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Report Period: January 16th to January 31st, 2023

Report No.: 2023 Willamette RST Bi-Weekly Report 01/16-01/31 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	05/25/2025	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	12/13/2022	12/13/2022	1

	(506 Fish, RO route)			
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 15th. The Green Peter Dam Tailrace- Middle Santiam trap was removed on May 12th due to damage incurred to the highline.

The RST's at Big Cliff Dam and Lookout Dam Tailrace started sampling on March 15th. On March 1st 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 15th.

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

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

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

Sampling start dates are included in Table 2, and season total collection numbers are displayed in Table 3. The locations of the RST's are depicted in Figures 1 through 10.



Imagery Source: 2021, ESRI.



FIGURE 1
Big Cliff Dam

● RST Locations

500 Feet



EAS ENVIRONMENTAL ASSESSMENT SERVICES
 Wholly Owned Subsidiary of Natives of Kodiak



Imagery Source: 2021, ESRI.



FIGURE 2 Foster Dam Head of Reservoir - South Santiam River

● RST Locations

———— 500 Feet



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 Wholly Owned Subsidiary of Natives of Kodiak



FIGURE 3
Cougar Dam

● RST Locations

500 Feet





FIGURE 4
Cougar Dam Head of Reservoir

● RST Locations

500 Feet





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





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



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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	01/16/2023	01/31/2023	16	354
Cougar Dam PH	12/1/2021	01/16/2023	01/31/2023	9	327
Cougar Dam RO	12/1/2021	01/16/2023	01/31/2023	15	418
Fall Creek Dam Tailrace*	3/15/2022	01/16/2023	01/31/2023	10	192
Fall Creek Head of Reservoir	1/18/2023	01/16/2023	01/31/2023	8	8
Dexter Dam Tailrace	3/7/2022	01/16/2023	01/31/2023	16	320
Lookout Point Dam PH	3/15/2022	01/16/2023	01/31/2023	16	292
Lookout Point Dam Spill	3/15/2022	01/16/2023	01/31/2023	16	292
Lookout Point Head of Reservoir	3/10/2022	01/16/2023	01/31/2023	15	292
Hills Creek Dam	9/16/2022	01/16/2023	01/31/2023	16	138

*Fall Creek Dam Tailrace trap was being operated by the Corps until EAS began sampling the site on March 15th 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	40	56	1293	610
Big Cliff Dam	STW	3	0	110	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	0	0	128	672
Foster Dam Head of Reservoir- South Santiam	STW	0	0	224	7
Cougar Dam	CHS	3	6	3038	834
Cougar Dam Head of Reservoir	CHS	0	0	710	320
Fall Creek Dam Tailrace	CHS	0	0	1	11
Fall Creek Head of Reservoir	CHS	9	0	9	0
Dexter Dam Tailrace	CHS	0	0	101	128
Lookout Point Dam	CHS	0	0	90	2
Lookout Point Head of Reservoir	CHS	15	0	127	225
Hills Creek Dam	CHS	4	0	150	33

North Santiam – Big Cliff Dam

Target Species

This reporting period began on January 16th and ended on January 31st. There were a total of 40 Chinook Salmon (CHS) and 3 Winter Steelhead (STW) captured during the 16-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.

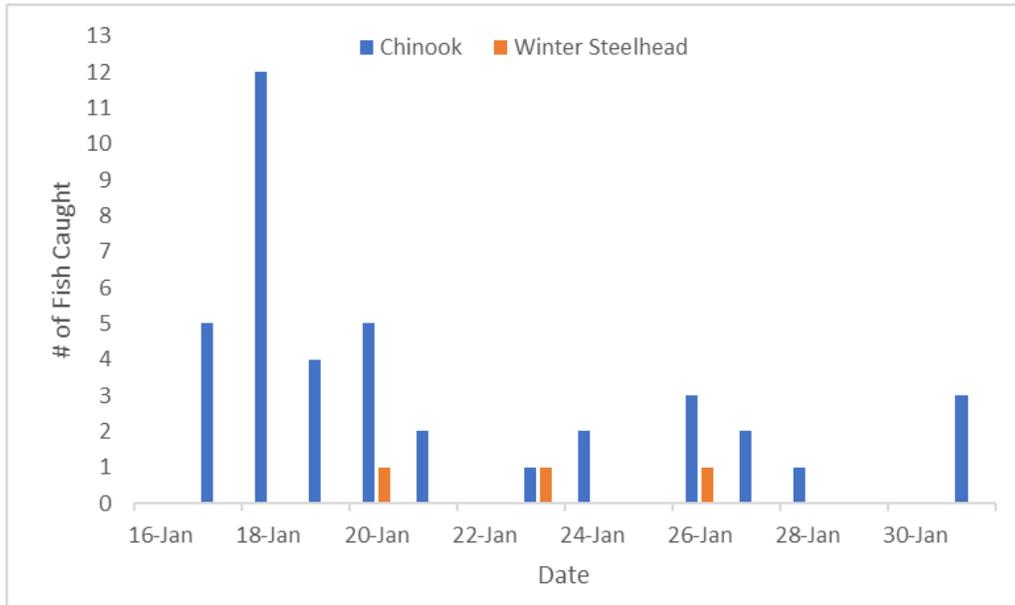
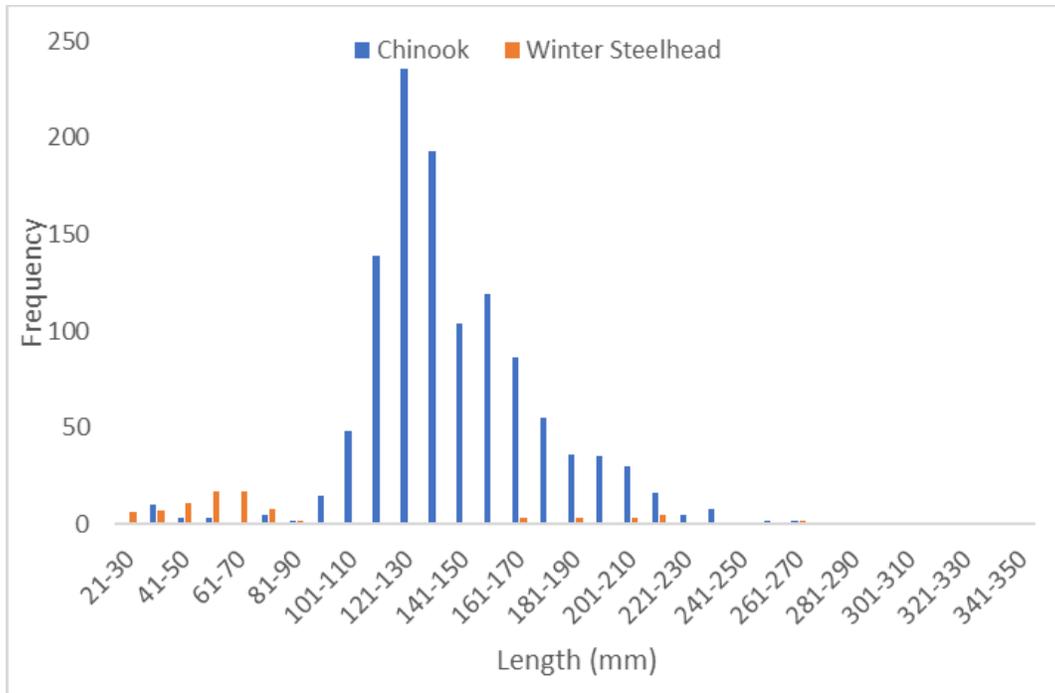


Figure 11. Chinook and Winter Steelhead Captured per day 01/16/2023 to 01/31/2023 (Big Cliff)



*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	13	31	48	37.5	1.2	1.4	1.3
		CHS	Parr	32	55	136	95.3	1.8	30.0	10.6
		CHS	Smolt	1246	74	283	146.3	5.4	253.5	37.1
		STW	Fry	28	21	69	40.4	1.1	3.4	1.6
		STW	Parr	45	51	131	69.1	1.3	24.8	4.5
		STW	Smolt	37	157	350	214.1	36.1	442.0	105.6

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

January 16-31, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Big Cliff	PWR	CHS	Fry	4	34	40	37.5	N/A	N/A	N/A
		CHS	Parr	5	79	112	99.4	3.8	15.8	9.6
		CHS	Smolt	31	98	209	169.4	8.9	92.8	52.1
		STW	Fry	0	N/A	N/A	N/A	N/A	N/A	N/A
		STW	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		STW	Smolt	3	205	215	208.7	75.5	97.2	89.9

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

24-Hour Post Collection Holding Trial

39 Spring Chinook and 2 Winter Steelhead were captured during the current reporting period and held for 24 hours. 4 Chinook (10.3%) and 0 Winter Steelhead (0.0%) died in holding.

Injuries and Copepod Infection

Partial descaling <20% was observed in 31 of the 40 Chinook captured (77.5%), 2 displayed descaling >20% (5.0%), 26 displayed body injury (65.0%), 2 had eye injury (5.0%), 27 had copepods present in the branchial cavity (67.5%) and 16 had copepods on fins (40.0%). 3 Chinook displayed gas bubble disease (three level 1) (7.5%). There was 1 mortality (2.5%).

Partial descaling <20% was observed in 3 of the 3 Winter Steelhead captured (100.0%) and 0 displayed descaling >20% (0.0%), 2 displayed body injury (66.7%), 1 had eye injury (33.3%), 3 had copepods present in the branchial cavity (100.0%) and 3 had copepods on fins (100.0%). 0 Winter Steelhead displayed gas bubble disease (0.0%). There was 1 mortality (33.3%). 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	40	31	2	26	2	27	16	1
Big Cliff Dam	Winter Steelhead	3	3	0	2	1	3	3	1

Collected DNA and Scale Samples

For the reporting period, scales and DNA were collected from 36 Spring Chinook and 3 Winter Steelhead. The other targets captured did not meet length criteria for DNA sampling or were too descaled/damaged to collect samples.

PIT Tags

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

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

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

Species	PWR Capture	PWR Mortality	Season Total	Season Total Mortality
Bluegill	1	0	1	0
Brown Bullhead	0	0	0	0
Chinook (Adult)	0	0	0	0
Chinook (clipped)	1	0	1	0
Cutthroat	0	0	0	0
Dace	0	0	0	0
Kokanee	30	5	30	5
Kokanee (clipped)	1	0	1	0
<i>O. mykiss</i> (clipped)	0	0	0	0
Pumpkinseed	1	0	1	0
Unknown	0	0	0	0
Mountain Whitefish	0	0	0	0
Sculpin	0	0	0	0
Totals	34	5	34	5

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 1,112.9 feet (mean: 1,110.2 feet) during the reporting period. Figure 13 shows instantaneous gauge height.

Total dissolved gas saturation ranged from 100 to 116% during the reporting period (mean: 108.1%). Figure 14 shows total dissolved gas saturation.

Stream temperatures were recorded every 2 hours for the length of the reporting period at the RST. The temperature probe contained corrupted data for the duration of the reporting period and was not viable for reporting. Temperature data from USGS stream gage 14181500 was used to supplement the corrupted data for the reporting period (Figure 15).

Flows through the Powerhouse and Spill during the reporting period averaged 1,794.2 and 196.0 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.

	Chinook	Winter Steelhead
Description	(8 ft)	(8 ft)
Catch	40	3
Effort (hrs)	361.2	361.2
CPUE (fish/hr)	0.111	0.008

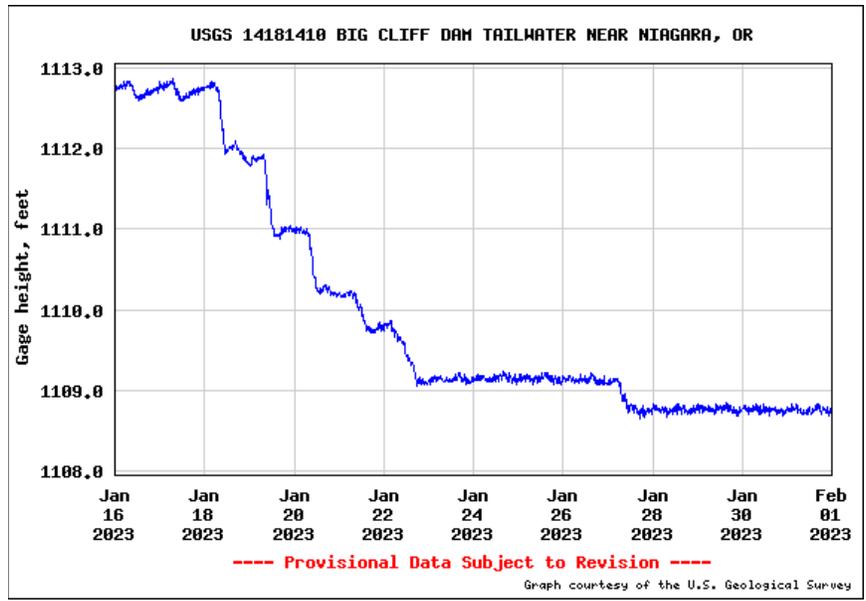


Figure 13. Gauge height (ft); below Big Cliff Dam

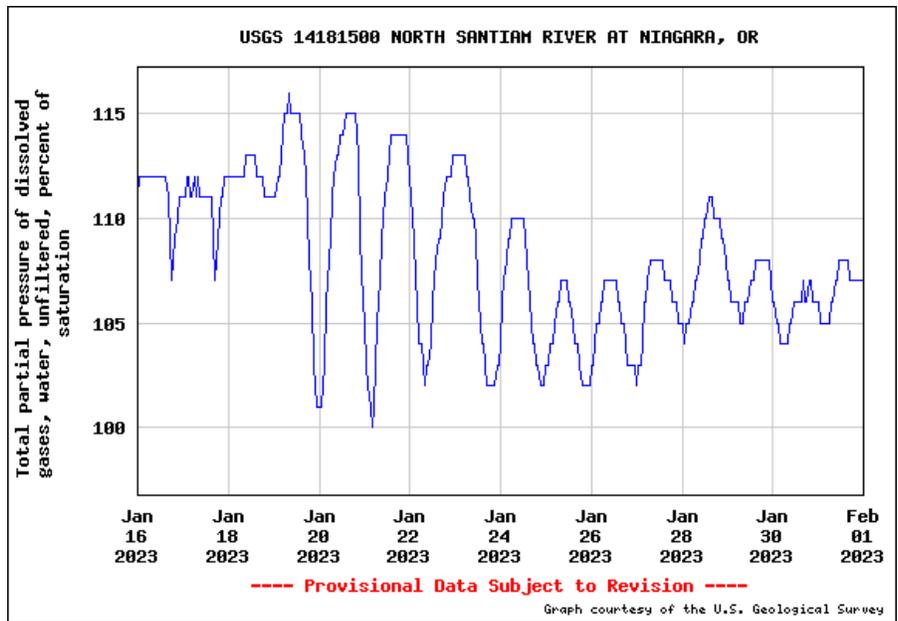


Figure 14. Total Dissolved Gas Saturation (%); below Big Cliff Dam

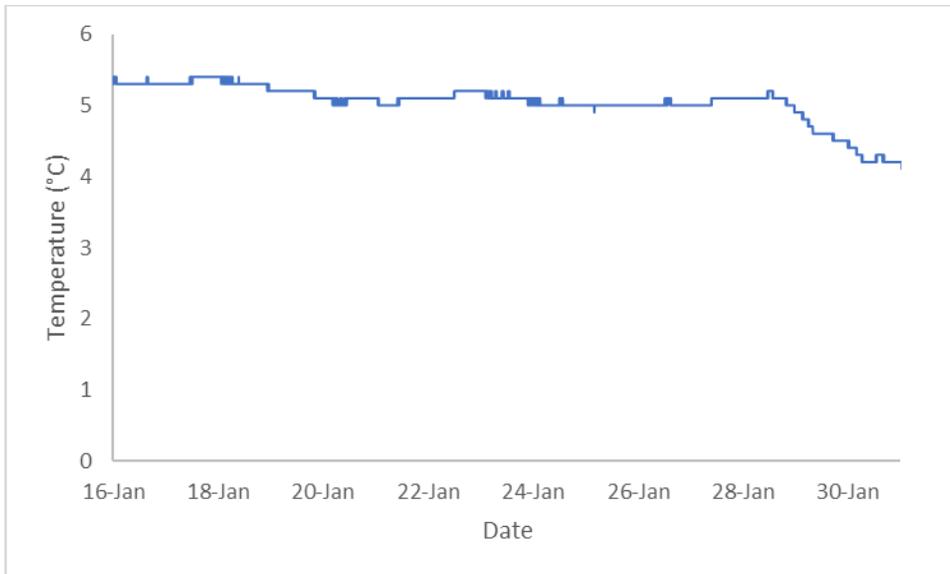


Figure 15. Temperature at RST (Big Cliff Dam)

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

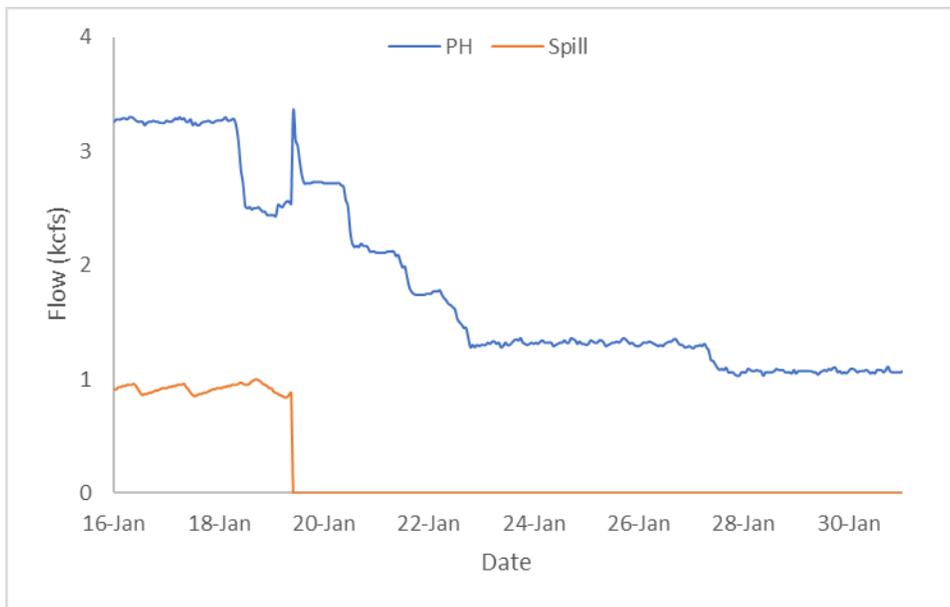


Figure 16. Hourly Flows PWR vs. Spill (Big Cliff Dam)

South Fork McKenzie – Cougar Dam

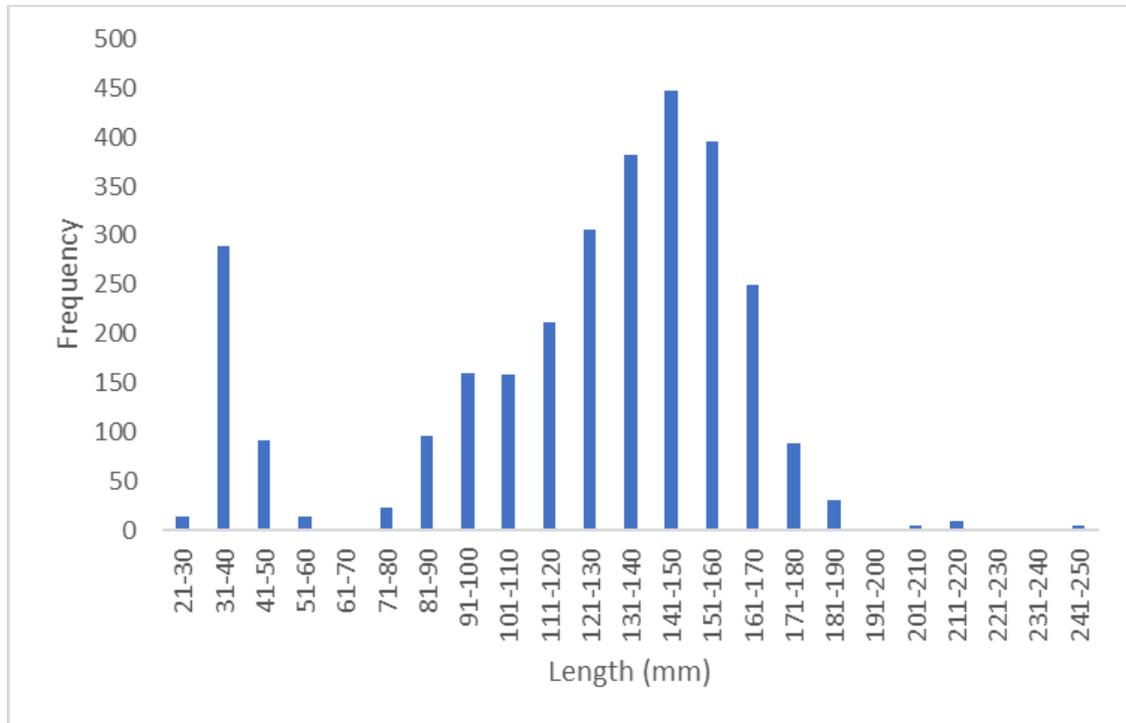
Target Species

This reporting period began on January 16th and ended on January 31st. There were a total of 3 Chinook Salmon (CHS) captured during the 16-day sampling period. Sampling duration was 100.0% for the RO RST and 56.3% for the Powerhouse RSTs. Table 8 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 17 shows the daily capture numbers for chinook and Figure 18 shows length frequency data to-date.



*Recaptured fish for trapping efficiency trials not included.

Figure 17. Chinook Captured Per Day 01/16/2023 to 01/31/2023 (Cougar Dam)



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

Figure 18. 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
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Table 8. 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.

January 16-31, 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	1	84	84	84.0	6.6	6.6	6.6
		CHS	Smolt	2	120	145	132.5	18.3	29.9	24.1
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 3 Chinook captured in the RSTs, 0 fish from the PWR RST and 3 from the RO RST, were held for ~24 hours in holding tanks and then evaluated for survival rates. In total, 0 of the 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 3 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 (level 1) (0.0%). There were 0 chinook mortalities collected in the PWR RST (0.0%).

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

Data is summarized below in Table 9. A summary of injuries observed during the reporting period, 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 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	3	1	0	1	0	2	1	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 3 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 5 non-target fish were captured during the reporting period; the data is summarized below in Table 10.

Table 10. 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)	3	1	0	0	3	1
Chinook (Adult)	0	0	0	0	0	0
Crappie	0	0	0	0	0	0
Cutthroat	0	0	0	0	0	0
Dace	1	1	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	1	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
Totals	4	2	1	0	10	2

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 1,253.0 feet (mean: 1,252.7 feet). Figure 19 shows instantaneous gauge height.

Total dissolved gas saturation ranged from 97 to 111% (mean: 102.5%). Figure 20 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 21 and 22 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 181.9 and 341.8 cubic feet per second (cfs) respectively (Figure 23). Catch per unit of effort (CPUE) data are summarized in Table 11. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

Table 11. Summary of salmonid CPUE, Cougar Dam.

Description	Chinook	
	RO (5ft)	PWR (8ft)
Catch	3	0
Effort (hrs)	382.5	344.2
CPUE (fish/hr)	0.008	0

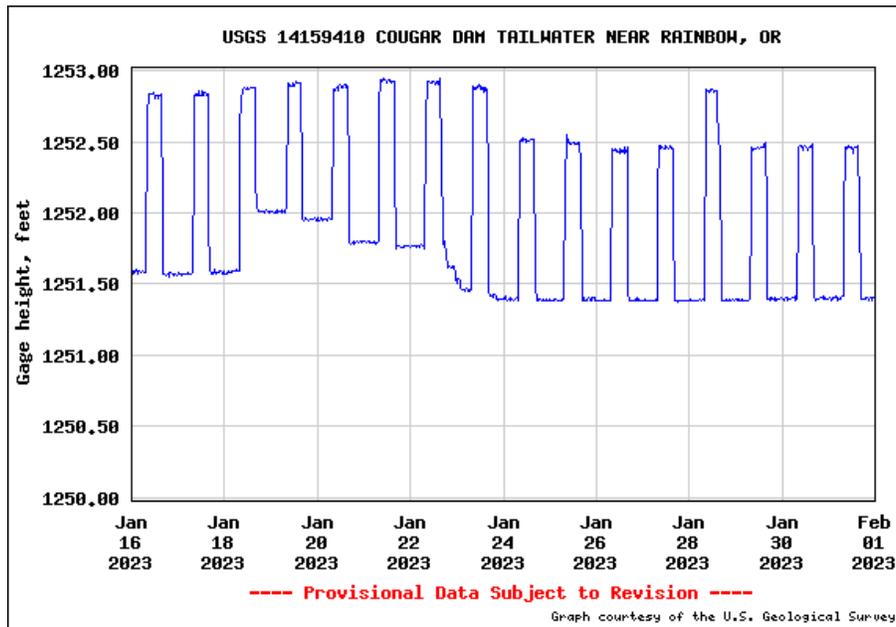


Figure 19. Gauge Height (feet); below Cougar Dam, South Fork McKenzie River

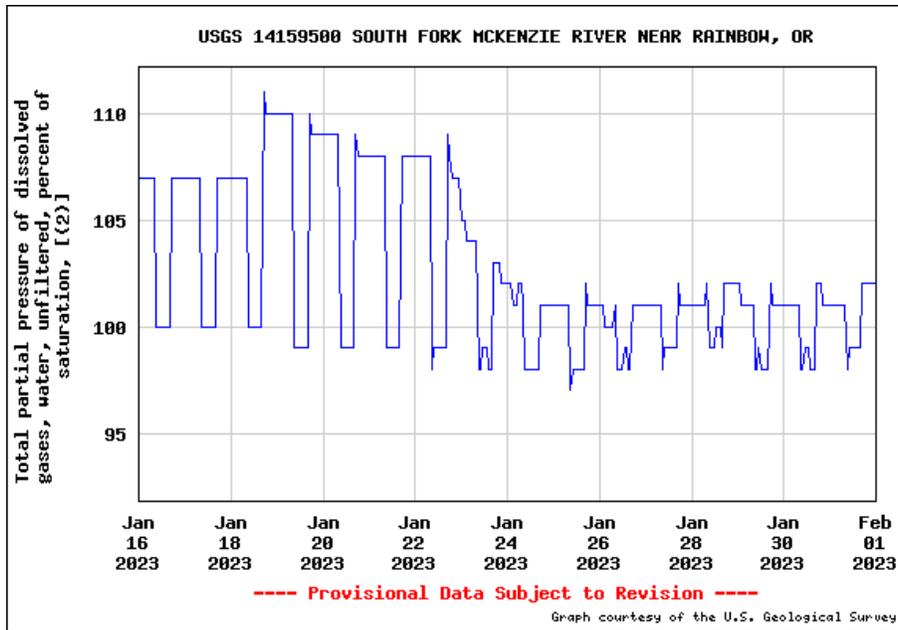


Figure 20. Total Dissolved Gas Saturation (%); below Cougar Dam, South Fork McKenzie River

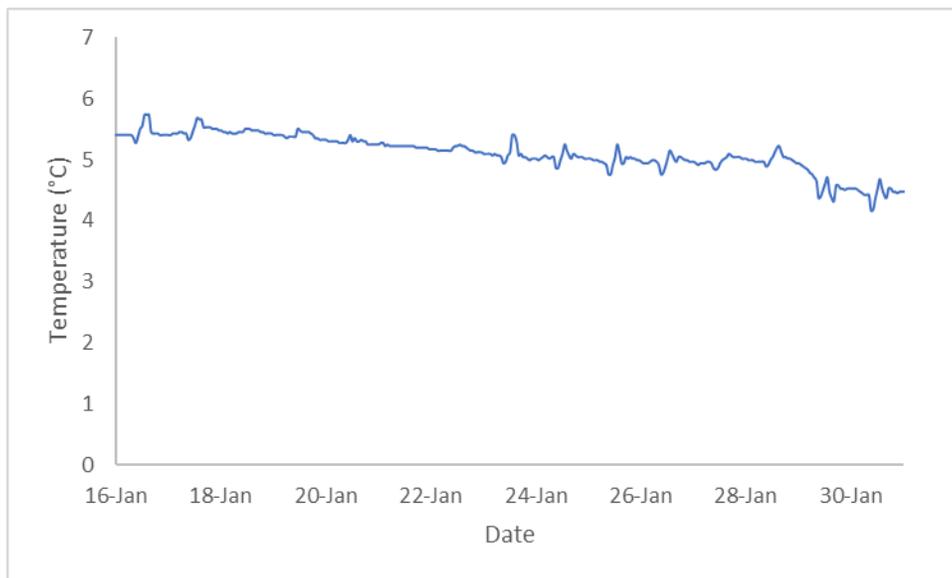


Figure 21. Temperature at RO RST (Cougar Dam)

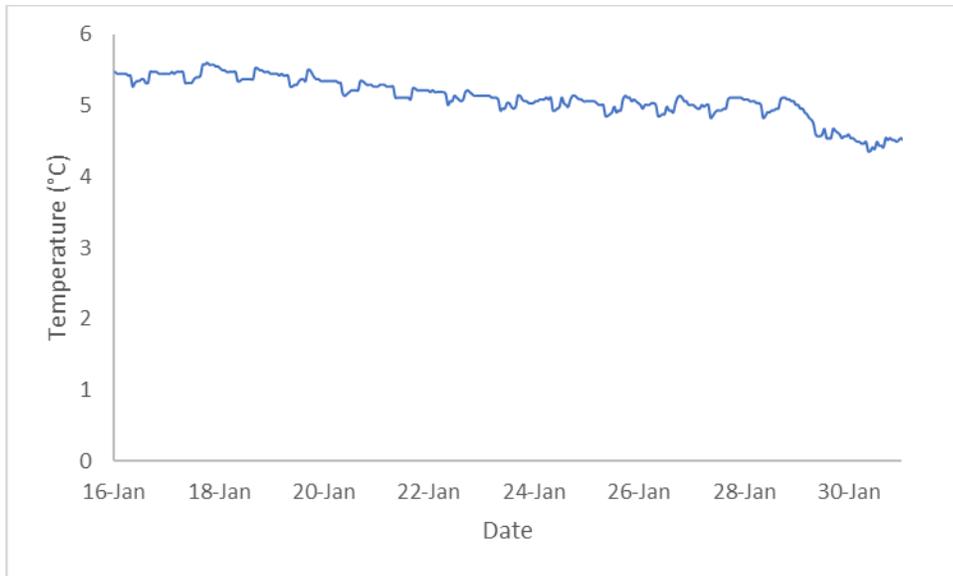


Figure 22. Temperature at PWR RST (Cougar Dam)

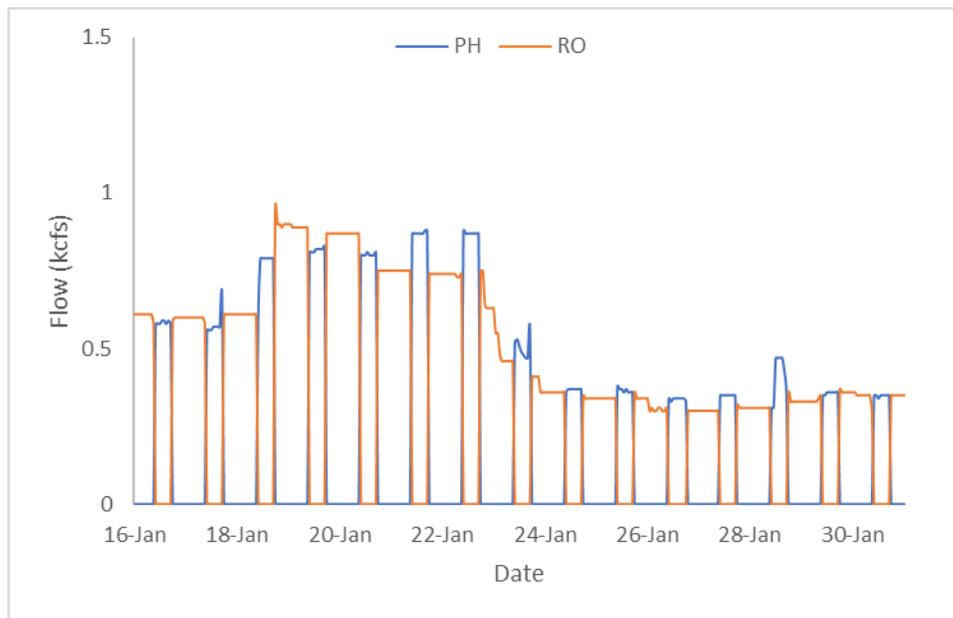


Figure 23. Hourly Flows PWR vs. RO (Cougar Dam)

Fall Creek Dam Tailrace

The reporting period began January 16th and ended January 31st. 0 Chinook salmon were captured during the 16-day sampling period (Figure 24). 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 sampled 62.5% of the days during this reporting period. Table 12 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 25 shows length frequency data to-date.

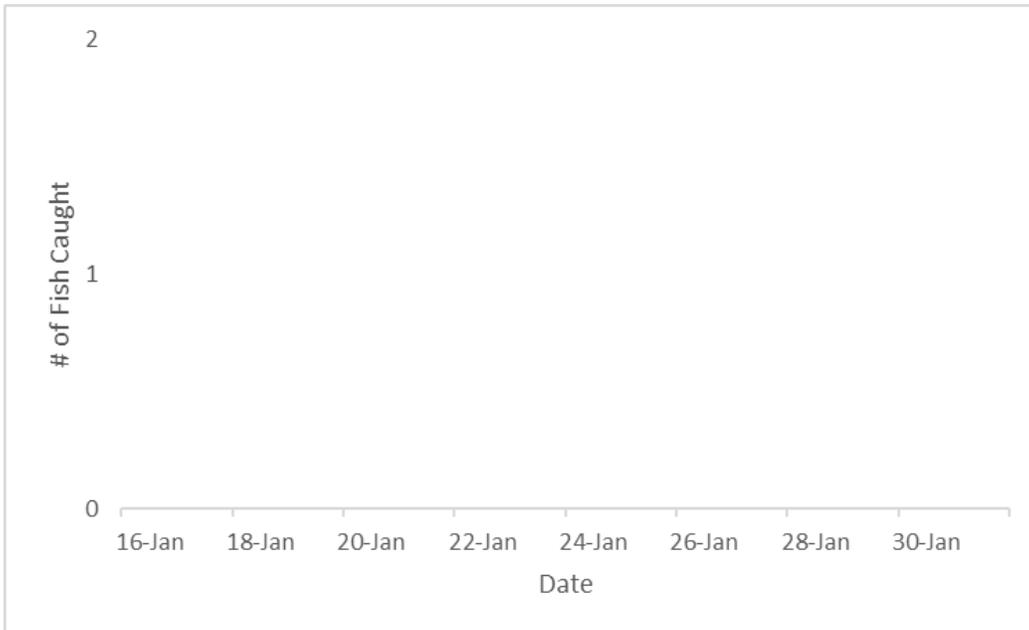


Figure 24. Chinook Captured Per Day 01/16/2023 to 01/31/2023 (Fall Creek Dam Tailrace)

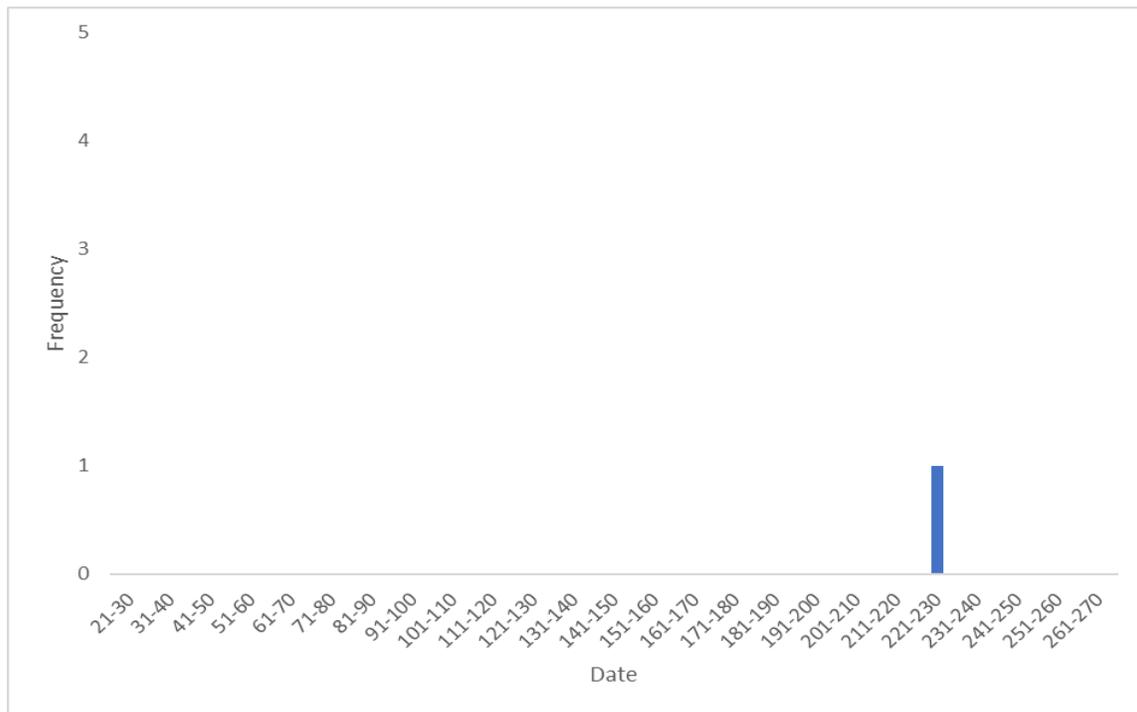


Figure 25. Length Frequency of Juvenile Chinook Sampled Season To-Date (Fall Creek Dam Tailrace)

Table 12. 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
January 16-31, 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 13. To date injury data is listed in Appendix A.

Table 13. 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 so as 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

74 non-target fish were captured at the Fall Creek Dam Tailrace site during the reporting period; the data is summarized below in Table 14.

Table 14. 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	1	0	3	0
Bull Trout	0	0	0	0
Chinook (clipped)	0	0	0	0
Crappie	0	0	0	0
Cutthroat Trout	2	0	5	0
Dace	57	1	74	3
Mosquitofish	0	0	0	0
Peamouth	0	0	0	0
Northern Pikeminnow	1	0	1	0
Redside Shiner	0	0	0	0
Sculpin	3	0	3	0
Spotted Bass	0	0	0	0
Largescale Sucker	0	0	2	0
Pacific Lamprey	0	0	0	0
Mountain Whitefish	0	0	0	0
<i>O. mykiss</i>	10	0	15	0
Unknown	0	0	0	0
Totals	74	1	113	3

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 176.0 cfs to 331.0 cfs (mean: 230.4 cfs). Figure 26 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 27).

Flows In and Out of reservoir during the reporting period averaged 262.6 cfs and 219.8 cfs respectively (Figure 28).

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 Chinook CPUE, Fall Creek Dam Tailrace

	Chinook
Description	(8 ft)
Catch	0
Effort (hrs)	234.5
CPUE (fish/hr)	0

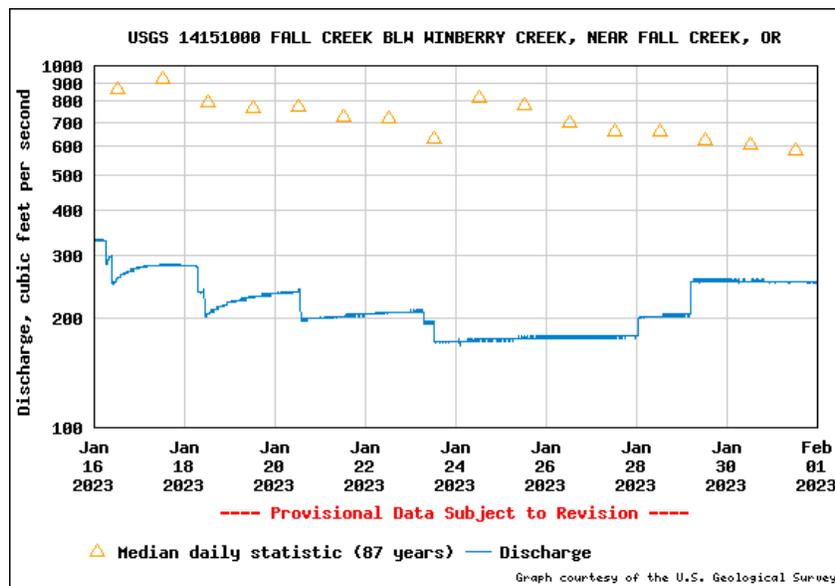


Figure 26. Discharge (cfs); Fall Creek Below Winberry Creek, Near Fall Creek, OR

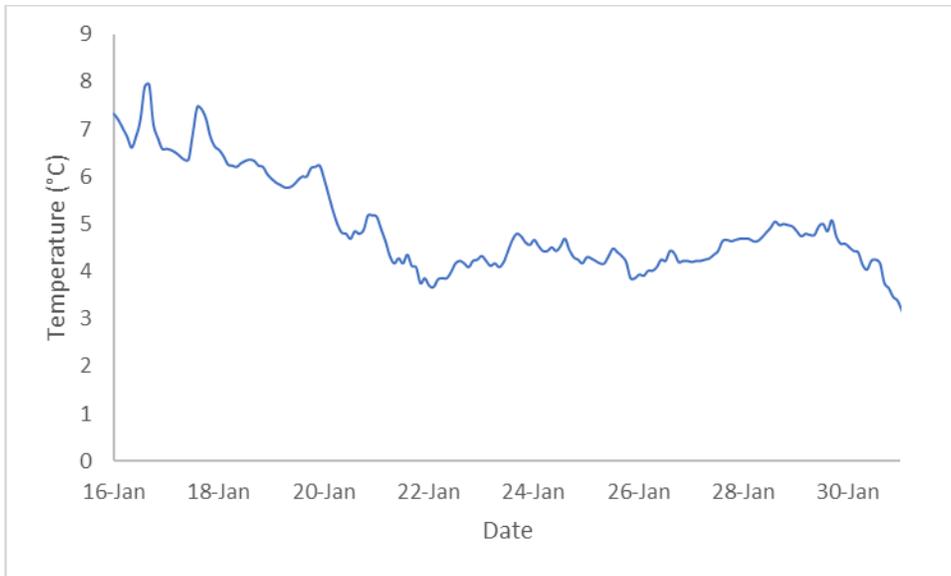


Figure 27. Temperature at RST (Fall Creek Dam Tailrace)

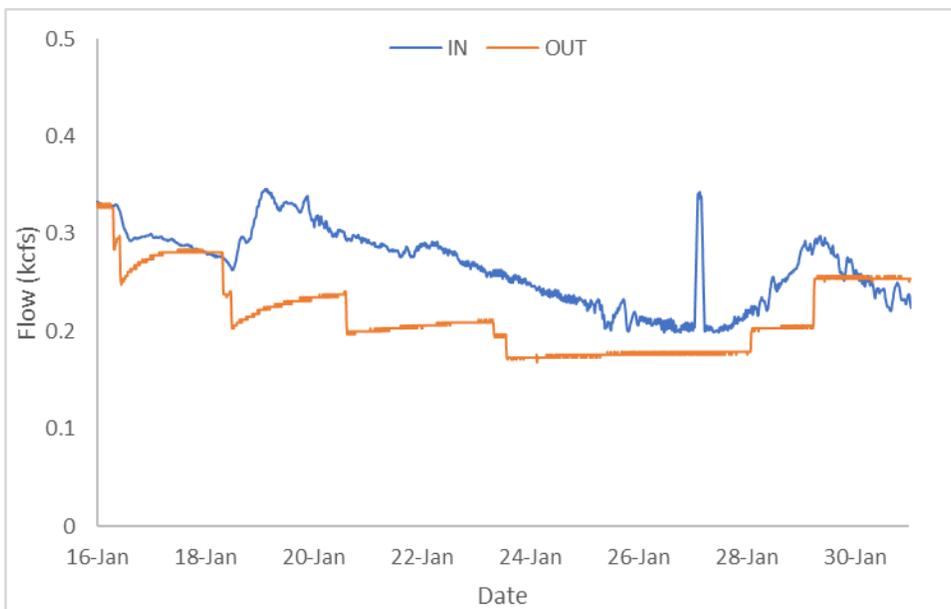


Figure 28. Hourly Flows PWR vs. RO (Fall Creek Tailrace)

Middle Fork Willamette – Fall Creek Head of Reservoir

Target Species

The reporting period began January 16th and ended January 31st. 9 Chinook salmon were captured during the 16-day sampling period (Figure 29). The Fall Creek Head of Reservoir trap was deployed on January 18th. The RST was put into the non-sampling position on January 27th due to low flows rendering

the trap inoperable. The trap was operated 50.0% of the reporting period. Table 16 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 30 shows length frequency data to-date.

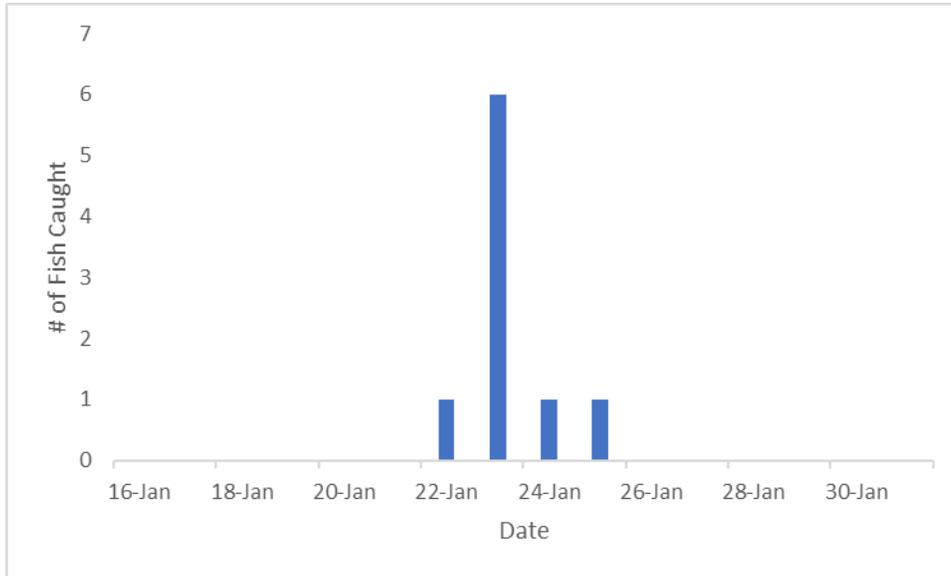


Figure 29. Chinook Captured Per Day 01/16/2023 to 01/31/2023 (Fall Creek Head of Reservoir)

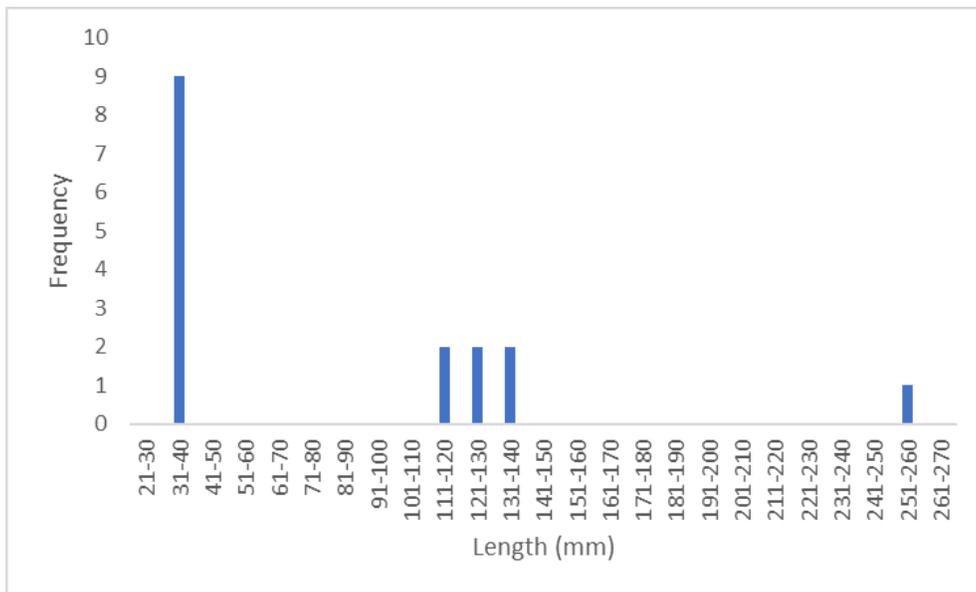


Figure 30. Length Frequency of Juvenile Chinook Sampled Season To-Date (Fall Creek Head of Reservoir)

Table 16. 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	9	33	36	34.9	N/A	N/A	N/A

January 16-31, 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	9	33	36	34.9	N/A	N/A	N/A

Injuries and Copepod Infection

No Chinook were captured during this reporting period. 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. (Fall Creek Head of Reservoir)

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

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

Trapping Efficiency

9 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, 9 Chinook have been VIE marked to the left of the dorsal fin with fluorescent elastomer. No fish with VIE marks have been detected at downstream RST sites to date.

Date Tagged	Tag Location	VIE Color	# Tagged	# Recaptured to Date
1/16/2023-1/31/2023	Left Dorsal	Blue	9	0

Non-Target Species

A total of 15 non-target fish were captured at the Fall Creek Head of Reservoir site during the reporting period; the data is summarized below in Table 18.

Table 18. Summary of Non-target Species (Fall Creek Head of Reservoir)

Species	8ft Capture	8ft Mortality	Season Total	Season Total Mortality
Brook Lamprey	2	0	2	0
Brown Bullhead	0	0	0	0
Cutthroat Trout	0	0	0	0
Dace	0	0	0	0
Redside Shiner	0	0	0	0
Sculpin	0	0	0	0
<i>O. mykiss</i>	13	0	13	0
<i>O. mykiss (clipped)</i>	0	0	0	0
Totals	15	0	15	0

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 3.4 feet to 3.7 feet (mean 3.5 feet). Figure 31 shows instantaneous gage height.

Stream temperatures were recorded every 2 hours for the Fall Creek RST (Figure 32). Temperature probes for the Fall Creek RST operated normally throughout this reporting period.

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, Fall Creek Head of Reservoir

	Chinook
Description	8 ft
Catch	9
Effort (hrs)	186.9
CPUE (fish/hr)	0.048

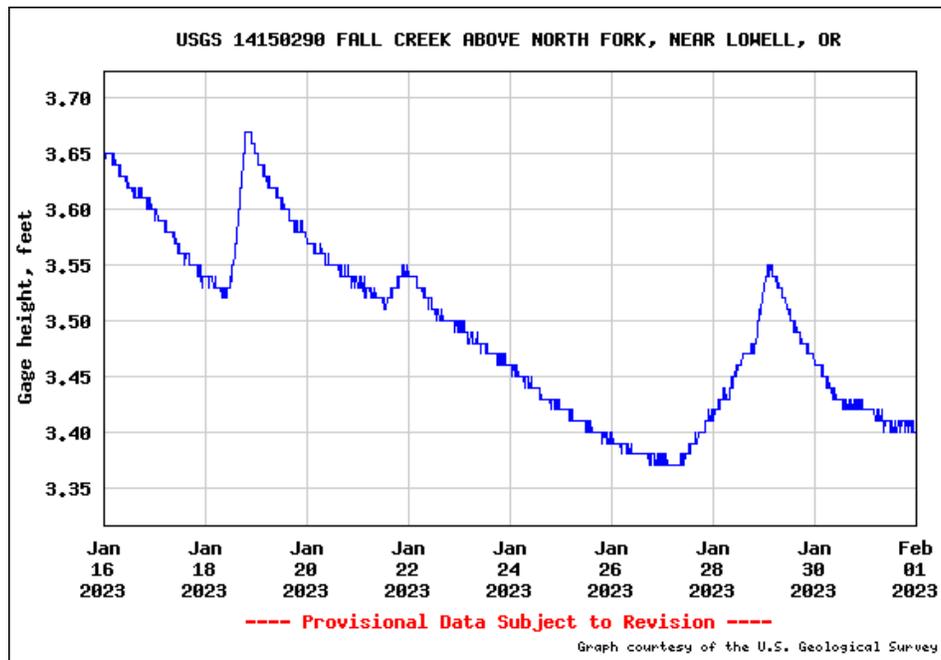


Figure 31. Gage Height (feet); Fall Creek Above North Fork, Near Lowell OR

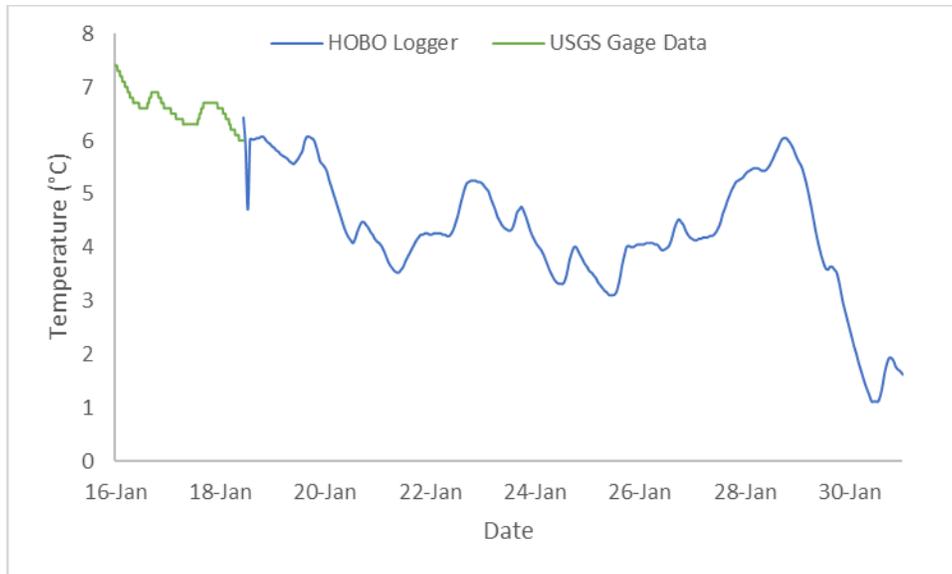


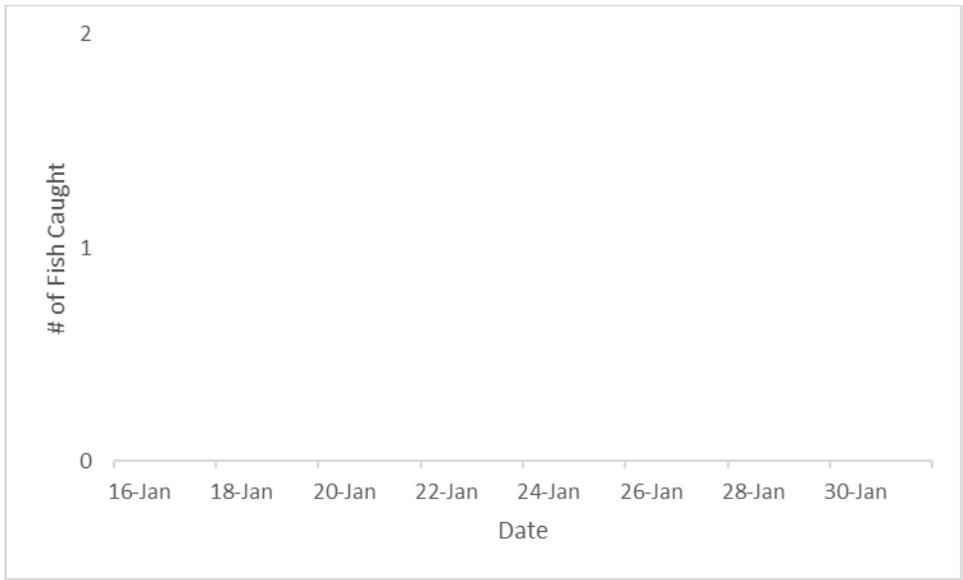
Figure 32. Temperature at RST (Fall Creek Head of Reservoir)

Note: The RST was installed on 18-Jan. Supplemental temperature data for the days prior was used from USGS gage 14150290, 1.2rkms downstream.

Middle Fork Willamette– Dexter Dam

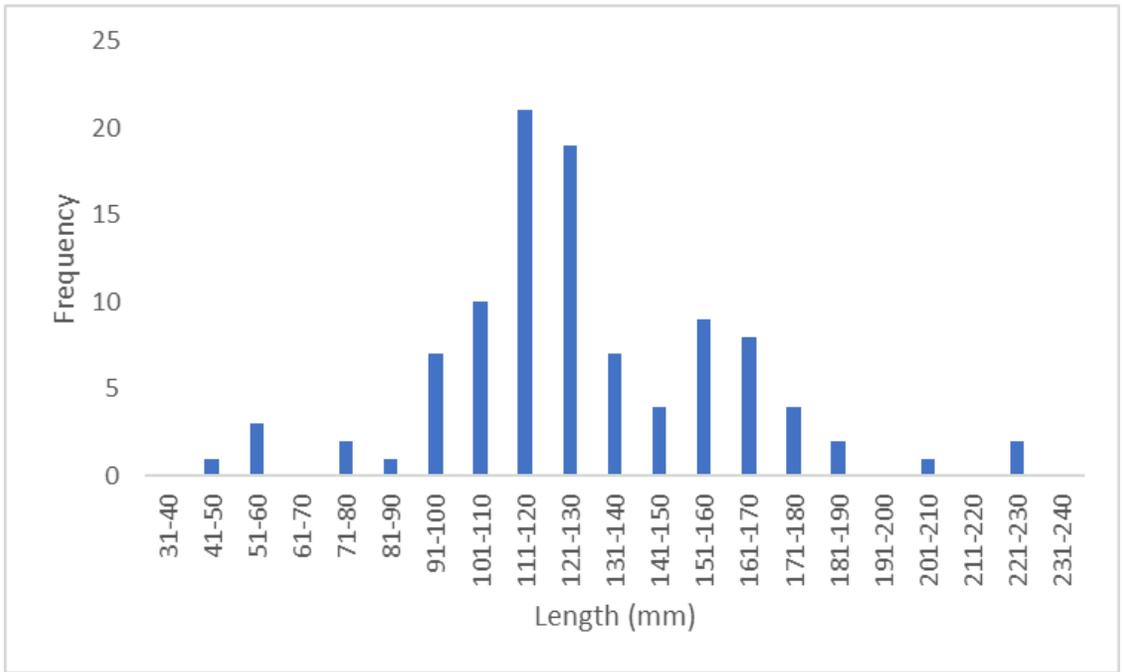
Target Species

This reporting period began on January 16th and ended on January 31st. There were 0 Chinook salmon (CHS) captured during the 16-day sampling period. Sampling duration was 100% for the 5 ft RST. Table 20 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 33 shows the daily capture numbers for Chinook and Figure 34 shows length frequency data to-date.



*Recaptured fish for trapping efficiency trials not included.

Figure 33. Chinook Captured Per Day 01/16/2023 to 01/31/2023 (Dexter Dam)



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

Figure 34. Length Frequency of Juvenile Chinook Sampled Season To-Date (Dexter Dam)

Table 20. 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

January 16-31, 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 21. To date injury data can be found in Appendix A.

Table 21. Number of Descaled, Bodily/Eye Injured, Copepod Infected and dead Chinook Salmon for Sampling Period (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

98 non-target species fish were captured during the reporting period; the data is summarized below in Table 22. 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 22. Summary of Non-target Species (Dexter Dam).

Species	Capture	Mortality	Season Total	Season Total Mortality
Bass	0	0	0	0
Bluegill	1	0	1	0
Chinook (adult)	0	0	0	0
Chinook (clipped)	4	0	4	0
Crappie	80	2	184	11
Cutthroat	0	0	0	0
Dace	0	0	0	0
Largescale Sucker	0	0	0	0
<i>O. mykiss</i>	2	0	3	0
<i>O. mykiss</i> (clipped)	0	0	0	0
Pikeminnow	0	0	0	0

Redside Shiner	1	0	1	0
Sculpin	10	1	24	2
Totals	98	3	217	13

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 638.7 feet (mean: 637.7 feet). Figure 35 shows instantaneous gauge height.

Total dissolved gas saturation ranged from 98 to 102% (mean: 98.9%) during the reporting period. Figure 36 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 37.

Flows through the Powerhouse and Spill during the reporting period averaged 1,892.5 and 0 cubic feet per second (cfs) respectively (Figure 38). Catch per unit of effort (CPUE) data are summarized in Table 23. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

Table 23. Summary of salmonid CPUE, Dexter Dam.

	Chinook
Description	8 ft
Catch	0
Effort (hrs)	378.1
CPUE (fish/hr)	0

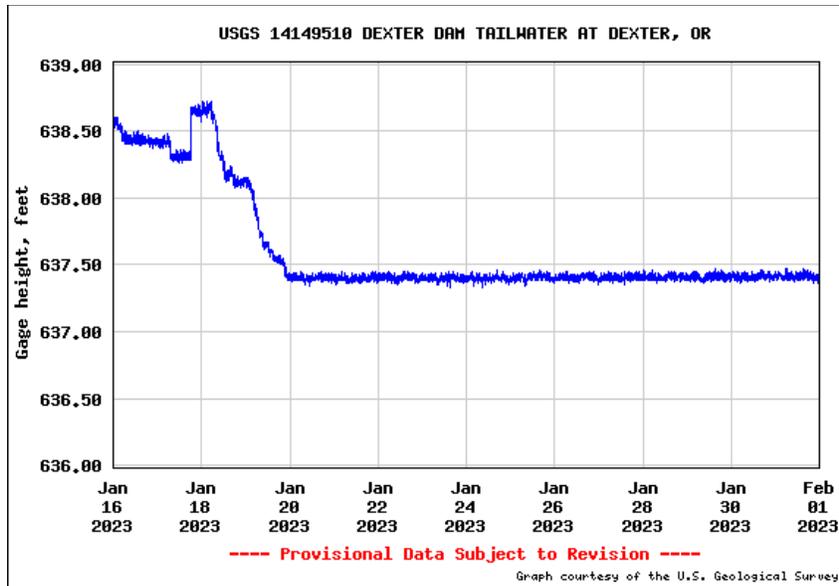


Figure 35. Gauge Height (feet); below Dexter Dam, Middle Fork Willamette

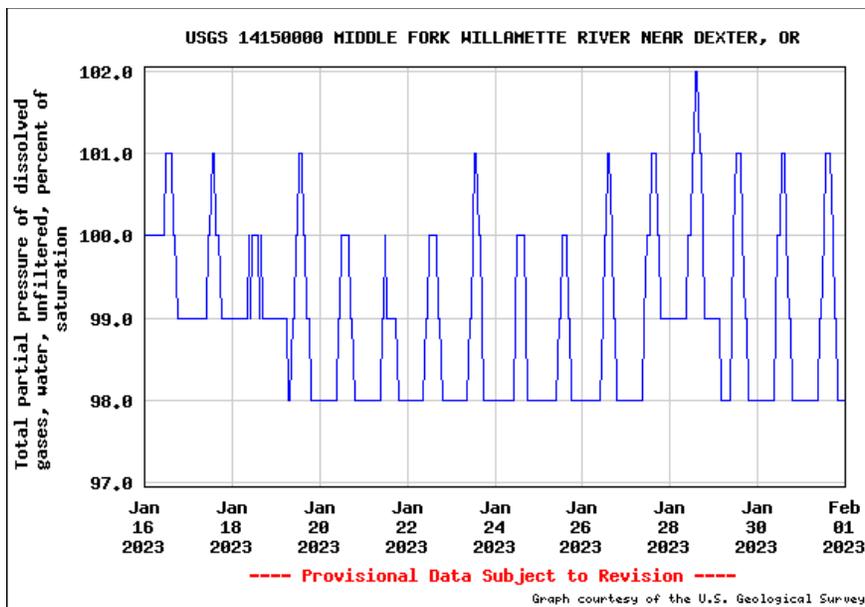


Figure 36. Total Dissolved Gas Saturation (%); Middle Fork Willamette River, Near Dexter, OR

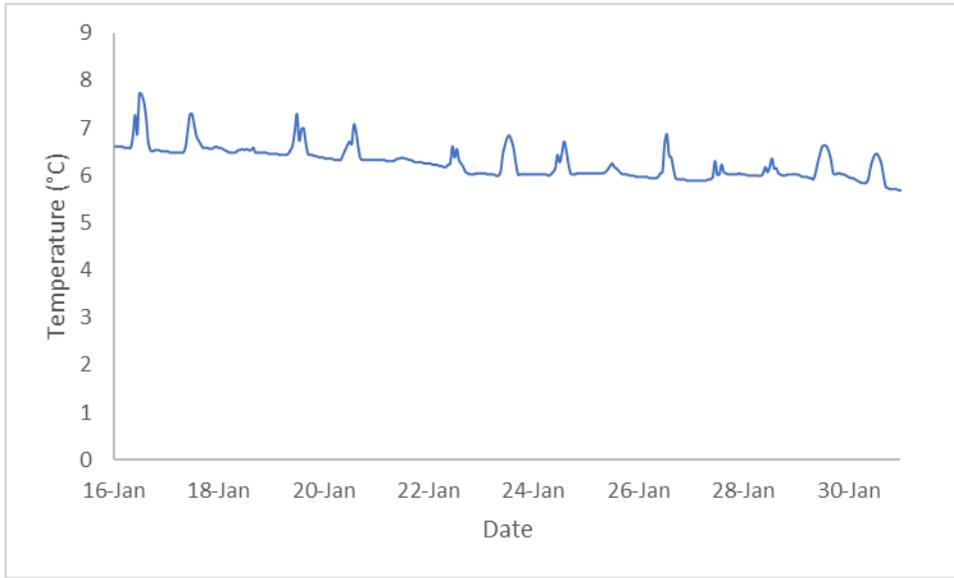


Figure 37. Temperature at RST (Dexter Dam)

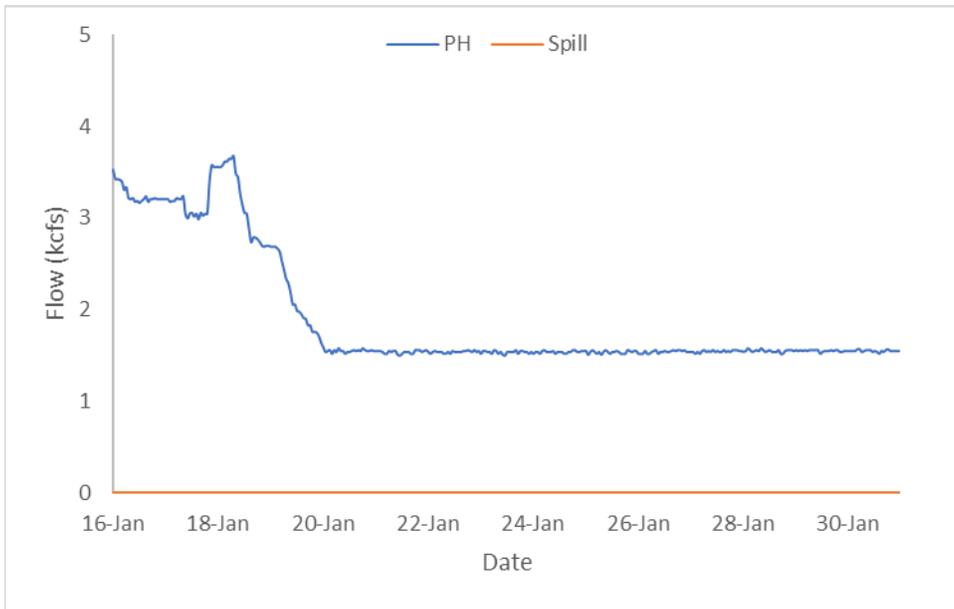


Figure 38. Hourly Flows PWR vs. Spill (Dexter Dam)

Middle Fork Willamette – Lookout Dam Tailrace

Target Species

The reporting period began January 16th and ended on January 31st. 0 Chinook salmon were captured during the 16-day sampling period (Figure 39). The traps were operated 100.0% of the reporting period. Table 24 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 40 shows length frequency data to-date.

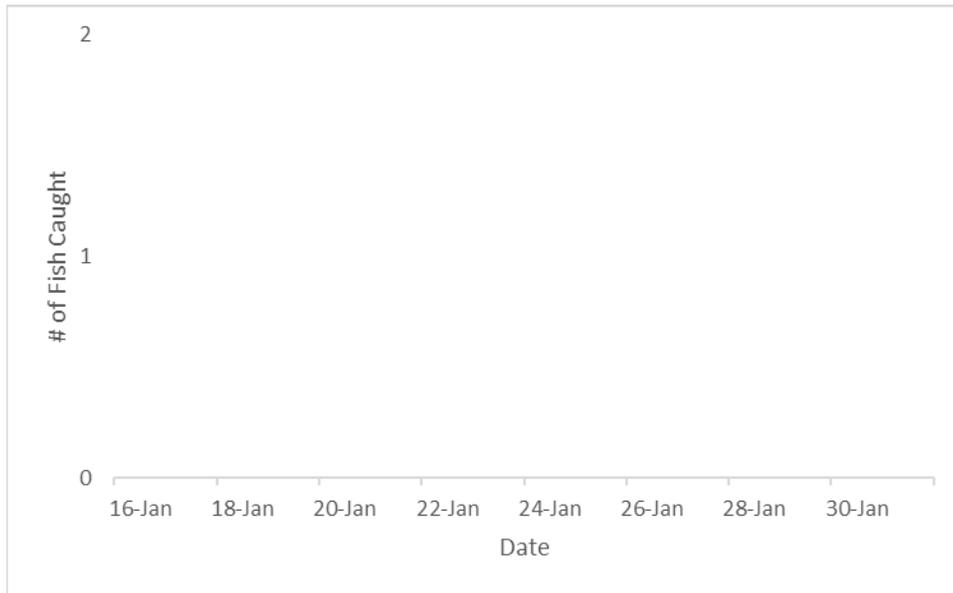


Figure 39. Chinook Captured Per Day 01/16/2023 to 01/31/2023 (Lookout Point Dam Tailrace)

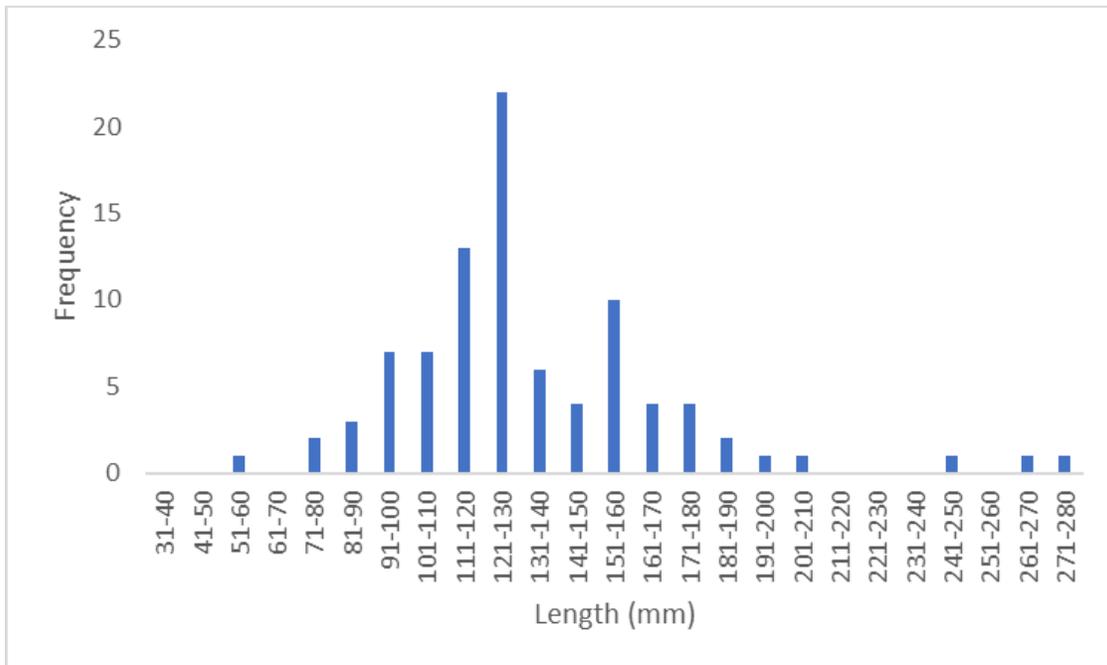


Figure 40. Length Frequency of Juvenile Chinook Sampled Season To-Date (Lookout Point Dam Tailrace)

Table 24. 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
January 16-31, 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 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 (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

7,464 non-target species were captured during the reporting period; the data is summarized below in Table 26.

Table 26. 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	9	0	0	0	42	8
Brown Bullhead	0	0	0	0	1	0
Chinook (clipped)	1	0	0	0	3	0
Crappie	7400	3896	31	6	142723	102478
Cutthroat	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 Pike minnow	1	0	0	0	2	1
<i>O. mykiss</i>	0	0	0	0	4	0
<i>O. mykiss</i> (clipped)	1	1	0	0	1	1
Pumpkinseed	0	0	0	0	1	0
Redside Shiner	0	0	0	0	0	0
Sculpin	18	1	3	0	39	3
Walleye	0	0	0	0	22	4
Unknown	0	0	0	0	0	0
Totals	7430	3898	34	6	142898	102553

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 692.5 feet to 695.0 feet (mean: 693.1 feet). Figure 41 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 (figures 42 and 43).

Flows through the Powerhouse and Spill during the reporting period averaged 1,782.1 and 0 cubic feet per second (cfs) respectively (Figure 44). 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 at Lookout Point Dam Tailrace.

Description	Chinook		
	PH 1	PH 2	Spill
Catch	0	0	0
Effort (hrs)	386.3	386.1	386.5
CPUE (fish/hr)	0	0	0

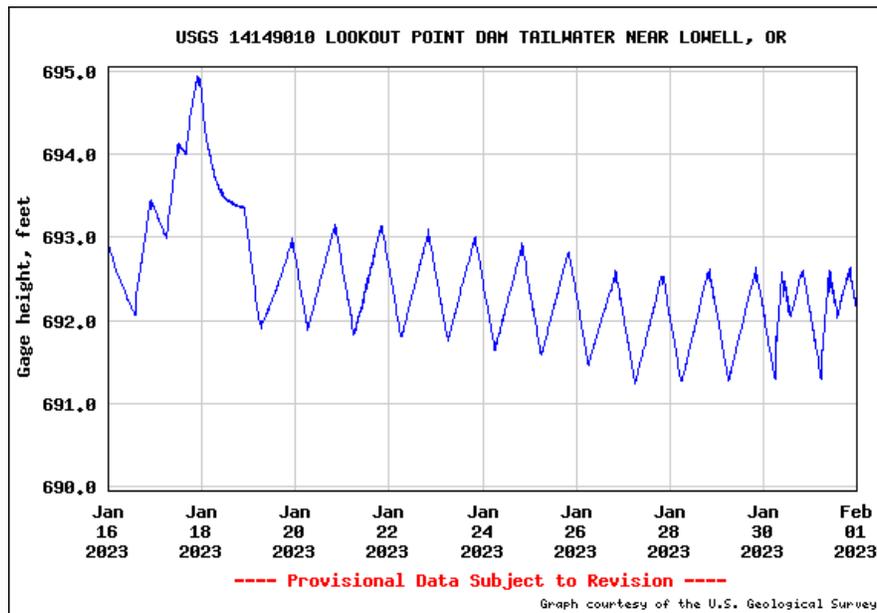


Figure 41. Gauge Height (feet); below Lookout Dam

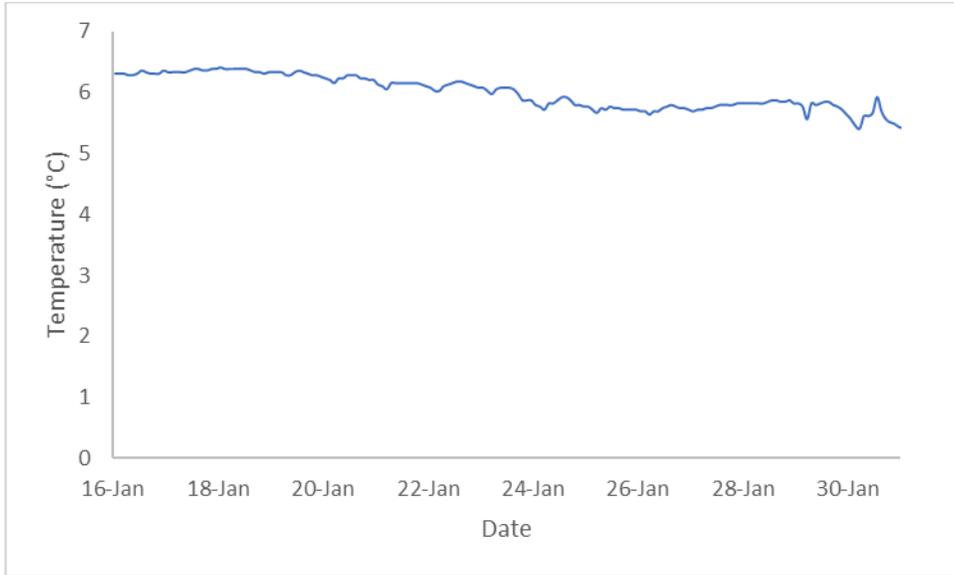


Figure 42. Temperature at RST (Lookout Dam PWR)

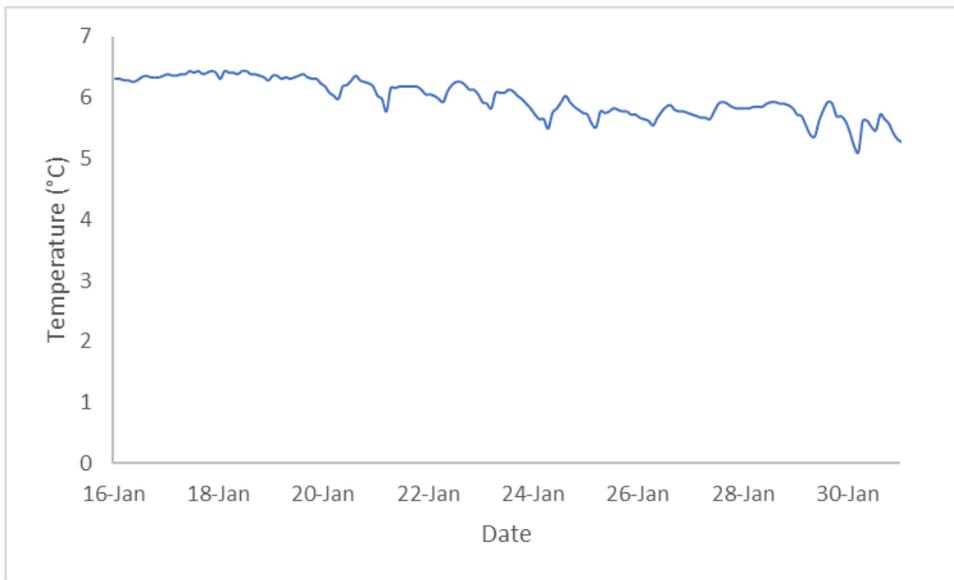


Figure 43. Temperature at RST (Lookout Dam Spill)

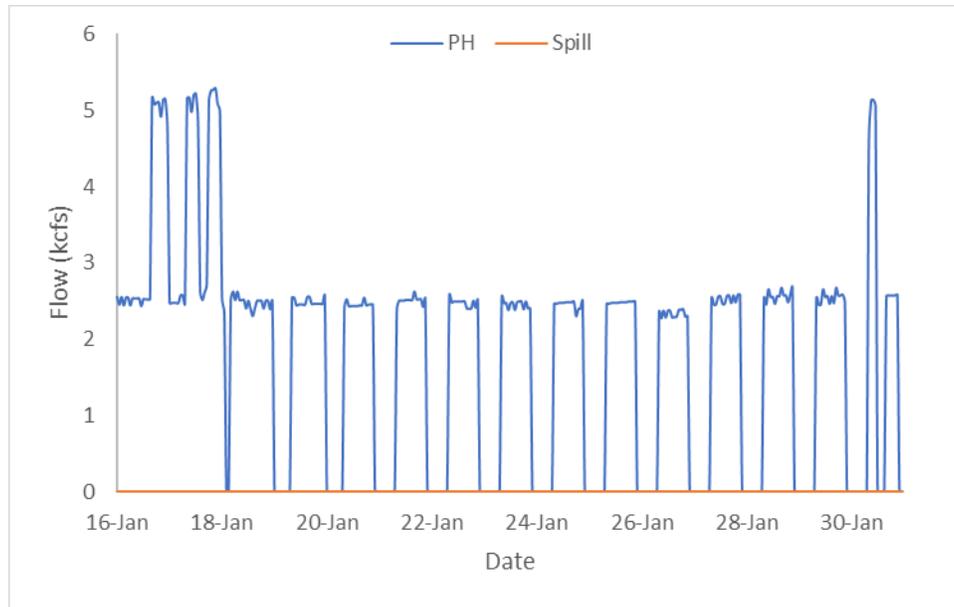


Figure 44. Hourly Flows PWR vs. Spill (Lookout Dam Tailrace)

Middle Fork Willamette – Lookout Point Head of Reservoir

Target Species

The reporting period began January 16th and ended on January 31st. 15 Chinook salmon were captured during the 16-day sampling period (Figure 45). The 5 ft RST was raised on 1/30/2023 due to low flow preventing the cone from lowering into sampling position. The trap was operated 93.8% of the reporting period. Table 28 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 46 shows length frequency data to-date.

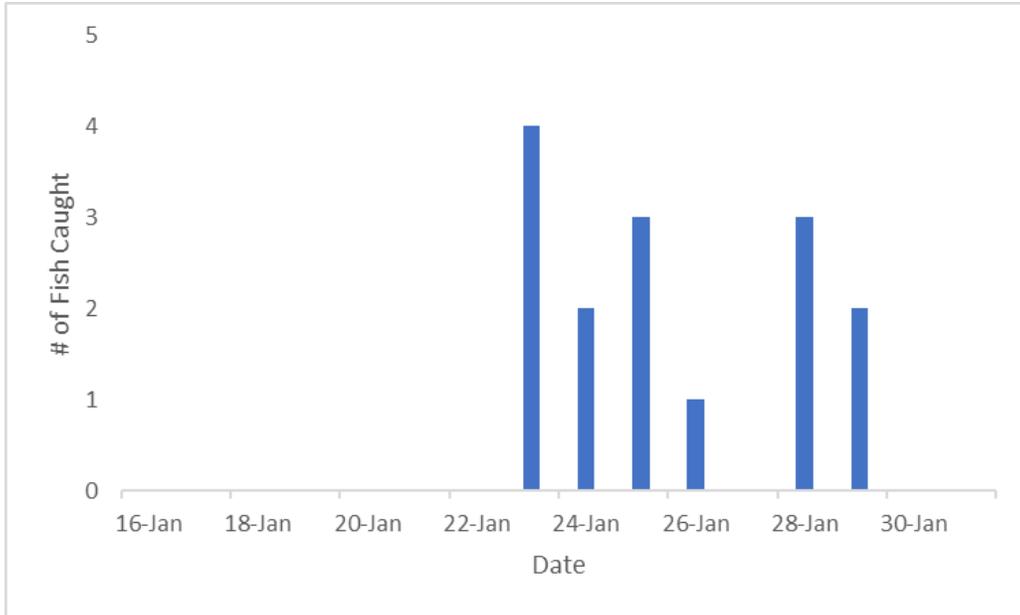


Figure 45. Chinook Captured Per Day 01/16/2023 to 01/31/2023 (Lookout Point Head of Reservoir)

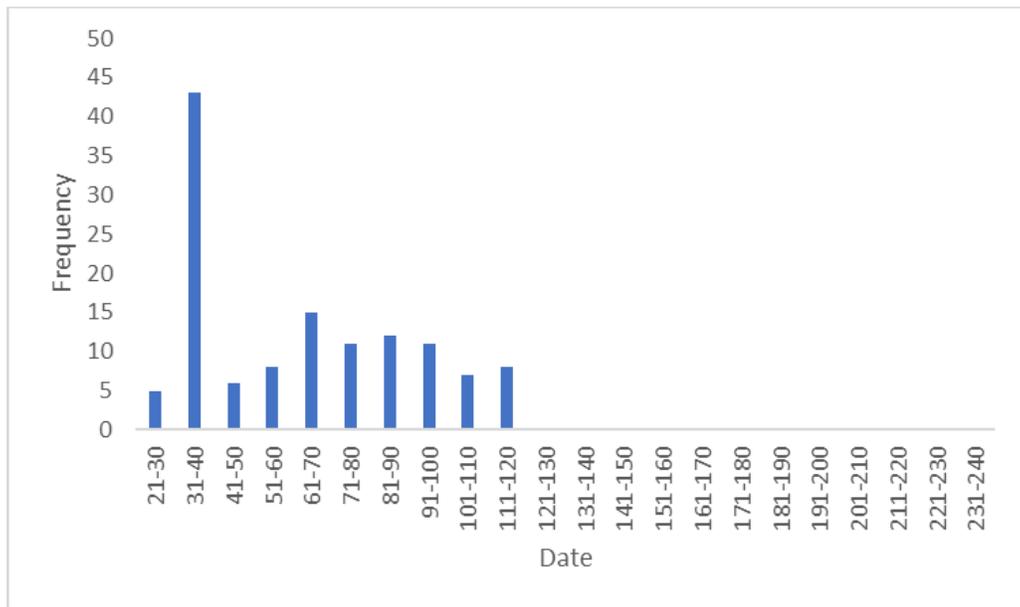


Figure 46. Length Frequency of Juvenile Chinook Sampled Season To-Date (Lookout Point Head of Reservoir)

Table 28. 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	56	28	69	36.6	N/A	N/A	N/A
January 16-31, 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	1	97	97	97.0	7.7	7.7	7.7
		CHS	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Fry	14	33	41	35.1	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 15 Chinook captured during this reporting period. 1 had partial descaling <20% (6.7%) and 0 had body injuries (0.0%). There were 0 mortalities (0.0%). Injury data for the reporting period is shown in table 29. To date data can be found in Appendix A.

Table 29. 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	15	1	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 1 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, 11 Chinook have been VIE marked to the left of the dorsal fin with fluorescent elastomer. No fish with VIE marks have been detected at downstream RST sites to date.

One fish was VIE marked below the sampling threshold (35-64mm) to train new crew members in preparation for increases in fry capture at Head of Reservoir sites.

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

Non-Target Species

7 non-target species were captured during the reporting period; the data is summarized below in Table 30.

Table 30. 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	0	0	0	0
Dace	1	0	2	0
Lamprey	0	0	0	0
Largescale Sucker	1	0	1	0
Mountain Whitefish	0	0	0	0
Northern Pikeminnow	0	0	0	0
<i>O. mykiss</i>	5	0	6	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
Totals	7	0	11	2

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 1,300.0 cfs to 3,000.0 cfs (mean: 2,091.3 cfs). Figure 47 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 48).

Flows into Lookout Point Reservoir averaged 1,962.0 cfs (Figure 49). Catch per unit of effort (CPUE) data are summarized in Table 31. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

Table 31. Summary of Chinook CPUE at Lookout Point Head of Reservoir.

	Chinook
Description	5 ft
Catch	15
Effort (hrs)	357.3
CPUE (fish/hr)	0.042

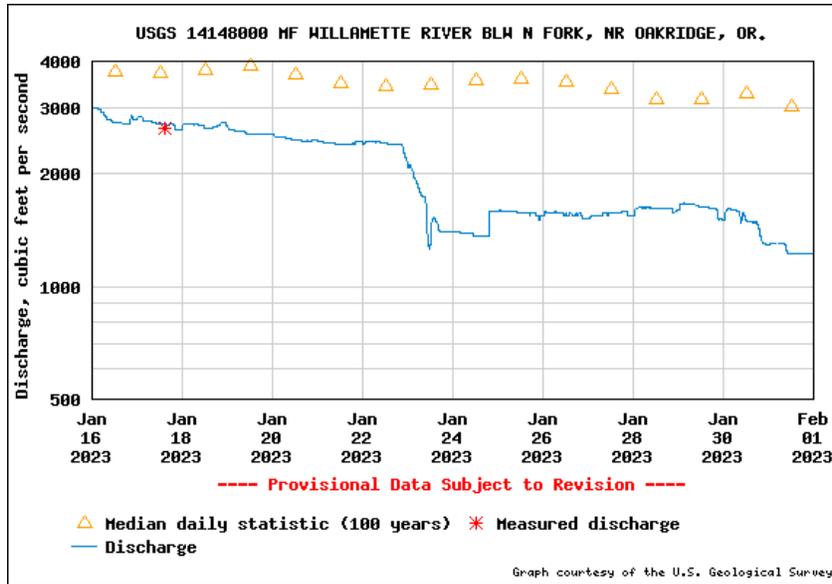


Figure 47. Discharge (cfs); above Lookout Point Reservoir, Below Oakridge, OR

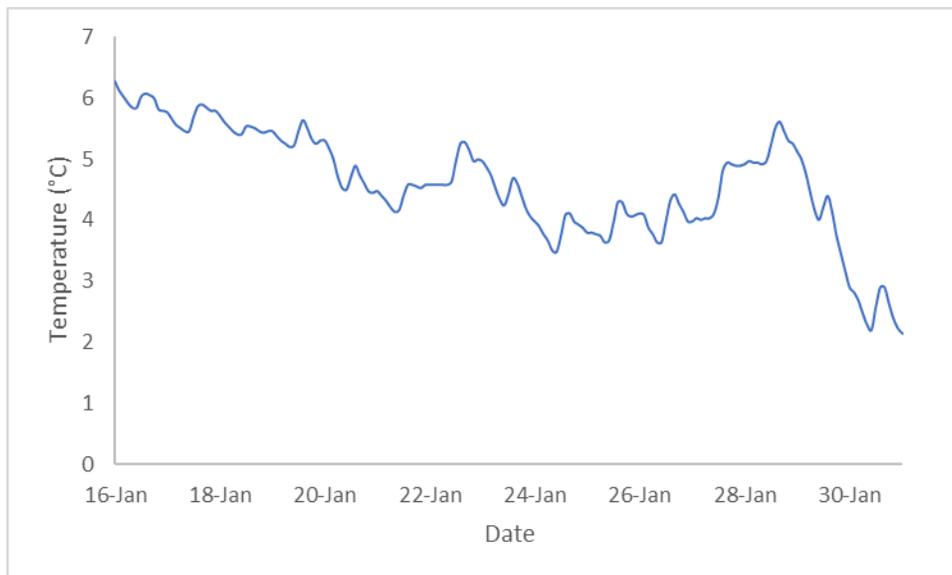


Figure 48. Temperature at RST (Lookout Point Head of Reservoir)

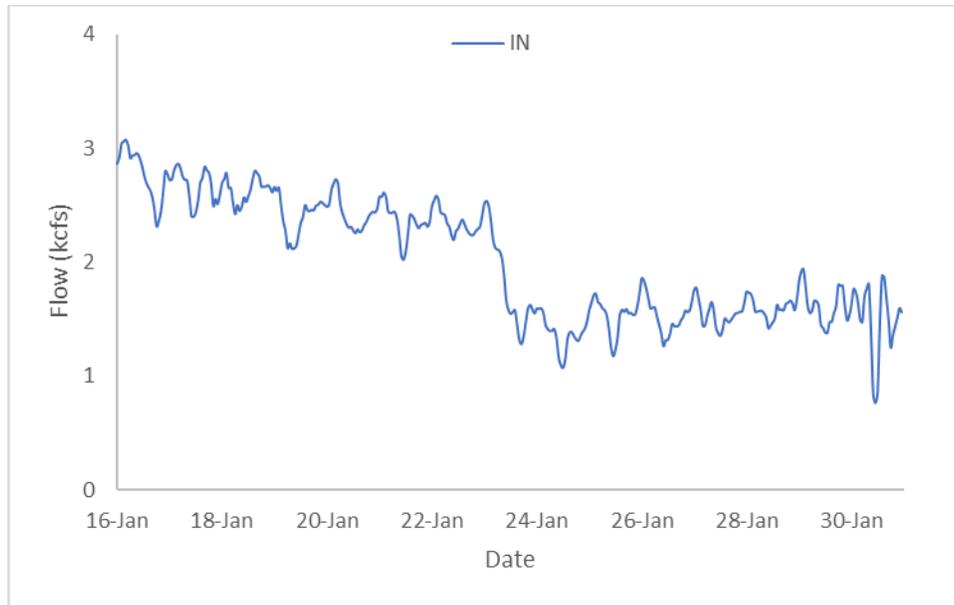


Figure 49. Hourly Flows (Lookout Point Head of Reservoir site)

Middle Fork Willamette – Hills Creek Dam

Target Species

This reporting period began on January 16th and ended on January 31st. There were 4 Chinook salmon (CHS) captured during the 16-day sampling period (Figure 50). Sampling durations were 100% for both the RO RST and Powerhouse RST. Table 32 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 51 shows length frequency data to-date.

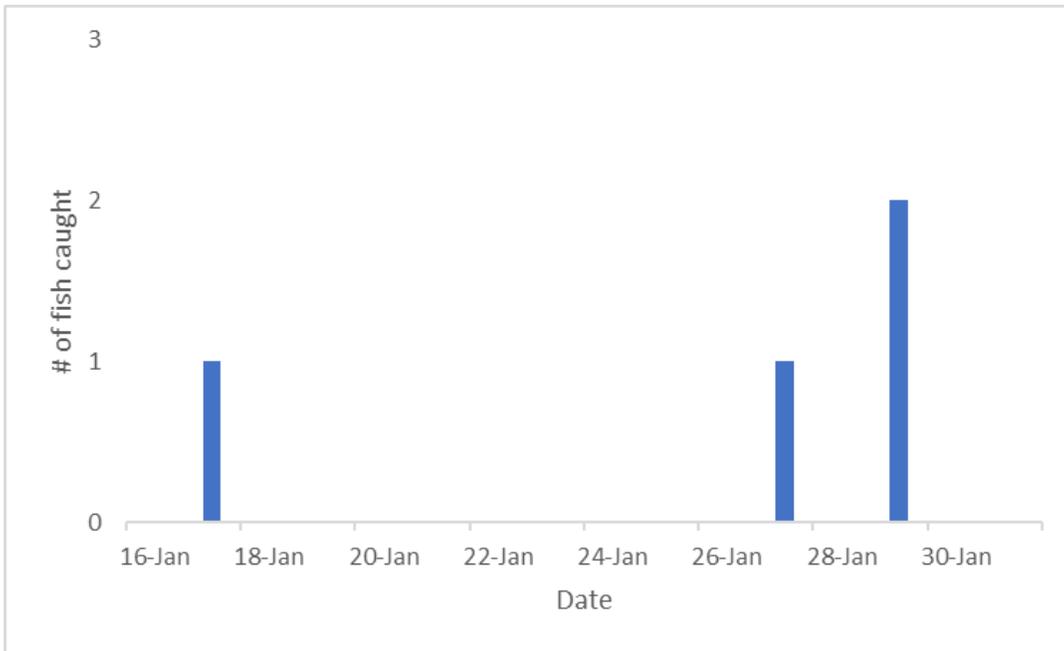
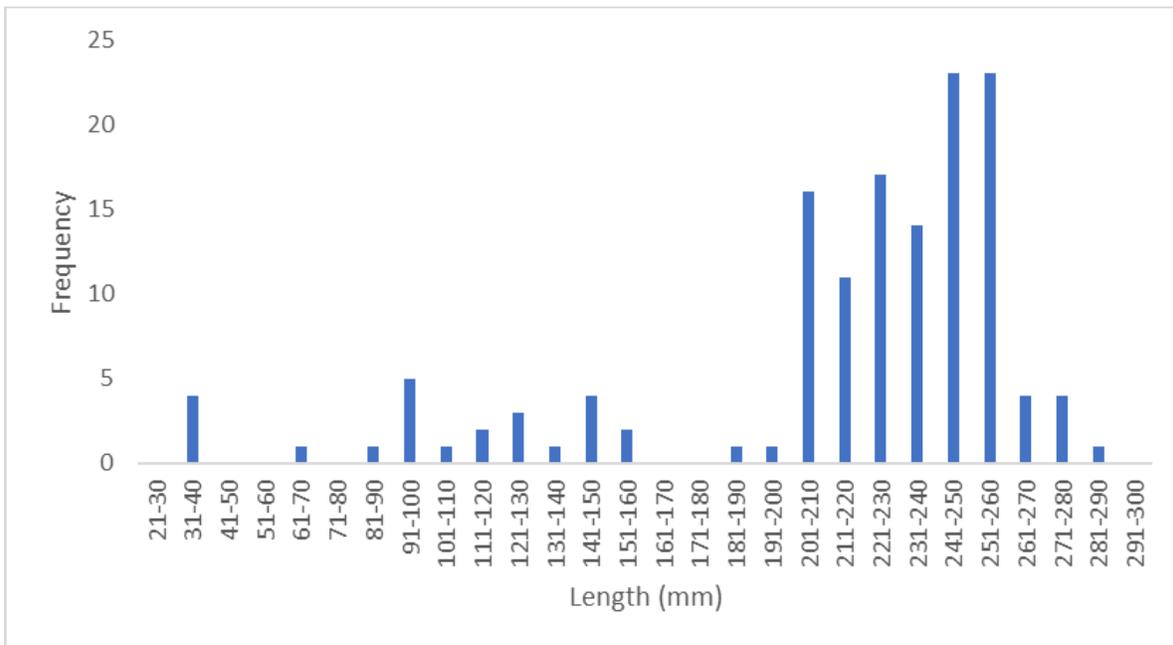


Figure 50. Chinook Captured Per Day 01/16/2023 to 01/31/2023 (Hills Creek Dam)



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

Figure 51. 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. 1 fish were held from the PWR RST and 3 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 32. 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	2	34	39	36.5	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	1	35	35	N/A	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.

January 16-31, 2023										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Hills Creek	RO	CHS	Fry	2	34	39	36.5	N/A	N/A	N/A
		CHS	Parr	0	N/A	N/A	N/A	N/A	N/A	N/A
		CHS	Smolt	1	257	257	257.0	189.3	189.3	189.3
Hills Creek	PWR	CHS	Fry	1	35	35	35	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 were 3 Chinook captured in the RO RST. Partial descaling <20% was observed on 1 of 3 Chinook collected at the RO RST (33.3%), and descaling >20% was observed on 0 of the Chinook collected (0.0%). 1 displayed body injuries (33.3%) and 0 had eye injuries (0.0%). 1 of the RO RST Chinook had copepods present in the branchial cavity (33.3%) and 1 had copepods present on fins (33.3%). There were no mortalities (0.0%). 1 of the fish captured in the Spill RST displayed Gas Bubble Disease (one level 1) (33.3%).

There was 1 Chinook captured in the Powerhouse channel RST. Partial descaling <20% was observed on 0 of the 1 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 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. (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	3	0	0	1	0	1	1	0
Hills Creek	PWR	1	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 1 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.

Non-Target Species

A total of 49 non-target fish were captured at Hills Creek during the reporting period; the data is summarized below in Table 34.

Table 34. 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	3	49	33
Brook Lamprey	0	0	0	0	0	0
Brown Bullhead	0	0	0	0	2	0
Crappie	2	1	9	8	94	71
Dace	0	0	0	0	0	0
Redside Shiner	1	1	0	0	1	1
Sculpin	3	0	1	0	4	0
Largemouth Bass	2	1	0	0	3	2
Spotted Bass	6	4	3	3	60	41

Species	RO Capture	RO Mortality	PWR Capture	PWR Mortality	Season Total	Season Total Mortality
Smallmouth Bass	0	0	0	0	1	1
Largescale Sucker	1	1	0	0	6	2
<i>O. mykiss</i>	4	3	9	3	34	16
Unknown	0	0	0	0	0	0
Totals	21	11	28	17	258	167

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 1,223.3 feet to 1,226.1 feet (mean: 1,225.1 feet). Figure 52 shows instantaneous gauge height.

Total dissolved gas saturation ranged from 96 to 105% (mean: 99.0%) during the reporting period. Figure 53 shows total dissolved gas saturation.

Stream temperatures were recorded every 2 hours for both the RO RST and the PWR RST (Figures 54 and 55). The probes operated normally throughout the reporting period.

Flows through the PWR and RO during the reporting period averaged 705.4 and 216.1 cfs respectively (Figure 56). 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, Hills Creek Dam.

Description	Chinook	
	RO (5ft)	PWR (8ft)
Catch	3	1
Effort (hrs)	381.7	383.2
CPUE (fish/hr)	0.008	0.003

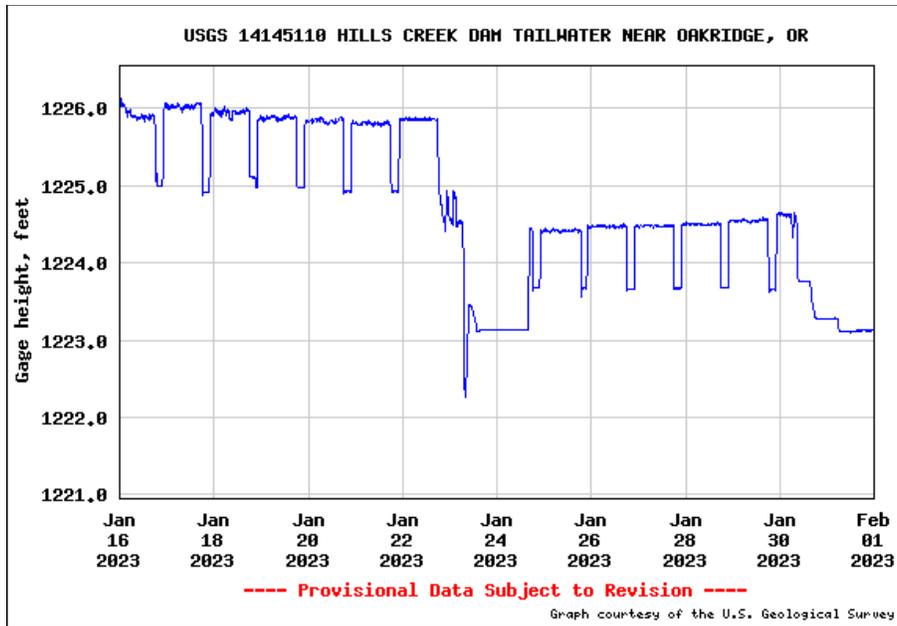


Figure 52. Gage Height (feet); below Hills Creek Dam PWR - Middle Fork Willamette River

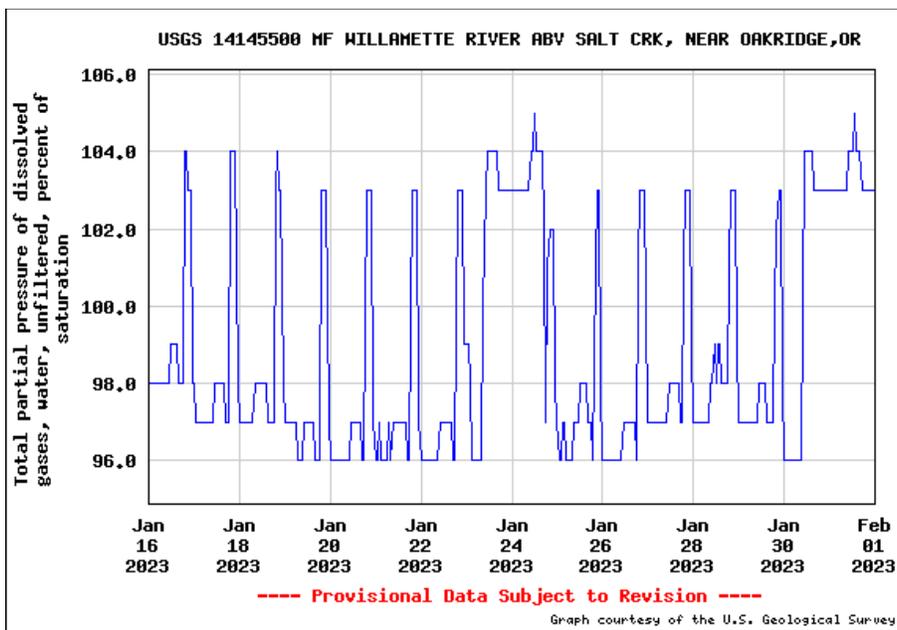


Figure 53. Total Dissolved Gas Saturation (%); below Hills Creek Dam – Middle Fork Willamette River

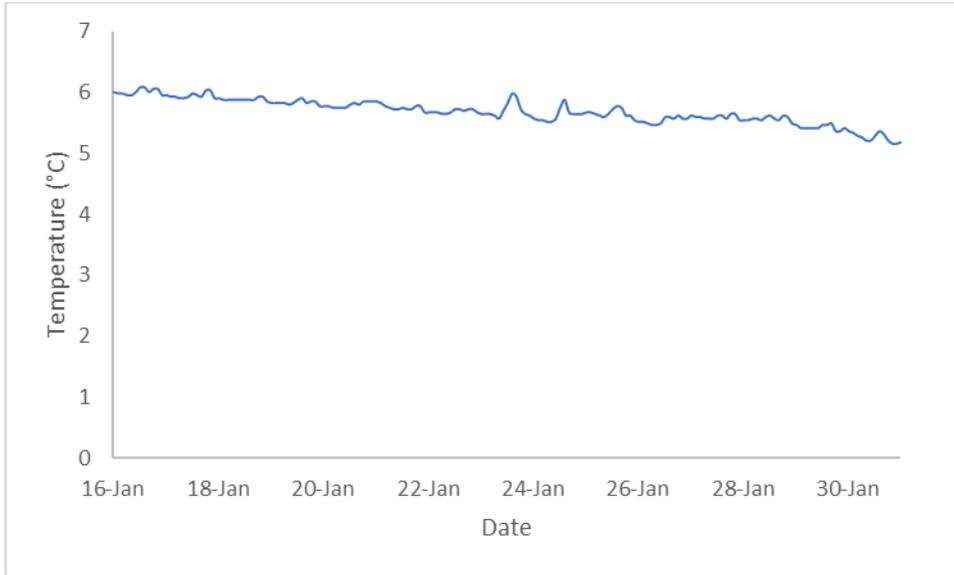


Figure 54. Temperature at RO RST (Hills Creek Dam)

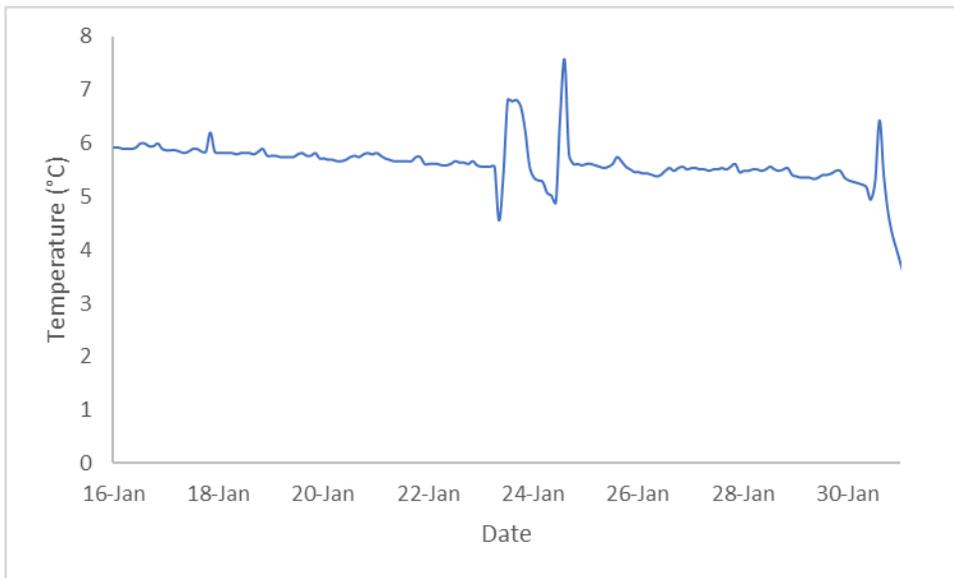


Figure 55. Temperature at Powerhouse RST (Hills Creek Dam)

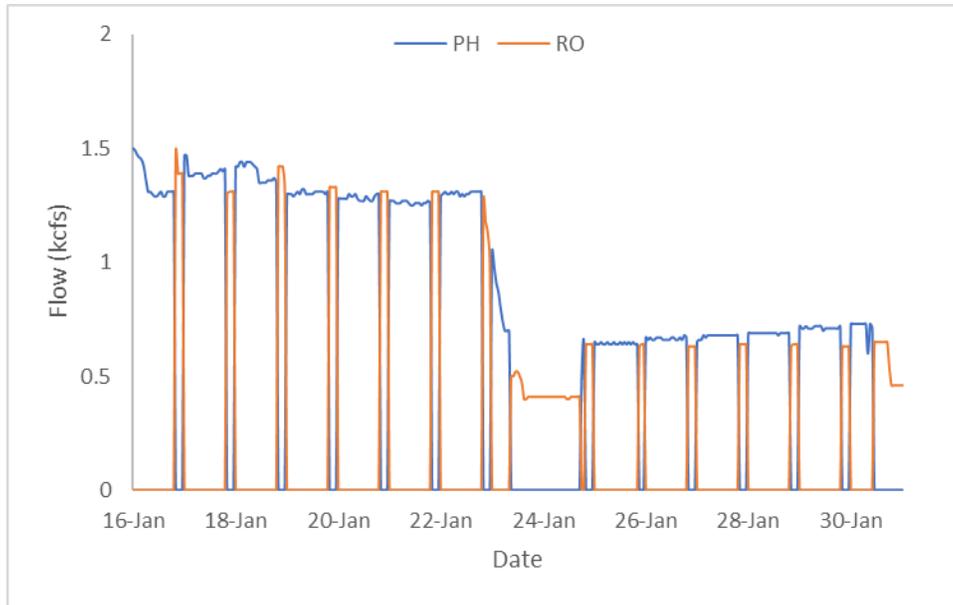


Figure 56. Hourly Flows PWR vs. RO (Hills Creek Dam)

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 will be installed on the Cougar Powerhouse traps in order to fish at low flow. Legs were removed at Lookout Point Head of Reservoir in order to prevent damage from high debris.

Upcoming USACE Support Services

USACE Crane Support will be needed to install traps 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																								
p/Life Stage	Total Fish	MUNK	DS<2	BLO	EYB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD	
Big Cliff Dam																								
	1294		815	10	90	6	1	1003	291	4	690	5	12	5	41	8	84	44	165	80	84	16	52	
8 ft	1294		815	10	90	6	1	1003	291	4	690	5	12	5	41	8	84	44	165	80	84	16	52	
Adult	1		1								1						1	1	1		1			
Parr	32		10	1	3	1		18	3		9					2			1			1		
Smolt	1246		804	9	86	5		985	287	4	679	5	12	3	41	6	82	43	162	79	83	14	52	
Unknown	2													2								1		
Fry	13				1		1		1		1						1		1	1				
Foster Dam HOR																								
	128		53		1			2			28													
5 ft	128		53		1			2			28													
Parr	44		31					2			12													
Smolt	29		21								16													
Fry	55		1		1																			
Cougar Dam																								
	3036	10	1626	36	277	16	3	2231	693	3	1527	3	7	2	90	33	154	70	303	104	221	18	456	
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	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																								
	710	3	93			1		10	4	3	56						1	6	8	7	1	1		
5 ft	710	3	93			1		10	4	3	56						1	6	8	7	1	1		
Parr	178		90			1		10	4	2	48						1	6	1	1	1			
Smolt	4		1																					
Fry	528	3	2							1	8								7	6		1		
Fall Creek Dam Tail.																								
	1								1		1							1						
8 ft	1								1		1							1						
Smolt	1								1		1							1						
Fall Creek HOR																								
	16		3					2			1													
8 ft	16		3					2			1													
Parr	2		2					1			1													
Smolt	5		1					1																
Fry	9																							
Dexter Dam Tail.																								
	101		62		6			12	23		48				1		3	4	6	6	5		21	
5 ft	101		62		6			12	23		48				1		3	4	6	6	5		21	
Parr	19		7		3			2	6		9							2	3	2			6	
Smolt	79		55		3			10	17		38				1		3	2	3	4	5		15	
Fry	3										1													

Chinook (CHS) To Date - Continued

		Chinook Injuries to-date (Cont.)																					
p/Life Stage	Total Fish	MUNK	DS<2	BLO	EYB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD
Lookout Dam Tail.	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	127		38					2			17						1		1				
5 ft	127		38					2			17						1		1				
Parr	63		31					1			10						1		1				
Smolt	8		6					1			5												
Fry	56		1								2												
Hills Creek Dam	150	1	71	1	19			120	62		66	1	11	2	44	8	15	6	23	9	13	2	17
RO	90	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	2																						
PH	60		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	2																1						

Chinook (CHS) During Reporting Period

Chinook Injuries During Reporting Period (01-16-2023 to 01-31-2023)																							
p/Life Stage	Total Fish	MUNK	DS<2	BLO	EYB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD
Big Cliff Dam	40		31	1	2	1		29	2		22						1	1	7		1	1	3
8 ft	40		31	1	2	1		29	2		22						1	1	7		1	1	3
Fry	4																						
Parr	5		4	1	2			3			3											1	
Smolt	31		27			1		26	2		19						1	1	7		1		3
Cougar Dam	3		1					2			1												1
RO	3		1					2			1												1
Parr	1		1								1												1
Smolt	2							2															
Fall Creek HOR	9																						
8 ft	9																						
Fry	9																						
Hills Creek Dam	4							1			1								1		1		1
PH	1																						
Fry	1																						
RO	3							1			1								1		1		1
Fry	2																						
Smolt	1							1			1								1		1		1
Lookout Point HOR	15		1								1												
5 ft	15		1								1												
Fry	14																						
Smolt	1		1								1												

Steelhead (O. mykiss) To Date

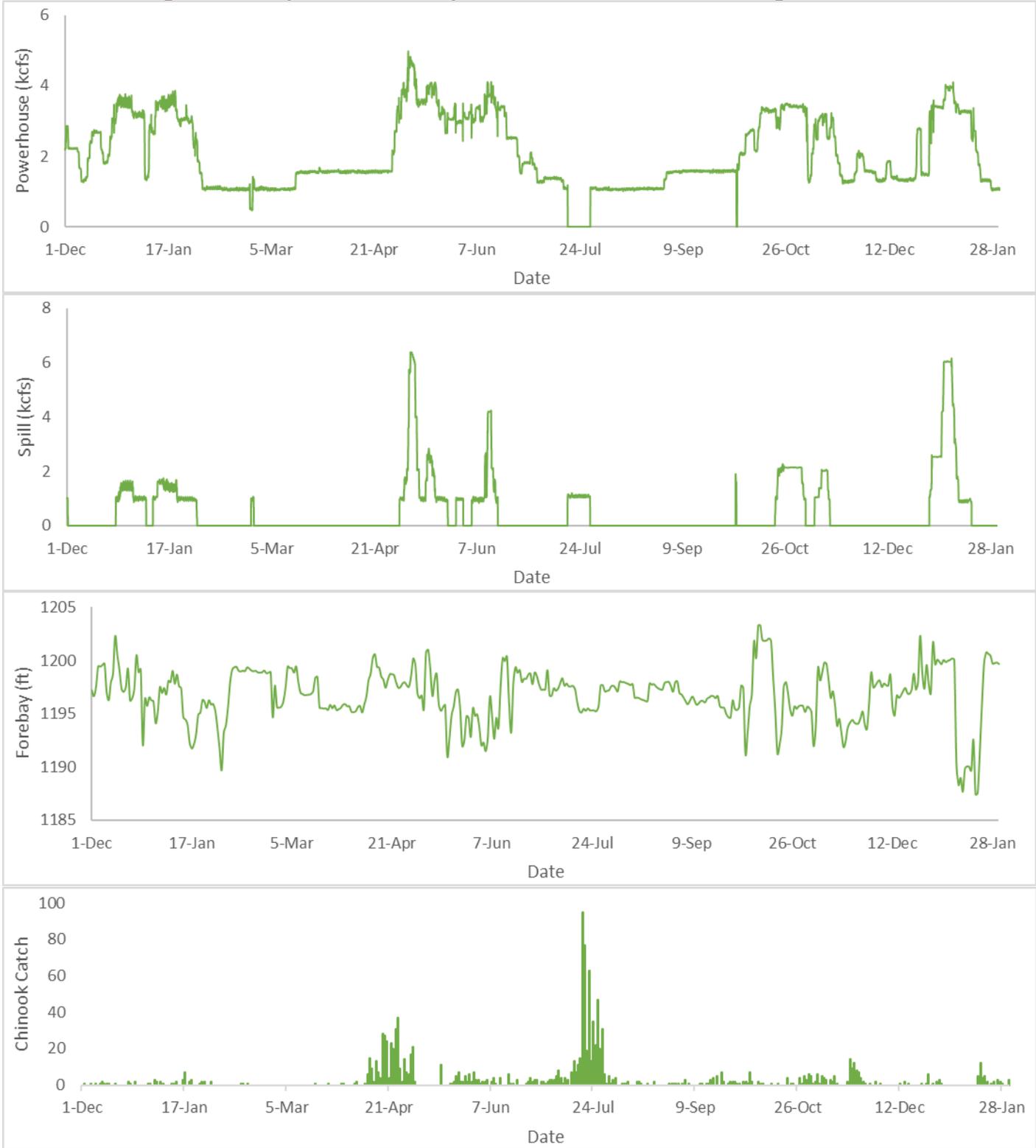
O. mykiss Injuries To Date																							
p/Life Stage	Total Fish	MUNK	DS<2	BLO	EYB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD
Big Cliff Dam	110	1	39	4	3	3		30	10		41		1		2		8	3	10	11	3	1	7
8 ft	110	1	39	4	3	3		30	10		41		1		2		8	3	10	11	3	1	7
Adult	1								1		1		1										
Parr	45	1	11	4	1	1					14						2		1	1	1		1
Smolt	36		25		2	2		30	9		25				2		5	3	9	10	2	1	6
Fry	28		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	224		69		1	2		2		2	64						3	1	2	1	1	1	
5 ft	224		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	31																						

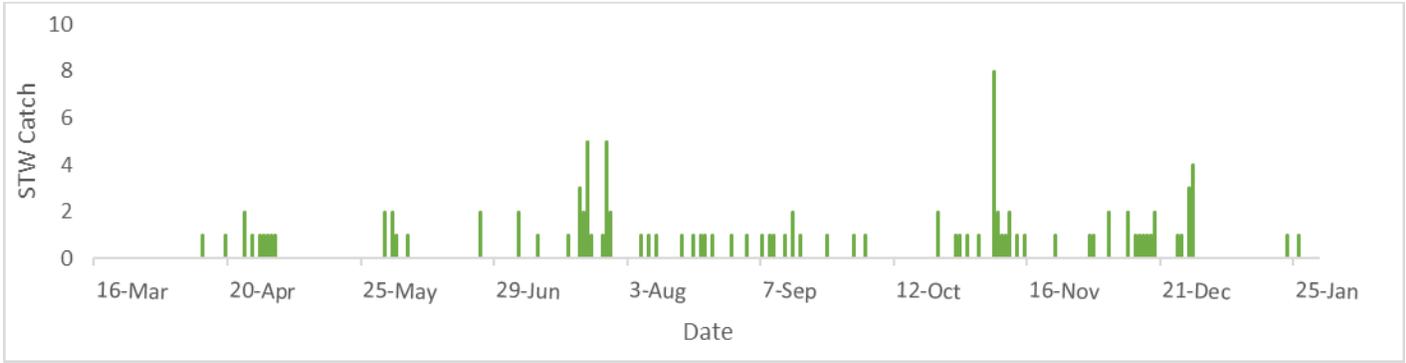
Steelhead (O. mykiss) During Reporting Period

O. mykiss Injuries During Reporting Period (01-16-2023 to 01-31-2023)																							
p/Life Stage	Total Fish	MUNK	DS<2	BLO	EYB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD
Big Cliff Dam	3		3		1			3			2								1	2			1
8 ft	3		3		1			3			2								1	2			1
Smolt	3		3		1			3			2								1	2			1

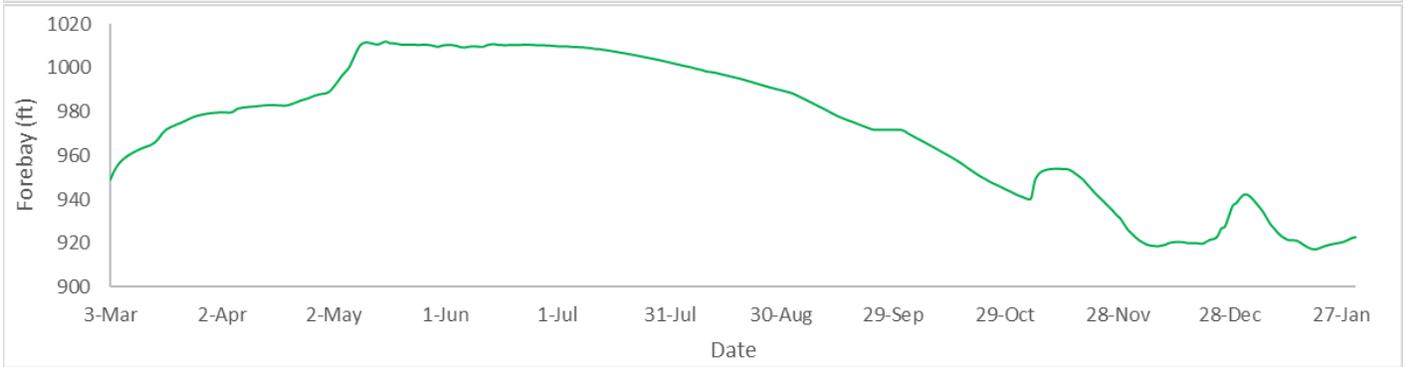
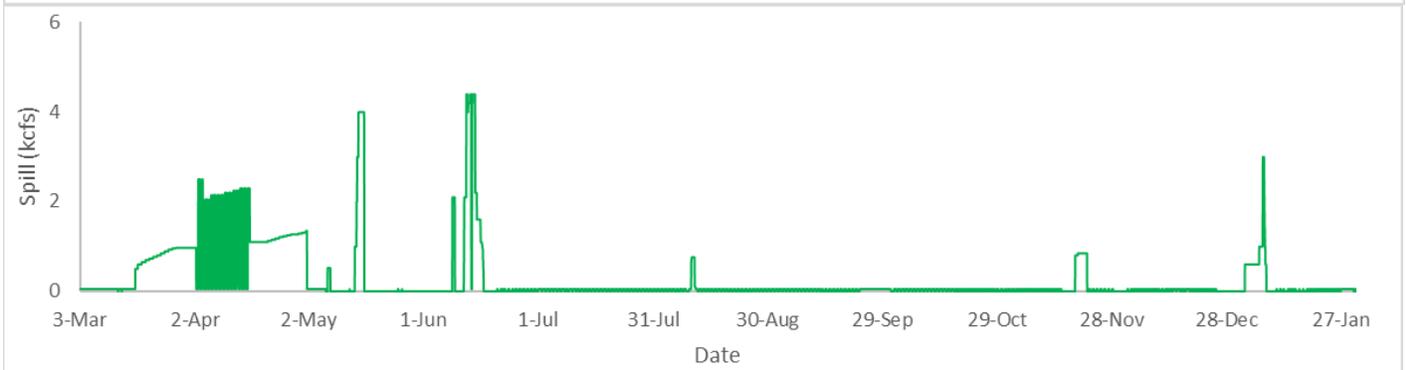
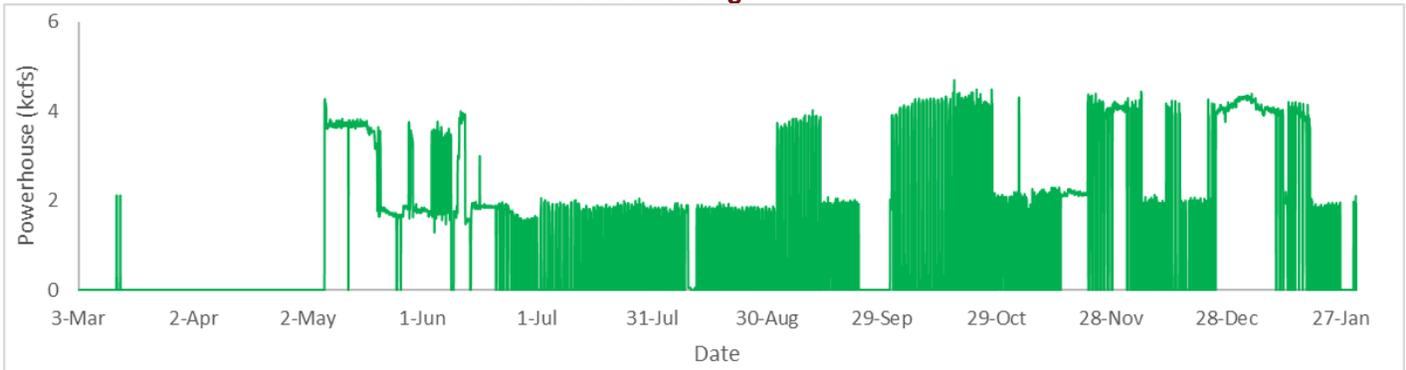
Appendix B

Big Cliff Dam Operational and Capture Data Since Start of Monitoring



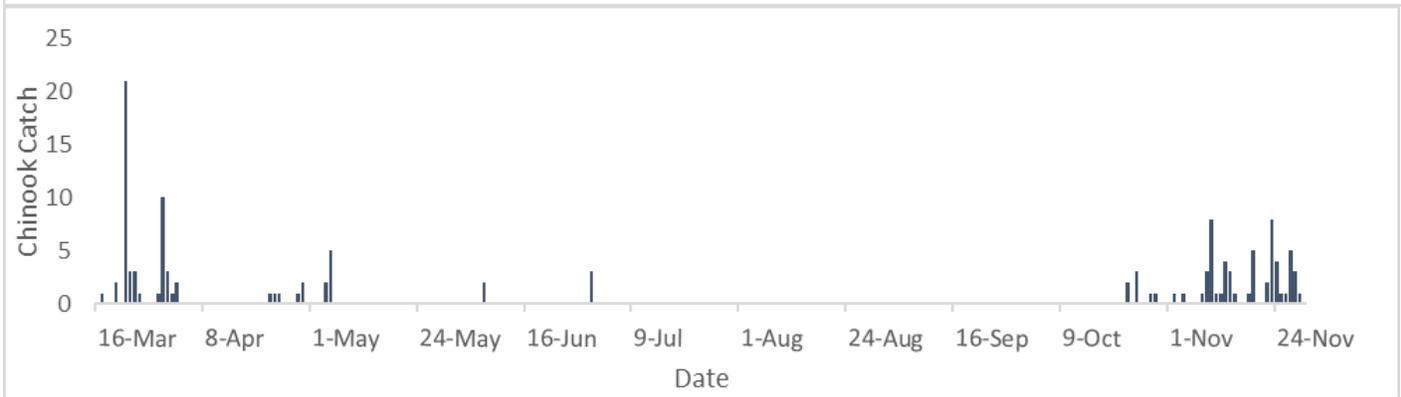
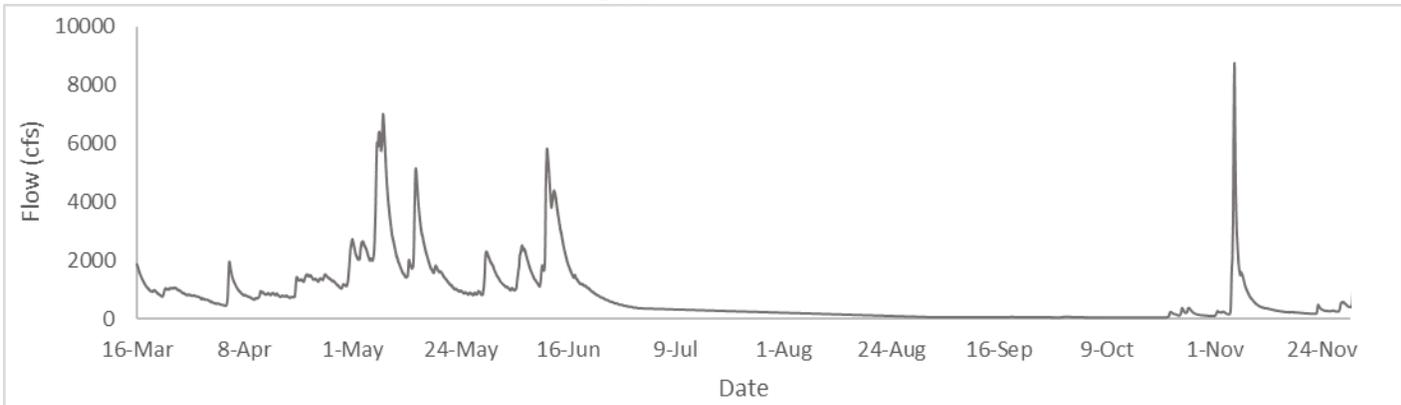


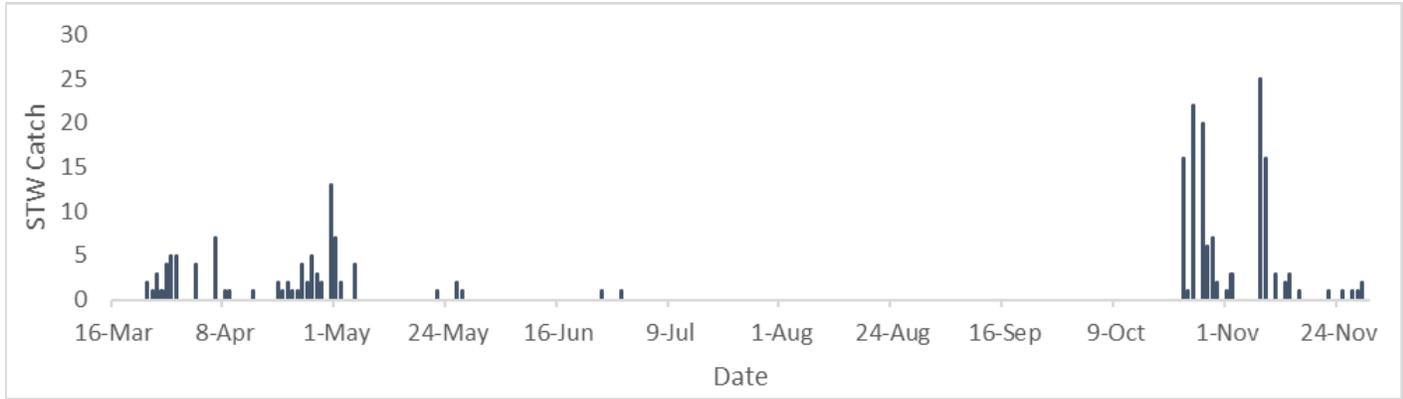
Green Peter Dam Operational and Green Peter Tailrace- Middle Santiam River Capture Data Since Start of Monitoring



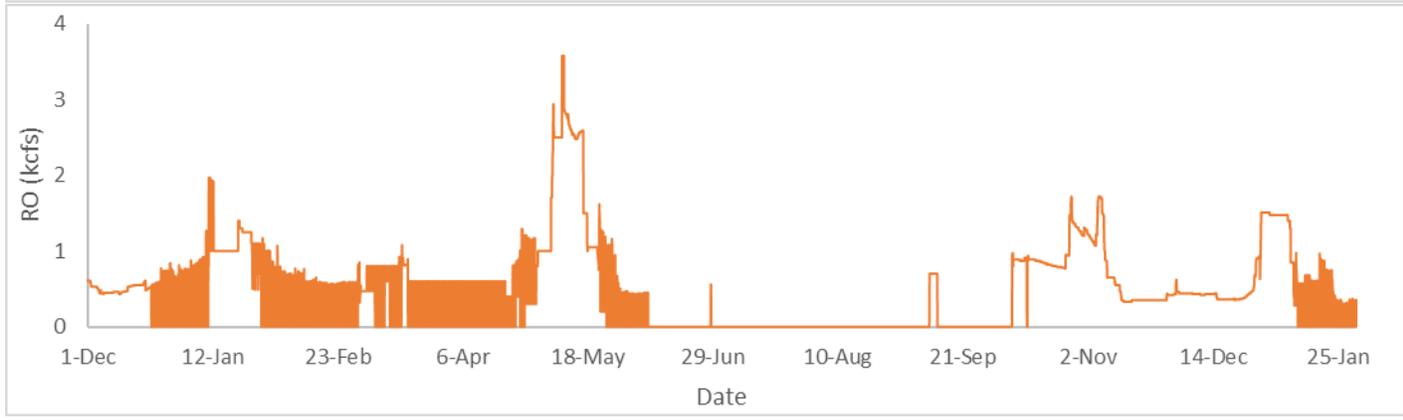
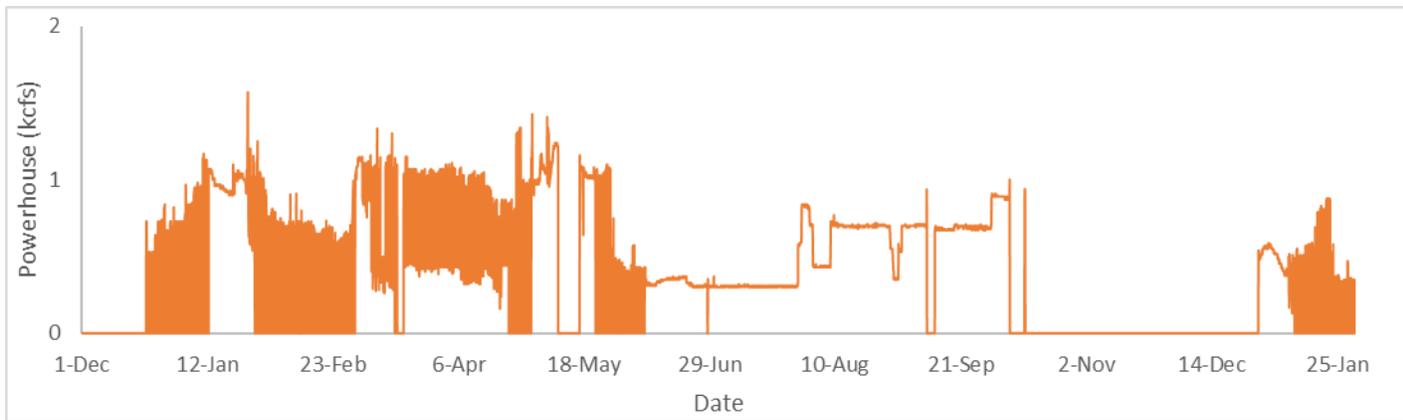


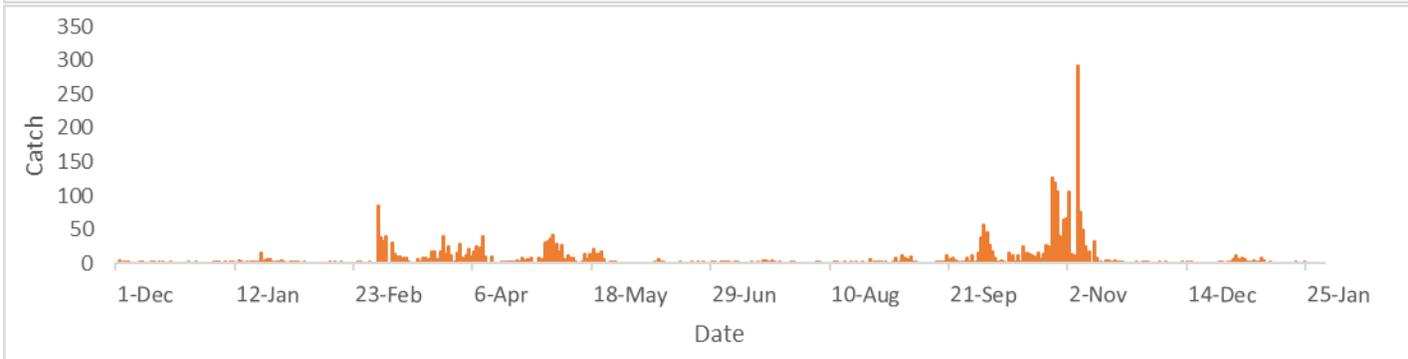
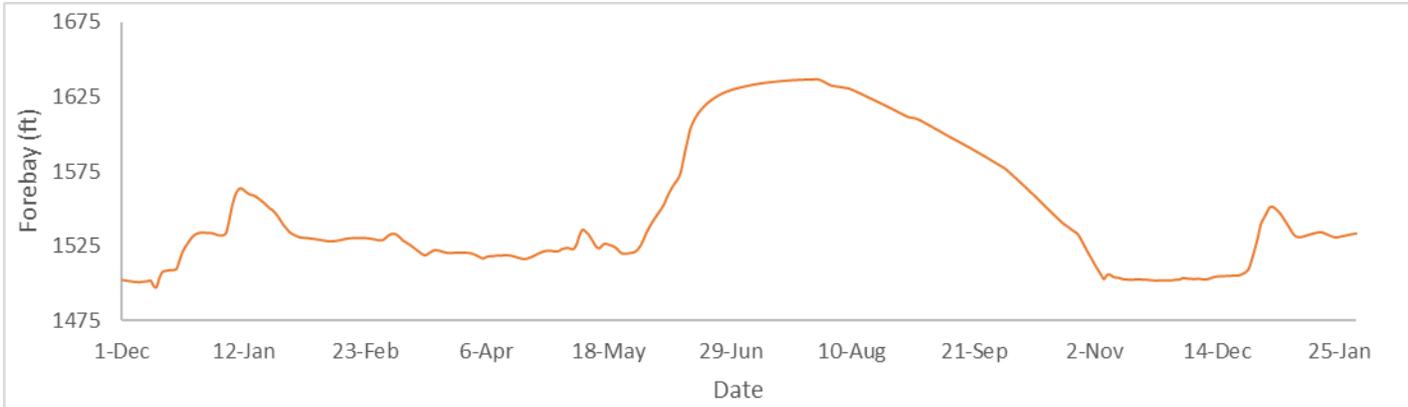
South Santiam River Above Foster Dam Discharge and Foster Dam Head of Reservoir Capture Data



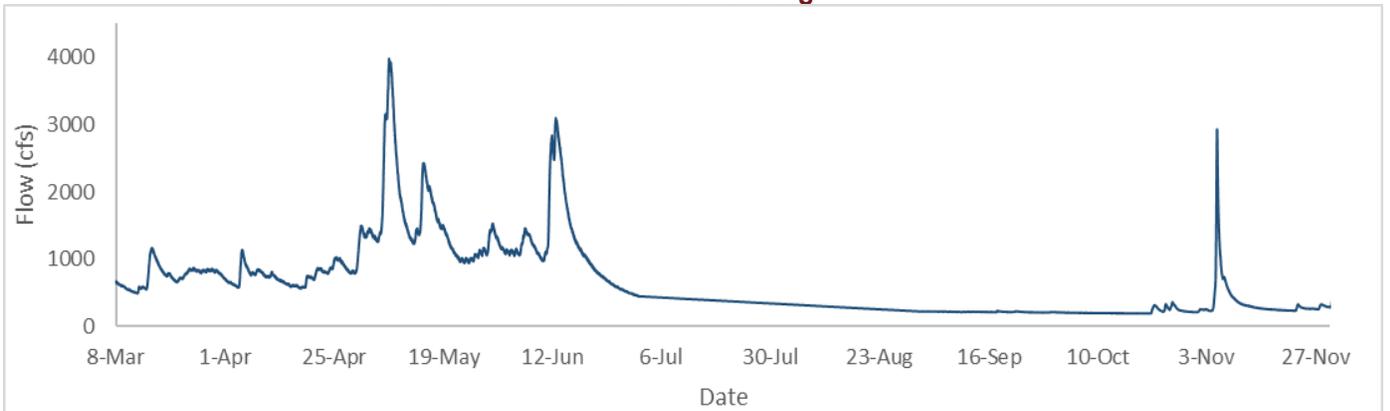


Cougar Dam Operational and Capture Data Since Start of Monitoring

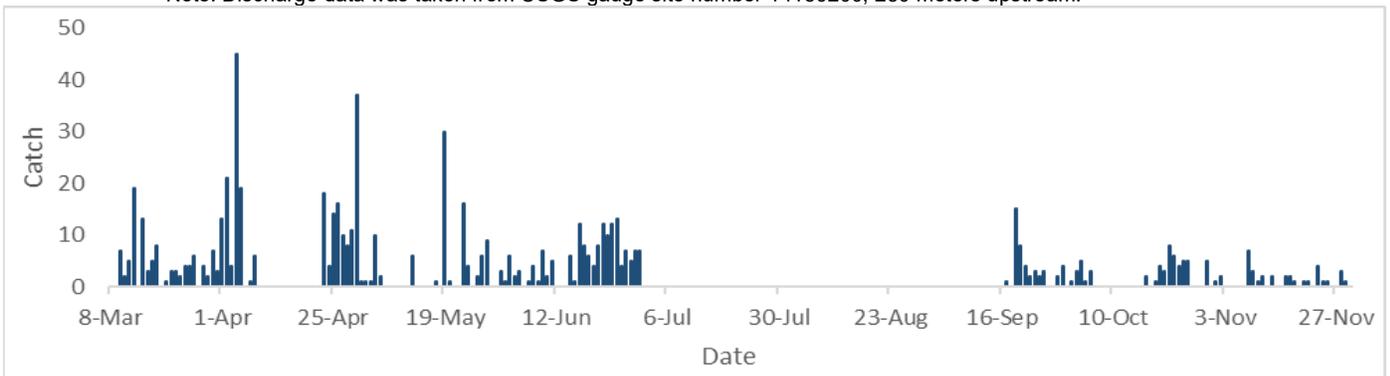




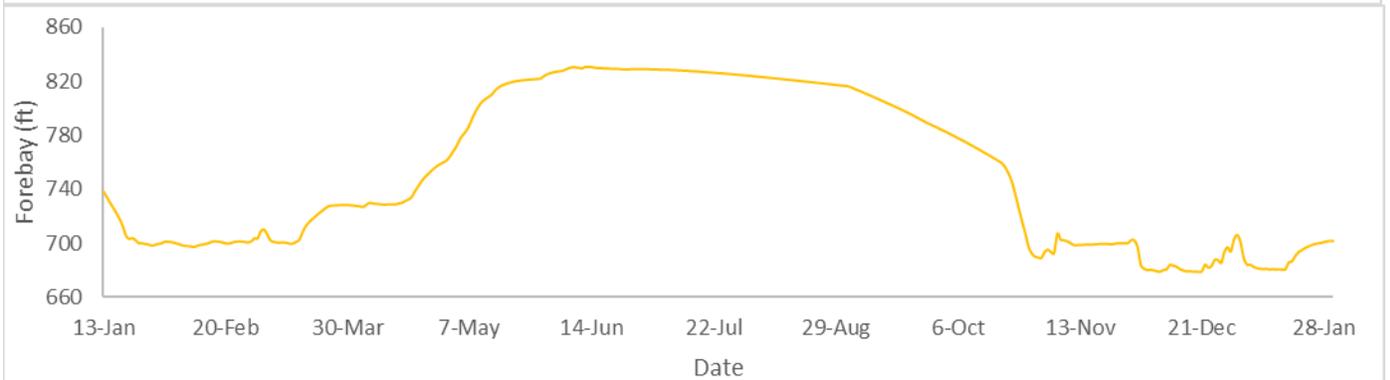
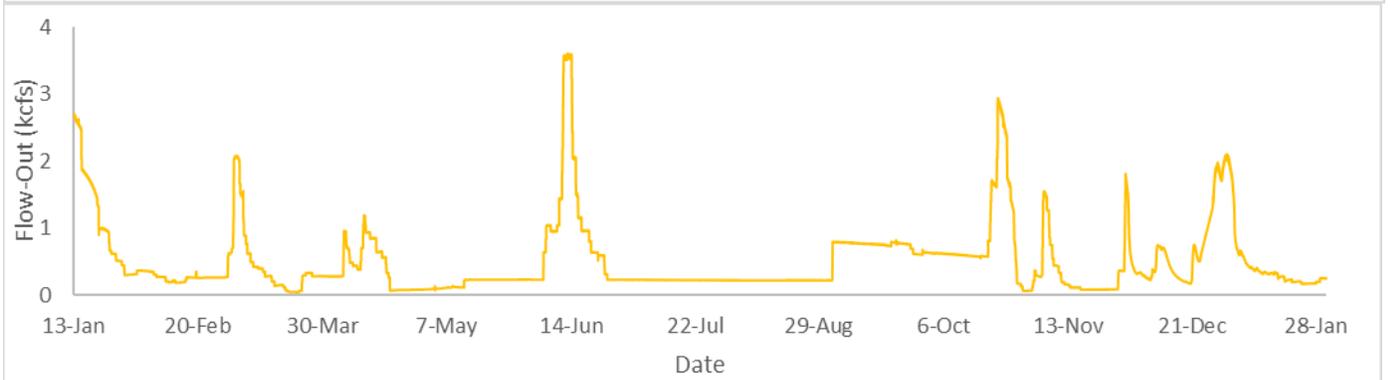
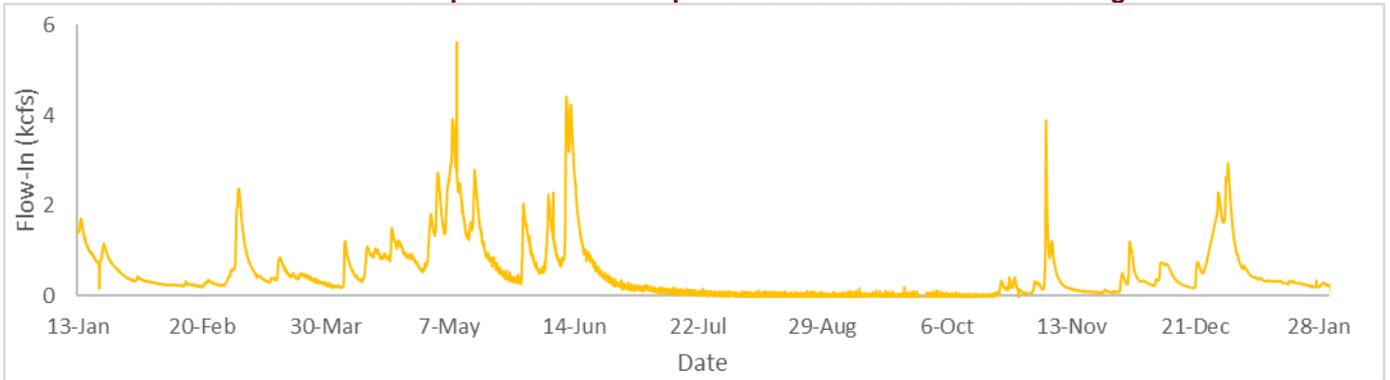
South Fork McKenzie above Cougar Dam Discharge and Cougar Dam Head of Reservoir Capture Data Since Start of Monitoring



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



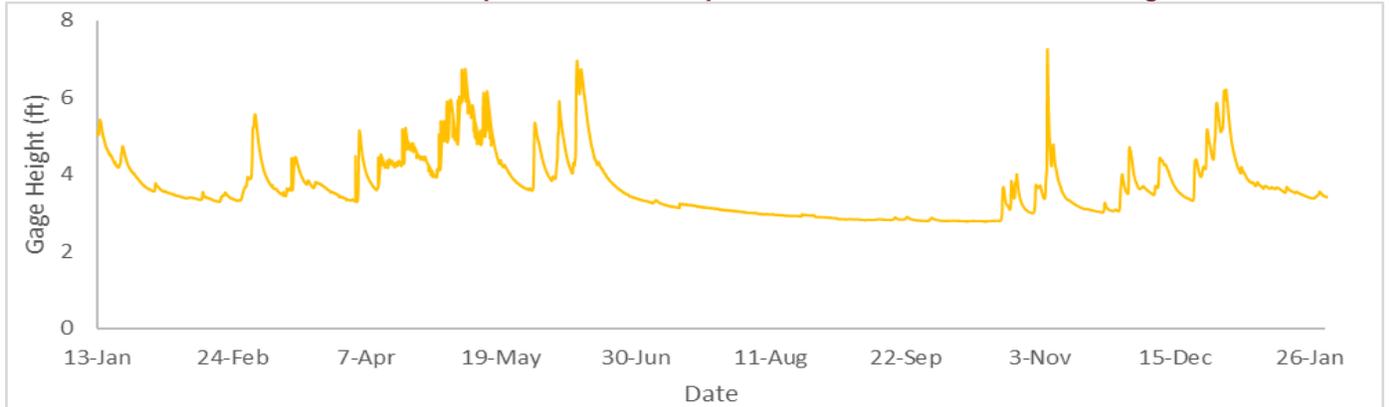
Fall Creek Dam Tailrace Operational and Capture Data Since Start of Monitoring



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



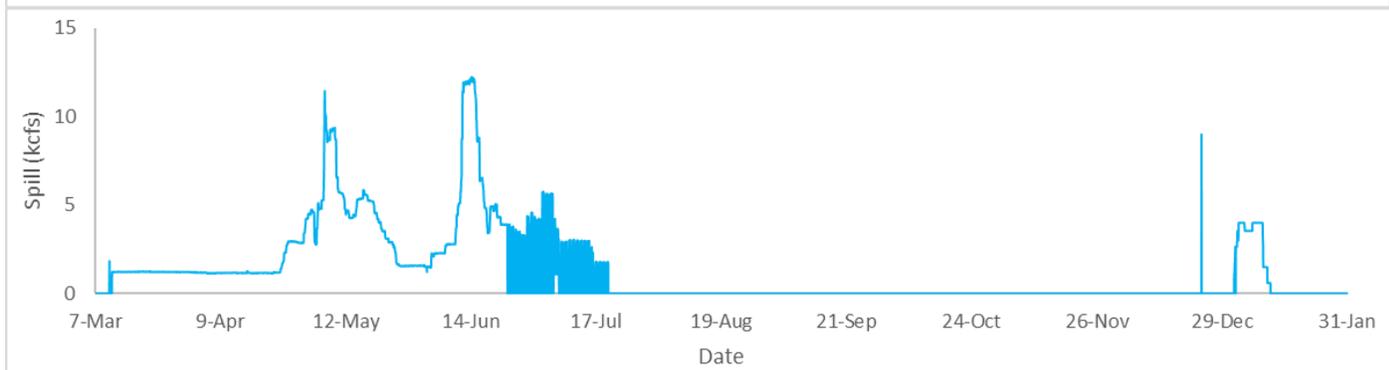
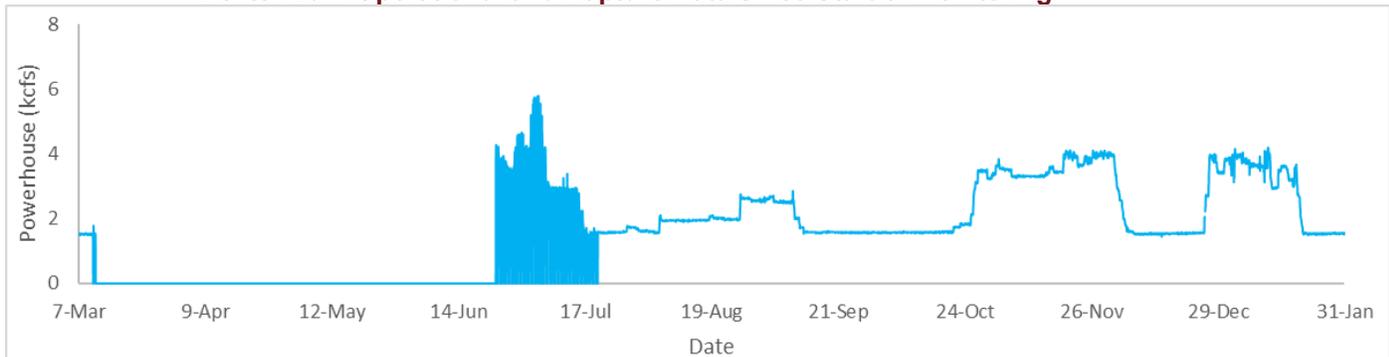
Fall Creek Head of Reservoir Operational and Capture Data Since Start of Monitoring

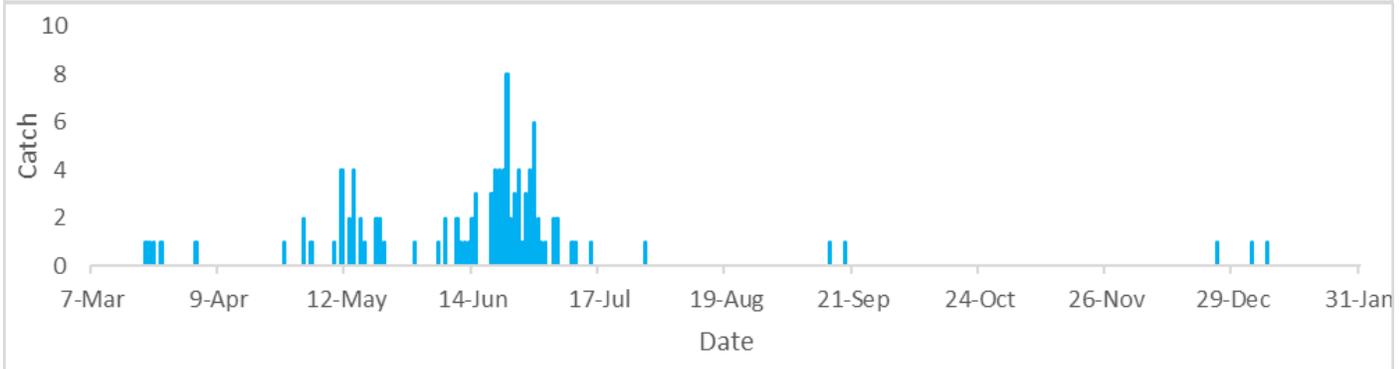
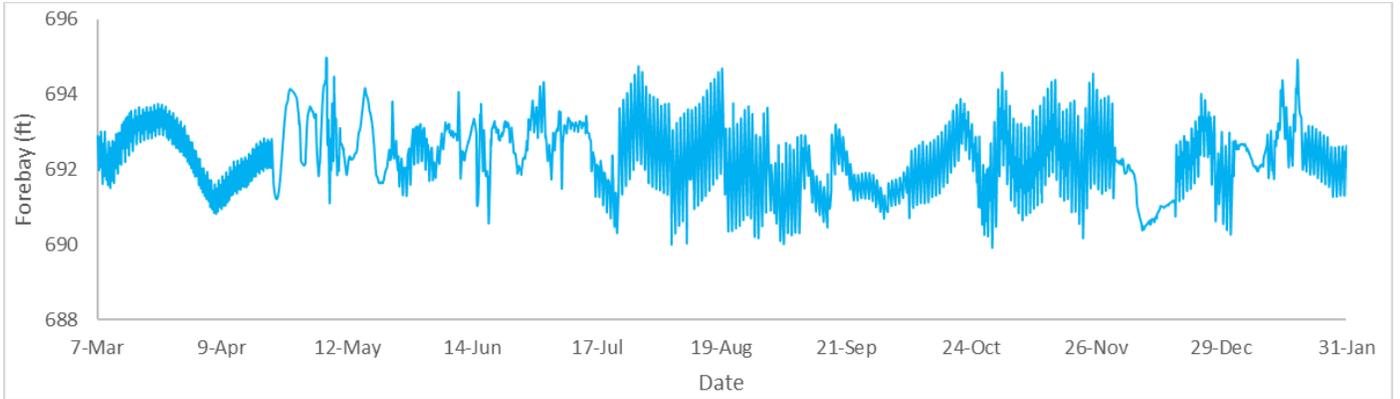


Note: Gauge height data was taken from USGS stream gauge number 14150290, 1.2 rkms downstream.

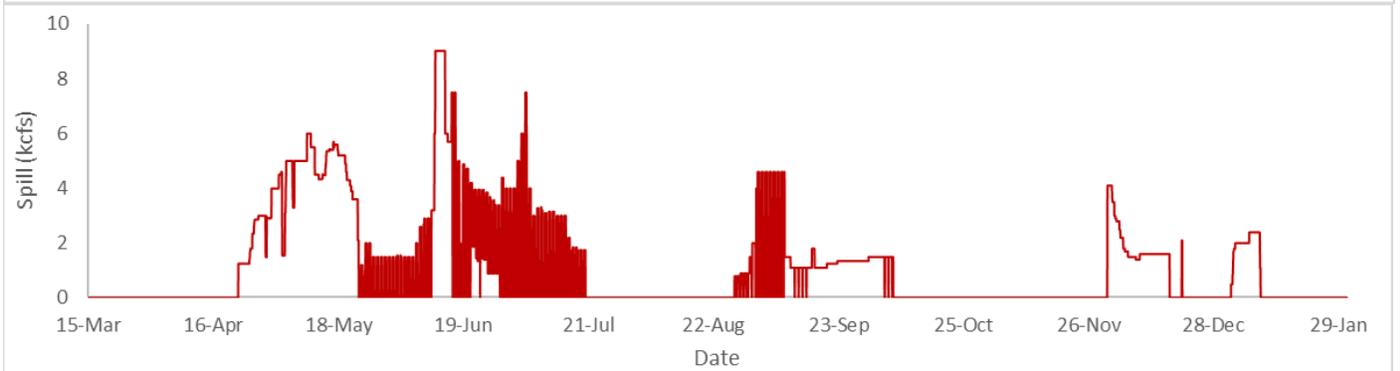
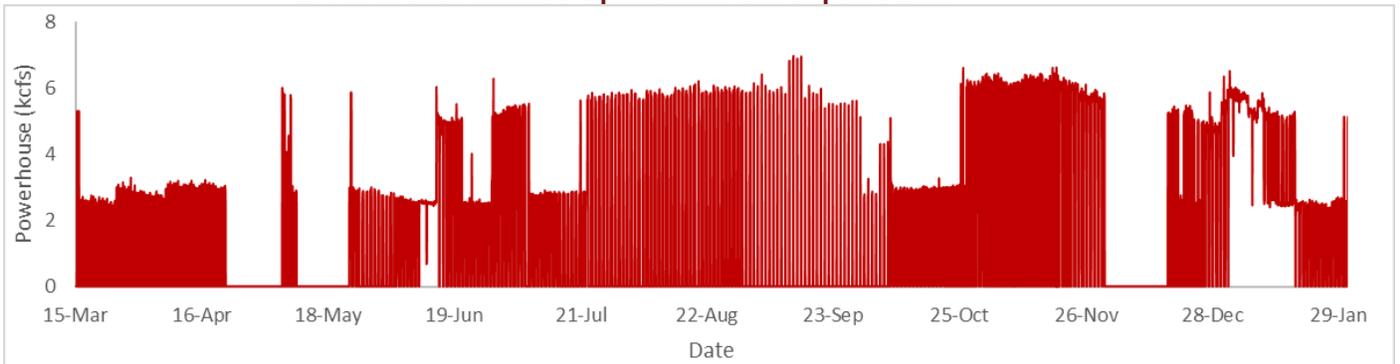


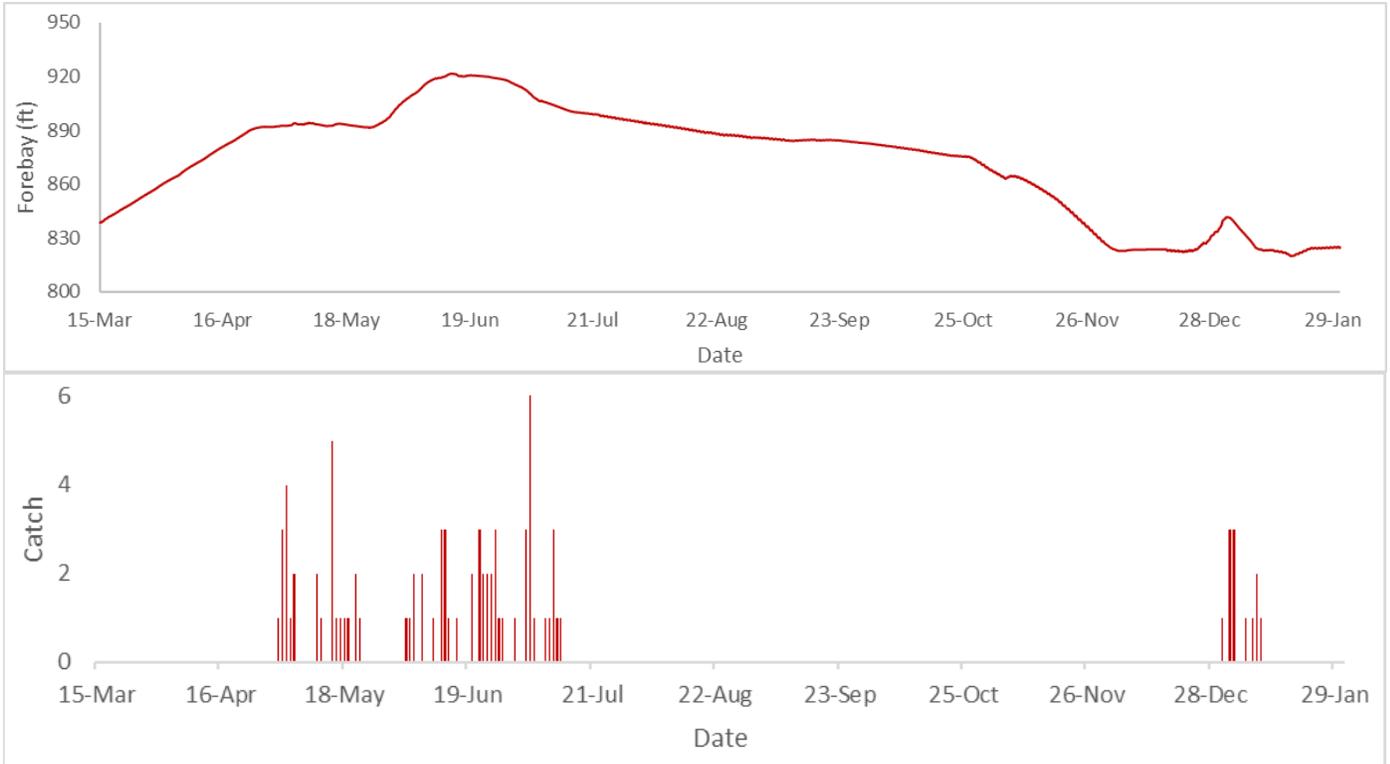
Dexter Dam Operational and Capture Data Since Start of Monitoring



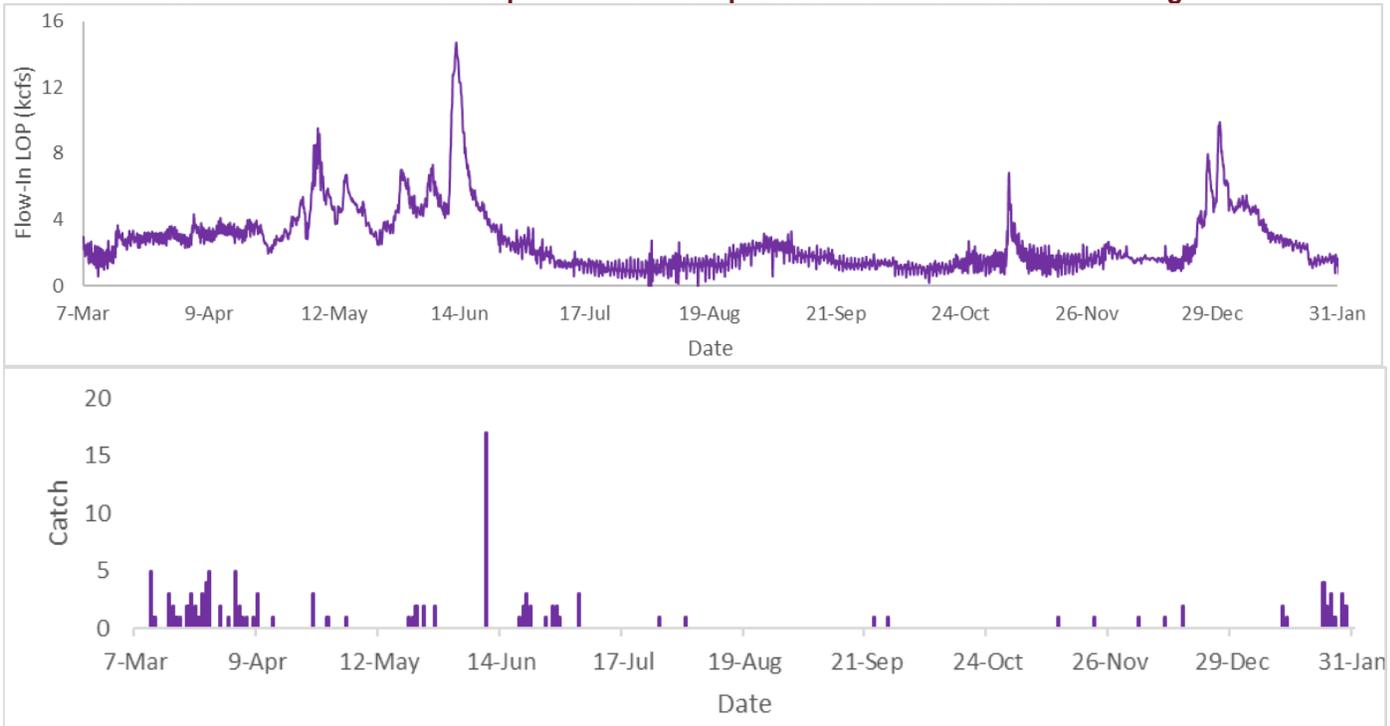


Lookout Dam Tailrace Operational and Capture Data

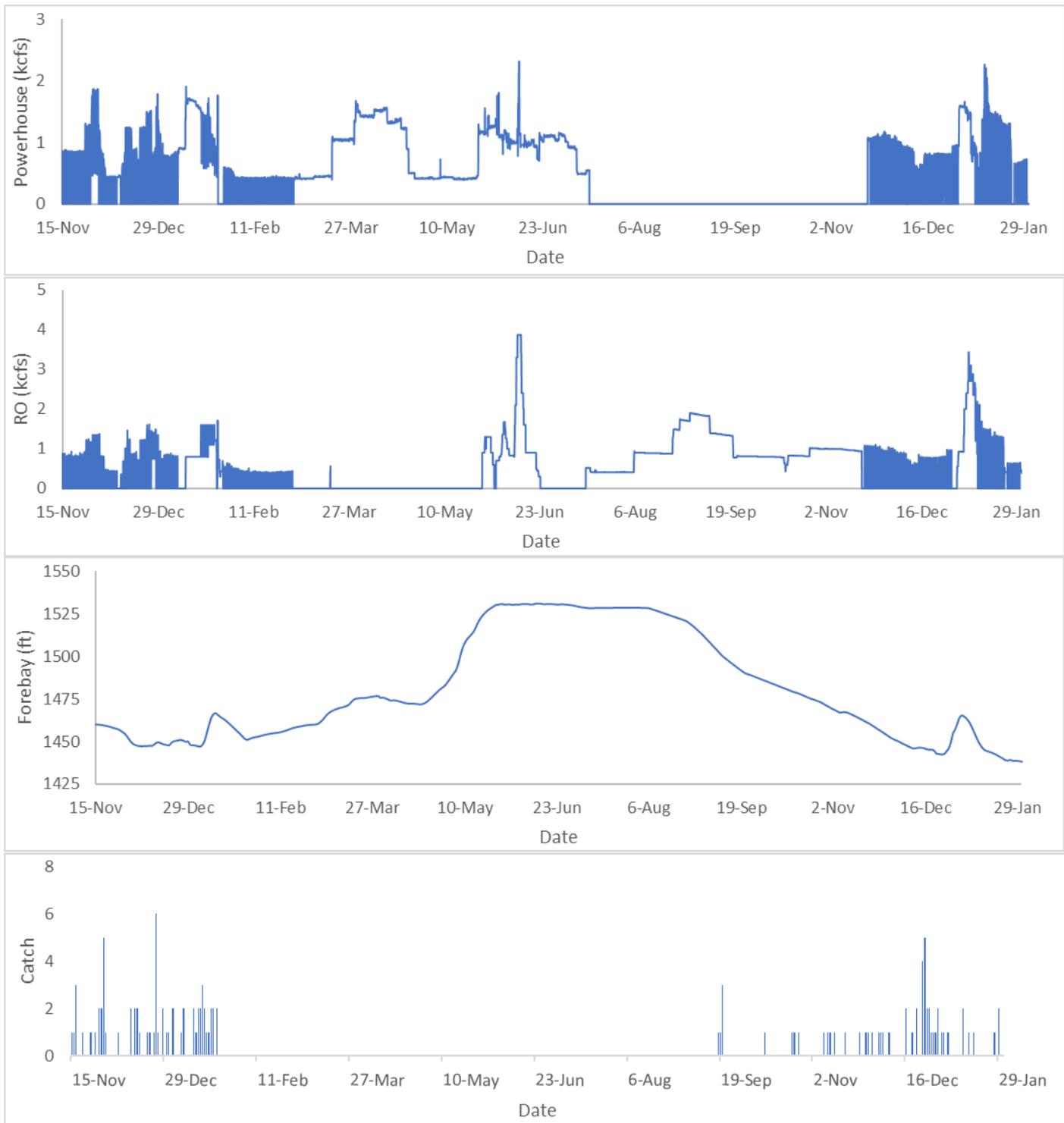




Lookout Point Head of Reservoir Operational and Capture Data Since Start of Monitoring



Hills Creek Dam Operational and Capture Data Since Start of Monitoring



Appendix C

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

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

Hills Creek Dam	Release #	Recapture #	Capture Efficiency
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)

Cougar Dam	Release #	Recapture #	Capture Efficiency
PH Route	405	40	9.88% (40/405)
RO Route	410	28	6.83% (28/410)

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

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

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

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

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

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

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

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)

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

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

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

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

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

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

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

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

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

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

Dexter Dam (11/17/2022)	Release #	Recapture #	Capture Efficiency
Spill	N/A	N/A	N/A
Powerhouse	991	4	0.4% (4/991)

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

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

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

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

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

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

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

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

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

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

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

Run of River Trapping Efficiency

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

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

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

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

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

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

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

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

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

Cougar Dam (01/12/2023)	Release #	Recapture #	Capture Efficiency
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	0
Green Peter Tailrace- Middle Santiam	8 ft	0
Dexter Dam Tailrace	5 ft	0
Lookout Point Head of Reservoir	5 ft	0
Lookout Dam Tailrace	Spill	0
Lookout Dam Tailrace	PWR	0
Hills Creek Dam Tailrace	PWR	0
Hills Creek Dam Tailrace	RO	0

Summary of Captured Fish Containing PIT Tags This Season

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

Cougar Dam	PH	3DD.003BEE17CA	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17A5	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C21	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2748	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C16	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B5C	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BC9	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE19AE	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BE3	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BA3	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BF3	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27B4	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D74	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2DB5	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B8C	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B8B	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D68	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B92	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D86	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27A5	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B1B	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C26	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27A3	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE19B9	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17BA	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B75	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B42	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D88	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2DAF	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C28	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2DAD	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D6B	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE25BA	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2DAG	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C0E	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE177C	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BAB	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE279D	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BA4	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE23BC	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B84	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27BF	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B91	1/13/2023	Chinook

Cougar Dam	PH	3DD.003BEE19C7	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BCA	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BE1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE25C1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE272B	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B23	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE25A7	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE25B1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27CD	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE29C5	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE19BD	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE19C2	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BA7	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE23A1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE199A	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17C7	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2997	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE25B3	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2991	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17C3	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BA6	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27CB	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B6C	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2755	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B90	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE25DC	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1BD2	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE299F	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BB1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE29AA	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27BC	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2766	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE27BD	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C06	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B8B	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE271E	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B92	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C22	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE29C1	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1B85	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2753	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE25CB	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1794	1/13/2023	Chinook

Cougar Dam	PH	3DD.003BEE2D76	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2D6C	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17AD	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE17A2	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE179E	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BAA	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2BC0	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1C1D	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE2B24	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE1986	1/13/2023	Chinook
Cougar Dam	PH	3DD.003BEE23FA	1/13/2023	Chinook
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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

No fish were PIT tagged this reporting period.

List of EAS VIE Marked Fish for Reporting Period

Site	Trap	Mark Type	Date	Species
Fall Creek Head of Reservoir	8 ft	VIE LDB	1/23/2023	Chinook
Fall Creek Head of Reservoir	8 ft	VIE LDB	1/23/2023	Chinook
Fall Creek Head of Reservoir	8 ft	VIE LDB	1/23/2023	Chinook
Fall Creek Head of Reservoir	8 ft	VIE LDB	1/23/2023	Chinook
Fall Creek Head of Reservoir	8 ft	VIE LDB	1/23/2023	Chinook
Fall Creek Head of Reservoir	8 ft	VIE LDB	1/23/2023	Chinook
Lookout Point Head of Reservoir	5 ft	VIE LDB	1/23/2023	Chinook
Lookout Point Head of Reservoir	5 ft	VIE LDB	1/25/2023	Chinook
Lookout Point Head of Reservoir	5 ft	VIE LDB	1/25/2023	Chinook

Lookout Point Head of Reservoir	5 ft	VIE LDB	1/26/2023	Chinook
Lookout Point Head of Reservoir	5 ft	VIE LDB	1/29/2023	Chinook
Lookout Point Head of Reservoir	5 ft	VIE LDB	1/29/2023	Chinook

*LDB denotes location and color (Left Dorsal Blue)