

---

Prepared by: Dillon Alegre, Grant Brink & Rachel Ellison, Environmental Assessment Services, LLC

Report Period: February 1<sup>st</sup> to February 15<sup>th</sup>, 2023

Report No.: 2023 Willamette RST Bi-Weekly Report 02/01-02/15 by EAS

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

---

## Project Schedule

**Table 1. Project Schedule**

Site	Task	Start	End	Days
Big Cliff Dam RST	Operation	12/01/2021	02/15/2022	443
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 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
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	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
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	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
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 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	Operation	09/16/2022	11/30/2022	76
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	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
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
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	152
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
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

## 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.



**FIGURE 1**  
Big Cliff Dam

● RST Locations

500 Feet





Imagery Source: 2021, ESRI.



**FIGURE 2** Foster Dam Head of Reservoir - South Santiam River

● RST Locations

500 Feet



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



**FIGURE 3**  
Cougar Dam

● RST Locations

500 Feet





Portland  
 Salem  
 Eugene

MAP AREA

OREGON

**FIGURE 4**  
 Cougar Dam Head of Reservoir

● RST Locations

500 Feet



**EAS** ENVIRONMENTAL  
 ASSESSMENT  
 SERVICES



Wholly Owned Subsidiary of Natives of Kodiak



Imagery Source: 2021, ESRI.



**FIGURE 5**  
Fall Creek Dam Tailrace

● RST Locations

500 Feet





**FIGURE 6**  
Fall Creek Head of Reservoir

● RST Locations

500 Feet





Imagery Source: 2021, ESRI.



**FIGURE 7**  
Dexter Dam Tailrace

● RST Locations

500 Feet



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



Imagery Source: 2021, ESRI.



**FIGURE 8**  
Lookout Dam Tailrace

● RST Locations

500 Feet





Imagery Source: 2021, ESRI.



**FIGURE 9**  
Lookout Point Head of Reservoir

● RST Locations

500 Feet





**FIGURE 10**  
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	2/1/2023	2/15/2023	15	369
Foster Dam Head of Reservoir – South Santiam	2/1/2023	2/1/2023	2/15/2023	15	15
Cougar Dam PH	12/1/2021	2/1/2023	2/15/2023	6	333
Cougar Dam RO	12/1/2021	2/1/2023	2/15/2023	15	433
Cougar Dam Head of Reservoir	2/1/2023	2/1/2023	2/15/2023	15	15
Fall Creek Dam Tailrace*	3/15/2022	2/1/2023	2/15/2023	0	192
Fall Creek Head of Reservoir	1/18/2023	2/1/2023	2/15/2023	9	17
Dexter Dam Tailrace	3/7/2022	2/1/2023	2/15/2023	15	335
Lookout Point Dam PH	3/15/2022	2/1/2023	2/15/2023	15	307
Lookout Point Dam Spill	3/15/2022	2/1/2023	2/15/2023	15	307
Lookout Point Head of Reservoir	3/10/2022	2/1/2023	2/15/2023	9	301
Hills Creek Dam	9/16/2022	2/1/2023	2/15/2023	15	153

\*Fall Creek Dam Tailrace trap was being operated by the Corps until EAS began sampling the site on March 15<sup>th</sup> per Task 7.1

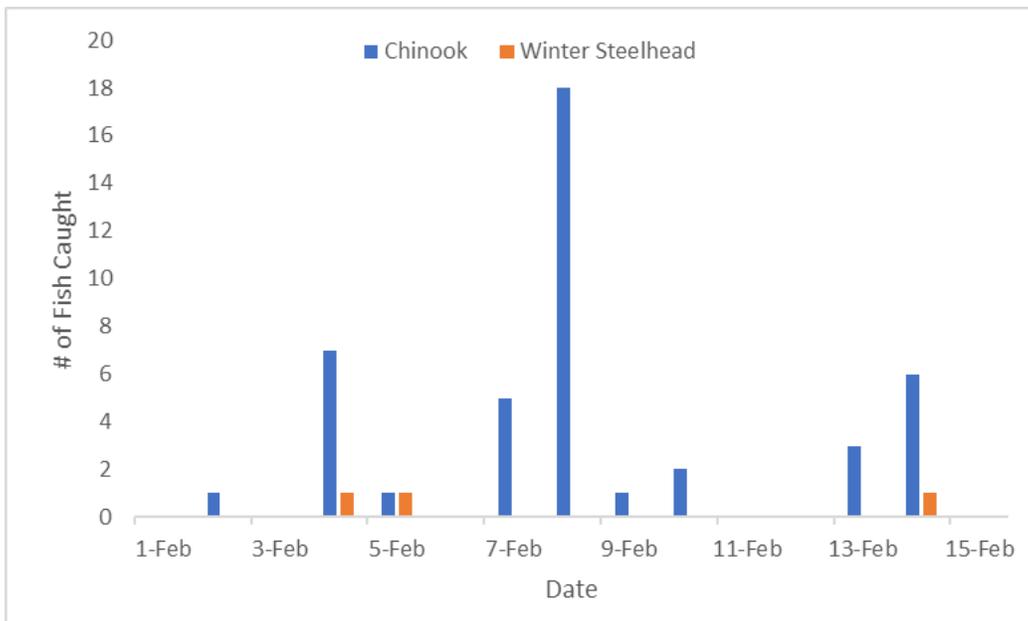
**Table 3. Willamette Valley Rotary Screw Trap Monitoring Catch Summary**

Site	Species	Catch (Reporting Period)	Recaptures (Reporting Period)	Total Catch	Total Recaptures
Big Cliff Dam	CHS	44	0	1338	610
Big Cliff Dam	STW	3	0	113	0
Green Peter Tailrace- Middle Santiam	CHS	0	0	0	13
Green Peter Tailrace- Middle Santiam	STW	0	0	6	0
Foster Dam Head of Reservoir- South Santiam	CHS	150	0	278	672
Foster Dam Head of Reservoir- South Santiam	STW	2	0	226	7
Cougar Dam	CHS	0	0	3038	834
Cougar Dam Head of Reservoir	CHS	5	0	715	320
Fall Creek Dam Tailrace	CHS	0	0	1	11
Fall Creek Head of Reservoir	CHS	16	0	32	0
Dexter Dam Tailrace	CHS	0	0	101	128
Lookout Point Dam	CHS	0	0	90	2
Lookout Point Head of Reservoir	CHS	3	0	130	225
Hills Creek Dam	CHS	4	0	154	33

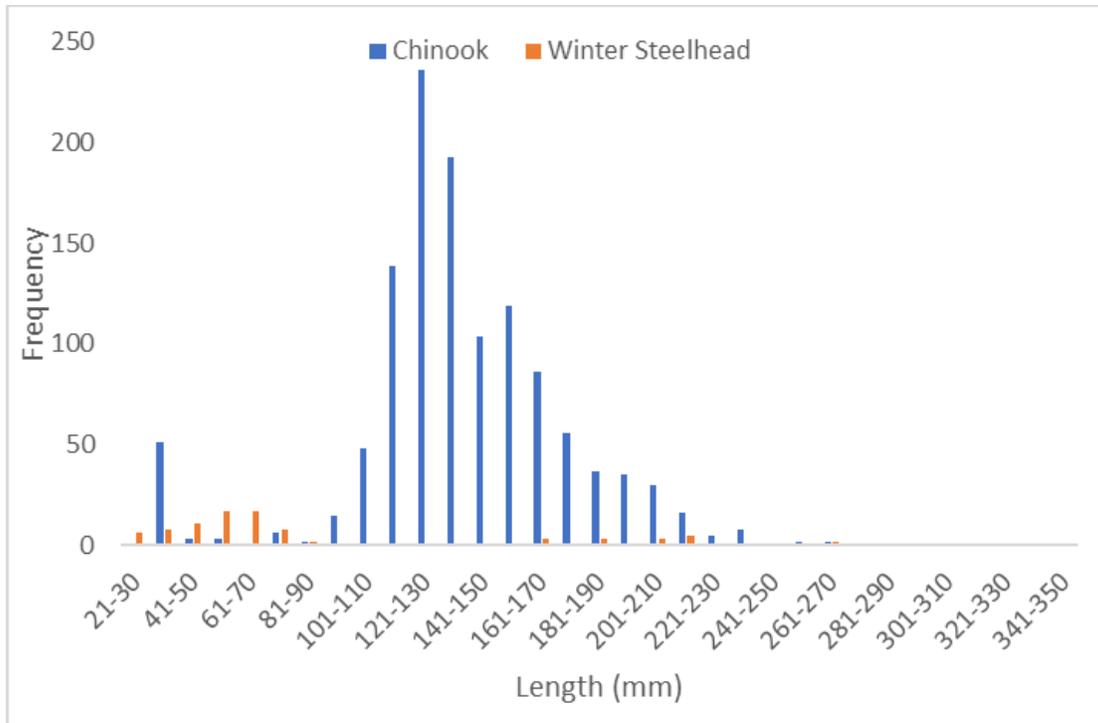
## North Santiam – Big Cliff Dam

### Target Species

This reporting period began on February 1st and ended on February 15th. There were a total of 44 Chinook Salmon (CHS) and 3 Winter Steelhead (STW) captured during the 15-day sampling period (Figure 11). 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 12 shows length frequency data to-date.



**Figure 11. Chinook and Winter Steelhead Captured per day 02/01/2023 to 02/15/2023 (Big Cliff)**



\*Figure does not include fish without heads

**Figure 12. Length Frequency of Juvenile Chinook and Winter Steelhead Sampled Season To-Date (Big Cliff)**

### Trapping Efficiency

A total of 500 juvenile hatchery Chinook (yearlings) were adipose, bismarck brown dyed and released on 01/25/2023 below Big Cliff Dam. A total of 56 fish were recaptured in the 8ft trap. Trapping efficiency was 11.2%.

Trapping efficiency fish displayed minor descaling and fin damage.

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

**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	54	31	48	36.6	1.2	1.4	1.3
		CHS	Parr	33	55	136	94.6	1.8	30.0	10.4
		CHS	Smolt	1248	74	283	146.4	5.4	253.5	37.1
		STW	Fry	29	21	69	40.2	1.1	3.4	1.6
		STW	Parr	45	51	131	69.1	1.3	24.8	4.5
		STW	Smolt	39	157	350	217.6	36.1	442.0	109.2

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

February 1-15, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Big Cliff	PWR	CHS	Fry	41	32	39	36.2	N/A	N/A	N/A
		CHS	Parr	1	72	72	72.0	6.2	6.2	6.2
		CHS	Smolt	2	179	188	183.5	57.7	65.1	61.4
		STW	Fry	1	36	36	36.0	N/A	N/A	N/A
		STW	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		STW	Smolt	2	226	335	280.5	94.8	254.4	174.6

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

### 24-Hour Post Collection Holding Trial

43 Spring Chinook and 3 Winter Steelhead were captured during the current reporting period and held for 24 hours. 1 Chinook (2.3%) and 0 Winter Steelhead (0.0%) died in holding.

### Injuries and Copepod Infection

Partial descaling <20% was observed in 1 of the 44 Chinook captured (2.3%), 1 displayed descaling >20% (2.3%), 3 displayed body injury (6.8%), 1 had eye injury (2.3%), 1 had copepods present in the branchial cavity (2.3%) and 0 had copepods on fins (0.0%). 1 Chinook displayed gas bubble disease (level 1) (2.3%). There was 1 mortality (2.3%).

Partial descaling <20% was observed in 0 of the 3 Winter Steelhead captured (0.0%) and 0 displayed descaling >20% (0.0%), 2 displayed body injury (66.7%), 0 had eye injury (0.0%), 0 had copepods present in the branchial cavity (0.0%) and 1 had copepods on fins (33.3%). 0 Winter Steelhead displayed gas bubble disease (0.0%). There were 0 mortalities (0.0%). 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	44	1	1	3	1	1	0	1
Big Cliff Dam	Winter Steelhead	3	0	0	2	0	0	1	0

### 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

No 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	0	0	1	0
Brown Bullhead	0	0	0	0
Chinook (Adult)	0	0	0	0
Chinook (clipped)	0	0	1	0
Cutthroat Trout	0	0	0	0
Dace	0	0	0	0
Kokanee	0	0	30	5
Kokanee (clipped)	0	0	1	0
<i>O. mykiss</i> (clipped)	0	0	0	0
Pumpkinseed	0	0	1	0
Unknown	0	0	0	0
Mountain Whitefish	0	0	0	0
Sculpin	0	0	0	0
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>34</b>	<b>5</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 1,108.8 to 1,109.3 feet (mean: 1,108.9 feet) during the reporting period. Figure 13 shows instantaneous gauge height.

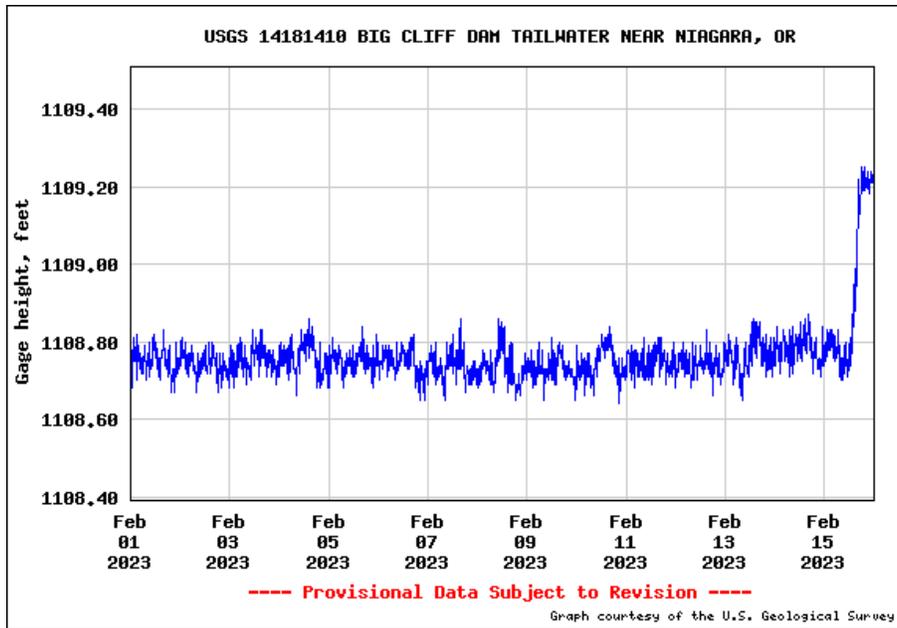
Total dissolved gas saturation ranged from 104 to 111% during the reporting period (mean: 107.5%). Figure 14 shows total dissolved gas saturation.

Stream temperatures were recorded every 2 hours for the length of the reporting period at the RST. (Figure 15). Temperature probes for the trap operated normally throughout this reporting period.

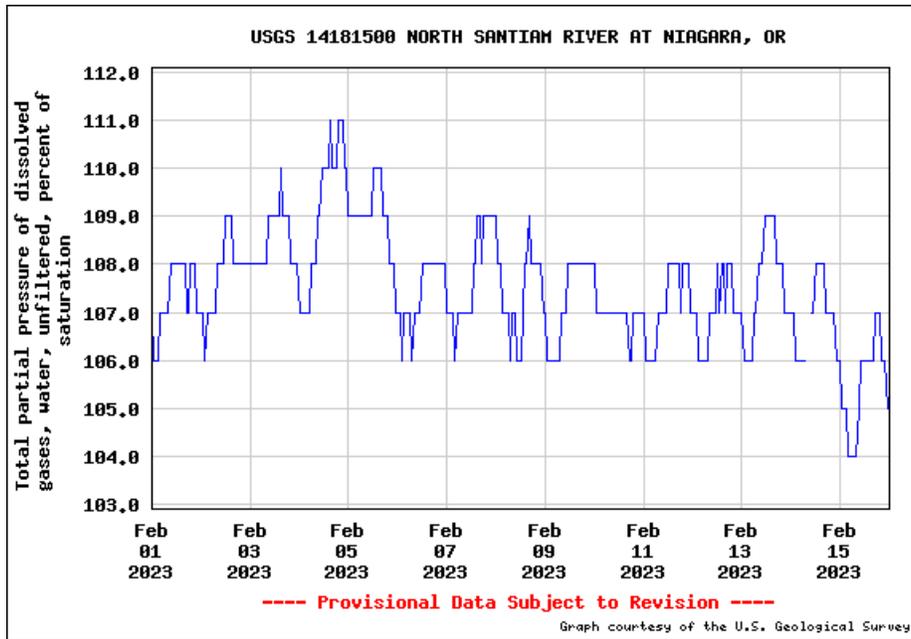
Flows through the Powerhouse and Spill during the reporting period averaged 1,078.7 and 0 cubic feet per second (cfs), respectively (Figure 16). Catch per unit of effort (CPUE) data are summarized in **Table 7**. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

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

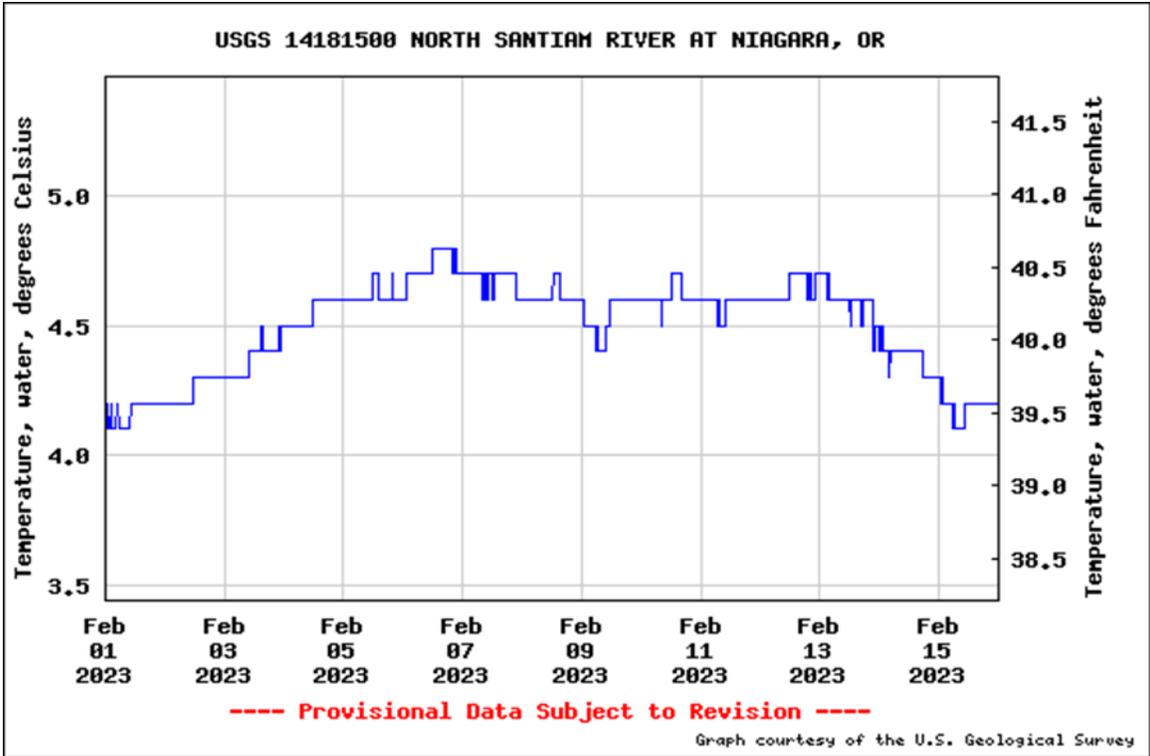
	<b>Chinook</b>	<b>Winter Steelhead</b>
<b>Description</b>	<b>(8 ft)</b>	<b>(8 ft)</b>
Catch	44	3
Effort (hrs)	359.6	359.6
CPUE (fish/hr)	0.122	0.008



**Figure 13. Gauge height (ft); below Big Cliff Dam**

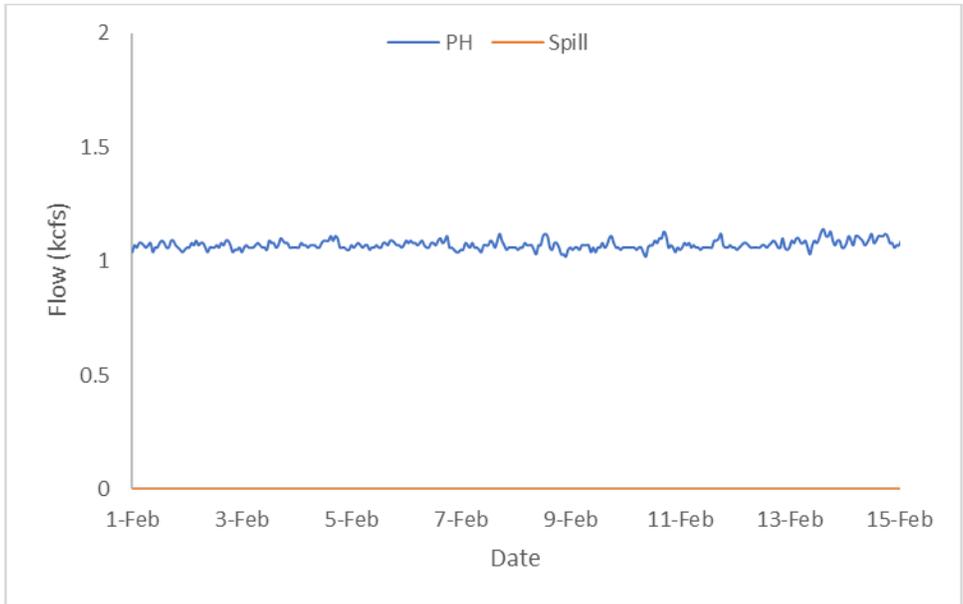


**Figure 14. Total Dissolved Gas Saturation (%); below Big Cliff Dam**



**Figure 15. Temperature at RST (Big Cliff Dam)**

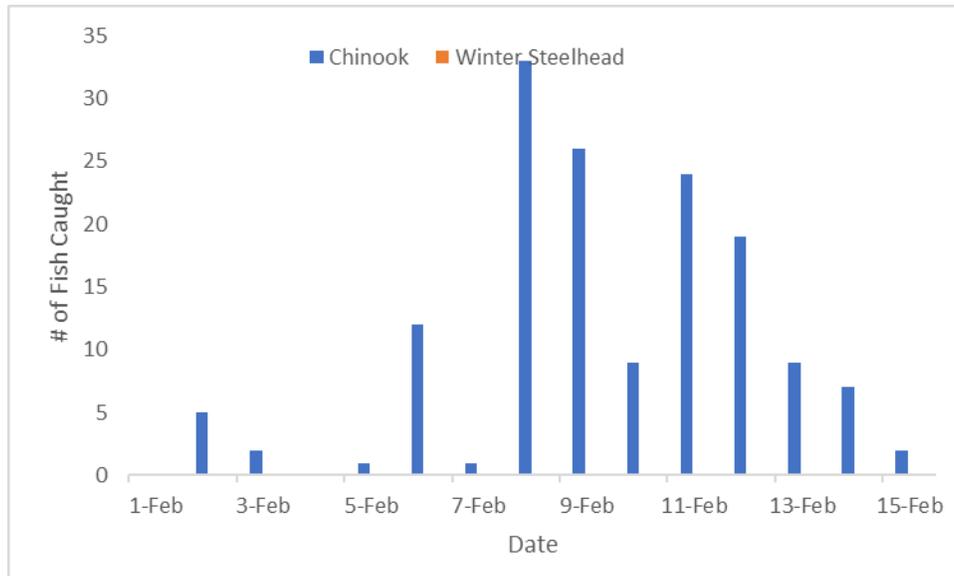
Note: The Big Cliff temperature logger was malfunctioning during the reporting period.  
The above temperature data was gathered from USGS gage 14181500.



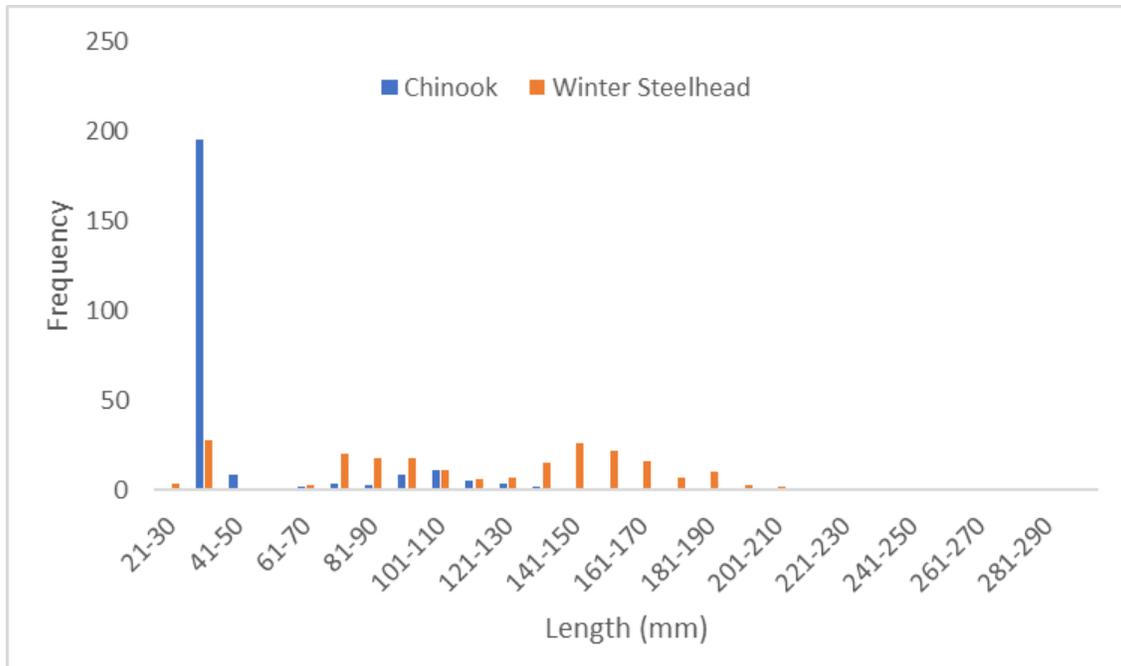
**Figure 16. Hourly Flows PWR vs. Spill (Big Cliff Dam)**

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

This reporting period began on February 1st and ended on February 15th. There were 150 Chinook salmon (CHS) and 2 Winter Steelhead (STW) captured during the 15-day sampling period. Sampling duration was 100.0% for the RST. Table 8 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 17 shows the daily capture numbers for Chinook and Winter Steelhead and Figure 18 shows length frequency data to-date for both species.



**Figure 17. Chinook and Winter Steelhead Captured Per Day 02/01/2023 to 02/15/2023  
(Foster Dam Head of Reservoir- South Santiam)**



**Figure 18. Length Frequency of Juvenile Chinook and Winter Steelhead Sampled Season To-Date (Foster Dam Head of Reservoir- South Santiam)**

### Trapping Efficiency

A total of 1009 juvenile hatchery Chinook (sub-yearlings) were bismarck brown dyed, adipose clipped and released on 11/15/2022 at Cascadia Park above the Foster Dam Head of Reservoir- South Santiam trap. 55 fish have been recaptured to date.

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

A total of 933 juvenile hatchery Chinook (sub-yearlings) were adipose clipped and released on 11/22/2022 at Cascadia Park above the Foster Dam Head of Reservoir- South Santiam trap. 163 fish have been recaptured to date.

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

## 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, 0 Spring Chinook and 0 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	0	0
Winter Steelhead	0	0

**Table 8. 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	205	30	49	36.1	N/A	N/A	N/A
		CHS	Parr	44	70	161	98.3	3.1	44.3	12.6
		CHS	Smolt	29	94	146	111.1	7.3	34.9	14.7
		STW	Fry	33	28	46	34.2	N/A	N/A	N/A
		STW	Parr	110	65	183	107.4	2.4	63.6	17.3
		STW	Smolt	83	100	213	160.5	11.2	164.0	43.9

February 1-15, 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	150	30	41	36.1	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	2	29	29	29.0	N/A	N/A	N/A
		STW	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		STW	Smolt	0	N/A	N/A	N/A	N/A	N/A	N/A

## Injuries and Copepod Infection

Partial descaling <20% was observed on 0 of the 150 Spring Chinook captured (0.0%). Body injuries were present on 0 Spring Chinook (0.0%) 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 no mortalities.

Partial descaling <20% was observed on 0 of the 2 Winter Steelhead captured (0.0%). Body injuries were present on 0 Winter Steelhead (0.0%) 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 were no mortalities. A summary of injuries observed during the reporting period are provided in Table 9, and 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. (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	150	0	0	0	0	0	0	0
	Winter Steelhead	2	0	0	0	0	0	0	0

### Collected DNA and Scale Samples

For the reporting period, scales and DNA were collected from 0 Spring Chinook and 0 Winter Steelhead. The targets captured did not meet length criteria for DNA sampling.

### Non-Target Species

0 non-target species fish were captured during the reporting period; the data is summarized below in Table 10.

**Table 10. 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	0	0	0	0
Largescale Sucker	0	0	0	0
Northern Pikeminnow	0	0	0	0
Sculpin	0	0	0	0
Unknown	0	0	0	0
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

### Stream Statistics

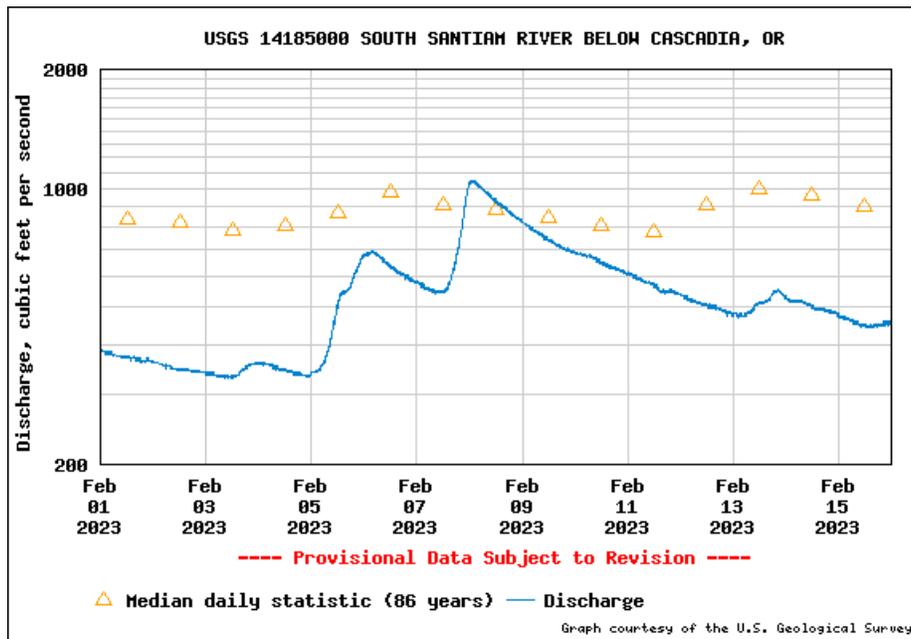
Basic stream statistics at the Foster Dam Head of Reservoir- South Santiam site were calculated from data downloaded from the U.S. Geological Survey stream gauge number 14185000. Discharge (cfs) and Gauge height (feet) are available at this gauge. During the reporting period, daily maximum values for instantaneous discharge ranged from 363.0 cfs to 1,050.0 cfs (mean: 610.3 cfs). Figure 19 shows instantaneous discharge.

Stream temperatures were recorded every 2 hours for the length of the report period for the RST (Figure 20). Temperature probes for the trap operated normally throughout this reporting period.

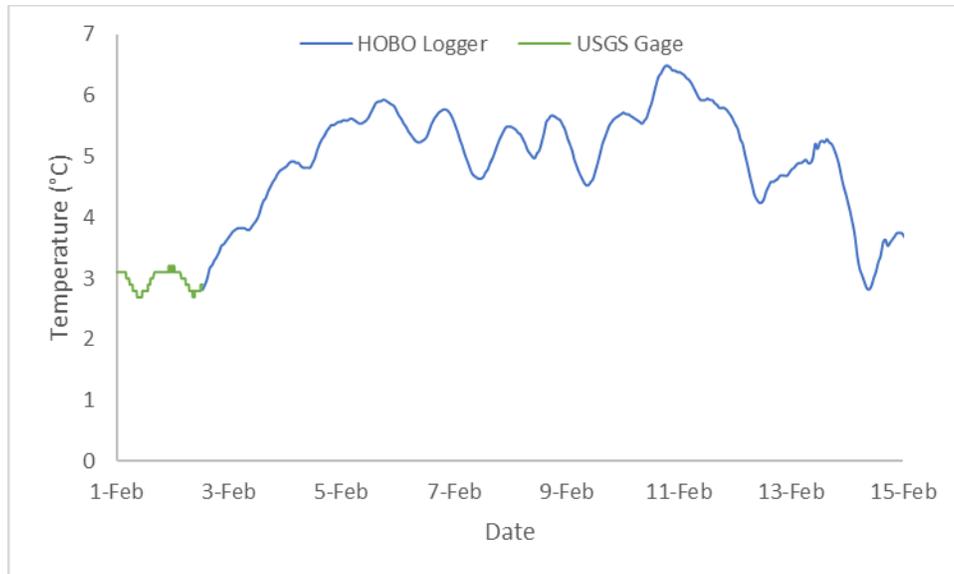
Catch per unit of effort (CPUE) data are summarized in Table 11. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 11. Summary of salmonid CPUE, Foster Dam Head of Reservoir- South Santiam.**

	Chinook	Winter Steelhead
<b>Description</b>	<b>(5 ft)</b>	
Catch	150	2
Effort (hrs)	335.9	335.9
CPUE (fish/hr)	0.447	0.006



**Figure 19. Discharge (cfs); Foster Dam Head of Reservoir – S. Santiam)**



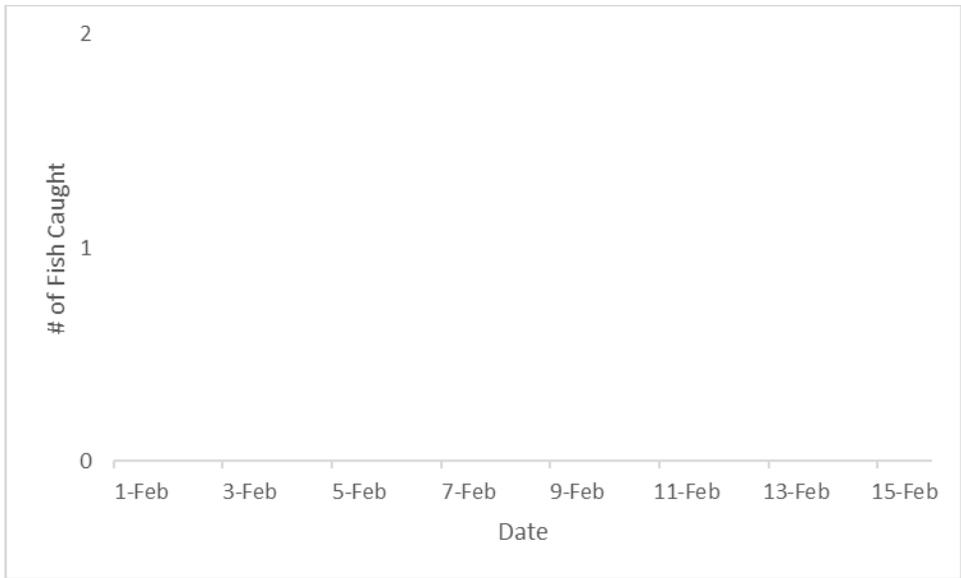
**Figure 20. Temperature at RST (Foster Dam Head of Reservoir – S. Santiam)**

Note: Temperature probe was deployed on Feb. 2<sup>nd</sup>. USGS gage data from gage 14185000 was used to supplement the absence of data.

## South Fork McKenzie – Cougar Dam

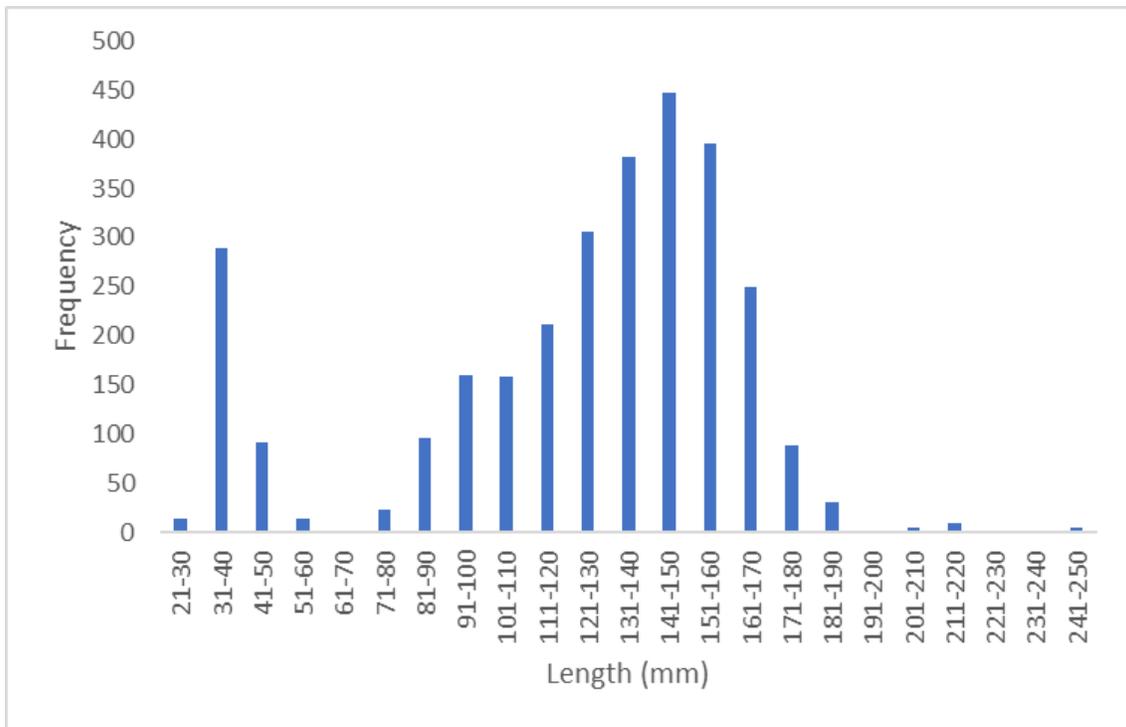
### Target Species

This reporting period began on February 1st and ended on February 15th. There were a total of 0 Chinook Salmon (CHS) captured during the 15-day sampling period. Sampling duration was 100.0% for the RO RST and 40.0% for the Powerhouse RSTs. Table 12 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 21 shows the daily capture numbers for chinook and Figure 22 shows length frequency data to-date.



\*Recaptured fish for trapping efficiency trials not included.

**Figure 21. Chinook Captured Per Day 02/01/2023 to 02/15/2023 (Cougar Dam)**



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

**Figure 22. 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, and released on 01/30/2023 in the RO channel. 6 fish were recaptured for an efficiency of 1.2%.

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

### Run of River Trapping Efficiency

Run of river fish were captured, caudal clipped 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.

Cougar Dam	Release #	Recapture #
PH	0	0
RO	0	0

**Table 12. Descriptive Statistics of Target Species Captured at Cougar 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
Cougar Dam	RO	CHS	Fry	21	34	48	40.8	N/A	N/A	N/A
		CHS	Parr	205	56	164	107.2	1.2	41.1	14.4
		CHS	Smolt	1601	92	247	145.2	4.7	142.4	34.7
Cougar Dam	PWR	CHS	Fry	382	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	556	76	223	138.6	4.2	113.5	29.8

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

February 1-15, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Cougar Dam	RO	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
Cougar Dam	PWR	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.

## 24-Hour Post Collection Holding Trial

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

## Injuries and Copepod Infection

Partial descaling <20% was observed on 0 of the 0 Chinook collected at the PWR RST (0.0%). Descaling >20% was observed on 0 of the Chinook (0.0%). There were 0 fish with bodily injuries (0.0%) and 0 had eye injuries (0.0%). 0 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 were 0 chinook mortalities collected in the PWR RST (0.0%).

Partial descaling <20% was observed on 0 of the 0 Chinook collected at the RO RST (0.0%). Descaling >20% was observed on 0 of the Chinook (0.0%). There was 0 fish with bodily injuries (0.0%) and 0 had eye injuries (0.0%). 0 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 were 0 chinook mortalities collected in the RO RST (0.0%).

Data is summarized below in Table 13. A summary of injuries observed during the reporting period, 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 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	0	0	0	0	0	0	0	0
Cougar 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, scales and DNA were collected from 0 Spring Chinook. The other targets captured did not meet length criteria for DNA sampling or were too damaged to remove 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.

## Non-Target Species

A total of 0 non-target fish were captured during the reporting period; the data is summarized below in Table 14.

**Table 14. 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)	0	0	0	0	3	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	0	0	0	0	1	1
Largescale Sucker	0	0	0	0	0	0
Mountain Whitefish	0	0	0	0	3	0
Northern Pikeminnow	0	0	0	0	0	0
<i>O. mykiss</i>	0	0	0	0	1	0
Sculpin	0	0	0	0	2	0
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>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>2</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 1,252.5 to 1,252.9 feet (mean: 1,252.9 feet). Figure 23 shows instantaneous gauge height.

Total dissolved gas saturation ranged from 98 to 105% (mean: 101.9%). Figure 24 shows total dissolved gas saturation.

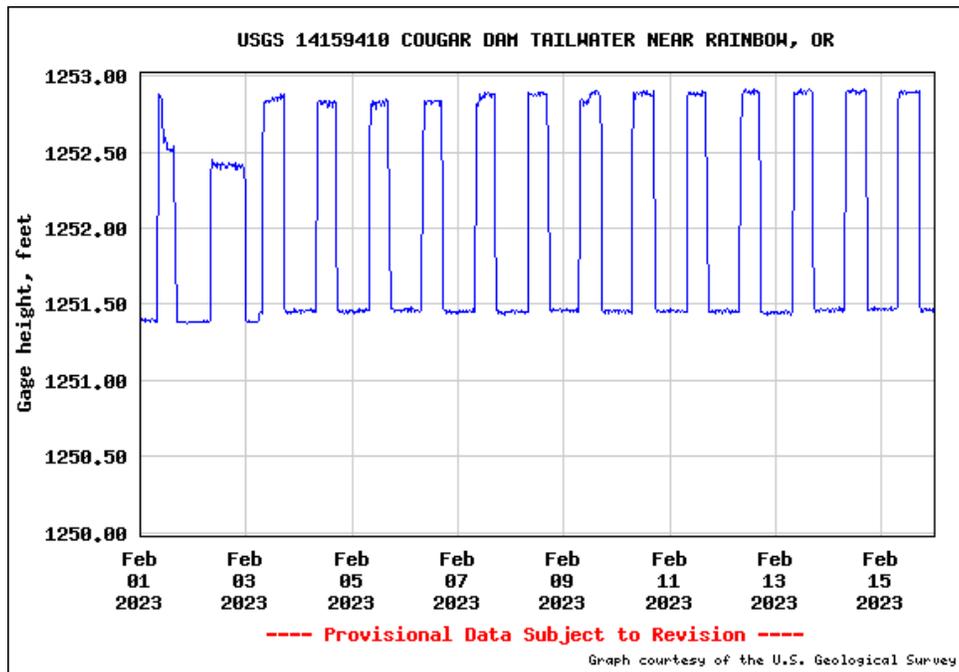
Stream temperatures were recorded every 2 hours for the length of the report period for the RO and PWR RST's (Figure 25 and Figure 26 respectively). Temperature probes for the RO and PWR RST operated normally throughout this reporting period.

Flows through the Powerhouse and RO during the reporting period averaged 209.3 and 262.0 cubic feet per second (cfs) respectively (Figure 27). Catch per unit of effort (CPUE) data are summarized in Table

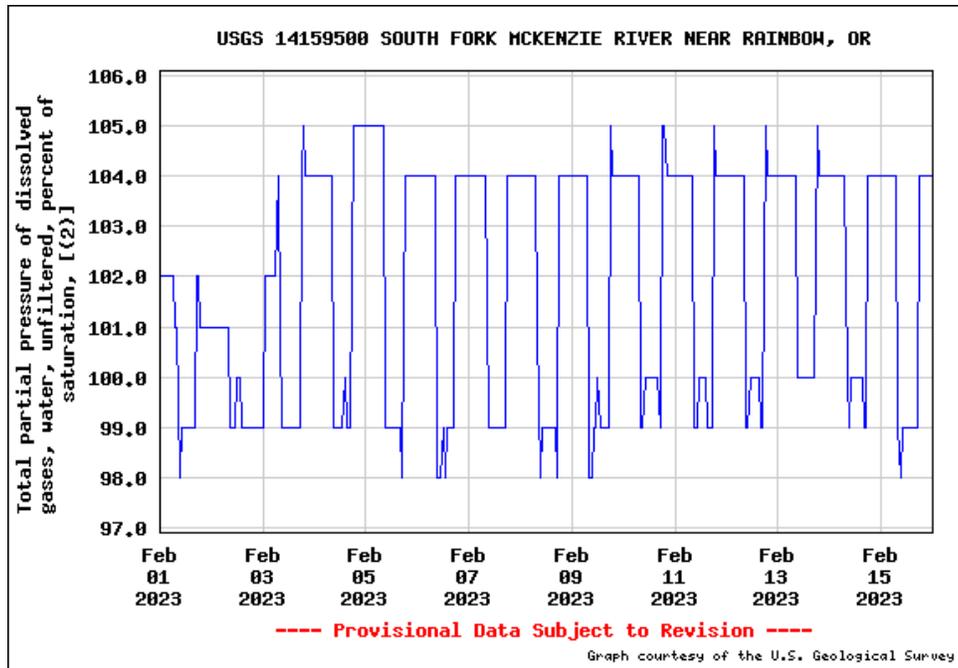
15. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 15. Summary of salmonid CPUE, Cougar Dam.**

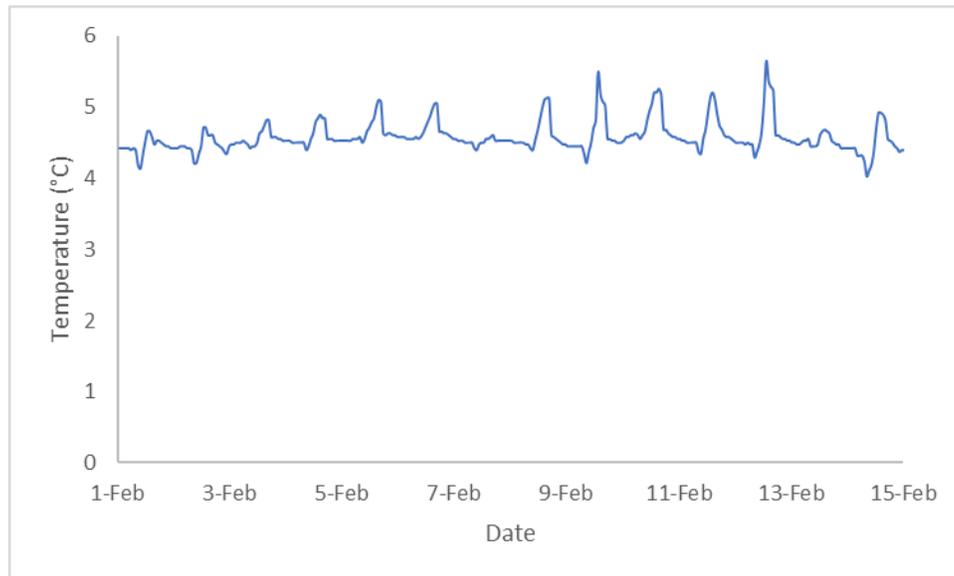
Description	Chinook	
	RO (5ft)	PWR (8ft)
Catch	0	0
Effort (hrs)	363.3	288.5
CPUE (fish/hr)	0	0



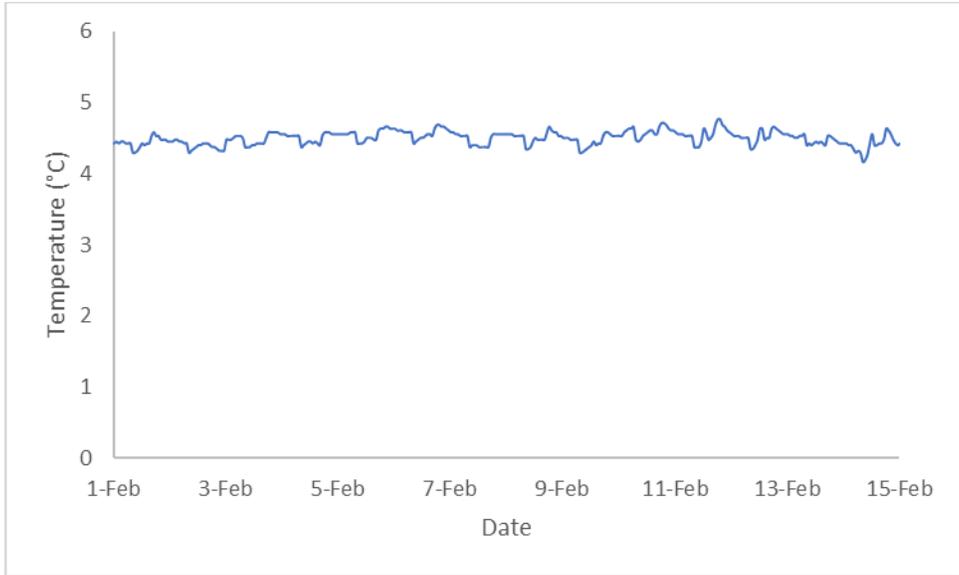
**Figure 23. Gauge Height (feet); below Cougar Dam, South Fork McKenzie River**



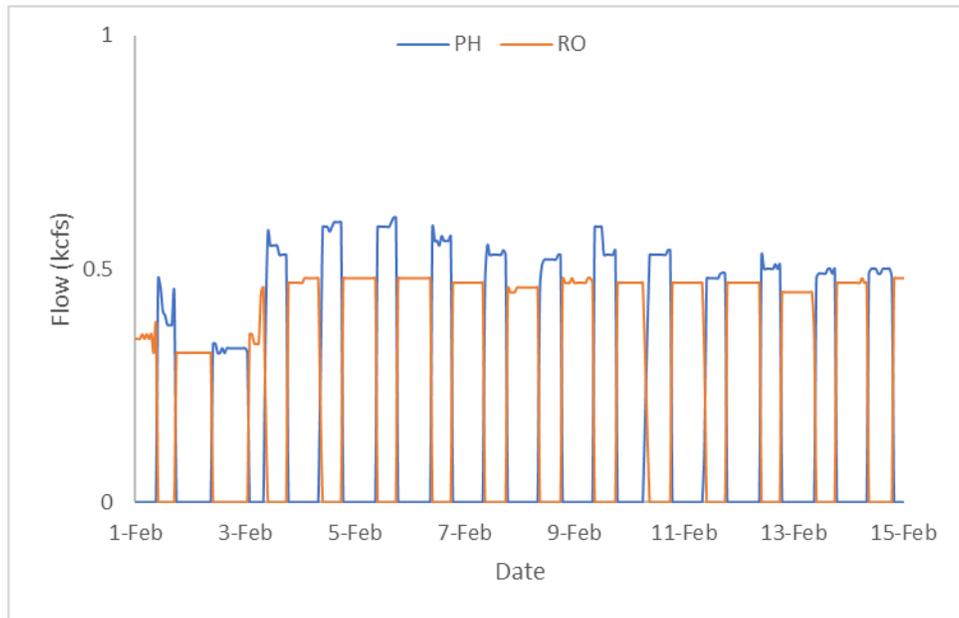
**Figure 24. Total Dissolved Gas Saturation (%); below Cougar Dam, South Fork McKenzie River**



**Figure 25. Temperature at RO RST (Cougar Dam)**



**Figure 26. Temperature at PWR RST (Cougar Dam)**

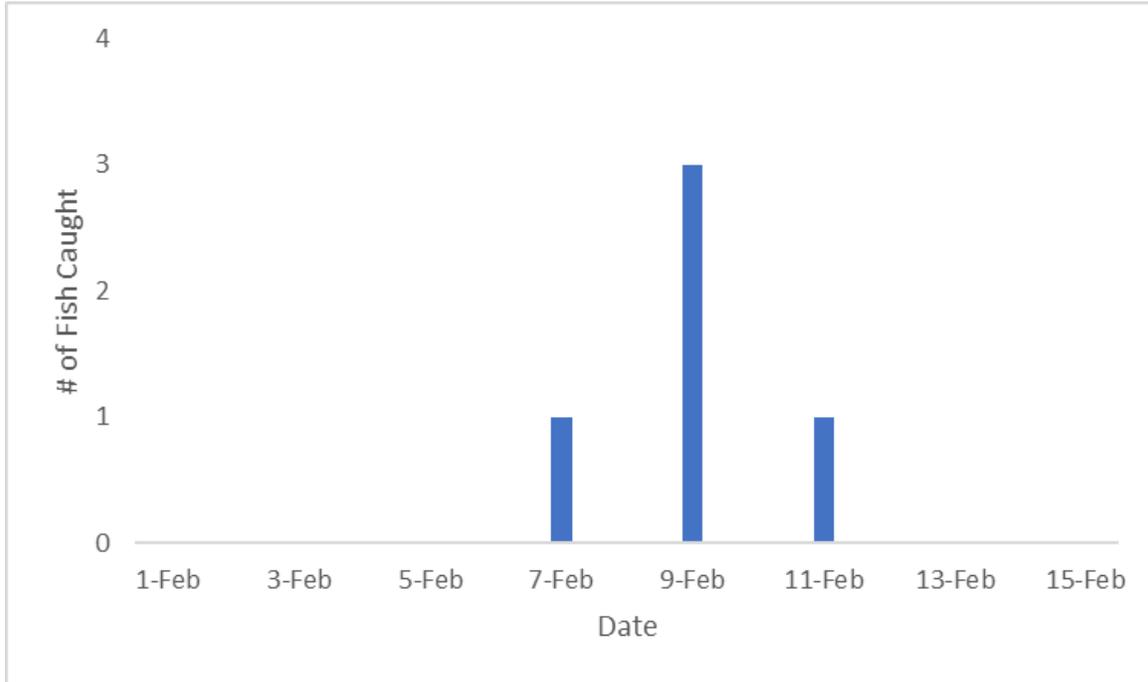


**Figure 27. Hourly Flows PWR vs. RO (Cougar Dam)**

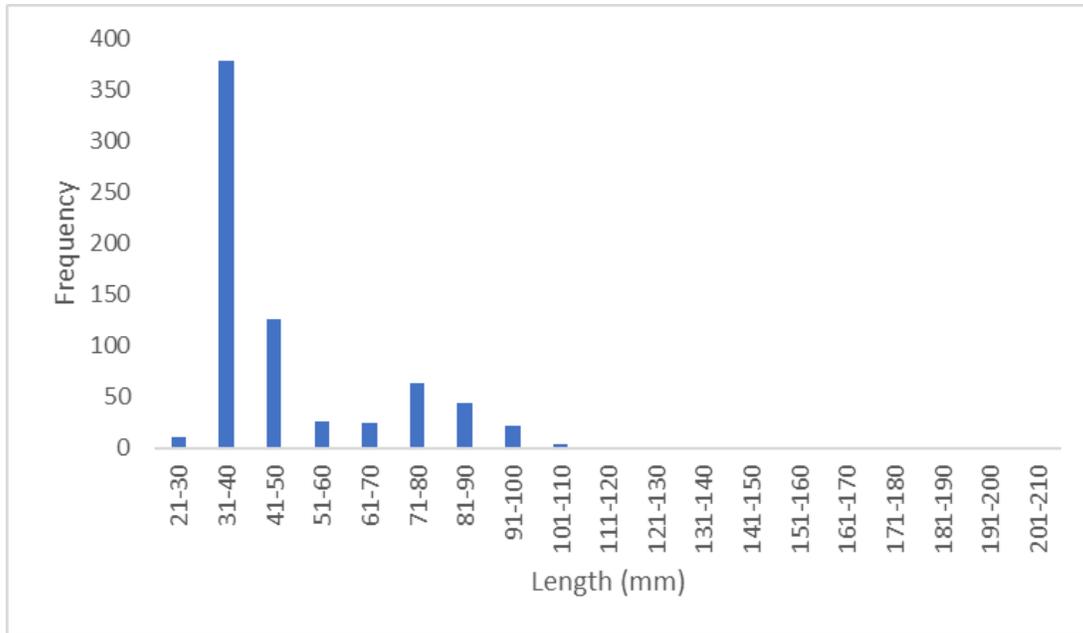
## South Fork of the McKenzie–Cougar Dam Head of Reservoir

### Target Species

The reporting period began February 1st and ended on February 15th. There were 5 Chinook salmon captured during the 15-day sampling period (Figure 28). The trap was operated 100.0% of the reporting period. Table 16 provides life stage, length, and weight data for all Chinook salmon that have been caught at the site to-date and Figure 29 shows length frequency data to-date.



**Figure 28. Chinook Captured Per Day 02/01/2023 to 02/15/2023 (Cougar Dam Head of Reservoir)**



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

**Table 16. 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	4	70	94	82	3.3	9.4	6.2
		CHS	Parr	183	43	150	79.2	1.0	11.2	5.6
		CHS	Fry	528	27	63	38.6	0.6	2.8	1.4

February 1-15, 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	5	78	94	85.4	5.5	8.4	6.8
		CHS	Fry	0	N/A	N/A	N/A	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 719 juvenile hatchery Chinook were adipose clipped, PIT tagged, and released on 11/16/2022 upstream of the Cougar Head of Reservoir trap site. A total of 29 fish were recaptured in the 5 ft trap. Trapping efficiency was 4.0%.

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

A total of 752 juvenile hatchery Chinook were adipose clipped, PIT tagged, and released on 11/23/2022 upstream of the Cougar Head of Reservoir trap site. A total of 51 fish were recaptured in the 5 ft trap. Trapping efficiency was 6.8%.

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

A total of 620 juvenile hatchery Chinook were adipose clipped, PIT tagged, and released on 11/29/2022 upstream of the Cougar Head of Reservoir trap site. A total of 48 fish were recaptured in the 5 ft trap. Trapping efficiency was 7.7%.

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

### Injuries and Copepod Infection

5 Chinook were captured for the reporting period. Of the fish captured, partial descaling <20% was observed on 3 fish (60.0%) and descaling >20% was observed on 0 fish (0.0%). 2 fish had bodily injury (40.0%). 0 had copepods in the branchial cavity (0.0%), 0 had copepods on fins (0.0%). There were 0 mortalities for this reporting period (0.0%). Injury data for the reporting period is summarized in Table 17. To date injury data can be found in Appendix A.

**Table 17. 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	5	3	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 5 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

5 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, 33 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

## Non-Target Species

A total of 1 non-target fish were captured at the Cougar Dam Head of Reservoir RST during the reporting period; the data is summarized below in Table 18. One Bull Trout carcass was collected in the trap during this period. Carcass was transferred to ODFW.

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

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

## Stream Statistics

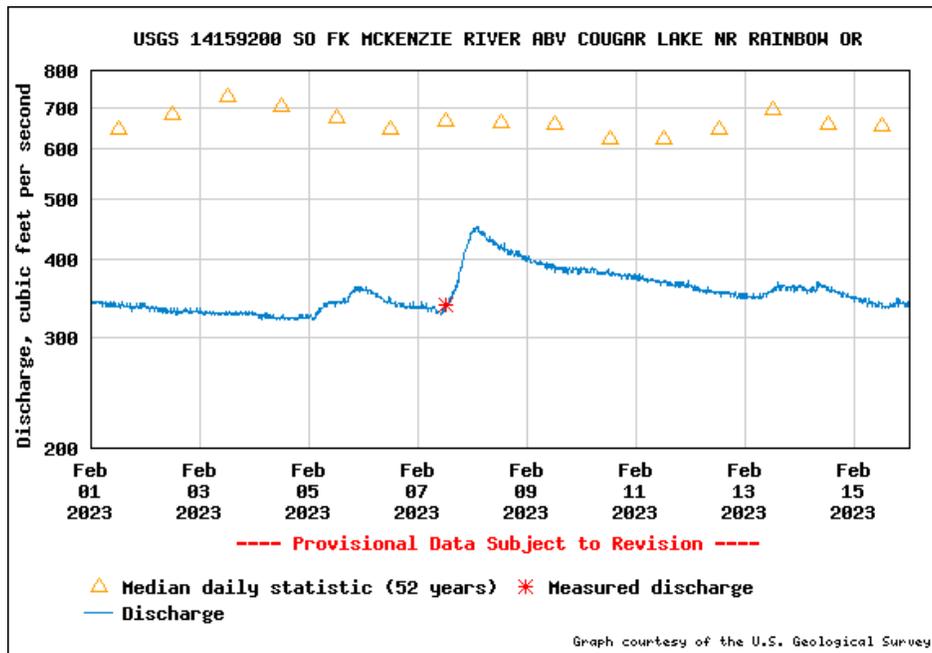
Basic stream statistics at the site were calculated from data downloaded from the U.S. Geological Survey stream gauge number 14159200. During the reporting period, daily maximum values for instantaneous discharge ranged from 329.0 cfs to 451.0 cfs (mean: 371.1 cfs). Figure 30 shows instantaneous discharge.

Stream temperatures were recorded every two hours using a temperature probe at the Cougar Dam Head of Reservoir RST site during this reporting period. Temperature probes operated normally, and the data is shown below in Figure 31.

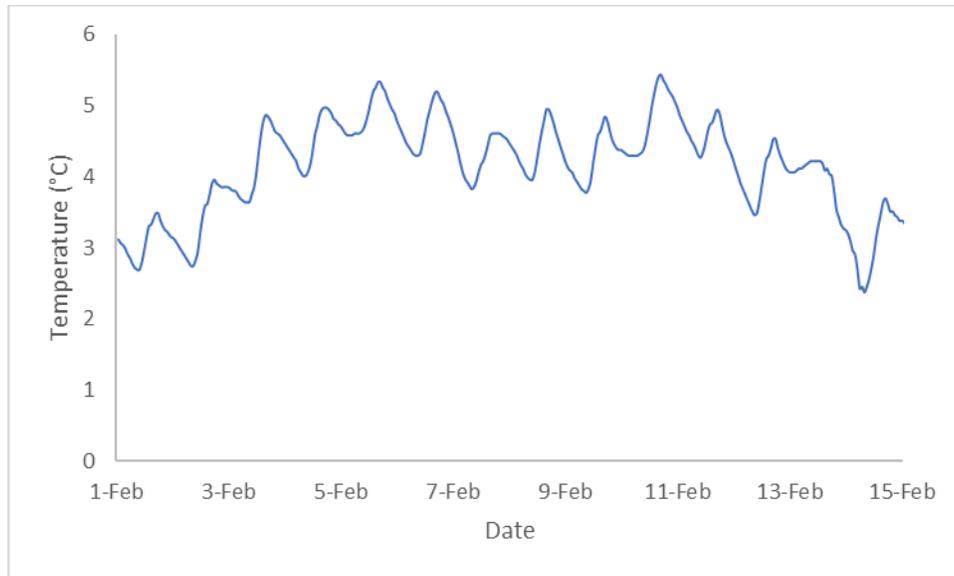
Catch per unit of effort (CPUE) data are summarized in Table 19. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 19. Summary of Chinook CPUE, Cougar Dam Head of Reservoir.**

	Chinook
Description	5 ft
Catch	5
Effort (hrs)	338.2
CPUE (fish/hr)	0.015



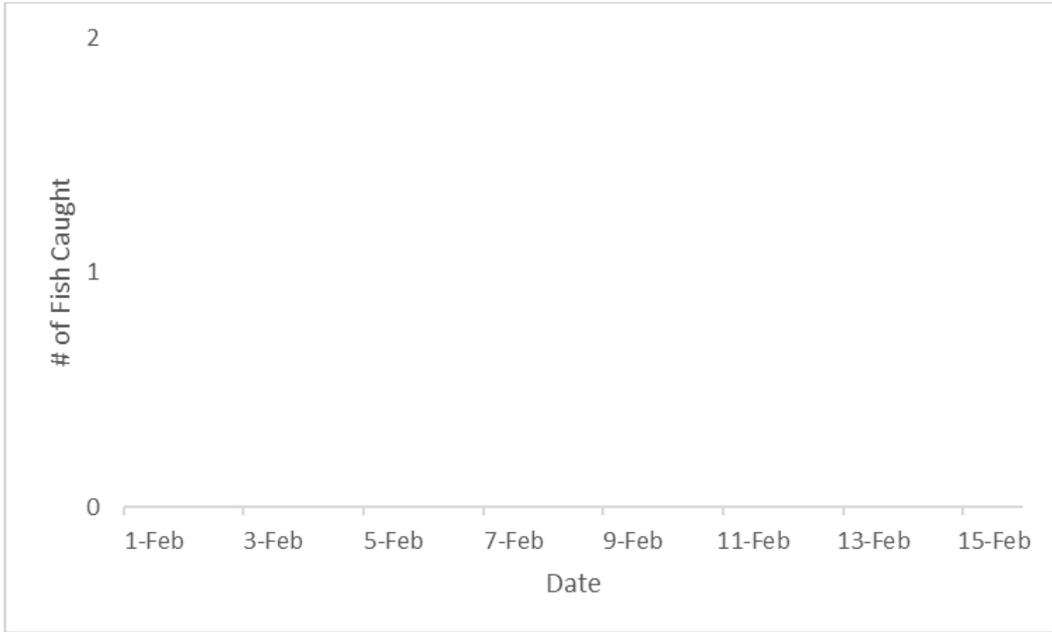
**Figure 30. Discharge (cfs); South Fork McKenzie above Cougar Dam**



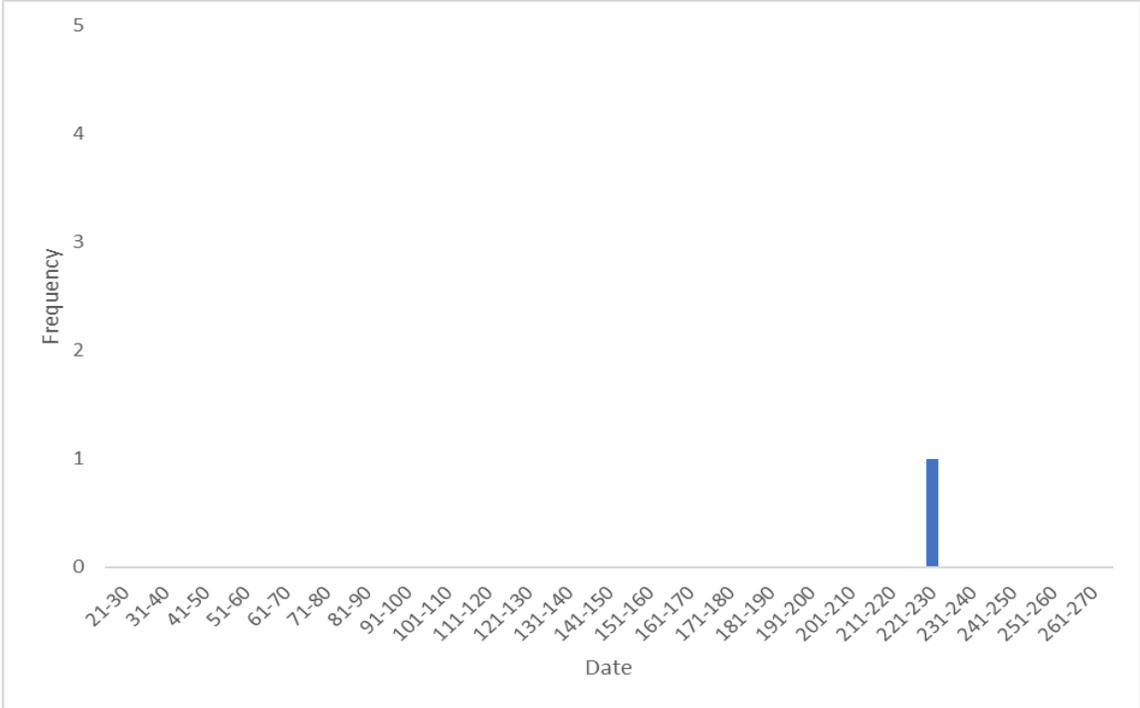
**Figure 31. Temperature at RST (Cougar Dam Head of Reservoir)**

### **Fall Creek Dam Tailrace**

The reporting period began February 1st and ended February 15th. 0 Chinook salmon were captured during the 15-day sampling period (Figure 32). Low flow in the tailrace channel resulted in the trap grounding out. The cone was raised to a non-sampling position on 1/25/2023. The trap did not fish this reporting period due to low flow. The trap sampled 0.0% of the days during this reporting period. Table 20 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 33 shows length frequency data to-date.



**Figure 32. Chinook Captured Per Day 02/01/2023 to 02/15/2023 (Fall Creek Dam Tailrace)**



**Figure 33. Length Frequency of Juvenile Chinook Sampled Season To-Date (Fall Creek Dam Tailrace)**

**Table 20. 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	0	N/A	N/A	N/A	N/A	N/A	N/A
February 1-15, 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	0	N/A	N/A	N/A	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 were captured during this reporting period. 0 fish displayed descaling >20% (0.0%) and 0 fish had bodily injuries (0.0%). 0 fish had copepods in the branchial cavity (0.0%). There were no mortalities. The data is summarized in Table 21. To date injury data is listed in Appendix A.

**Table 21. 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	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 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

0 non-target fish were captured at the Fall Creek Dam Tailrace site during the reporting period; the data is summarized below in Table 22.

**Table 22. 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	0	0	10	0
Brown Bullhead	0	0	3	0
Bull Trout	0	0	0	0
Chinook (clipped)	0	0	0	0
Crappie	0	0	0	0
Cutthroat Trout	0	0	5	0
Dace	0	0	74	3
Largescale Sucker	0	0	2	0
Mosquitofish	0	0	0	0
Mountain Whitefish	0	0	0	0
Northern Pikeminnow	0	0	1	0
<i>O. mykiss</i>	0	0	15	0
Pacific Lamprey	0	0	0	0
Peamouth	0	0	0	0
Redside Shiner	0	0	0	0
Sculpin	0	0	3	0
Spotted Bass	0	0	0	0
Unknown	0	0	0	0
<b>Totals</b>	<b>0</b>	<b>0</b>	<b>113</b>	<b>3</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 182.0 cfs to 343.0 cfs (mean: 272.5 cfs). Figure 34 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 35).

Flows In and Out of reservoir during the reporting period averaged 262.6 cfs and 219.8 cfs respectively (Figure 36).

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, Fall Creek Dam Tailrace.**

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

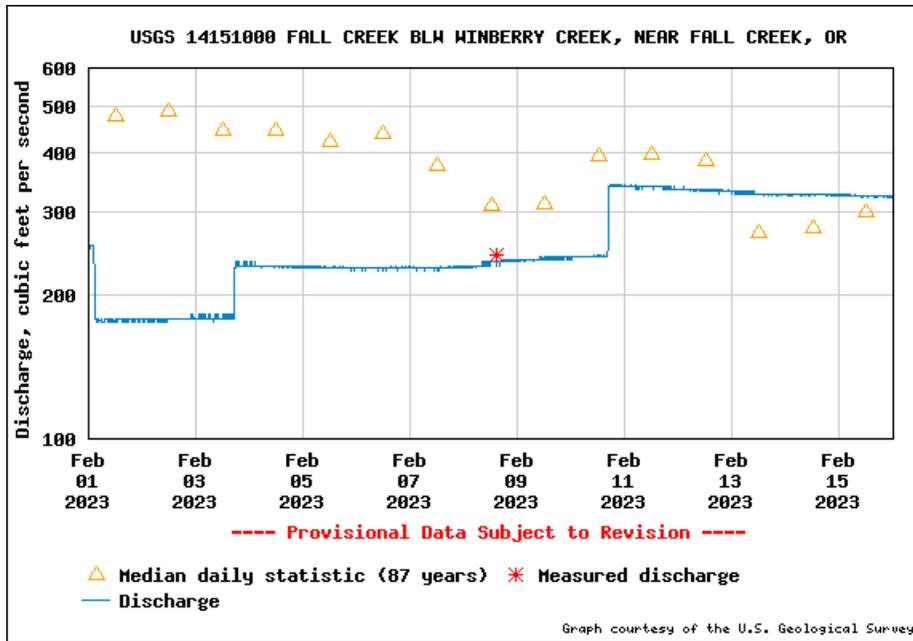


Figure 34. Discharge (cfs); Fall Creek Below Winberry Creek, Near Fall Creek, OR

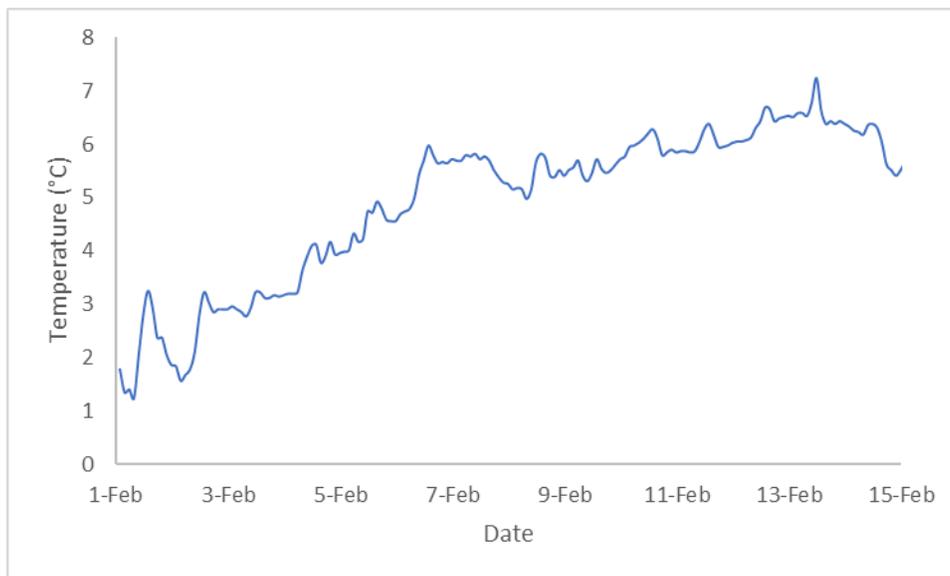
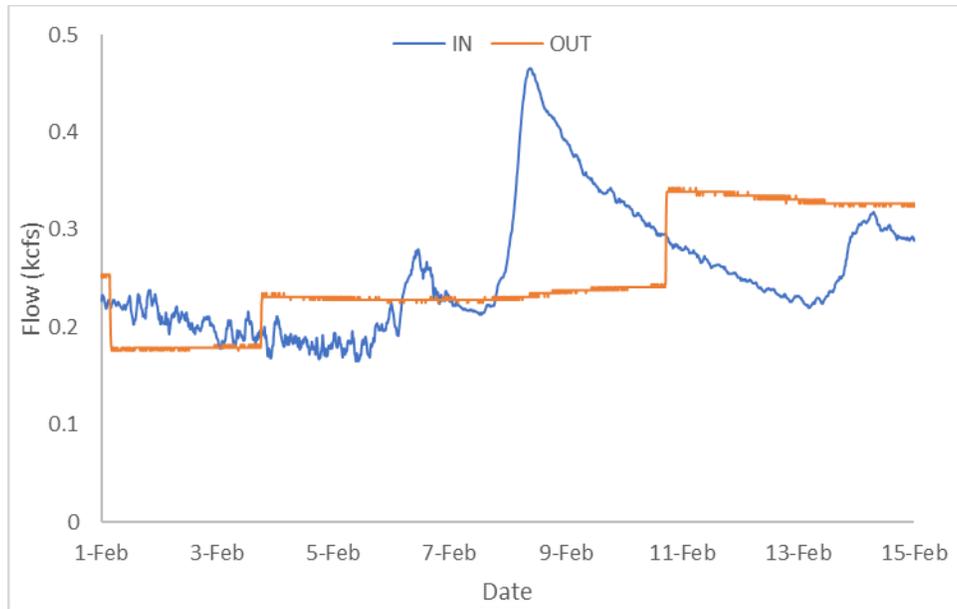


Figure 35. Temperature at RST (Fall Creek Dam Tailrace)

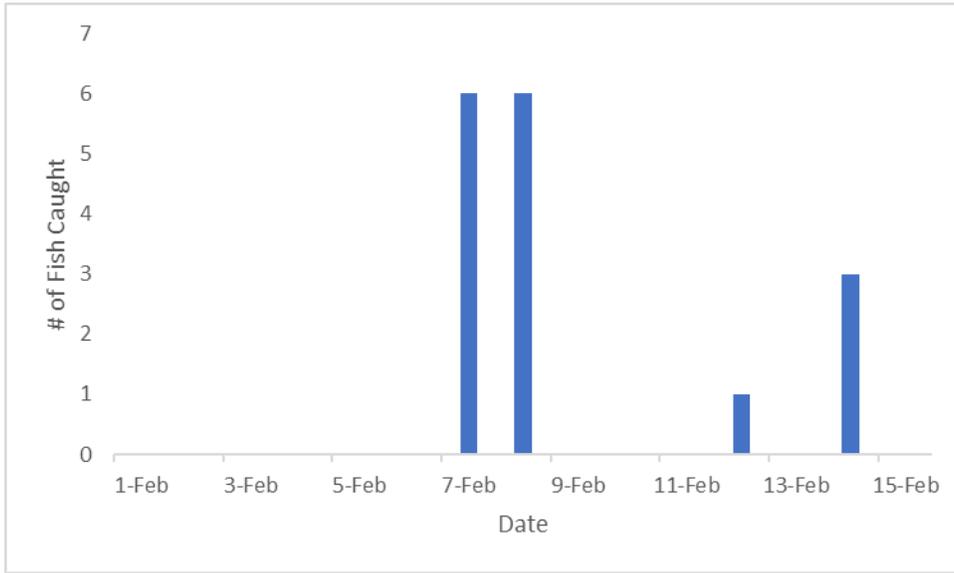


**Figure 36. Hourly Flows In vs. Out (RO) (Fall Creek Tailrace)**

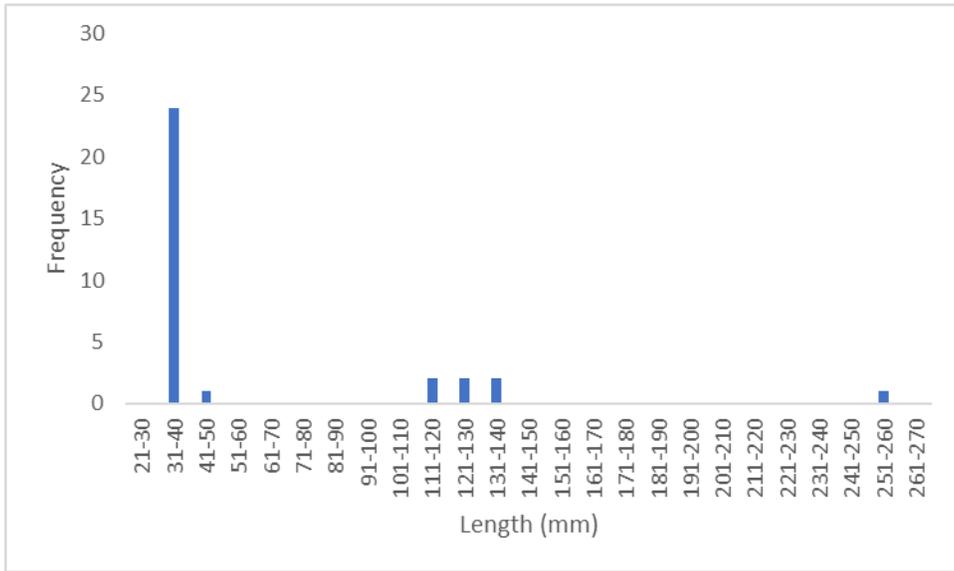
## **Middle Fork Willamette – Fall Creek Head of Reservoir**

### **Target Species**

The reporting period began February 1st and ended February 15th. 16 Chinook salmon were captured during the 15-day sampling period (Figure 37). The Fall Creek Head of Reservoir trap was deployed on 1/18/2023. The RST was put into the non-sampling position on 1/27/2023 due to low flows rendering the trap inoperable. The trap was lowered into the sampling position on 2/6/2023. The trap was operated 60.0% of the reporting period. Table 24 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 38 shows length frequency data to-date.



**Figure 37. Chinook Captured Per Day 02/01/2023 to 02/15/2023 (Fall Creek Head of Reservoir)**



**Figure 38. Length Frequency of Juvenile Chinook Sampled Season To-Date (Fall Creek Head of Reservoir)**

**Table 24. 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	25	32	41	35.4	N/A	N/A	N/A

February 1-15, 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	0	0	0	0	0	0
		CHS	Parr	0	0	0	0	0	0	0
		CHS	Fry	16	32	41	35.7	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%). 0 displayed gas bubble disease (0.0%). There were 0 mortalities this reporting period (0.0%). Injuries are displayed in Table 25. To date injury data can be found in Appendix A.

**Table 25. 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	16	0	0	0	0	0	0	0

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

### Trapping Efficiency

2 Chinook were VIE marked and released upstream to conduct a run of river trapping efficiency trial during this period. To date, no VIE marked fish have been recaptured.

### Collected DNA and Scale Samples

No scales and DNA were collected from Chinook captured for the reporting period. The targets were below the sampling threshold.

## 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, 11 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
1/16/2023-1/31/2023	Left Dorsal	Blue	9	0
2/1/2023-2/15/2023	Right Dorsal	Yellow	2	0

## Non-Target Species

A total of 18 non-target fish were captured at the Fall Creek Head of Reservoir site during the reporting period; the data is summarized below in Table 26.

**Table 26. Summary of Non-target Species (Fall Creek Head of Reservoir).**

Species	8ft Capture	8ft Mortality	Season Total	Season Total Mortality
Brook Lamprey	1	0	3	0
Brown Bullhead	0	0	0	0
Cutthroat Trout	3	0	3	0
Dace	1	0	1	0
<i>O. mykiss</i>	13	0	26	0
<i>O. mykiss (clipped)</i>	0	0	0	0
Redside Shiner	0	0	0	0
Sculpin	0	0	0	0
<b>Totals</b>	<b>18</b>	<b>0</b>	<b>33</b>	<b>0</b>

## Stream Statistics

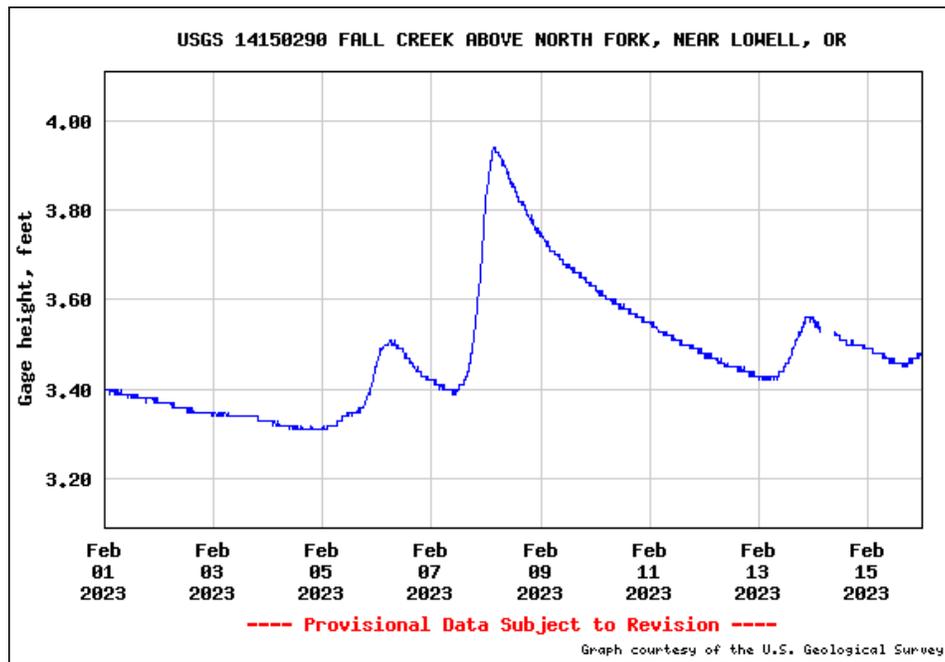
Basic stream statistics at the Fall Creek site were calculated from data downloaded from the U.S. Geological Survey stream gage number 14150290. During the reporting period, daily maximum values for instantaneous gage height ranged from 3.3 feet to 3.9 feet (mean 3.5 feet). Figure 39 shows instantaneous gage height.

Stream temperatures were recorded every 2 hours for the Fall Creek RST (Figure 40). Temperature probes for the Fall Creek RST operated normally throughout this reporting period.

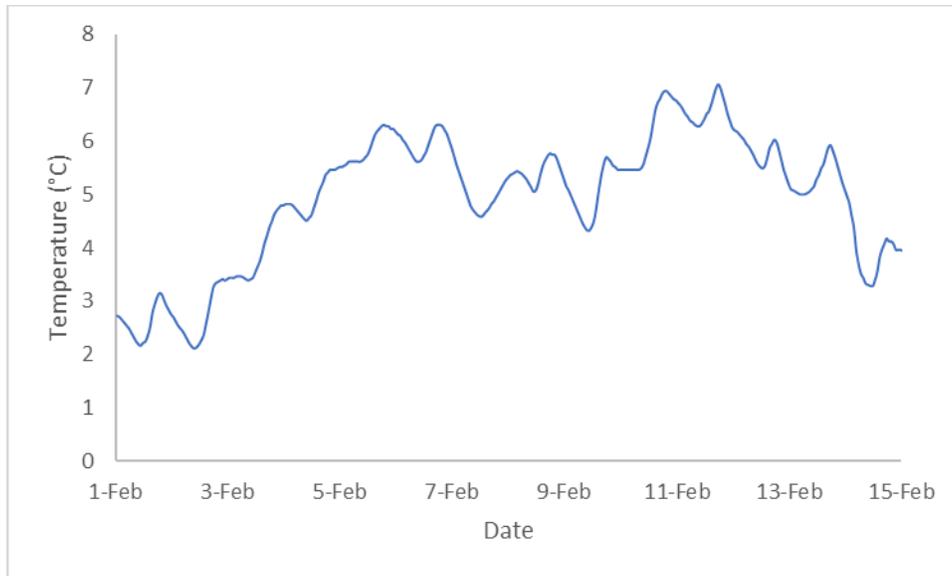
Catch per unit of effort (CPUE) data are summarized in Table 27. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 27. Summary of Chinook CPUE, Fall Creek Head of Reservoir.**

	Chinook
Description	8 ft
Catch	16
Effort (hrs)	215.9
CPUE (fish/hr)	0.074



**Figure 39. Gage Height (feet); Fall Creek Above North Fork, Near Lowell OR**

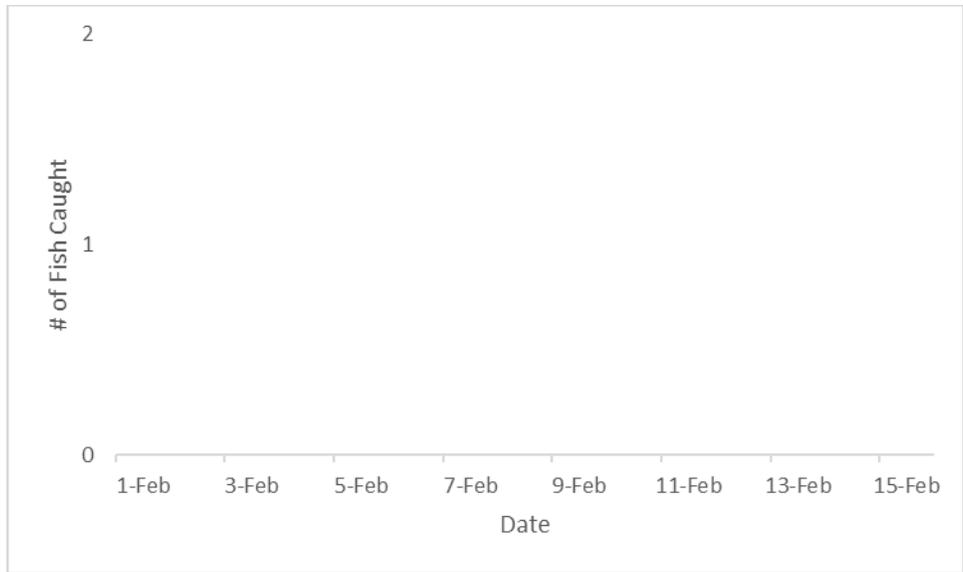


**Figure 40. Temperature at RST (Fall Creek Head of Reservoir)**

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

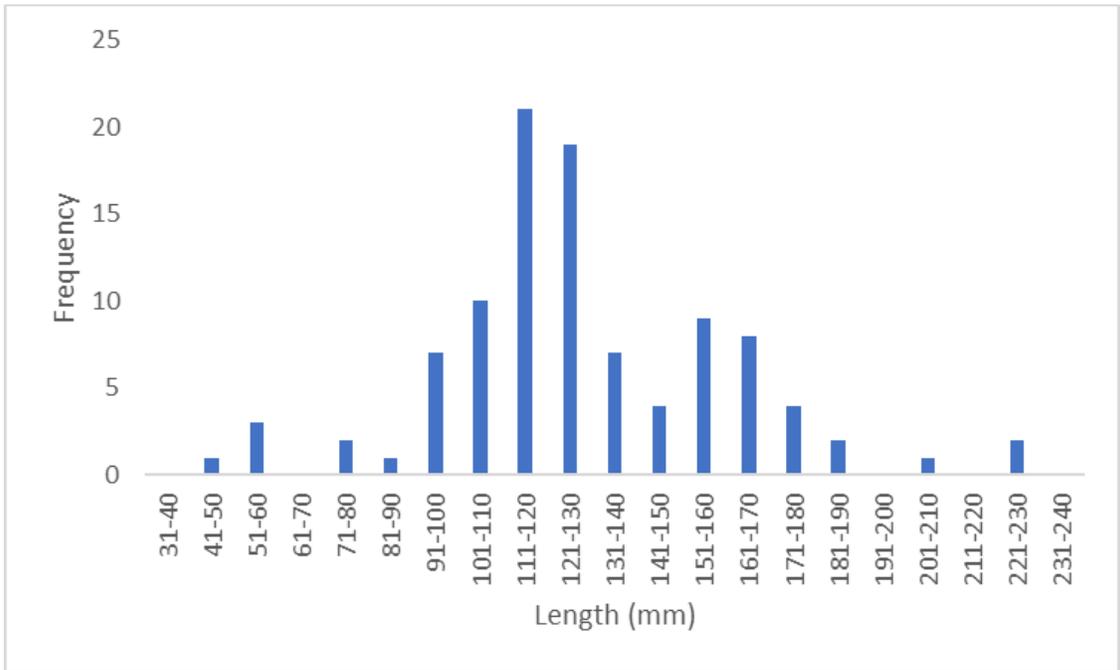
### **Target Species**

This reporting period began on February 1st and ended on February 15th. There were 0 Chinook salmon (CHS) captured during the 15-day sampling period. Sampling duration was 100% for the 5 ft RST. Table 28 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 41 shows the daily capture numbers for Chinook and Figure 42 shows length frequency data to-date.



\*Recaptured fish for trapping efficiency trials not included.

**Figure 41. Chinook Captured Per Day 02/01/2023 to 02/15/2023 (Dexter Dam)**



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

**Figure 42. Length Frequency of Juvenile Chinook Sampled Season To-Date (Dexter Dam)**

**Table 28. 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

February 1-15, 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 1010 juvenile hatchery Chinook (sub-yearlings) adipose clipped, upper caudal clipped and released on 12/06/2022 below Dexter Dam. Fish were released in small groups into powerhouse flow to evaluate the traps efficiency capturing fish passing through the powerhouse. 10 fish were recaptured in the 5-foot RST for an efficiency of 1.0%.

Dexter Dam	Release #	Recapture #	Capture Efficiency
Spill	N/A	N/A	N/A
Powerhouse	1010	10	1.0% (10/1010)

### 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 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 (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

54 non-target species fish were captured during the reporting period; the data is summarized below in Table 30. 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 30. Summary of Non-target Species (Dexter Dam).**

Species	Capture	Mortality	Season Total	Season Total Mortality
Bass	0	0	0	0
Bluegill	0	0	1	0
Chinook (adult)	0	0	0	0
Chinook (clipped)	3	0	7	0
Crappie	42	2	226	13
Cutthroat Throat	0	0	0	0
Dace	0	0	0	0
Largescale Sucker	0	0	0	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	9	0	33	2
<b>Totals</b>	<b>54</b>	<b>2</b>	<b>271</b>	<b>15</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 637.5 feet to 637.5 feet (mean: 637.5 feet). Figure 43 shows instantaneous gauge height.

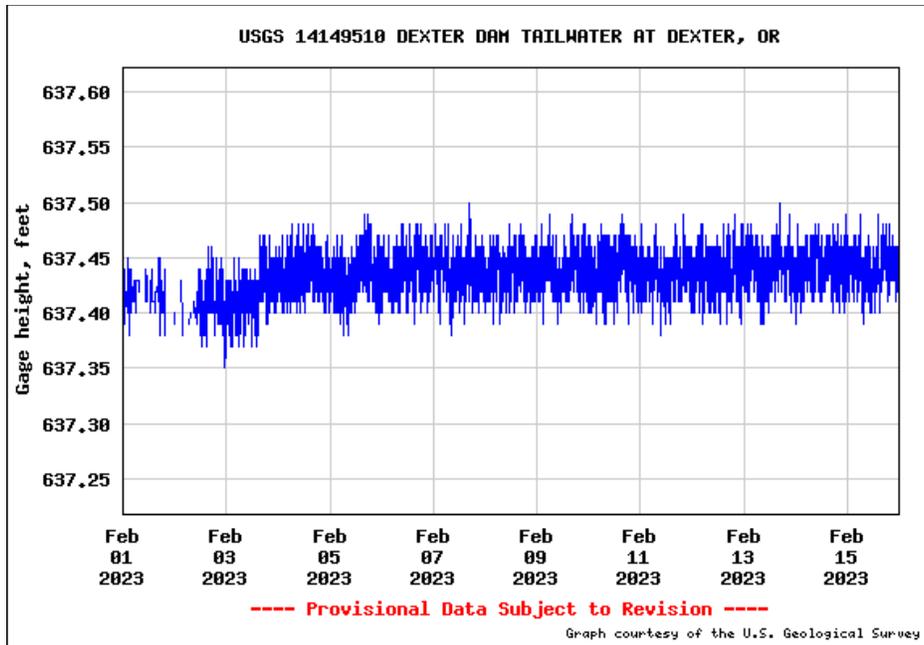
Total dissolved gas saturation ranged from 98 to 104% (mean: 99.9%) during the reporting period. Figure 44 shows total dissolved gas saturation.

Stream temperatures were recorded every two 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 45.

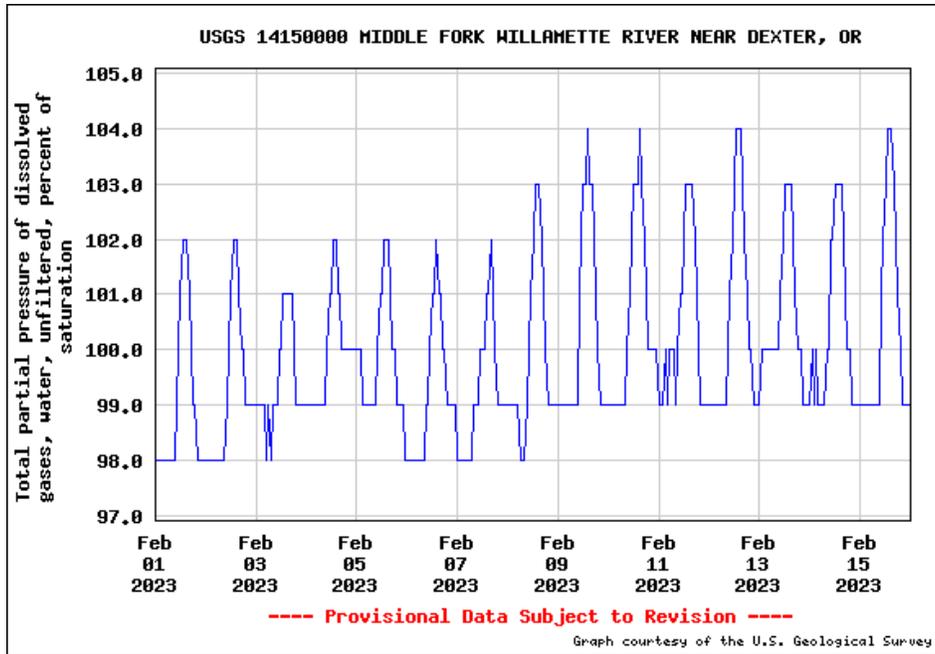
Flows through the Powerhouse and Spill during the reporting period averaged 1,892.5 and 0 cubic feet per second (cfs) respectively (Figure 46). Catch per unit of effort (CPUE) data are summarized in Table 31. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 31. Summary of salmonid CPUE, Dexter Dam.**

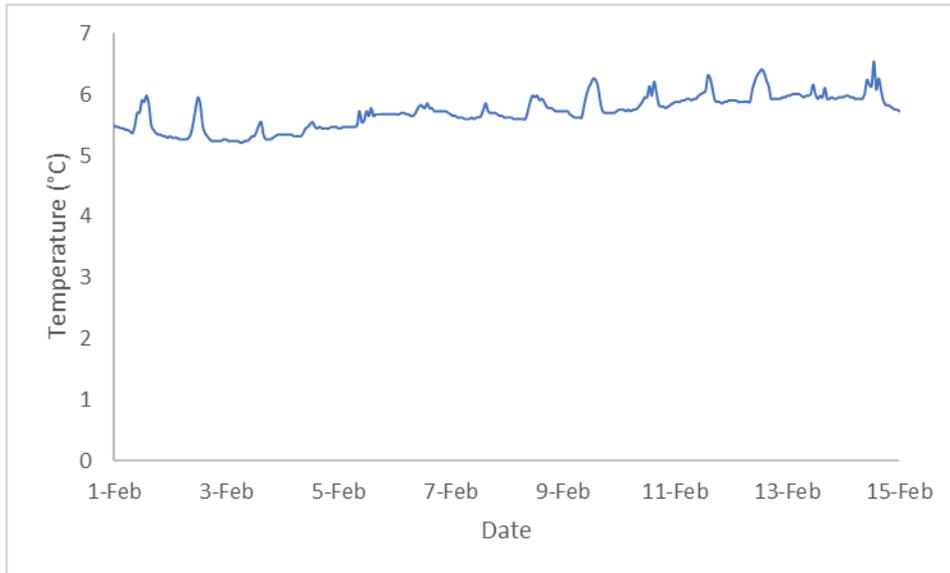
	<b>Chinook</b>
<b>Description</b>	<b>8 ft</b>
Catch	0
Effort (hrs)	360.0
CPUE (fish/hr)	0



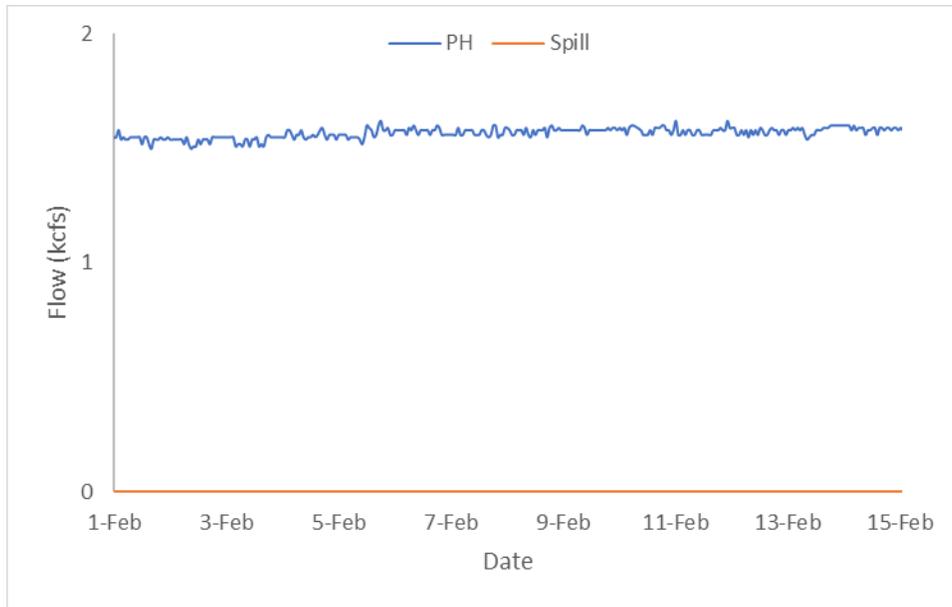
**Figure 43. Gauge Height (feet); below Dexter Dam, Middle Fork Willamette**



**Figure 44. Total Dissolved Gas Saturation (%); Middle Fork Willamette River, Near Dexter, OR**



**Figure 45. Temperature at RST (Dexter Dam)**

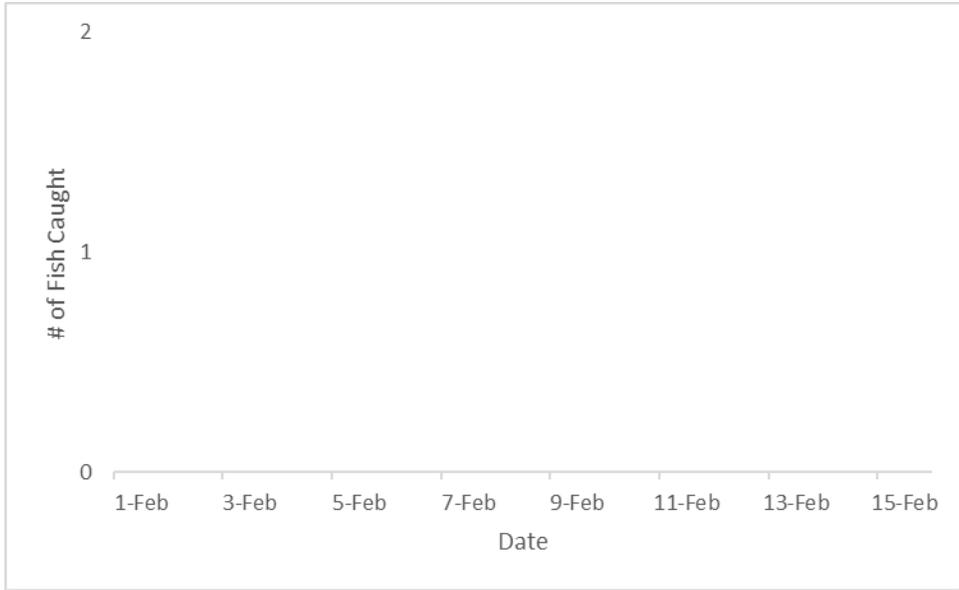


**Figure 46. Hourly Flows PWR vs. Spill (Dexter Dam)**

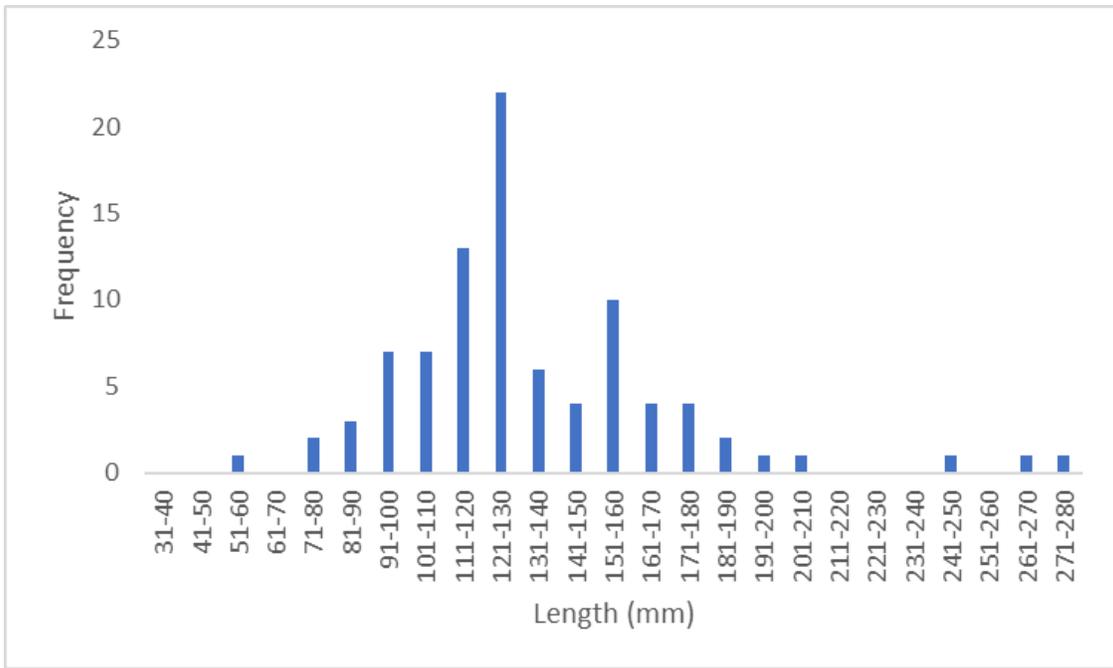
## **Middle Fork Willamette – Lookout Dam Tailrace**

### **Target Species**

The reporting period began February 1st and ended on February 15th. 0 Chinook salmon were captured during the 15-day sampling period (Figure 47). The traps were operated 100.0% of the reporting period. Table 32 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 48 shows length frequency data to-date.



**Figure 47. Chinook Captured Per Day 02/01/2023 to 02/15/2023 (Lookout Point Dam Tailrace)**



**Figure 48. Length Frequency of Juvenile Chinook Sampled Season To-Date (Lookout Point Dam Tailrace)**

**Table 32. 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	30	112	275	152.2	15.0	269.0	46.9
		CHS	Parr	4	84	107	94.8	3.8	10.5	7.3
		CHS	Fry	0	0	0	0	0	0	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	0	0	0	0	0	0	0
	Spill	CHS	Smolt	34	94	194	133.9	7.6	63.0	27.4
		CHS	Parr	7	77	126	100.6	5.4	26.1	12.9
		CHS	Fry	0	0	0	0	0	0	0
February 1-15, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Lookout Point Dam	PH 1	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
	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	0	N/A	N/A	N/A	N/A	N/A	N/A
	Spill	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.

### 24-Hour Post Collection Holding Trial

0 Spring Chinook were captured during the current reporting period and held for 24 hours. 0 fish were held from the PWR RST and 0 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%). 0 of the fish from Spill RST died during holding (0.0%).

### 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 0 Chinook captured in the Spill Channel RST. Partial descaling <20% was observed on 0 of 0 Chinook collected at the Spill RST (0.0%), and descaling >20% was observed on 0 of the Chinook collected (0.0%). 0 displayed body injuries (0.0%) and 0 had eye injuries (0.0%). 0 of the Spill RST Chinook had copepods present in the branchial cavity (0.0%) and 0 had copepods present on fins (0.0%). 0 of the fish captured in the Spill RST displayed Gas Bubble Disease (0.0%).

There were 0 Chinook captured in the Powerhouse channel RSTs. Partial descaling <20% was observed on 0 of the 0 Chinook collected at the PWR RSTs (0.0%). Descaling >20% was observed on 0 of the Chinook collected (0.0%). 0 PWR RST fish had bodily injury (0.0%) and 0 had eye injuries (0.0%). 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 were 0 chinook mortality collected in the Spill RST (0.0%) and 0 in the PWR RST (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 (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	0	0	0	0	0	0	0	0
	Spill	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, scales and DNA were collected from 0 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

2,650 non-target species were captured during the reporting period; the data is summarized below in Table 34.

**Table 34. 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	2	0	0	0	44	8
Brown Bullhead	0	0	0	0	1	0
Chinook (clipped)	0	0	0	0	3	0
Crappie	2647	1656	12	2	145382	104136
Cutthroat Trout	0	0	0	0	0	0
Dace	0	0	0	0	0	0
Largemouth Bass	0	0	0	0	0	0
Smallmouth Bass	0	0	0	0	57	57
Spotted Bass	0	0	0	0	1	0
Largescale Sucker	0	0	0	0	2	1
Northern Pikeminnow	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	1	0	3	1	41	3
Walleye	0	0	0	0	22	4
Unknown	0	0	0	0	0	0
<b>Totals</b>	<b>2650</b>	<b>1656</b>	<b>15</b>	<b>3</b>	<b>145563</b>	<b>104212</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

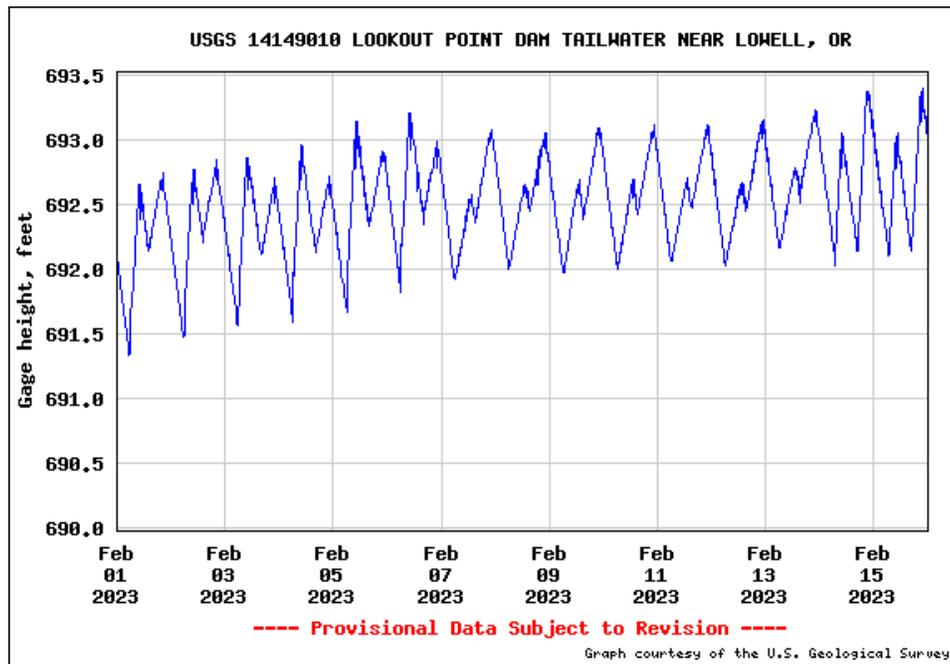
values for instantaneous gauge height ranged from 692.7 feet to 693.4 feet (mean: 693.1 feet). Figure 49 shows instantaneous gauge height.

Stream temperatures were recorded every two hours using a temperature probe at the Lookout Dam RST site during this reporting period. Temperature probes operated normally, and the data is shown below in (Figure 50 and Figure 51).

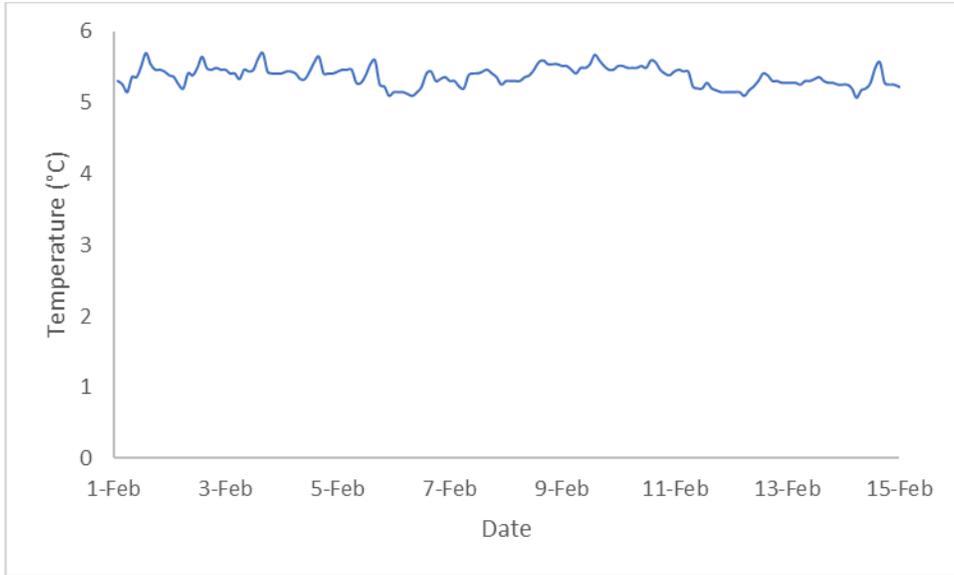
Flows through the Powerhouse and Spill during the reporting period averaged 1,782.1 and 0 cubic feet per second (cfs) respectively (Figure 52). Catch per unit of effort (CPUE) data are summarized in Table 35. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 35. Summary of Chinook CPUE at Lookout Point Dam Tailrace.**

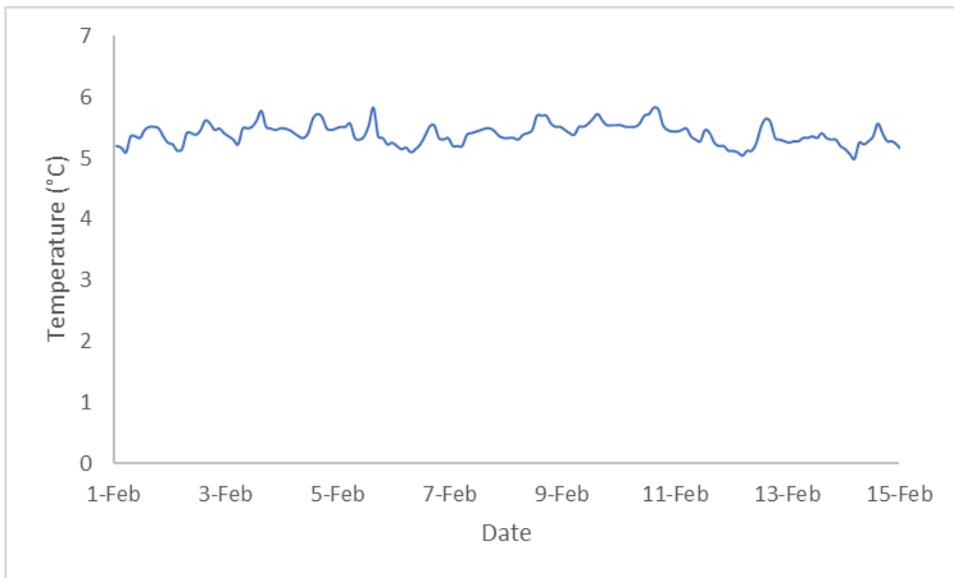
Description	Chinook		
	PH 1	PH 2	Spill
Catch	0	0	0
Effort (hrs)	357.6	358.0	358.5
CPUE (fish/hr)	0	0	0



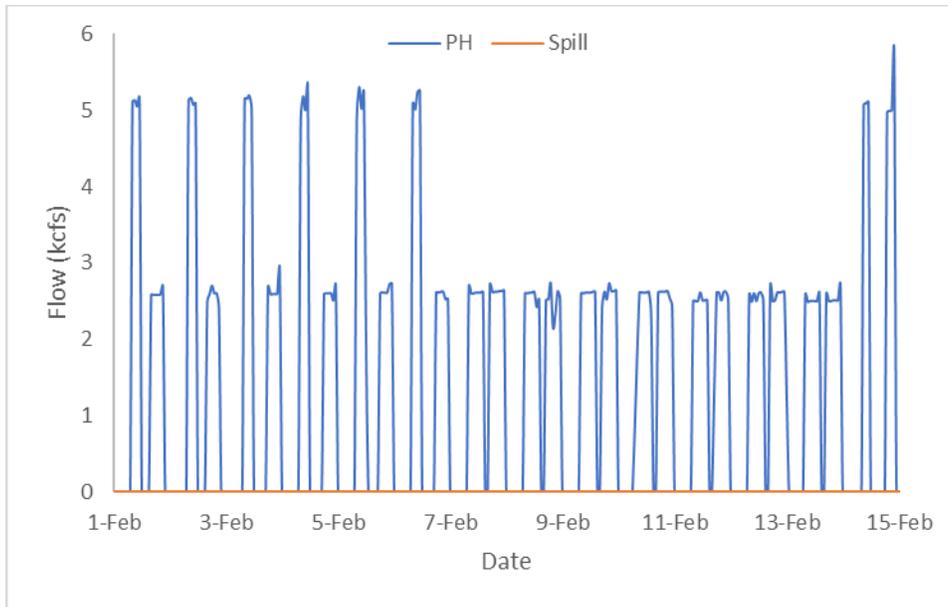
**Figure 49. Gauge Height (feet); below Lookout Dam**



**Figure 50. Temperature at RST (Lookout Dam PWR)**



**Figure 51. Temperature at RST (Lookout Dam Spill)**

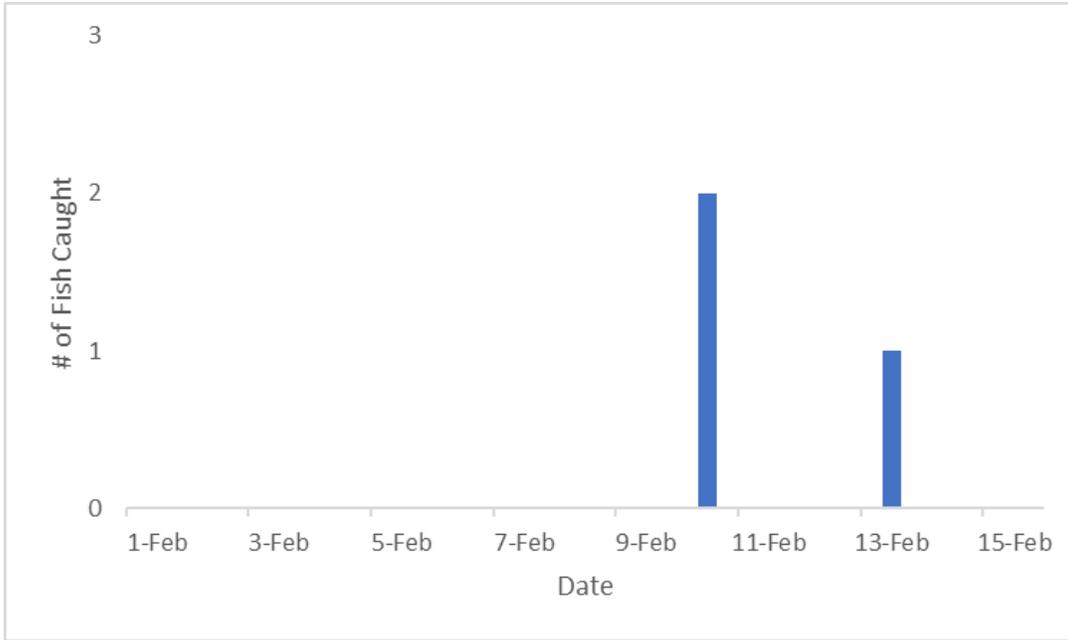


**Figure 52. Hourly Flows PWR vs. Spill (Lookout Dam Tailrace)**

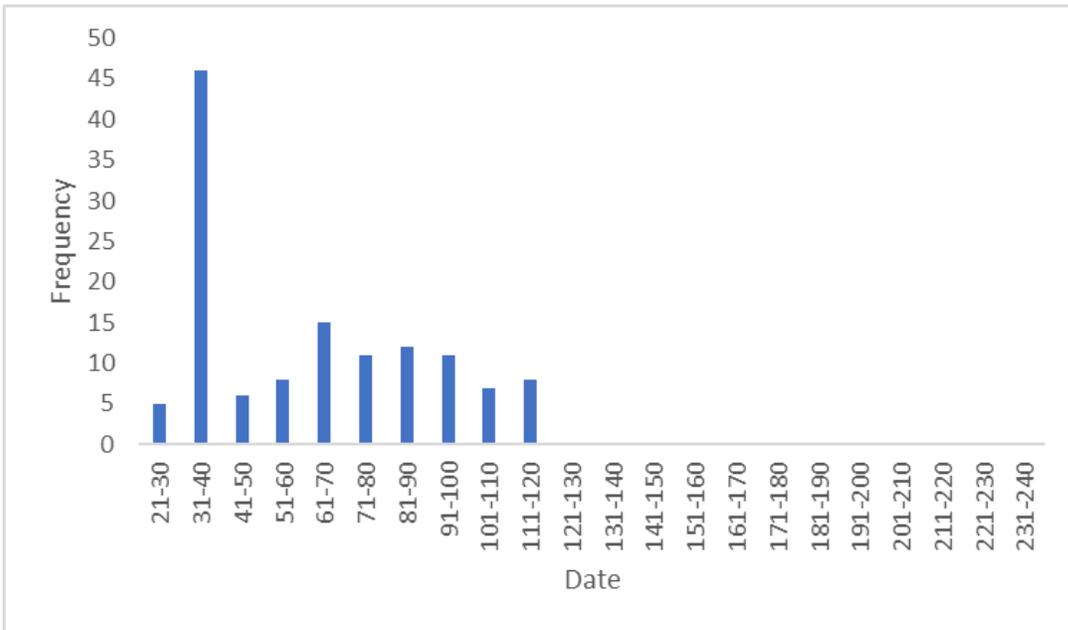
## **Middle Fork Willamette – Lookout Point Head of Reservoir**

### **Target Species**

The reporting period began February 1st and ended on February 15th. 3 Chinook salmon were captured during the 15-day sampling period (Figure 53). The 5 ft RST was raised on 1/30/2023 due to low flow. A rain event and increased flow at Hills Creek Dam allowed the trap to be lowered into the sampling position on 2/6/2023. The trap was operated 60.0% of the reporting period. Table 36 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 54 shows length frequency data to-date.



**Figure 53. Chinook Captured Per Day 02/01/2023 to 02/15/2023 (Lookout Point Head of Reservoir)**



**Figure 54. Length Frequency of Juvenile Chinook Sampled Season To-Date (Lookout Point Head of Reservoir)**

**Table 36. 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	8	97	118	107.4	7.7	18.2	14.2
		CHS	Parr	63	59	119	81.6	1.0	19.8	6.4
		CHS	Fry	59	28	69	36.7	N/A	N/A	N/A
February 1-15, 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	3	34	40	37.7	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 3 Chinook captured during this reporting period. 0 had partial descaling <20% (0.0%) and 0 had body injuries (0.0%). 1 fish displayed eye injuries (33.3%). There were 0 mortalities (0.0%). Injury data for the reporting period is shown in Table 37. To date 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 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	3	0	0	0	1	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

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 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, 13 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

## Non-Target Species

3 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 Head of Reservoir).**

Species	5ft Capture	5ft Mortality	Season Total	Season Total Mortality
Bass Unknown	0	0	0	0
Bluegill	0	0	0	0
Chinook (clipped)	0	0	0	0
Crappie	0	0	2	2
Cutthroat Trout	1	0	1	0
Dace	1	0	3	0
Lamprey	0	0	0	0
Largescale Sucker	0	0	1	0
Mountain Whitefish	0	0	0	0
Northern Pikeminnow	0	0	0	0
<i>O. mykiss</i>	1	0	7	0
<i>O. mykiss</i> (clipped)	0	0	0	0
Peamouth	0	0	0	0
Pumpkinseed	0	0	0	0
Redside Shiner	0	0	0	0
Sculpin	0	0	0	0
Spotted Bass	0	0	0	0
Smallmouth Bass	0	0	0	0
Unknown	0	0	0	0
<b>Totals</b>	<b>3</b>	<b>0</b>	<b>14</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 1,230.0 cfs to 1,950.0 cfs (mean: 1,584.0 cfs). Figure 55 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. The probe operated normally during this period. (Figure 56).

Flows into Lookout Point Reservoir averaged 1,962.0 cfs (Figure 57). 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 Head of Reservoir.**

	<b>Chinook</b>
<b>Description</b>	<b>5 ft</b>
Catch	3
Effort (hrs)	217.0
CPUE (fish/hr)	0.014

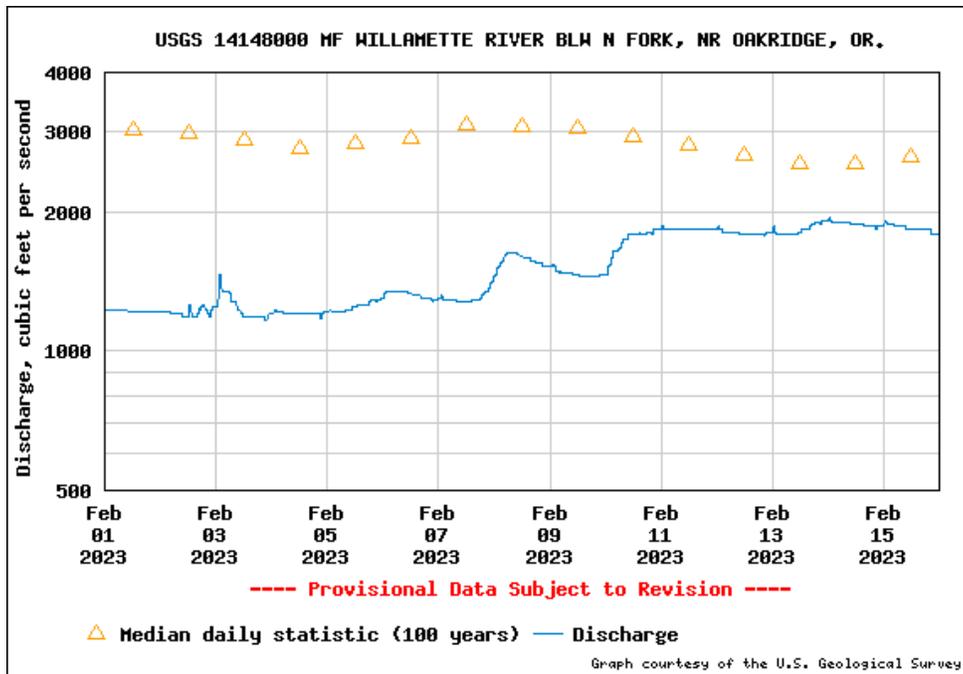


Figure 55. Discharge (cfs); above Lookout Point Reservoir, Below Oakridge, OR

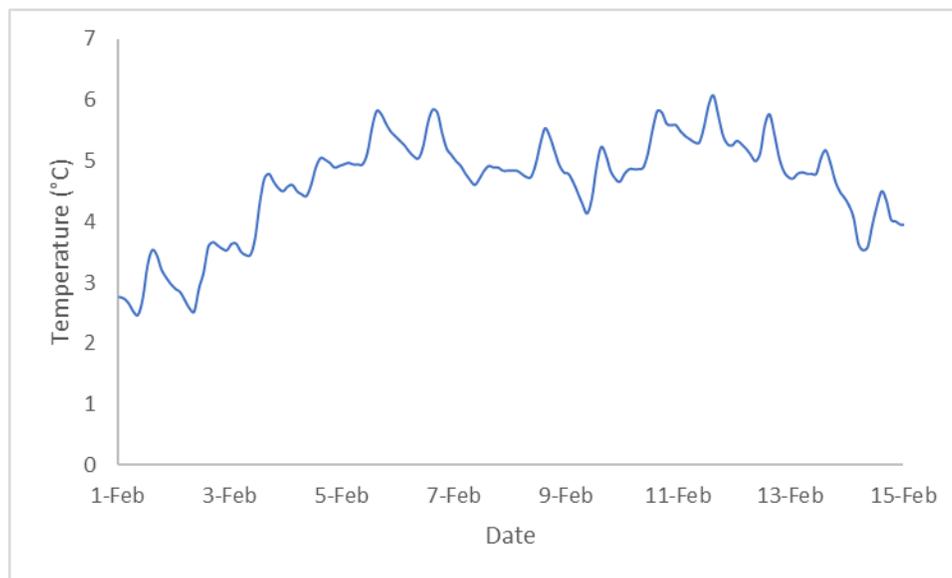
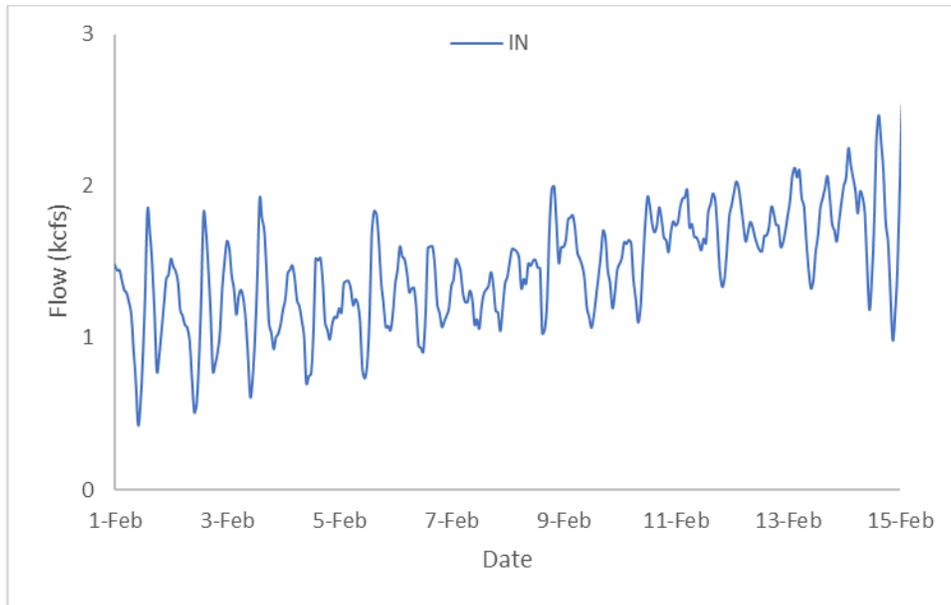


Figure 56. Temperature at RST (Lookout Point Head of Reservoir)

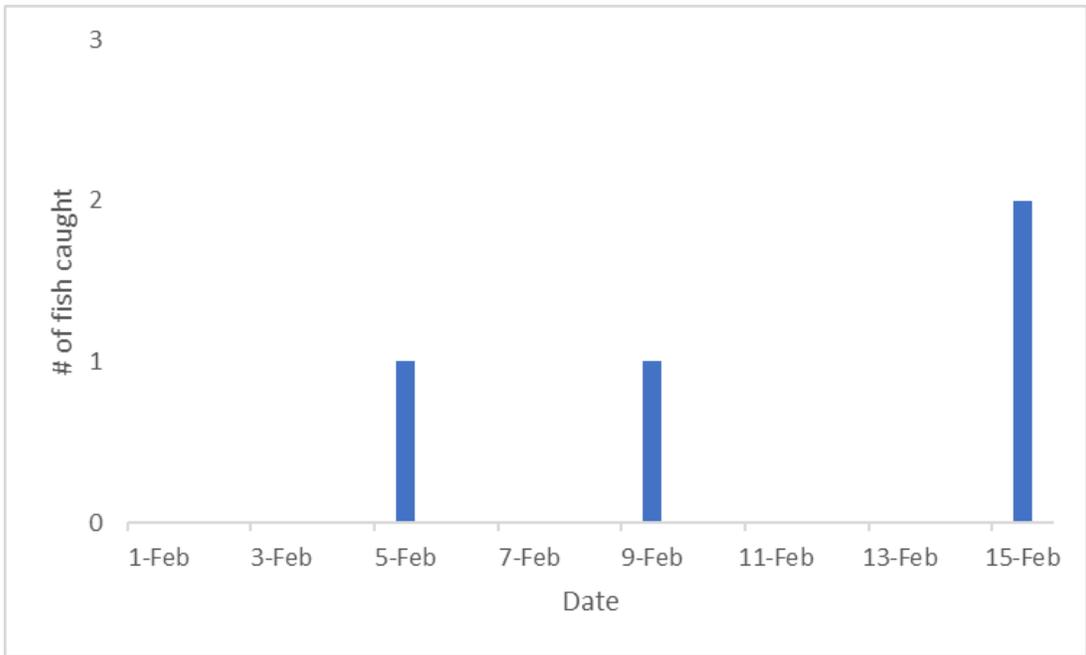


**Figure 57. Hourly Flows (Lookout Point Head of Reservoir site)**

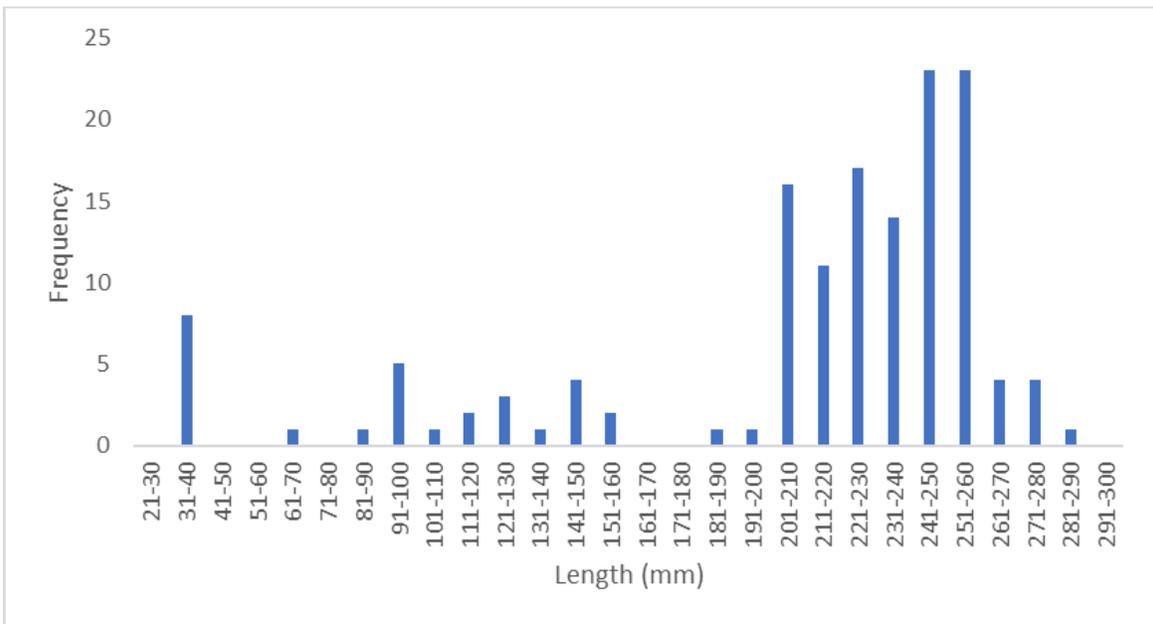
## **Middle Fork Willamette – Hills Creek Dam**

### **Target Species**

This reporting period began on February 1st and ended on February 15th. There were 4 Chinook salmon (CHS) captured during the 15-day sampling period (Figure 58). Sampling durations were 100% for both the RO RST and Powerhouse RST. Table 40 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 59 shows length frequency data to-date.



**Figure 58. Chinook Captured Per Day 02/01/2023 to 02/15/2023 (Hills Creek Dam)**



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

**Figure 59. Length Frequency of Juvenile Chinook Sampled Season To-Date (Hills Creek Dam)**

## 24-Hour Post Collection Holding Trial

4 Chinook captured in the RSTs were held during this reporting period. 3 fish were held from the PWR RST and 1 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%).

## Trapping Efficiency

2 trapping efficiency trials have been conducted at Hills Creek Dam during this reporting period. The first being on 12/07/2022 and the second being on 12/13/2022.

During the first Trapping Efficiency trial, a total of 514 juvenile Chinook (parr) were dyed, clipped and released on 12/07/2022 below Hills Creek PWR to evaluate the efficiency of the screw traps. A total of 29 fish were recaptured in the 8 ft PWR trap. A total of 3 chinook released in the PWR route were captured in the 5ft RO trap. Trapping efficiency was 5.6% for the PWR RST and 0.6% for the RO RST.

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

\*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.

During the second Trapping Efficiency trial, a total of 516 juvenile Chinook (parr) were dyed, clipped and released on 12/13/2022 below the Hills Creek RO to evaluate the efficiency of the screw trap. A total of 1 fish was recaptured in the 5 ft RO trap. The efficiency of the RO trap was 0.2%.

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

\*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.

**Table 40. 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	3	34	39	36.0	N/A	N/A	N/A
		CHS	Parr	6	90.0	141.0	110.7	7.4	23.4	13.3
		CHS	Smolt	82	137.0	275.0	233.3	27.4	196.3	144.5
Hills Creek	PWR	CHS	Fry	5	34	38	35.0	N/A	N/A	N/A
		CHS	Parr	7	69.0	127.0	98.1	3.7	24.5	11.2
		CHS	Smolt	51	128.0	285.0	227.2	26.2	245.5	138.2

\*Fish that were missing heads are not included in length and weight calculations. One fish was a head only and could not be assigned a life stage.

February 1-15, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Hills Creek	RO	CHS	Fry	1	35	35	35.0	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
Hills Creek	PWR	CHS	Fry	3	33	38	35.0	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

## Injuries and Copepod Infection

There was 1 Chinook captured in the RO RST. Partial descaling <20% was observed on 0 of 1 Chinook collected at the RO RST (0.0%), and descaling >20% was observed on 0 of the Chinook collected (0.0%). 0 displayed body injuries (0.0%) 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 were no mortalities (0.0%). 0 of the fish captured in the Spill RST displayed Gas Bubble Disease (0.0%).

There were 3 Chinook captured in the Powerhouse channel RST. Partial descaling <20% was observed on 0 of the 3 Chinook collected at the PWR RSTs (0.0%). Descaling >20% was observed on 0 of the Chinook collected (0.0%). 0 PWR RST fish had bodily injury (0.0%) and 0 had eye injuries (0.0%). 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 were 0 chinook mortalities collected in the PH RST (0.0%).

Injuries are displayed in Table 41. To date injury data can be found in Appendix A.

**Table 41. 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	1	0	0	0	0	0	0	0
Hills Creek	PWR	3	0	0	0	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 0 Spring Chinook. The other targets captured did not meet length criteria for DNA sampling or did not have a body.

### 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 Spring Chinook have been VIE marked at this site to date. The first 60 target fish per week are prioritized for the 24-Hour Post Collection Holding Study. These fish are not marked to not bias the results of the holding study. More information regarding VIE marked fish can be found in Appendix D.

Fish still showing an egg sac are not VIE marked.

### Non-Target Species

A total of 32 non-target fish were captured at Hills Creek during the reporting period; the data is summarized below in Table 42.

**Table 42. 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	4	0
Bluegill	2	0	6	0	57	33
Brook Lamprey	0	0	0	0	0	0
Brown Bullhead	0	0	0	0	2	0
Crappie	6	1	9	3	99	75
Dace	0	0	0	0	0	0
Redside Shiner	0	0	0	0	1	1

Species	RO Capture	RO Mortality	PWR Capture	PWR Mortality	Season Total	Season Total Mortality
Sculpin	2	0	3	0	9	0
Largemouth Bass	0	0	0	0	5	2
Spotted Bass	0	0	2	2	62	43
Smallmouth Bass	0	0	0	0	1	1
Largescale Sucker	0	0	0	0	6	2
<i>O. mykiss</i>	0	0	1	0	35	16
Unknown	0	0	0	0	0	0
<b>Totals</b>	<b>10</b>	<b>1</b>	<b>21</b>	<b>5</b>	<b>281</b>	<b>173</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 1,223.1 feet to 1,225.5 feet (mean: 1,224.6 feet). Figure 60 shows instantaneous gauge height.

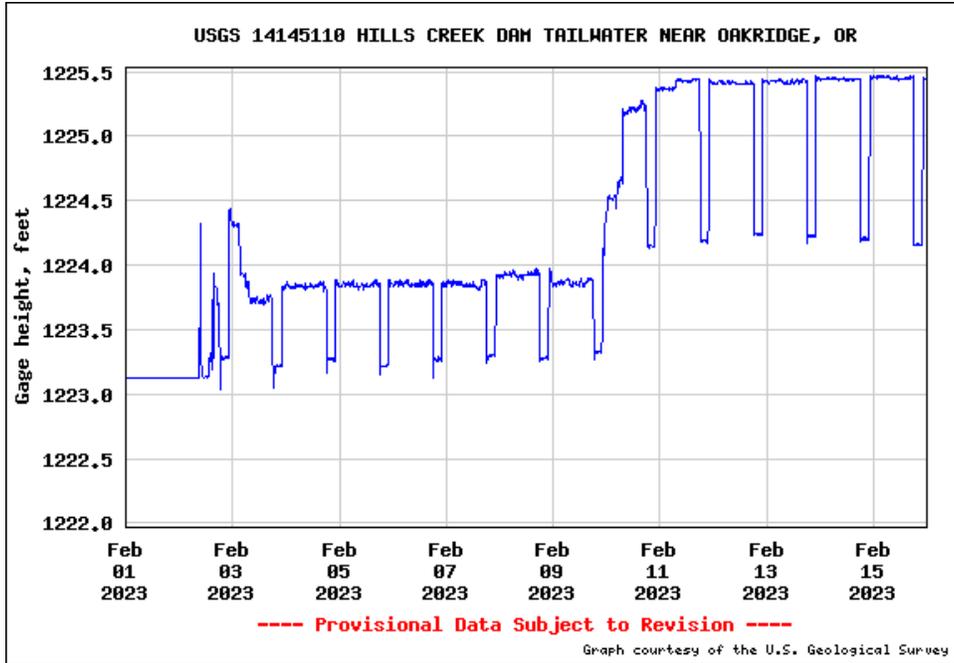
Total dissolved gas saturation ranged from 96 to 105% (mean: 98.7%) during the reporting period. Figure 61 shows total dissolved gas saturation.

Stream temperatures were recorded every 2 hours for both the RO RST and the PWR RST (Figure 62 and Figure 63). The probes operated normally throughout the reporting period.

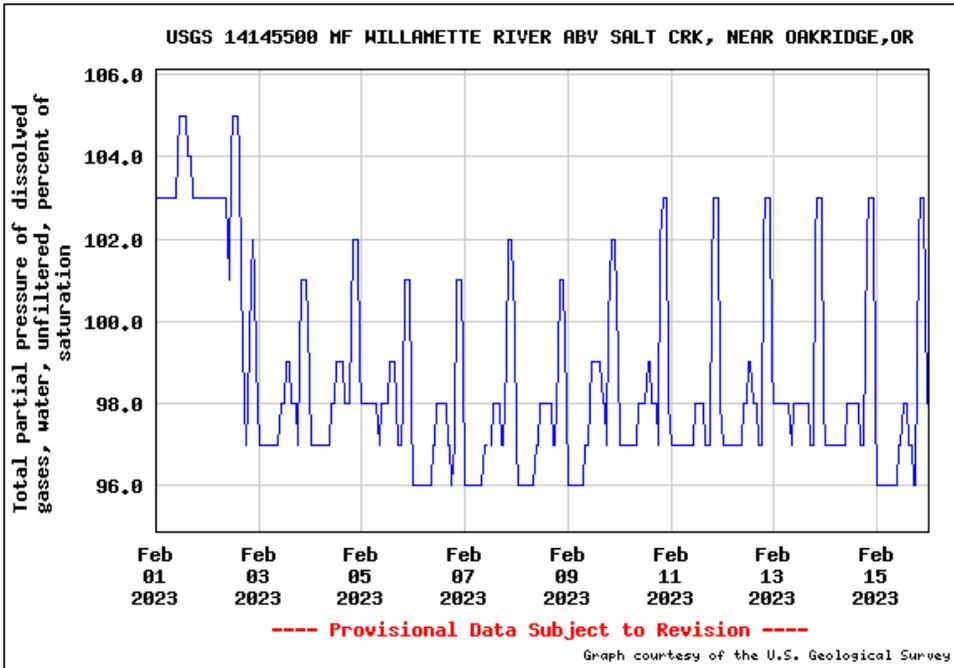
Flows through the PWR and RO during the reporting period averaged 471.3 and 150.1 cfs respectively (Figure 64). Catch per unit of effort (CPUE) data are summarized in Table 43. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

**Table 43. Summary of Chinook CPUE, Hills Creek Dam.**

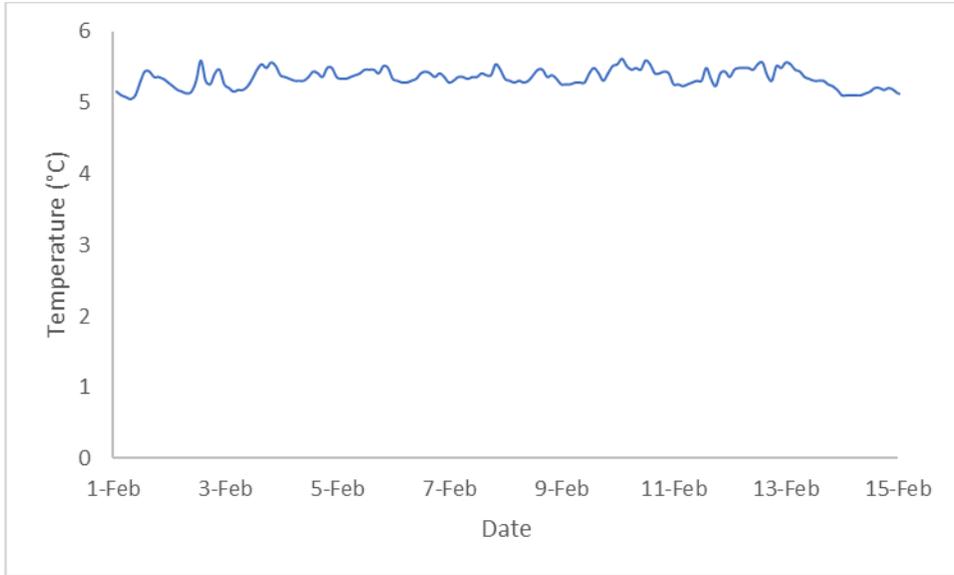
Description	Chinook	
	RO (5ft)	PWR (8ft)
Catch	1	3
Effort (hrs)	386.8	362.2
CPUE (fish/hr)	0.003	0.008



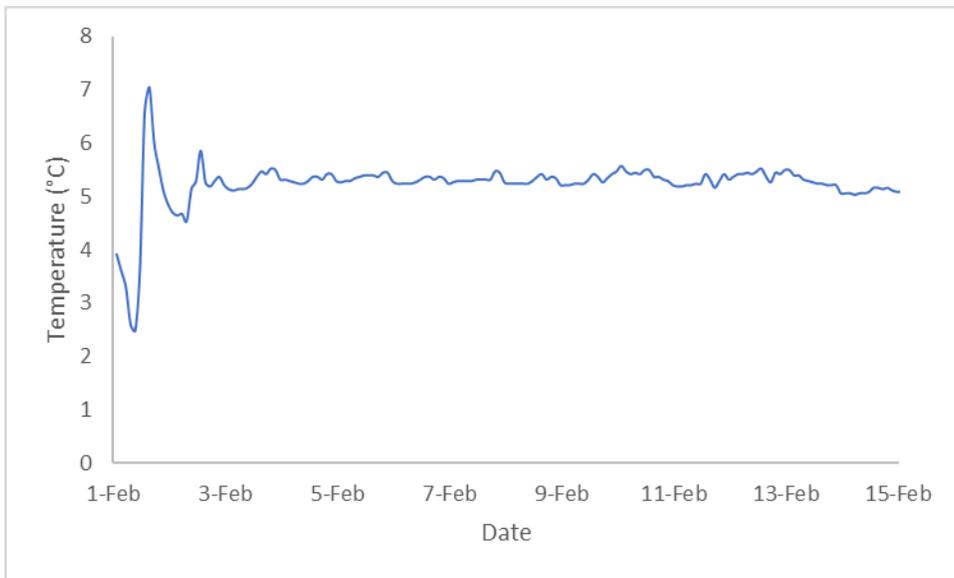
**Figure 60. Gauge Height (feet); below Hills Creek Dam PWR - Middle Fork Willamette River**



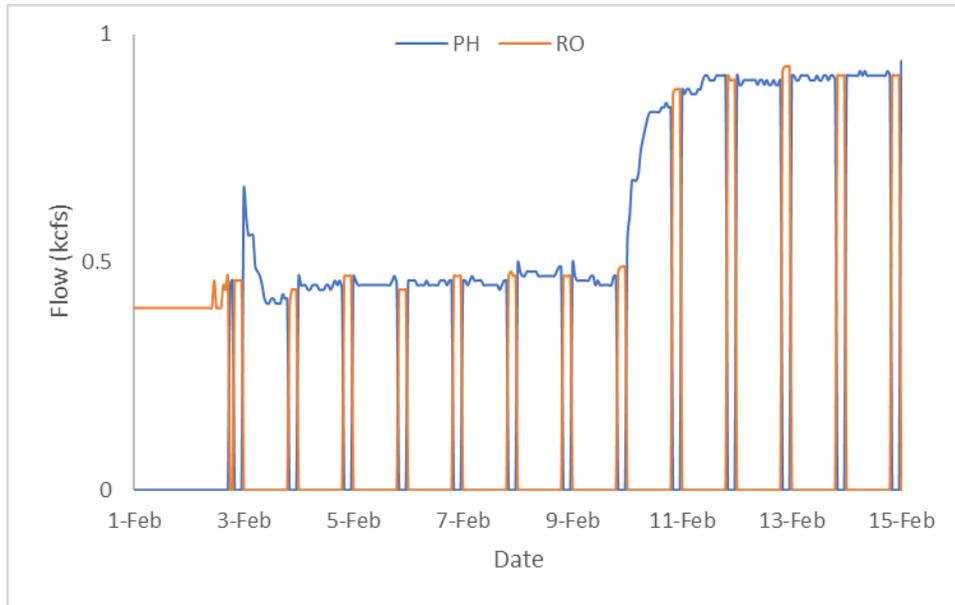
**Figure 61. Total Dissolved Gas Saturation (%); below Hills Creek Dam – Middle Fork Willamette River**



**Figure 62. Temperature at RO RST (Hills Creek Dam)**



**Figure 63. Temperature at Powerhouse RST (Hills Creek Dam)**



**Figure 64. Hourly Flows PWR vs. RO (Hills Creek Dam)**

### **Issues Encountered**

Low flow and a lack of precipitation has caused traps at Lookout Point Head of Reservoir, Fall Creek Dam Tailrace, Fall Creek Head of Reservoir, and the Cougar Dam powerhouse traps to ground out. Legs were installed on the Cougar Powerhouse traps in order to fish at low flow.

### **Upcoming USACE Support Services**

USACE Crane Support will be needed to install a trap at Green Peter Dam in February 2023.

Injury Code	Description of Injury/Condition
NXI	Live fish with no external injuries
MUNK	Mortality with no external injuries
DS<2	Descaling <20%
BLO	Bloated
EYB	Bloody Eye (hemorrhage)
BVT	Bleeding from Vent
FVB	Fin Blood Vessels Broken
GBD	Gas Bubble Disease (fin ray/eye inclusions)
POP	Pop Eye (eye popping out of head)
HIN	Head Injury
OPD	Opercle Damage
TEA	Body Injury (tears, scrapes, mechanical damage)
BRU	Bruising (any part of the body)
HBP	Hole Behind Pectoral Fin
DS>2	Descaling > 20%
HO	Head Only
BO	Body Only
HBO	Head Barely Connected
FID	Fin Damage
PRD	Predation Marks (vert. claw or teeth marks)
COP	Copepods (on gills or fins)
BKD	BKD (distended abdomen)
FUN	Fungus

GBT Rank	Description
Rank 0 / N/A	No bubbles
Rank 1	1 – 5% of fin or eye is covered in bubbles.
Rank 2	6 – 25% of fin or eye is covered in bubbles.
Rank 3	26 – 50% of fin or eye is covered in bubbles.
Rank 4	Greater than 50% of fin or eye is covered in bubbles.

# Appendix A

## Chinook (CHS) To Date

Chinook Injuries to-date																								
ite/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																								
8 ft	1338	817	10	91	7	1	1004	292	4	694	5	12	5	42	8	86	45	166	81	85	16	53		
Adult	1	1									1						1	1	1		1			
Parr	33	10	1	4	2		18	3		10					2				1			1		
Smolt	1248	805	9	86	5		986	288	4	681	5	12	3	42	6	83	43	163	79	84	14	52		
Unknown	2												2								1			
Fry	54	1		1		1		1		2						2	1	1	2				1	
Foster Dam HOR																								
5 ft	278	53		1			2			31														
Parr	44	31					2			12														
Smolt	29	21								16														
Fry	205	1		1						3														
Cougar Dam																								
RO	1826	1092	30	244	12	3	1643	572	3	1205	3	2		56	31	126	38	249	83	157	14	451		
Parr	205	109	5	33	3		131	50		103				4	1	8	2	14	12	4	2	22		
Smolt	1600	983	25	208	9	3	1512	521	3	1101	3	2		52	30	117	36	234	69	153	12	429		
Fry	21			3				1		1						1		1	2					
PH	1210	10	534	6	33	4	588	121		322		5	2	34	2	28	32	54	21	64	4	5		
Parr	270	151		11	1		107	25		71	1		5		3	6	11	6	5					
Smolt	556	381	6	18	3		481	90		246	4		28	2	23	19	40	12	59	1	5			
Unknown	2												2											
Fry	382	10	2	4				6		5				1		2	7	3	3		3			
Cougar Dam HOR																								
5 ft	715	3	96		1		10	4	3	58							1	6	8	7	1	1		
Parr	183		93		1		10	4	2	50							1	6	1	1	1			
Smolt	4		1																					
Fry	528	3	2						1	8									7	6		1		
Fall Creek Dam Tail.																								
8 ft	1							1		1								1						
Smolt	1							1		1								1						
Fall Creek HOR																								
8 ft	32	3					2			1														
Parr	2	2					1			1														
Smolt	5	1					1																	
Fry	25																							
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.)																							
ite/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
Lookout Dam Tail.	90		49	1	17	1		18	29		54					3	2	10	2	15	10	8	9
PH 1	34		15	1	8			9	14		23					3	2	6	1	8	3	2	3
Parr	4		1		1				2		2					1	1		1				
Smolt	30		14	1	7			9	12		21				3	1	5	1	7	3	2		3
PH 2	15		12		4			3	3		12						2	1	2	4	1		
Parr	4		4		3				1		4						1	1	1	3			
Smolt	11		8		1			3	2		8						1		1	1	1		
Spill	41		22		5	1		6	12		19						2		5	3	5		6
Parr	7		2						3		2												
Smolt	34		20		5	1		6	9		17						2		5	3	5		6
Lookout Point HOR	130		38		1			2			17						1		1				
5 ft	130		38		1			2			17						1		1				
Parr	63		31					1			10						1		1				
Smolt	8		6					1			5												
Fry	59		1		1						2												
Hills Creek Dam	154	1	71	1	19			120	62		66	1	11	2	44	8	15	6	23	9	13	2	17
RO	91	1	44		8			73	35		37		6		27	6	8	2	16	6	5	2	6
Parr	6		1					1									1						
Smolt	82	1	43		8			72	35		37		6		27	6	7	2	16	6	5	2	6
Fry	3																						
PH	63		27	1	11			47	27		29	1	5	2	17	2	7	4	7	3	8		11
Parr	7		4					1	1							1				1			
Smolt	51		23	1	11			46	26		29	1	5	2	17	1	6	4	7	2	8		11
Fry	5																1						

### Chinook (CHS) During Reporting Period

Chinook Injuries During Reporting Period (02-01-2023 to 02-15-2023)																							
ite/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	44		2		1	1		1	1		4				1		2	1	1	1	1	1	1
8 ft	44		2		1	1		1	1		4				1		2	1	1	1	1	1	1
Fry	41		1								1						1	1		1			1
Parr	1				1	1					1												
Smolt	2		1					1	1		2				1		1		1		1		
Foster Dam HOR	150										3												
5 ft	150										3												
Fry	150										3												
Cougar Dam HOR	5		3								2												
5 ft	5		3								2												
Parr	5		3								2												
Fall Creek HOR	16																						
8 ft	16																						
Fry	16																						
Lookout Point HOR	3				1																		
5 ft	3				1																		
Fry	3				1																		
Hills Creek Dam	4																						
PH	3																						
Fry	3																						
RO	1																						
Fry	1																						

### Steelhead (O. mykiss) To Date

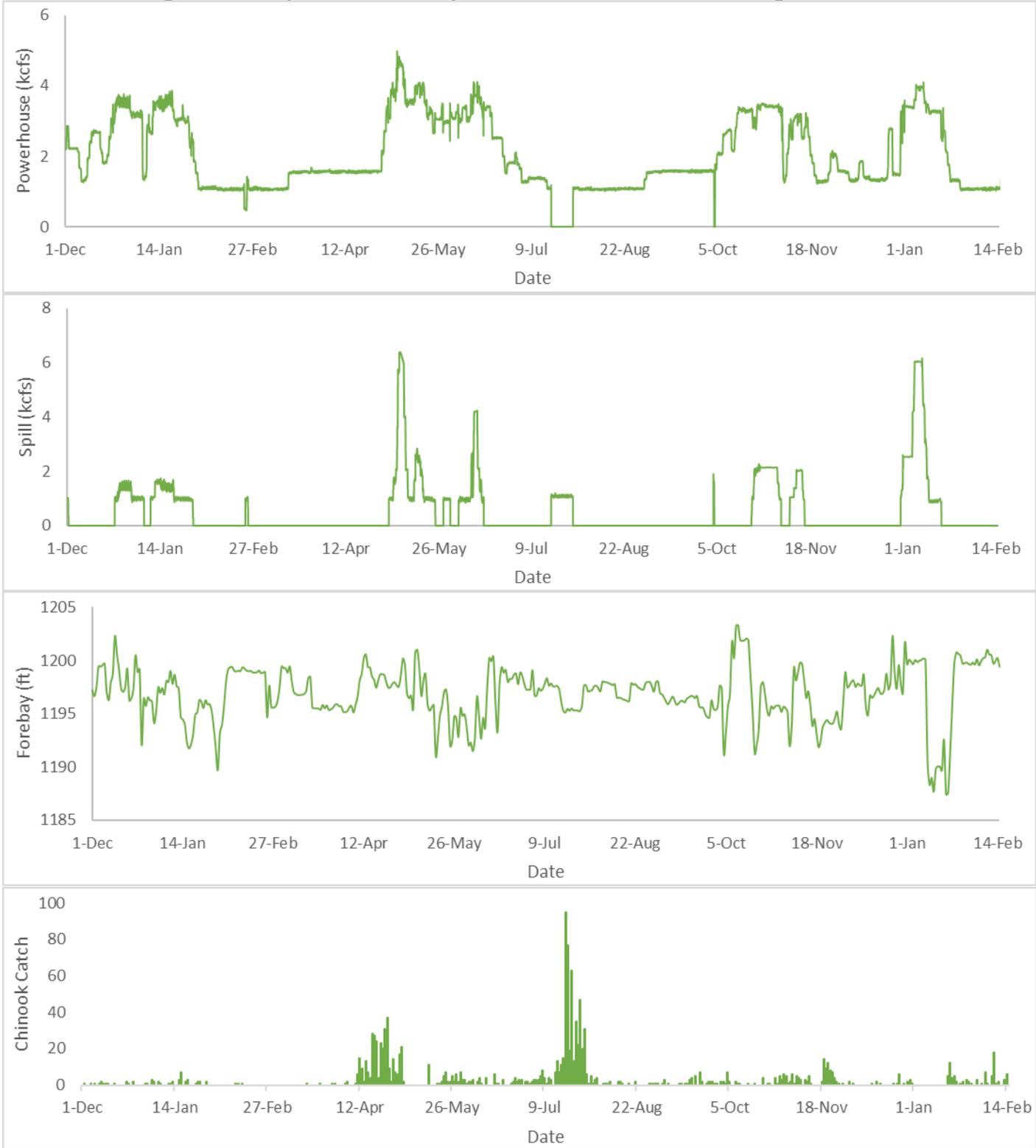
		O. mykiss Injuries to-Date																					
ite/Trap/Life Stage	Total Fish	MUNK	DS<2	BLO	EYB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD
Big Cliff Dam	113	1	39	4	3	4		31	10		42		1		2		9	3	11	11	4	1	7
8 ft	113	1	39	4	3	4		31	10		42		1		2		9	3	11	11	4	1	7
Adult	1								1		1		1										
Parr	45	1	11	4	1	1					14						2		1	1	1		1
Smolt	38		25		2	3		31	9		26				2		6	3	10	10	3	1	6
Fry	29		3								1						1						
Green Peter Tail.	6		3		1			1	2		4						4		1	1			5
8 ft	6		3		1			1	2		4						4		1	1			5
Smolt	6		3		1			1	2		4						4		1	1			5
Foster Dam HOR	226		69		1	2		2		2	64						3	1	2	1	1	1	
5 ft	226		69		1	2		2		2	64						3	1	2	1	1	1	
Adult	7		1								2												
Parr	110		32		1	2		1			36						3		2		1	1	
Smolt	76		36					1		2	26							1		1			
Fry	33																						

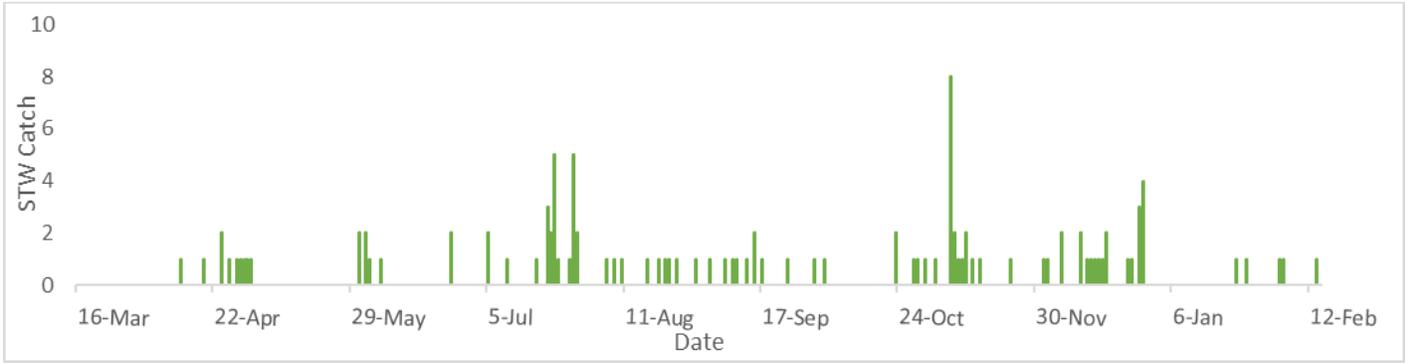
### Steelhead (O. mykiss) During Reporting Period

		O. mykiss Injuries During Reporting Period (02-01-2023 to 02-15-2023)																					
ite/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	3					1		1			1						1		1		1		
8 ft	3					1		1			1						1		1		1		
Fry	1																						
Smolt	2					1		1			1						1		1		1		
Foster Dam Head of Re	2																						
5 ft	2																						
Fry	2																						

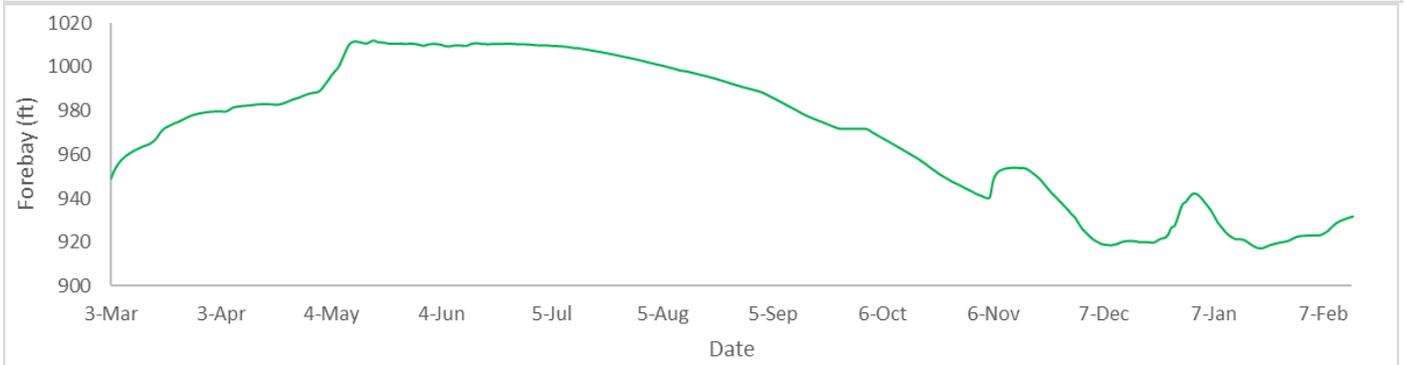
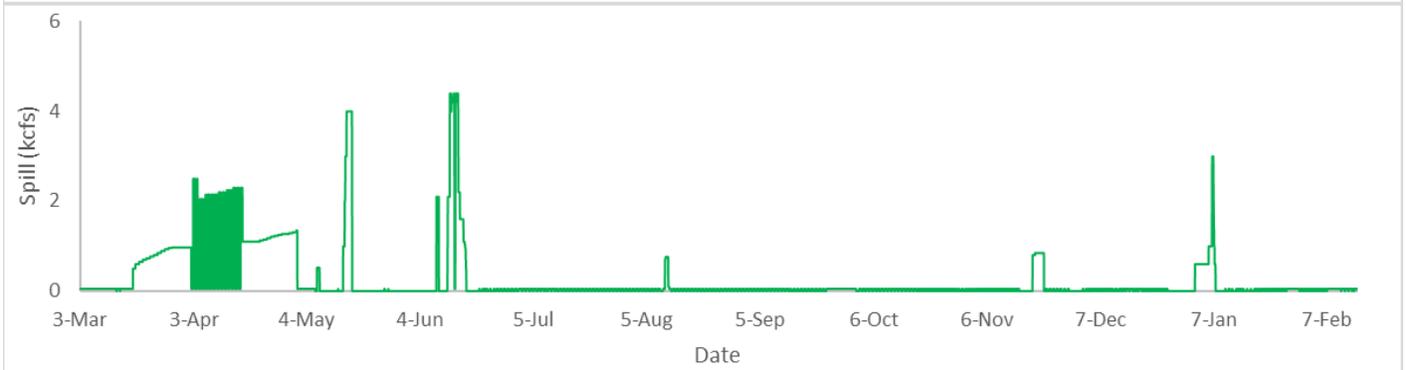
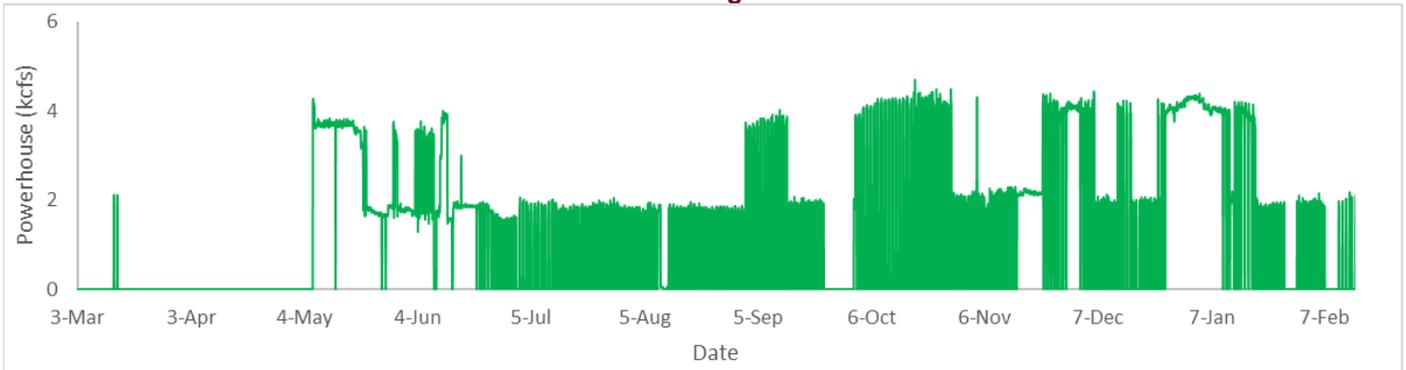
## Appendix B

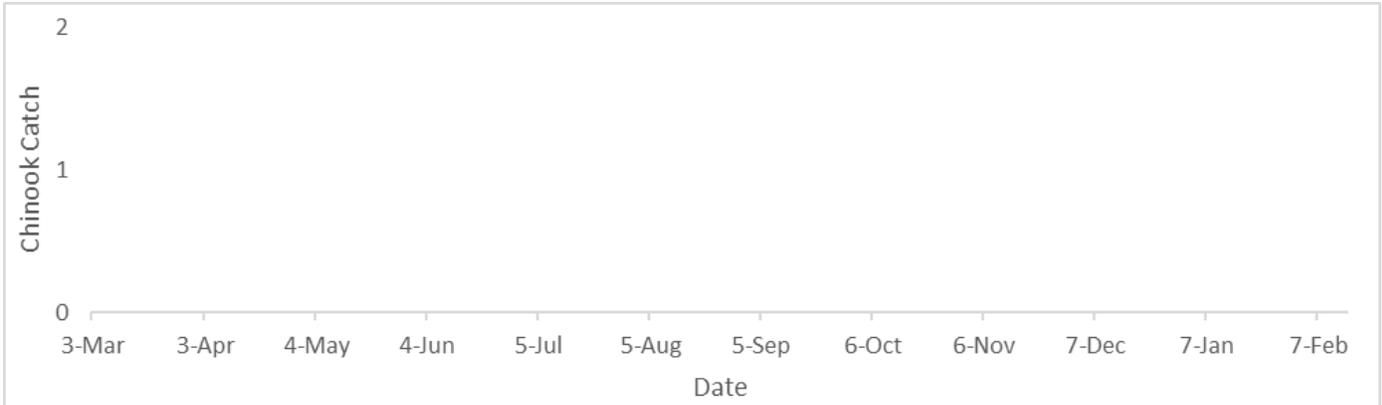
### Big Cliff Dam Operational and Capture Data Since Start of Monitoring



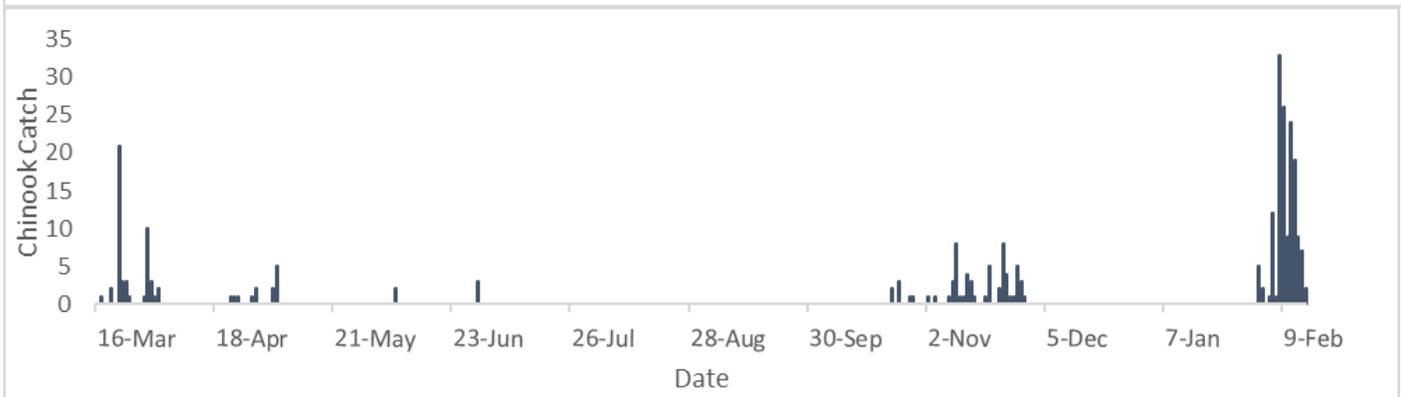
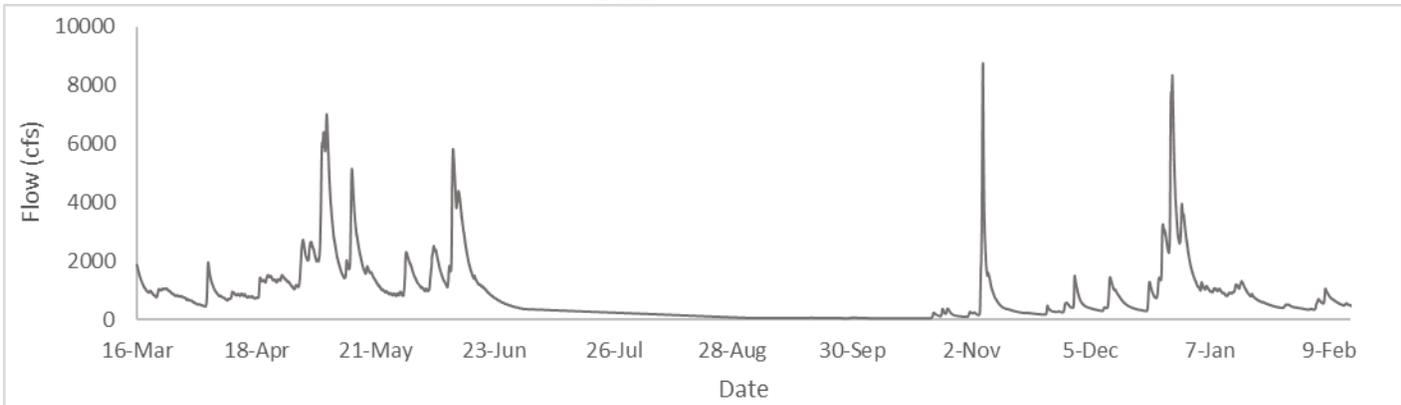


**Green Peter Dam Operational and Green Peter Tailrace- Middle Santiam River Capture Data Since Start of Monitoring**



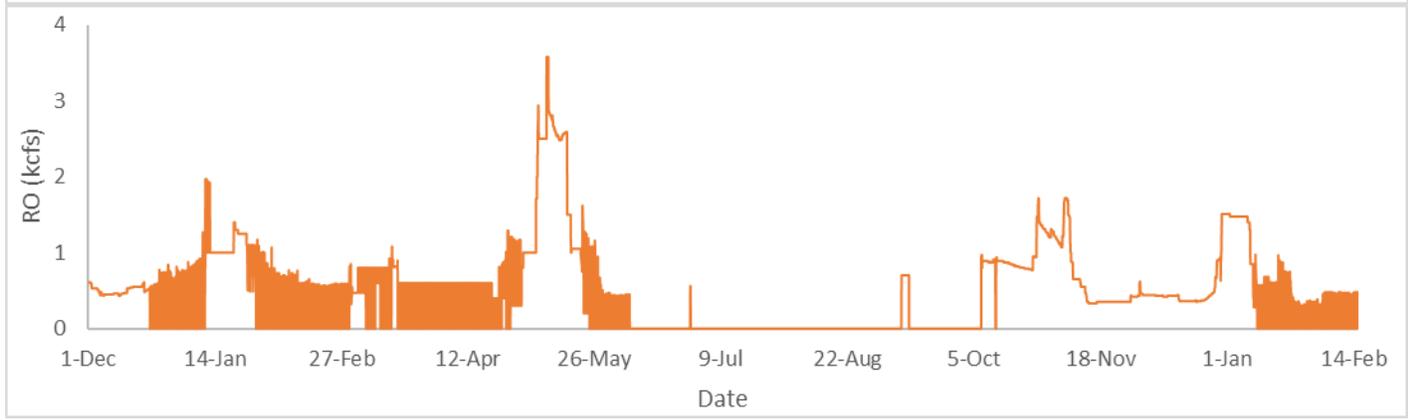
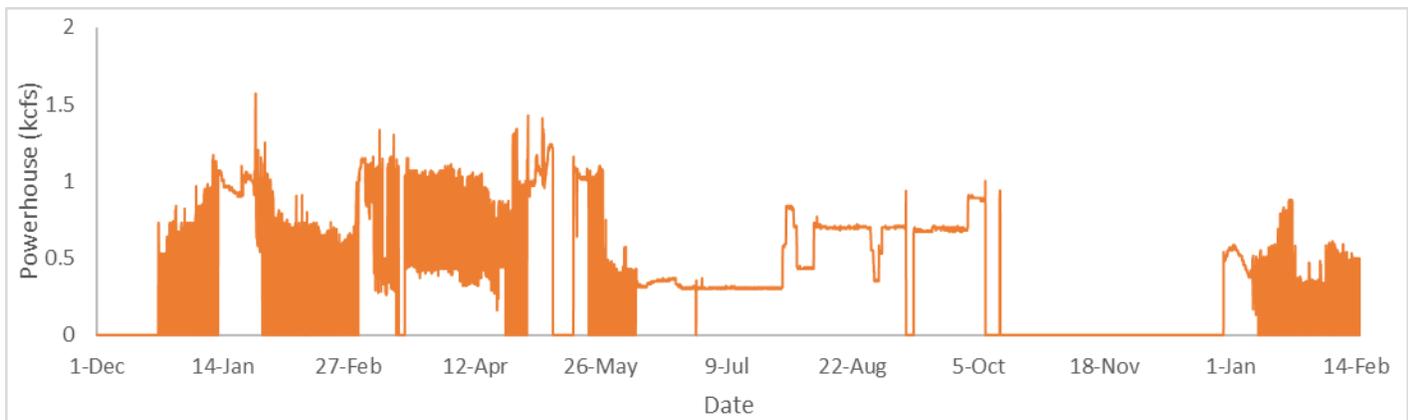


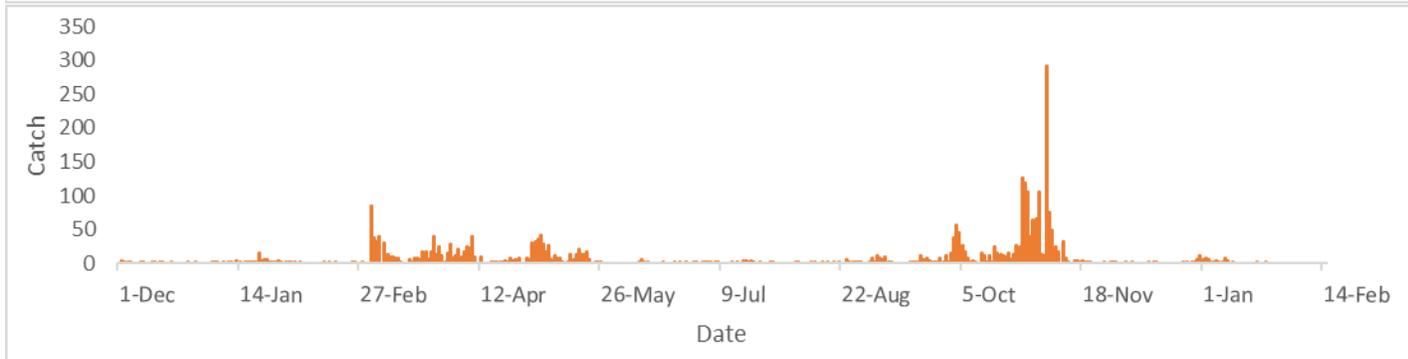
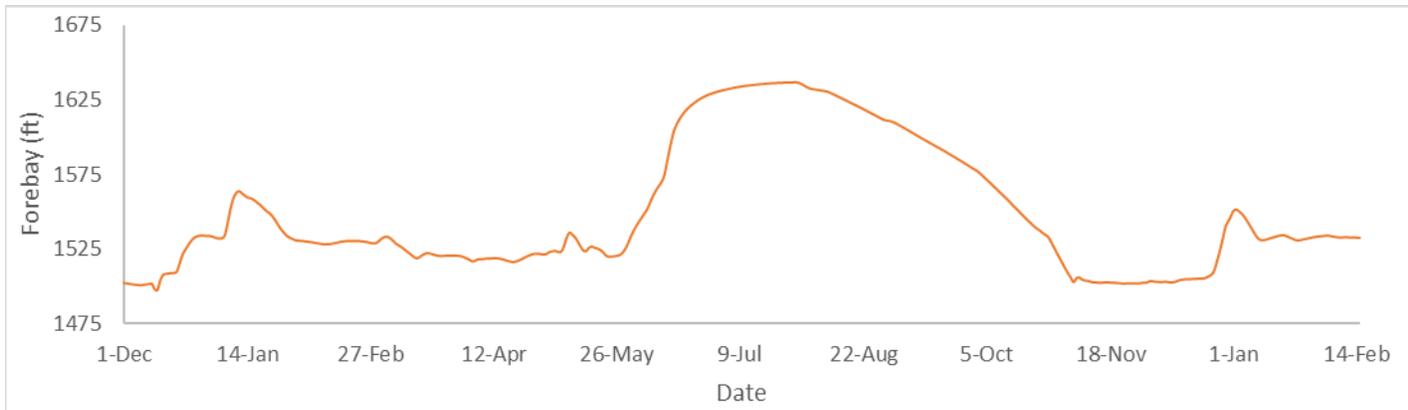
**South Santiam River Above Foster Dam Discharge and Foster Dam Head of Reservoir Capture Data**



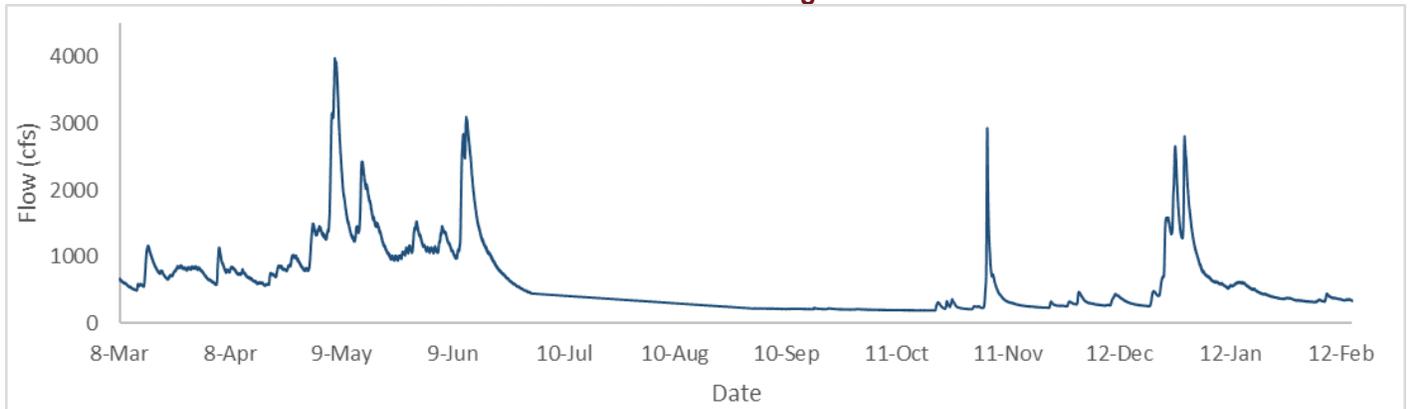


**Cougar Dam Operational and Capture Data Since Start of Monitoring**

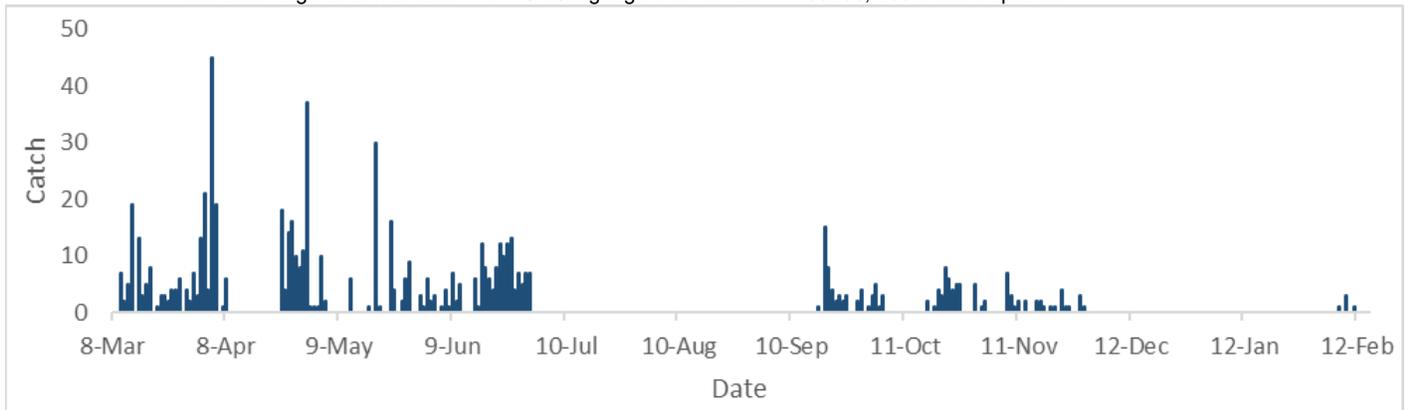




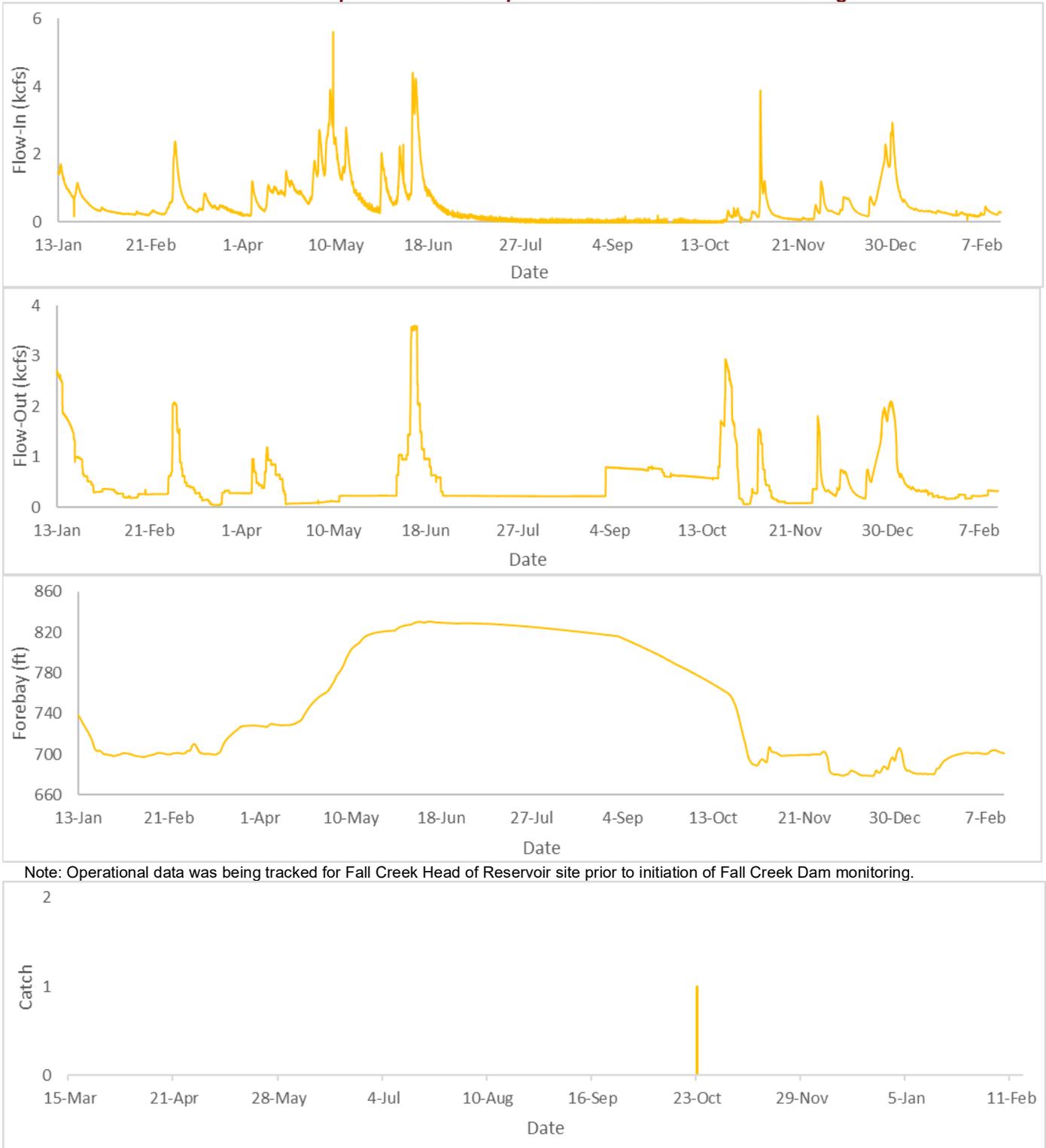
**South Fork McKenzie above Cougar Dam Discharge and Cougar Dam Head of Reservoir Capture Data Since Start of Monitoring**



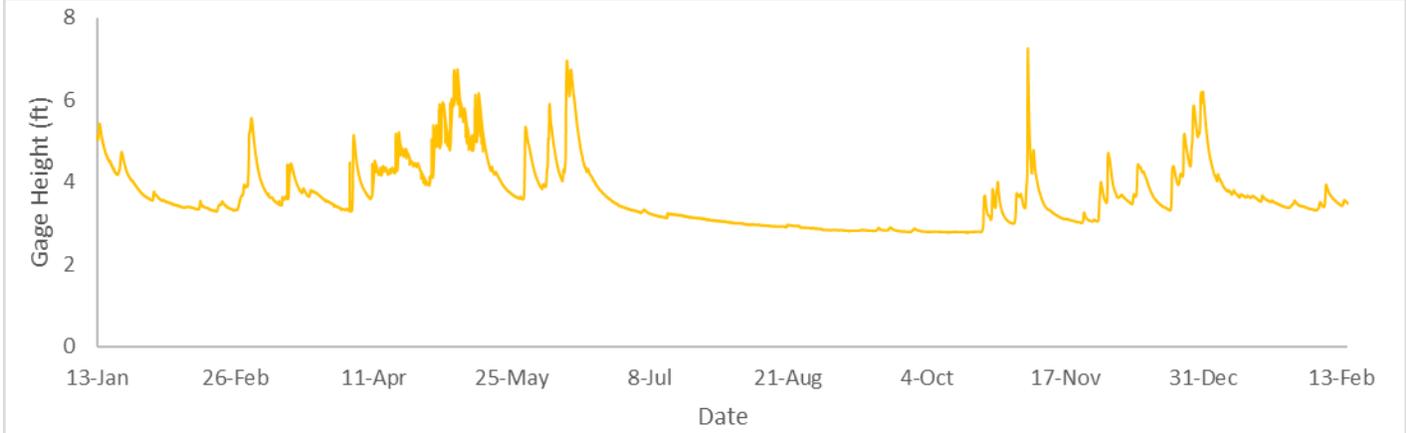
Note: Discharge data was taken from USGS gauge site number 14159200, 250 meters upstream.



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



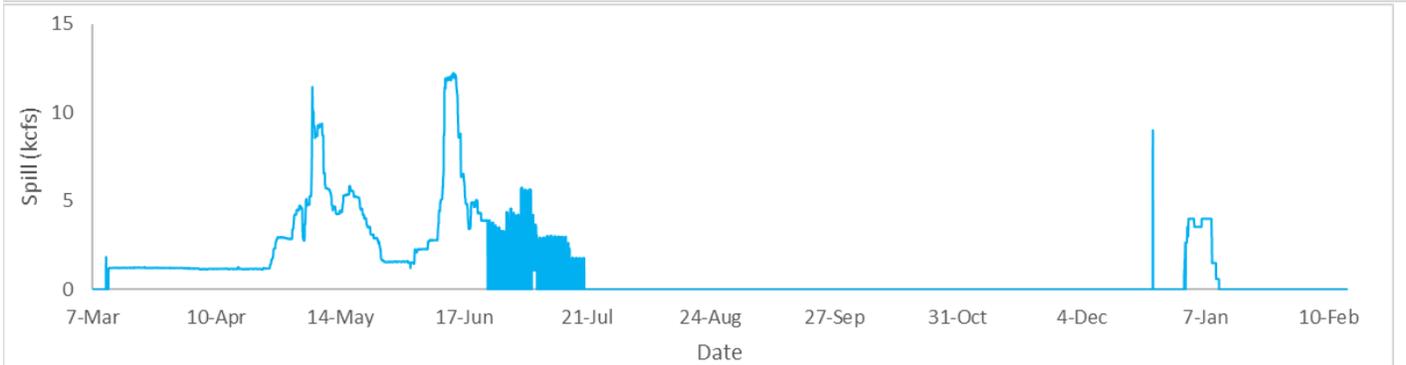
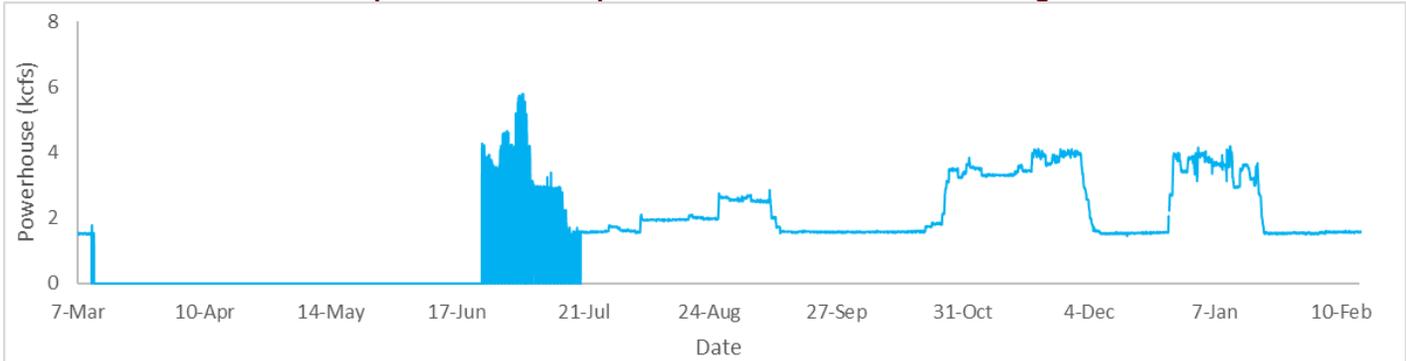
**Fall Creek Head of Reservoir Operational and Capture Data Since Start of Monitoring**

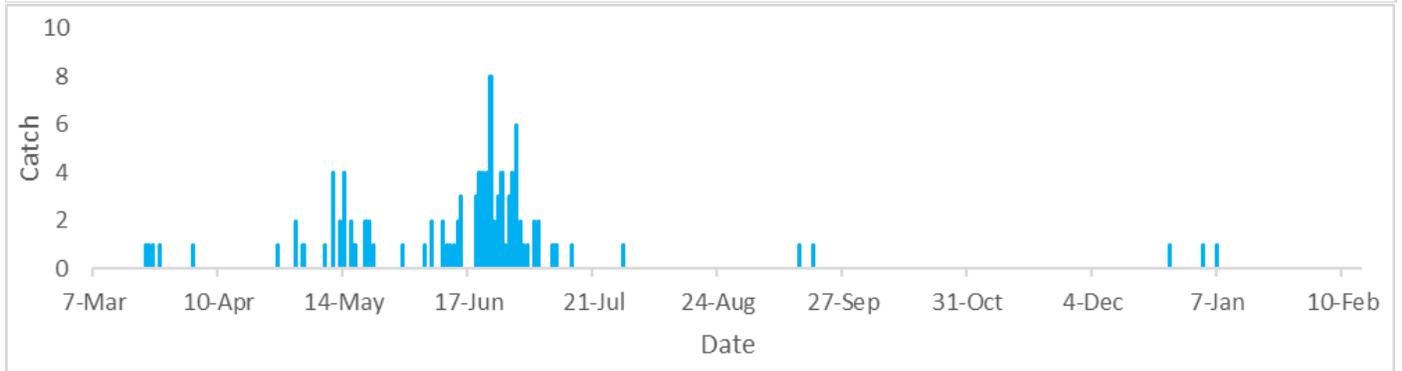
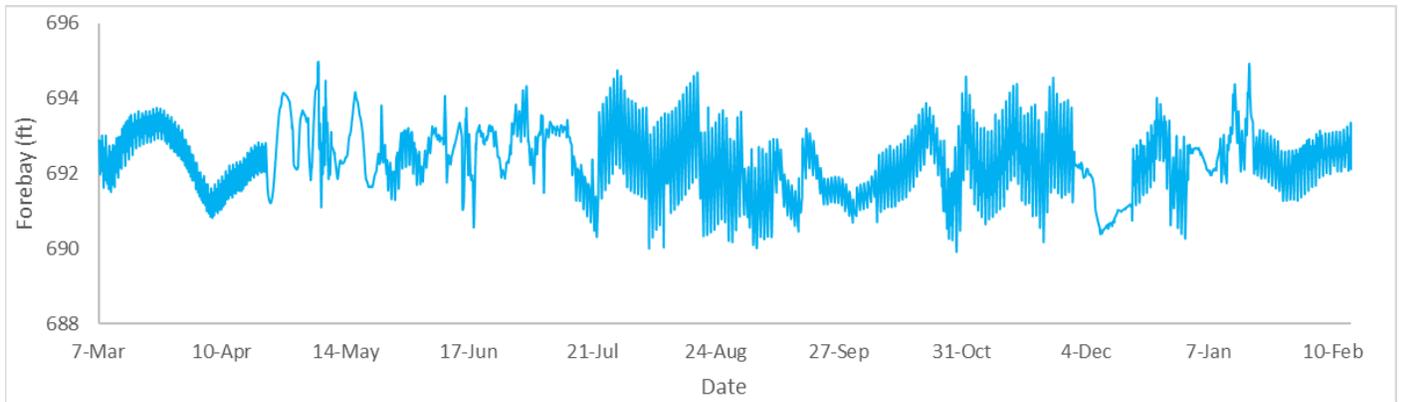


Note: Gauge height data was taken from USGS stream gauge number 14150290, 1.2 rkms downstream.

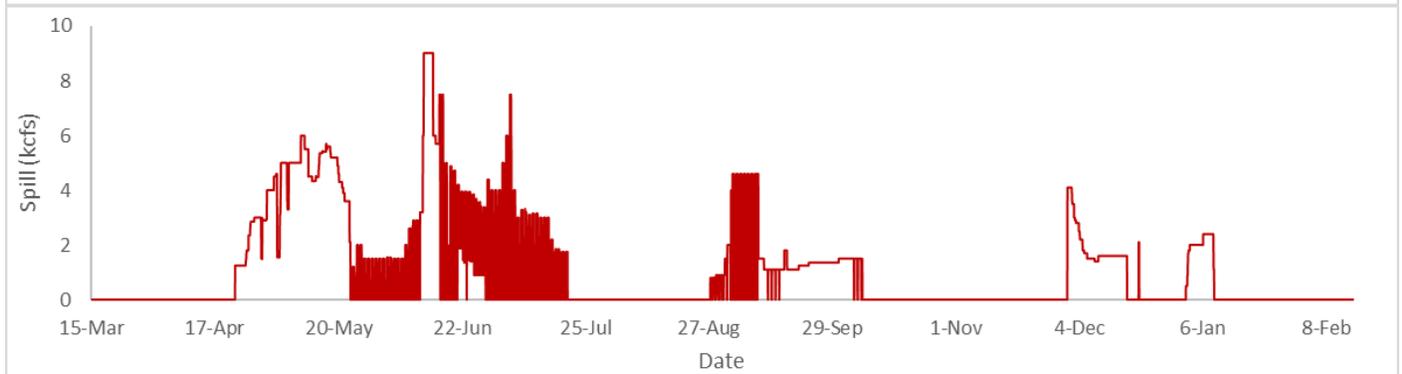
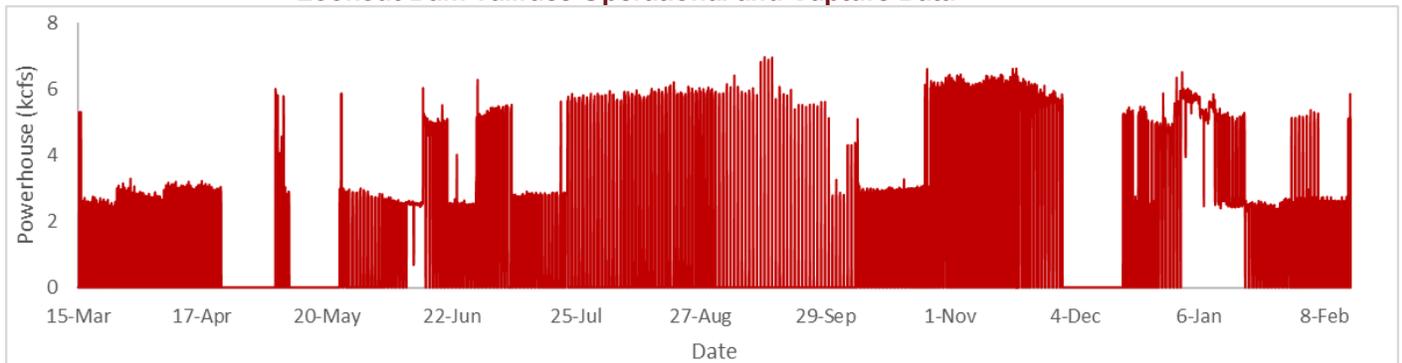


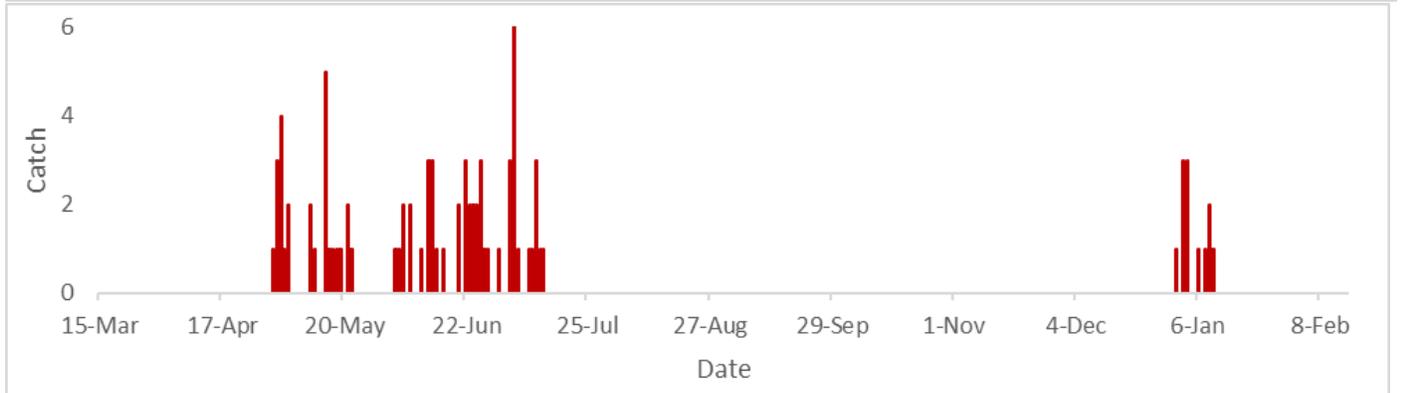
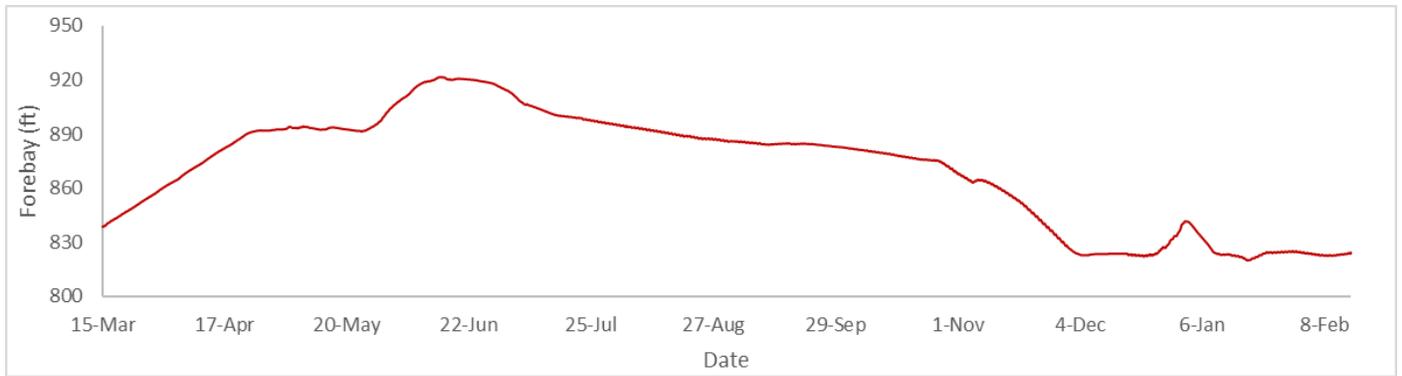
**Dexter Dam Operational and Capture Data Since Start of Monitoring**



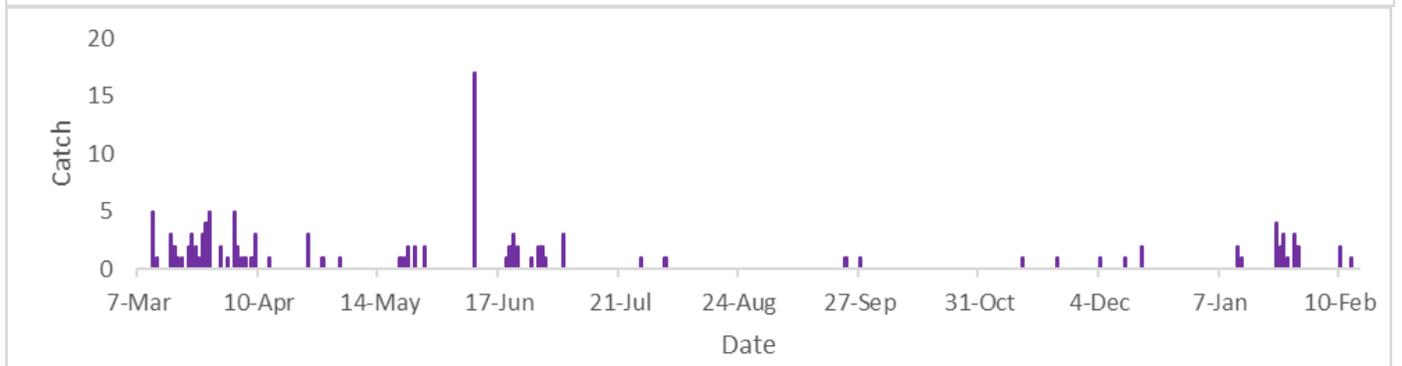
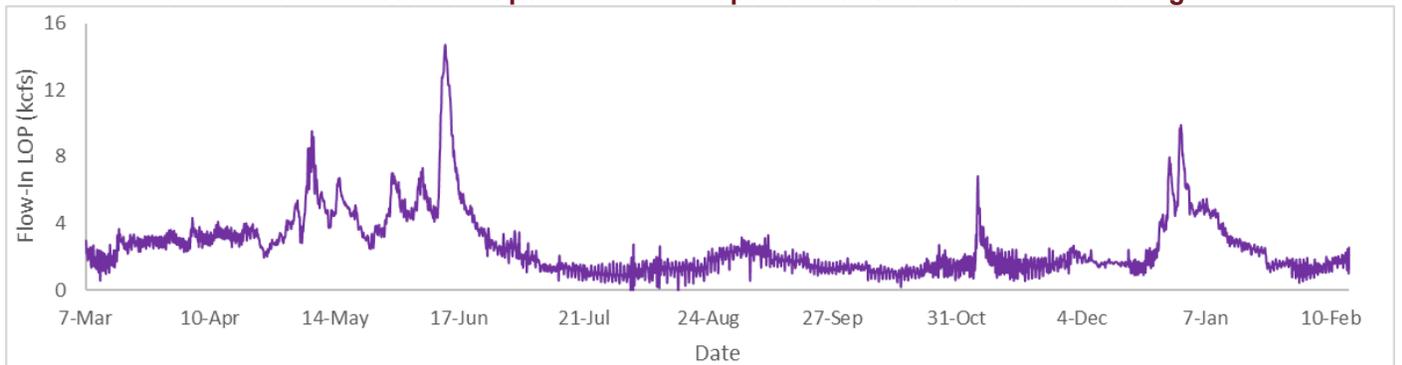


**Lookout Dam Tailrace Operational and Capture Data**

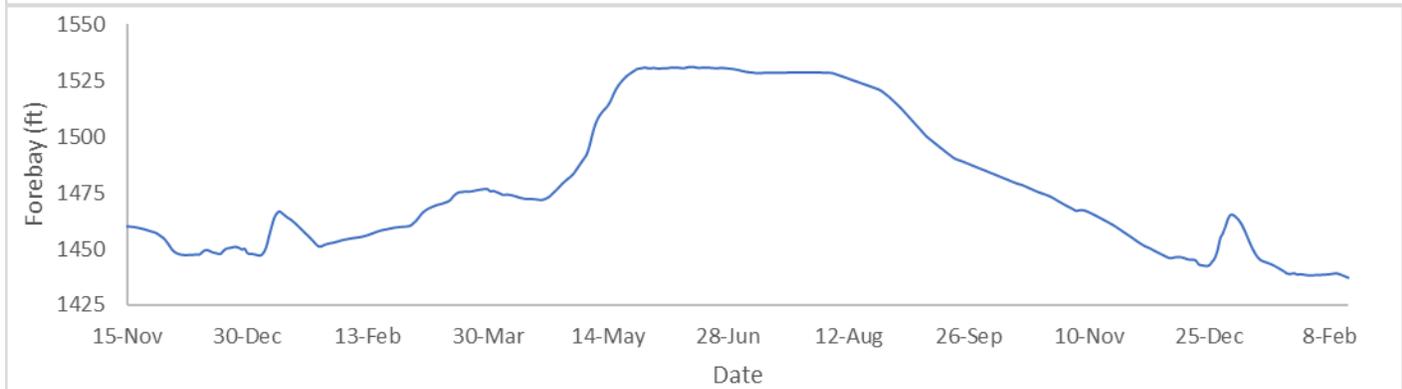
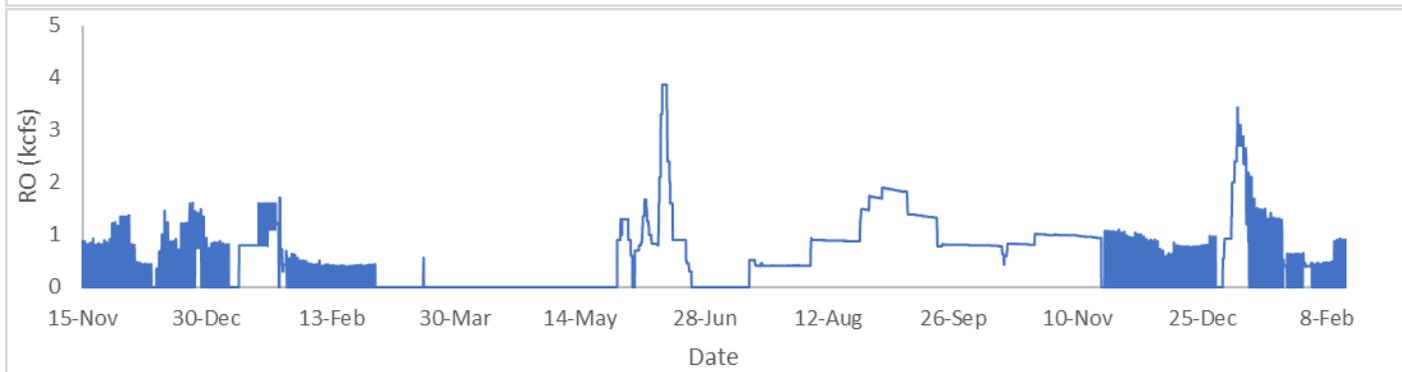
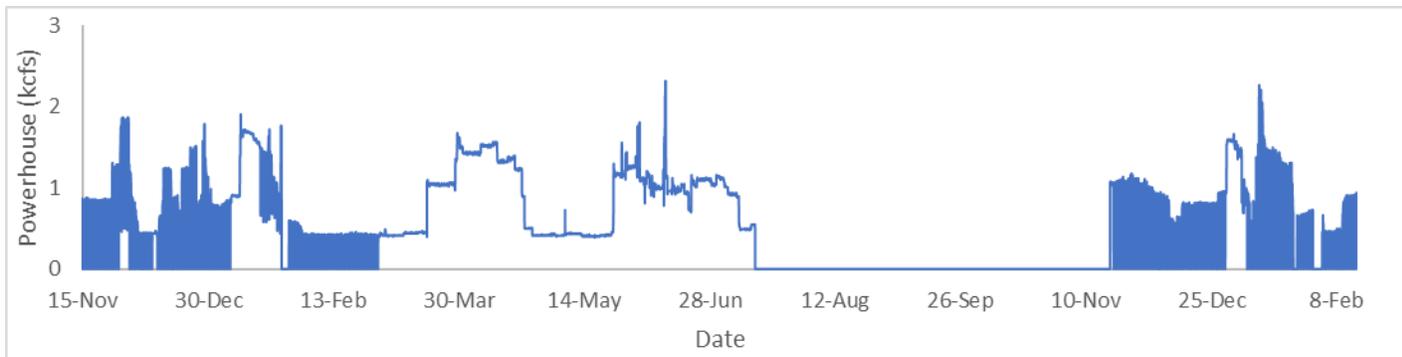




**Lookout Point Head of Reservoir Operational and Capture Data Since Start of Monitoring**



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



## Appendix C

<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)

<b>Dexter Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
Spill	988	2	0.2% (2/988)
Powerhouse	N/A	N/A	N/A

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

<b>Big Cliff Dam</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
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

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

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

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

Cougar Dam	Release #	Recapture #	Capture Efficiency
------------	-----------	-------------	--------------------

RO Route	993	63	6.34% (63/993)
----------	-----	----	-------------------

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

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

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

Cougar Dam	Release #	Recapture #	Capture Efficiency
PH Route	500	148	29.6% (148/500)

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
8ft Trap	549	40	7.3% (40/549)

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)

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

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

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

<b>Big Cliff Dam (11/16/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
8ft Trap	509	15	2.9% (15/509)

<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)

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

<b>Hills Creek Dam (2/16/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
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.

<b>Hills Creek Dam (2/25/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
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.

<b>Cougar Dam (12/15/2022)</b>	<b>Release #</b>	<b>Recapture #</b>	<b>Capture Efficiency</b>
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)

**Run of River Trapping Efficiency**

<b>Foster Dam Head of Reservoir- South Santiam To-Date</b>	<b>Release #</b>	<b>Recapture #</b>
Chinook	78	11
Winter Steelhead	193	17

<b>Cougar Dam 10/15/2022-10/31/2022</b>	<b>Release #</b>	<b>Recapture #</b>
PH	126	8
RO	20	1

<b>Cougar Dam 11/1/2022-11/15/2022</b>	<b>Release #</b>	<b>Recapture #</b>
PH	0	0
RO	464	22

<b>Cougar Dam 11/16/2022-11/30/2022</b>	<b>Release #</b>	<b>Recapture #</b>
PH	0	0
RO	25	1

<b>Foster Dam Head of Reservoir- South Santiam 11/16/2022 to 11/30/2022</b>	<b>Release #</b>	<b>Recapture #</b>
Chinook	32	7
Winter Steelhead	7	1

<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)

## **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	0
Cougar Dam	PWR	0
Cougar Dam	RO	0
Cougar Dam Head of Reservoir	5 ft	5
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

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

Site	Trap	PIT Tag #	Date	Species
Cougar Dam Head of Reservoir	5 ft	3DD.003BD3961C	2/7/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	3DD.003BD3962B	2/9/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	3DD.003BD3962F	2/9/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	3DD.003BD39630	2/9/2023	Chinook
Cougar Dam Head of Reservoir	5 ft	3DD.003BEE2A53	2/11/2023	Chinook

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

Site	Trap	PIT Tag #	Date	Species
Fall Creek Head of Reservoir	8 ft	VIE RDY	2/7/2023	Chinook
Fall Creek Head of Reservoir	8 ft	VIE RDY	2/8/2023	Chinook
Lookout Point Head of Reservoir	5 ft	VIE RDY	2/10/2023	Chinook
Lookout Point Head of Reservoir	5 ft	VIE RDY	2/10/2023	Chinook
Fall Creek Head of Reservoir	8 ft	VIE RDY	2/12/2023	Chinook

\*RDY denotes location and color (Right Dorsal Yellow)