<b>11</b>

## Stream Statistics

Basic stream statistics at the Big Cliff Dam site were calculated from data downloaded from U.S. Geological Survey stream gauge numbers 14181410 and 14181500. Gauge height (feet) is the only metric provided at gauge 14181410. Total dissolved gas (TDG) saturation data was received from gauge 14181500, 1 rkm downstream of the trap. During the reporting period, daily maximum values for instantaneous gauge height ranged from 1,109.1 to 1,110.0 feet (mean: 1,109.2 feet) during the reporting period. Figure 14 shows instantaneous gauge height.

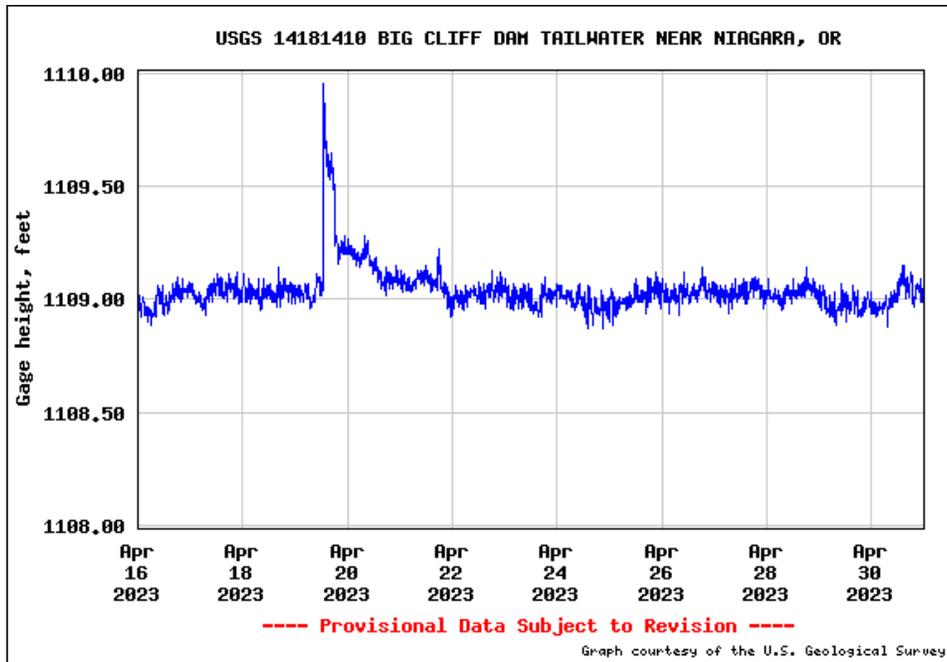
Total dissolved gas saturation ranged from 101 to 122% during the reporting period (mean: 105.0%). Figure 15 shows total dissolved gas saturation.

Stream temperatures were recorded every 2 hours for the length of the reporting period at the RST (Figure 16). The temperature probe for the trap operated normally throughout this reporting period.

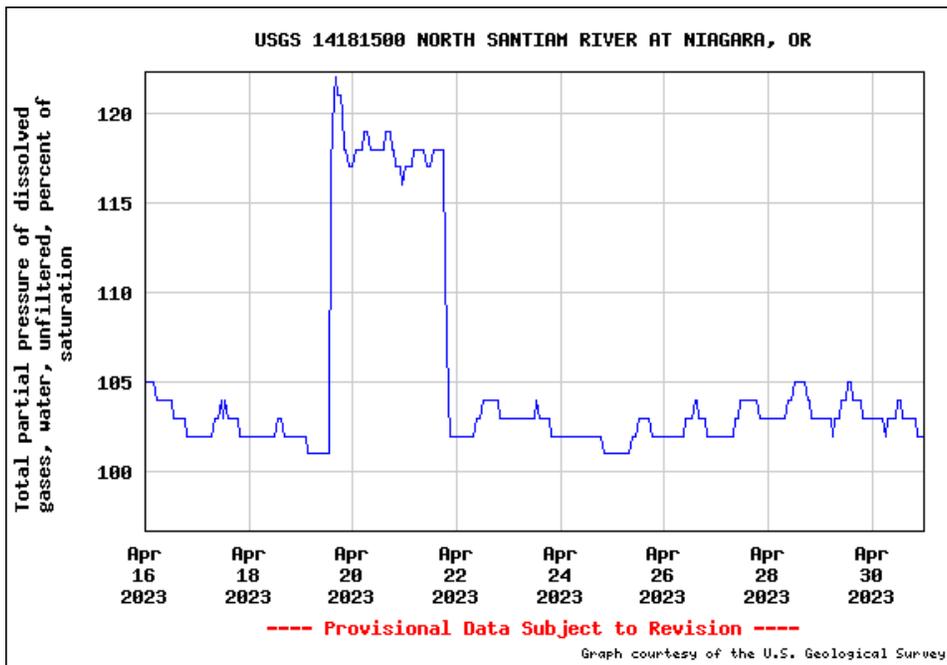
Flows through the Powerhouse and Spill during the reporting period averaged 1,110.2 and 190.4 cubic feet per second (cfs), respectively (Figure 17). Catch per unit of effort (CPUE) data are summarized in Table 7. , Detroit and Big Cliff forebay elevations and TDG at Niagara are shown in appendix B. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 7. Summary of salmonid CPUE, Big Cliff Dam.**

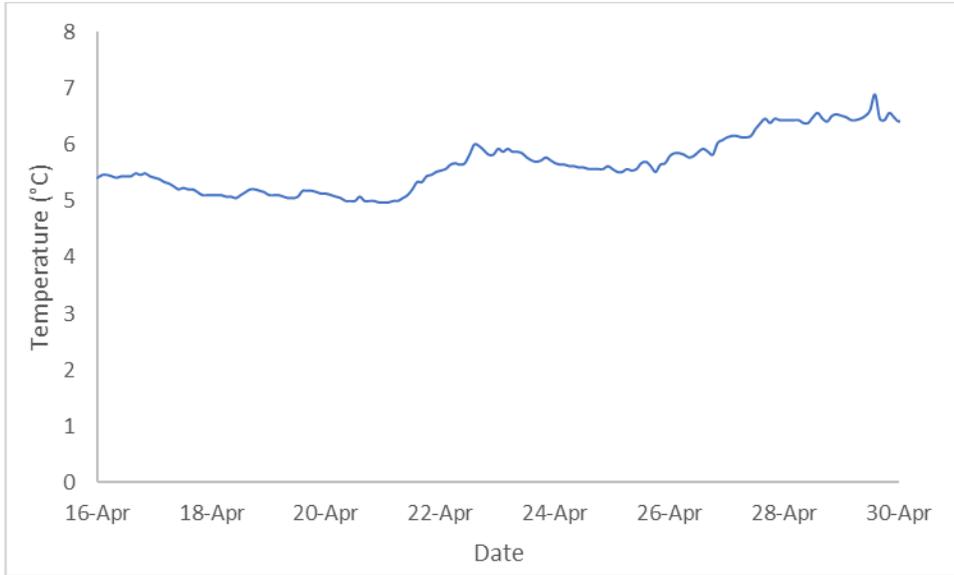
	<b>Chinook</b>	<b>Winter Steelhead</b>
<b>Description</b>	<b>(8 ft)</b>	<b>(8 ft)</b>
Catch	3	2
Effort (hrs)	361.3	361.3
CPUE (fish/hr)	0.008	0.005



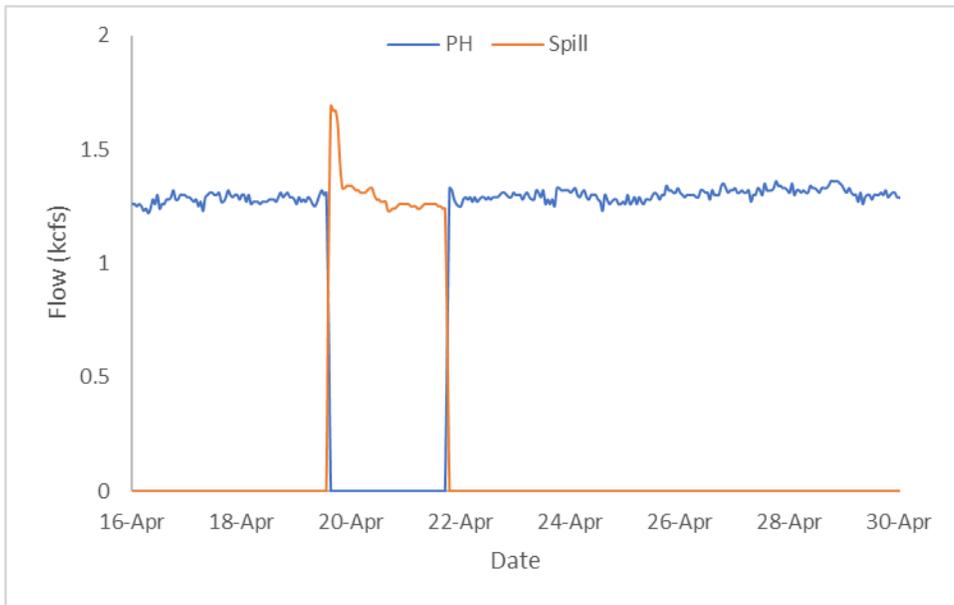
**Figure 14. Gauge height (ft); below Big Cliff Dam**



**Figure 15. Total Dissolved Gas Saturation (%); below Big Cliff Dam**



**Figure 16. Temperature at RST (Big Cliff Dam)**

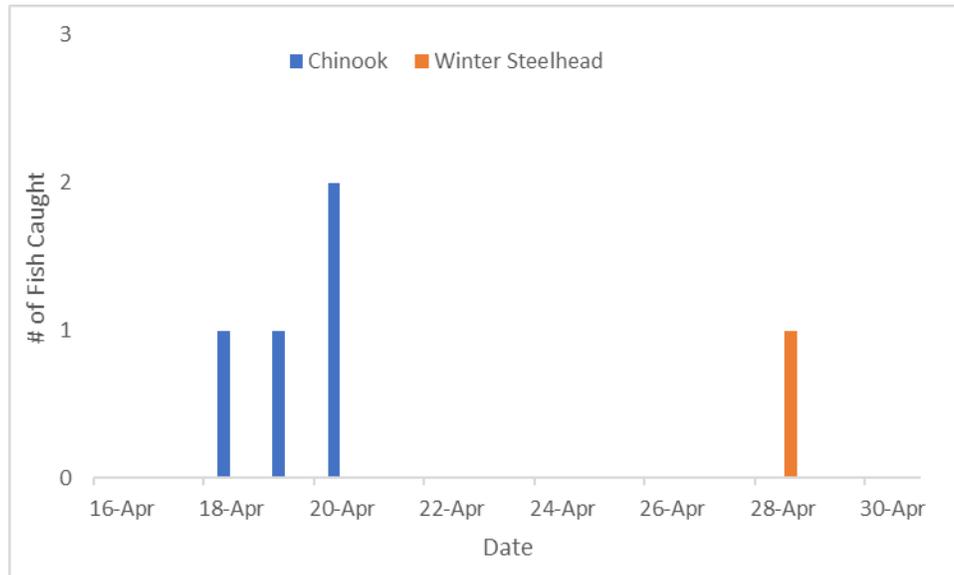


**Figure 17. Hourly Flows PWR vs. Spill (Big Cliff Dam)**

## Middle Fork Santiam– Green Peter Tailrace

### Target Species

This reporting period began on April 16th and ended on April 30th. 4 Chinook Salmon (CHS) and 1 Winter Steelhead (STW) were captured during the 14-day sampling period. Sampling duration was 100.0% for the RST. Table 8 provides life stage, length, and weight data for all target species that have been caught at the Green Peter Dam site to-date and for the reporting period. Figure 18 shows the daily capture numbers for Chinook and Winter Steelhead and Figure 19 shows length frequency data to-date.



\*Recaptured fish for trapping efficiency trials not included.

**Figure 18. Chinook and Winter Steelhead Captured Per Day 04/16/2022 to 04/30/2022 (Green Peter Tailrace- Middle Santiam)**



\*Figure does not include fish without heads or fish used for trapping efficiency trials.

**Figure 19. Length Frequency of Juvenile Chinook and Winter Steelhead Sampled Season To-Date (Green Peter Tailrace- Middle Santiam River)**

### Trapping Efficiency

A total of 518 juvenile hatchery Chinook (parr) were bismarck brown dyed, adipose clipped and released on 4/30/2022 below Green Peter Dam. A total of 9 fish were recaptured in the 8ft trap on 5/1/2022. Trapping efficiency was 1.74%.

Of the 9 fish recaptured, only 1 fish that was captured had injuries present. The injured fish displayed fin damage. Mt. Hood Environmental staff noted that fish appeared to be in good condition upon retrieval from the hatchery.

Green Peter Dam Tailrace- Middle Santiam	Release #	Recapture #	Capture Efficiency
8ft Trap	518	9	1.74% (9/518)

**Table 8. Descriptive Statistics of Target Species Captured at the Green Peter Tailrace-Middle Santiam River Season To-Date**

To-Date										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Green Peter Dam Tailrace-Middle Santiam	Spill	CHS	Fry	6	33	54	43.8	1.1	3.6	2.1
		CHS	Parr	2	55	56	55.5	2.3	2.6	2.5
		CHS	Smolt	0	0	0	0	0	0	0
		STW	Fry	1	29	29	29	N/A	N/A	N/A
		STW	Parr	0	0	0	0	0	0	0
		STW	Smolt	1	185	240	212.5	59.0	114.0	86.5

April 16-30, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Green Peter Dam Tailrace-Middle Santiam	Spill	CHS	Fry	2	44	53	48.5	1.1	1.5	1.3
		CHS	Parr	2	55	56	55.5	2.3	2.6	2.5
		CHS	Smolt	0	0	0	0	0	0	0
		STW	Fry	0	29	29	29	N/A	N/A	N/A
		STW	Parr	0	0	0	0	0	0	0
		STW	Smolt	1	185	185	185.0	59.0	59.0	59.0

\*Fish that were missing heads are not included in length and weight calculations.

### 24-Hour Post Collection Holding Trial

4 Spring Chinook and 1 Winter Steelhead were captured during the current reporting period and held for 24 hours. 0 Chinook (0.0%) and 0 Winter Steelhead (0.0%) died in holding.

### Injuries and Copepod Infection

Partial descaling <20% was observed in 0 of the 4 Chinook captured (0.0%), 0 displayed descaling >20% (0.0%), 2 displayed body injury (50.0%), 0 had eye injury (0.0%), 0 had copepods present in the branchial cavity (0.0%) and 0 had copepods on fins (0.0%). 2 Chinook displayed gas bubble disease (two level 3) (50.0%). There were 0 mortalities (0.0%).

Partial descaling <20% was observed in 1 of the 1 Winter Steelhead captured (100.0%) and 0 displayed descaling >20% (0.0%), 1 displayed body injury (100.0%), 0 had eye injury (0.0%), 0 had copepods present in the branchial cavity (0.0%) and 0 had copepods on fins (0.0%). 1 Winter Steelhead displayed gas bubble disease (Level 2) (100.0%). There were 0 mortalities (0.0%).

A summary of injuries observed on Chinook Salmon and Winter Steelhead during the reporting period is provided in Table 9, and target species injuries for the duration of the season are provided in Appendix A.

**Table 9. Number of Descaled, Bodily/Eye Injured, Copepod Infected and Dead Chinook Salmon and Winter Steelhead for Sampling Period. (Green Peter Tailrace- Middle Santiam River).**

Site	Species	# Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Green Peter	CHS	4	0	0	2	0	0	0	0
	STW	1	1	0	1	0	0	0	0

\*DSC=Descaled, COP=Copepods, B.C.=Branchial Cavity

### Collected DNA and Scale Samples

For the reporting period, scales and DNA were collected from 3 Spring Chinook and 1 Winter Steelhead. The other targets captured did not meet length criteria for DNA sampling or were too descaled/damaged to collect samples.

### PIT Tags

No Spring Chinook or Winter Steelhead were PIT tagged during this reporting period. The first 60 target fish per week are prioritized for the 24-Hour Post Collection Holding Study. These fish are not tagged to not bias the results of the holding study. More information regarding PIT tagged fish can be found in Appendix D.

### Non-Target Species

582 non-targets were captured during this sampling period. A summary of non-target species catch and mortality numbers for 2023 are listed in table 10.

**Table 10. Summary of Non-target Species (Green Peter Tailrace- Middle Santiam River).**

Species	Capture	Mortality	Season Total Capture	Season Total Mortality
Bluegill	15	10	36	7
Crappie	3	2	9	4
Kokanee	560	227	585	235
Kokanee (clipped)	2	0	2	0
Largemouth Bass	0	0	1	0
<i>O. mykiss</i> (clipped)	1	1	2	1
Smallmouth Bass	1	0	1	0
<b>Totals</b>	<b>582</b>	<b>240</b>	<b>636</b>	<b>247</b>

### Stream Statistics

Basic stream statistics at the Green Peter Dam Tailrace- Middle Santiam site were calculated from data downloaded from the U.S. Geological Survey stream gage number 14186110 and 14186200. Gage

height (feet) is the only metric provided at gage 14186110. Total dissolved gas saturation data was received from gage number 14186200, 50 meters upstream of the trap. During the reporting period, daily maximum values for instantaneous gage height ranged from 697.7 feet to 699.9 feet (mean: 698.3 feet). Figure 20 shows instantaneous gage height.

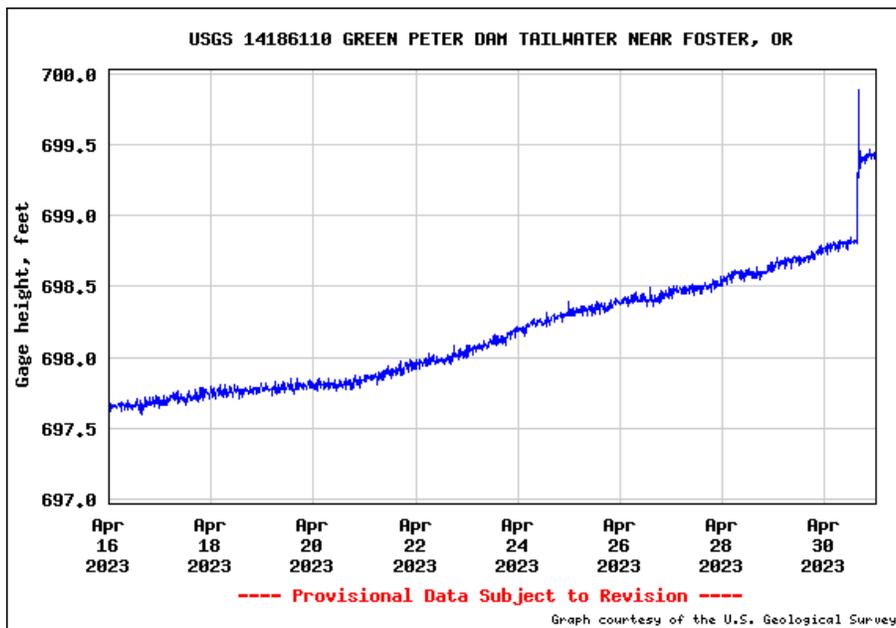
Total dissolved gas saturation ranged from 120 to 122% (mean: 121.5%) during the reporting period. Figure 21 shows the total dissolved gas saturation.

Stream temperatures were recorded every 2 hours for the length of the report period for the RST (Figure 22). Temperature probes operated normally throughout this reporting period.

Flows through the Powerhouse and Spillway during the reporting period averaged 0 and 1,466.1 cubic feet per second (cfs) respectively (Figure 23). Catch per unit of effort (CPUE) data are summarized in Table 11. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 11. Summary of salmonid CPUE, Green Peter Tailrace- Middle Santiam River.**

	Chinook	Winter Steelhead
<b>Description</b>	8ft	8 ft
Catch	4	1
Effort (hrs)	359.4	359.4
CPUE (fish/hr)	0.011	0.003



**Figure 20. Gage Height (feet); below Green Peter Dam**

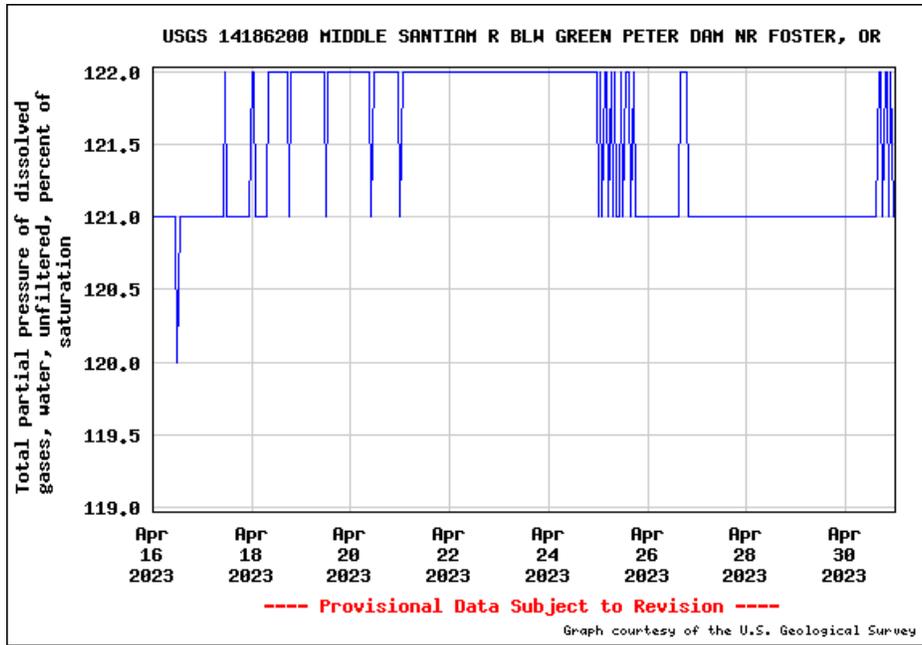


Figure 21. Total Dissolved Gas Saturation (%); below Green Peter Dam

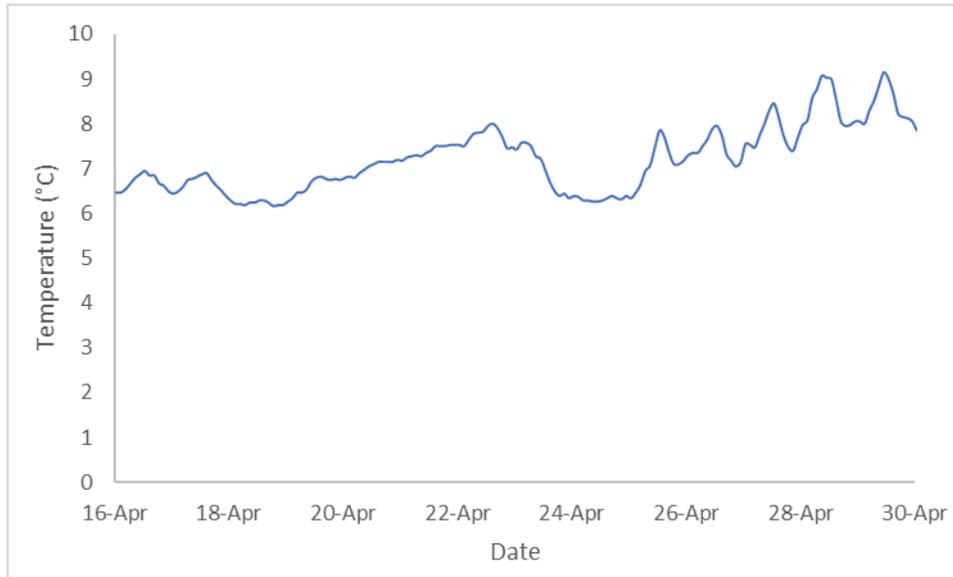
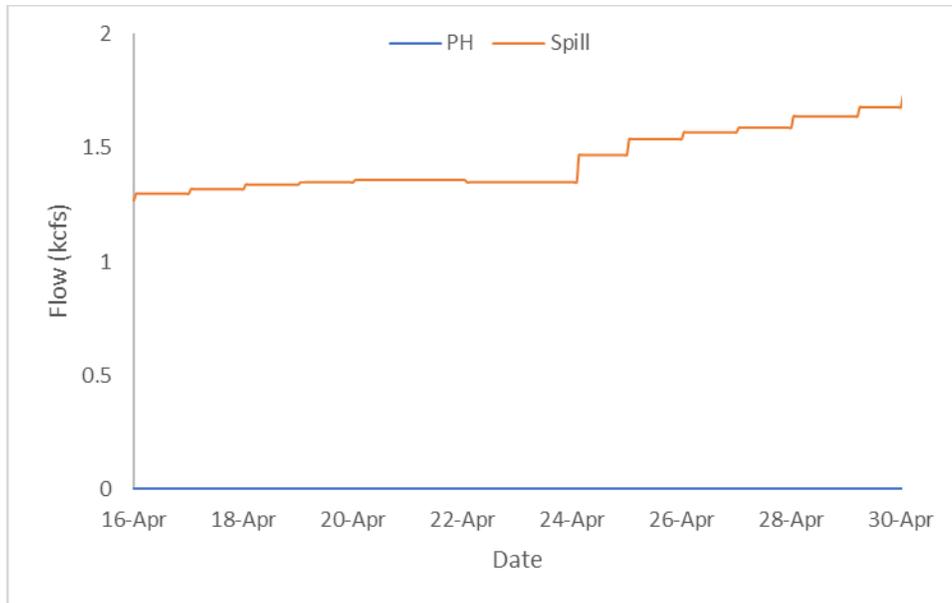


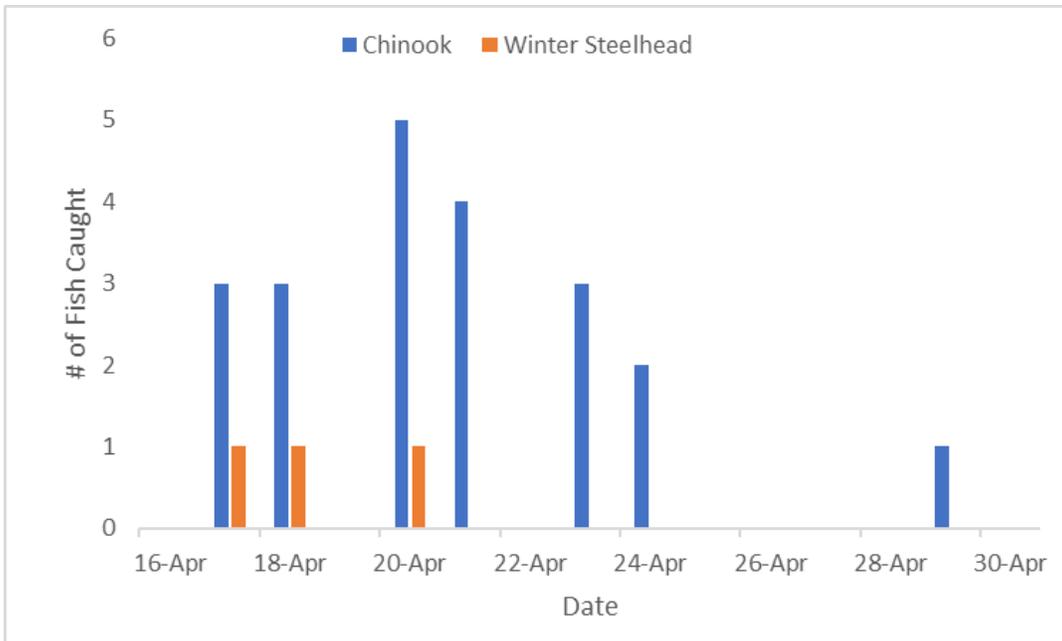
Figure 22. Temperature at RST (Green Peter Tailrace- Middle Santiam River)



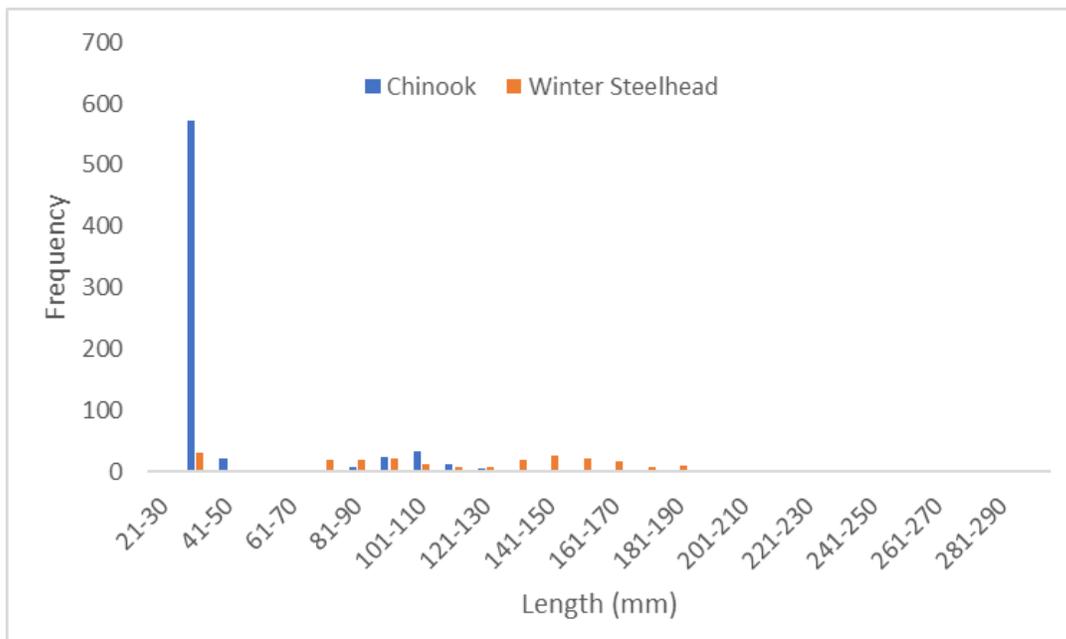
**Figure 23. Hourly Flows PWR vs. Spill (Green Peter Dam)**

## **South Fork Santiam– Foster Dam Head of Reservoir Target Species**

This reporting period began on April 16th and ended on April 30th. There were 21 Chinook salmon (CHS) and 3 Winter Steelhead (STW) captured during the 14-day sampling period. Snow melt caused high water and a log damaged the trap door. The 5 foot trap was raised to a non-sampling position on April 29<sup>th</sup>. The door was repaired and the trap was lowered to a sampling position on April 30<sup>th</sup>. Sampling duration was 92.8% for the RST. Table 12 provides life stage, length, and weight data for all Chinook Salmon and Winter Steelhead that have been caught at the Foster Dam Head of Reservoir- South Santiam site to-date and for the reporting period. Figure 24 shows the daily capture numbers for Chinook and Winter Steelhead and Figure 25 shows length frequency data to-date for both species.



**Figure 24. Chinook and Winter Steelhead Captured Per Day 04/16/2023 to 04/30/2023 (Foster Dam Head of Reservoir- South Santiam)**



**Figure 25. Length Frequency of Juvenile Chinook and Winter Steelhead Sampled Season To-Date (Foster Dam Head of Reservoir- South Santiam)**

### Trapping Efficiency

A total of 995 juvenile hatchery Chinook (yearlings) were bismarck brown dyed, adipose clipped and released on 03/09/2023 at Cascadia Park above the Foster Dam Head of Reservoir- South Santiam trap. 62 fish were recaptured in the 5ft trap. Trapping efficiency was 6.23%.

Foster Dam Head of Reservoir- South Santiam	Release #	Recapture #	Capture Efficiency
5 ft Trap	995	62	6.23% (62/995)

### Run of River Trapping Efficiency

Run of river fish captured in the RST have been caudal clipped and released upstream to perform run of river trapping efficiency trials. Only fish large enough to be safely caudal clipped have been used for run of river efficiency trials. This year, 27 Spring Chinook and 9 Winter Steelhead have been caudal clipped and released upstream for the purpose of conducting run of river trapping efficiency trials. Release numbers and recaptures for this reporting period are summarized below.

Foster Dam Head of Reservoir- South Santiam	Release #	Recapture #
Chinook	1	0
Winter Steelhead	3	0

**Table 12. Descriptive Statistics of Target Species Captured at Foster Dam Head of Reservoir-South Santiam Season To-Date.**

To-Date (Since Dec. 01, 2021)										
Site	Trap	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Foster Dam Head of Reservoir-South Santiam	5 ft	CHS	Fry	596	30	50	36.1	N/A	N/A	N/A
		CHS	Parr	51	70	161	98.9	3.1	44.3	12.7
		CHS	Smolt	43	93	146	111.3	7.3	34.9	15.1
		STW	Fry	36	28	46	34.2	N/A	N/A	N/A
		STW	Parr	114	65	183	107.0	2.4	63.6	17.0
		STW	Smolt	88	100	213	160.6	11.2	164.0	43.5

April 16-30, 2023										
Site	Trap	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Foster Dam Head of Reservoir-South Santiam	5 ft	CHS	Fry	21	33	49	37.0	N/A	N/A	N/A
		CHS	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Smolt	0	N/A	N/A	N/A	N/A	N/A	N/A
		STW	Fry	0	N/A	N/A	N/A	N/A	N/A	N/A
		STW	Parr	2	95	104	99.5	11.1	12.5	11.8
		STW	Smolt	1	168	168	168.0	47.8	47.8	47.8

## Injuries and Copepod Infection

Partial descaling <20% was observed on 1 of the 21 Spring Chinook captured (4.8%). Body injuries were present on 1 Spring Chinook (4.8%) and 0 displayed eye injury (0.0%). No copepods were present in the branchial cavity (0.0%) and 0 fish displayed copepods on the fins (0.0%). There were 0 mortalities (0.0%).

Partial descaling <20% was observed on 2 of the 3 Winter Steelhead captured (66.7%). Body injuries were present on 3 Winter Steelhead (100.0%) and 0 displayed eye injury (0.0%). No copepods were found in the branchial cavity (0.0%) and 0 fish displayed copepods on the fins (0.0%). There was 0 mortalities (0.0%). A summary of injuries observed during the reporting period are provided in table 13, and for the duration of the season are provided in Appendix A.

**Table 13. Number of Descaled, Bodily/Eye Injured, Copepod Infected and Dead Chinook Salmon and Winter Steelhead for Sampling Period. (Foster Dam Head of Reservoir- South Santiam).**

Site	Species	# Fish Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Foster Dam Head of Reservoir- South Santiam	Chinook	21	1	0	1	0	0	0	0
	Winter Steelhead	3	2	0	3	0	0	0	0

## Collected DNA and Scale Samples

For the reporting period, scales and DNA were collected from 1 Spring Chinook and 3 Winter Steelhead. The other targets captured did not meet length criteria for DNA sampling or were too descaled/damaged to collect samples.

## PIT Tags

0 Spring Chinook and 3 Winter Steelhead were PIT tagged during this reporting period. More information regarding PIT tagged fish can be found in Appendix D.

## Non-Target Species

5 non-target species fish were captured during the reporting period; the data is summarized below in Table 14.

**Table 14. Summary of Non-target Species (Foster Dam Head of Reservoir).**

Species	5 ft Capture	5 ft Mortality	Season Total	Season Total Mortality
Brook Lamprey	0	0	0	0
Cutthroat Trout	0	0	0	0
Dace	5	0	14	0
Largescale Sucker	0	0	1	0
Northern Pikeminnow	0	0	0	0
Sculpin	0	0	1	0
Unknown	0	0	1	0
<b>Totals</b>	<b>5</b>	<b>0</b>	<b>17</b>	<b>0</b>

## Stream Statistics

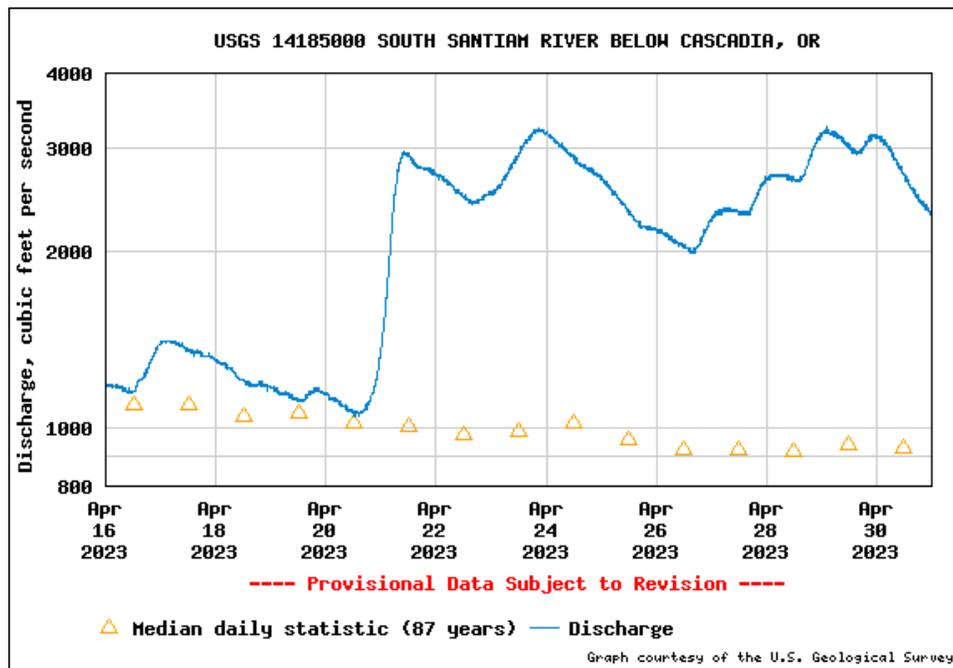
Basic stream statistics at the Foster Dam Head of Reservoir- South Santiam site were calculated from data downloaded from the U.S. Geological Survey stream gauge number 14185000. Discharge (cfs) and Gauge height (feet) are available at this gauge. During the reporting period, daily maximum values for instantaneous discharge ranged from 1,180.0 cfs to 3,250.0 cfs (mean: 2,392.0 cfs). Figure 26 shows instantaneous discharge.

Stream temperatures were recorded every 2 hours for the length of the report period for the RST (Figure 27). Temperature probes for the trap operated normally throughout this reporting period.

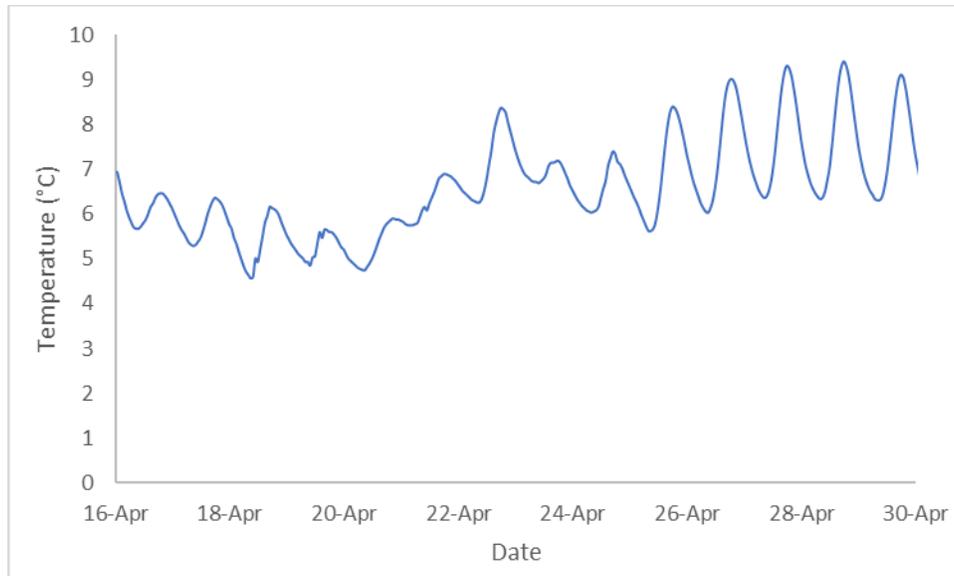
Catch per unit of effort (CPUE) data are summarized in Table 15. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 8. Summary of salmonid CPUE, Foster Dam Head of Reservoir- South Santiam.**

	Chinook	Winter Steelhead
Description	(5 ft)	
Catch	21	3
Effort (hrs)	335.7	335.7
CPUE (fish/hr)	0.063	0.008



**Figure 26. Discharge (cfs); Foster Dam Head of Reservoir – S. Santiam)**

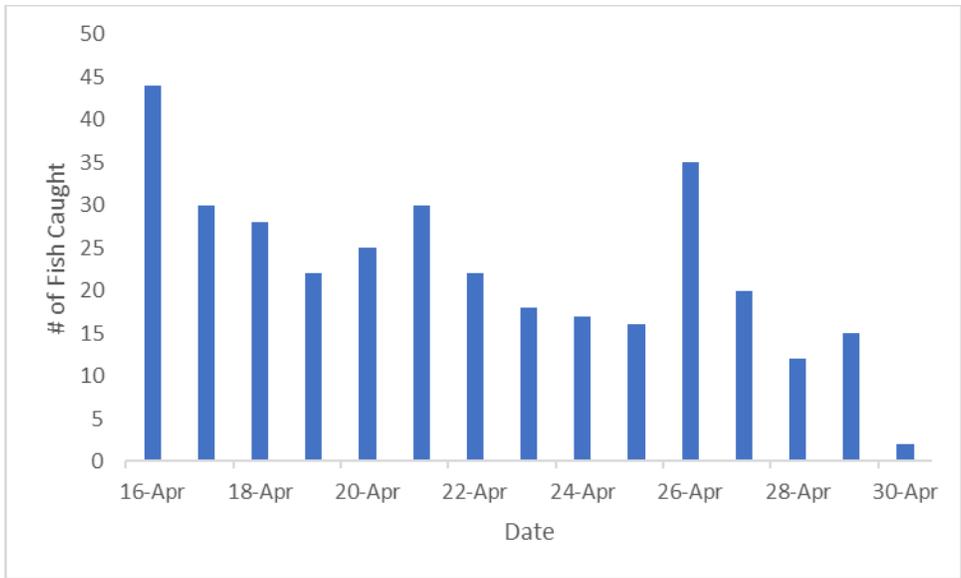


**Figure 27. Temperature at RST (Foster Dam Head of Reservoir – S. Santiam)**

## **South Fork McKenzie – Cougar Dam**

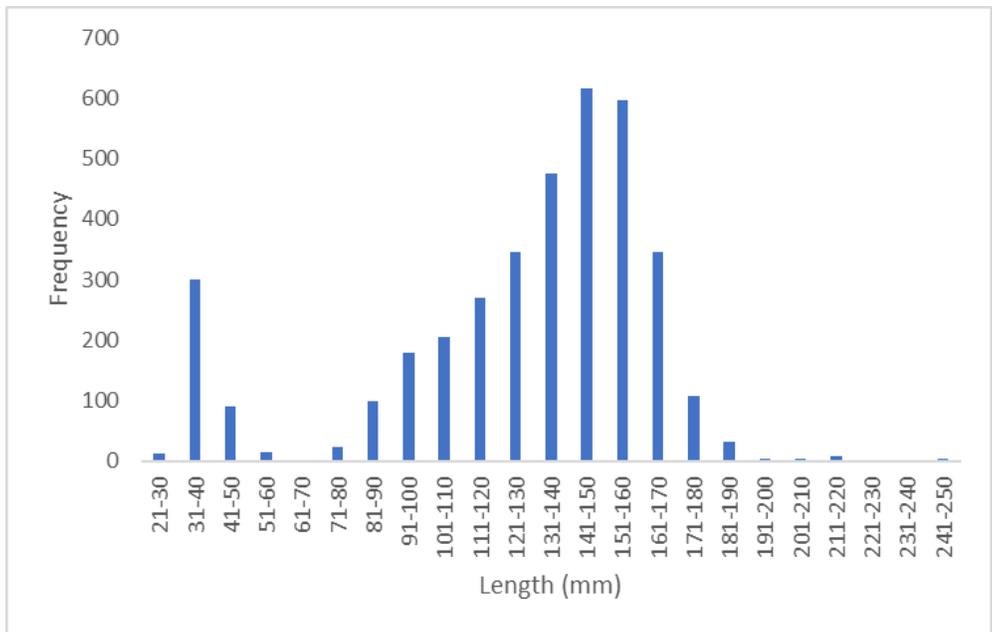
### **Target Species**

This reporting period began on April 16<sup>th</sup> and ended on April 30<sup>th</sup>. There were a total of 336 Chinook Salmon (CHS) captured during the 14-day sampling period. Sampling duration was 100.0% for the RO RST and 100.0% for the Powerhouse RSTs. Table 16 provides life stage, length, and weight data for all Chinook salmon that have been caught at the Cougar Dam site to-date and for the reporting period. Figure 28 shows the daily capture numbers for chinook and Figure 29 shows length frequency data to-date.



\*Recaptured fish for trapping efficiency trials not included.

**Figure 28. Chinook Captured Per Day 04/16/2023 to 04/30/2023 (Cougar Dam)**



\*Figure does not include fish without heads or fish used for trapping efficiency trials.

**Figure 29. Length Frequency of Juvenile Chinook Sampled Season To-Date (Cougar Dam)**

### Trapping Efficiency

A total of 500 juvenile hatchery Chinook (yearlings) were adipose clipped, left vent clipped, bismark brown dyed and released in the RO channel and 197 adipose clipped, left vent clipped, bismark brown dyed and released in the PWR channel on 4/18/23. 2 fish were recaptured in the RO RST for an efficiency of 0.7% and 14 fish were captured in the PWR RST's for an efficiency of 7.1%.

<b>Cougar Dam (04/18/2023)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
RO Route	500	2	0.4% (2/500)
PWR Route	197	14	7.1% (14/197)

A total of 491 juvenile hatchery Chinook (yearlings) were adipose clipped, left vent clipped, bismark brown dyed and released in the RO channel and 497 adipose clipped, left vent clipped, bismark brown dyed and released in the PWR channel on 3/30/23. 30 fish were recaptured in the RO RST for an efficiency of 6.1% and 83 fish were captured in the PWR RST's for an efficiency of 16.7%.

<b>Cougar Dam (03/30/2023)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
RO Route	491	30	6.1% (30/491)
PWR Route	497	83	16.7% (83/497)

#### Run of River Trapping Efficiency

Run of river fish were captured, caudal clipped or PIT tagged and released for the purpose of conducting run of river trapping efficiency trials at Cougar Dam. Numbers of fish released and recaptured by route for the reporting period are listed below.

<b>Cougar Dam</b>	<b>Release #</b>	<b>Recapture #</b>
PH	6	0
RO	310	13

**Table 9. Descriptive Statistics of Target Species Captured at Cougar Dam Season To-Date**

<b>To-Date (Since Dec. 01, 2021)</b>										
<b>Site</b>	<b>Route</b>	<b>Species</b>	<b>Life stage</b>	<b>Collected</b>	<b>Length (mm)*</b>			<b>Weight (g)*</b>		
					<b>Min</b>	<b>Max</b>	<b>Mean</b>	<b>Min</b>	<b>Max</b>	<b>Mean</b>
Cougar Dam	RO	CHS	Fry	29	33	52	40.0	N/A	N/A	N/A
		CHS	Parr	249	56	164	106.8	1.2	41.1	14.2
		CHS	Smolt	2256	92	247	145.8	4.7	142.4	34.8
Cougar Dam	PWR	CHS	Fry	385	25	55	38.0	1.0	1.8	1.2
		CHS	Parr	271	54	165	99.0	1.6	41.0	10.6
		CHS	Smolt	559	76	223	138.7	4.2	113.5	29.9

\*Fish that were missing heads are not included in length and weight calculations.

April 16-30, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Cougar Dam	RO	CHS	Fry	4	35	52	39.5	N/A	N/A	N/A
		CHS	Parr	24	80	135	107.2	5.2	29.2	13.9
		CHS	Smolt	302	97	193	146.4	8.9	72.1	34.2
Cougar Dam	PWR	CHS	Fry	3	33	36	34.7	N/A	N/A	N/A
		CHS	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Smolt	3	141	159	149.7	32.5	36.2	34.4

\*Fish that were missing heads are not included in length and weight calculations.

### 24-Hour Post Collection Holding Trial

A total of 134 Chinook captured in the RSTs, 0 fish from the PWR RST and 134 from the RO RST, were held for ~24 hours in holding tanks and then evaluated for survival rates. In total, 6 of the 134 fish (4.5%) held during this period died during holding. 0 of the 0 PWR RST captured fish (0.0%) died during holding and 6 of the 134 RO RST captured fish (4.5%) died during holding.

### Injuries and Copepod Infection

Partial descaling <20% was observed on 0 of the 6 Chinook collected at the PWR RST (0.0%). Descaling >20% was observed on 4 of the Chinook (66.7%). There were 5 fish with bodily injuries (83.3%) and 4 had eye injuries (66.7%). 2 fish had copepods present in the branchial cavity (33.3%) and 2 had copepods present on fins (33.3%). 1 fish displayed Gas Bubble Disease (level 1) (16.7%). There were 3 chinook mortalities collected in the PWR RST (50.0%).

Partial descaling <20% was observed on 215 of the 336 Chinook collected at the RO RST (64.0%). Descaling >20% was observed on 95 of the Chinook (28.3%). There were 298 fish with bodily injuries (88.7%) and 45 had eye injuries (13.4%). 254 fish had copepods present in the branchial cavity (75.6%) and 144 had copepods present on fins (42.9%). 182 fish displayed Gas Bubble Disease (97 level 1, 47 level 2, 26 level 3, 13 level 4) (54.2%). There were 52 chinook mortalities collected in the RO RST (15.5%).

Data is summarized below in table 17 . A summary of injuries observed during the reporting period, and for the duration of the season are provided in Appendix A.

**Table 17. Number of Descaled, Bodily/Eye Injured, Copepod Infected and Dead Chinook Salmon for Sampling Period. (Cougar Dam).**

Site	Route	# CHS Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Cougar Dam	RO	336	215	95	298	45	254	144	52
Cougar Dam	PWR	6	0	4	5	4	2	2	3

\*DSC=Descaled, COP=Copepods, B.C.=Branchial Cavity

## Collected DNA and Scale Samples

For the reporting period, scales and DNA were collected from 330 Spring Chinook. The other targets captured did not meet length criteria for DNA sampling or were too damaged to remove scales.

## PIT Tags

142 Spring Chinook were PIT tagged during this reporting period. The first 60 target fish per week are prioritized for the 24-Hour Post Collection Holding Study. These fish are not tagged to not bias the results of the holding study. More information regarding PIT tagged fish can be found in Appendix D.

## VIE Marking

No VIE marked Spring Chinook have been detected at this site to date.

## Non-Target Species

18 non-target fish were captured during the reporting period; the data is summarized below in table 18.

**Table 18. Summary of Non-target Species (Cougar Dam).**

Species	RO Capture	RO Mortality	PWR Capture	PWR Mortality	Season Total Capture	Season Total Mortality
Brook Lamprey	0	0	0	0	0	0
Bluegill	0	0	0	0	0	0
Bull Trout	0	0	0	0	0	0
Chinook (clipped)	15	0	0	0	23	1
Chinook (Adult)	0	0	0	0	0	0
Crappie	0	0	0	0	0	0
Cutthroat Trout	0	0	0	0	0	0
Dace	1	0	0	0	5	1
Largescale Sucker	0	0	0	0	0	0
Mountain Whitefish	0	0	0	0	4	1
Northern Pikeminnow	0	0	0	0	0	0
<i>O. mykiss</i>	2	0	0	0	5	0
Sculpin	0	0	0	0	6	1
Smallmouth Bass	0	0	0	0	0	0
Spotted Bass	0	0	0	0	0	0
Unknown	0	0	0	0	0	0
<b>Totals</b>	<b>18</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>43</b>	<b>4</b>

## Stream Statistics

Basic stream statistics at the Cougar Dam site were calculated from data downloaded from U.S. Geological Survey stream gauge numbers 14159410 and 14181500. Gauge height (feet) is the only metric provided at gauge 14159410. Total dissolved gas saturation data was received from gauge

14181500, 500 meters downstream of the trap. During the reporting period, daily maximum values for instantaneous gauge height ranged from 1,253.2 to 1,253.4 feet (mean: 1,253.3 feet). Figure 30 shows instantaneous gauge height.

Total dissolved gas saturation ranged from 103 to 115% (mean: 109.7%). Figure 31 shows total dissolved gas saturation.

Stream temperatures were recorded every 2 hours for the length of the report period for the RO and PWR RST's (Figure 32 and Figure 33 respectively). Temperature probes for the RO and PWR RST operated normally throughout this reporting period.

Flows through the Powerhouse and RO during the reporting period averaged 351.1 and 1,065.8 cubic feet per second (cfs) respectively (Figure 34). Catch per unit of effort (CPUE) data are summarized in Table 19. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 19. Summary of salmonid CPUE, Cougar Dam.**

	Chinook	
Description	RO (5ft)	PWR (8ft)
Catch	330	6
Effort (hrs)	357.1	715.6
CPUE (fish/hr)	0.924	0.008

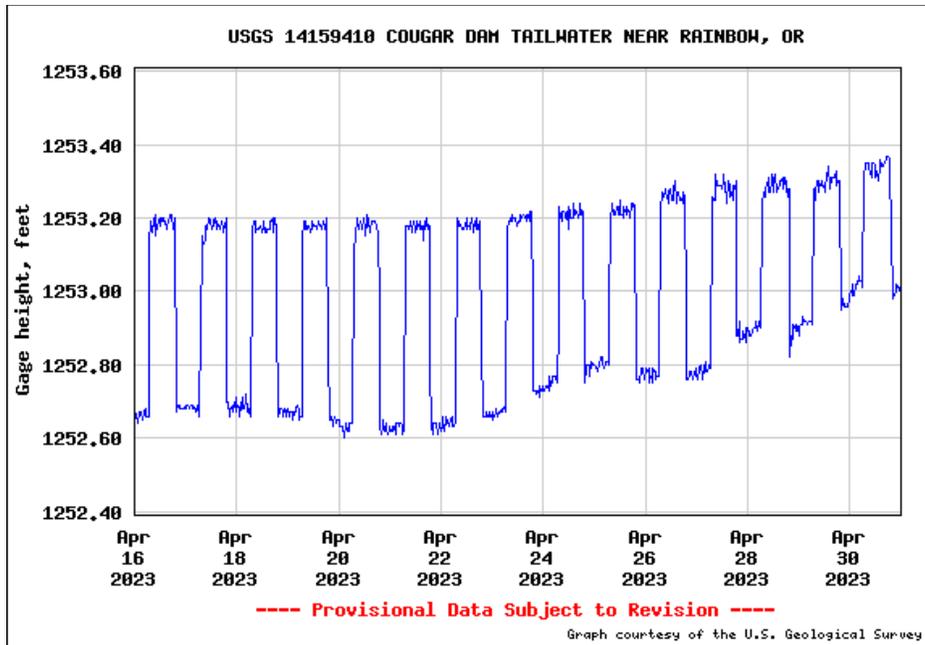


Figure 30. Gage Height (feet); below Cougar Dam, South Fork McKenzie River

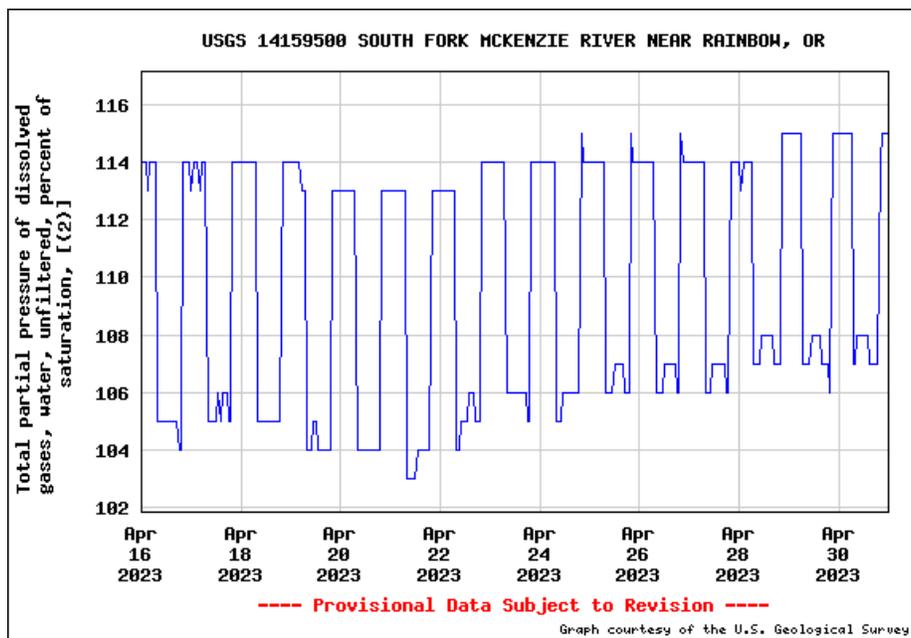
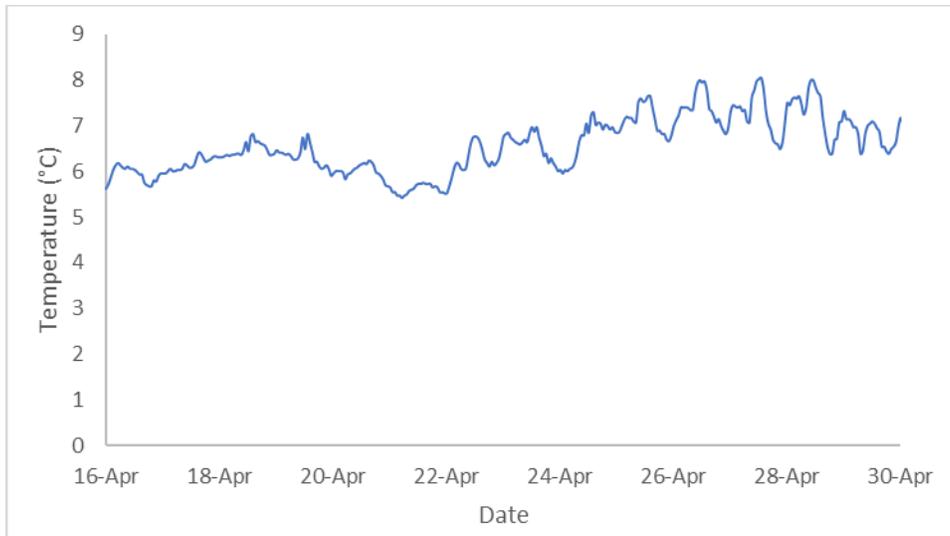
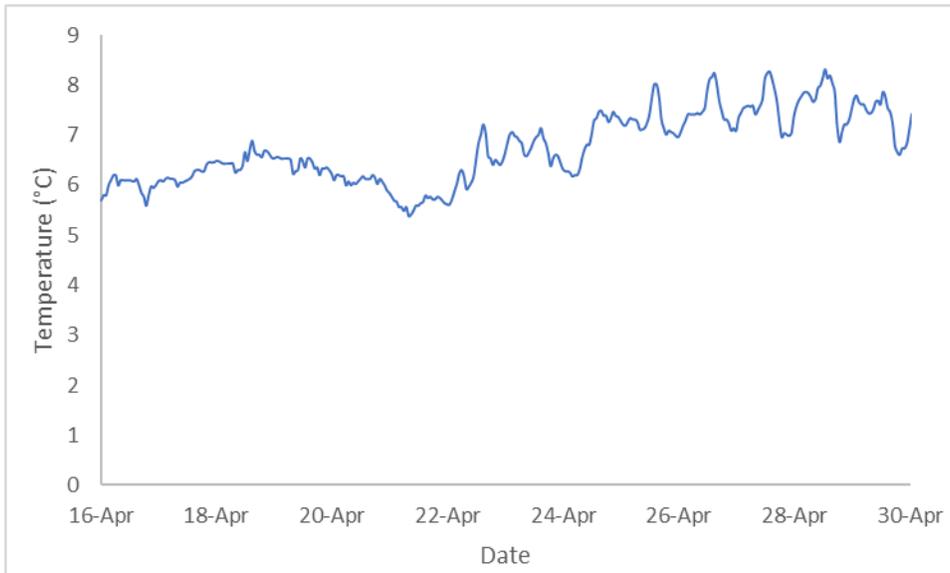


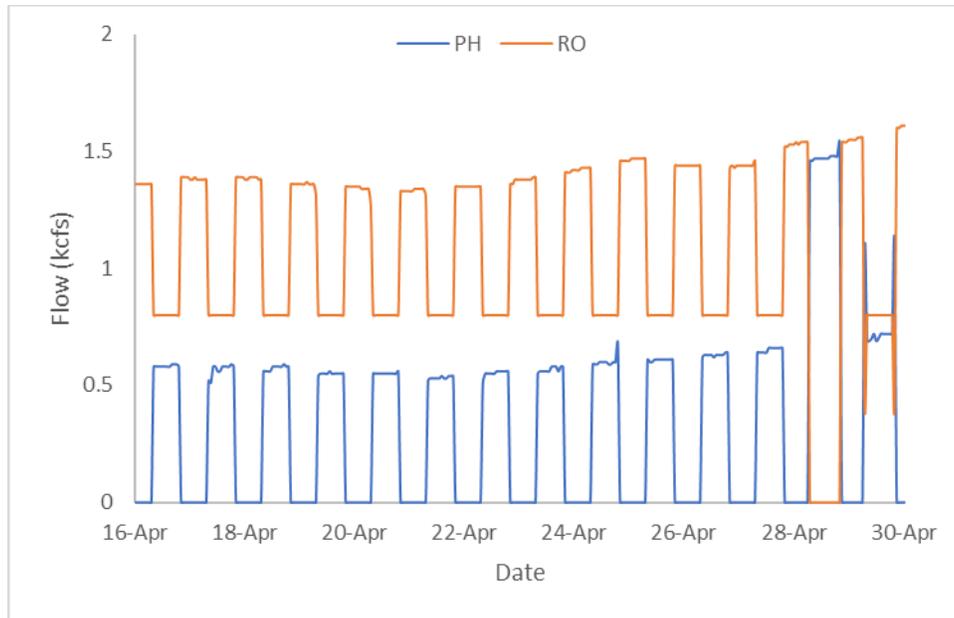
Figure 31. Total Dissolved Gas Saturation (%); below Cougar Dam, South Fork McKenzie River



**Figure 32. Temperature at RO RST (Cougar Dam)**



**Figure 33. Temperature at PWR RST (Cougar Dam)**

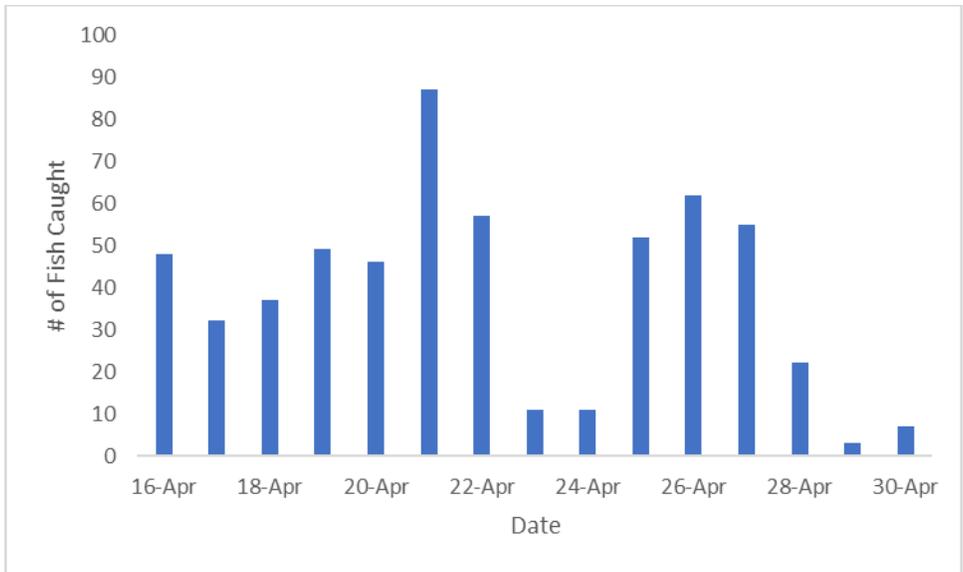


**Figure 34. Hourly Flows PWR vs. RO (Cougar Dam)**

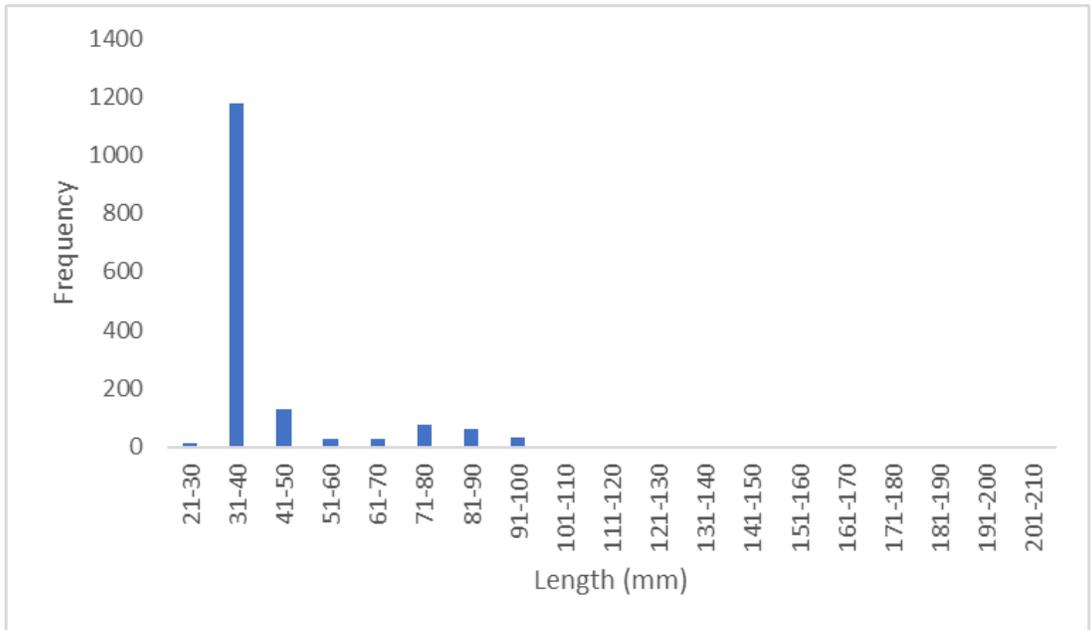
## South Fork of the McKenzie–Cougar Dam Head of Reservoir

### Target Species

The reporting period began April 16th and ended on April 30th. There were 579 Chinook salmon captured during the 15-day sampling period (Figure 35). The trap was operated 100% of the reporting period. Table 20 provides life stage, length, and weight data for all Chinook salmon that have been caught at the site to-date and Figure 36 shows length frequency data to-date.



**Figure 35. Chinook Captured Per Day 04/16/2023 to 04/30/2023 (Cougar Dam Head of Reservoir)**



**Figure 36. Length Frequency of Juvenile Chinook Sampled Season To-Date (Cougar Dam Head of Reservoir)**

**Table 20. Descriptive Statistics of Target Species Captured at Cougar Dam Head of Reservoir, Season To-Date and for the Reporting Period.**

To-Date (Since March 07, 2022)										
Site	Route	Species	Life stage	Collected	Length (mm)			Weight (g)		
					Min	Max	Mean	Min	Max	Mean
Cougar Dam Head of Reservoir	5 ft	CHS	Smolt	8	70	100	87.6	3.3	10.4	7.1
		CHS	Parr	206	43	150	80.2	1.0	13.7	5.7
		CHS	Fry	1328	27	63	36.5	0.6	2.8	1.3

April 16-30, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)			Weight (g)		
					Min	Max	Mean	Min	Max	Mean
Cougar Dam Head of Reservoir	5 ft	CHS	Smolt	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Fry	579	29	46	35.2	N/A	N/A	N/A

\*Most fry are too small to collect accurate weights and thus some metrics are not available for them.

### Trapping Efficiency

A total of 506 juvenile hatchery Chinook were adipose clipped, right vent clipped, Bismarck brown Y dyed, and released on 4/14/2023 upstream of the Cougar Head of Reservoir trap site. A total of 8 fish were recaptured in the 5 ft trap. Trapping efficiency was 7.7%.

Cougar Dam Head of Reservoir	Release #	Recapture #	Capture Efficiency
5ft trap	506	8	1.6% (8/506)

### Injuries and Copepod Infection

579 Chinook were captured for the reporting period. Of the fish captured, partial descaling <20% was observed on 9 fish (1.6%) and descaling >20% was observed on 17 fish (2.9%). 47 fish had bodily injury (8.1%). 5 fish displayed eye injuries (0.9%). 0 fish had copepods in the branchial cavity (0.0%), 0 had copepods on fins (0.0%). There were 33 mortalities for this reporting period (5.7%). Injury data for the reporting period is summarized in Table 21. To date injury data can be found in Appendix A.

**Table 21. Number of Descaled, Bodily/Eye Injured, Copepod Infected and Dead Chinook Salmon for Sampling Period. (Cougar Dam Head of Reservoir).**

Site	# CHS Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Cougar Dam Head of Reservoir	579	9	17	47	5	0	0	33

\*DSC=Descaled, COP=Copepods, B.C.=Branchial Cavity

### Collected DNA and Scale Samples

Scales and DNA were collected from 1 of the Chinook captured. The rest of the captured fish were under the minimum fork length threshold and samples were not collected (less than 45 mm fork length for DNA and less than 50 mm fork length for scales).

### PIT Tags

0 Spring Chinook were PIT tagged during this reporting period. More information regarding PIT tagged fish can be found in Appendix D.

### VIE Marking

Visual Implant Elastomer (VIE) trials commenced at the Cougar Dam Head of Reservoir site on 6/25/2022. VIE tag color and locations are changed every month to distinctly mark groups of fish by capture date. Since then, 417 Chinook have been VIE marked with fluorescent elastomer. No fish with VIE marks have been detected at downstream RST sites to date. Fish still showing an egg sac are not VIE marked.

Date Tagged	Tag Location	VIE Color	# Tagged	# Recaptured to Date
6/25/2022-7/15/2022	Left Dorsal	Yellow	30	0
9/15/2022-9/30/2022	Left Dorsal	Orange	1	0
10/1/2022-10/15/2022	Left Dorsal	Pink	1	0
11/1/2022-11/15/2022	Left Dorsal	Green	1	0
2/16/2023-2/28/2023	Right Dorsal	Yellow	1	0
3/1/2023-3/15/2023	Right Dorsal	Red	1	0
3/16/2023-3/31/2023	Right Dorsal	Red	9	0
4/1/2023-4/15/2023	Right Dorsal	Blue	85	0
4/16/2023-4/30/2023	Right Dorsal	Blue	288	0

### Non-Target Species

5 non-target fish were captured at the Cougar Dam Head of Reservoir RST during the reporting period; the data is summarized below in Table 22.

**Table 22. Summary of Non-target Species (Cougar Dam Head of Reservoir).**

Species	5ft Capture	5ft Mortality	Season Total	Season Total Mortality
Bull Trout	1	0	2	0
Cutthroat Trout	1	0	1	0
Dace	0	0	0	0
Mountain Whitefish	0	0	1	0
Northern Pikeminnow	0	0	0	0
<i>O. mykiss</i>	1	0	4	0
Sculpin	1	0	1	0
Unknown	1	1	1	1
<b>Totals</b>	<b>5</b>	<b>0</b>	<b>10</b>	<b>1</b>

## Stream Statistics

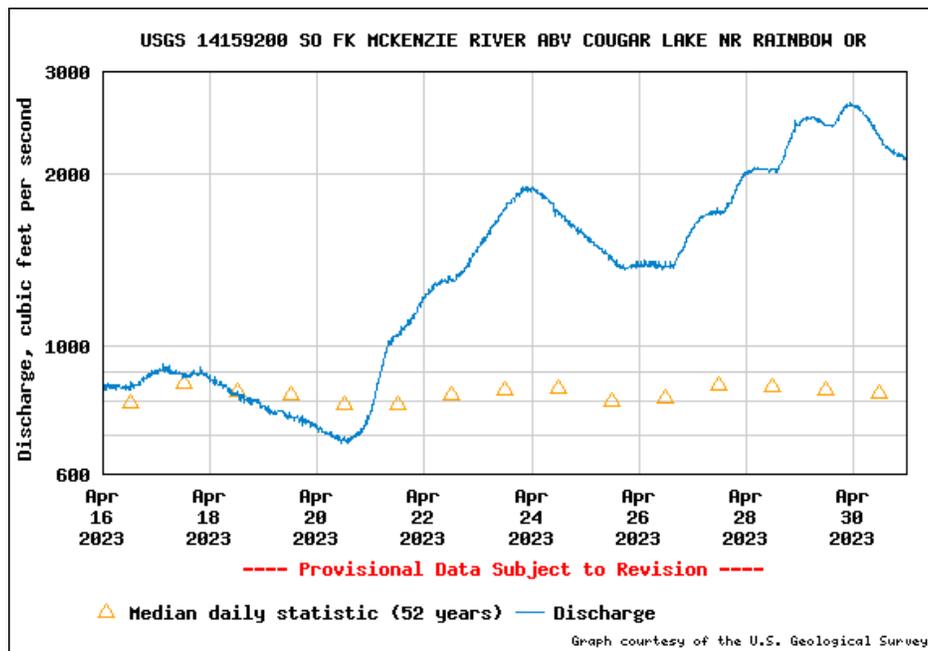
Basic stream statistics at the site were calculated from data downloaded from the U.S. Geological Survey stream gauge number 14159200. During the reporting period, daily maximum values for instantaneous discharge ranged from 774.0 cfs to 2,650.0 cfs (mean: 1,580.3 cfs). Figure 37 shows instantaneous discharge.

Stream temperatures were recorded every two hours using a temperature probe at the Cougar Dam Head of Reservoir RST site during this reporting period. The temperature probe operated normally, and the data is shown below in figure 38.

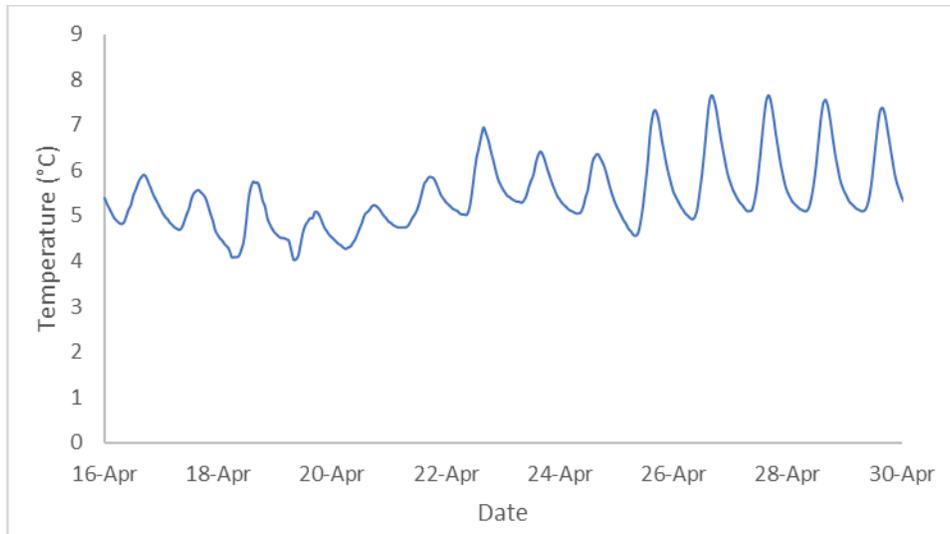
Catch per unit of effort (CPUE) data are summarized in Table 23. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 23. Summary of Chinook CPUE, Cougar Dam Head of Reservoir.**

	Chinook
Description	5 ft
Catch	579
Effort (hrs)	361.3
CPUE (fish/hr)	1.603



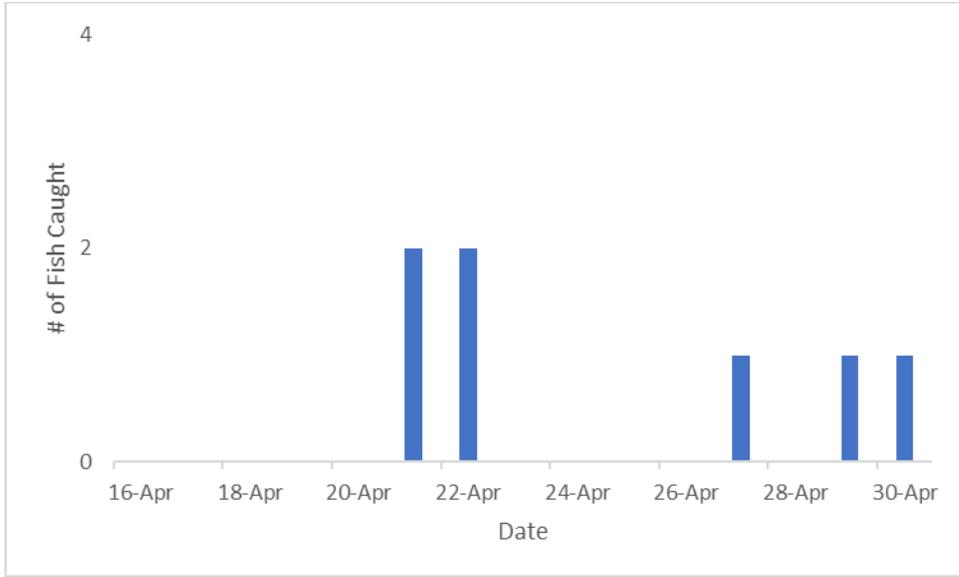
**Figure 37. Discharge (cfs); South Fork McKenzie above Cougar Dam**



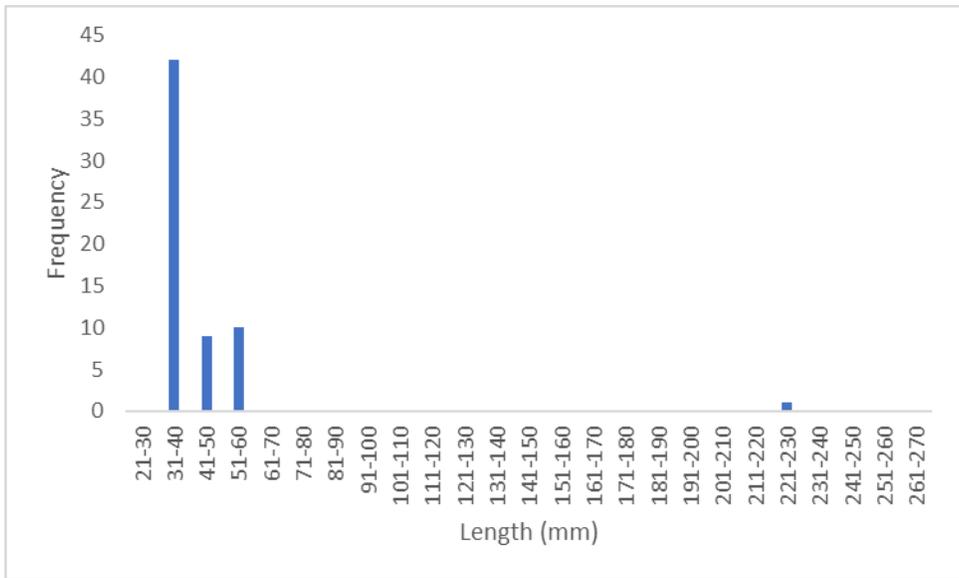
**Figure 38. Temperature at RST (Cougar Dam Head of Reservoir)**

### **Fall Creek Dam Tailrace**

The reporting period began April 16th and ended April 30th. 7 Chinook salmon were captured during the 14-day sampling period (Figure 39). The trap sampled 100.0% of the days during this reporting period. Table 24 provides life stage, length, and weight data for all Chinook salmon that have been caught at the Fall Creek Dam Tailrace site to-date and Figure 40 shows length frequency data to-date.



**Figure 39. Chinook Captured Per Day 04/16/2023 to 04/30/2023 (Fall Creek Dam Tailrace)**



**Figure 40. Length Frequency of Juvenile Chinook Sampled Season To-Date (Fall Creek Dam Tailrace)**

**Table 24. Descriptive Statistics of Target Species Captured at Fall Creek Dam Tailrace, Season To-Date and for the Reporting Period.**

To-Date										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Fall Creek Dam	RO	CHS	Smolt	1	230	230	230.0	141.1	141.1	141.1
		CHS	Parr	7	40	60	53.9	2.1	4.5	3.3
		CHS	Fry	54	33	55	39.2	1.3	3.2	1.9
April 16-30, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Fall Creek Dam	RO	CHS	Smolt	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Parr	3	55	60	57	3.1	4.5	3.7
		CHS	Fry	4	49	55	51.3	1.2	1.8	1.6

### 24-Hour Post Collection Holding Trial

6 Spring Chinook was captured during the current reporting period and held for 24 hours. 0 Chinook (0.0%) died in holding.

### Injuries and Copepod Infection

7 Chinook were captured during this reporting period. 0 fish displayed descaling >20% (0.0%) and 2 fish had bodily injuries (28.6%). 0 fish displayed eye injuries (0.0%). 0 fish had copepods in the branchial cavity (0.0%). There were 0 mortalities (0.0%). 1 fish displayed Gas Bubble Disease (level 2) (14.3%). The data is summarized in Table 25. To date injury data is listed in Appendix A.

**Table 25. Number of Descaled, Bodily/Eye Injured, Copepod Infected and Dead Chinook Salmon for Sampling Period. (Fall Creek).**

Site	# CHS Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Fall Creek Dam	7	0	0	2	0	0	0	0

\*DSC=Descaled, COP=Copepods, B.C.=Branchial Cavity

### Collected DNA and Scale Samples

Scales and DNA were collected from 7 of the Chinook captured. The rest of the captured fish were under the minimum fork length threshold and samples were not collected (less than 45 mm fork length for DNA and less than 50 mm fork length for scales).

### PIT Tags

No Spring Chinook were PIT tagged during this reporting period. The first 60 target fish per week are prioritized for the 24-Hour Post Collection Holding Study. These fish are not tagged to not bias the results of the holding study. More information regarding PIT tagged fish can be found in Appendix D.

## VIE Marking

No VIE marked Spring Chinook have been detected at this site to date.

## Trapping Efficiency

A total of 500 juvenile hatchery Chinook (sub yearlings) were adipose clipped, Bismarck Brown dyed, and released on 07/13/2022 upstream of the Fall Creek Dam Tailrace RO channel trap site. A total of 0 fish were recaptured in the 8 ft trap. Trapping efficiency was 0%.

Fall Creek Dam	Release #	Recapture #	Capture Efficiency
RO	500	0	0% (0/500)

## Non-Target Species

113 non-target fish were captured at the Fall Creek Dam Tailrace site during the reporting period; the data is summarized below in Table 26.

**Table 26. Summary of Non-target Species (Fall Creek Dam Tailrace).**

Species	8ft Capture	8ft Mortality	Season Total	Season Total Mortality
Bluegill	0	0	0	0
Brook Lamprey	2	0	15	0
Brown Bullhead	3	1	33	11
Cutthroat Trout	9	0	26	0
Dace	27	0	131	5
Largescale Sucker	1	0	9	2
Mosquitofish	0	0	0	0
Northern Pikeminnow	0	0	1	0
<i>O. mykiss</i>	57	0	65	2
<i>O. mykiss</i> (clipped)	9	1	15	3
Pacific Lamprey	0	0	1	0
Sculpin	0	0	6	0
<b>Totals</b>	<b>113</b>	<b>1</b>	<b>302</b>	<b>23</b>

## Stream Statistics

Basic stream statistics at the site were calculated from data downloaded from U.S. Geological Survey stream gage numbers 14151000 and 1415000. Instantaneous discharge (cfs) data was collected from gage 1415100. Dissolved oxygen (mg/L) concentration data was received from gage 1415000, 1.2 rkms downstream of the trap. During the reporting period, daily maximum values for instantaneous discharge ranged from 859.0 cfs to 2,010.0 cfs (mean: 1,689.3 cfs). Figure 41 shows instantaneous discharge.

Dissolved oxygen concentrations were not available for the duration of the reporting period. No data has been recorded from the stream gage after October 19, 2022 at 12:00.

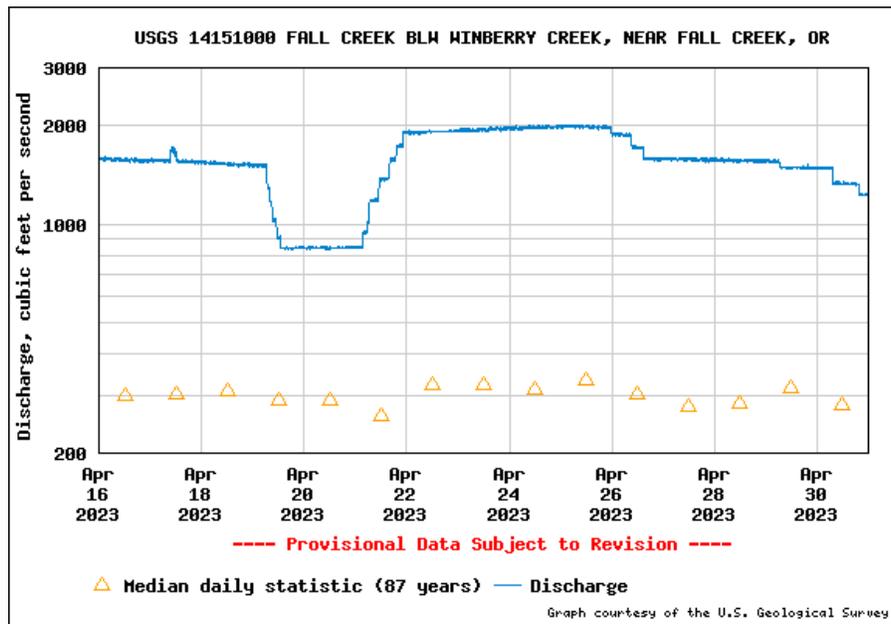
Stream temperatures were recorded using temperature probes for the Fall Creek Dam Tailrace RST site during this reporting period. The temperature probe operated normally during this period (Figure 42).

Flows In and Out of reservoir during the reporting period averaged 1,497.0 cfs and 1,568.2 cfs respectively (Figure 43).

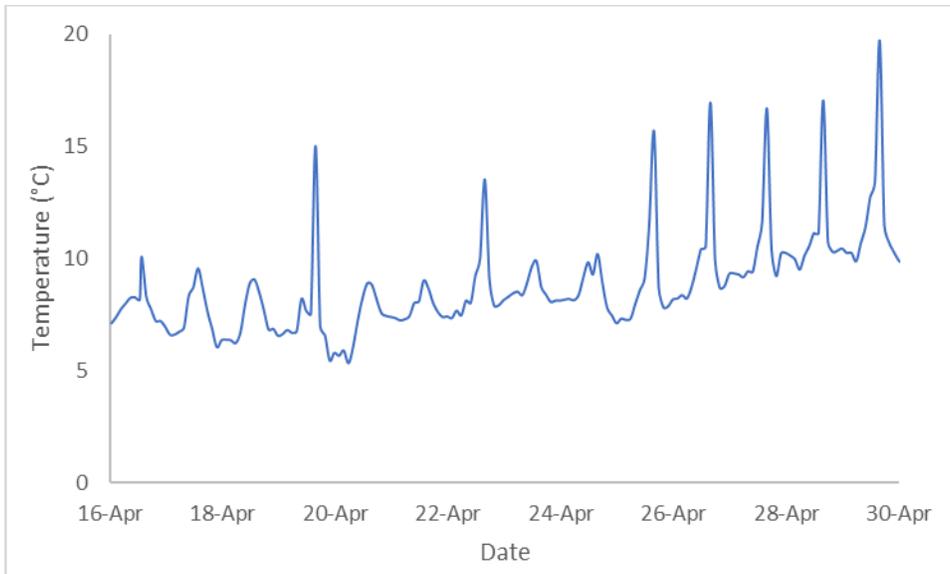
Catch per unit of effort (CPUE) data are summarized in Table 27. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B

**Table 27. Summary of Chinook CPUE, Fall Creek Dam Tailrace.**

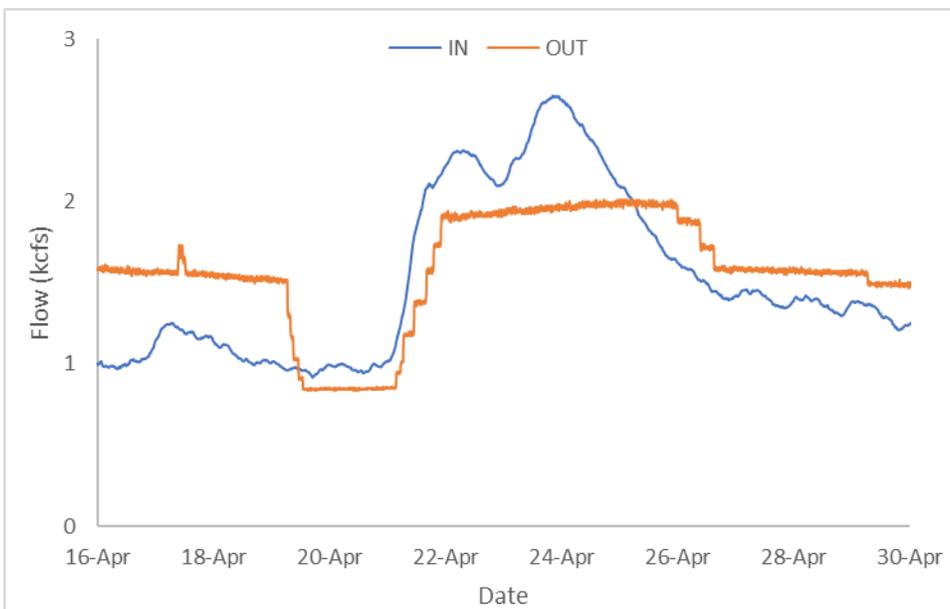
	Chinook
Description	(8 ft)
Catch	7
Effort (hrs)	360.9
CPUE (fish/hr)	0.019



**Figure 41. Discharge (cfs); Fall Creek Below Winberry Creek, Near Fall Creek, OR**



**Figure 42. Temperature at RST (Fall Creek Dam Tailrace)**

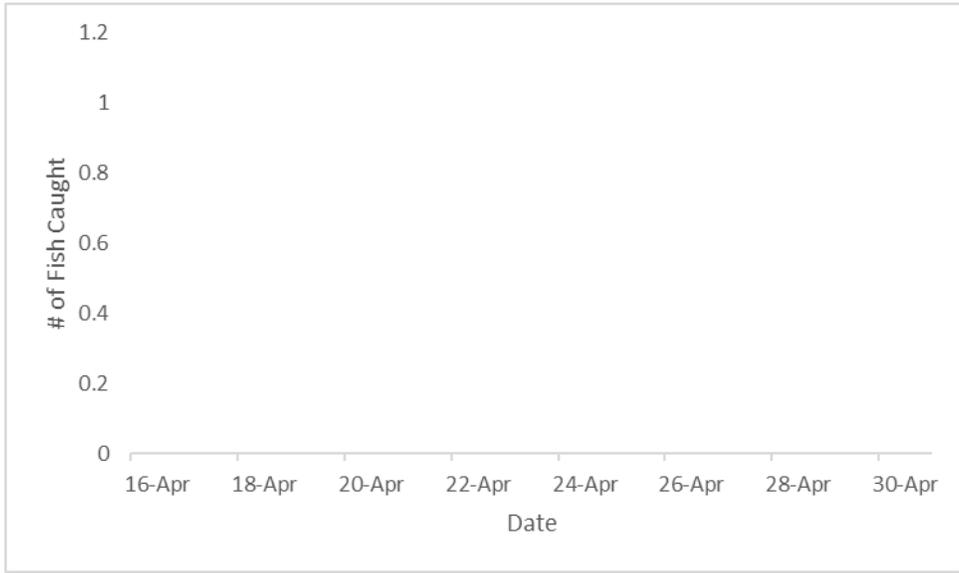


**Figure 43. Hourly Flows Inflow vs. Outflow (RO) (Fall Creek Tailrace)**

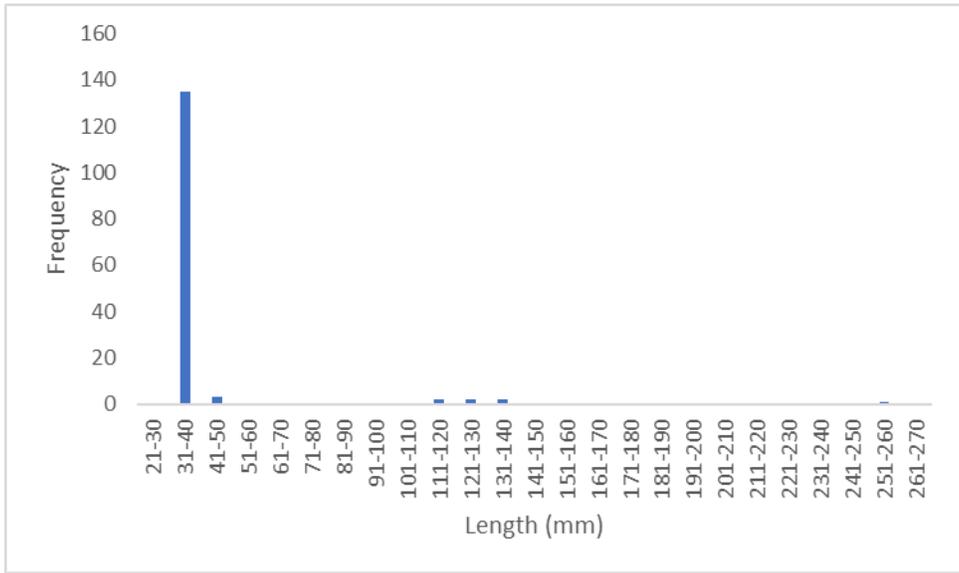
## Middle Fork Willamette – Fall Creek Head of Reservoir

### Target Species

The reporting period began April 16<sup>th</sup> and ended April 30<sup>th</sup>. 0 Chinook salmon was captured during the 14-day sampling period (Figure 44). High flow and high debris loads caused the 8 foot trap to be raised to a non-sampling position on April 23<sup>rd</sup>. It was lowered to a sampling position on April 25<sup>th</sup>. The trap was operated 85.7% of the reporting period. Table 28 provides life stage, length, and weight data for all Chinook salmon that have been caught at the Fall Creek Head of Reservoir site to-date and Figure 45 shows length frequency data to-date.



**Figure 44. Chinook Captured Per Day 04/16/2023 to 04/30/2023 (Fall Creek Head of Reservoir)**



**Figure 45. Length Frequency of Juvenile Chinook Sampled Season To-Date (Fall Creek Head of Reservoir)**

**Table 28. Descriptive Statistics of Target Species Captured at Fall Creek Head of Reservoir, Season To-Date and for the Reporting Period.**

To-Date										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Fall Creek Head of Reservoir	8 ft	CHS	Smolt	5	127	255	157.2	21.5	108.5	214.3
		CHS	Parr	2	119	120	119.5	16.1	19.8	18.0
		CHS	Fry	140	31	42	34.7	N/A	N/A	N/A

April 16-30, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Fall Creek Head of Reservoir	8 ft	CHS	Smolt	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Fry	0	N/A	N/A	N/A	N/A	N/A	N/A

### Injuries and Copepod Infection

0 Chinook was captured during this reporting period. Partial descaling <20% was observed in 0 of the 0 Chinook captured (0.0%) and 0 displayed descaling >20% (0.0%). 0 displayed body injury (0.0%) and 0 Chinook had eye injury (0.0%). 0 Chinook had copepods present in the branchial cavity (0.0%) and 0 had copepods on fins (0.0%). There was 0 mortality this reporting period (0.0%). Injuries are displayed in Table 29. To date injury data can be found in Appendix A.

**Table 29. Number of Descaled, Bodily/Eye Injured, Copepod Infected and Dead Chinook Salmon for Sampling Period. (Fall Creek Head of Reservoir).**

Site	# CHS Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Fall Creek Head of Reservoir	0	0	0	0	0	0	0	0

\*DSC=Descaled, COP=Copepods, B.C.=Branchial Cavity

### Trapping Efficiency

0 Chinook were VIE marked and released upstream to conduct a run of river trapping efficiency trial during this period. 0 VIE marked fish were recaptured.

### Collected DNA and Scale Samples

No scales and DNA were collected from Chinook captured for the reporting period.

## PIT Tags

No Spring Chinook were PIT tagged during this reporting period. Refer to Appendix D for further information regarding PIT tags during this reporting period.

## VIE Marking

Visual Implant Elastomer (VIE) trials commenced at Fall Creek Head of Reservoir site on 1/18/2023. VIE tag color and locations are changed every month to distinctly mark groups of fish by capture date. Since then, 45 Chinook have been VIE marked with fluorescent elastomer. 1 fish with VIE marks Has been recaptured at the head of reservoir trap site to date. This was a VIE marked fish released above the trap for trapping efficiency trials.

Fish still showing an egg sac are not VIE marked.

Date Tagged	Tag Location	VIE Color	# Tagged	# Recaptured to Date
1/16/2023-1/31/2023	Left Dorsal	Blue	9	0
2/1/2023-2/15/2023	Right Dorsal	Yellow	2	0
2/16/2023-2/28/2023	Right Dorsal	Yellow	1	0
3/1/2023-3/15/2023	Right Dorsal	Red	33	1

## Non-Target Species

173 non-target fish were captured at the Fall Creek Head of Reservoir site during the reporting period; the data is summarized below in table 30.

**Table 30. Summary of Non-target Species (Fall Creek Head of Reservoir).**

Species	8ft Capture	8ft Mortality	Season Total	Season Total Mortality
Brook Lamprey	3	0	42	1
Brown Bullhead	0	0	0	0
Cutthroat Trout	15	0	42	0
Dace	7	0	15	1
Largescale Sucker	1	0	4	0
<i>O. mykiss</i>	114	0	309	0
<i>O. mykiss (clipped)</i>	6	0	6	0
Pacific Lamprey	0	0	10	0
Redside Shiner	0	0	0	0
Sculpin	0	0	0	0
Unknown Lamprey	27	0	48	0
<b>Totals</b>	<b>173</b>	<b>0</b>	<b>476</b>	<b>2</b>

## Stream Statistics

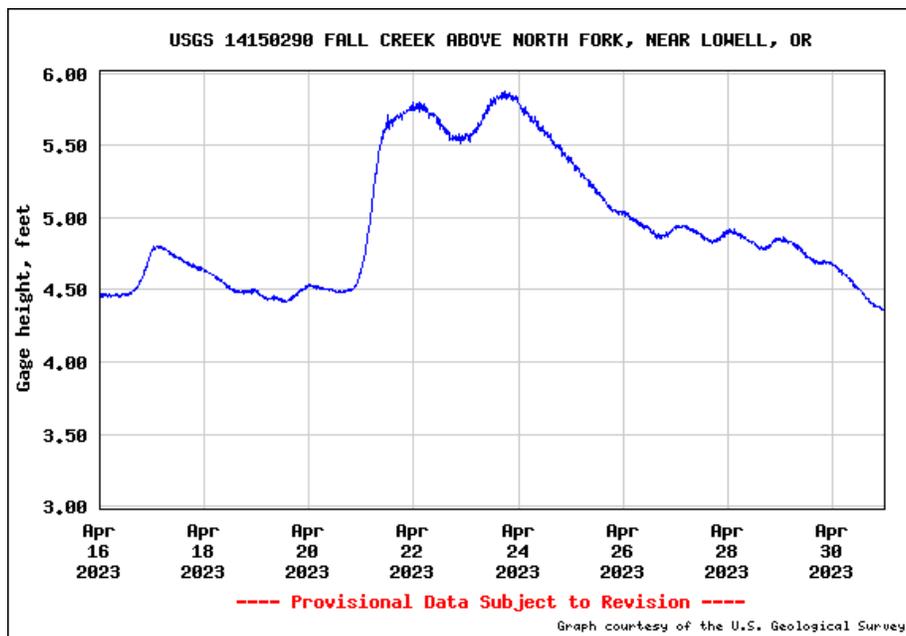
Basic stream statistics at the Fall Creek site were calculated from data downloaded from the U.S. Geological Survey stream gage number 14150290. During the reporting period, daily maximum values for instantaneous gage height ranged from 4.5 feet to 5.9 feet (mean 5.1 feet). Figure 46 shows instantaneous gage height.

Stream temperatures were recorded every 2 hours for the Fall Creek RST (Figure 47). Temperature probes for the Fall Creek RST operated normally throughout this reporting period.

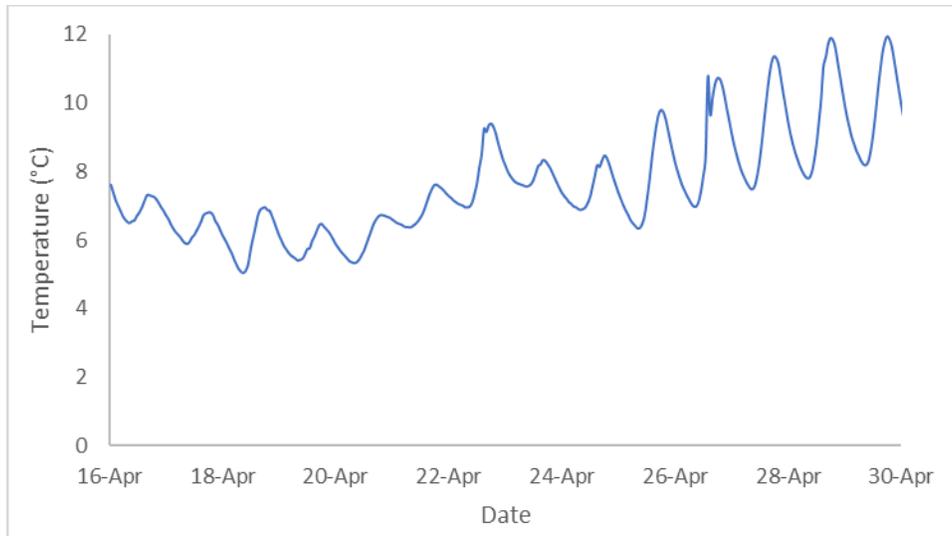
Catch per unit of effort (CPUE) data are summarized in Table 31. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 31. Summary of Chinook CPUE, Fall Creek Head of Reservoir.**

	Chinook
Description	8 ft
Catch	0
Effort (hrs)	318.1
CPUE (fish/hr)	0



**Figure 46. Gage Height (feet); Fall Creek Above North Fork, Near Lowell OR**

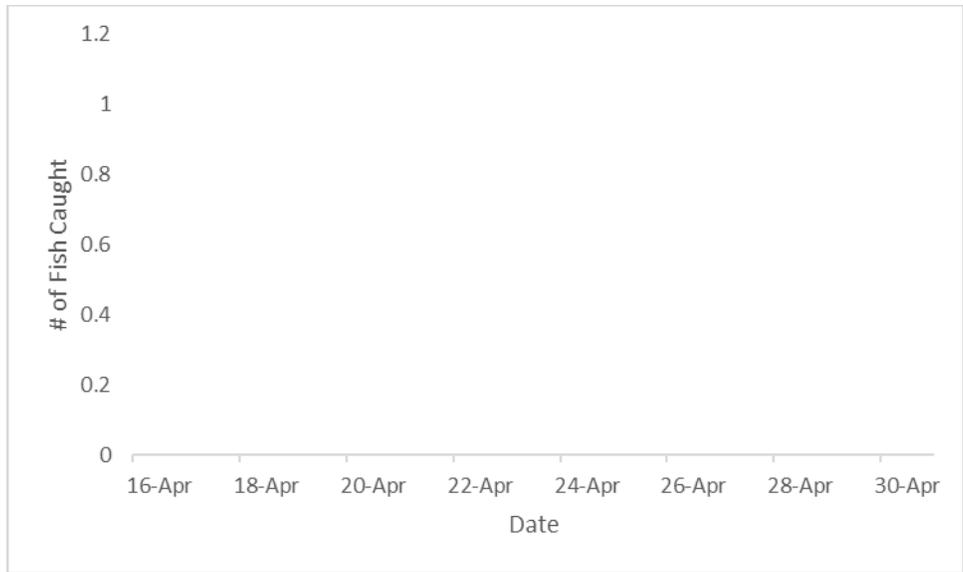


**Figure 47. Temperature at RST (Fall Creek Head of Reservoir)**

## **Middle Fork Willamette– Dexter Dam**

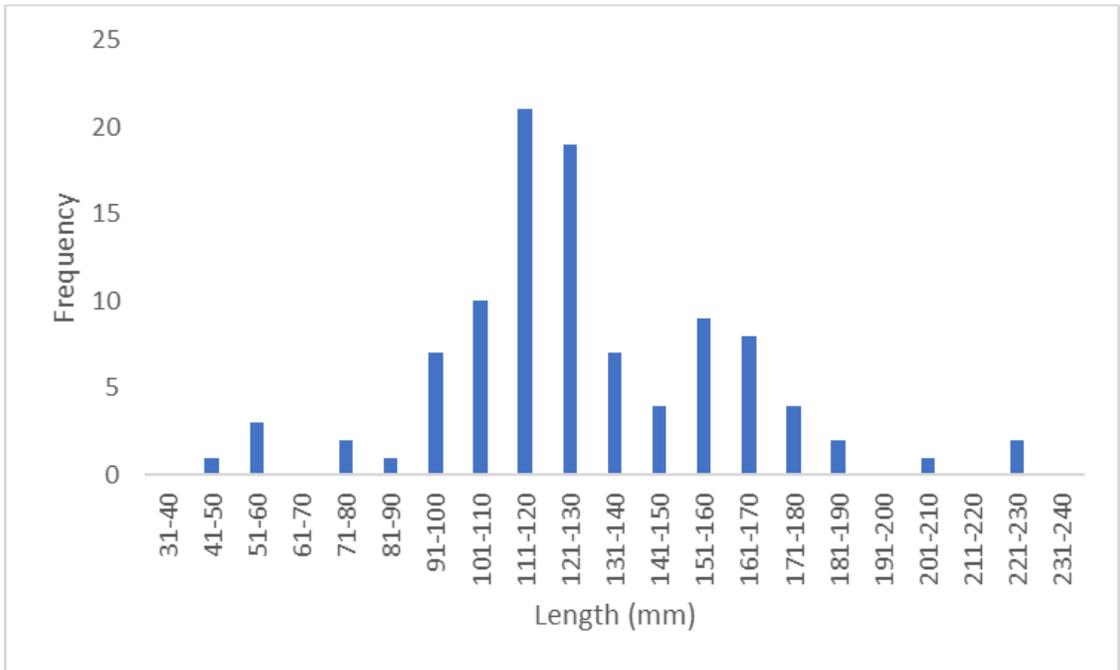
### **Target Species**

This reporting period began on April 16<sup>th</sup> and ended on April 30<sup>th</sup>. There were 0 Chinook salmon (CHS) captured during the 14-day sampling period. Sampling duration was 100% for the 5 ft RST. Table 32 provides life stage, length, and weight data for all Chinook salmon that have been caught at the Dexter Dam site to-date and for the reporting period. Figure 48 shows the daily capture numbers for Chinook and Figure 49 shows length frequency data to-date.



\*Recaptured fish for trapping efficiency trials not included.

**Figure 48. Chinook Captured Per Day 04/16/2023 to 04/30/2023 (Dexter Dam)**



\*Figure does not include fish without heads or fish used for trapping efficiency trials.

**Figure 49. Length Frequency of Juvenile Chinook Sampled Season To-Date (Dexter Dam)**

**Table 32. Descriptive Statistics of Target Species Captured at the Dexter Dam RST Season To-Date.**

To-Date (Since March 07, 2022)										
Site	Trap	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Dexter Dam	5 ft	CHS	Fry	3	46	55	51.3	1.4	1.4	1.4
		CHS	Parr	19	51	159	101.4	2.1	48.3	12.8
		CHS	Smolt	79	95	226	138.0	9.3	162.3	29.2

April 16-30, 2023										
Site	Trap	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Dexter Dam	5 ft	CHS	Fry	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Smolt	0	N/A	N/A	N/A	N/A	N/A	N/A

\*Fish that were missing heads are not included in length and weight calculations.

### Trapping Efficiency

A total of 1,199 juvenile hatchery Chinook (yearlings) adipose clipped, upper caudal clipped, Bismarck brown dyed and released on 03/29/23 below Dexter Dam. Fish were released in small groups into the spillway flow to evaluate the traps efficiency capturing fish passing over the spillway. 5 fish were recaptured in the 5-foot RST for an efficiency of 1.0%.

Dexter Dam	Release #	Recapture #	Capture Efficiency
Spill	1,199	5	0.4% (5/1,199)
Powerhouse	N/A	N/A	N/A

### 24-Hour Post Collection Holding Trial

0 Spring Chinook was captured during the current reporting period and held for 24 hours. 0 Chinook (0.0%) died in holding.

### Injuries and Copepod Infection

0 Chinook was captured during this reporting period. Partial descaling <20% was observed in 0 of the 0 Chinook captured (0.0%) and 0 displayed descaling >20% (0.0%). 0 displayed body injury (0.0%) and 0 Chinook had eye injury (0.0%). 0 Chinook had copepods present in the branchial cavity (0.0%) and 0 had copepods on fins (0.0%). 0 displayed gas bubble disease (0.0%). There were 0 mortalities this reporting period (0.0%). Injuries are displayed in Table 33. To date injury data can be found in Appendix A.

**Table 33. Number of Descaled, Bodily/Eye Injured, Copepod Infected and dead Chinook Salmon for Sampling Period (Dexter Dam).**

Site	Route	# CHS Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Dexter Dam	PWR	0	0	0	0	0	0	0	0

\*DSC=Descaled, COP=Copepods, B.C.=Branchial Cavity

### Collected DNA and Scale Samples

For the reporting period, no scales and DNA were collected from Spring Chinook. The other targets captured did not meet length criteria for DNA sampling.

### PIT Tags

No Spring Chinook were PIT tagged during this reporting period. The first 60 target fish per week are prioritized for the 24-Hour Post Collection Holding Study. These fish are not tagged to not bias the results of the holding study. More information regarding PIT tagged fish can be found in Appendix D.

### VIE Marking

No VIE marked Spring Chinook have been detected at this site to date.

### Non-Target Species

77 non-target fish were captured during the reporting period; the data is summarized below in Table 34. Dexter Fish Facility releases adipose clipped Chinook near our trapping site. Adipose clipped Chinook caught in our trap are being counted as non-target fish to provide better clarity on data concerning run of river Chinook.

**Table 34. Summary of Non-target Species (Dexter Dam).**

Species	Capture	Mortality	Season Total	Season Total Mortality
Bass	0	0	0	0
Bluegill	0	0	2	0
Chinook (adult)	0	0	0	0
Chinook (clipped)	1	0	17	0
Crappie	10	5	296	21
Cutthroat Throat	1	0	1	0
Dace	2	0	2	0
Largescale Sucker	1	0	1	0
<i>O. mykiss</i>	0	0	3	0
<i>O. mykiss</i> (clipped)	0	0	0	0
Pikeminnow	0	0	0	0
Redside Shiner	0	0	1	0
Sculpin	61	2	163	4
Smallmouth Bass	1	0	1	1
<b>Totals</b>	<b>77</b>	<b>7</b>	<b>487</b>	<b>26</b>

## Stream Statistics

Basic stream statistics at the Dexter Dam site were calculated from data downloaded from the U.S. Geological Survey stream gauge numbers 14149510 and 14150000. Gauge height (feet) is the only metric provided at gauge 14149510. Total dissolved gas saturation data was received from gauge 14150000, 4.75 rkms downstream of the trap. During the reporting period, daily maximum values for instantaneous gauge height ranged from 637.1 feet to 639.7 feet (mean: 638.7 feet). Figure 50 shows instantaneous gauge height.

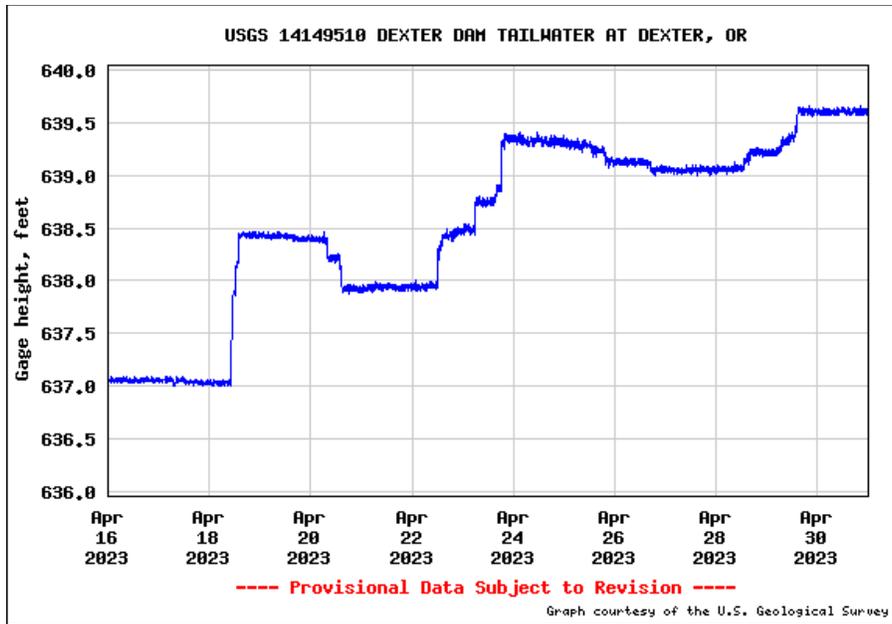
Total dissolved gas saturation ranged from 106 to 117% (mean: 112.2%) during the reporting period. Figure 51 shows total dissolved gas saturation.

Stream temperatures were recorded every 2 hours using a temperature probe at the Dexter Dam RST site during this reporting period. Temperature probes operated normally, and the data is shown below in Figure 52.

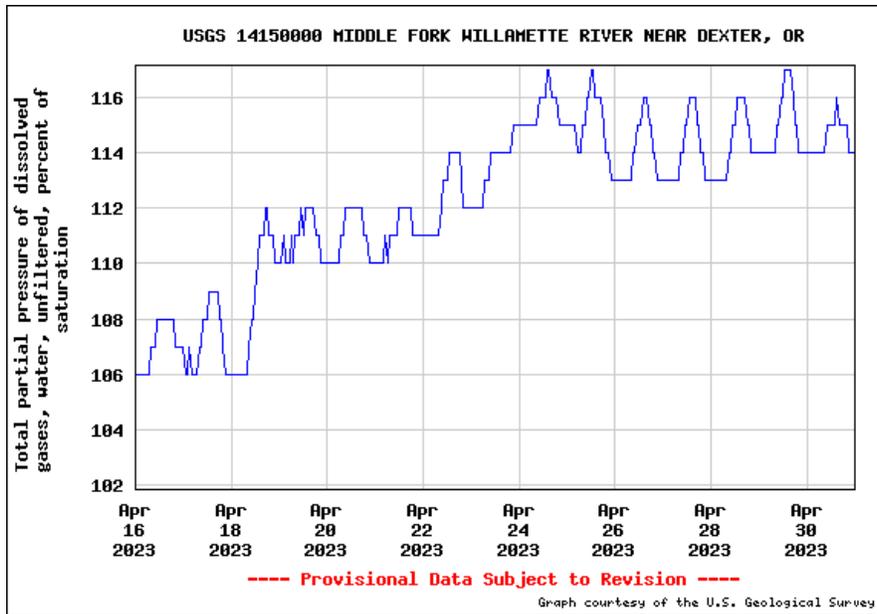
Flows through the Powerhouse and Spill during the reporting period averaged 0 and 4,172.0 cubic feet per second (cfs) respectively (Figure 53). Catch per unit of effort (CPUE) data are summarized in Table 35. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 35. Summary of salmonid CPUE, Dexter Dam.**

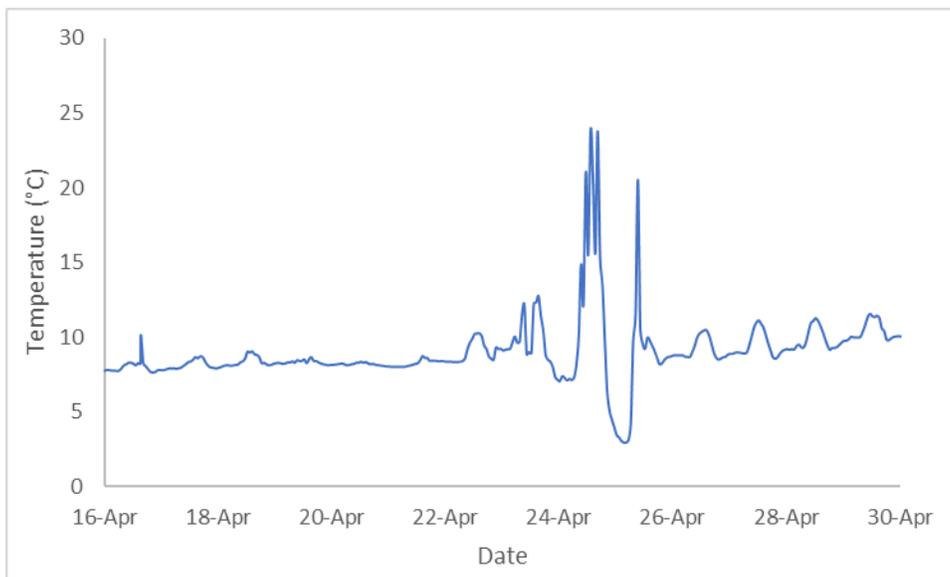
	Chinook
Description	8 ft
Catch	0
Effort (hrs)	361.7
CPUE (fish/hr)	0



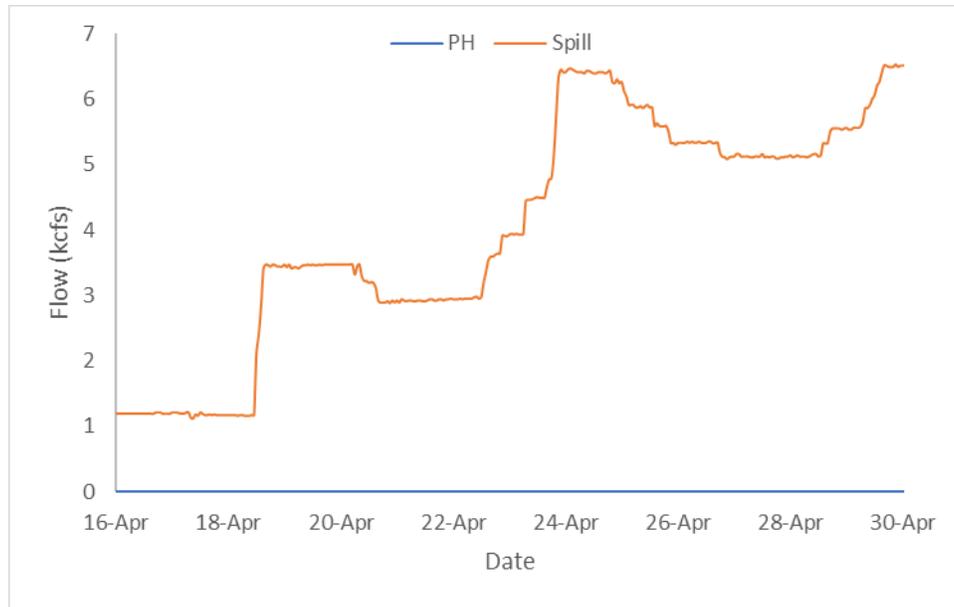
**Figure 50. Gauge Height (feet); below Dexter Dam, Middle Fork Willamette**



**Figure 51. Total Dissolved Gas Saturation (%); Middle Fork Willamette River, Near Dexter, OR**



**Figure 52. Temperature at RST (Dexter Dam)**

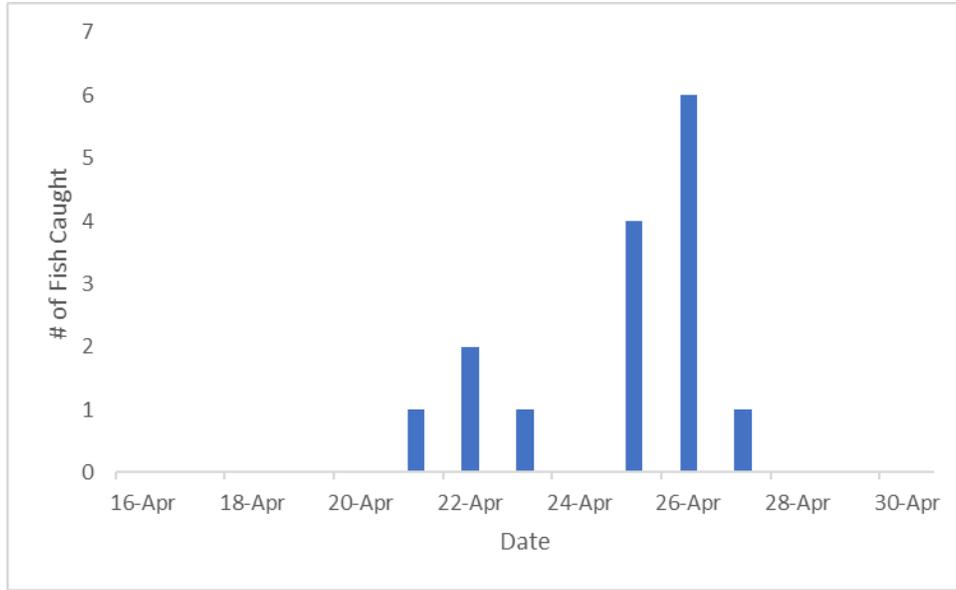


**Figure 53. Hourly Flows PWR vs. Spill (Dexter Dam)**

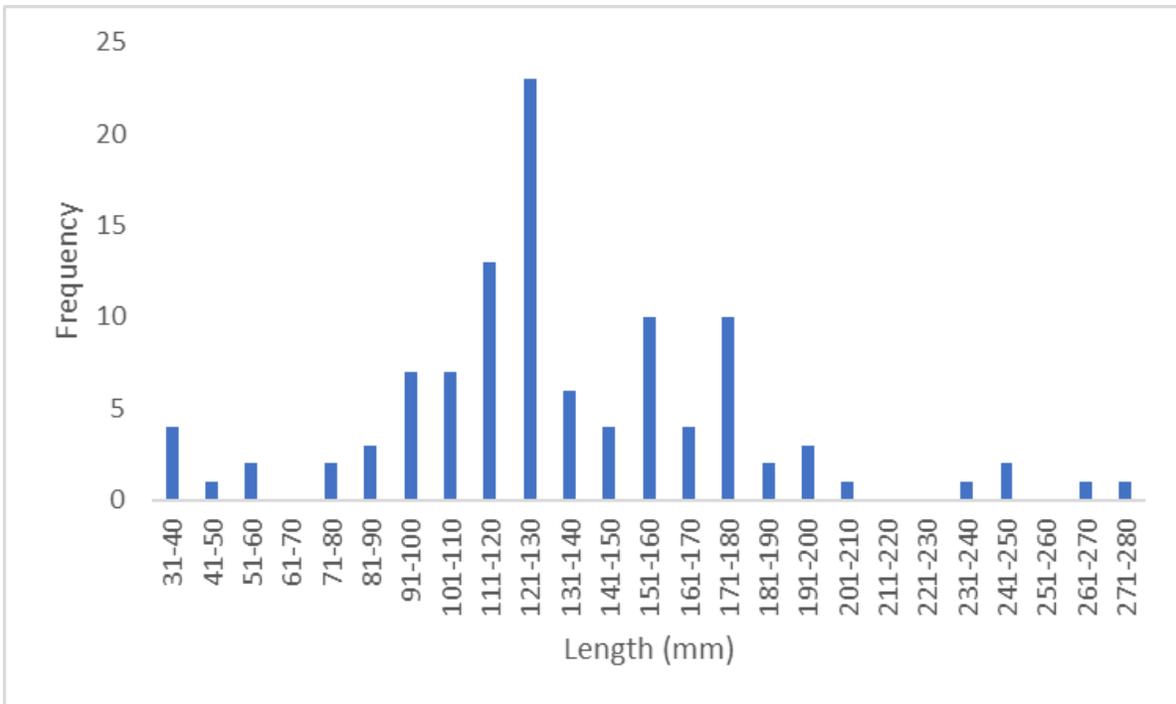
## Middle Fork Willamette – Lookout Dam Tailrace

### Target Species

The reporting period began April 16<sup>th</sup> and ended on April 30<sup>th</sup>. 15 Chinook salmon were captured during the 14-day sampling period (Figure 54). Dam operations moved to inflow which caused large woody debris to clog the traps. All three RSTs were raised to the non-sampling position on April 18<sup>th</sup>. The RSTs were lowered to the sampling position on April 20<sup>th</sup>. The traps were operated 85.7% of the reporting period. Table 36 provides life stage, length, and weight data for all Chinook salmon that have been caught at the Lookout Point Dam Tailrace site to-date and Figure 55 shows length frequency data to-date.



**Figure 54. Chinook Captured Per Day 04/16/2023 to 04/30/2023 (Lookout Point Dam Tailrace)**



**Figure 55. Length Frequency of Juvenile Chinook Sampled Season To-Date (Lookout Point Dam Tailrace)**

**Table 36. Descriptive Statistics of Target Species Captured at Lookout Point Dam Tailrace, Season To-Date and for the Reporting Period.**

To-Date (Since March 15, 2022)										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Lookout Point Dam	PH 1	CHS	Smolt	33	112	275	154.9	15.0	269.0	48.8
		CHS	Parr	4	84	107	94.8	3.8	10.5	7.3
		CHS	Fry	1	52	52	52.0	3.0	3.0	3.0
	PH 2	CHS	Smolt	11	95	250	133.6	8.4	194.6	133.6
		CHS	Parr	4	58	108	86.0	2.2	13.4	6.7
		CHS	Fry	4	33	37	34.8	N/A	N/A	N/A
	Spill	CHS	Smolt	42	94	247	144.2	7.6	161.4	38.4
		CHS	Parr	7	77	126	100.6	5.4	26.1	12.9
		CHS	Fry	1	44	44	44.0	N/A	N/A	N/A
April 16-30, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Lookout Point Dam	PH 1	CHS	Smolt	3	174	195	182	60.0	79.2	66.9
		CHS	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Fry	1	52	52	52.0	3.0	3.0	3.0
	PH 2	CHS	Smolt	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Fry	2	35	37	36.0	N/A	N/A	N/A
	Spill	CHS	Smolt	8	122	247	188.1	24.1	161.4	81.2
		CHS	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Fry	1	44	44	44.0	N/A	N/A	N/A

\*Some fry are too small to accurately weigh and are omitted from the above tables.

### 24-Hour Post Collection Holding Trial

13 Spring Chinook were captured during the current reporting period and held for 24 hours. 5 fish were held from the PWR RST and 8 fish were held from the Spill RST. 0 hold fish died from the PWR RSTs (0 from PH 1 and 0 from PH 2) (0.0%). 3 of the fish from Spill RST died during holding (37.5%).

### Trapping Efficiency

A total of 1,013 juvenile hatchery Chinook (parr) were bismarck brown dyed and adipose clipped, right ventral fin clipped and released on 04/13/2022 below Lookout Point Dam. Fish were released in small groups directly into powerhouse flow at 17:00 to 19:00. 2 fish were recaptured in the PH 1 RST for an

efficiency of 0.2%. 1 Lookout Point Dam trap efficiency fish was captured downstream in the Dexter RST on 4/15/2022.

Mt. Hood Environmental staff noted that fish appeared to be in good condition upon retrieval from the hatchery but did note some descaling and fin damage present as is common among hatchery fish of this age.

Lookout Dam	Release #	Recapture #	Capture Efficiency
Powerhouse	1,013	2	0.2% (2/1,013)

### Injuries and Copepod Infection

There were 9 Chinook captured in the Spill Channel RST. Partial descaling <20% was observed on 2 of 9 Chinook collected at the Spill RST (22.2%), and descaling >20% was observed on 6 of the Chinook collected (66.7%). 8 displayed body injuries (88.9%) and 0 had eye injuries (0.0%). 4 of the Spill RST Chinook had copepods present in the branchial cavity (44.4%) and 1 had copepods present on fins (11.1%). 5 of the fish captured in the Spill RST displayed Gas Bubble Disease (one level 1, three level 2, and one level 3) (55.6%).

There were 6 Chinook captured in the Powerhouse channel RSTs. Partial descaling <20% was observed on 1 of the 6 Chinook collected at the PWR RSTs (16.7%). Descaling >20% was observed on 3 of the Chinook collected (50.0%). 4 PWR RST fish had bodily injury (66.7%) and 0 had eye injuries (0.0%). 1 of the fish had copepods present in the branchial cavity (16.7%) and 0 had copepods present on fins (0.0%). 1 fish displayed Gas Bubble Disease (level 1) (16.7%).

There were 1 chinook mortality collected in the Spill RST (11.1%) and 1 in the PWR RSTs (16.7%). Injuries are displayed in Table 37. To date injury data can be found in Appendix A.

**Table 37. Number of Descaled, Bodily/Eye Injured, Copepod Infected and Dead Chinook Salmon for Sampling Period (Lookout Point Dam Tailrace).**

Site	Route	# CHS Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Lookout Point Dam Tailrace	PWR	6	1	3	4	0	1	0	1
	Spill	9	2	6	8	0	4	1	1

\*DSC=Descaled, COP=Copepods, B.C.=Branchial Cavity

### Collected DNA and Scale Samples

For the reporting period, scales and DNA were collected from 12 Spring Chinook. The other targets captured did not meet length criteria for DNA sampling.

## PIT Tags

No Spring Chinook were PIT tagged during this reporting period. The first 60 target fish per week are prioritized for the 24-Hour Post Collection Holding Study. These fish are not tagged to not bias the results of the holding study. More information regarding PIT tagged fish can be found in Appendix D.

## VIE Marking

No VIE marked Spring Chinook have been detected at this site to date.

## Non-Target Species

894 non-target species were captured during the reporting period; the data is summarized below in Table 38.

**Table 38. Summary of Non-target Species (Lookout Point Dam Tailrace).**

Species	PWR Capture	PWR Mortality	Spill Capture	Spill Mortality	Season Total	Season Total Mortality
Bass Unknown	0	0	0	0	0	0
Bluegill	7	1	2	1	56	11
Brown Bullhead	0	0	0	0	1	0
Chinook (clipped)	0	0	6	1	9	1
Crappie	763	527	86	55	153412	109137
Cutthroat Trout	0	0	0	0	0	0
Dace	0	0	0	0	0	0
Largemouth Bass	0	0	0	0	0	0
Largescale Sucker	1	0	0	0	3	1
Northern Pike minnow	0	0	0	0	2	1
<i>O. mykiss</i>	0	0	0	0	4	0
<i>O. mykiss</i> (clipped)	0	0	0	0	1	1
Pumpkinseed	0	0	0	0	1	0
Redside Shiner	0	0	0	0	0	0
Sculpin	7	0	8	3	91	6
Smallmouth Bass	1	0	13	12	72	69
Spotted Bass	0	0	0	0	1	0
Unknown	0	0	0	0	7	0
Walleye	0	0	0	0	24	5
<b>Totals</b>	<b>779</b>	<b>528</b>	<b>115</b>	<b>72</b>	<b>153684</b>	<b>109232</b>

## Stream Statistics

Basic stream statistics at Lookout Dam Tailrace site were calculated from data downloaded from the U.S. Geological Survey stream gauge number 14149010. Total dissolved gas saturation or dissolved oxygen concentration measurements are not available at this stream gauge site, or any nearby stream gauges.

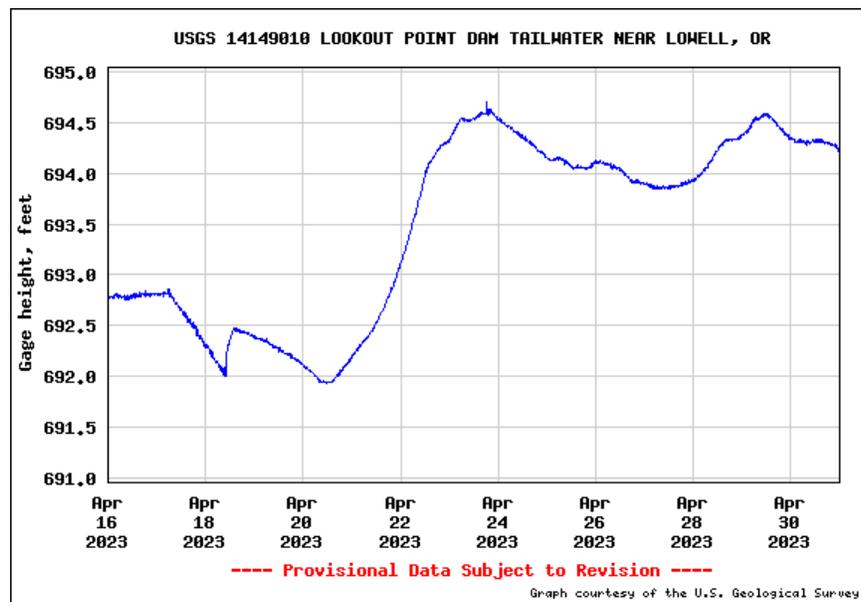
Gauge height (feet) is the only metric provided at this gauge. During the reporting period, daily maximum values for instantaneous gauge height ranged from 692.2 feet to 694.7 feet (mean: 693.7 feet). Figure 56 shows instantaneous gauge height.

Stream temperatures were recorded every two hours using temperature probes at the PWR and Spill Lookout Dam RST's during this reporting period. Temperature probes operated normally, and the data is shown below in (Figure 57 and Figure 58).

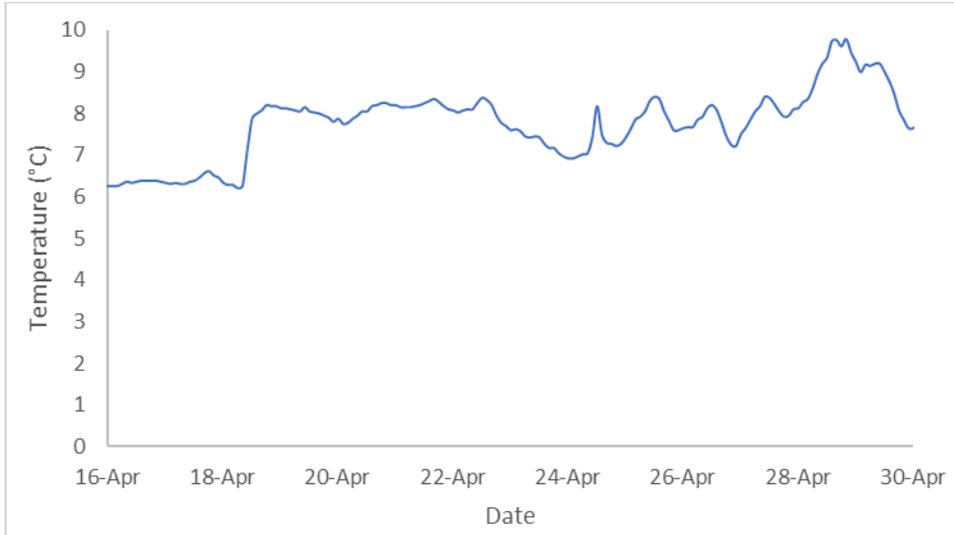
Flows through the Powerhouse and Spill during the reporting period averaged 0 and 4,120.1 cubic feet per second (cfs) respectively (Figure 59). Catch per unit of effort (CPUE) data are summarized in Table 39. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 39. Summary of Chinook CPUE at Lookout Point Dam Tailrace.**

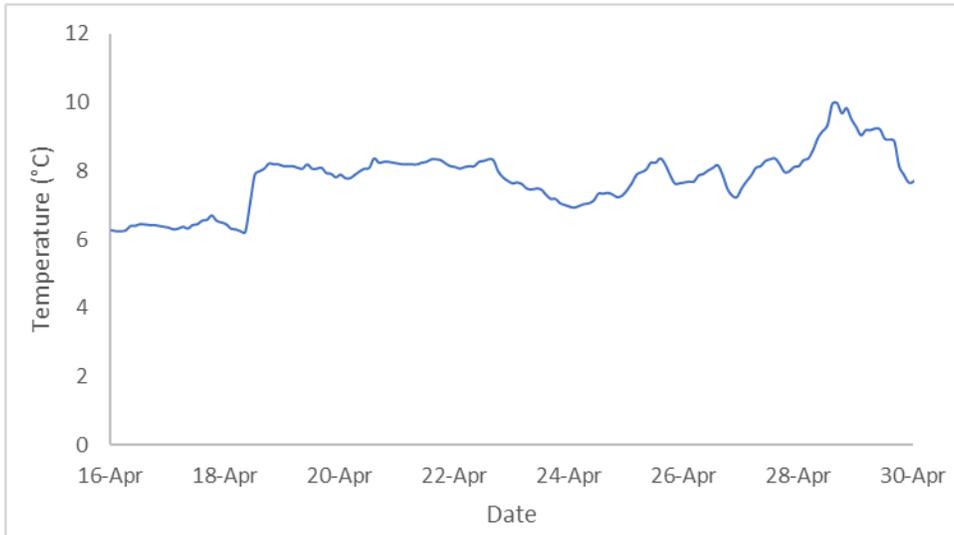
Description	Chinook		
	PH 1	PH 2	Spill
Catch	4	2	9
Effort (hrs)	309.8	309.6	279.9
CPUE (fish/hr)	0.013	0.006	0.032



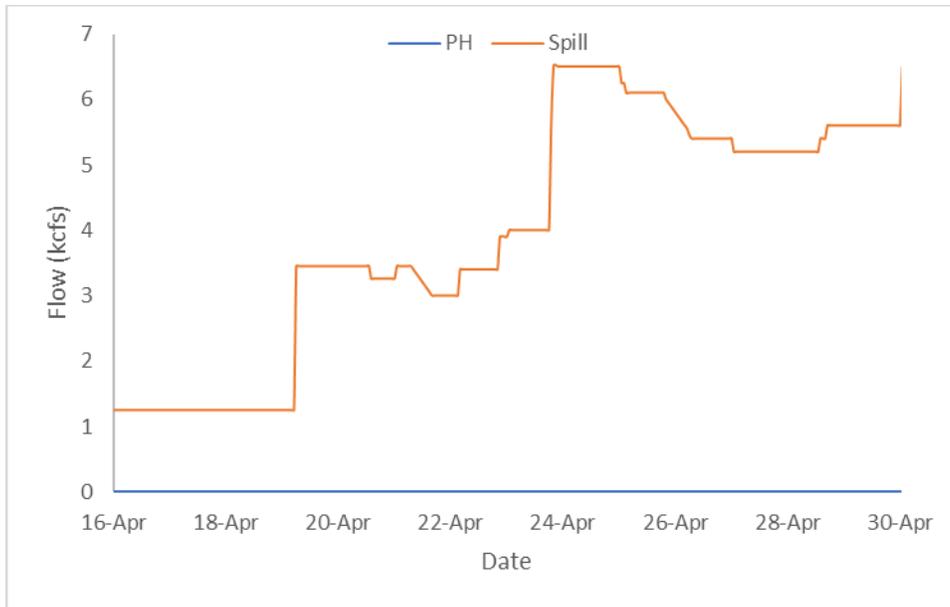
**Figure 56. Gauge Height (feet); below Lookout Dam**



**Figure 57. Temperature at RST (Lookout Dam PWR)**



**Figure 58. Temperature at RST (Lookout Dam Spill)**

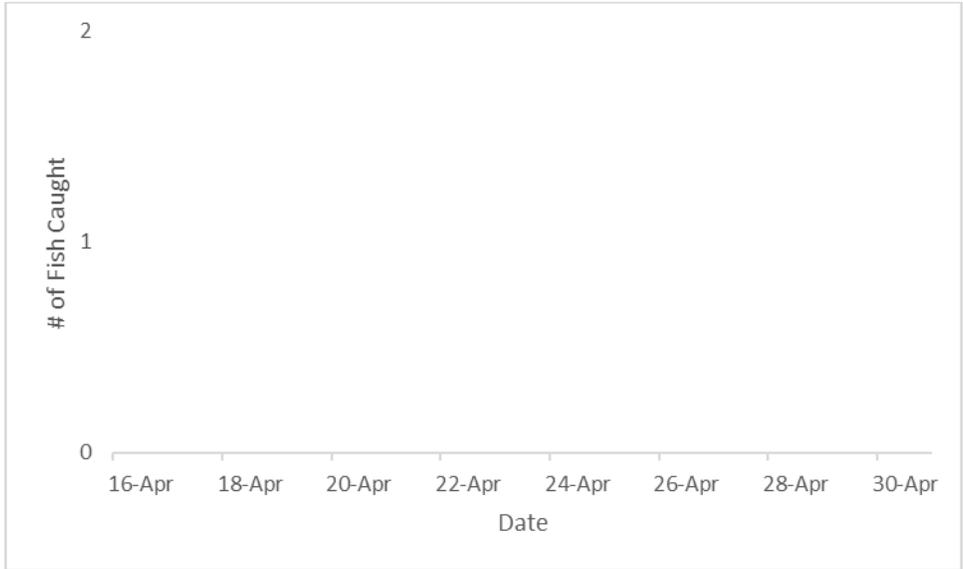


**Figure 59. Hourly Flows PWR vs. Spill (Lookout Dam Tailrace)**

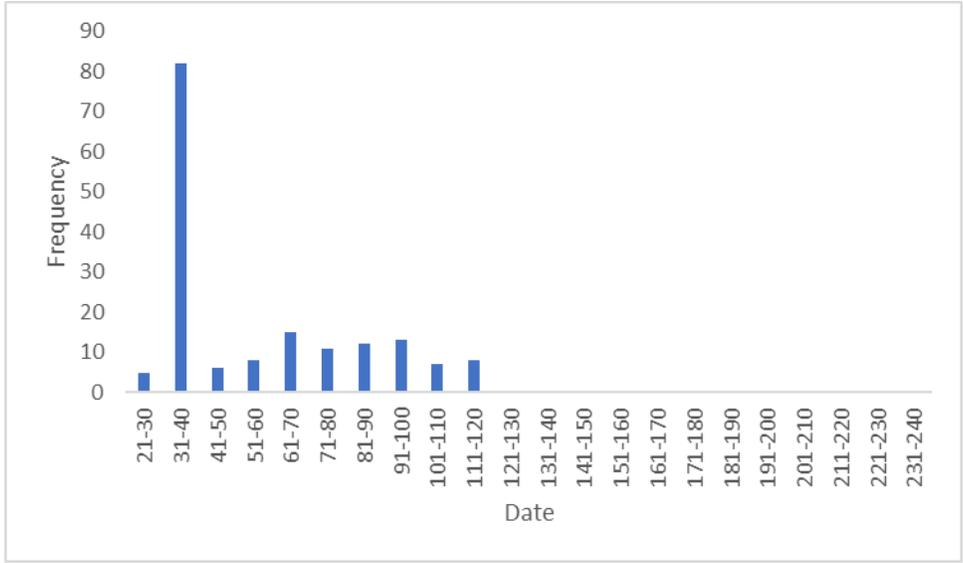
## Middle Fork Willamette – Lookout Point Head of Reservoir

### Target Species

The reporting period began April 16<sup>th</sup> and ended on April 30<sup>th</sup>. 0 Chinook salmon were captured during the 14-day sampling period (Figure 60). A security risk was determined after an incident with theft and confrontation with the railroad crew near the Lookout Point Head of Reservoir site. Our crew was escorted by an OSP Fish and Wildlife officer on 3/16/2023 to raise the 5 foot trap to the non-sampling position. We are waiting on a path forward for this site. The trap was operated 0.0% of the reporting period. Table 40 provides life stage, length, and weight data for all Chinook salmon that have been caught at the Middle Fork Willamette - Lookout Point Head of Reservoir site to-date and Figure 61 shows length frequency data to-date.



**Figure 60. Chinook Captured Per Day 04/16/2023 to 04/30/2023 (Lookout Point Head of Reservoir)**



**Figure 61. Length Frequency of Juvenile Chinook Sampled Season To-Date (Lookout Point Head of Reservoir)**

**Table 40. Descriptive Statistics of Target Species Captured at Lookout Point Head of Reservoir, Season To-Date and for the Reporting Period.**

To-Date										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Lookout Point Head of Reservoir	5 ft	CHS	Smolt	9	94	118	105.8	7.7	18.2	13.8
		CHS	Parr	64	59	119	81.8	1.0	19.8	6.4
		CHS	Fry	95	28	69	35.7	N/A	N/A	N/A
April 16-30, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Lookout Point Head of Reservoir	5 ft	CHS	Smolt	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Fry	0	N/A	N/A	N/A	N/A	N/A	N/A

\*Some fry are too small to accurately weigh and are omitted from the above tables.

### Trapping Efficiency

A total of 513 juvenile hatchery Chinook (sub-yearlings) were bismarck brown dyed and adipose clipped and released on 01/13/2023 above the Lookout Point Head of Reservoir trap. Fish were released in small groups to evaluate the traps' efficiency capturing fish migrating downstream. 10 fish were recaptured in the 5-ft RST for an efficiency of 1.9%.

Lookout Point Head of Reservoir	Release #	Recapture #	Capture Efficiency
01/13/2022	513	10	1.9% (10/513)

### Injuries and Copepod Infection

There were 0 Chinook captured during this reporting period. 0 had partial descaling <20% (0.0%) and 0 had descaling >20% (0.0%). 0 had body injuries (0.0%) and 0 fish displayed eye injuries (0.0%). There were 0 mortalities (0.0%). Injury data for the reporting period is shown in Table 41. To date data can be found in Appendix A.

**Table 41. Number of Descaled, Bodily/Eye Injured, Copepod Infected and Dead Chinook Salmon for Sampling Period (Lookout Point Head of Reservoir).**

Site	# CHS Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Lookout Point Head of Reservoir	0	0	0	0	0	0	0	0

\*DSC=Descaled, COP=Copepods, B.C.=Branchial Cavity

### Collected DNA and Scale Samples

Scales and DNA were collected from 0 Chinook captured for the reporting period. The other targets were below the sampling threshold.

### PIT Tags

0 Spring Chinook was PIT tagged during this reporting period. Refer to Appendix D for further information regarding PIT tags during this reporting period.

### VIE Marking

Visual Implant Elastomer (VIE) trials commenced at the Lookout Point Head of Reservoir site on 6/25/2022. VIE tag color and locations are changed every month to distinctly mark groups of fish by capture date. Since then, 17 Chinook have been VIE marked with fluorescent elastomer. No fish with VIE marks have been detected at downstream RST sites to date. Fish still showing an egg sac are not VIE marked.

Date Tagged	Tag Location	VIE Color	# Tagged	# Recaptured to Date
6/25/2022-7/15/2022	Left Dorsal	Yellow	3	0
7/16/2022-7/31/2022	Left Dorsal	Red	1	0
1/1/2023-1/31/2023	Left Dorsal	Blue	7	0
2/1/2023-2/15/2023	Right Dorsal	Yellow	2	0
2/16/2023-2/28/2023	Right Dorsal	Yellow	1	0
3/1/2023-3/15/2023	Right Dorsal	Red	3	0

### Non-Target Species

0 non-target species were captured during the reporting period; the data is summarized below in Table 42.

**Table 42. Summary of Non-target Species (Lookout Point Head of Reservoir).**

<b>Species</b>	<b>5ft Capture</b>	<b>5ft Mortality</b>	<b>Season Total</b>	<b>Season Total Mortality</b>
Bass Unknown	0	0	0	0
Bluegill	0	0	0	0
Chinook (clipped)	0	0	0	0
Crappie	0	0	2	2
Cutthroat Trout	0	0	4	0
Dace	0	0	4	0
Lamprey	0	0	0	0
Largescale Sucker	0	0	2	0
Mountain Whitefish	0	0	0	0
Northern Pikeminnow	0	0	0	0
<i>O. mykiss</i>	0	0	9	0
<i>O. mykiss</i> (clipped)	0	0	0	0
Peamouth	0	0	0	0
Pumpkinseed	0	0	0	0
Redside Shiner	0	0	1	0
Sculpin	0	0	2	0
Spotted Bass	0	0	0	0
Smallmouth Bass	0	0	0	0
Unknown	0	0	0	0
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>24</b>	<b>2</b>

### **Stream Statistics**

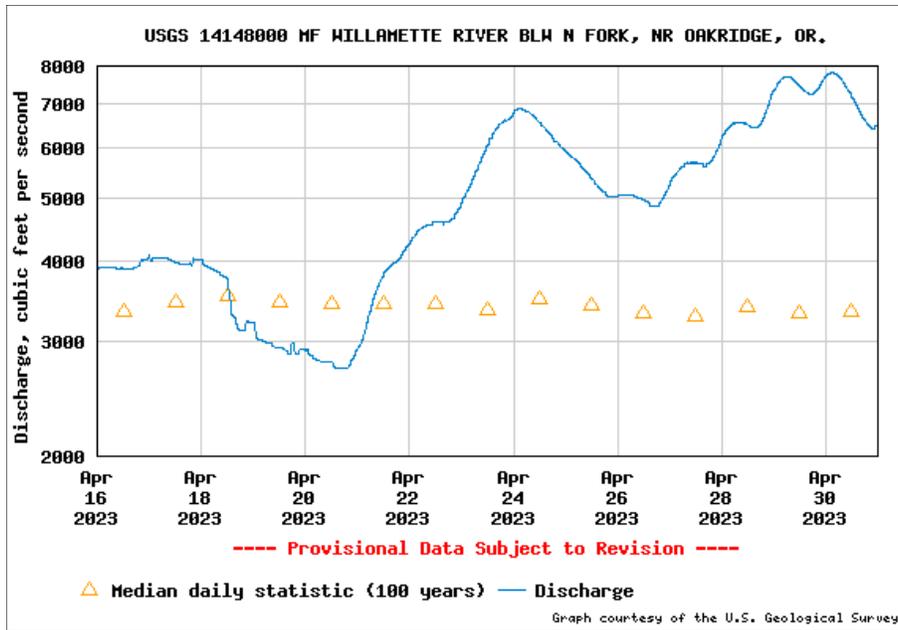
Basic stream statistics for the Lookout Point Head of Reservoir RST site were calculated from data downloaded from the U.S. Geological Survey stream gauge number 14148000. During the reporting period, daily maximum values for instantaneous discharge ranged from 2,920.0 cfs to 7,820.0 cfs (mean: 5,424.7 cfs). Figure 62 shows instantaneous discharge.

Stream temperatures were recorded every two hours using a temperature probe at the Lookout Point Head of Reservoir RST site during this reporting period. Due to extenuating safety circumstances, the temperature probe data was not available for this report. Data from USGS gage 14145500 was used to supplement the temperature data for the reporting period (Figure 63).

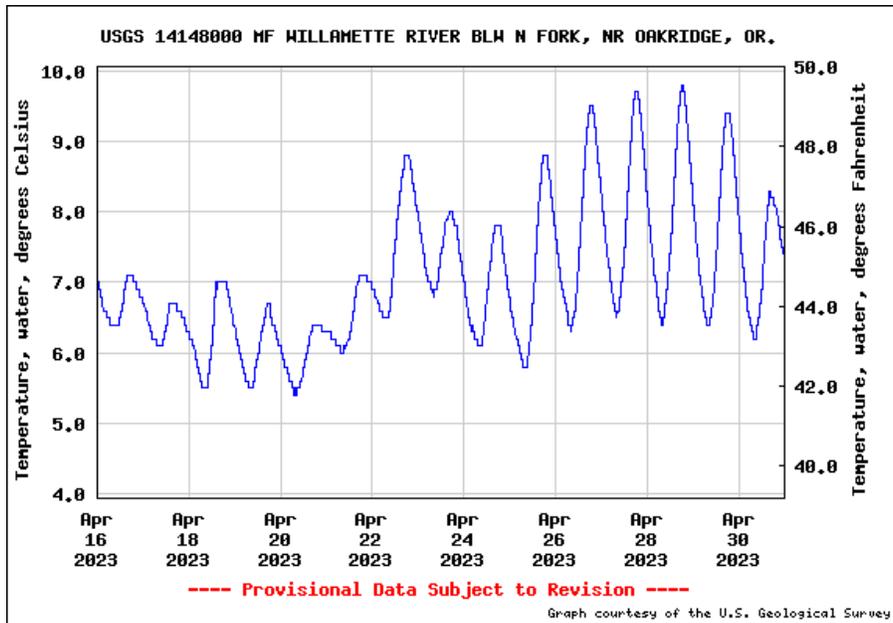
Flows into Lookout Point Reservoir averaged 4,852.7 cfs (Figure 64). Catch per unit of effort (CPUE) data are summarized in Table 43. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 43. Summary of Chinook CPUE at Lookout Point Head of Reservoir.**

	<b>Chinook</b>
<b>Description</b>	<b>5 ft</b>
Catch	0
Effort (hrs)	0
CPUE (fish/hr)	0

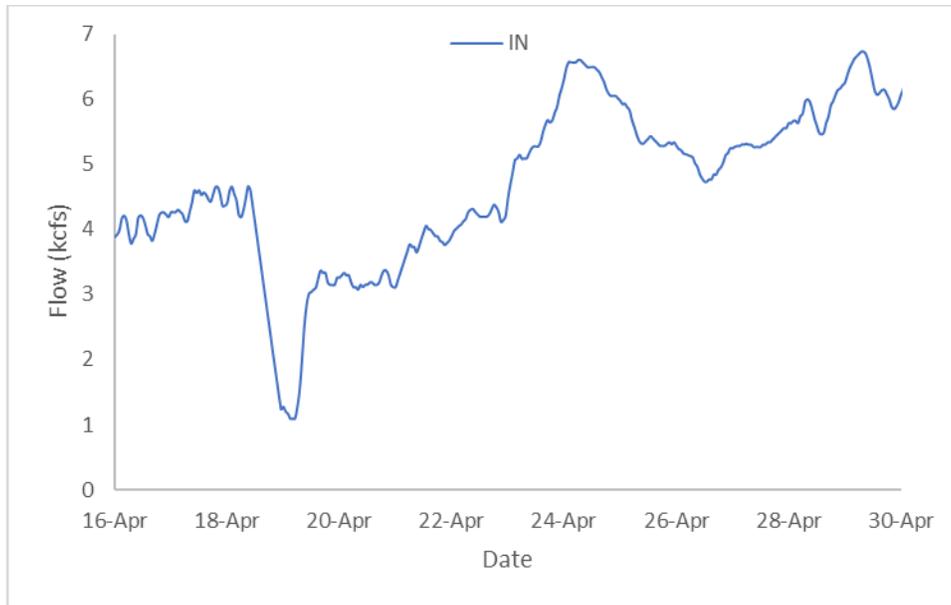


**Figure 62. Discharge (cfs); above Lookout Point Reservoir, Below Oakridge, OR**



**Figure 63. Temperature at RST (Lookout Point Head of Reservoir)**

Note: Data from USGS stream gage 14148000 was used to supplement the temperature data for the reporting period.

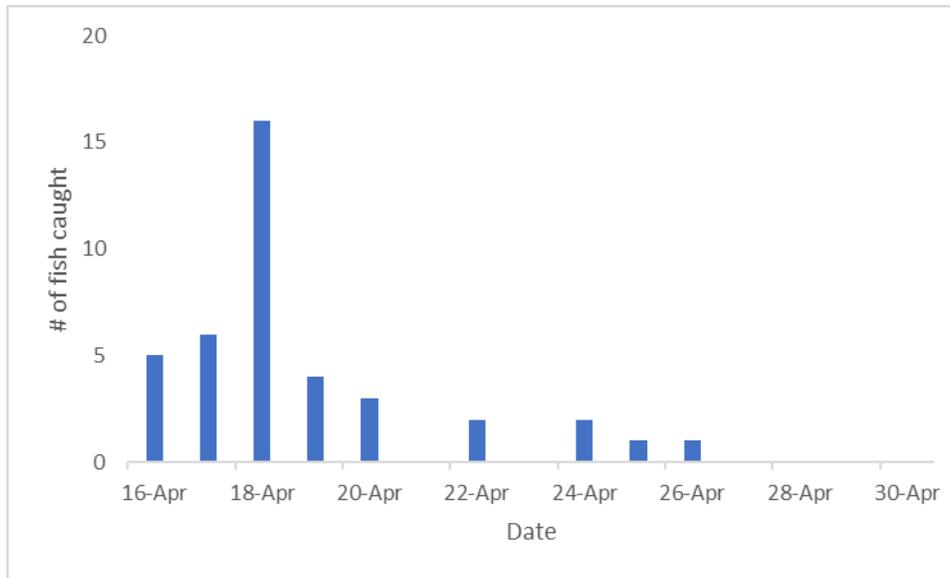


**Figure 64. Hourly Flows (Lookout Point Head of Reservoir site)**

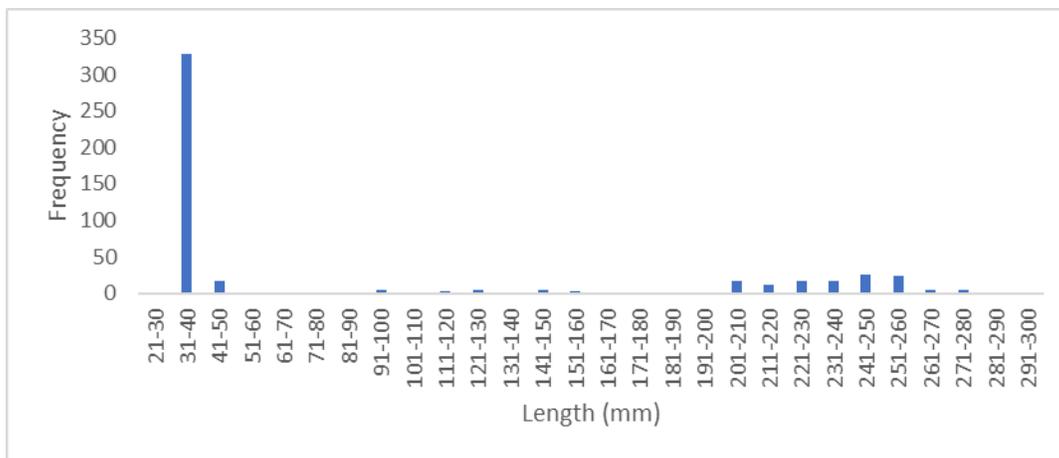
## **Middle Fork Willamette – Hills Creek Dam**

### **Target Species**

This reporting period began on April 16<sup>th</sup> and ended on April 30<sup>th</sup>. There were 40 Chinook salmon (CHS) captured during the 14-day sampling period (Figure 65). Sampling durations were 100% for both the RO RST and Powerhouse RST. Table 44 provides life stage, length, and weight data for all Chinook salmon that have been caught at the Hills Creek Dam site to-date and Figure 66 shows length frequency data to-date.



**Figure 65. Chinook Captured Per Day 04/16/2023 to 04/30/2023 (Hills Creek Dam)**



\*Figure does not include fish without heads or fish used for trapping efficiency

**Figure 66. Length Frequency of Juvenile Chinook Sampled Season To-Date (Hills Creek Dam)**

### Trapping Efficiency

A total of 482 juvenile Chinook (parr) were dyed, clipped and released on 02/25/2023 below Hills Creek RO to evaluate the efficiency of the screw trap. A total of 4 fish were recaptured in the 5 ft RO trap.

Hills Creek Dam (02/25/2023)	Release #	Recapture #	Capture Efficiency
RO Trap	482	4	0.83% (4/482)

**Table 44. Descriptive Statistics of Target Species Captured at Hills Creek Dam Season To-Date and for the Reporting Period.**

To-Date										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Hills Creek	RO	CHS	Fry	126	31	55	35.6	N/A	N/A	N/A
		CHS	Parr	6	90.0	141.0	110.7	7.4	23.4	13.3
		CHS	Smolt	86	137.0	275.0	233.9	27.4	196.3	145.2
Hills Creek	PWR	CHS	Fry	220	31	48	36.1	N/A	N/A	N/A
		CHS	Parr	7	69.0	127.0	98.1	3.7	24.5	11.2
		CHS	Smolt	56	122.0	285.0	225.9	19.6	245.5	136.3

\*Fish that were missing heads are not included in length and weight calculations.

April 16-30, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Hills Creek	RO	CHS	Fry	8	34	39	35.8	N/A	N/A	N/A
		CHS	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Smolt	0	N/A	N/A	N/A	N/A	N/A	N/A
Hills Creek	PWR	CHS	Fry	32	33	47	36.5	N/A	N/A	N/A
		CHS	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Smolt	0	N/A	N/A	N/A	N/A	N/A	N/A

### 24-Hour Post Collection Holding Trial

38 Chinook captured in the RSTs were held during this reporting period. 31 fish were held from the PWR RST and 7 fish were held from the RO RST. 0 hold fish died from the PWR RST (0.0%). 0 of the fish from RO RST died during holding (0.0%).

### Injuries and Copepod Infection

There were 8 Chinook captured in the RO RST. Partial descaling <20% was observed on 0 of 8 Chinook collected at the RO RST (0.0%), and descaling >20% was observed on 0 of the Chinook collected (0.0%). 1 displayed body injuries (12.5%) and 0 had eye injuries (0.0%). 0 of the RO RST Chinook had copepods present in the branchial cavity (0.0%) and 0 had copepods present on fins (0.0%). There was 1 mortality (12.5%). 0 of the fish captured in the RO RST displayed Gas Bubble Disease (0.0%).

There were 32 Chinook captured in the Powerhouse channel RST. Partial descaling <20% was observed on 1 of the 32 Chinook collected at the PWR RSTs (3.1%). Descaling >20% was observed on 0 of the Chinook collected (0.0%). 2 PWR RST fish had bodily injury (6.3%) and 1 had eye injuries (3.1%). 0 of the fish had copepods present in the branchial cavity (0.0%) and 0 had copepods present on fins (0.0%).

0 fish displayed Gas Bubble Disease (0.0%). There was 1 chinook mortalities collected in the PWR RST (3.1%).

Injuries are displayed in Table 45. To date injury data can be found in Appendix A.

**Table 45. Number of Descaled, Bodily/Eye Injured, Copepod Infected and Dead Chinook Salmon for Sampling Period. (Hills Creek Dam).**

Site	Route	# CHS Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Hills Creek	RO	8	0	0	1	0	0	0	1
Hills Creek	PWR	32	1	0	2	1	0	0	1

\*DSC=Descaled, COP=Copepods, B.C.=Branchial Cavity

### Collected DNA and Scale Samples

For the reporting period, scales and DNA were collected from 0 Spring Chinook. The other targets captured did not meet length criteria for DNA sampling or did not have a body.

### PIT Tags

0 Spring Chinook were PIT tagged during this reporting period. The first 60 target fish per week are prioritized for the 24-Hour Post Collection Holding Study. These fish are not tagged to not bias the results of the holding study. More information regarding PIT tagged fish can be found in Appendix D.

### VIE Marking

VIE tag color and locations are changed every month to distinctly mark groups of fish by capture date. The first 60 target fish per week are prioritized for the 24-Hour Post Collection Holding Study. These fish are not tagged to not bias the results of the holding study. 39 Chinook have been VIE marked with fluorescent elastomer. More information regarding VIE marked fish can be found in Appendix D.

Fish still showing an egg sac are not VIE marked.

Date Tagged	Tag Location	VIE Color	# Tagged	# Recaptured to Date
3/16/2023-3/31/2023	Head	Red	39	0

### Non-Target Species

201 non-target fish were captured at Hills Creek during the reporting period; the data is summarized below in Table 46.

**Table 46. Summary of Non-target Species (Hills Creek Dam).**

Species	RO Capture	RO Mortality	PWR Capture	PWR Mortality	Season Total	Season Total Mortality
Bass Unknown	0	0	0	0	5	1
Bluegill	23	13	29	12	141	58
Brook Lamprey	0	0	0	0	0	0
Brown Bullhead	0	0	0	0	3	0
Crappie	50	37	19	10	364	210
Dace	2	2	6	0	8	1
Redside Shiner	0	0	0	0	1	1
Sculpin	12	0	42	0	12	0
Largemouth Bass	0	0	0	0	7	23
Spotted Bass	1	1	0	0	92	46
Smallmouth Bass	0	0	0	0	1	1
Largescale Sucker	4	2	11	1	14	3
<i>O. mykiss</i>	0	0	2	1	56	20
<i>O. mykiss (clipped)</i>	0	0	0	0	12	45
Unknown	0	0	0	0	1	1
<b>Totals</b>	<b>92</b>	<b>55</b>	<b>109</b>	<b>24</b>	<b>916</b>	<b>429</b>

## Stream Statistics

Basic stream statistics at the Hills Creek site were calculated from data downloaded from the U.S. Geological Survey stream gauge numbers 14145110 and 14145500. Gauge height (feet) is the only metric provided at this gauge. Total dissolved gas saturation data was received from gauge 14145500, 1.4 rkms downstream of the trap. During the reporting period, daily maximum values for instantaneous gauge height ranged from 1,223.8 feet to 1,225.1 feet (mean: 1,224.2 feet). Figure 67 shows instantaneous gauge height.

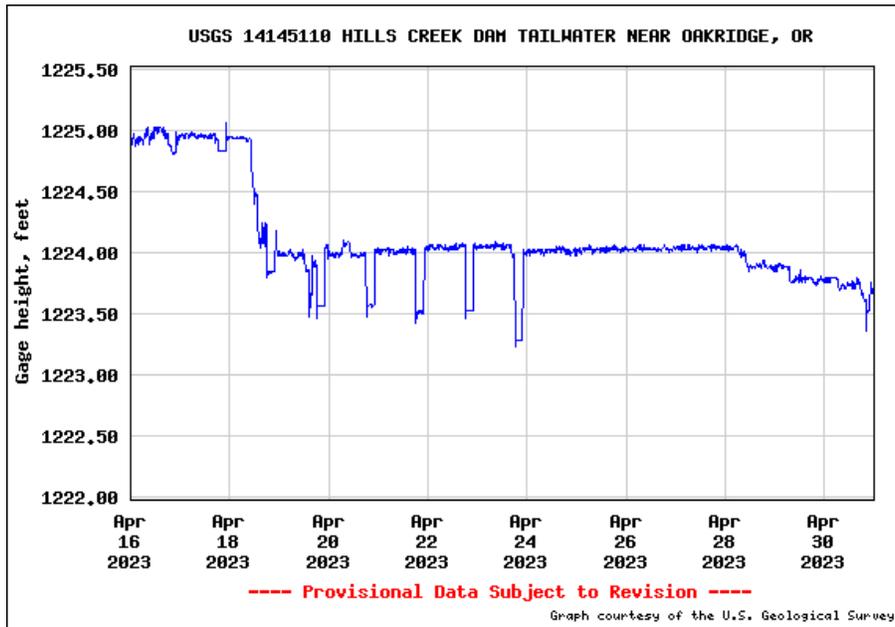
Total dissolved gas saturation ranged from 100 to 107% (mean: 102.6%) during the reporting period. Figure 68 shows total dissolved gas saturation.

Stream temperatures were recorded every two hours using temperature probes at the Hills Creek Dam RST's during this reporting period (Figure 69 and 70).

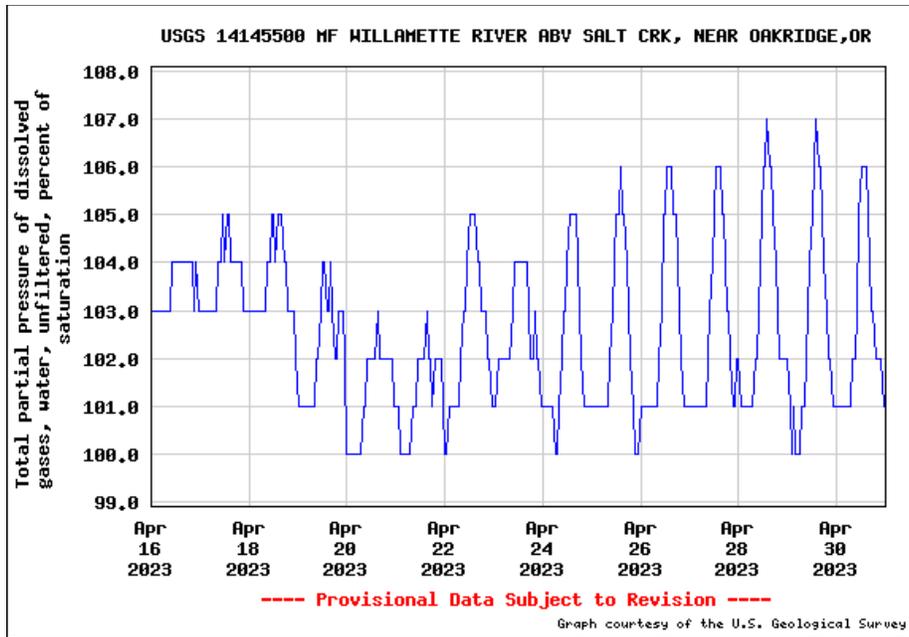
Flows through the PWR and RO during the reporting period averaged 506.4 and 127.7 cfs respectively (Figure 71). Catch per unit of effort (CPUE) data are summarized in Table 47. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 47. Summary of Chinook CPUE, Hills Creek Dam.**

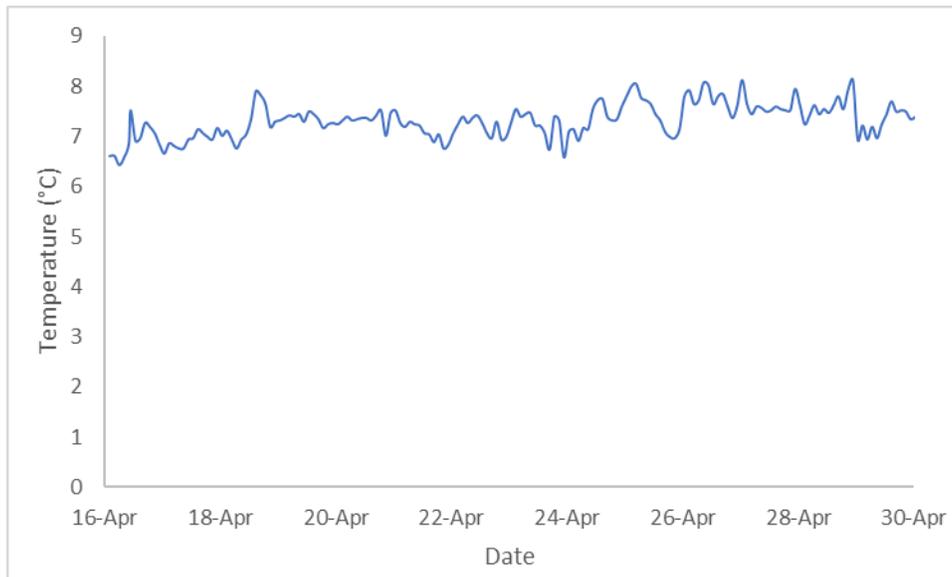
Description	Chinook	
	RO (5ft)	PWR (8ft)
Catch	8	32
Effort (hrs)	360.3	361.2
CPUE (fish/hr)	0.022	0.089



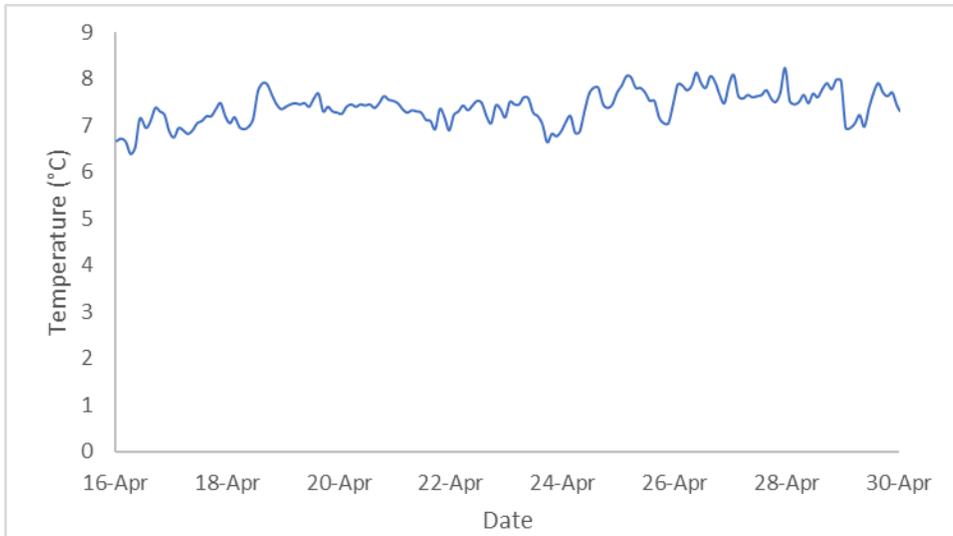
**Figure 67. Gauge Height (feet); below Hills Creek Dam PWR - Middle Fork Willamette River**



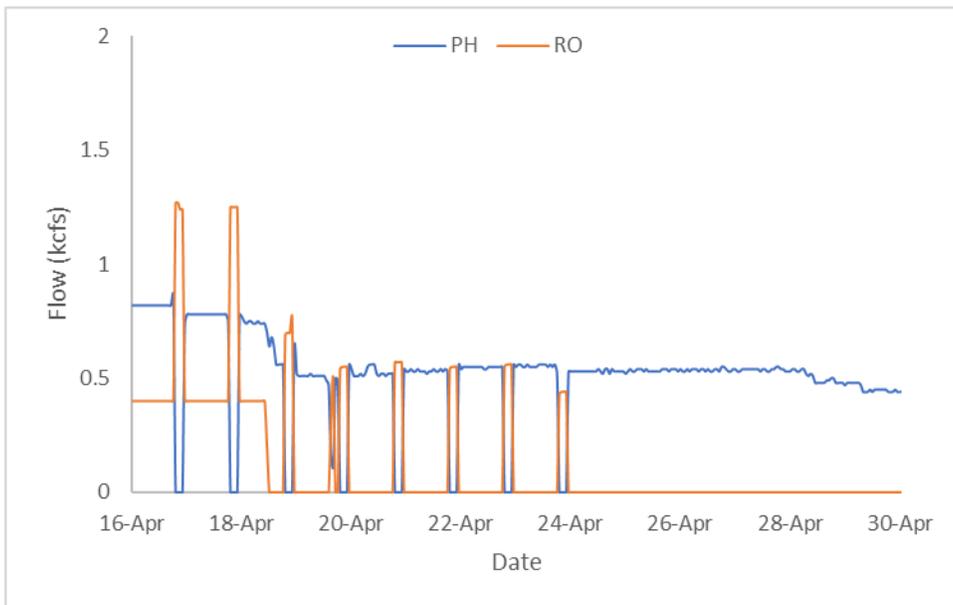
**Figure 68. Total Dissolved Gas Saturation (%); below Hills Creek Dam – Middle Fork Willamette River**



**Figure 69. Temperature at Hills Creek RST PWR (Hills Creek Dam)**



**Figure 70. Temperature at Hills Creek RO RST (Hills Creek Dam)**



**Figure 71. Hourly Flows PWR vs. RO (Hills Creek Dam)**

### Issues Encountered

The Lookout Point Head of Reservoir trap remains raised as we work on a safe path forward.

### Upcoming USACE Support Services

None at this time.

# Appendix A

## Chinook (CHS) To Date

Chinook Injuries to-date																							
p/Life Stage	Total Fish	MUNK	DS<2	BLO	EYB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD
Big Cliff Dam																							
8 ft	1417		830	11	95	7	1	1011	293	4	703	5	12	5	43	8	88	46	169	82	86	18	57
Adult	1		1								1						1	1	1		1		
Parr	34		11	1	4	2		18	3		11					2			1			1	
Smolt	1257		813	10	89	5		993	289	4	688	5	12	3	42	6	84	44	166	79	85	14	55
Unknown	2													2								1	
Fry	123		5		2		1		1		3				1		3	1	1	3		2	2
Green Peter Tail.																							
8 ft	8		1	1				1			4						2		2				2
Parr	2										2								1				2
Fry	6		1	1				1			2						2		1				
Foster Dam HOR																							
5 ft	690		68		3			2	5		56		1	1	3		5	12	4	15	1		6
Parr	51		34					2			14				1				1				
Smolt	43		31								22						1			2			
Fry	596		3		3				5		20		1	1	2		4	12	3	13	1		6
Cougar Dam																							
RO	2534	10	2093	41	360	41	3	2818	888	4	2131	3	8	2	##	41	202	##	418	124	318	30	805
Parr	249		135	5	39	3		154	67		141				9	2	10	6	18	17	7	5	37
Smolt	2256		1424	29	281	34	3	2074	695	4	1665	3	3		80	37	159	87	343	84	244	21	762
Fry	29				3				1		1						1		1	2	1		
PH	1216	10	534	7	37	4		590	125		324		5	2	36	2	32	32	56	21	66	4	6
Parr	270		151		11	1		107	25		71		1		5		3	6	11	6	5		
Smolt	559		381	7	20	3		483	93		248		4		30	2	26	19	41	12	61	1	6
Unknown	2														2								
Fry	385	10	2		6				7		5				1		3	7	4	3		3	
Cougar Dam HOR																							
5 ft	1542	6	122		5	1		14	23	4	94	2	1				16	25	23	32	2		17
Parr	206		108			1		14	6	2	56						1	6	1	1	1		
Smolt	8		3								2												
Fry	1328	6	11		5				17	2	36	2	1				15	19	22	31	1		17
Fall Creek Dam Tail.																							
8 ft	62		4		2				1		5				1		2	1	2	3			2
Parr	7		1		1						1				1			1	1	1			2
Smolt	1								1		1							1					
Fry	54		3		1						3							1	1	2			
Fall Creek HOR																							
8 ft	147		4	1				2	2		3	1					1	3		2			1
Parr	2		2					1			1												
Smolt	5		1					1															
Fry	140		1	1					2		2	1						1	3		2		1
Dexter Dam Tail.																							
5 ft	101		62		6			12	23		48				1		3	4	6	6	5		21
Parr	19		7		3			2	6		9							2	3	2			6
Smolt	79		55		3			10	17		38				1		3	2	3	4	5		15
Fry	3										1												

### Chinook (CHS) To Date - Continued

		Chinook Injuries to-date (Cont.)																					
p/Life Stage	Total Fish	MUNK	DS<2	BLO	EYB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD
Lookout Dam Tail.	107		52	1	17	1		24	38		65				3	2	12	5	17	14	15		15
PH 1	38		16	1	8			10	16		26				3	2	7	1	8	5	3		4
Parr	4		1		1				2		2					1	1		1				
Smolt	33		15	1	7			10	14		24				3	1	6	1	7	5	3		4
Fry	1																						
PH 2	19		12		4			3	4		12						2	3	2	5	2		
Parr	4		4		3				1		4						1	1	1	3			
Smolt	11		8		1			3	2		8						1		1	1	1		
Fry	4								1									2			1	1	
Spill	50		24		5	1		11	18		27						3	1	7	4	10		11
Parr	7		2						3		2												
Smolt	42		22		5	1		11	15		25						3	1	7	4	10		11
Fry	1																						
Lookout Point HOR	156		40		3			2	2		19						2	1	2				
5 ft	156		40		3			2	2		19						2	1	2				
Parr	64		32					1			10						1		1				
Smolt	9		7					1			5												
Fry	83		1		3				2		4						1	1	1				
Hills Creek Dam	501	2	80	1	26			128	68		81	1	12	3	53	8	26	11	30	16	16	7	20
RO	218	2	48		9			77	37		43		7		29	6	12	2	18	9	7	4	8
Parr	6		1					1									1						
Smolt	86	1	45		8			76	37		41		7		29	6	8	2	16	6	6	2	8
Fry	126	1	2		1						2						3		2	3	1	2	
PH	283		32	1	17			51	31		38	1	5	3	24	2	14	9	12	7	9	3	12
Parr	7		4					1	1							1				1			
Smolt	56		23	1	13			50	30		33	1	5	3	19	1	8	4	8	4	9		12
Fry	220		5		4						5				5		6	5	4	2		3	

### Chinook (CHS) During Reporting Period

Chinook Injuries During Reporting Period (04-16-2023 to 04-30-2023)																							
Site/Trap/Life Stage	Total Fish	MUNK	DS>2	BLO	EVB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD
Big Cliff Dam	3		3					2			2							1					2
8 ft	3		3					2			2							1					2
Parr	1		1								1												
Smolt	2		2					2			1							1					2
Green Peter Tail.	4										2									1			2
8 ft	4										2									1			2
Fry	2																						
Parr	2										2									1			2
Foster Dam HOR	21		1																		1		
5 ft	21		1																		1		
Fry	21		1																		1		
Cougar Dam	336		215	4	49	8		281	99		290				19	7	28	32	65	7	49	7	184
PH 1	6			1	4			2	4		2				2		4		2		2		1
Fry	3				2				1								1		1				
Smolt	3			1	2			2	3		2				2		3		1		2		1
RO	330		215	3	45	8		279	95		288				17	7	24	32	63	7	47	7	183
Fry	4																					1	
Parr	24		13		5			14	10		19				2		1	3	3	2	1	2	12
Smolt	302		202	3	40	8		265	85		269				15	7	23	29	60	5	45	5	171
Cougar Dam HOR	579	1	9		5			17	1	25	2	1					10	19	13	20	1	16	
5 ft	579	1	9		5			17	1	25	2	1					10	19	13	20	1	16	
Fry	579	1	9		5			17	1	25	2	1					10	19	13	20	1	16	
Fall Creek Dam Tail.	7										1									1			1
8 ft	7										1									1			1
Fry	4										1									1			
Parr	3																						1
Lookout Dam Tail.	15		3					6	9		11						2	2	2	4	6		6
PH 1	4		1					1	2		3						1			2	1		1
Fry	1																						
Smolt	3		1					1	2		3						1			2	1		1
PH 2	2								1									1		1			
Fry	2								1									1		1			
Spill	9		2					5	6		8						1	1	2	1	5		5
Fry	1																						
Smolt	8		2					5	6		8						1	1	2	1	5		5
Hills Creek Dam	40		1		1						2						1	1	1	1			
PH	32		1		1						1							1					
Fry	32		1		1						1							1					
RO	8										1						1		1	1			
Fry	8										1						1		1	1			

### Steelhead (O. mykiss) To Date

O. mykiss Injuries to-Date																							
p/Life Stage	Total Fish	MUNK	DS>2	BLO	EYB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD
Big Cliff Dam	120	1	42	4	3	4		34	11		48		1		2		11	6	12	11	4	1	8
8 ft	120	1	42	4	3	4		34	11		48		1		2		11	6	12	11	4	1	8
Adult	1								1		1		1										
Parr	46	1	11	4	1	1					15						2	1	1	1	1		1
Smolt	42		27		2	3		34	10		30				2		7	4	11	10	3	1	6
Fry	31		4								2						2	1					1
Green Peter Tail.	9		5		1			1	2		6						4		1	1			7
8 ft	9		5		1			1	2		6						4		1	1			7
Adult	1		1								1												1
Smolt	7		4		1			1	2		5						4		1	1			6
Fry	1																						
Foster Dam HOR	238		75		1	3		2	2	71							3	2	3	3	1	1	
5 ft	238		75		1	3		2	2	71							3	2	3	3	1	1	
Adult	7		1								2												
Parr	114		34		1	2		1			40						3		2		1	1	
Smolt	81		40			1		1	2	28								1	1	2			
Fry	36										1							1		1			

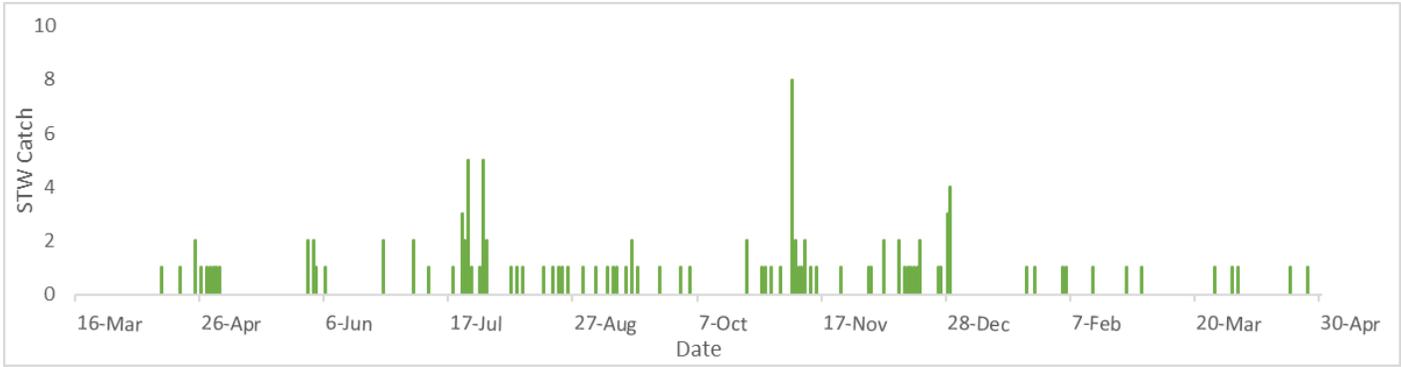
### Steelhead (O. mykiss) During Reporting Period

O. mykiss Injuries During Reporting Period (04-16-2023 to 04-30-2023)																							
Site/Trap/Life Stage	Total Fish	MUNK	DS>2	BLO	EYB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD
Big Cliff Dam	2		1					2	1		2						1	1					
8 ft	2		1					2	1		2						1	1					
Smolt	2		1					2	1		2						1	1					
Foster Dam HOR	3		2			1					2												
5 ft	3		2			1					2												
Parr	2		1								2												
Smolt	1		1			1																	
Green Peter Tail.	1		1								1												1
8 ft	1		1								1												1
Smolt	1		1								1												1

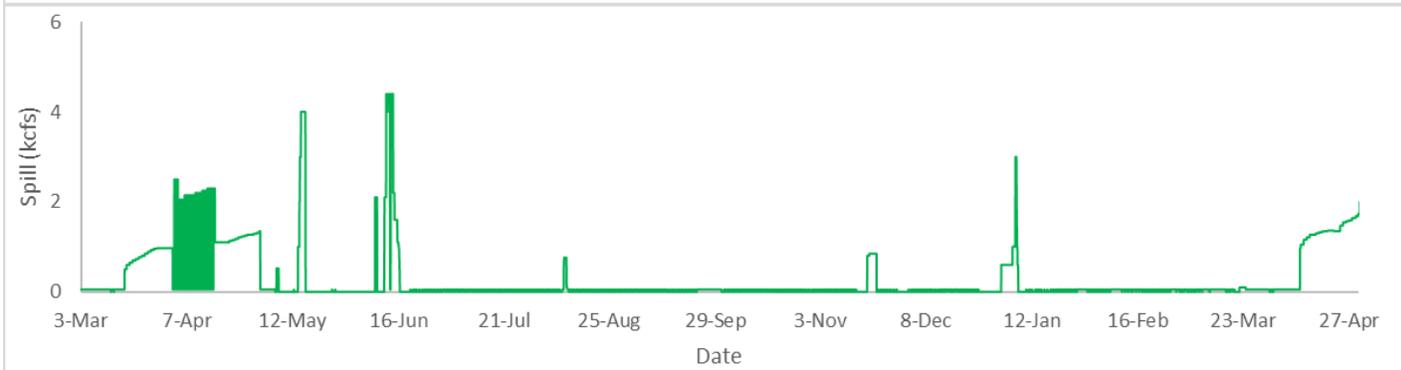
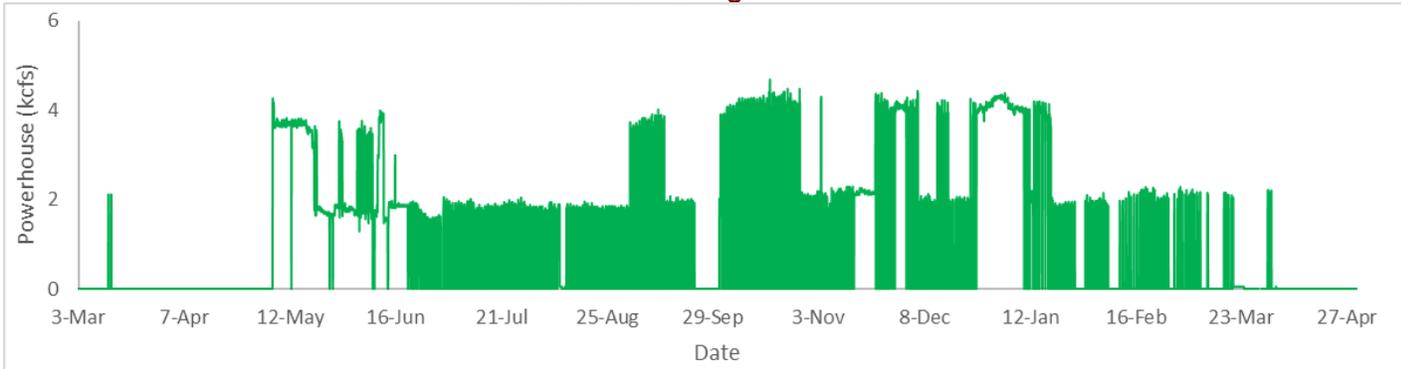
## Appendix B

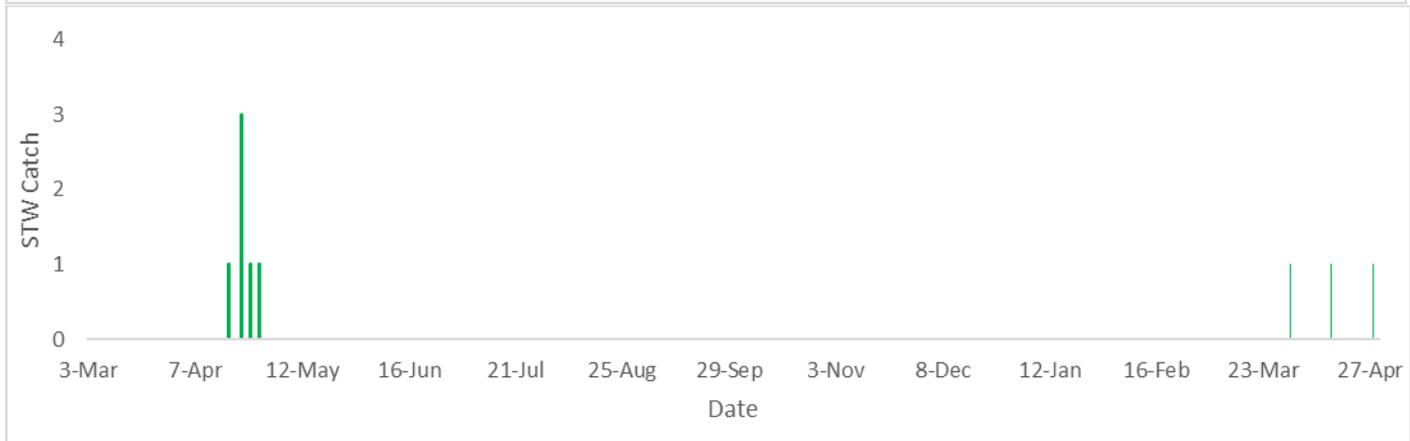
### Big Cliff Dam Operational and Capture Data Since Start of Monitoring



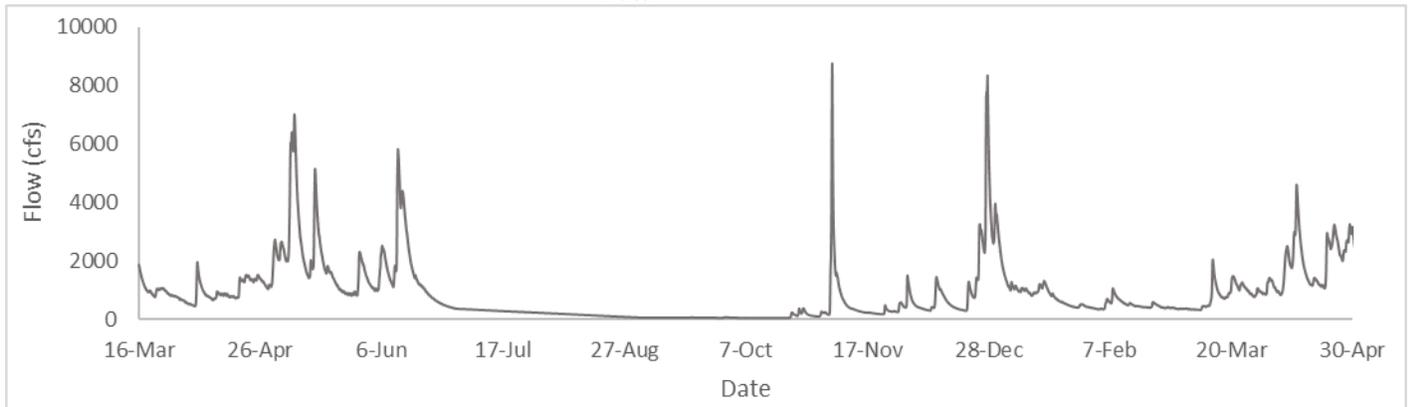


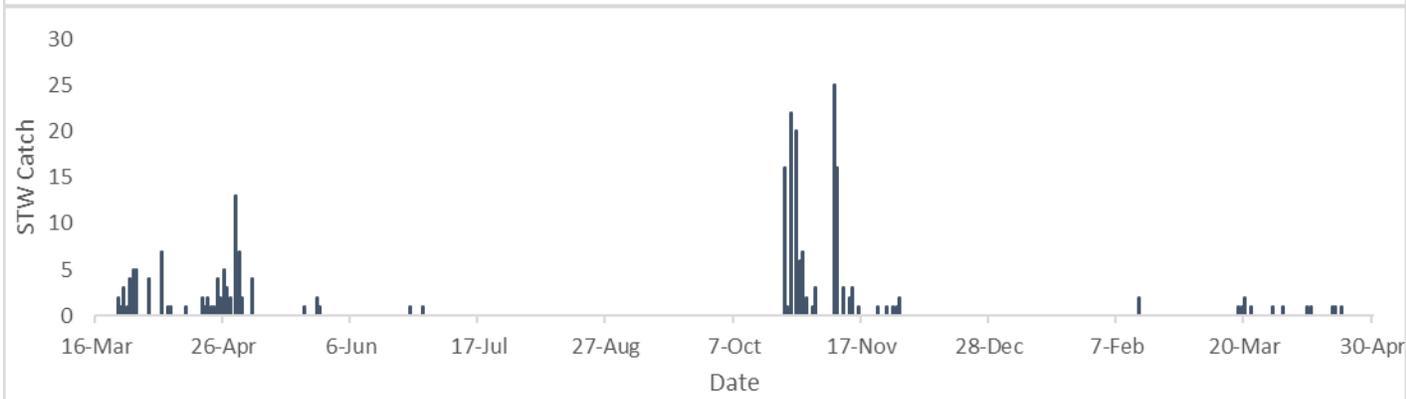
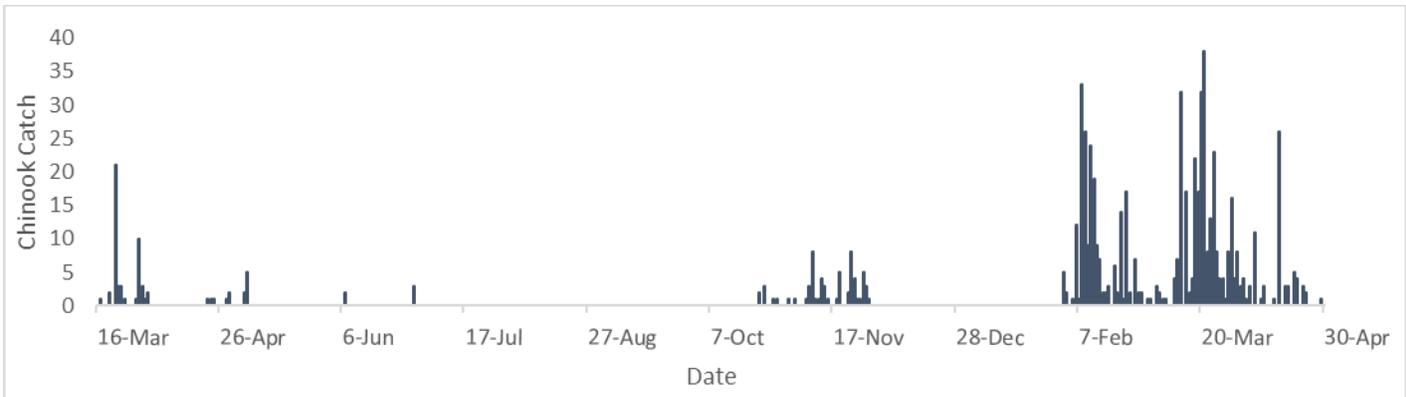
**Green Peter Dam Operational and Green Peter Tailrace- Middle Santiam River Capture Data Since Start of Monitoring**



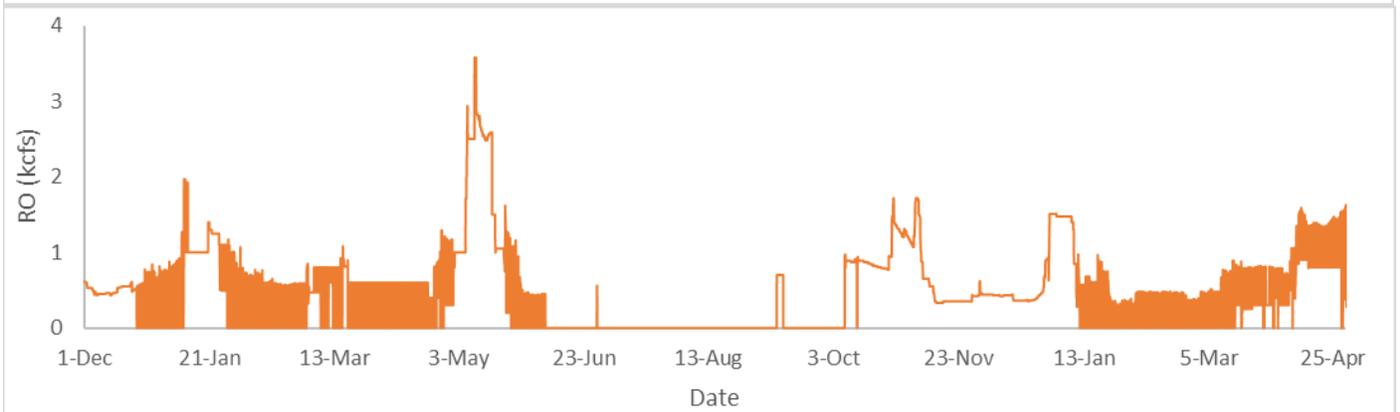
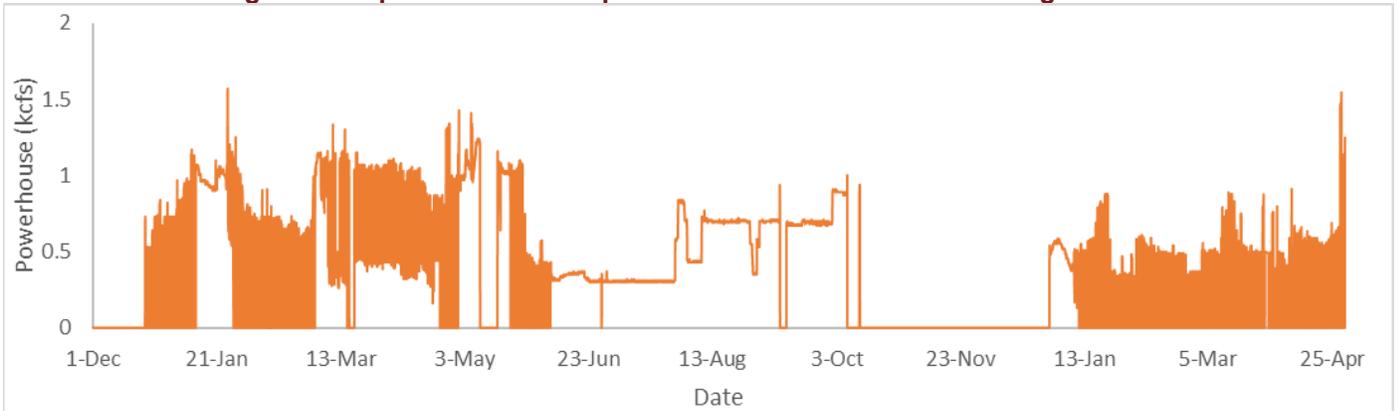


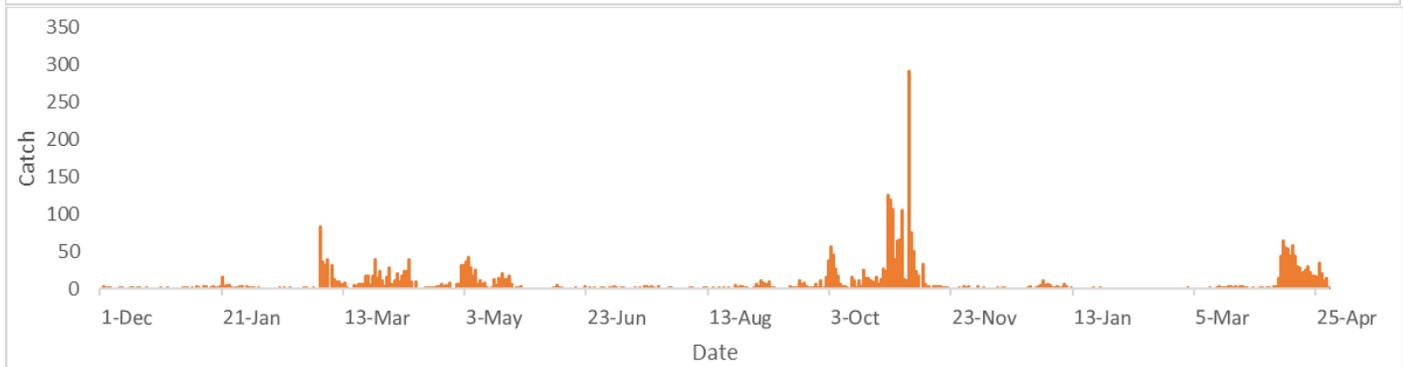
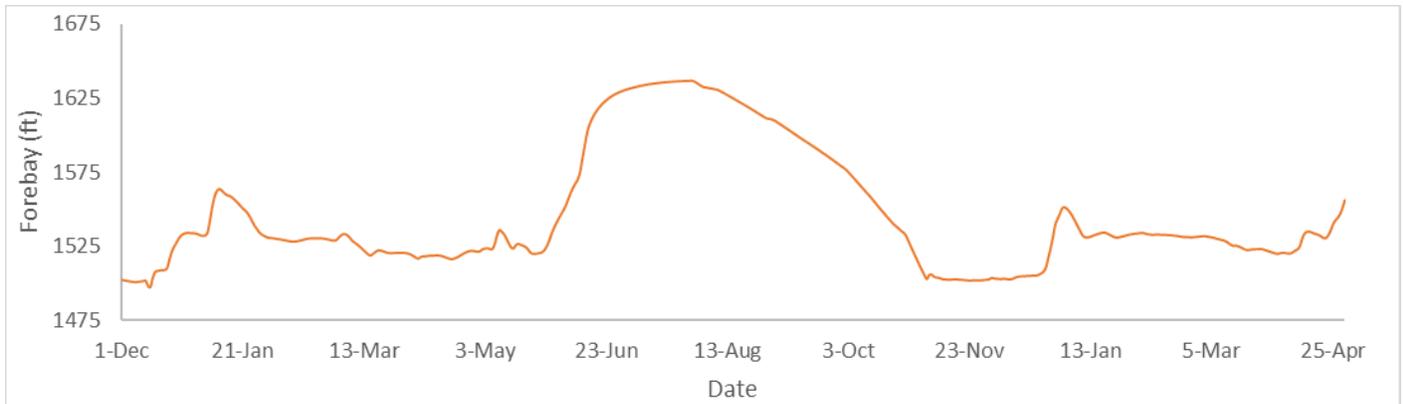
**South Santiam River Above Foster Dam Discharge and Foster Dam Head of Reservoir Capture Data**



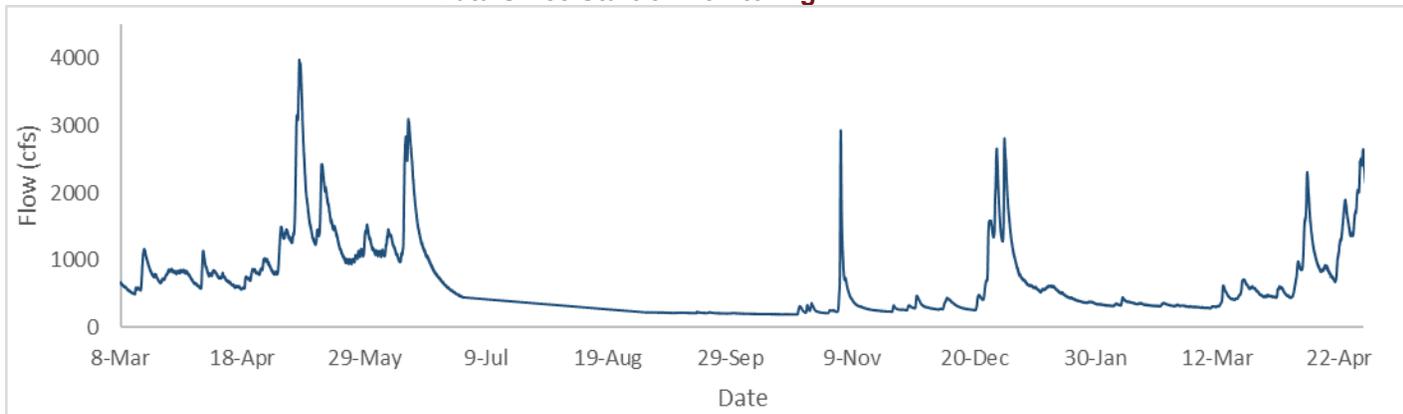


**Cougar Dam Operational and Capture Data Since Start of Monitoring**

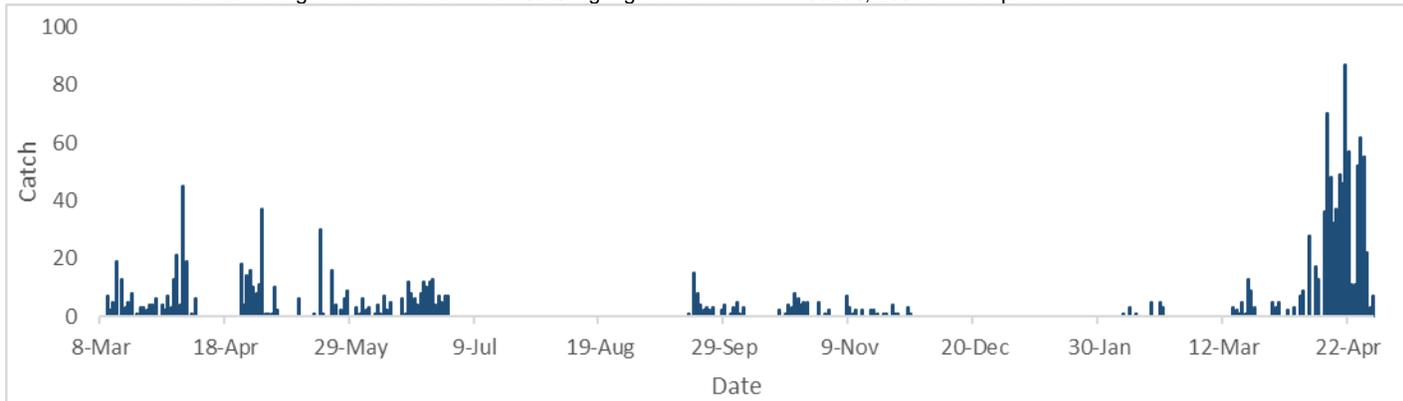




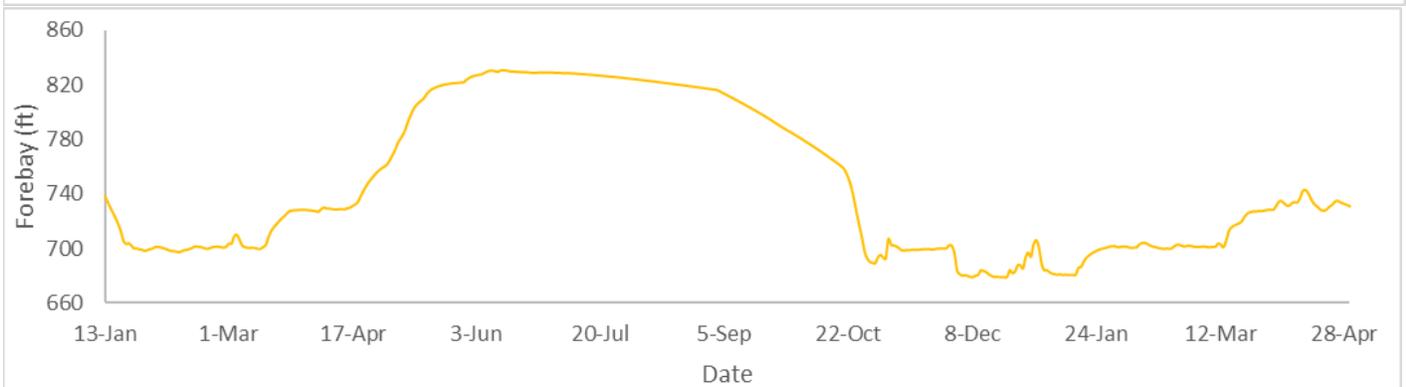
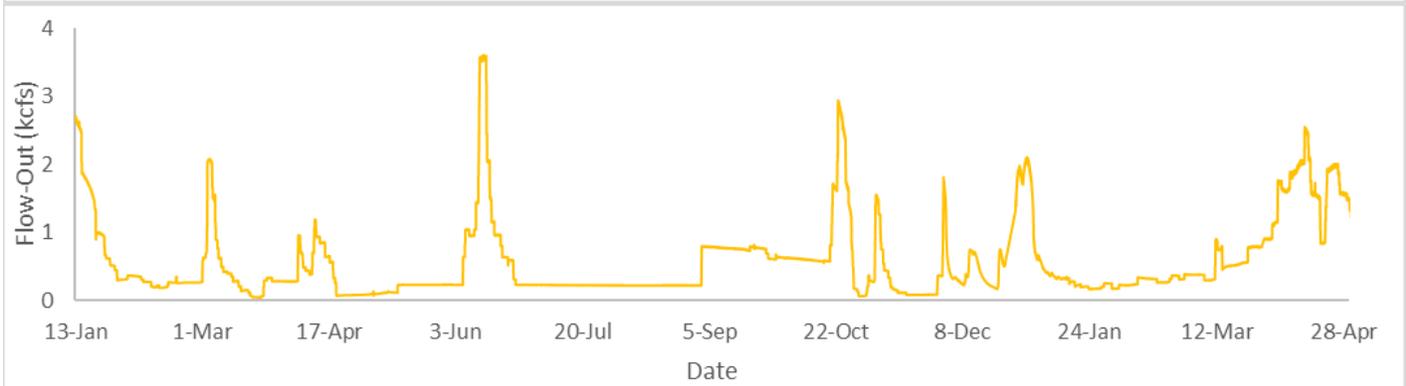
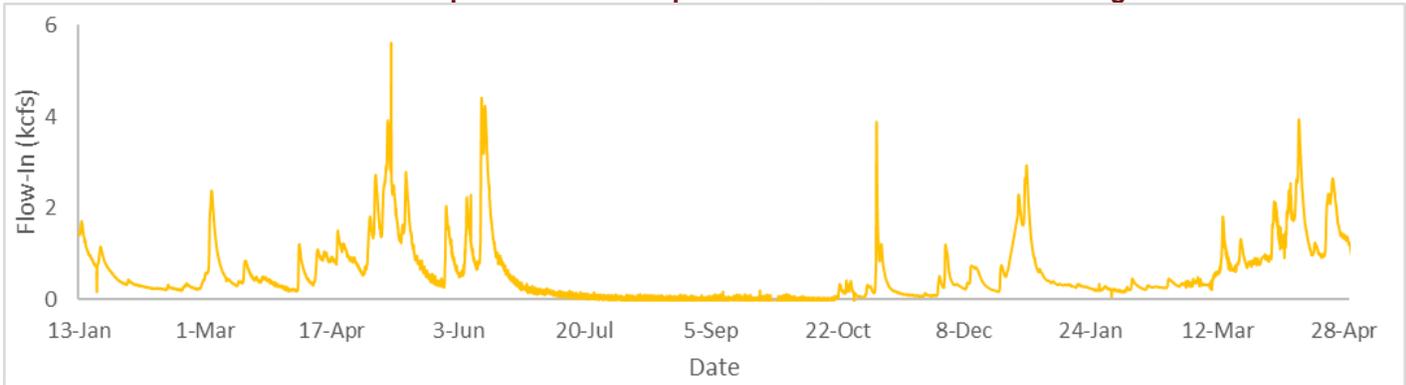
**South Fork McKenzie above Cougar Dam Discharge and Cougar Dam Head of Reservoir Capture Data Since Start of Monitoring**



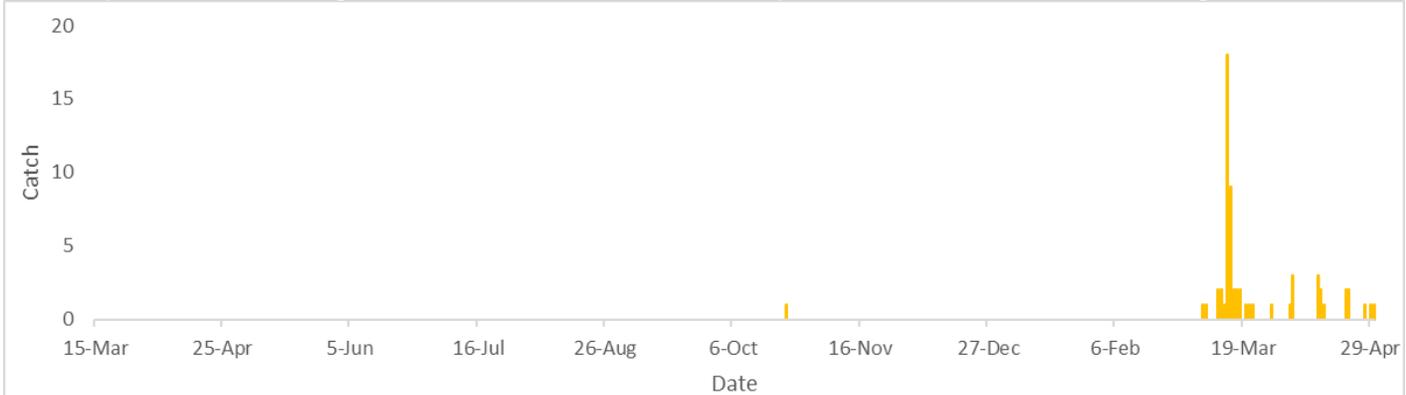
Note: Discharge data was taken from USGS gauge site number 14159200, 250 meters upstream.



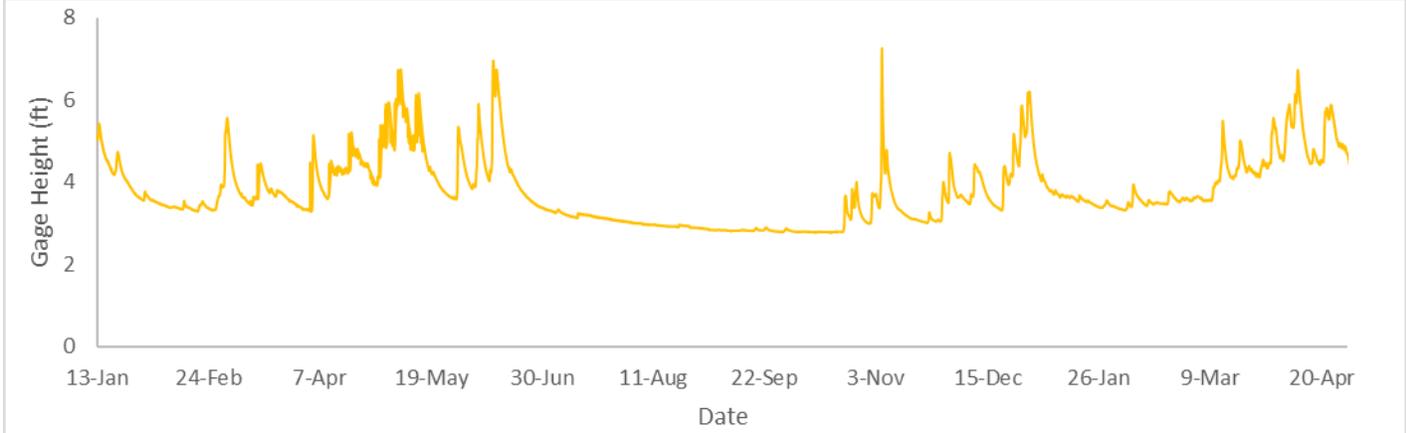
### Fall Creek Dam Tailrace Operational and Capture Data Since Start of Monitoring



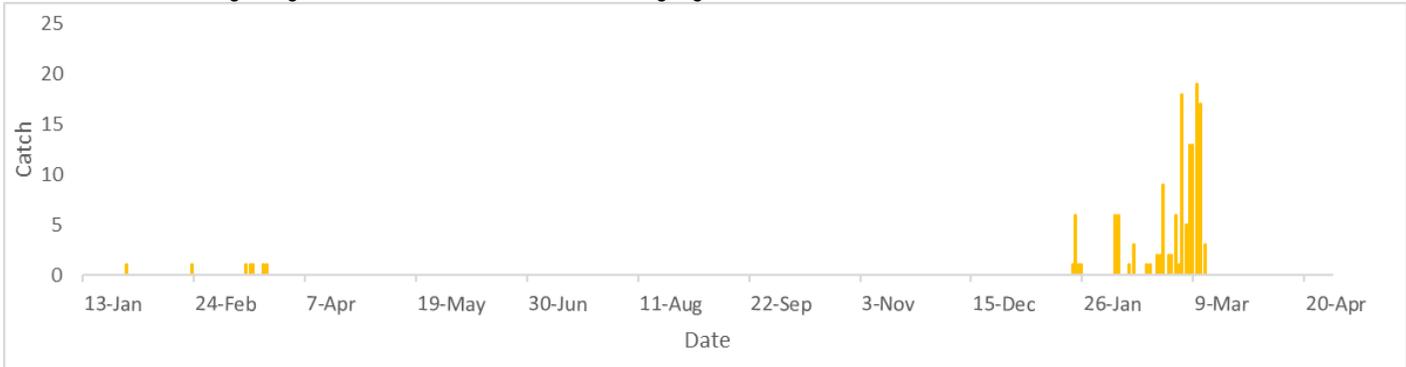
Note: Operational data was being tracked for Fall Creek Head of Reservoir site prior to initiation of Fall Creek Dam monitoring.



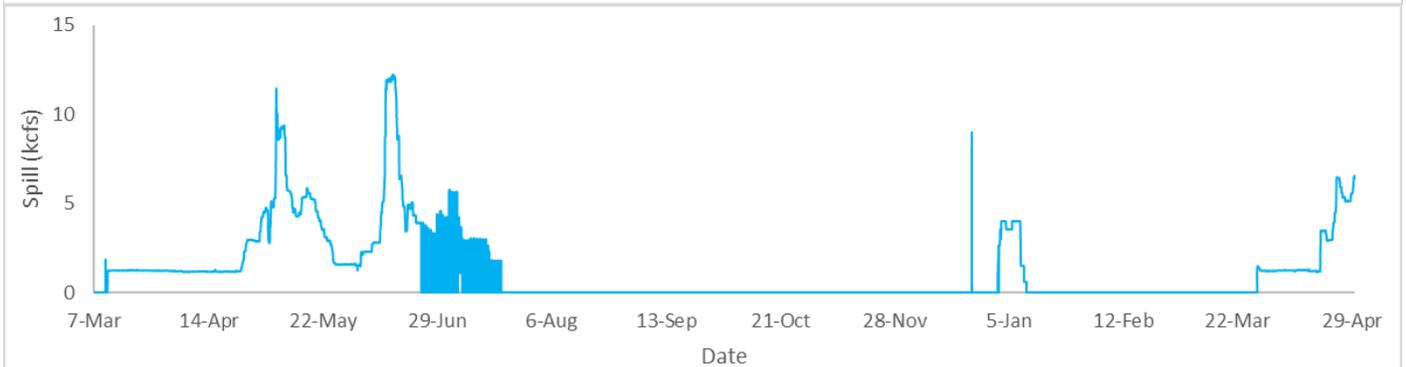
### Fall Creek Head of Reservoir Operational and Capture Data Since Start of Monitoring

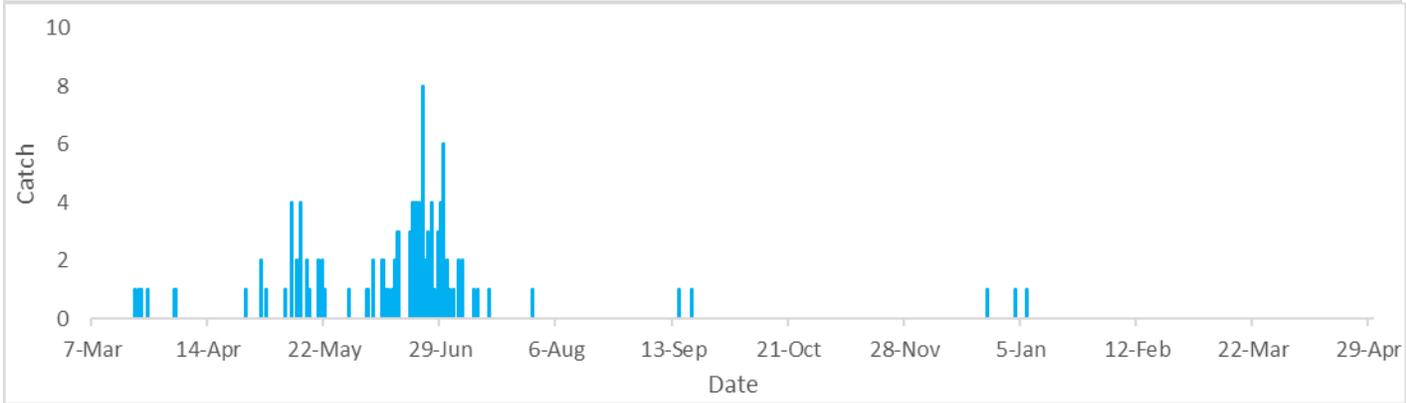
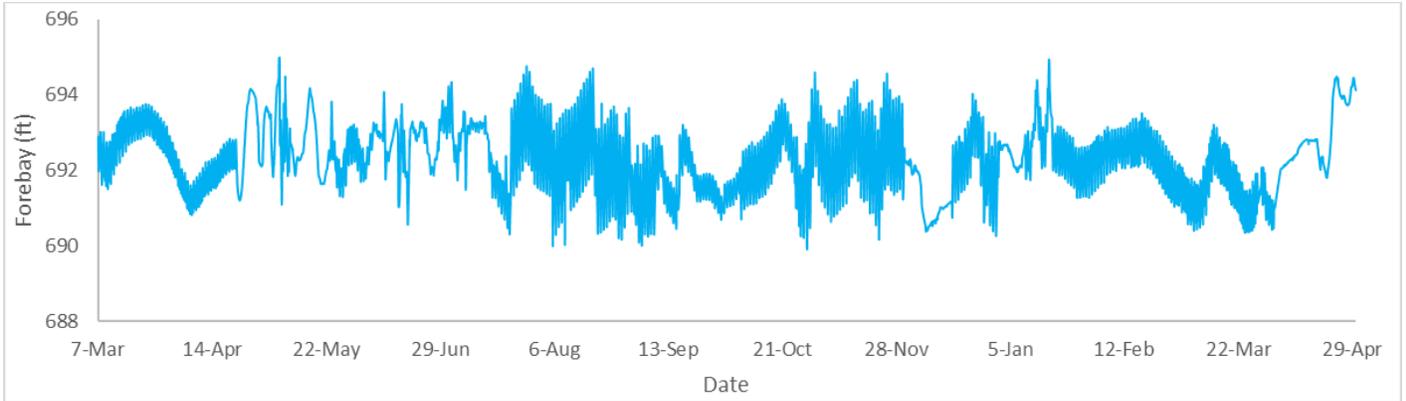


Note: Gauge height data was taken from USGS stream gauge number 14150290, 1.2 rkms downstream.

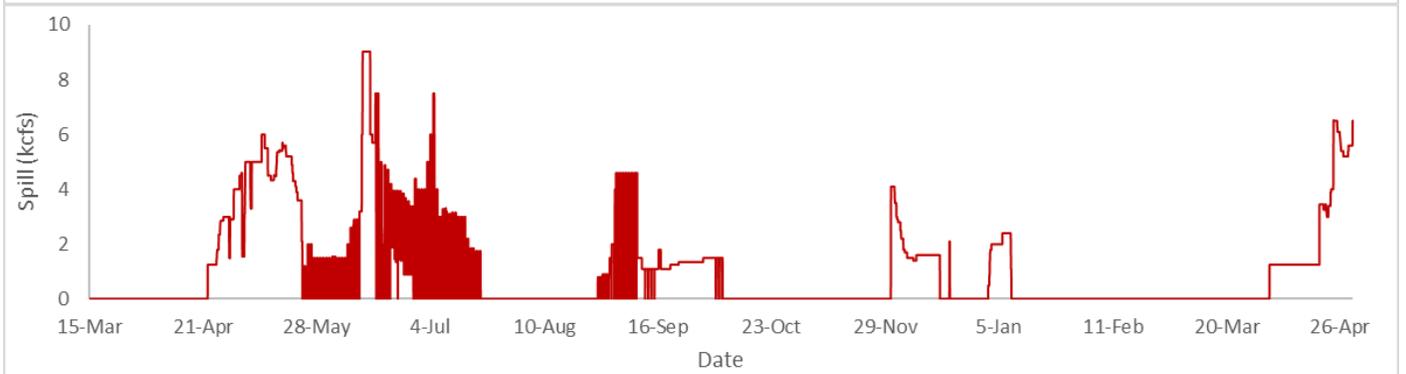
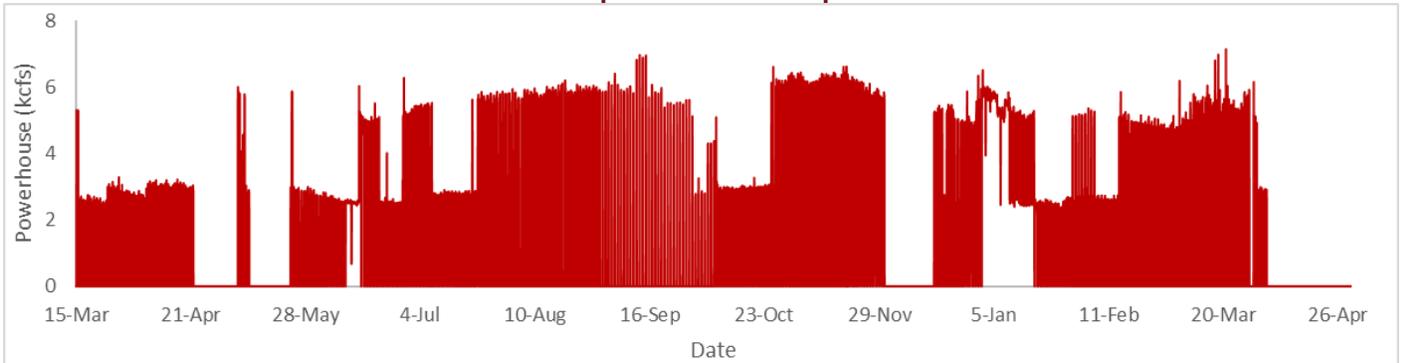


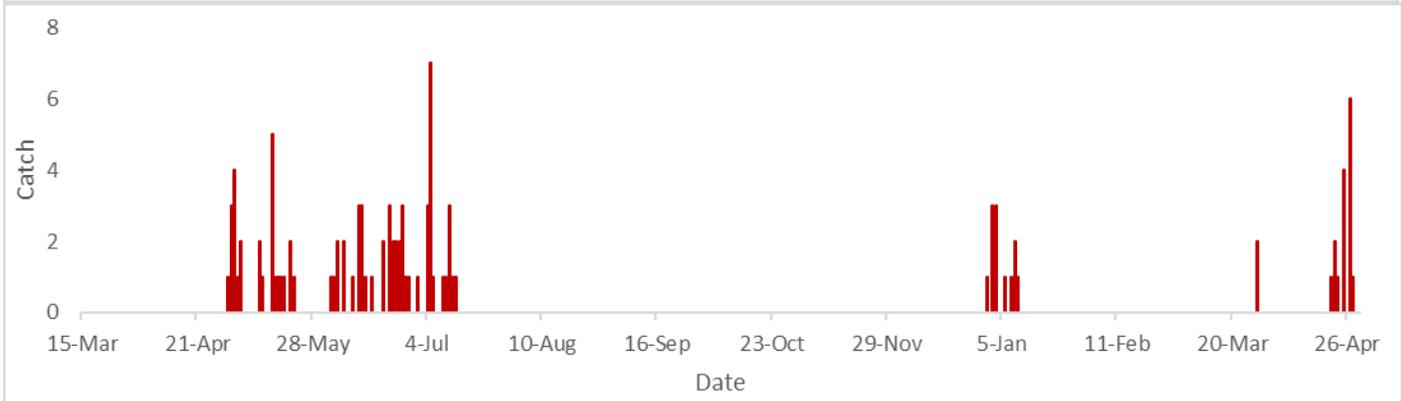
### Dexter Dam Operational and Capture Data Since Start of Monitoring



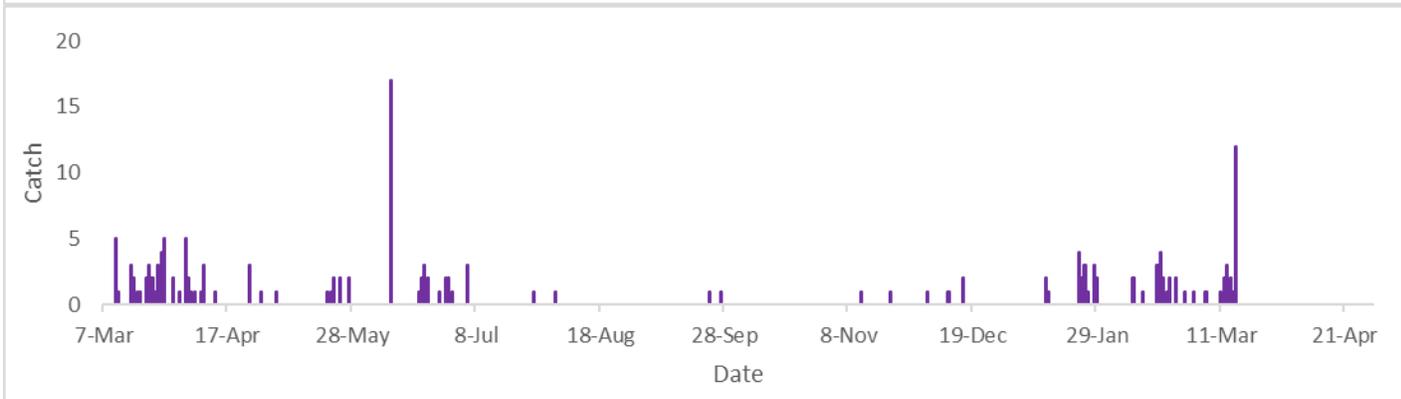
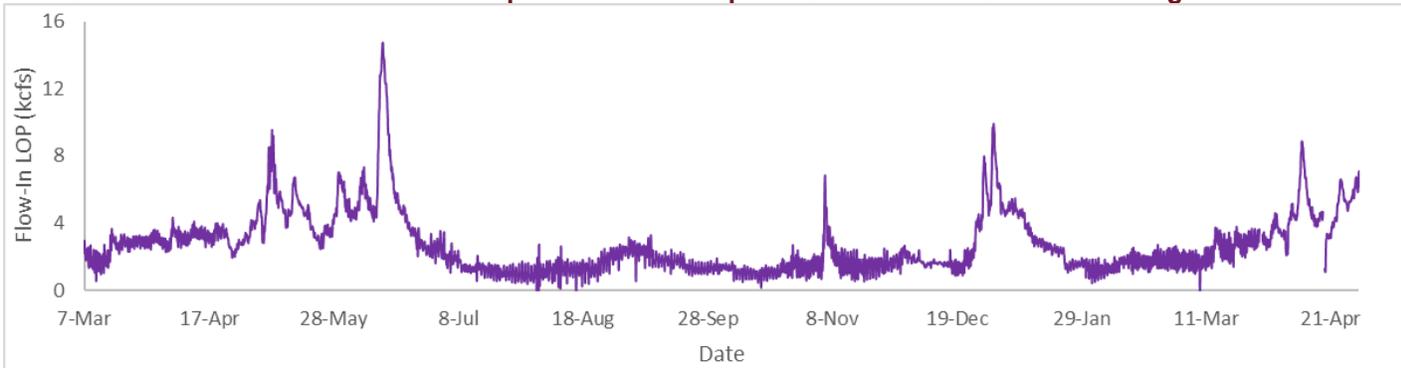


**Lookout Dam Tailrace Operational and Capture Data**

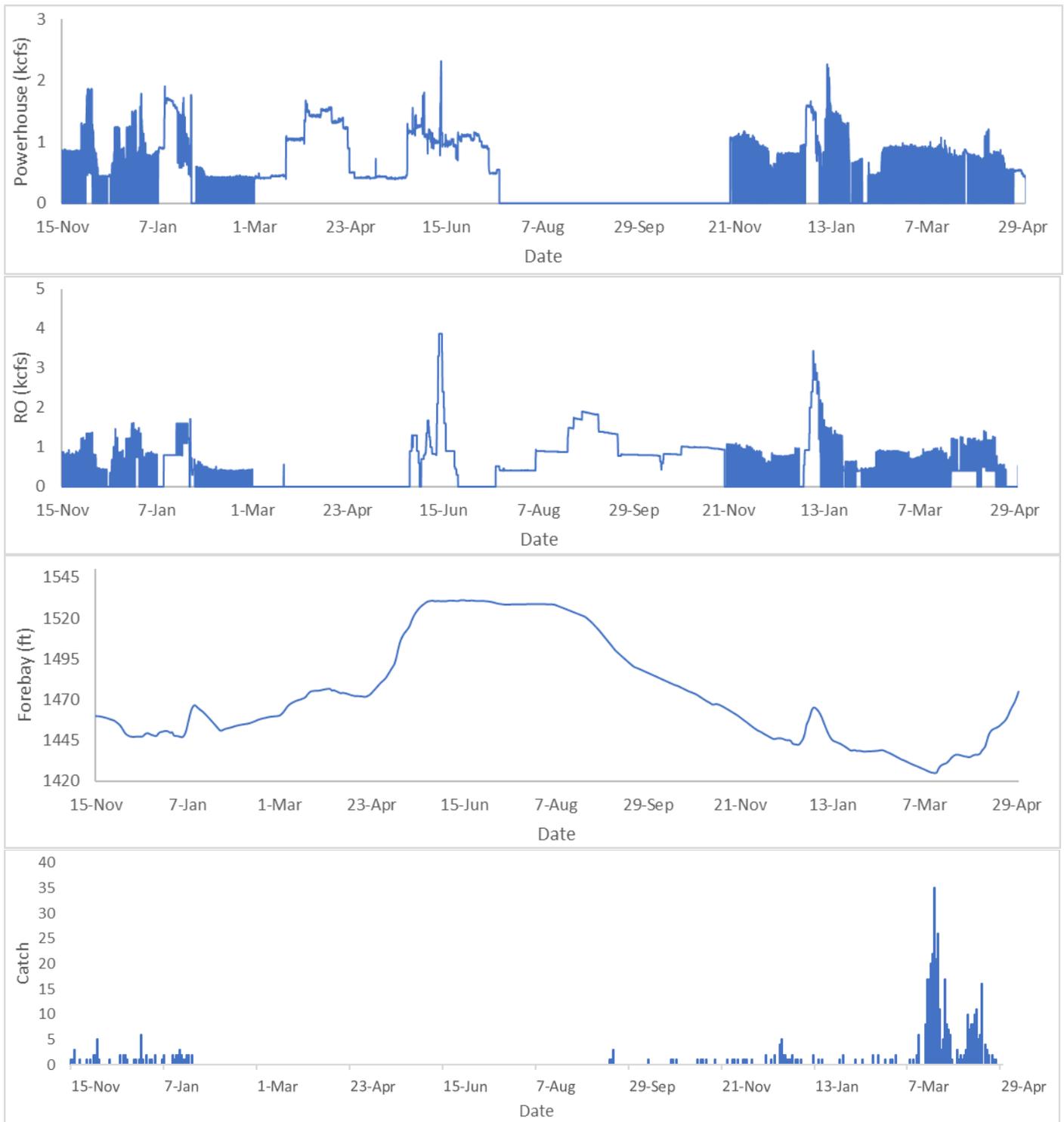




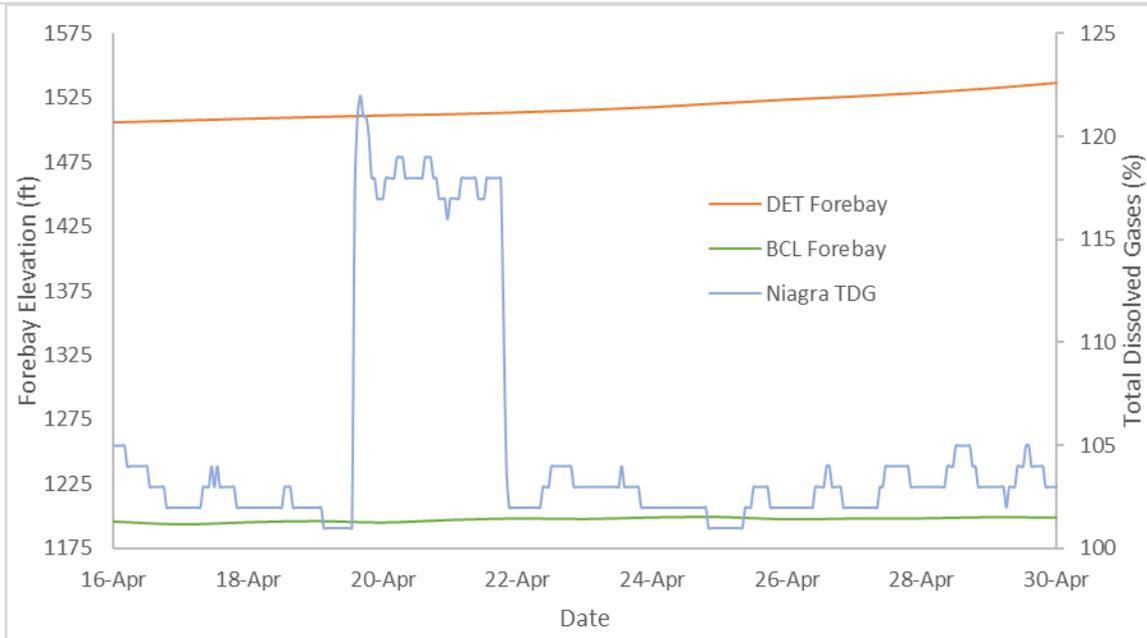
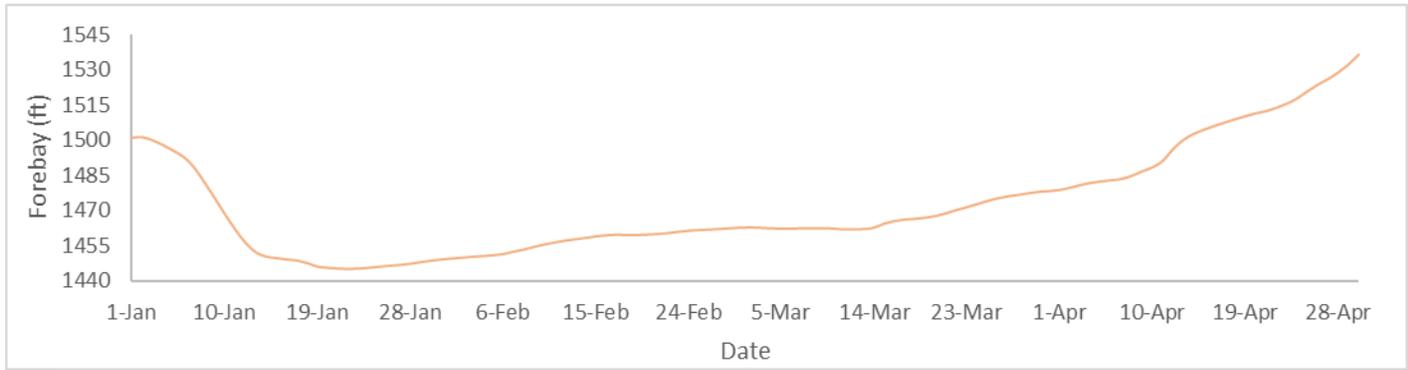
**Lookout Point Head of Reservoir Operational and Capture Data Since Start of Monitoring**



**Hills Creek Dam Operational and Capture Data Since Start of Monitoring**



### Detroit Dam Forebay Elevation



## Appendix C

<b>Cougar Dam (01/30/2023)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
RO Route	500	6	1.2% (6/500)

<b>Dexter Dam (12/15/23)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
Spill	N/A	N/A	N/A
Powerhouse	1010	10	1.0% (10/1010)

<b>Big Cliff Dam 12/14/2022</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
8ft Trap	502	54	10.8% (54/502)

<b>Cougar Dam (12/13/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
RO Route	506	42	8.3% (42/506)

<b>Hills Creek Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
PH Route	596	20	3.36% (20/596)
RO Trap	RO Route- 605	13	2.15% (13/605)
	PH Route- 592	5	0.84% (5/592)

<b>Cougar Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
PH Route	405	40	9.88% (40/405)

RO Route	410	28	6.83% (28/410)
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Dexter Dam	Release #	Recapture #	Capture Efficiency
Spill	988	2	0.2% (2/988)
Powerhouse	N/A	N/A	N/A

Green Peter Dam Tailrace- Middle Santiam	Release #	Recapture #	Capture Efficiency
8ft Trap	643	4	0.62% (4/643)

Big Cliff Dam	Release #	Recapture #	Capture Efficiency
8ft Trap	996	40	4.01% (40/996)

Cougar Dam Head of Reservoir	Release #	Recapture #	Capture Efficiency
5ft trap	806	41	5.1% (41/806)

Cougar Dam Head of Reservoir	Release #	Recapture #	Capture Efficiency
5ft trap	515	7	1.4% (7/515)

Cougar Dam	Release #	Recapture #	Capture Efficiency
PH Route	357	62	17.37% (62/357)
RO Route	378	21	5.56% (21/378)

Dexter Dam	Release #	Recapture #	Capture Efficiency
Spill	1000	43	4.3% (43/1000)
Powerhouse	N/A	N/A	N/A

<b>Lookout Point Head of Reservoir</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
04/05/2022	993	53	5.3% (53/993)
04/14/2022	989	19	1.9% (19/989)

<b>Fall Creek Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
RO	518	11	2.1% (11/518)

<b>Fall Creek Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
RO	513	0	0% (0/513)

<b>Cougar Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
RO Route	993	63	6.34% (63/993)

<b>Dexter Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
Spill	1019	67	6.6% (67/1,019)
Powerhouse	N/A	N/A	N/A

<b>Lookout Point Head of Reservoir</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
05/24/2022	1007	125	12.4% (125/1007)

<b>Big Cliff Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
8ft Trap	1000	21	2.1% (21/1000)

<b>Cougar Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
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PH Route	500	148	29.6% (148/500)
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Cougar Dam Head of Reservoir	Release #	Recapture #	Capture Efficiency
5ft trap	551	56	10.2% (56/551)

Big Cliff Dam	Release #	Recapture #	Capture Efficiency
8ft Trap	1000	92	9.2% (92/1000)

Cougar Dam	Release #	Recapture #	Capture Efficiency
PH Route	501	31	6.2% (31/501)

Big Cliff Dam	Release #	Recapture #	Capture Efficiency
8 ft Trap	500	14	2.8% (14/500)

Foster Dam Head of Reservoir- South Santiam	Release #	Recapture #	Capture Efficiency
5 ft Trap	1063	0	0% (0/1063)

Dexter Dam	Release #	Recapture #	Capture Efficiency
Spill	N/A	N/A	N/A
Powerhouse	981	1	0.1% (1/981)

Lookout Point Head of Reservoir	Release #	Recapture #	Capture Efficiency
07/20/2022	1005	9	0.9% (9/1005)

Big Cliff Dam	Release #	Recapture #	Capture Efficiency
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8ft Trap	549	40	7.3% (40/549)
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Foster Dam Head of Reservoir- South Santiam	Release #	Recapture #	Capture Efficiency
5 ft Trap	1006	263	26.1% (263/1006)

Foster Dam Head of Reservoir- South Santiam	Release #	Recapture #	Capture Efficiency
5 ft Trap	1007	68	6.8% (68/1007)

Cougar Dam Head of Reservoir	Release #	Recapture #	Capture Efficiency
5ft trap	721	33	4.6% (33/721)

Dexter Dam	Release #	Recapture #	Capture Efficiency
Spill	N/A	N/A	N/A
Powerhouse	775	1	0.1% (1/775)

Lookout Point Head of Reservoir	Release #	Recapture #	Capture Efficiency
10/27/2022	506	9	1.8% (9/506)

Cougar Dam (10/14/2022)	Release #	Recapture #	Capture Efficiency
RO Route	442	48	10.9% (48/442)

Big Cliff Dam (11/16/2022)	Release #	Recapture #	Capture Efficiency

8ft Trap	509	15	2.9% (15/509)
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<b>Foster Dam Head of Reservoir- South Santiam (11/15/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
5 ft Trap	1009	55	5.5% (55/1009)

<b>Foster Dam Head of Reservoir- South Santiam (11/22/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
5 ft Trap	933	163	17.5% (163/933)

<b>Cougar Dam Head of Reservoir (11/16/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
5ft trap	719	29	4.0% (29/719)

<b>Cougar Dam Head of Reservoir 11/23/2022</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
5ft trap	752	51	6.8% (51/752)

<b>Cougar Dam Head of Reservoir (11/29/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
5ft trap	620	48	7.7% (48/620)

<b>Cougar Dam (11/22/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
RO Route	504	24	4.8% (24/504)

<b>Dexter Dam (11/17/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>

Spill	N/A	N/A	N/A
Powerhouse	991	4	0.4% (4/991)

Lookout Point Head of Reservoir	Release #	Recapture #	Capture Efficiency
11/17/2022	510	0	0.0% (0/510)

Hills Creek Dam (2/16/2022)	Release #	Recapture #	Capture Efficiency
PWR Route	600	12	2.0% (12/600)
RO Trap	593	19	3.2% (19/593)

\*Live fish captured at the PWR trap are released just downstream of the PWR trap, upstream of the RO trap and therefore retained in the capture efficiency estimates for the RO Trap if they arrive in the lower trap.

\*Any dead fish captured at the PWR trap are excluded from the RO trap capture efficiency estimate as they are not alive at time of re-release.

Hills Creek Dam (2/25/2022)	Release #	Recapture #	Capture Efficiency
PWR Route	604	6	0.99% (6/604)
RO Trap	625	7	1.12% (7/625)

\*Live fish captured at the PWR trap are released just downstream of the PWR trap, upstream of the RO trap and therefore retained in the capture efficiency estimates for the RO Trap if they arrive in the lower trap.

\*Any dead fish captured at the PWR trap are excluded from the RO trap capture efficiency estimate as they are not alive at time of re-release.

Cougar Dam (12/15/2022)	Release #	Recapture #	Capture Efficiency
RO Route	1015	56	5.5% (56/1015)

<b>Cougar Dam (12/20/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
RO Route	500	65	13.0% (65/500)

<b>Cougar Dam (12/28/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
RO Route	445	15	3.4% (15/445)

<b>Lookout Point Head of Reservoir</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
12/12/2022	510	0	0.0% (0/510)

<b>Big Cliff Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
8ft Trap	1,010	92	9.1% (92/1,010)

<b>Big Cliff Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
8ft Trap	1,014	32	3.2% (32/1,014)

<b>Big Cliff Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
8ft Trap	704	47	6.68% (47/704)

<b>Big Cliff Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
8ft Trap	452	22	4.87% (22/452)

<b>Cougar Dam (01/12/2023)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
PH Route	843	159	18.9% (159/843)

<b>Big Cliff Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
8ft Trap	500	56	11.2% (56/500)

<b>Foster Dam Head of Reservoir- South Santiam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
5 ft Trap	1009	55	5.5% (55/1009)

<b>Foster Dam Head of Reservoir- South Santiam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
5 ft Trap	933	163	17.5% (163/933)

<b>Hills Creek Dam (12/07/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
PWR Route	514	29	5.6% (29/514)
RO Trap	514 in PWR	3	0.6% (3/514)

<b>Hills Creek Dam (12/13/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
RO Route	516	1	0.2% (1/516)

<b>Cougar Dam Head of Reservoir</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
5ft trap	719	29	4.0% (29/719)

<b>Cougar Dam Head of Reservoir</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
5ft trap	752	51	6.8% (51/752)

<b>Cougar Dam Head of Reservoir</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
5ft trap	620	48	7.7% (48/620)

<b>Cougar Dam (03/23/2023)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
RO Route	511	3	0.6% (3/511)
PWR Route	500	49	9.8% (49/500)

<b>Hills Creek Dam (02/25/2023)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
PWR Route	528	15	2.8% (15/528)
RO Trap	528 in PWR	0	0.0% (0/528)

\*Live fish captured at the PWR trap are released just downstream of the PWR trap, upstream of the RO trap and therefore retained in the capture efficiency estimates for the RO Trap if they arrive in the lower trap.

\*Any dead fish captured at the PWR trap are excluded from the RO trap capture efficiency estimate as they are not alive at time of re-release.

<b>Hills Creek Dam (02/25/2023)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
RO Trap	482	4	0.83% (4/482)

## Appendix D

### Summary of Project PIT Tagged Fish for Reporting Period

Site	Trap	# of PIT Tagged Fish
Big Cliff Dam	8 ft	0
Foster Dam Head of Reservoir- South Santiam	5 ft	3
Cougar Dam	PWR	0
Cougar Dam	RO	142
Cougar Dam Head of Reservoir	5 ft	0
Green Peter Tailrace- Middle Santiam	8 ft	0
Dexter Dam Tailrace	5 ft	0
Lookout Point Head of Reservoir	5 ft	0
Lookout Dam Tailrace	Spill	0
Lookout Dam Tailrace	PWR	0
Hills Creek Dam Tailrace	PWR	0
Hills Creek Dam Tailrace	RO	0

### Summary of Captured Fish Containing PIT Tags This Season

Site	Trap	PIT Tag #	Date	Species
Cougar Dam	RO	3DD.003BEE14EC	1/1/2023	Chinook
Cougar Dam	RO	3DD.003BEE1565	1/2/2023	Chinook
Cougar Dam	RO	3DD.003BEE0B3B	1/4/2023	Chinook
Cougar Dam	RO	3DD.003BEE0F24	1/5/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B78	1/14/2023	Chinook
Cougar Dam	PH	3DD.003BEE19BF	1/14/2023	Chinook
Cougar Dam	PH	3DD.003BEE29B1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE23CE	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE23AF	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE19C3	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE19A0	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17CA	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17A5	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C21	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2748	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C16	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B5C	1/13/2023	Chinook

Cougar Dam	PH	3DD.003BEE1BC9	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE19AE	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BE3	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BA3	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BF3	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27B4	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D74	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2DB5	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B8C	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B8B	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D68	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B92	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D86	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27A5	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B1B	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C26	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27A3	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE19B9	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17BA	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B75	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B42	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D88	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2DAF	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C28	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2DAD	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D6B	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE25BA	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2DAG	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C0E	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE177C	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BAB	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE279D	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BA4	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE23BC	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B84	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27BF	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B91	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE19C7	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BCA	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BE1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE25C1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE272B	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B23	1/13/2023	Chinook

Cougar Dam	PH	3DD.003BEE25A7	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE25B1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27CD	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE29C5	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE19BD	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE19C2	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BA7	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE23A1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE199A	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17C7	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2997	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE25B3	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2991	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17C3	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BA6	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27CB	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B6C	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2755	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B90	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE25DC	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BD2	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE299F	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BB1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE29AA	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27BC	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2766	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27BD	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C06	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B8B	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE271E	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B92	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C22	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE29C1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B85	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2753	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE25CB	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1794	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D76	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D6C	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17AD	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17A2	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE179E	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BAA	1/13/2023	Chinook

Cougar Dam	PH	3DD.003BEE2BC0	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C1D	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B24	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1986	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE23FA	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B55	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE271C	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE19BD	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE275B	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1995	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE29C1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17D6	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BC7	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE29D4	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C0C	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D7C	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE277A	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B8A	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE179A	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BA9	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B4C	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE277F	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE274D	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1778	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B51	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE23A8	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B08	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2725	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B86	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D8F	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D8E	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2975	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D93	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BA5	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE23A7	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B82	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BF6	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE19BF	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE23C8	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE23E6	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BB6	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE197B	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B8D	1/13/2023	Chinook

Cougar Dam	PH	3DD.003BEE1B78	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE179B	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE259A	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE278E	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BF0	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2758	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B1A	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1972	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BE2	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2590	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27D9	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B59	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2730	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B62	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B36	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE274C	1/13/2023	Chinook
Cougar Dam	RO	3DD.003BEE2C16	1/22/2023	Chinook
Cougar Dam	RO	3DD.003BEE0966	1/20/2023	Chinook
Cougar Dam	RO	3DD.003BEE2345	1/21/2023	Chinook
Cougar Dam	PH	3DD.003BEE23A2	3/14/2023	Chinook
Cougar Dam	RO	3DD.003BEE16B9	3/17/2023	Chinook
Cougar Dam	RO	3DD.0077CF7449	3/20/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	3DD.003BD2275C	3/22/2023	Chinook
Cougar Dam	RO	3DD.003BEE1B2D	4/10/2023	Chinook
Cougar Dam	RO	3DD.003BD22B12	4/12/2023	Chinook
Cougar Dam	RO	3DD.003BD22CE0	4/13/2023	Chinook
Cougar Dam	RO	3DD.003B332C11	4/13/2023	Chinook
Cougar Dam	RO	3DD.003BD22B0D	4/13/2023	Chinook
Cougar Dam	RO	3DD.003BD227D4	4/13/2023	Chinook
Cougar Dam	RO	3DD.003BD22B30	4/14/2023	Chinook
Cougar Dam	RO	3DD.003BEE2CE7	4/15/2023	Chinook
Cougar Dam	RO	3DD.003BEE1D22	4/15/2023	Chinook
Cougar Dam	RO	3DD.003BEE1B0A	4/29/2023	Chinook
Cougar Dam	RO	3DD.003BEE1B14	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BEE1B3A	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BEE1D8D	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BEE2286	4/25/2023	Chinook
Cougar Dam	RO	3DD.003BEE2562	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BEE2581	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BEE28AC	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BEE28C7	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BEE28D9	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BEE2923	4/18/2023	Chinook

Cougar Dam	RO	3DD.003BEE2C03	4/23/2023	Chinook
Cougar Dam	RO	3DD.003BEE2D54	4/23/2023	Chinook

**List of EAS PIT Tagged Fish for Reporting Period**

Site	Trap	PIT Tag	Date	Species
Cougar Dam	RO	3DD.003BD22BA1	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD22BAB	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD22BAC	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD22BB0	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD22BC0	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD22BC1	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD22BD2	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD22BE4	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD22EBF	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BD22EC3	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BD22EC5	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22EC6	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BD22ECD	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BD22ECE	4/28/2023	Chinook
Cougar Dam	RO	3DD.003BD22ED1	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22ED6	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22ED8	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22ED9	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22EDB	4/28/2023	Chinook
Cougar Dam	RO	3DD.003BD22EDE	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22EE0	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22EE3	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BD22EE5	4/28/2023	Chinook
Cougar Dam	RO	3DD.003BD22EE6	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BD22EE9	4/28/2023	Chinook
Cougar Dam	RO	3DD.003BD22EEA	4/28/2023	Chinook
Cougar Dam	RO	3DD.003BD22EEC	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22EEF	4/28/2023	Chinook
Cougar Dam	RO	3DD.003BD22EF2	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22EF7	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BD22EFA	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22EFE	4/28/2023	Chinook
Cougar Dam	RO	3DD.003BD22EFF	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22F00	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BD22F04	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BD22F05	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BD22F06	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22F07	4/27/2023	Chinook

Cougar Dam	RO	3DD.003BD22F08	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BD22F0D	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22F0E	4/28/2023	Chinook
Cougar Dam	RO	3DD.003BD22F0F	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22F13	4/28/2023	Chinook
Cougar Dam	RO	3DD.003BD22F14	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BD22F16	4/26/2023	Chinook
Cougar Dam	RO	3DD.003BD22F18	4/28/2023	Chinook
Cougar Dam	RO	3DD.003BD22F1B	4/27/2023	Chinook
Cougar Dam	RO	3DD.003BD22F89	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22F90	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22F91	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22F9D	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FA4	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FA5	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FAC	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FB5	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FB9	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FBA	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FC3	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FC4	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FC9	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FCB	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FCF	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FD0	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FD6	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FD9	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FE4	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD22FE5	4/22/2023	Chinook
Cougar Dam	RO	3DD.003BD39528	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD3952A	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD39536	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD39545	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD3954A	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD3954D	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD3955B	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD39567	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD39568	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD39569	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD3956B	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD3956D	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD3956E	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD3956F	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD39570	4/19/2023	Chinook
Cougar Dam	RO	3DD.003BD39574	4/19/2023	Chinook

Cougar Dam	RO	3DD.003BD396A4	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396A6	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396A7	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396A9	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396AA	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396AB	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396AC	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396AD	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396AF	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396B2	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396B3	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396B8	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396BC	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396BE	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396BV	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396C1	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396C2	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396C8	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396C9	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396CA	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396CC	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396CD	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396D4	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396D5	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396D6	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396D7	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396D9	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396DA	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396DB	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396DE	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396DE	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396DF	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396E3	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396E4	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396E6	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396E7	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396E8	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396E9	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396EB	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396EC	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396ED	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396EF	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396F0	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396F1	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396F3	4/21/2023	Chinook

Cougar Dam	RO	3DD.003BD396F4	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396F5	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396F7	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396F9	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396FB	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396FC	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD396FD	4/21/2023	Chinook
Cougar Dam	RO	3DD.003BD396FE	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD396FF	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD39700	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD39701	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD39703	4/20/2023	Chinook
Cougar Dam	RO	3DD.003BD39704	4/18/2023	Chinook
Cougar Dam	RO	3DD.003BD39705	4/20/2023	Chinook
Foster Dam Head of Reservoir- South Santiam River	5 ft	3DD.003BD2272C	4/17/2023	O. mykiss
Foster Dam Head of Reservoir- South Santiam River	5 ft	3DD.003BD39755	4/20/2023	O. mykiss
Foster Dam Head of Reservoir- South Santiam River	5 ft	3DD.003BD39756	4/18/2023	O. mykiss

**List of EAS VIE Marked Fish for Reporting Period**

Site	Trap	VIE Mark	Date	Species
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/16/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/17/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/17/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	VIE RDB	4/17/2023	Chinook











