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Report Period:	March 16 to March 31, 2022
Report No.:	2022 Willamette RST Bi-Weekly Report 03/16 – 03/31 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	12/01/21	2/15/22	292
Big Cliff Dam RST	Operation	3/15/22	10/15/22	
Big Cliff Dam Tailrace	Trap Efficiency Release (1,000 Fish)	12/22/2021	12/22/2021	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	06/30/2022	120
Green Peter Tailrace- Middle Santiam River RST	Trap Efficiency Release (643 Fish)	03/29/2022	03/29/2022	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	03/10/2022	06/30/2022	113
Cougar Dam RST	Operation	11/30/21	11/30/22	366
Cougar Dam	Trap Efficiency Release (1,200 Fish, 600 per route)	01/19/2022	1/19/2022	1
Cougar Dam Head of Reservoir	Highline and Trap Install	03/7/2022	3/7/2022	1
Cougar Dam Head of Reservoir	Operation	03/8/2022	06/30/2022	115
Cougar Dam Head of Reservoir	Trap Efficiency Release (806 Fish)	03/18/2022	03/18/2022	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	285

Dexter Dam Tailrace RST	Trap Efficiency Release (988 Fish)	03/23/2022	03/23/2022	1
Lookout Dam Tailrace RSTs	Operation	03/15/2022	07/31/2022	139
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	285
Fall Creek Dam Tailrace RST	Operation	03/15/2022	07/15/2022	123
Fall Creek Head of Reservoir RST	Trap and Highline Install	01/11/2022	01/11/2022	1
Fall Creek Head of Reservoir RST	Operation	01/02/22	05/31/22	150
Hills Creek Dam RO and PWR	Deployment	10/12/21	10/12/21	1
Hills Creek Dam RO	Operation	10/15/21	3/01/22	138
Hills Creek Dam PWR	Operation	10/15/21	3/01/22	138
Hills Creek Dam	Trap Efficiency Release (1,200 fish, 600 per route)	1/6/2022	1/6/2022	1
Hills Creek Dam	Trap Efficiency Release (1,200 fish, 600 per route)	2/16/2022	2/16/2022	1
Hills Creek Dam	Trap Efficiency Release (1,200 fish, 600 per route)	2/23/2022	2/23/2022	1
Hills Creek Dam RSTs	Trap Removal	03/01/2022	03/01/2022	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 being operated at the following ten locations: Big Cliff Dam, Green Peter Tailrace- Middle Santiam, Foster Dam Head of Reservoir- South Santiam, Cougar Dam, Cougar Dam Head of Reservoir, Fall Creek Dam Tailrace, Fall Creek Head of Reservoir, Dexter Dam Tailrace, Lookout Dam Tailrace, and Lookout Point Head of Reservoir.

The RST's at Big Cliff Dam and Lookout Dam Tailrace started sampling on March 15th. Catch at these sites was not assessed until the 16th and will be reported as part of this reporting period. 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.

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. Below dam sites that include one RST to monitor passage include the 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.

Figure 1. Big Cliff RST Location

Figure 2. Green Peter Tailrace- Middle Santiam River RST Location

Figure 3. Foster Dam Head of Reservoir- South Santiam RST Location

Figure 4. Cougar Dam RST Locations

Figure 5. Cougar Dam Head of Reservoir RST Location

Figure 6. Fall Creek Dam Tailrace RST Location

Figure 7. Fall Creek Head of Reservoir RST Location

Figure 8. Dexter Dam RST Location

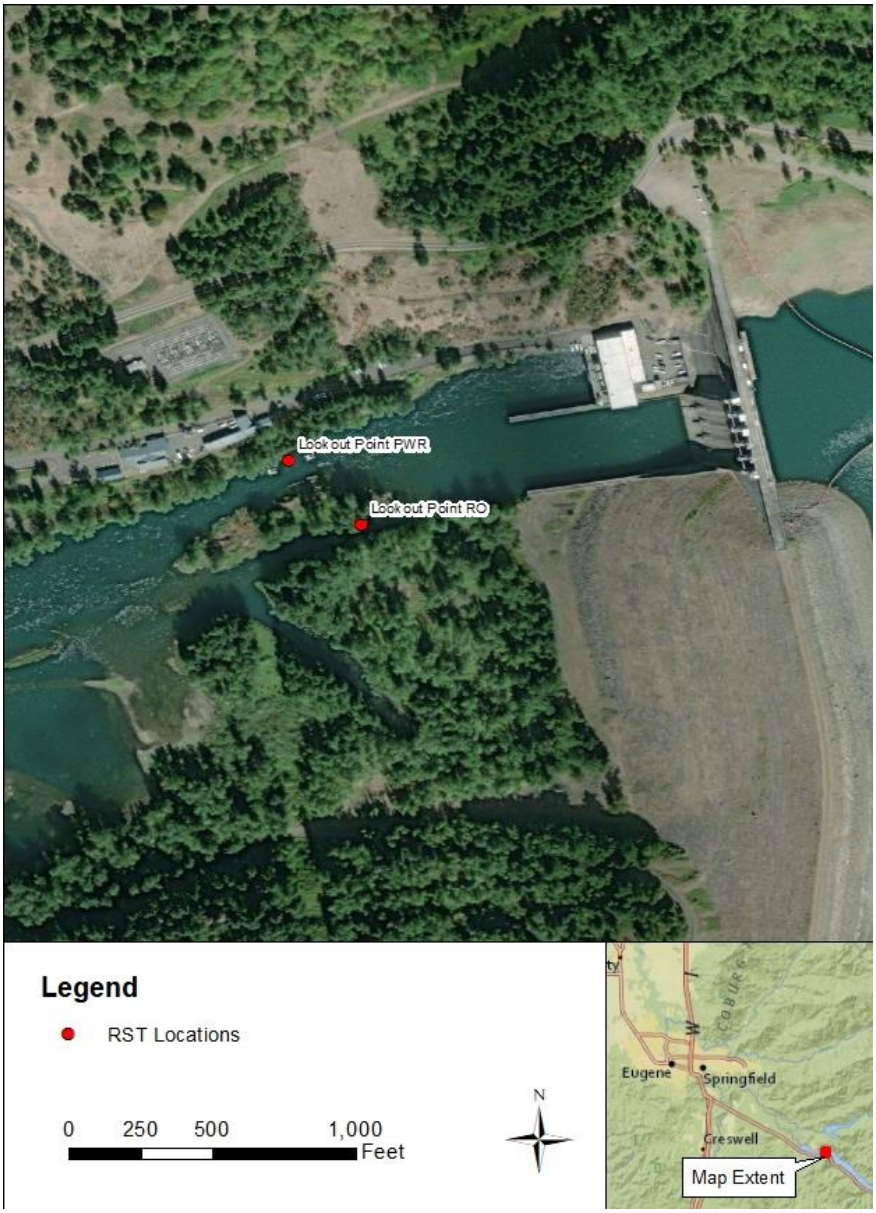


Figure 9. Lookout Point Dam Tailrace RST Location

Figure 10. Lookout Point Head of Reservoir RST Location

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	3/16/2022	3/31/2022	16	91
Green Peter Tailrace- Middle Santiam River	3/2/2022	3/16/2022	3/31/2022	16	30

Foster Dam Head of Reservoir- South Santiam	3/16/2022	3/16/22	3/31/22	16	16
Cougar Dam PH	12/1/2021	3/16/2022	3/31/2022	16	121
Cougar Dam RO	12/1/2021	3/16/2022	3/31/2022	16	121
Cougar Dam Head of Reservoir	3/7/2022	3/16/2022	3/31/2022	16	24
Fall Creek Dam Tailrace*	3/15/2022	3/16/2022	3/31/2022	16	17
Fall Creek Head of Reservoir	1/13/2022	3/16/2022	3/31/2022	16	78
Dexter Dam Tailrace	3/7/2022	3/16/2022	3/31/2022	16	25
Lookout Point Dam	3/15/2022	3/16/2022	3/31/2022	16	17
Lookout Point Head of Reservoir	3/10/2022	3/16/2022	3/31/2022	16	32

*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	4	0	98	40
Green Peter Tailrace- Middle Santiam	CHS	0	4	0	4
Foster Dam Head of Reservoir- South Santiam	CHS	45	0	45	0
Foster Dam Head of Reservoir- South Santiam	STW	21	0	21	0
Cougar Dam	CHS	192	0	559	67
Cougar Dam Head of Reservoir	CHS	55	41	101	41
Fall Creek Dam Tailrace	CHS	0	0	0	0
Fall Creek Head of Reservoir	CHS	4	1	7	1
Dexter Dam Tailrace	CHS	0	2	0	2
Lookout Point Dam	CHS	0	0	0	0
Lookout Point Head of Reservoir	CHS	29	0	35	0

North Santiam – Big Cliff Dam

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.

Target Species

This reporting period began on March 16 and ended on March 31. There was a total of 4 Chinook salmon (CHS) and 0 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 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. Winter Steelhead have not been captured at this site to date.

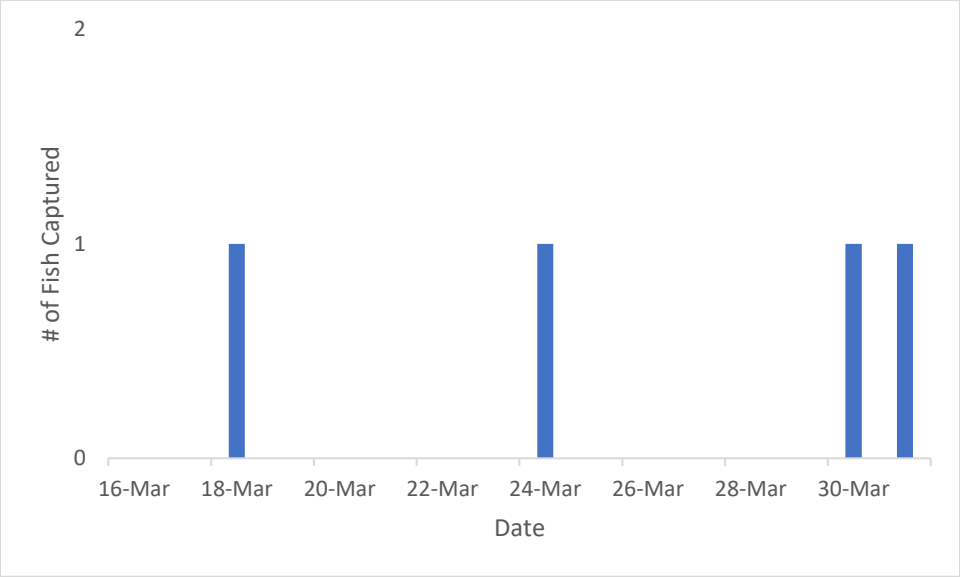


Figure 11. Chinook Captured per day 03/16/2022 to 03/31/2022 (Big Cliff)

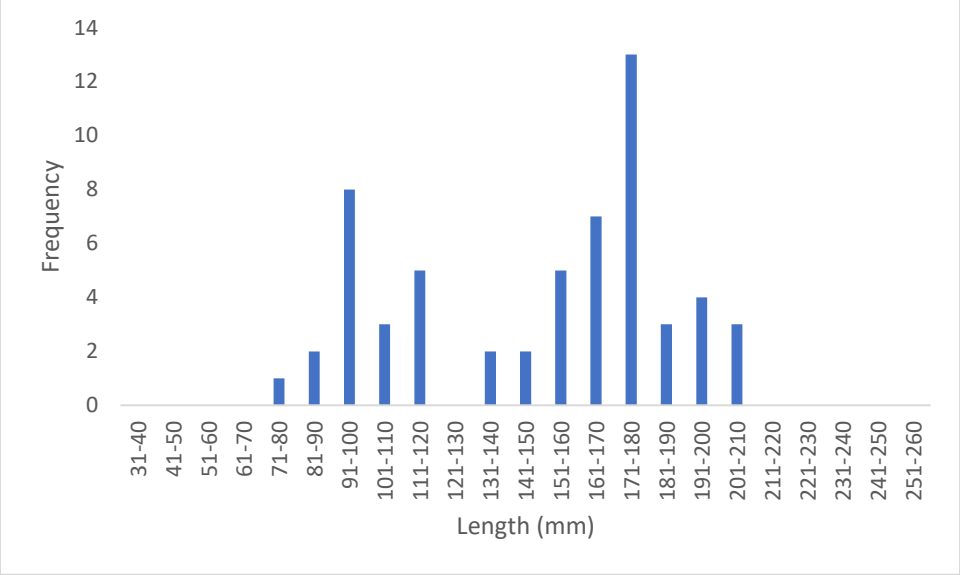


*Figure does not include fish without heads

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

Trapping Efficiency

A total of 996 juvenile hatchery Chinook (parr) were bismark brown dyed, adipose clipped and released on 12/22/2021 below Big Cliff Dam. A total of 39 fish were recaptured in the 8ft trap 12/23/2021, with 1 more fish captured in the 8ft trap 02/15/2022 for a total of 40 recaptures. Trapping efficiency was 4.01%.

Of the 40 fish recaptured, only the 1 fish that was captured on 2/15/2022 had injuries present. The 39 fish recaptured on 12/23/2021 had no injuries present. The injured fish had copepods on its fins and in the branchial cavity. Mt. Hood Environmental staff noted that fish appeared to be in good condition upon retrieval from the hatchery.

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

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

To-Date											
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*			
					Min	Max	Mean	Min	Max	Mean	
Big Cliff	PWR	CHS	Parr	16	78.0	115.0	98.6	6.1	20.1	11.2	
		CHS	Smolt	42	113.0	210.0	169.2	14.2	103.8	50.9	

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

March 16-31, 2022											
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*			
					Min	Max	Mean	Min	Max	Mean	
Big Cliff	PWR	CHS	Parr	1	92	92	92	8.9	8.9	8.9	
		CHS	Smolt	3	172	179	175	53.6	60.8	56.3	

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

24-Hour Post Collection Holding Trial

3 Spring Chinook were captured during the current reporting period and held for 24 hours. No fish died in holding.

Injuries and Copepod Infection

Partial descaling <20% was observed in 2 of the 4 Chinook captured (50%) and 1 displayed descaling >20% (25%). 3 displayed body injury (75%) and 1 Chinook had eye injury (25%). All 4 Chinook had copepods present (100%). A summary of injuries observed during the reporting period are provided in Table 5, and for the duration of the season are provided in Appendix A.

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	4	2	1	3	1	3	2	1

Non-Target Species

Summary of to-date non-target species catch and mortality numbers are listed in Table 6.

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

Species	PWR Capture	PWR Mortality	Season Total	Season Total Mortality
Bluegill	0	0	6	2
Brook Lamprey	0	0	0	0
Bullhead	0	0	1	0
Crappie	0	0	0	0
Longnose Dace	0	0	0	0
Kokanee	1	1	92	37
Red-Sided Shiner	0	0	0	0
Sculpin	0	0	0	0
Spotted Bass	0	0	0	0
Sucker	0	0	0	0
Whitefish	0	0	4	0
Cutthroat	1	0	3	0
O. mykiss	0	0	1	0
Pumpkinseed	1	1	1	1
Unknown	0	0	1	0
Totals	**3**	**2**	**109**	**40**

Stream Statistics

Basic stream statistics at the Big Cliff Dam site were calculated from data downloaded from the U.S. Geological Survey stream gage number 14181410. Gage height (feet) is the only metric provided at this gage. During the reporting period, daily maximum values for instantaneous gage height ranged from 1,109.5 feet to 1,109.7 feet (mean: 1,109.6 feet). Figure 13 shows instantaneous gage height.

Stream temperatures were recorded every 2 hours for the length of the report period for the RO and PWR RST's (Figure 14). Temperature probes operated normally throughout this reporting period.

Flows through the Powerhouse and RO during the reporting period averaged 757.6 cubic feet per second (cfs) (Figure 15). 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.

Description	Chinook (8 ft)
Catch	4
Effort (hrs)	382.6
CPUE (fish/hr)	0.010

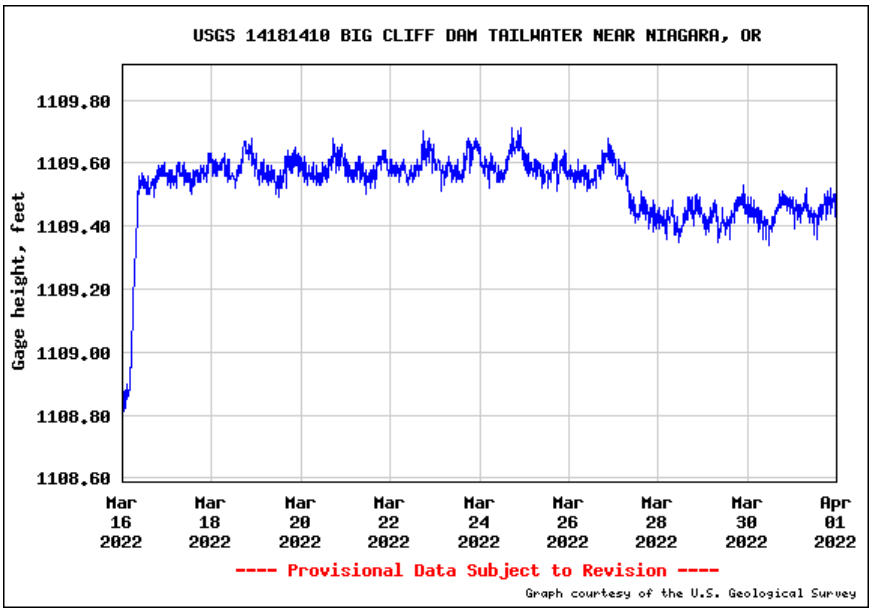


Figure 13. Gage height (ft); below Big Cliff Dam

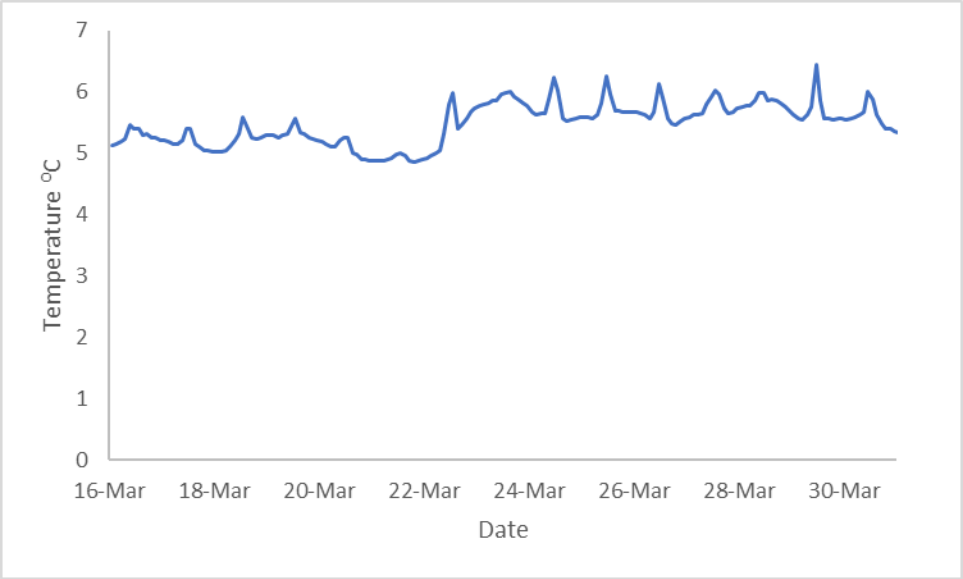


Figure 14. Temperature at RST (Big Cliff Dam)

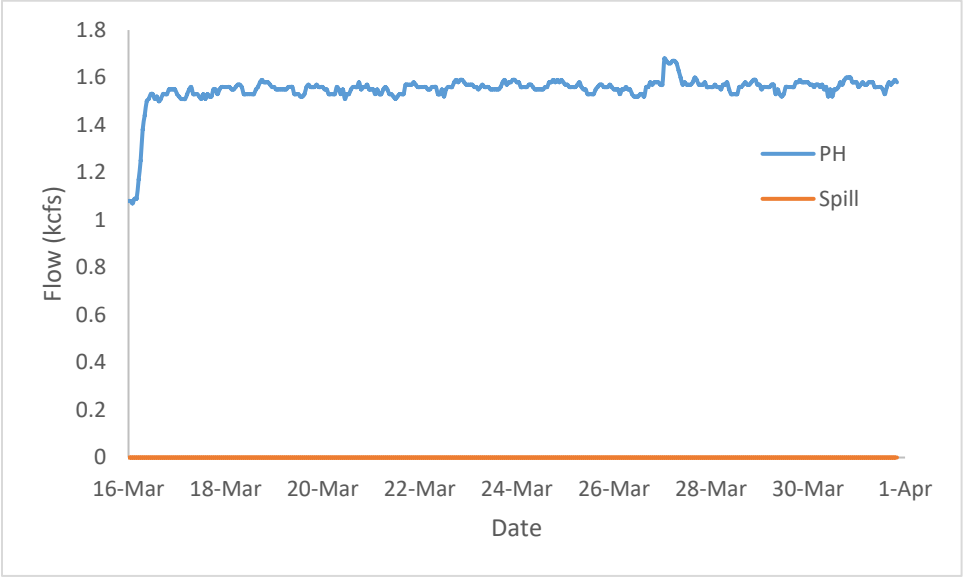
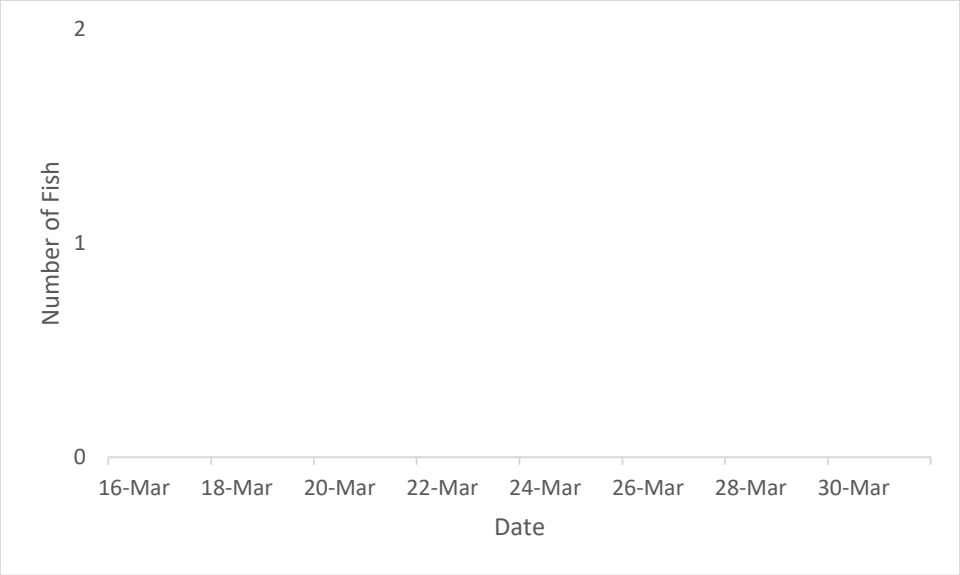


Figure 15. Hourly Flows PWR vs. RO (Big Cliff Dam)

Middle Fork Santiam– Green Peter Tailrace

Target Species

This reporting period began on March 16 and ended on March 31. No Chinook Salmon (CHS) or Winter Steelhead (STW) were captured during the 16-day sampling period (Figure 16). Sampling duration was 100% for the RST. Table 8 provides life stage, length, and weight data for all target species that have been caught at the Green Peter Dam site to-date and for the reporting period. Figure 16 shows the daily capture numbers for chinook and Figure 17 shows length frequency data to-date.



*Recaptured fish for trapping efficiency trials not included.

Figure 16. Chinook Captured Per Day 03/16/2022 to 03/31/2022 (Green Peter Tailrace-Middle Santiam)

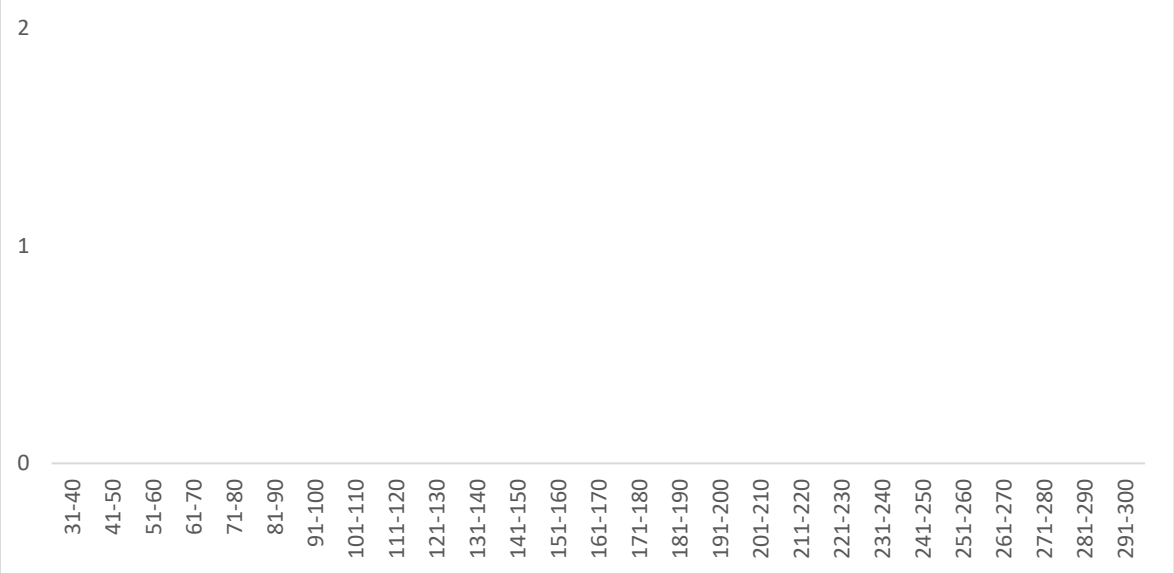


*Figure does not include fish without heads or fish used for trapping efficiency trials.

Figure 17. Length Frequency of Juvenile Chinook Sampled Season To-Date (Green Peter Tailrace- Middle Santiam River)

Trapping Efficiency

A total of 643 juvenile hatchery Chinook (parr) were bismark brown dyed, adipose clipped and released on 03/29/2022 below Green Peter Dam. 214 dyed and adipose clipped fish were released below the PWR and 429 dyed and adipose clipped fish were released below the Spillway to evaluate the efficiency of the screw trap in the tailrace. A total of 4 fish were recaptured in the 8ft trap on 03/30/2022. Route-specific trapping efficiency was 0.062%

Mt. Hood Environmental staff noted that fish appeared to be in good condition upon retrieval from the hatchery.

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

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

To-Date											
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*			
					Min	Max	Mean	Min	Max	Mean	
Green Peter Dam Tailrace-Middle Santiam	RO	CHS	Parr	0	0	0	0	0	0	0	
		CHS	Smolt	0	0	0	0	0	0	0	

March 16-31,2022											
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*			
					Min	Max	Mean	Min	Max	Mean	
Green Peter Dam Tailrace-Middle Santiam	RO	CHS	Parr	0	0	0	0	0	0	0	
		CHS	Smolt	0	0	0	0	0	0	0	

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

24-Hour Post Collection Holding Trial

No Spring Chinook or Winter Steelhead were captured during the current reporting period; therefore, no fish were in holding.

Injuries and Copepod Infection

No Spring Chinook or Winter Steelhead were captured at Green Peter Dam; therefore, no injuries are reported for target species. As a surrogate, we are providing injury data for kokanee at the Green Peter

Dam Tailrace- Middle Santiam site. 2 of the 5 (40%) Kokanee captured during this period showed partial descaling <20% and 2 showed descaling >20% (40%). 4 of the fish showed body injuries (80%) and 1 had eye injury (20%). 1 fish had copepods (20%) and 1 displayed gas bubble disease (20%, level 1). A summary of injuries observed on kokanee during the reporting period is provided in Table 9, and target species injuries for the duration of the season are provided in Appendix A.

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

Site	Trap	# Koke Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Green Peter	8 Foot	5	2	2	4	1	1	0	2

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

Collected DNA and Scale Samples

No target fish were captured for the reporting period and thus, no scale or DNA samples were collected.

Non-Target Species

A total of 12 non-target species fish were captured during the reporting period; the data is summarized below in Table 10.

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

Species	Capture	Mortality	Season Total Capture	Season Total Mortality
Bluegill	5	4	5	4
Brook Lamprey	0	0	0	0
Bullhead	0	0	0	0
Crappie	0	0	0	0
Longnose Dace	0	0	0	0
Kokanee	5	2	5	2
Red-Sided Shiner	0	0	0	0
Sculpin	0	0	0	0
Spotted Bass	0	0	0	0
Sucker	1	1	1	1
Whitefish	0	0	0	0
Cutthroat	0	0	0	0
O. mykiss	1	0	1	0
Totals	**12**	**7**	**12**	**7**

Stream Statistics

Basic stream statistics at the Green Peter Dam Tailrace- Middle Santiam site were calculated from data downloaded from the U.S. Geological Survey stream gage number 14186110. Gage height (feet) is the only metric provided at this gage. During the reporting period, daily maximum values for instantaneous gage height ranged from 692.2 feet to 697.8 feet (mean: 696.2 feet). Figure 18 shows instantaneous gage height.

Stream temperatures were recorded every 2 hours for the length of the report period for the RO and PWR RST's (Figure 19). Temperature probes operated normally throughout this reporting period.

Flows through the Powerhouse and RO during the reporting period averaged 273.8 and 332.4 cubic feet per second (cfs) respectively (Figure 20). 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.

Large amounts of woody debris were passing through the spillway during this sampling period. Debris was large enough to prevent the trap from rotating on multiple occasions. Observations from the area above the dam suggest that debris load will be problematic for some time.

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

	Chinook
Description	8ft
Catch	0
Effort (hrs)	383.2
CPUE (fish/hr)	0

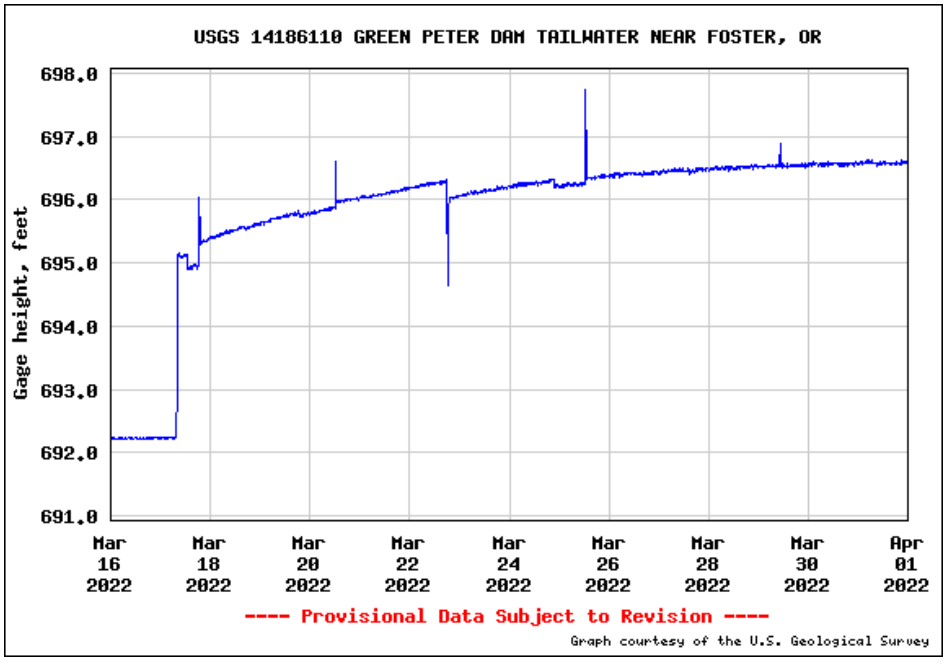


Figure 18. Gage Height (feet); below Green Peter Dam

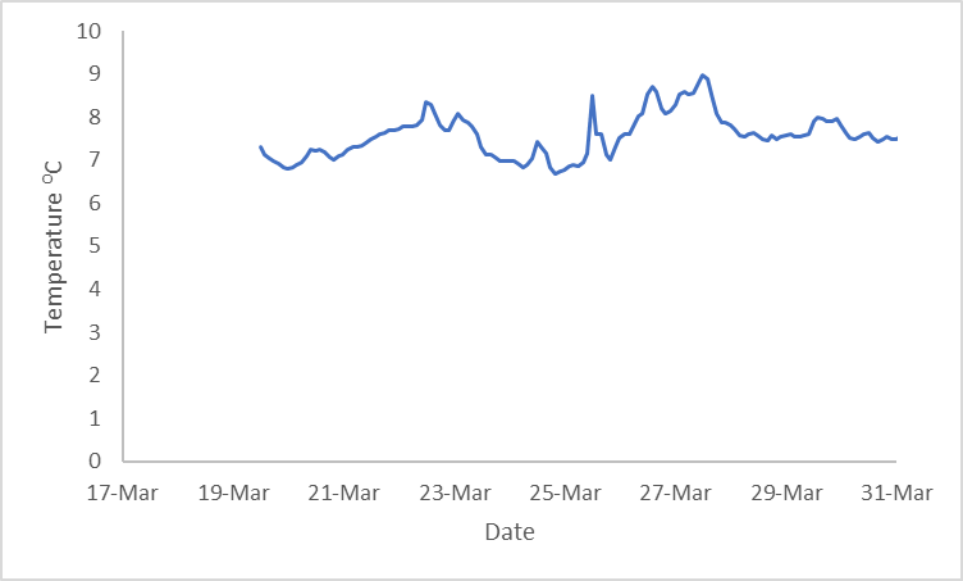


Figure 19. Temperature at RST (Green Peter Tailrace- Middle Santiam River)

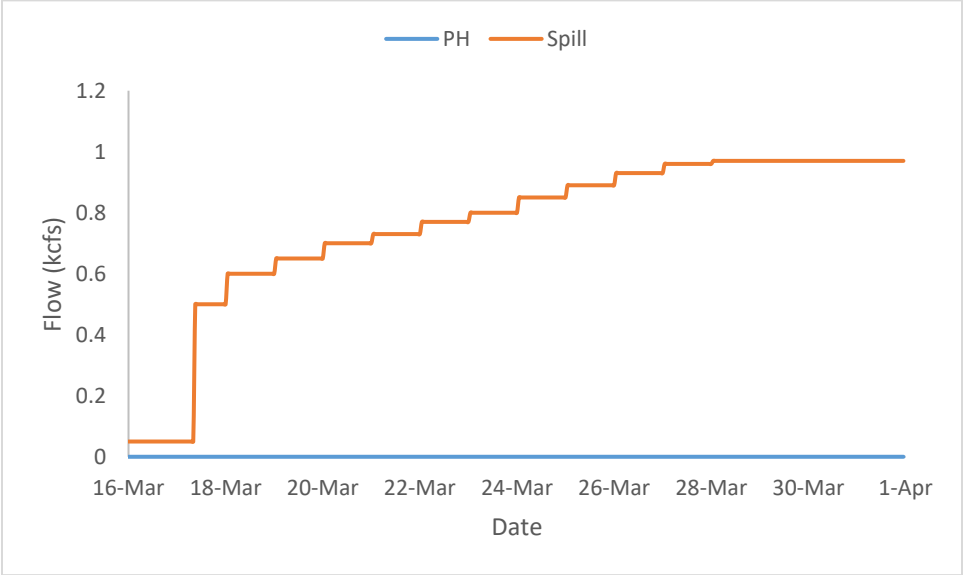


Figure 20. Hourly Flows PWR vs. RO (Green Peter Dam)

South Fork Santiam– Foster Dam Head of Reservoir

Target Species

This reporting period began on March 16 and ended on March 31. There was a total of 45 Chinook salmon (CHS) and 21 Winter Steelhead captured (Figure 21) during the 16-day sampling period. Sampling duration was 100% for the RST. Table 12 provides life stage, length, and weight data for all

Chinook Salmon and Winter Steelhead that have been caught at the Foster Dam Head of Reservoir- South Santiam site to-date and for the reporting period. Figure 21 shows the daily capture numbers for Chinook and Winter Steelhead and Figure 22 shows length frequency data to-date for both species.

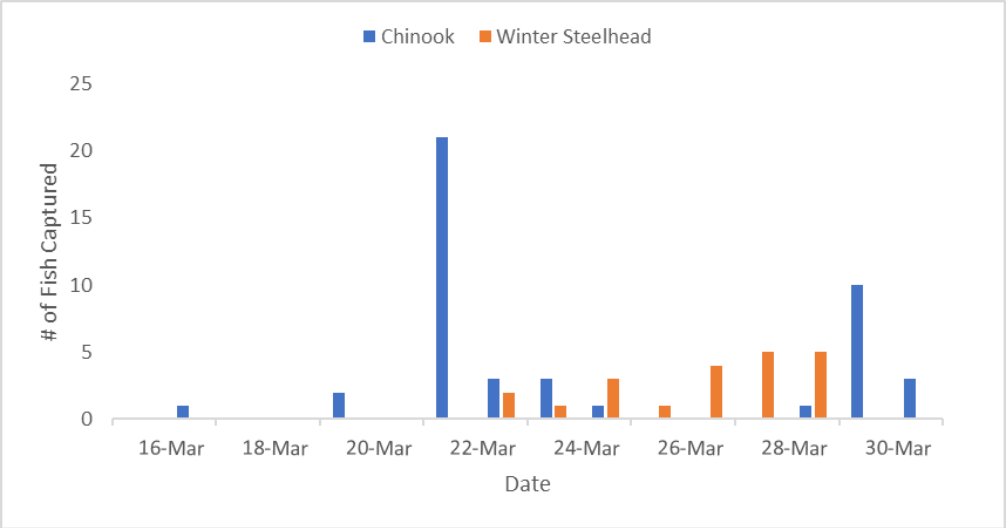


Figure 21. Chinook and Winter Steelhead Captured Per Day 03/16/2022 to 03/31/2022 (Foster Dam Head of Reservoir- South Santiam)

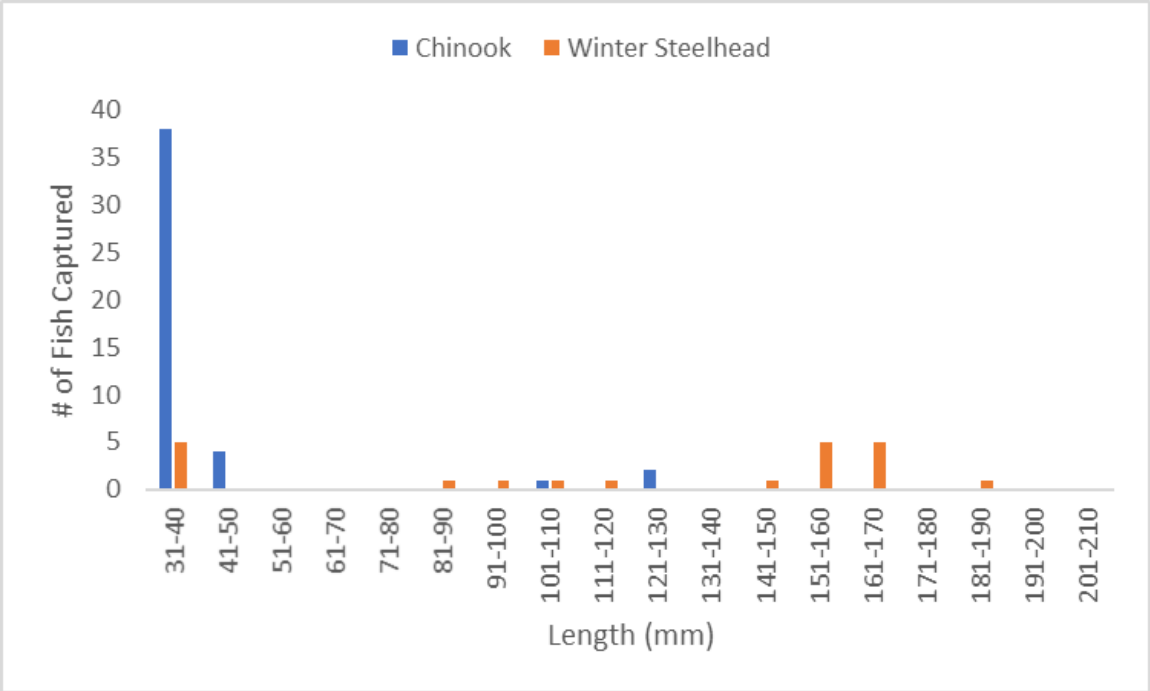


Figure 22. Length Frequency of Juvenile Chinook and Winter Steelhead Sampled Season To-Date (Foster Dam Head of Reservoir- South Santiam)

Trapping Efficiency

6 Chinook and 16 Winter Steelhead have been caudal clipped and released upstream for the purpose of conducting run of river trapping efficiency trials. To date, none of the released fish have been recaptured. Only fish large enough to be safely caudal clipped have been used for efficiency trials.

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

To-Date (March 16-31,2022)											
Site	Trap	Species	Life stage	Collected	Length (mm)*			Weight (g)*			
					Min	Max	Mean	Min	Max	Mean	
Foster Dam Head of Reservoir- South Santiam	5 ft	CHS	Fry	42	32	49	35.2	N/A	N/A	N/A	
		CHS	Parr	1	108	108	108	14.2	14.2	14.2	
		CHS	Smolt	2	120	129	124.5	19.6	23.5	21.6	
		STW	Fry	5	31	36	33.4	N/A	N/A	N/A	
		STW	Parr	6	88	157	118.3	7.7	44.1	21.2	
		STW	Smolt	10	152	192	164.4	34.3	71.3	45.4	

*Most fry are too small to collect accurate weight measurements in the field.

Injuries and Copepod Infection

Partial descaling <20% was observed in 3 of the 45 Chinook captured (6.6%) and only 3 displayed body injury (6.6%). No Chinook had eye injuries or copepods present. Partial descaling <20% was observed on 5 of the 21 Winter Steelhead captured (23.8%). Body injuries were present on 5 Winter Steelhead (23.8%) and 0 displayed eye injury. Copepods were present on 1 of the Winter Steelhead captured (4.8%). A summary of injuries observed during the reporting period are provided in Table 13, and for the duration of the season are provided in Appendix A.

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

Site	Species	# Fish Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Foster Dam Head of Reservoir- South Santiam	Chinook	45	3	0	3	0	0	0	0
	Winter Steelhead	21	5	0	5	0	1	0	0

Collected DNA and Scale Samples

Prior to negotiating size limitations for collecting DNA and scales on fish, collection efforts had already been attempted for fish >34 mm. For the reporting period, DNA and scale samples were collected from 16 Winter Steelhead and 6 (including 3 fry) Spring Chinook. All other target fish were too small to sample (less than 50 mm fork length).

Non-Target Species

A total of 31 non-target species fish were captured during the reporting period; the data is summarized below in Table 14.

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

Species	PWR Capture	PWR Mortality	Season Total	Season Total Mortality
Bluegill	0	0	0	0
Brook Lamprey	0	0	0	0
Bullhead	0	0	0	0
Crappie	0	0	0	0
Longnose Dace	0	0	0	0
Kokanee	0	0	0	0
Red-Sided Shiner	0	0	0	0
Sculpin	0	0	0	0
Spotted Bass	0	0	0	0
Sucker	3	0	3	0
Whitefish	0	0	0	0
Cutthroat	28	0	28	0
O. mykiss	0	0	0	0
Pumpkinseed	0	0	0	0
Unknown	0	0	0	0
Totals	**31**	**0**	**31**	**0**

Stream Statistics

Basic stream statistics at the Foster Dam Head of Reservoir- South Santiam site were calculated from data downloaded from the U.S. Geological Survey stream gage number 14185000. Discharge (cfs) and Gage height (feet) are available at this gage. During the reporting period, daily maximum values for instantaneous discharge ranged from 687 cfs to 1,860 cfs (mean: 1,002.7 cfs). Figure 23 shows instantaneous discharge.

Stream temperatures were recorded every 2 hours for the length of the report period for the 5 foot RST (Figure 24). Temperature probes operated normally throughout this reporting period. The temperature spike in the data is likely due to a reading from the probe while being out of the water while adjustments to its connection to the trap was being made.

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

Table 15. Summary of salmonid CPUE, Foster Dam Head of Reservoir- South Santiam.

	Chinook	Winter Steelhead
Description	**(5 ft)**	
Catch	45	21
Effort (hrs)	357.8	357.8
CPUE (fish/hr)	0.126	0.059

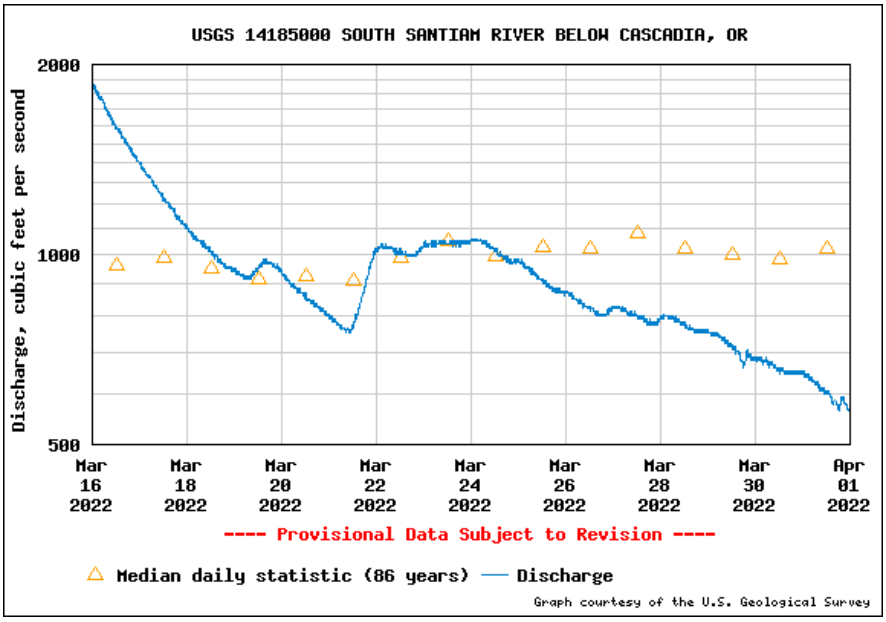


Figure 23. Discharge (cfs); Foster Dam Head of Reservoir – S. Santiam)

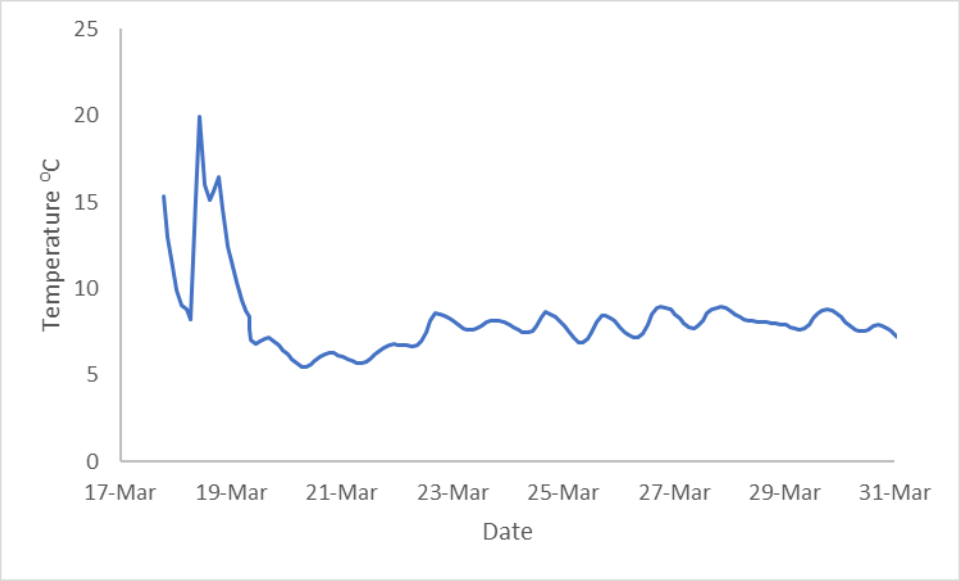
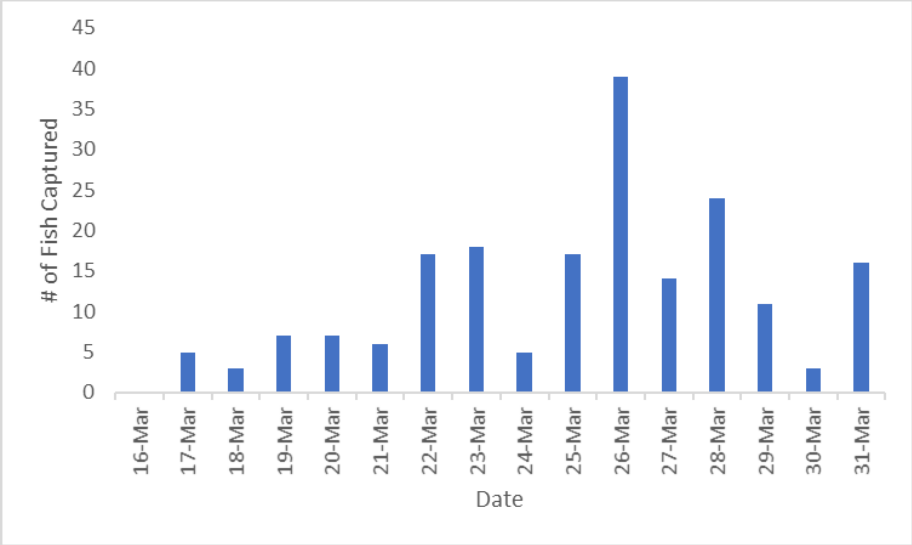


Figure 24. Temperature at RST (Foster Dam Head of Reservoir – S. Santiam)

South Fork McKenzie – Cougar Dam

Target Species

This reporting period began on March 16 and ended on March 31. There was a total of 192 Chinook Salmon (CHS) captured during the 16-day sampling period (Figure 25). Sampling duration was 100% for both RO RST and Powerhouse RST. Table 16 provides life stage, length, and weight data for all Chinook salmon that have been caught at the Cougar Dam site to-date and for the reporting period. Figure 25 shows the daily capture numbers for chinook and Figure 26 shows length frequency data to-date.



*Recaptured fish for trapping efficiency trials not included.

Figure 25. Chinook Captured Per Day 03/16/2022 to 03/31/2022 (Cougar Dam)

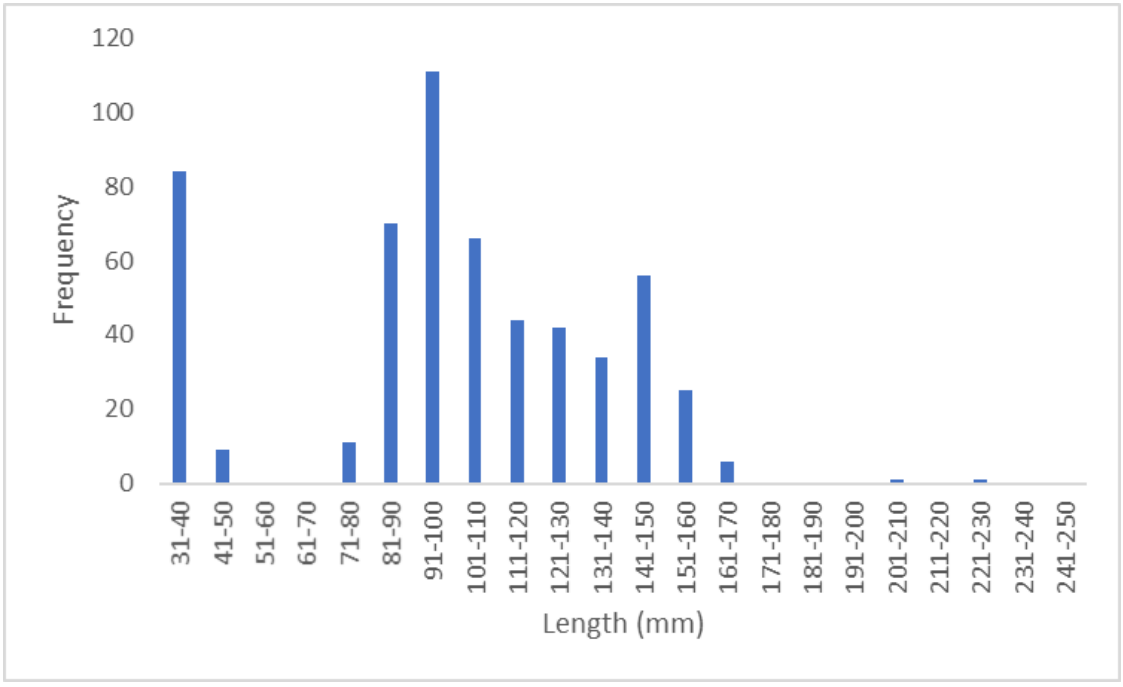


*Figure does not include fish without heads or fish used for trapping efficiency trials.

Figure 26. Length Frequency of Juvenile Chinook Sampled Season To-Date (Cougar Dam)

Trapping Efficiency

A total of 815 juvenile hatchery Chinook (parr) were bismark brown dyed, adipose clipped, left and right ventrally clipped and released on 01/19/2022 below Cougar Dam. 405 dyed, adipose, and left ventrally

clipped fish were released below the PWR and 410 dyed, adipose, and right ventrally clipped fish were released below the RO to evaluate the efficiency of the screw trap at those locations. A total of 37 fish were recaptured in the 8ft PH traps and 25 in the 5ft RO trap on 01/20/2022, with 3 more fish captured in the PH traps and 1 more fish in the RO trap on 01/21/2022 for a total of 40 recaptures in the PH traps and 26 in the RO trap. Route-specific trapping efficiency was 9.88% at the PH traps and 6.34% at the RO.

Of the 66 fish recaptured, 2 were dead and an additional 50 were injured. Injuries were primarily descaling (25) and fin damage (44). Mt. Hood Environmental staff noted that fish appeared to be in good condition upon retrieval from the hatchery.

Cougar Dam	Release #	Recapture #	Capture Efficiency
PH Route	405	40	9.88% (40/405)
RO Route	410	26	6.34% (26/410)

.

Table 16. Descriptive Statistics of Target Species Captured at the Cougar Dam Season To-Date

To-Date											
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*			
					Min	Max	Mean	Min	Max	Mean	
Cougar Dam	RO	CHS	Fry	4	34	40	36.3	N/A	N/A	N/A	
		CHS	Parr	94	72.0	152.0	101.3	4.2	34.1	11.4	
		CHS	Smolt	94	92	230.	136.8	8.8	86.1	27.6	
Cougar Dam	PWR	CHS	Fry	88	31	46	36.3	N/A	N/A	N/A	
		CHS	Parr	206	74.0	155.0	100.2	4.1	36.2	10.6	
		CHS	Smolt	73	76.0	169.0	134.8	4.2	44.3	25.1	

March 16-31, 2022										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Cougar Dam	RO	CHS	Fry	4	34	40	36.3	N/A	N/A	N/A
		CHS	Parr	18	82	127	100.7	7.0	21	11.1
		CHS	Smolt	57	92	230	133.0	8.9	86.1	25.4
Cougar Dam	PWR	CHS	Fry	88	31	46	36.3	N/A	N/A	N/A
		CHS	Parr	16	82	112	98.6	5.4	16.6	9.9
		CHS	Smolt	9	100	160	127.8	6.7	34.1	20.6

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

24-Hour Post Collection Holding Trial

A total of 109 Chinook captured in the RSTs, 26 fish from the PWR RST and 83 from the RO RST, were held for ~24 hours in holding tanks and then evaluated for survival rates. In total, 107 of the fish (98.2%) held during this period were released alive. 0 of the 26 PWR RST captured fish died during holding and 2 of the 83 RO RST captured fish (2.4%) died during holding.

Injuries and Copepod Infection

Partial descaling <20% was observed on 57 of 79 Chinook collected at the RO RST (72.2%), and descaling >20% was observed on 13 of 79 Chinook collected at the RO RST (16.5%). Of the 79 Chinook captured in the RO RST 39 displayed body injuries (49.4%) and 10 had eye injuries (12.7%). 4 RO RST Chinook displayed Gas Bubble Disease (5.1%). 2 showed GBD at the level 1 description and 1 at the level 2 description. 40 of the RO RST Chinook had copepods present in the branchial cavity (50.6%) and 25 had copepods present on fins (31.6%). Partial descaling <20% was observed on 20 of the 113 Chinook collected at the PWR RST (17.7%). Partial descaling >20% was observed on 4 of the 113 Chinook collected at the PWR RST (3.5%). 9 PWR RST fish had bodily injury (8.0%) and 3 had eye injuries (2.7%). 6 fish had copepods present in the branchial cavity (5.3%) and 5 had copepods present on fins (4.4%). There were 10 chinook mortalities collected in the RO RST (12.7%) and 5 in the PWR RST (4.4%) – 2 of which died after tagging. Data is summarized below in Table 17. A summary of injuries observed during the reporting period, and for the duration of the season are provided in Appendix A.

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

Site	Route	# CHS Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Cougar	RO	79	57	13	39	10	40	25	10
Cougar	PWR	113	20	4	9	3	6	5	5

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

Non-Target Species

A total of 99 non-target species fish were captured during the reporting period; the data is summarized below in Table 18.

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

Species	RO Capture	RO Mortality	PWR Capture	PWR Mortality	Season Total Live	Season Total Mortality
Bluegill	0	0	0	0	0	0
Lamprey	0	0	1	0	1	0
Bullhead	0	0	0	0	0	0
Crappie	0	0	0	0	0	0
Longnose Dace	0	0	0	0	0	0
Kokanee	0	0	0	0	0	0
Red-Sided Shiner	0	0	0	0	0	0
Sculpin	0	0	9	0	12	0
Spotted Bass	0	0	0	0	0	0

Sucker	0	0	0	0	0	0
Whitefish	0	0	0	0	1	0
Cutthroat	1	0	21	1	23	1
O. mykiss	4	1	45	0	57	1
Bull Trout	0	0	0	0	1	0
Unknown	1	0	17	1	17	1
Totals	**6**	**1**	**93**	**2**	**111**	**3**

Stream Statistics

Basic stream statistics at the Cougar Dam site were calculated from data downloaded from the U.S. Geological Survey stream gage number 14159410. Gage height (feet) is the only metric provided at this gage. During the reporting period, daily maximum values for instantaneous gage height ranged from 1,252 feet to 1,254.1 feet (mean: 1,253.8 feet). Figure 27 shows instantaneous gage height.

Stream temperatures were recorded every 2 hours for the length of the report period for the RO and PWR RST's (Figure 28 and 29 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 638.6 and 380.2 cubic feet per second (cfs) respectively (Figure 30). Catch per unit of effort (CPUE) data are summarized in Table 19. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

Table 19. Summary of salmonid CPUE, Cougar Dam.

	Chinook	
Description	**RO (5ft)**	**PWR(8ft)**
Catch	79	113
Effort (hrs)	385.8	771.6
CPUE (fish/hr)	0.205	0.146

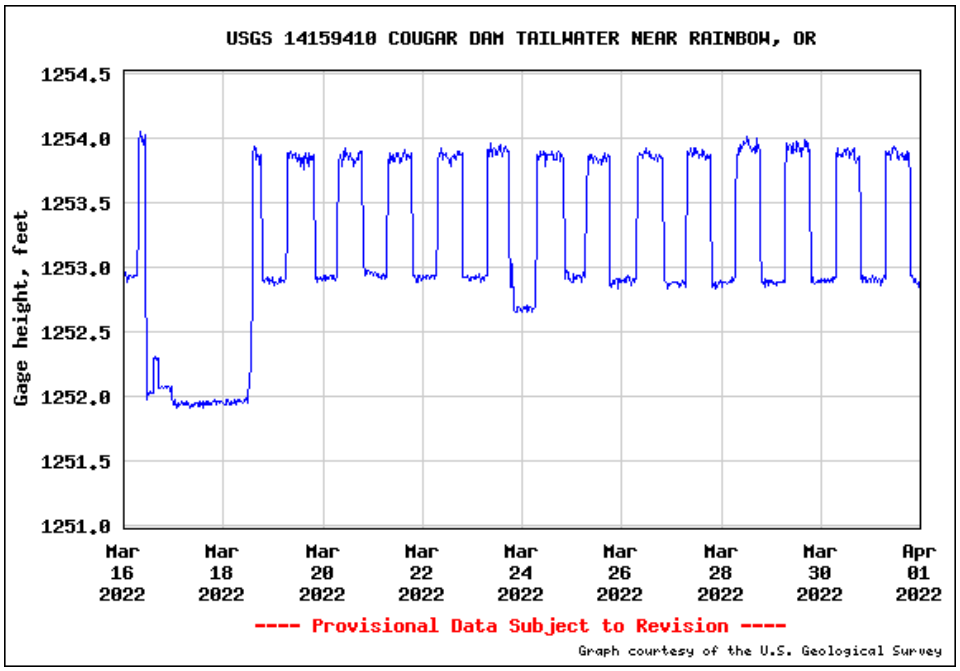


Figure 27. Gage Height (feet); below Cougar Dam, South Fork McKenzie River

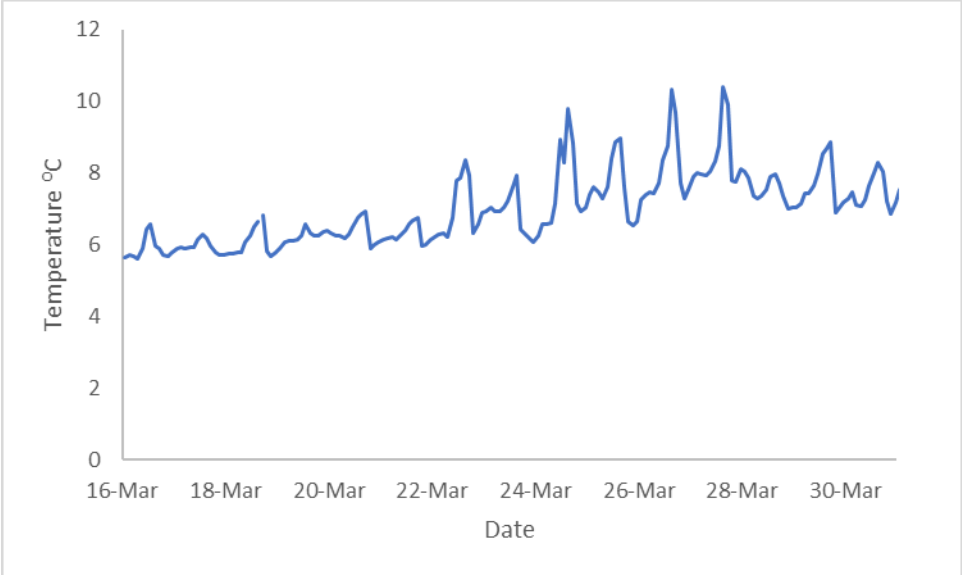


Figure 28. Temperature at RO RST (Cougar Dam)

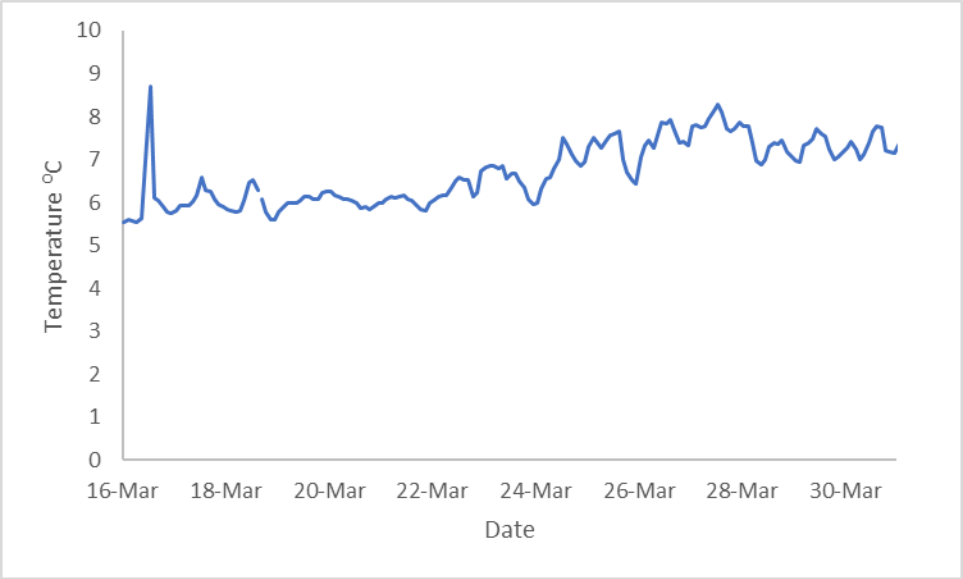


Figure 29. Temperature at PWR RST (Cougar Dam)

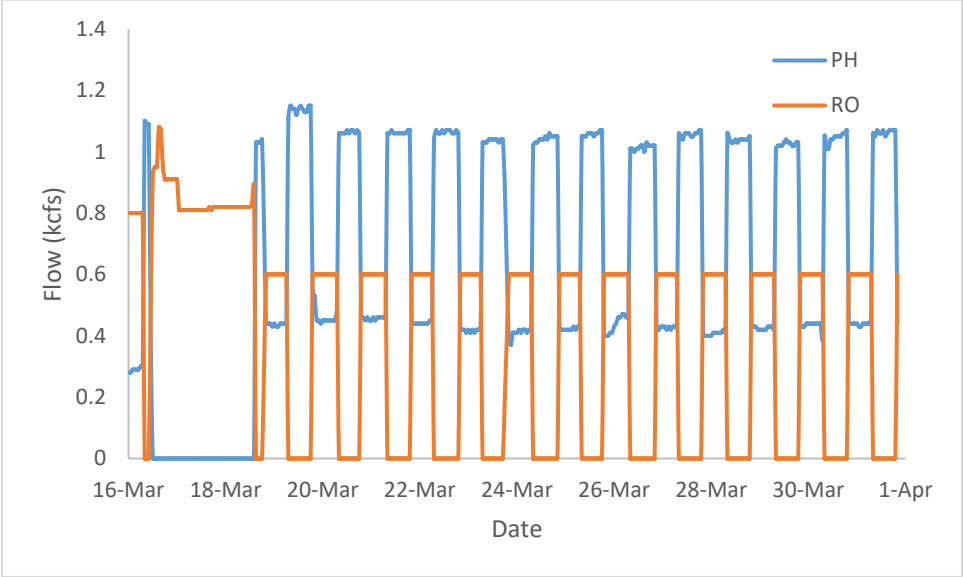


Figure 30. Hourly Flows PWR vs. RO (Cougar Dam)

South Fork of the McKenzie–Cougar Dam Head of Reservoir

Target Species

The reporting period began March 16 and ended March 31. 55 chinook salmon were captured during the 16-day sampling period (Figure 31). The trap was operated 100% of the reporting period. Table 20 provides life stage, length, and weight data for all Chinook salmon that have been caught at the site to-date and Figure 32 shows length frequency data to-date.

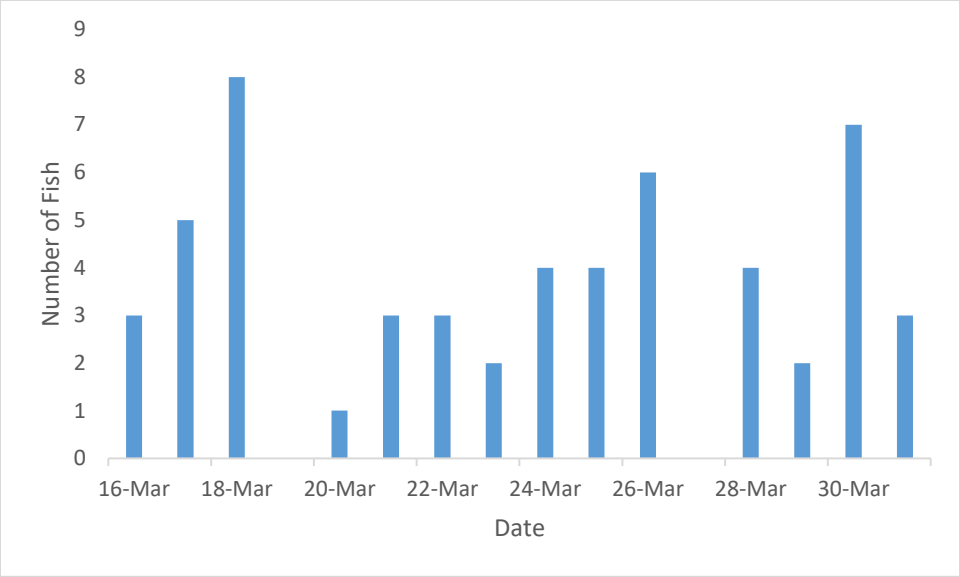


Figure 31. Chinook Captured Per Day 03/16/2022 to 03/31/2022 (Cougar Dam Head of Reservoir)

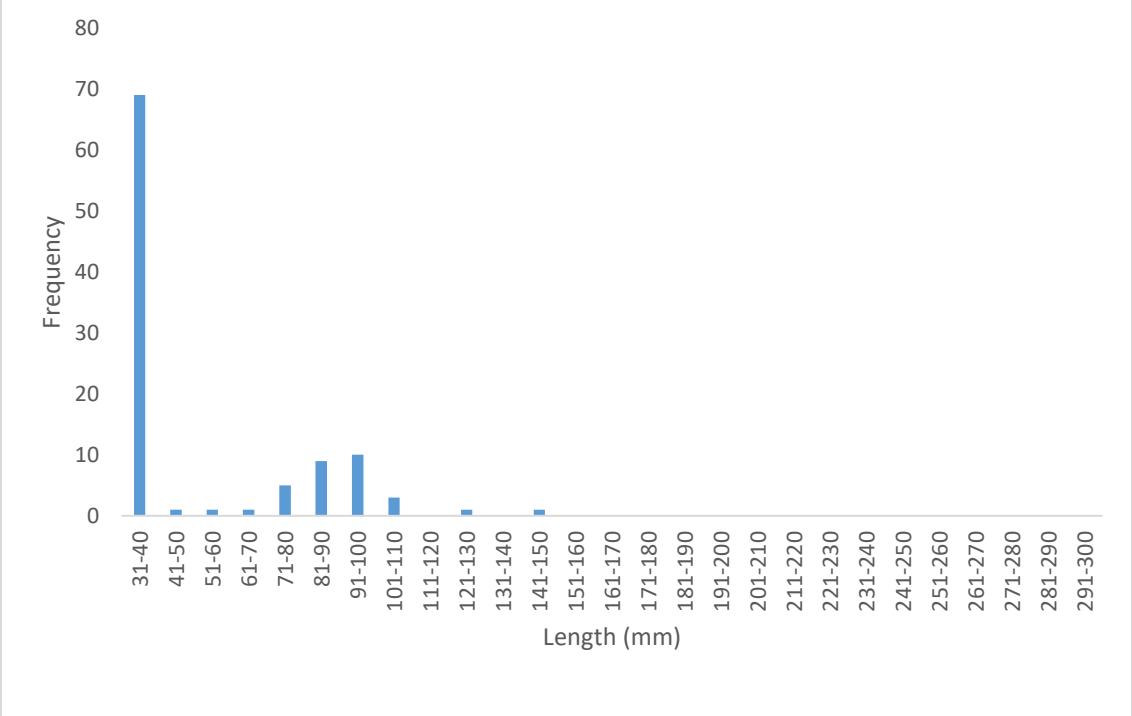


Figure 32. Length Frequency of Juvenile Chinook Sampled Season To-Date (Cougar Dam Head of Reservoir)

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

To-Date										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Cougar Dam Head of Reservoir	5 ft	CHS	Smolt	0	0	0	0	0	0	0
		CHS	Parr	31	58	150	91.3	2.3	11.2	7.6
		CHS	Fry	70	31	41	35.4	-	-	-

March 16-31, 2022										
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Cougar Dam Head of Reservoir	5 ft	CHS	Smolt	0	0	0	0	0	0	0
		CHS	Parr	26	69	150	93.2	3.2	11.2	7.9
		CHS	Fry	29	33	41	36	-	-	-

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

Trapping Efficiency

A total of 806 juvenile hatchery Chinook (smolt) were adipose clipped, left or right ventrally clipped and released on 03/18/2022 upstream of the Cougar Head of Reservoir trap site. A total of 41 fish were recaptured in the 5 ft trap between March 19th and March 25th. Trapping efficiency was 5.1%.

Of the 41 fish recaptured, 26 showed minor descaling and 32 had fin damage. Mt. Hood Environmental staff noted that fish appeared to be in good condition upon retrieval from the hatchery, only noting descaling and fin damage which is common in hatchery raised fish.

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

Injuries and Copepod Infection

55 Chinook were captured for the reporting period. Of the fish captured, partial descaling <20% was observed on 16 fish (29.1%), 2 had copepods on fins (3.6%), and 5 had bodily injury (9.1%). Injury data for the reporting period is summarized in Table 21. 1 fish died after PIT tagging. To date injury data can be found in Appendix A.

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

Site	# CHS Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Above Cougar	55	16	0	5	0	0	2	1

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

Collected DNA and Scale Samples

Scales and DNA were collected from 30 of the 55 Chinook captured (54.5%). The rest of the captured fish were under the minimum fork length threshold and samples were not collected (less than 50 mm fork length).

Non-Target Species

A total of 80 non-target fish were captured at the Cougar Dam Head of Reservoir RST during the reporting period; the data is summarized below in Table 22.

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

Species	5ft Capture	5ft Mortality	Season Total	Season Total Mortality
Bluegill	0	0	0	0
Lamprey	0	0	0	0
Bullhead	0	0	0	0
Bull Trout	0	0	0	0
Crappie	0	0	0	0
Cutthroat Trout	18	1	20	1
Longnose Dace	1	0	1	0
Red-Sided Shiner	0	0	0	0
Sculpin	0	0	1	0
Spotted Bass	0	0	0	0
Sucker	0	0	0	0
Whitefish	0	0	0	0
O. mykiss	61	0	61	0
Totals	**80**	**1**	**83**	**1**

Stream Statistics

Basic stream statistics at the site were calculated from data downloaded from the U.S. Geological Survey stream gage number 14159200. During the reporting period, daily maximum values for instantaneous discharge ranged from 720 cfs to 1,160 cfs (mean: 853.4 cfs). Figure 33 shows instantaneous discharge.

Stream temperature was recorded every two hours with a temperature probe at the trap. The temperature probe operated normally during this period. (Figure 34).

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

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

	Chinook
Description	**5 ft**
Catch	55
Effort (hrs)	386.4
CPUE (fish/hr)	0.142

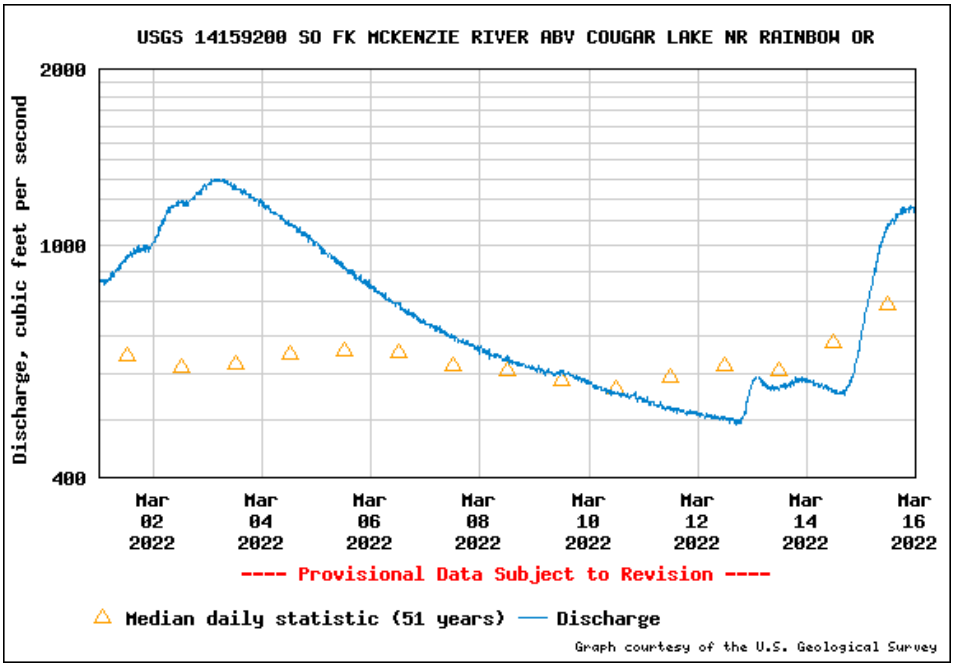


Figure 33. Gage Height (feet); South Fork McKenzie above Cougar Dam

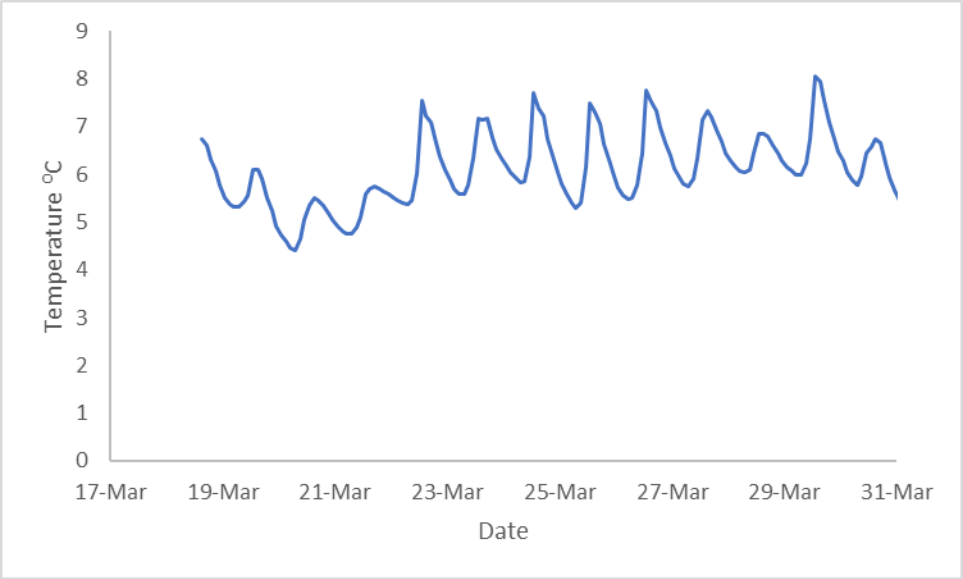


Figure 34. Temperature at RST (Cougar Dam Head of Reservoir)

Middle Fork Willamette – Fall Creek Dam Tailrace

Target Species

The reporting period began March 16 and ended March 31. No Chinook salmon were captured during the 16-day sampling period (Figure 35). The trap was operated 100% of the reporting period. Table 24 provides life stage, length, and weight data for all Chinook salmon that have been caught at the Fall Creek Head of Reservoir site to-date and Figure 36 shows length frequency data to-date.

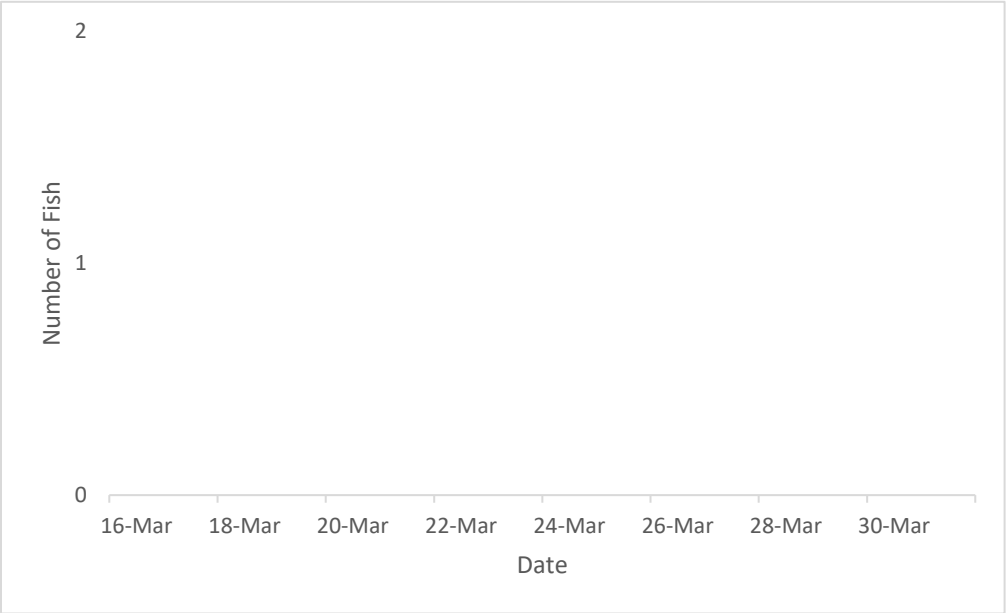


Figure 35. Chinook Captured Per Day 03/16/2022 to 03/31/2022 (Fall Creek Dam Tailrace)

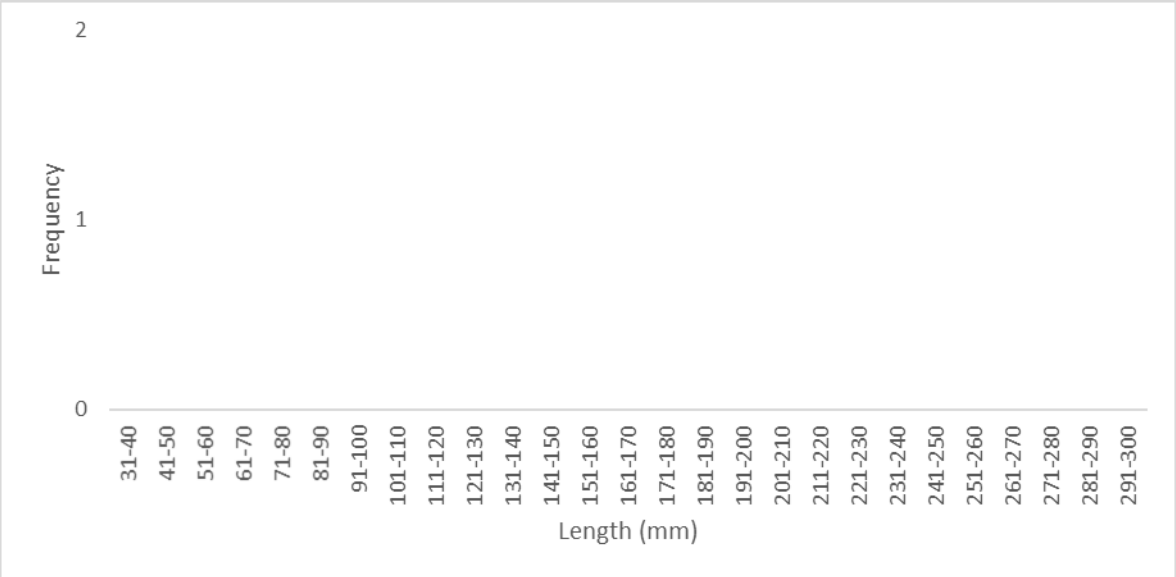


Figure 36. Length Frequency of Juvenile Chinook Sampled Season To-Date (Fall Creek Dam Tailrace)

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

To-Date											
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*			
					Min	Max	Mean	Min	Max	Mean	
Fall Creek Dam	RO	CHS	Smolt	0	0	0	0	0	0	0	
		CHS	Parr	0	0	0	0	0	0	0	

March 16-31,2022											
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*			
					Min	Max	Mean	Min	Max	Mean	
Fall Creek Dam	RO	CHS	Smolt	0	0	0	0	0	0	0	
		CHS	Parr	0	0	0	0	0	0	0	

Injuries and Copepod Infection

No Chinook were captured during this reporting period. The data is summarized in Table 25. To date injury data is listed in Appendix A.

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

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

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

Trapping Efficiency

Trapping efficiency trials have not been conducted at the Fall Creek Dam Tailrace site to date.

Non-Target Species

A total of 24 non-target fish were captured at the Fall Creek Dam Tailrace site during the reporting period; the data is summarized below in Table 26.

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

Species	8ft Capture	8ft Mortality	Season Total	Season Total Mortality
Bluegill	0	0	0	0
Lamprey	0	0	0	0
Bullhead	0	0	0	0
Bull Trout	0	0	0	0
Crappie	0	0	0	0
Cutthroat Trout	1	0	1	0
Dace	19	0	19	0
Red-Sided Shiner	3	0	3	0
Sculpin	0	0	0	0
Spotted Bass	0	0	0	0
Sucker	0	0	0	0
Whitefish	0	0	0	0
O. mykiss	1	0	1	0
Totals	**24**	**0**	**24**	**0**

Stream Statistics

Basic stream statistics at the site were calculated from data downloaded from the U.S. Geological Survey stream gage number 14151000. During the reporting period, daily maximum values for instantaneous discharge ranged from 53.4 cfs to 335 cfs (mean: 213.6 cfs). Figure 37 shows instantaneous discharge.

Stream temperatures were not recorded using temperature probes for the Fall Creek Dam Tailrace RST site during this reporting period. Until we receive more temperature probes, temperature from the USGS gage 1415100 downstream will be used and can be found below (Figure 38).

Flows In and Out of reservoir during the reporting period averaged 416 cfs and 195.4 cfs respectively (Figure 39).

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

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

	Chinook
Description	**(8 ft)**
Catch	0
Effort (hrs)	384.9
CPUE (fish/hr)	0

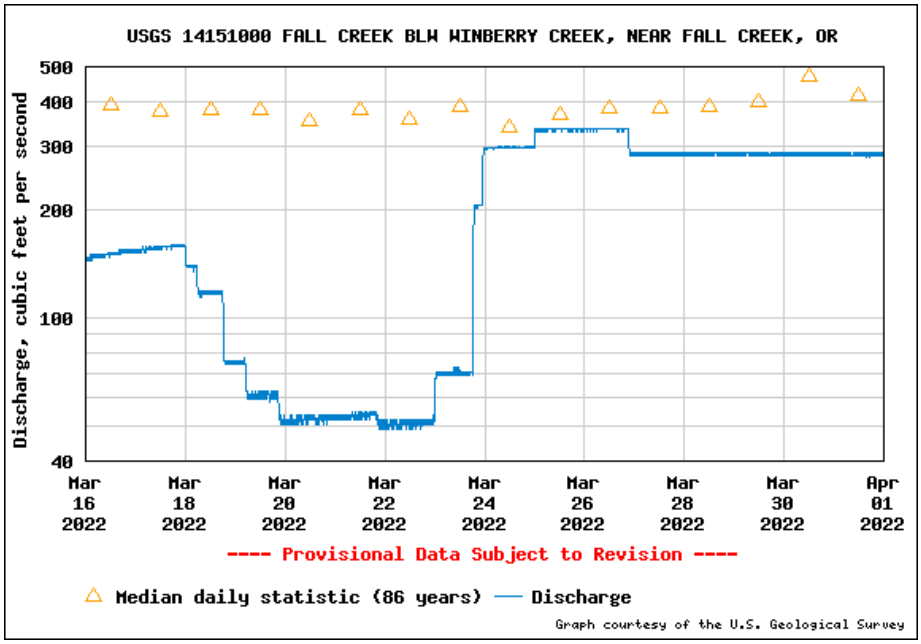


Figure 37. Discharge (cfs); Fall Creek Below Winberry Creek, Near Fall Creek, OR

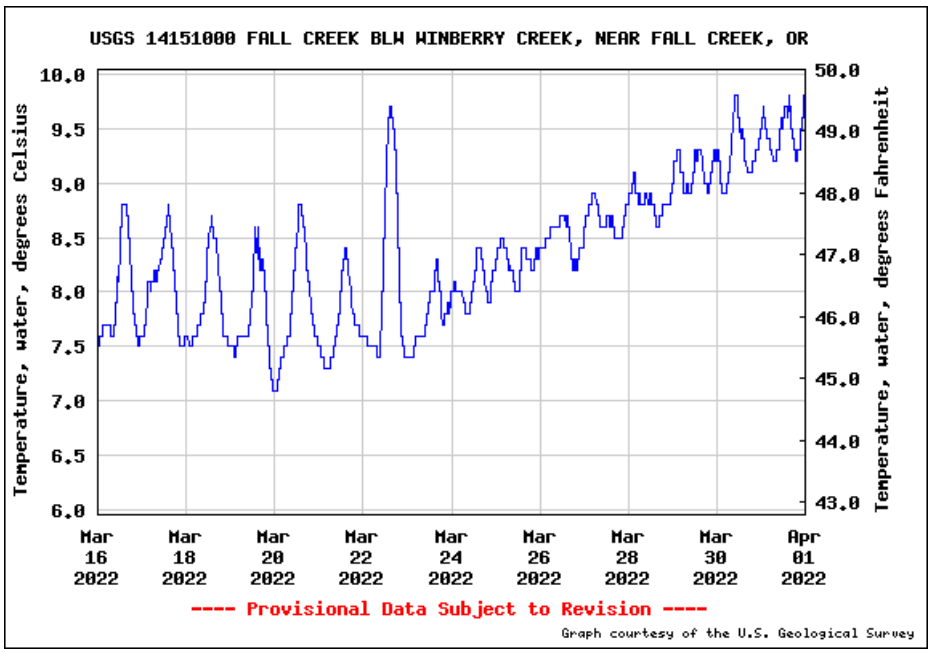


Figure 38. Temperature at RST (Fall Creek Below Winberry Creek, Near Fall Creek, OR)

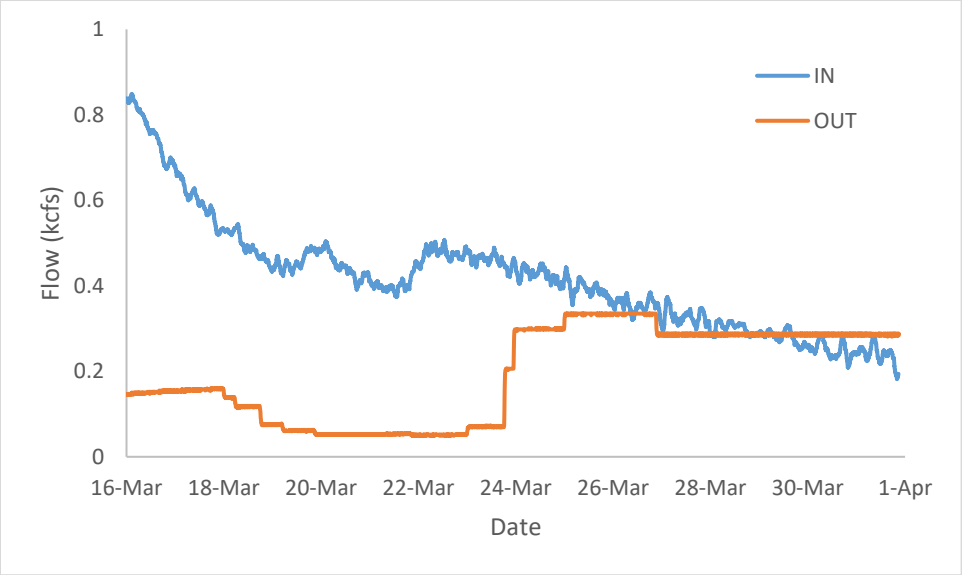


Figure 39. Hourly Flows PWR vs. RO (Fall Creek Tailrace)

Middle Fork Willamette – Fall Creek Head of Reservoir

Target Species

The reporting period began March 16 and ended March 31. Fish data for March 20th is not available at this time. No target fish were captured on this date. 4 Chinook salmon was captured during the 16-day sampling period (Figure 40). The trap was operated 100% of the reporting period. Table 28 provides life stage, length, and weight data for all Chinook salmon that have been caught at the Fall Creek Head of Reservoir site to-date and Figure 41 shows length frequency data to-date.

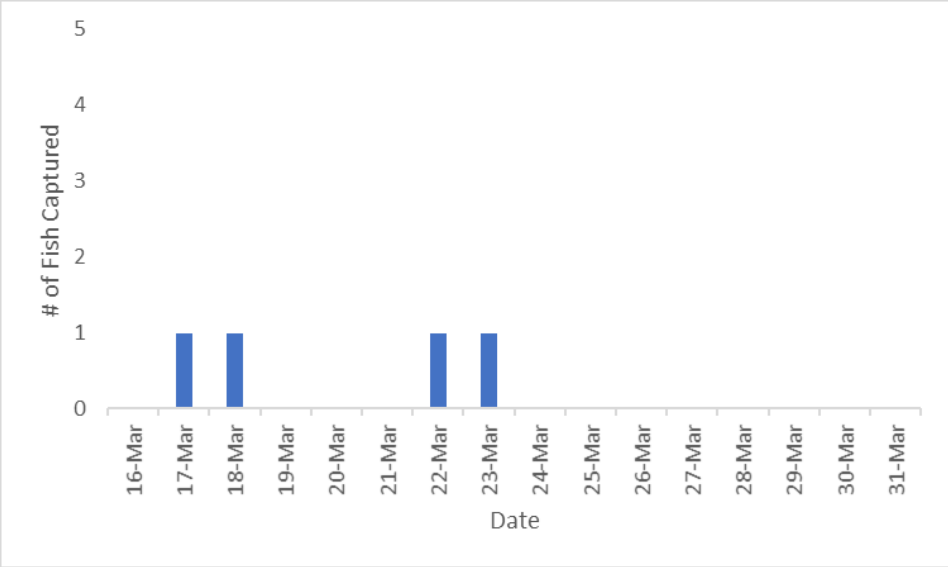


Figure 40. Chinook Captured Per Day 03/16/2022 to 03/31/2022 (Fall Creek Head of Reservoir)

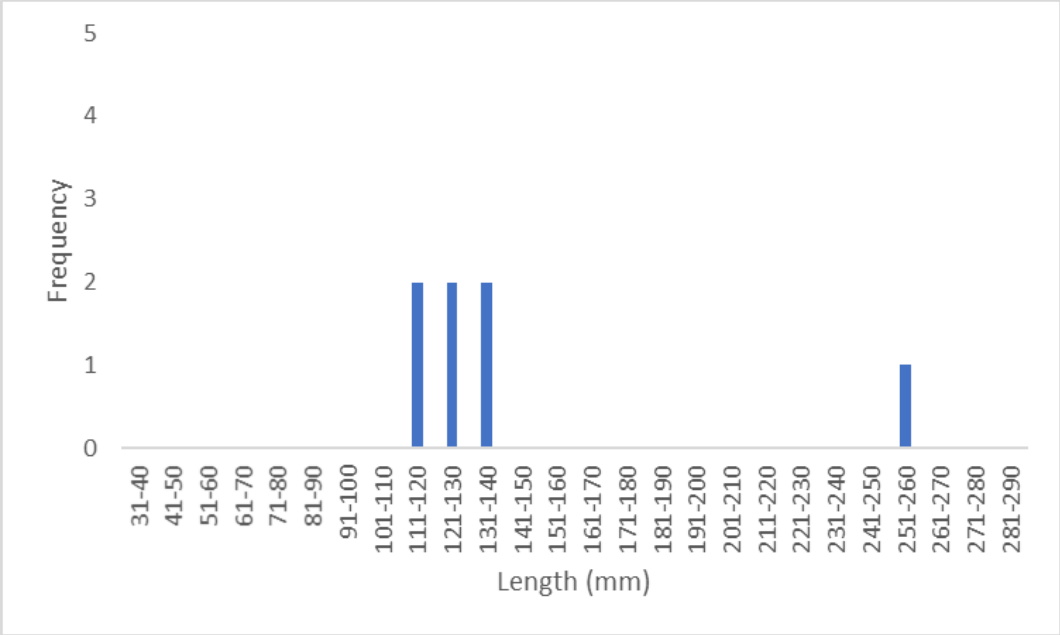


Figure 41. Length Frequency of Juvenile Chinook Sampled Season To-Date (Fall Creek Head of Reservoir)

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

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

March 16-31,2022										
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	4	127	255	164	22.2	108.5	192.8
		CHS	Parr	0	0	0	0	0	0	0

Injuries and Copepod Infection

1 of the 4 Chinook captured during the reporting period had partial descaling <20% (25%) and copepods (25%). 3 of the Chinook displayed a skin parasite (Blackspot) (75%). No other injuries on Chinook were observed. The data is summarized in Table 29. To date injury data is listed in Appendix A.

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

Site	# CHS Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Fall Creek Head of Reservoir	4	1	0	0	0	1	1	0

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

Trapping Efficiency

4 Chinook were caudal clipped and released upstream to conduct a run of river trapping efficiency trial during this period. 7 fish have been released for efficiency testing to date. 1 fish was recaptured during the reporting period (released March 18 and recaptured March 22) for an efficiency of 14.3%.

Collected DNA and Scale Samples

Scales and DNA were collected from the 4 Chinook captured (100%) for the reporting period.

Non-Target Species

A total of 151 non-target fish were captured at the Fall Creek Head of Reservoir site during the reporting period; the data is summarized below in Table 30. Non-target data for March 20th is not available and is not included in the below table.

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

Species	8ft Capture	8ft Mortality	Season Total	Season Total Mortality
Bluegill	0	0	0	0
Lamprey	33	0	112	0
Bullhead	0	0	0	0
Bull Trout	0	0	0	0
Crappie	0	0	0	0
Cutthroat Trout	28	0	57	0
Longnose Dace	11	0	14	0
Red-Sided Shiner	1	0	1	0
Sculpin	1	0	1	0
Spotted Bass	0	0	0	0
Sucker	3	0	3	0
Whitefish	0	0	0	0
O. mykiss	74		84	0
Totals	**151**	**0**	**272**	**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 4.4 feet (mean: 3.7 feet). Figure 42 shows instantaneous gage height.

Stream temperatures were recorded every 2 hours for the Fall Creek RST (Figure 43). Temperature probes for the Fall Creek RST operated normally throughout this reporting period.

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

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

	Chinook
Description	**8 ft**
Catch	4
Effort (hrs)	380.4
CPUE (fish/hr)	0.011

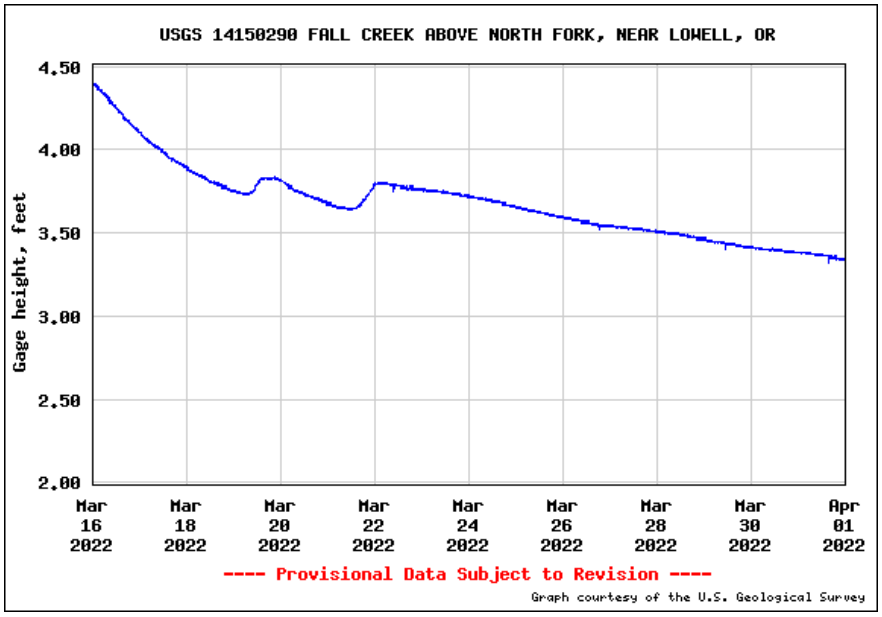


Figure 42. Gage Height (feet); Fall Creek Above North Fork, Near Lowell OR

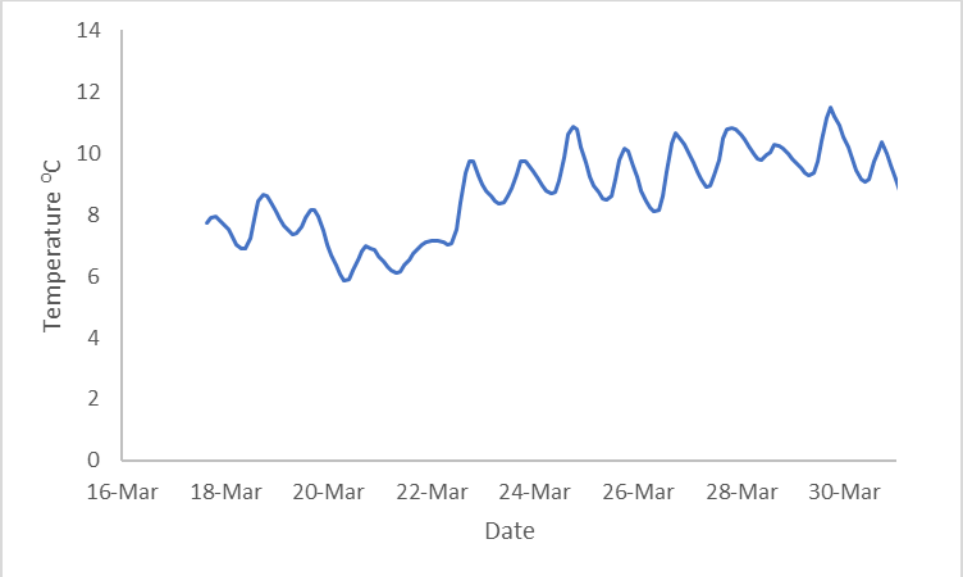
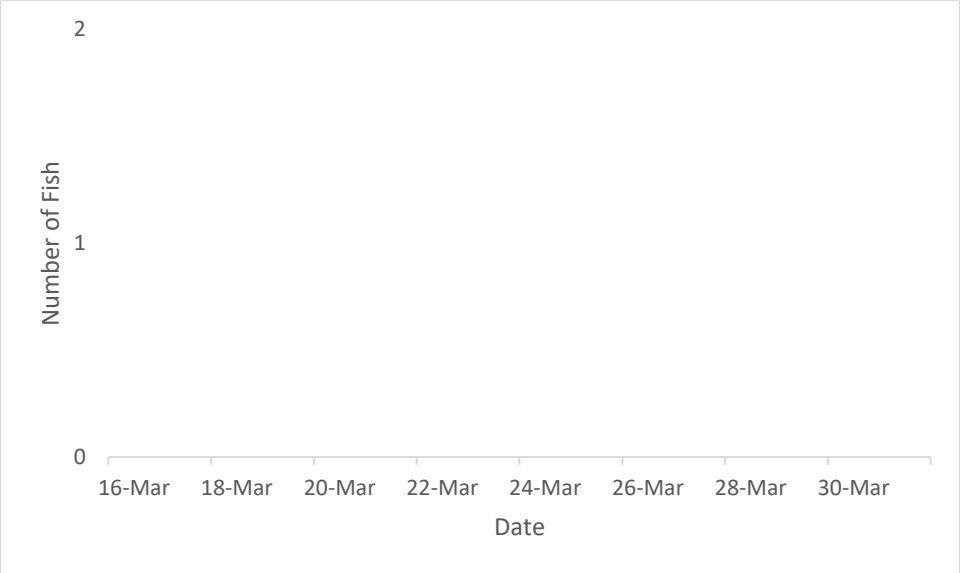


Figure 43. Temperature at RST (Fall Creek Head of Reservoir)

Middle Fork Willamette– Dexter Dam

Target Species

This reporting period began on March 16 and ended on March 31. There were no Chinook salmon (CHS) captured during the 16-day sampling period (Figure 44). Sampling duration was 100% for the 5 ft RST. Table 32 provides life stage, length, and weight data for all Chinook salmon that have been caught at the Dexter Dam site to-date and for the reporting period. Figure 44 shows the daily capture numbers for Chinook and Figure 45 shows length frequency data to-date.



*Recaptured fish for trapping efficiency trials not included.

Figure 44. Chinook Captured Per Day 03/16/2022 to 03/31/2022 (Dexter Dam)

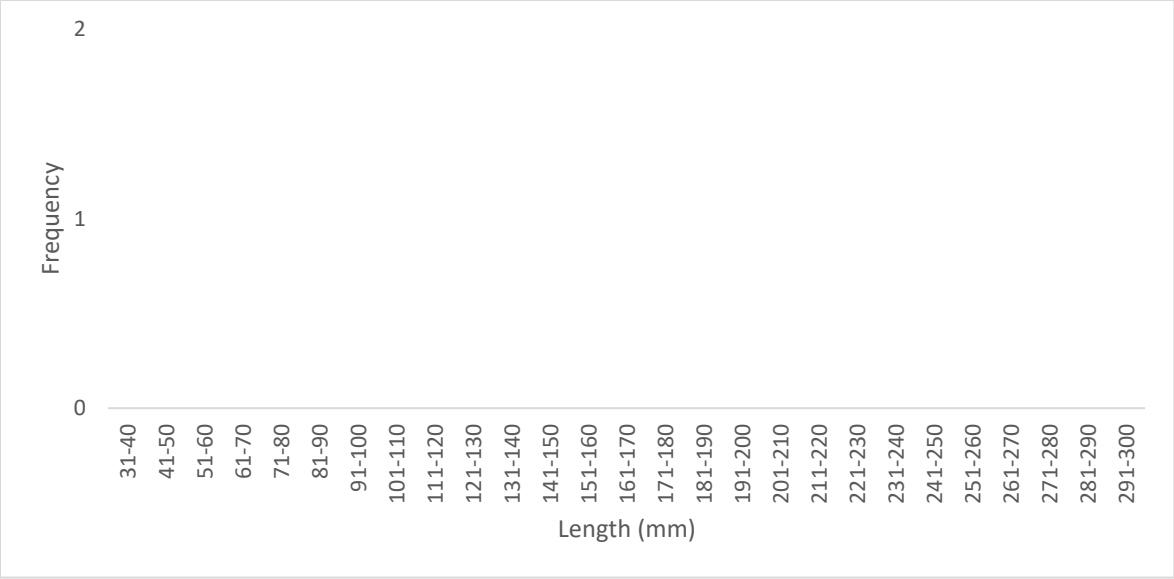


*Figure does not include fish without heads or fish used for trapping efficiency trials.

Figure 45. Length Frequency of Juvenile Chinook Sampled Season To-Date (Dexter Dam)

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

To-Date										
Site	Trap	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Dexter Dam	5 ft	CHS	Parr	0	0	0	0	0	0	0
		CHS	Smolt	0	0	0	0	0	0	0

March 16-31,2022										
Site	Trap	Species	Life stage	Collected	Length (mm)*			Weight (g)*		
					Min	Max	Mean	Min	Max	Mean
Dexter Dam	5 ft	CHS	Parr	0	0	0	0	0	0	0
		CHS	Smolt	0	0	0	0	0	0	0

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

Trapping Efficiency

A total of 988 juvenile hatchery Chinook (parr) were bismark brown dyed, adipose clipped, upper caudal clipped and released on 03/23/2022 below Dexter Dam. Fish were released in small groups into different locations in the spillway flow to evaluate the traps efficiency capturing fish passing through spill. 2 fish were recaptured in the 5 foot RST for an efficiency of 0.2%.

Both of the 2 fish recaptured were injured. Injuries were descaling and fin damage. 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.

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

24-Hour Post Collection Holding Trial

No Chinook were captured in the RST; therefore, no fish were held for ~24 hours.

Injuries and Copepod Infection

No Chinook were captured during this reporting period; therefore, no injuries are reported.

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

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

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

Non-Target Species

A total of 63 non-target species fish were captured during the reporting period; the data is summarized below in Table 34. Dexter Fish Facility releases adipose clipped Chinook near our trapping site. Adipose clipped Chinook caught in our trap are being counted as non-target fish to provide better clarity on data concerning run of river Chinook. 2 sculpin captured during this period displayed gas bubble disease (1 level 1, 1 level 3).

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

Species	Capture	Mortality	Season Total Live	Season Total Mortality
Bluegill	0	0	0	0
Brook Lamprey	0	0	0	0
Bullhead	0	0	0	0
Crappie	2	0	3	0
Longnose Dace	1	0	1	0
Kokanee	0	0	0	0
Red-Sided Shiner	0	0	0	0
Sculpin	56	2	57	2
Spotted Bass	0	0	0	0
Sucker	0	0	0	0
Whitefish	0	0	0	0
Cutthroat	0	0	0	0

O. mykiss	0	0	0	0
Chinook (AD Clipped)	4	0	4	0
Totals	**63**	**2**	**65**	**2**

Stream Statistics

Basic stream statistics at the Dexter Dam site were calculated from data downloaded from the U.S. Geological Survey stream gage number 14149510. Gage height (feet) is the only metric provided at this gage. During the reporting period, daily maximum values for instantaneous gage height ranged from 637.1 feet to 637.3 feet (mean: 637.1 feet). Figure 46 shows instantaneous gage height.

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 47.

Flows through the Powerhouse and RO during the reporting period averaged 273.8 and 332.4 cubic feet per second (cfs) respectively (Figure 48). Catch per unit of effort (CPUE) data are summarized in Table 35. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

Table 35. Summary of salmonid CPUE, Dexter Dam.

	Chinook
Description	**8 ft**
Catch	0
Effort (hrs)	386.4
CPUE (fish/hr)	0

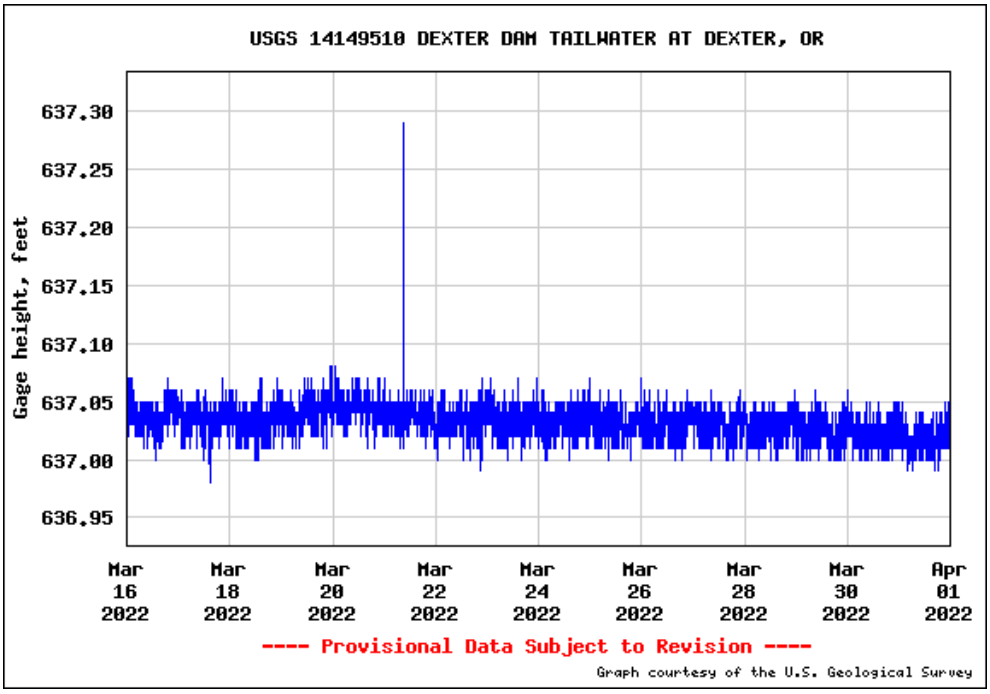


Figure 46. Gage Height (feet); below Dexter Dam, Middle Fork Willamette

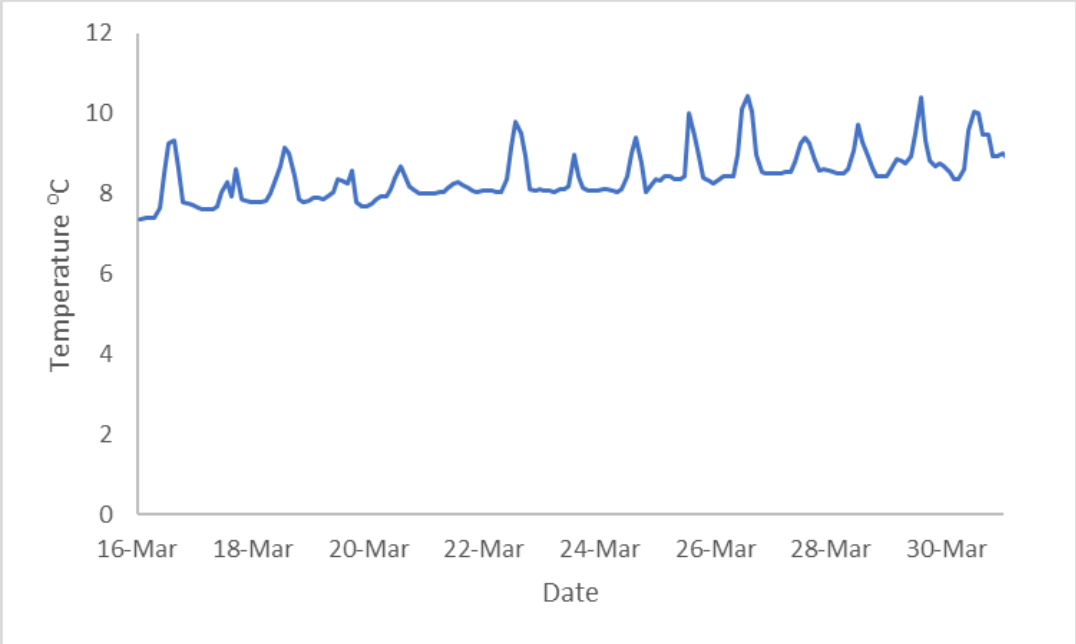


Figure 47. Temperature at RST (Dexter Dam)

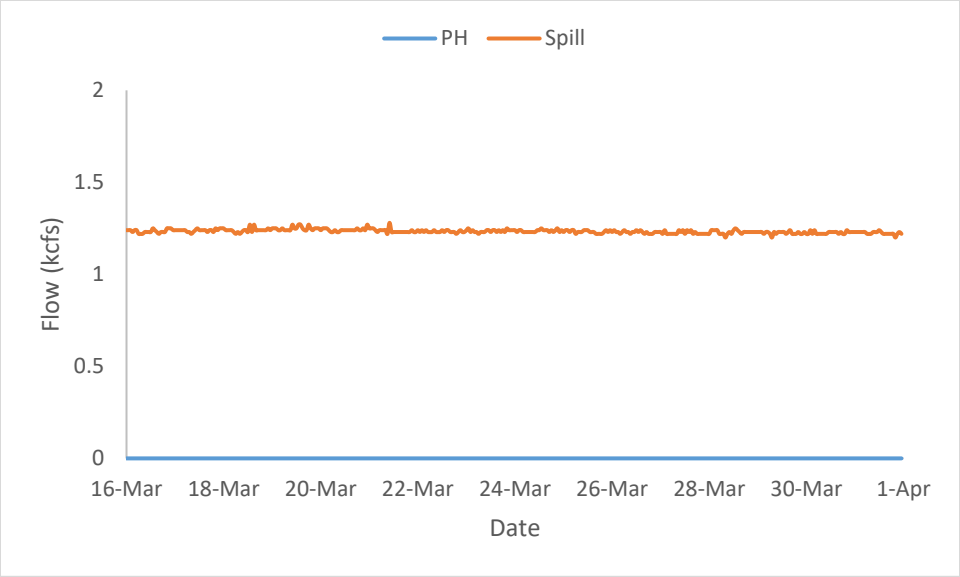


Figure 48. Hourly Flows PWR vs. RO (Dexter Dam)

Middle Fork Willamette – Lookout Dam Tailrace

Target Species

The reporting period began March 16 and ended March 31. 0 chinook salmon were captured during the 16-day sampling period (Figure 49). The trap was operated 100% of the reporting period. Table 36 provides life stage, length, and weight data for all Chinook salmon that have been caught at the Lookout Point Dam Tailrace site to-date and Figure 50 shows length frequency data to-date.

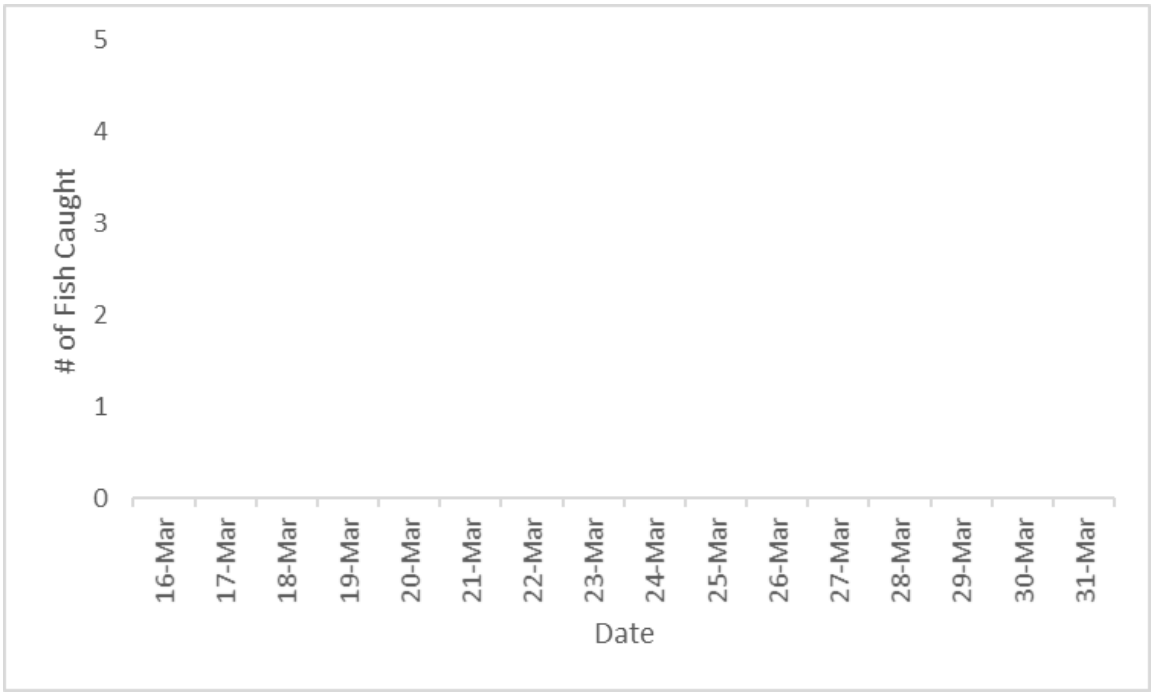


Figure 49. Chinook Captured Per Day 03/16/2022 to 03/31/2022 (Lookout Point Dam Tailrace)

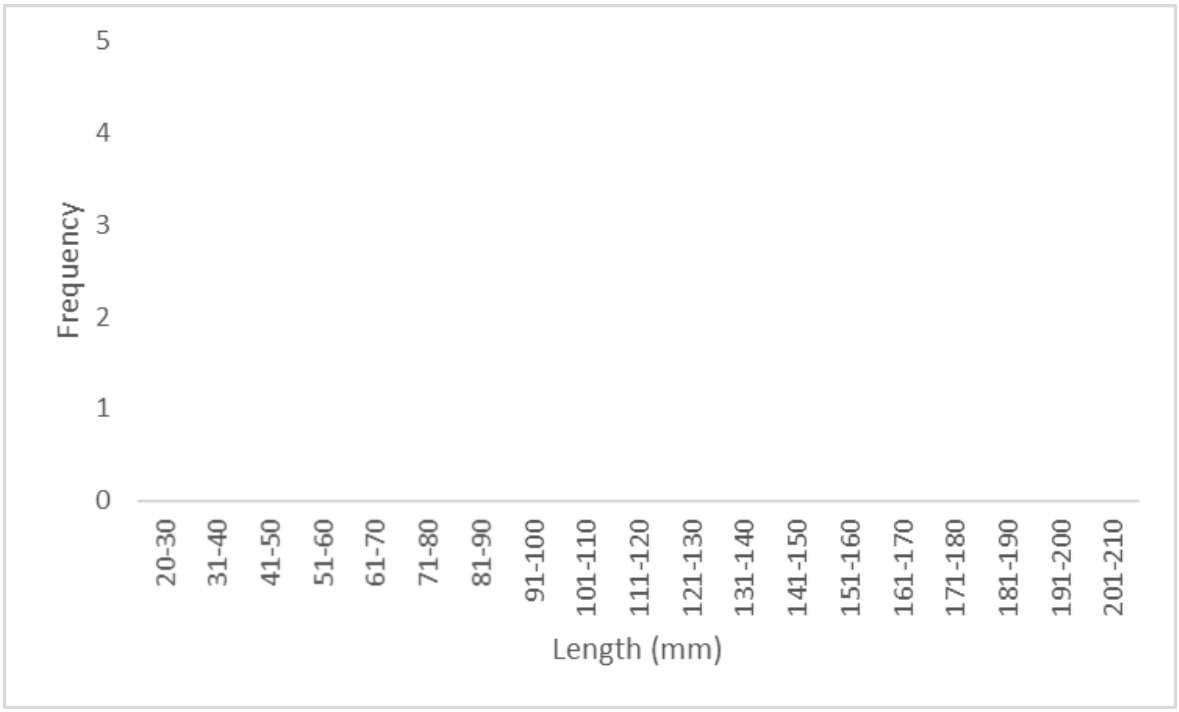


Figure 50. Length Frequency of Juvenile Chinook Sampled Season To-Date (Lookout Point Dam Tailrace)

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

To-Date											
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*			
					Min	Max	Mean	Min	Max	Mean	
Lookout Point Dam	PH 1	CHS	Smolt	0	0	0	0	0	0	0	
		CHS	Parr	0	0	0	0	0	0	0	
		CHS	Fry	0	0	0	0	0	0	0	
	PH 2	CHS	Smolt	0	0	0	0	0	0	0	
		CHS	Parr	0	0	0	0	0	0	0	
		CHS	Fry	0	0	0	0	0	0	0	
	Spill	CHS	Smolt	0	0	0	0	0	0	0	
		CHS	Parr	0	0	0	0	0	0	0	
		CHS	Fry	0	0	0	0	0	0	0	

March 16-31, 2022											
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*			
					Min	Max	Mean	Min	Max	Mean	
Lookout Point Dam	PH 1	CHS	Smolt	0	0	0	0	0	0	0	
		CHS	Parr	0	0	0	0	0	0	0	
		CHS	Fry	0	0	0	0	0	0	0	
	PH 2	CHS	Smolt	0	0	0	0	0	0	0	
		CHS	Parr	0	0	0	0	0	0	0	
		CHS	Fry	0	0	0	0	0	0	0	
	Spill	CHS	Smolt	0	0	0	0	0	0	0	
		CHS	Parr	0	0	0	0	0	0	0	
		CHS	Fry	0	0	0	0	0	0	0	

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

Injuries and Copepod Infection

No Chinook were captured for the reporting period.

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

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 Dam Tailrace	0	0	0	0	0	0	0	0

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

Non-Target Species

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

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

Species	PWR Capture	PWR Mortality	Spill Capture	Spill Mortality	Season Total	Season Total Mortality
Bluegill	1	0	0	0	1	0
Lamprey	0	0	0	0	0	0
Bullhead	0	0	0	0	0	0
Bull Trout	0	0	0	0	0	0
Crappie	1	0	0	0	1	0
Cutthroat Trout	0	0	0	0	0	0
Longnose Dace	0	0	0	0	0	0
Red-Sided Shiner	0	0	0	0	0	0
Sculpin	0	0	0	0	0	0
Smallmouth Bass	15	5	0	0	15	5
Sucker	0	0	0	0	0	0
Whitefish	0	0	0	0	0	0
O. mykiss	0	0	0	0	0	0
Totals	**17**	**5**	**0**	**0**	**17**	**5**

Stream Statistics

Basic stream statistics at Lookout Dam Tailrace site were calculated from data downloaded from the U.S. Geological Survey stream gage number 14149010. Gage height (feet) is the only metric provided at this gage. During the reporting period, daily maximum values for instantaneous gage height ranged from 693 feet to 693.7 feet (mean: 693.5 feet). Figure 51 shows instantaneous gage height.

Stream temperatures were not recorded using temperature probes for the Lookout Dam Tailrace RST site during this reporting period. The stream gage nearby also does not record temperature. Until we receive more temperature probes, temperature taken during site visits will be used to formulate figure data for PWR and Spill, figures 52 and 53 respectively.

Flows through the Powerhouse and RO during the reporting period averaged 273.8 and 332.4 cubic feet per second (cfs) respectively (Figure 54). Catch per unit of effort (CPUE) data are summarized in Table

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

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

	Chinook		
Description	**PH 1**	**PH 2**	**Spill**
Catch	0	0	0
Effort (hrs)	384.5	384.5	384.5
CPUE (fish/hr)	0	0	0

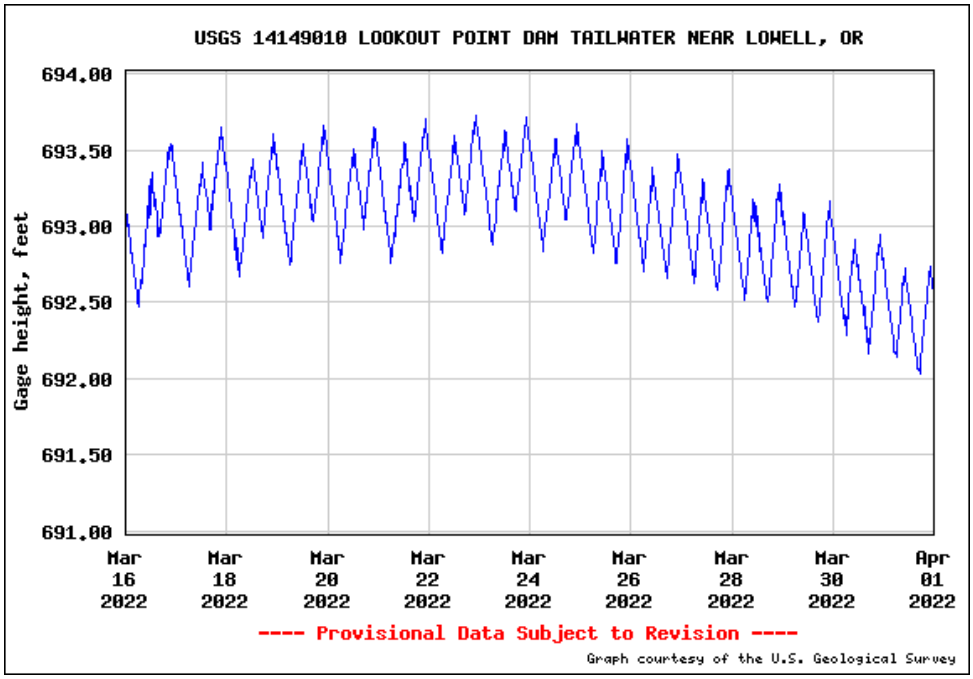


Figure 51. Gage Height (feet); below Lookout Dam

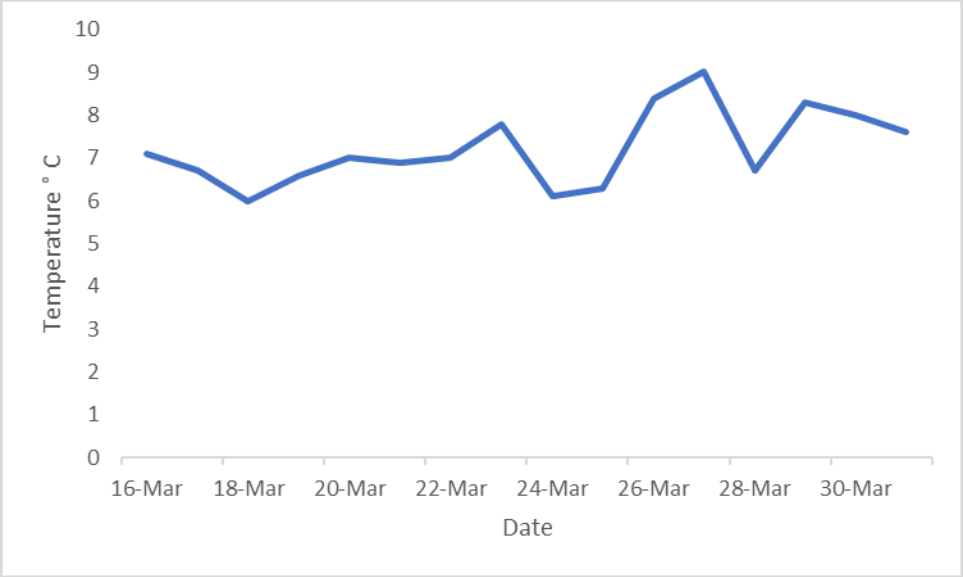


Figure 52. Temperature at RST (Lookout Dam PWR)

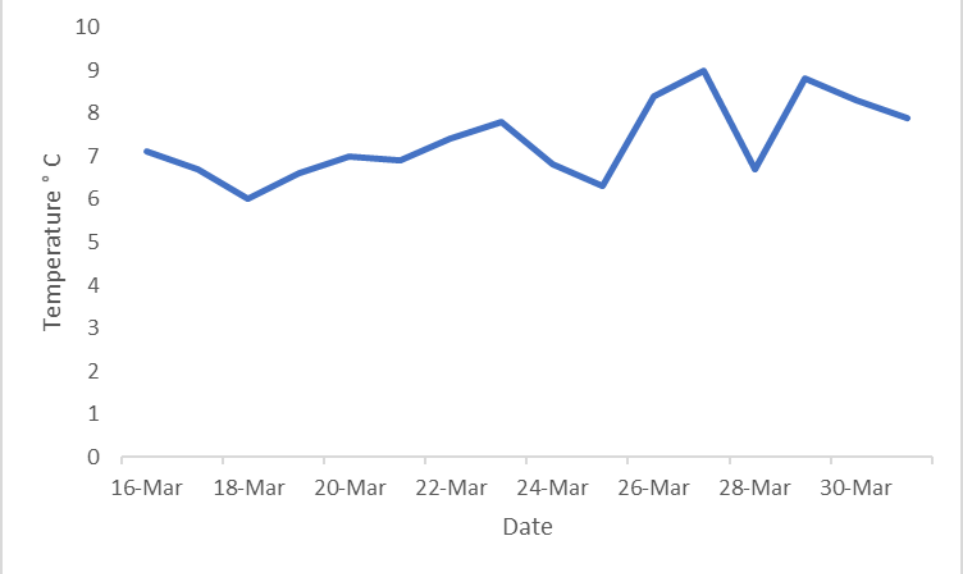


Figure 53. Temperature at RST (Lookout Dam Spill)

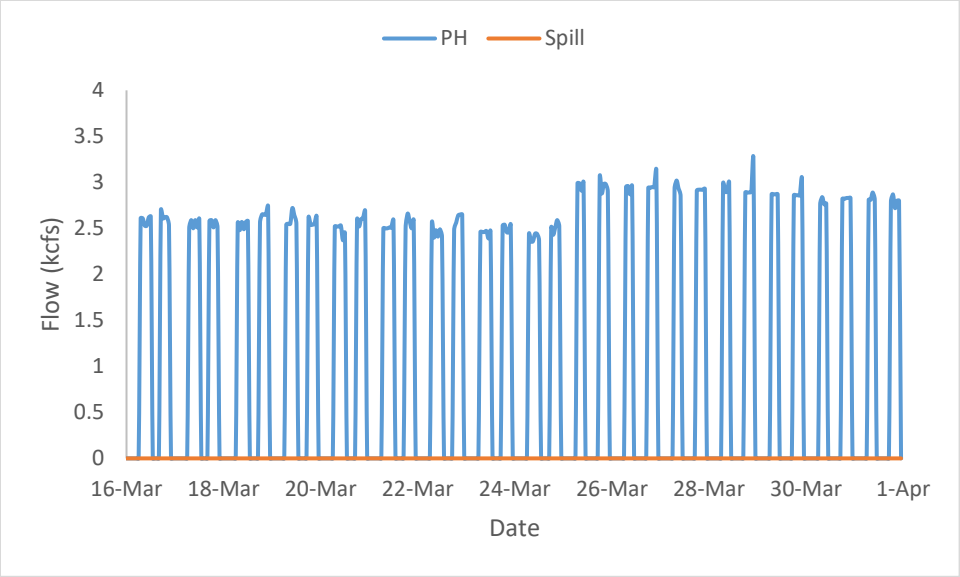


Figure 54. Hourly Flows PWR vs. RO (Lookout Dam Tailrace)

Middle Fork Willamette – Lookout Point Head of Reservoir

Target Species

The reporting period began March 16 and ended March 31. 29 chinook salmon were captured during the 16-day sampling period (Figure 55). The trap was operated 100% of the reporting period. Table 40 provides life stage, length, and weight data for all Chinook salmon that have been caught at the Middle Fork Willamette Above Lookout Point site to-date and Figure 56 shows length frequency data to-date.

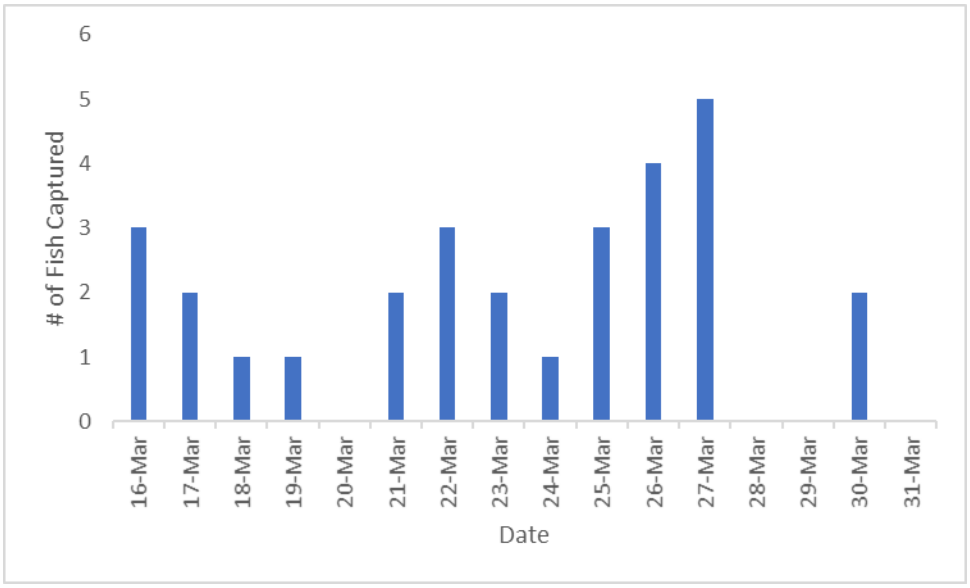


Figure 55. Chinook Captured Per Day 03/16/2022 to 03/31/2022 (Lookout Point Head of Reservoir)

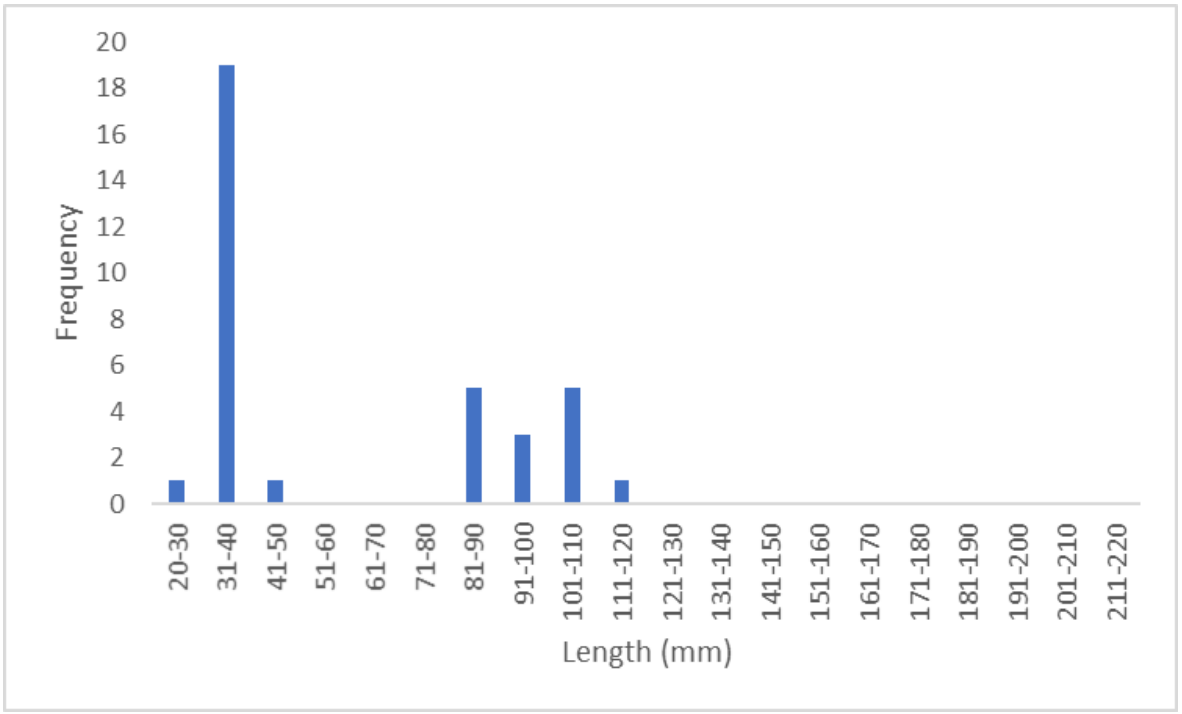


Figure 56. Length Frequency of Juvenile Chinook Sampled Season To-Date (Lookout Point Head of Reservoir)

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

To-Date											
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*			
					Min	Max	Mean	Min	Max	Mean	
Lookout Point Head of Reservoir	5 ft	CHS	Smolt	0	0	0	0	0	0	0	
		CHS	Parr	14	86	115	97	4.1	12.6	8.3	
		CHS	Fry	21	28	42	34.4	N/A	N/A	N/A	

March 16-31, 2022											
Site	Route	Species	Life stage	Collected	Length (mm)*			Weight (g)*			
					Min	Max	Mean	Min	Max	Mean	
Lookout Point Head of Reservoir	5 ft	CHS	Smolt	0	0	0	0	0	0	0	
		CHS	Parr	14	86	115	97	4.1	12.6	8.3	
		CHS	Fry	15	28	38	34.2	N/A	N/A	N/A	

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

Injuries and Copepod Infection

Partial descaling <20% was observed on 9 of the 29 Chinook captured (31%). 5 Chinook displayed bodily injuries (17.2%) and 0 had eye injury. 1 Chinook had copepods present on its fins (3.4%). Injury data for the reporting period is shown in table 41. To date data can be found in Appendix A.

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

Site	# CHS Collected	# DSC* <20%	# DSC* >20%	# with Body Injuries	# with Eye Injuries	# with COP* In B.C.	# with COP* on Fins	Mortalities
Lookout Point Head of Reservoir	29	9	0	5	0	0	1	0

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

Collected DNA and Scale Samples

Scales and DNA were collected for 16 of the Chinook captured for the reporting period. The rest of the Chinook captured were under the minimum fork length thresholds for collecting samples (less than 50 mm fork length).

Non-Target Species

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

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

Species	8ft Capture	8ft Mortality	Season Total	Season Total Mortality
Bluegill	1	0	1	0
Lamprey	0	0	0	0
Bullhead	0	0	0	0
Bull Trout	0	0	0	0
Crappie	0	0	0	0
Cutthroat Trout	4	0	4	0
Longnose Dace	0	0	0	0
Red-Sided Shiner	1	0	1	0
Sculpin	0	0	0	0
Smallmouth Bass	1	0	1	0
Sucker	3	0	3	0
Whitefish	0	0	0	0
O. mykiss	17	0	17	0
Totals	**27**	**0**	**27**	**0**

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 gage number 14148000. During the reporting period, daily maximum values for instantaneous discharge ranged from 2,850 cfs to 3,460 cfs (mean: 3,089.4 cfs). Figure 57 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 58)

Catch per unit of effort (CPUE) data are summarized in Table 43. Discharge and capture data for the duration of monitoring efforts at this location are provided in Appendix B.

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

	Chinook
Description	**5 ft**
Catch	29
Effort (hrs)	388.9
CPUE (fish/hr)	0.075

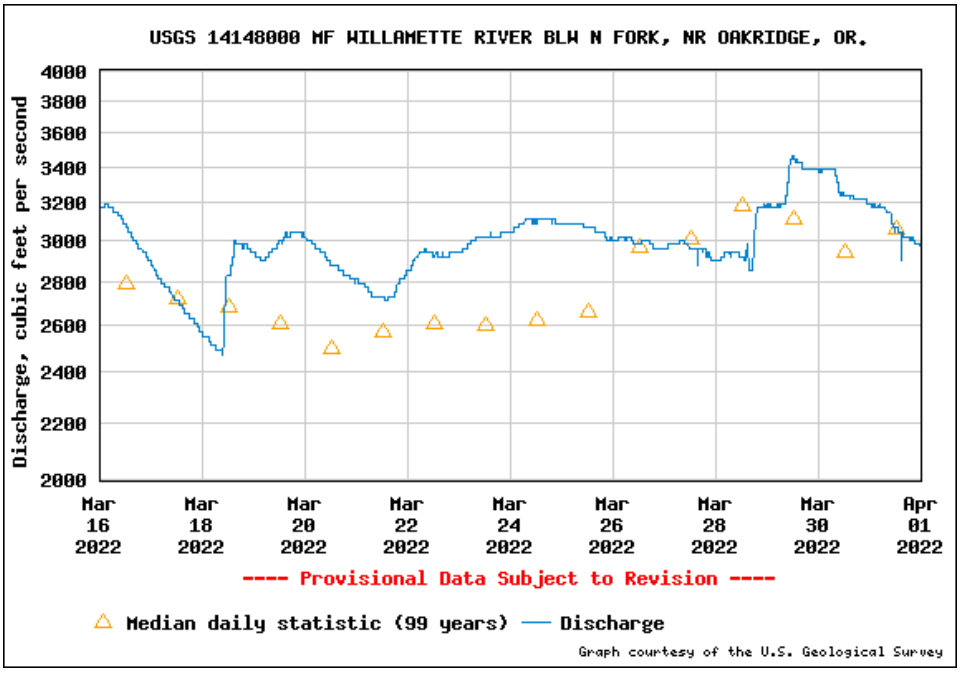


Figure 57. Discharge (cfs); above Lookout Point Reservoir, Below Oakridge, OR

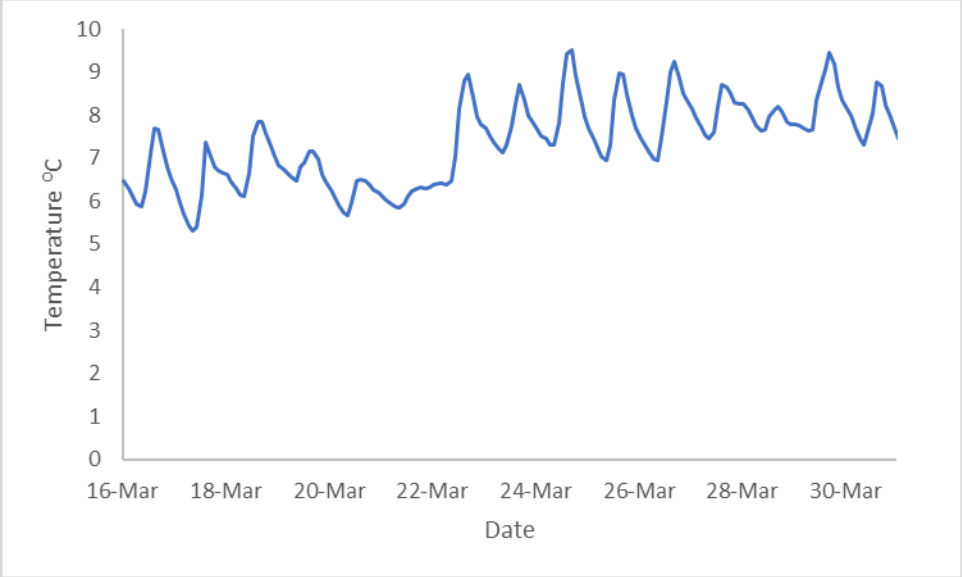


Figure 58. Temperature at RST (Lookout Point Head of Reservoir)

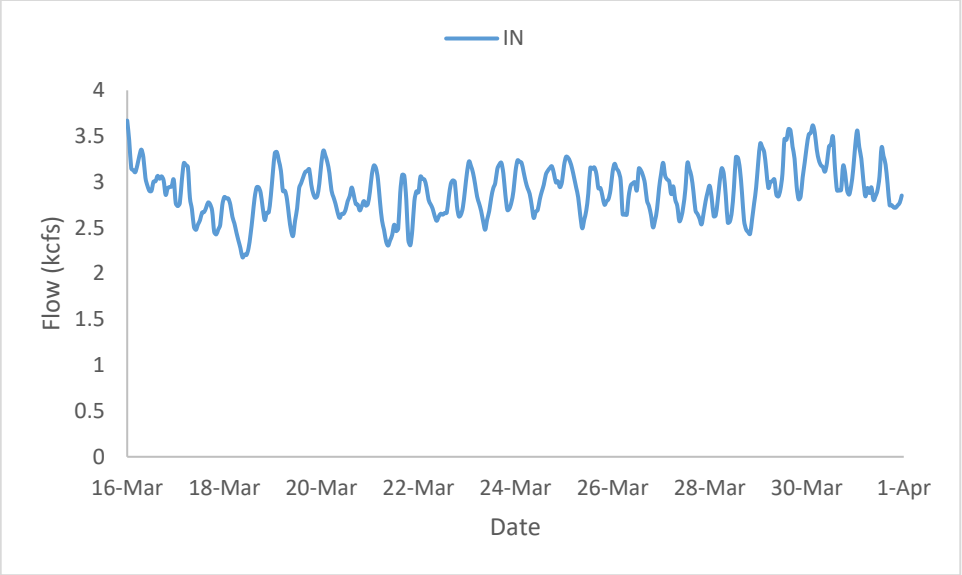


Figure 59. Hourly Flows (Lookout Point Head of Reservoir site)

Issues Encountered

One datasheet was misplaced between being recorded in the field and being entered and filed in the office. Crews confirmed no target fish were captured at the site and date.

Upcoming USACE Support Services

None

Appendix A

Chinook (CHS)

Site/Trap/Life Stage	Total Fish	Injuries to-date																					
		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	58		24		6	1		52	7	1	13	1			5	2	2	2	8	1			
PH	58		24		6	1		52	7	1	13	1			5	2	2	2	8	1			
Parr	16		4			1		11	1		2					1			1				
Smolt	42		20		6			41	6	1	11	1			5	1	2	2	7	1			
Foster Dam HOR	45		4		1						1												
5 ft	45		4		1						1												
Parr	1		1																				
Smolt	2		2								1												
Fry	42		1		1																		
Cougar Dam	564	1	276		49	2		257	51	2	##		3	2	10	1	16	4	27	18	10		8
RO	192		114		33	1		122	26	2	62				3	1	12	2	17	11	5		8
Parr	94		50		21			47	12		22				1		4	1	5	5			5
Smolt	94		64		12	1		75	14	2	40				2	1	8	1	12	6	5		3
Fry	4																						
PH	372	1	162		16	1		135	25		60		3	2	7		4	2	10	7	5		
Parr	207		114		10	1		84	13		42		1		4		2	2	5	3	4		
Smolt	75		48		5			51	12		18		2		3		2		5	3	1		
Fry	88	1			1															1			
Unk	2													2									
Cougar Dam HOR	101		19					3			5												
5 ft	101		19					3			5												
Parr	31		19					3			5												
Fry	70																						
Fall Creek HOR	7		3					2			1												
8 ft	7		3					2			1												
Parr	2		2					1			1												
Smolt	5		1					1															
Lookout Point HOR	35		9								4						1						
5 ft	35		9								4						1						
Parr	14		9								4						1						
Fry	21																						
Hills Creek Dam	95		53		10			70	32		20		8	1	24	8	3	3	5	3	4		
RO	63		35		4			49	21		13		6		18	6	2	2	4	1	1		
Parr	6		1					1									1						
Smolt	57		34		4			48	21		13		6		18	6	1	2	4	1	1		
PH	32		18		6			21	11		7		2	1	6	2	1	1	1	2	3		
Parr	7		4					1	1							1				1			
Smolt	25		14		6			20	10		7		2	1	6	1	1	1	1	1	3		

Chinook (CHS)

Injuries During Reporting Period (3-16-2022 to 3-31-2022)																							
Site/Trap/Life Stage	Total Fish	MUNK	DS<2	BLO	EYB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD
Big Cliff Dam	4		2		1			4	1		2												
8 ft	4		2		1			4	1		2												
Parr	1							1															
Smolt	3		2		1			3	1		2												
Foster Dam HOR	45		4		1						1												
5 ft	45		4		1						1												
Parr	1		1																				
Smolt	2		2								1												
Fry	42		1		1																		
Cougar Dam	190	1	65		11	1		57	14	2	29				2		11		12	3			3
RO	79		49		8	1		51	10	2	26				2		10		10	2			3
Parr	18		9		3			8	4		4						2		2				1
Smolt	57		40		5	1		43	6	2	22				2		8		8	2			2
Fry	4																						
PH	113	1	18		3			8	4		5						1		2	2			
Parr	16		12					5	1		3									1			
Smolt	9		6		2			3	3		2						1		2				
Fry	88	1			1															1			
Cougar Dam HOR	55		16					2			5												
5 ft	55		16					2			5												
Parr	26		16					2			5												
Fry	29																						
Fall Creek HOR	4		1					1															
8 ft	4		1					1															
Smolt	4		1					1															
Lookout Point HOR	29		9								4						1						
5 ft	29		9								4						1						
Parr	14		9								4						1						
Fry	15																						

Steelhead (O. mykiss)

Injuries to-date																							
Site/Trap/Life Stage	Total Fish	MUNK	DS<2	BLO	EYB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD
Foster Dam HOR	21		5					1			1												
5 ft	21		5					1			1												
Parr	6		2					1															
Smolt	10		3								1												
Fry	5																						

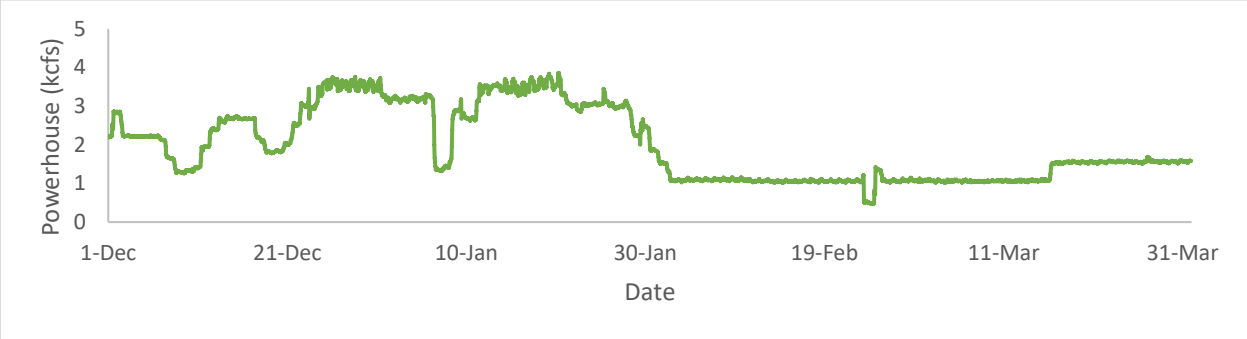
Steelhead (O. mykiss)

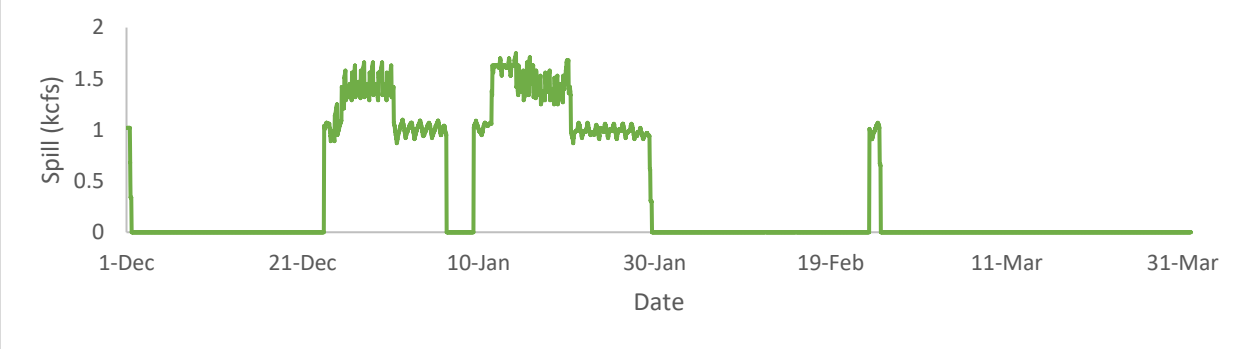
Injuries During Reporting Period (3-16-2022 to 3-31-2022)																							
Site/Trap/Life Stage	Total Fish	MUNK	DS<2	BLO	EYB	FUN	BKD	COP	DS>2	PRD	FID	HBO	BO	HO	BVT	HBP	BRU	TEA	OPD	HIN	FVB	POP	GBD
Foster Dam HOR	21		5					1			1												
5 ft	21		5					1			1												
Parr	6		2					1															
Smolt	10		3								1												
Fry	5																						

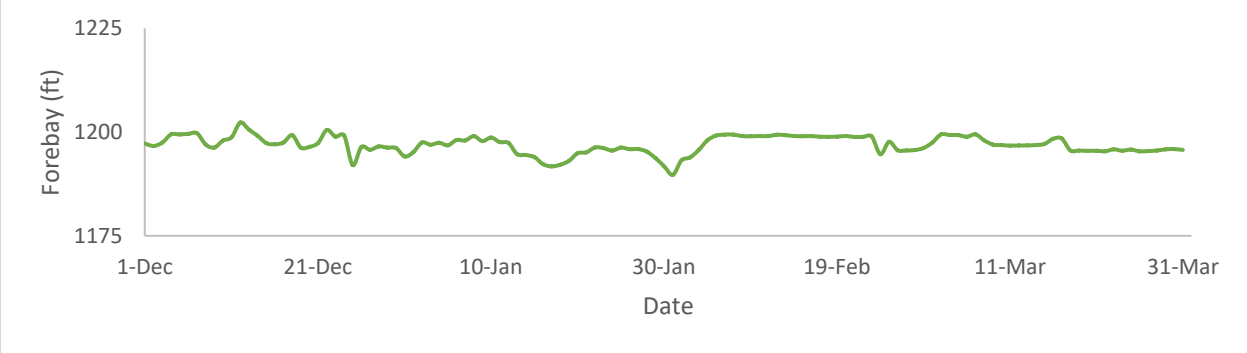
Injury Code	Description of Injury/Condition
NXI	Live fish with no external injuries
MUNK	Mortality with no external injuries
DS<2	Descaling <20%
BLO	Bloated
EYB	Bloody Eye (hemorrhage)
BVT	Bleeding from Vent
FVB	Fin Blood Vessels Broken
GBD	Gas Bubble Disease (fin ray/eye inclusions)
POP	Pop Eye (eye 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

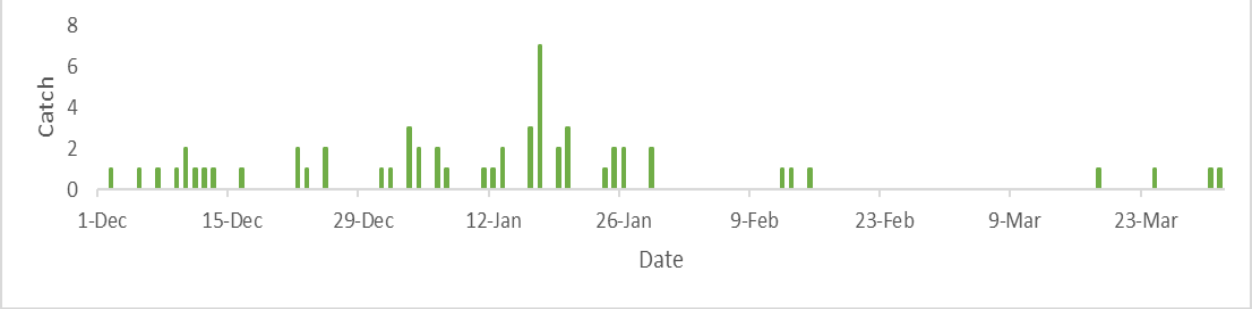
Appendix B

Big Cliff Dam Operational and Capture Data Since Start of Monitoring

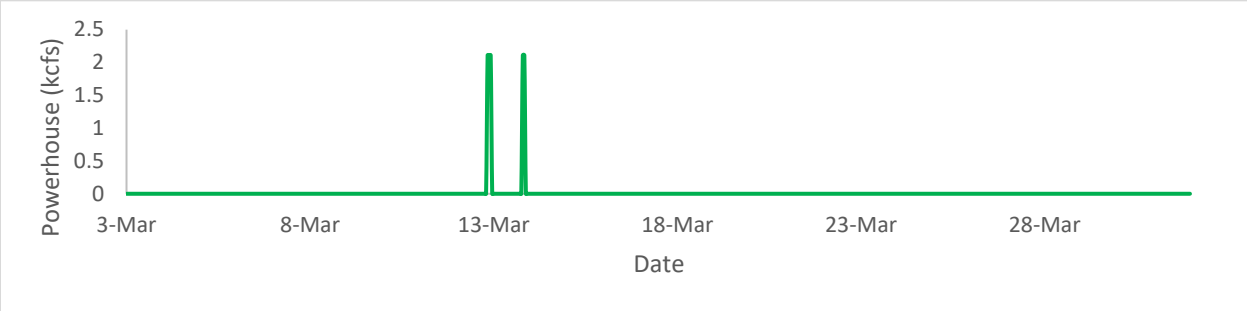


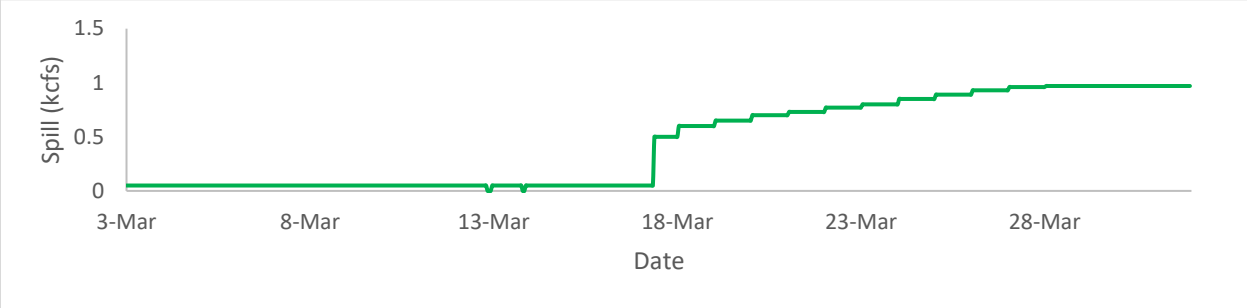


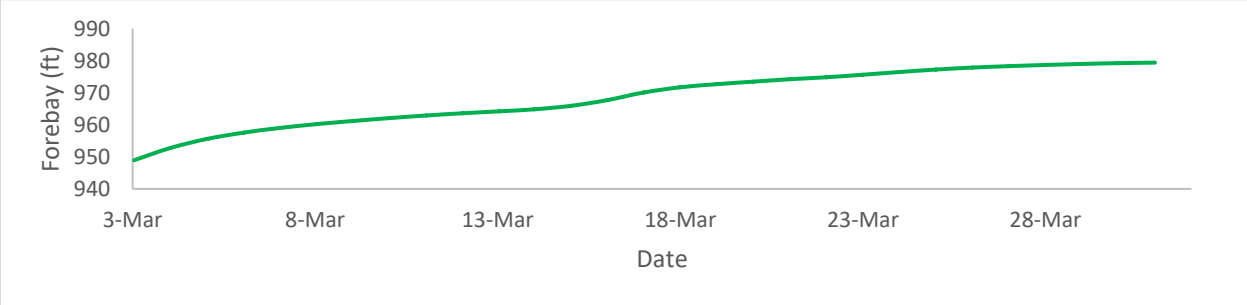


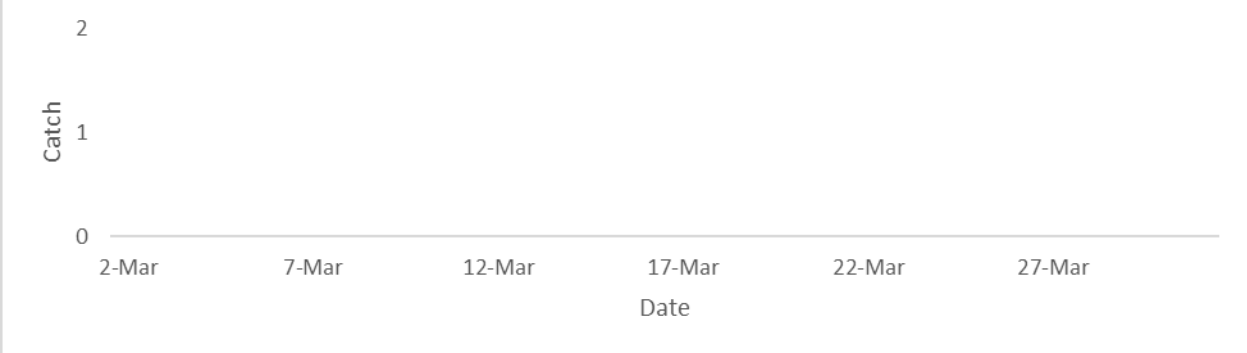


Green Peter Dam Operational and Green Peter Tailrace- Middle Santiam River Capture Data Since Start of Monitoring

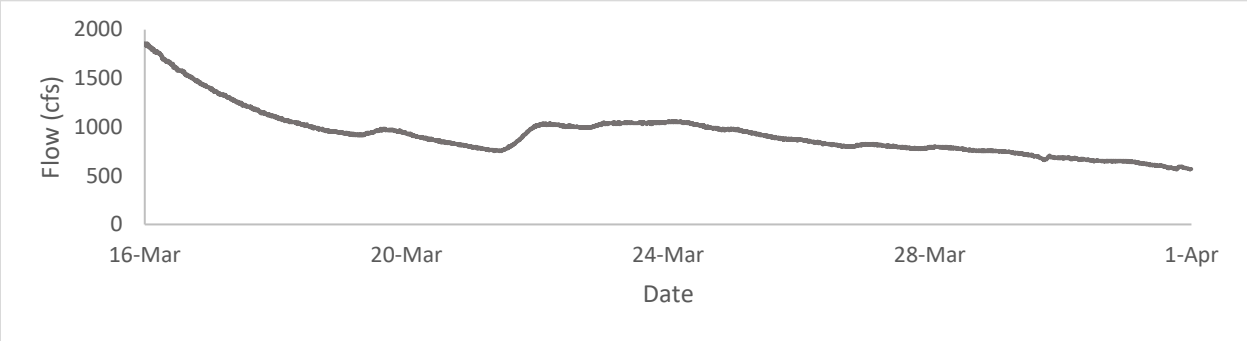


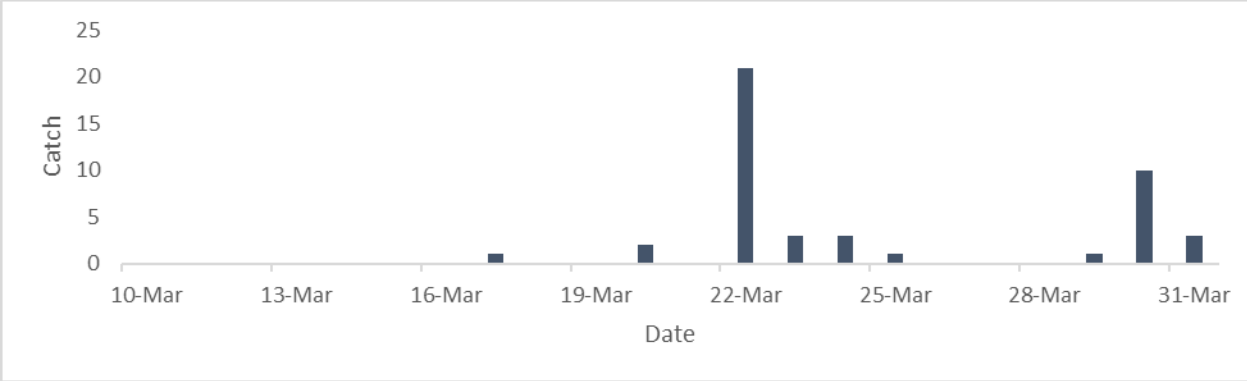




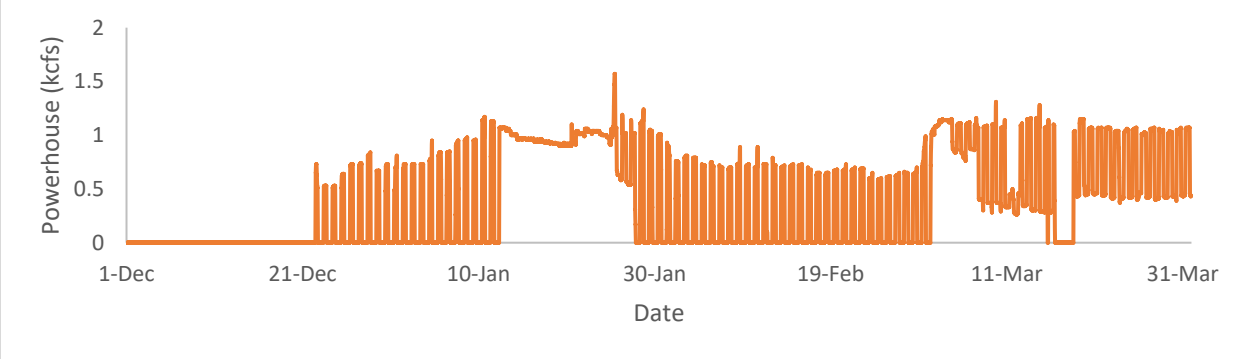


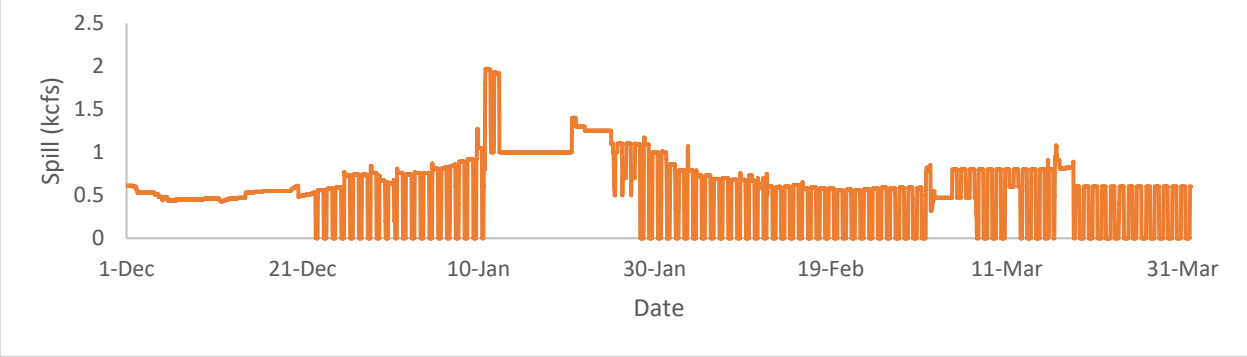
South Santiam River Above Foster Dam Discharge and Foster Dam Head of Reservoir Capture Data

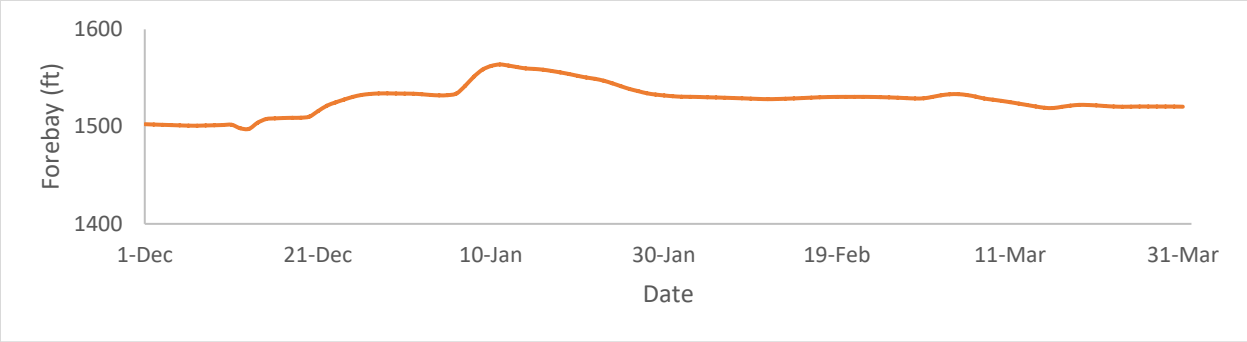


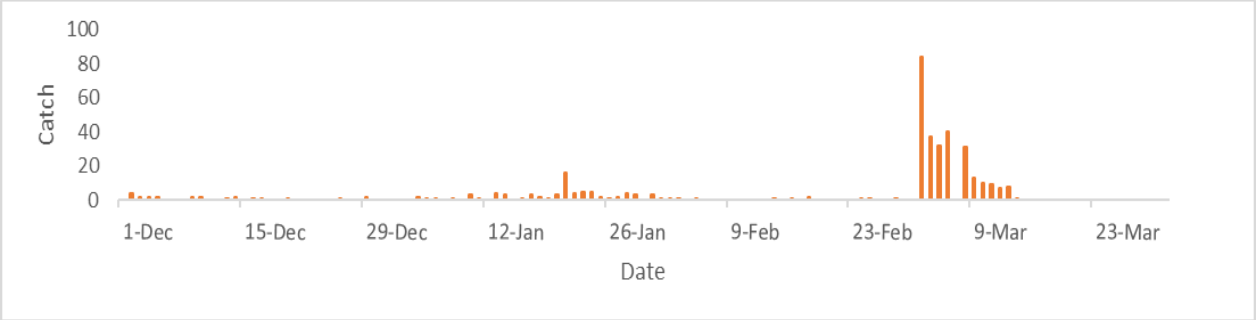


Cougar Dam Operational and Capture Data Since Start of Monitoring

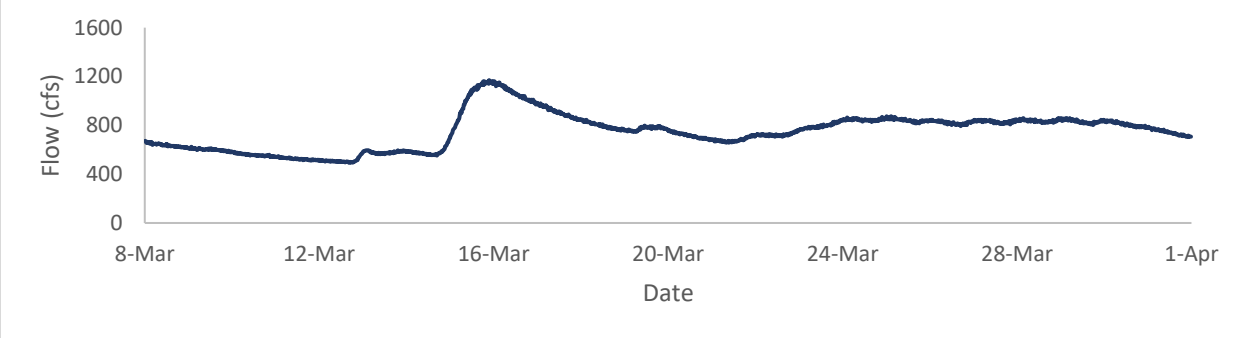


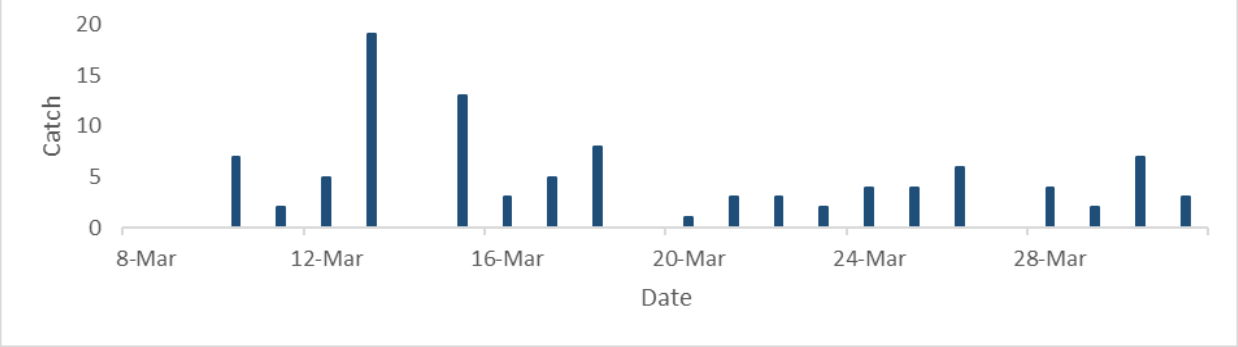




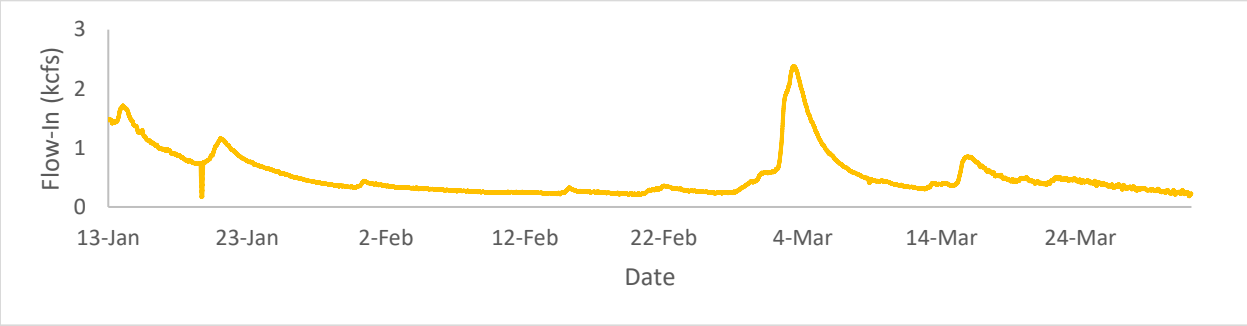


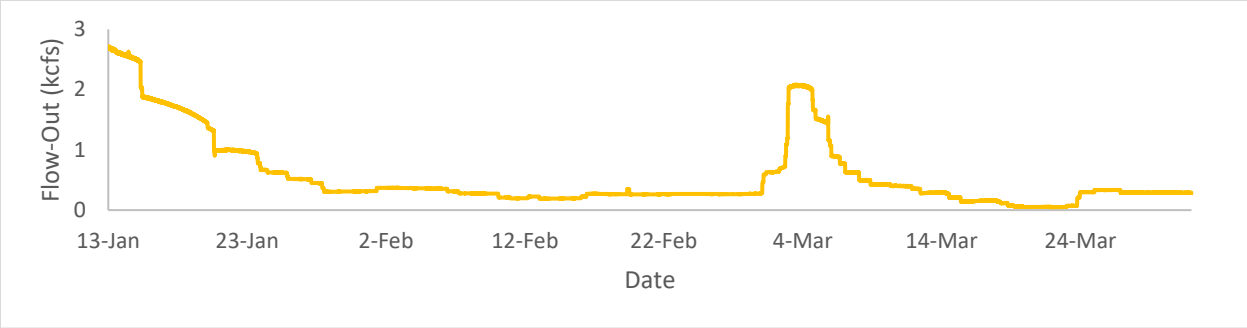
South Fork McKenzie above Cougar Dam Discharge and Cougar Dam Head of Reservoir Capture Data Since Start of Monitoring

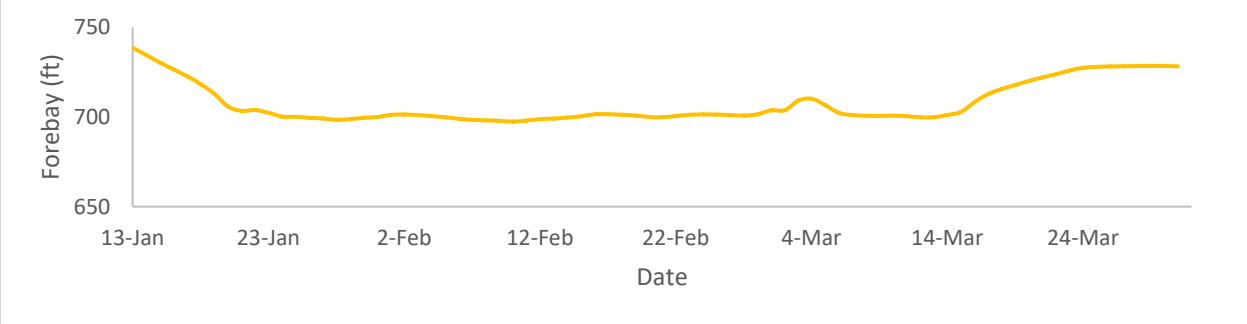


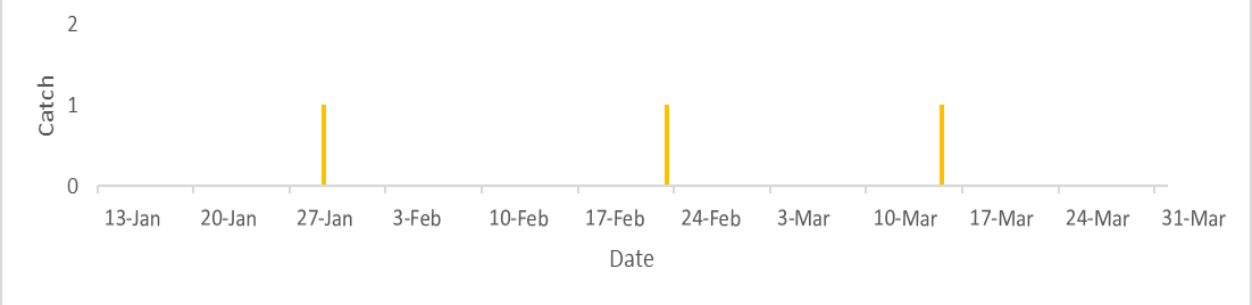


Fall Creek Dam Operational and Fall Creek Head of Reservoir Capture Data Since Start of Monitoring

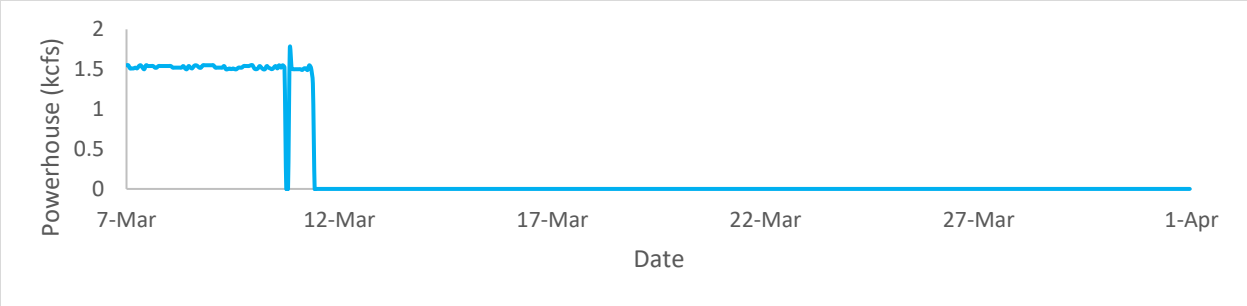


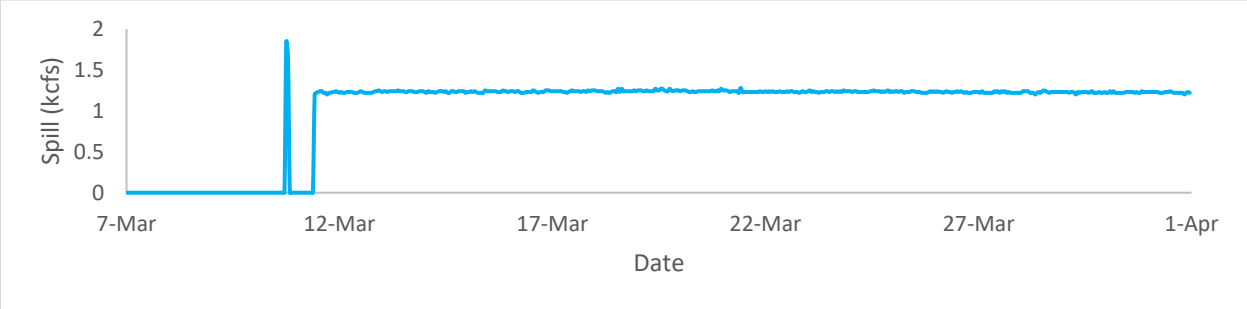


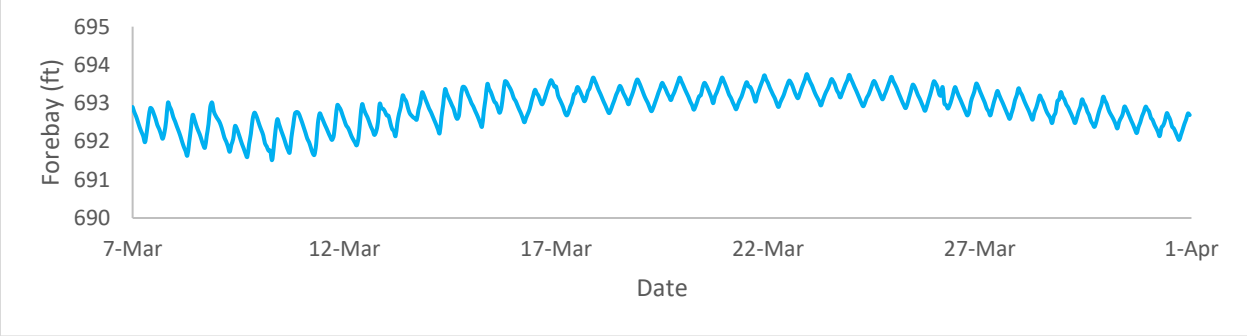


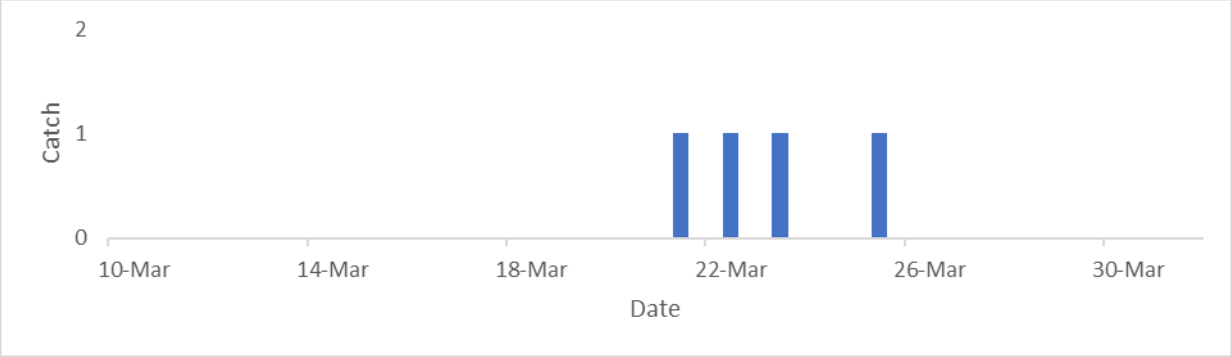


Dexter Dam Operational and Capture Data Since Start of Monitoring

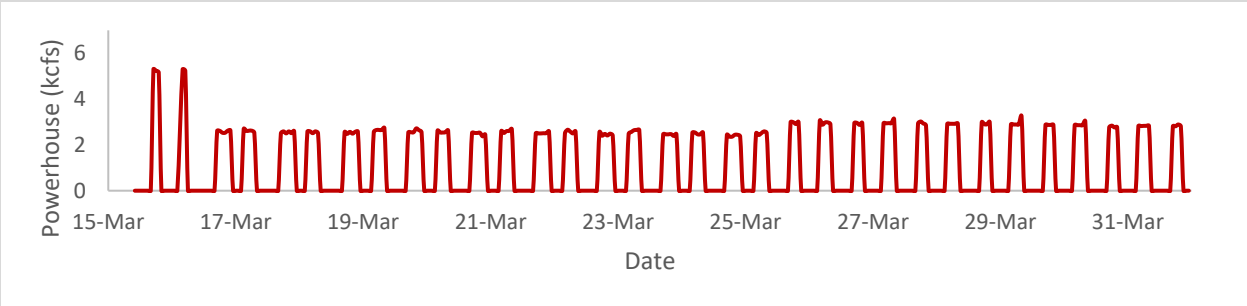


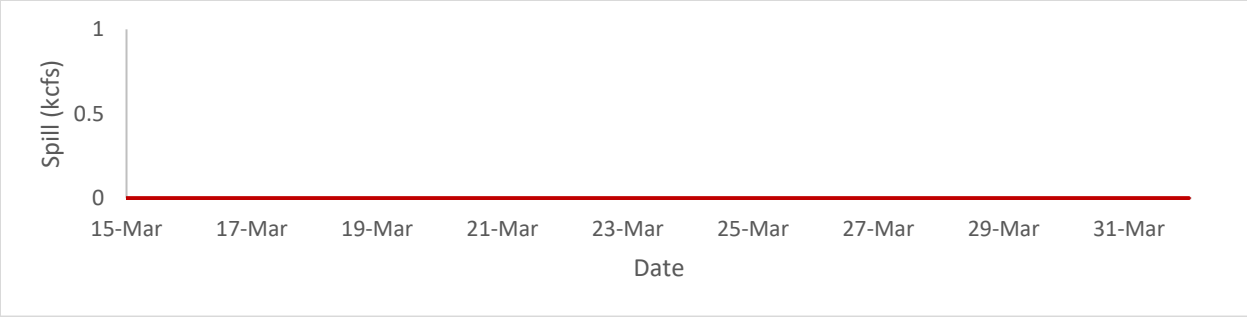


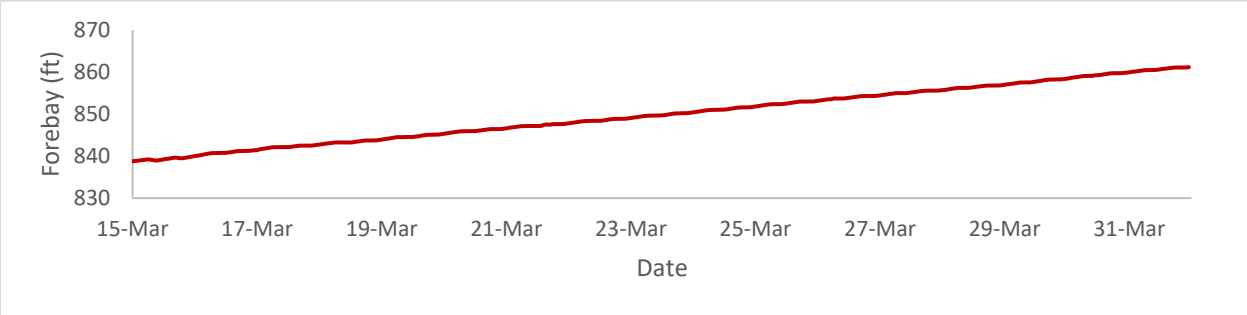




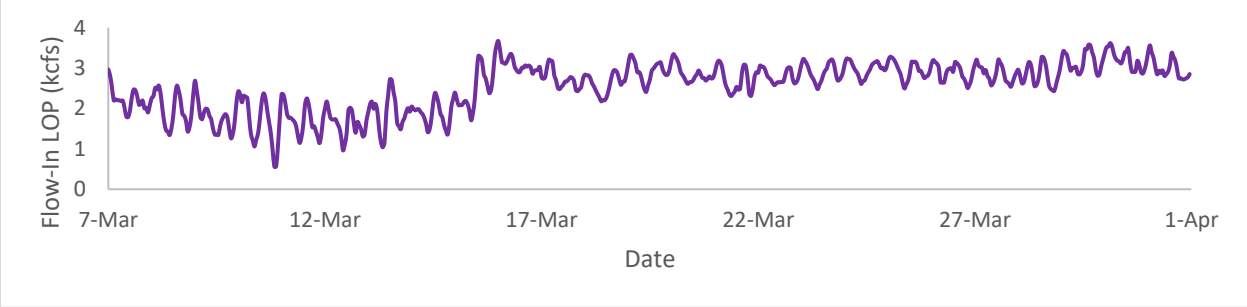
Lookout Dam Tailrace Operational and Capture Data

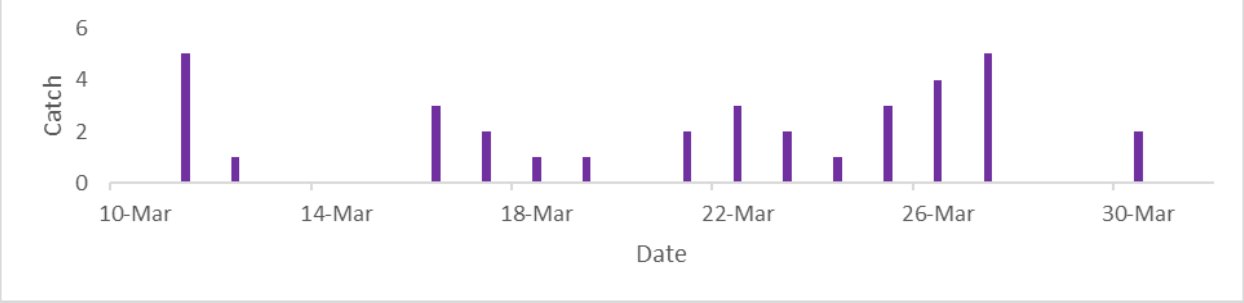




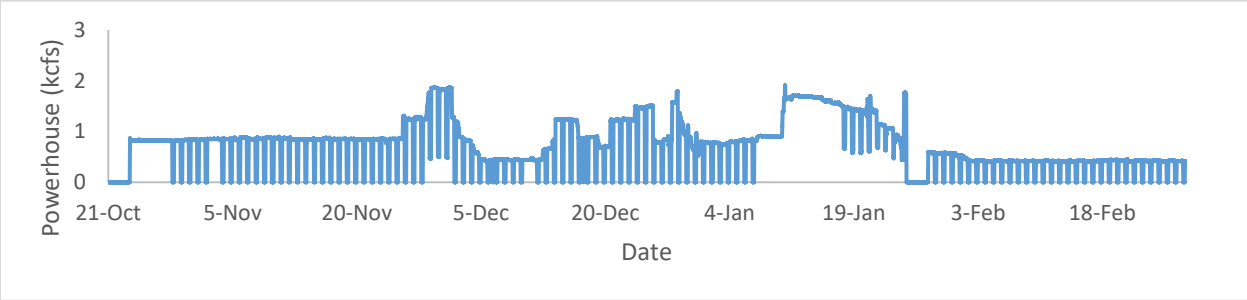


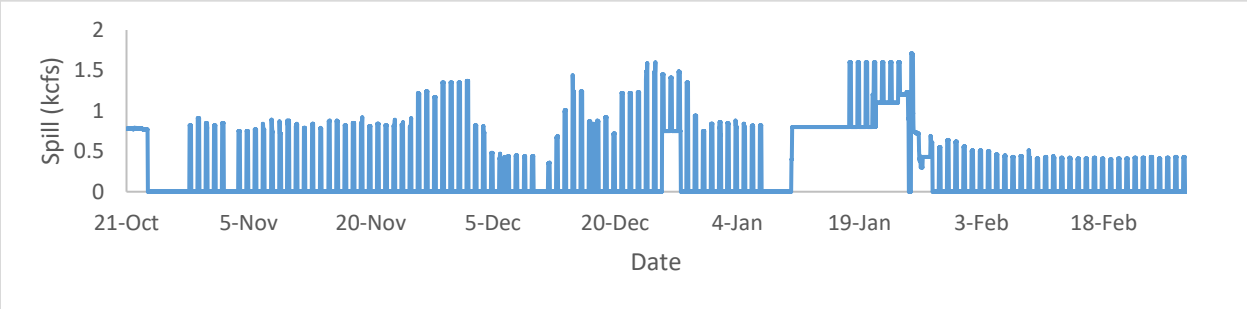
Lookout Point Head of Reservoir Operational and Capture Data Since Start of Monitoring

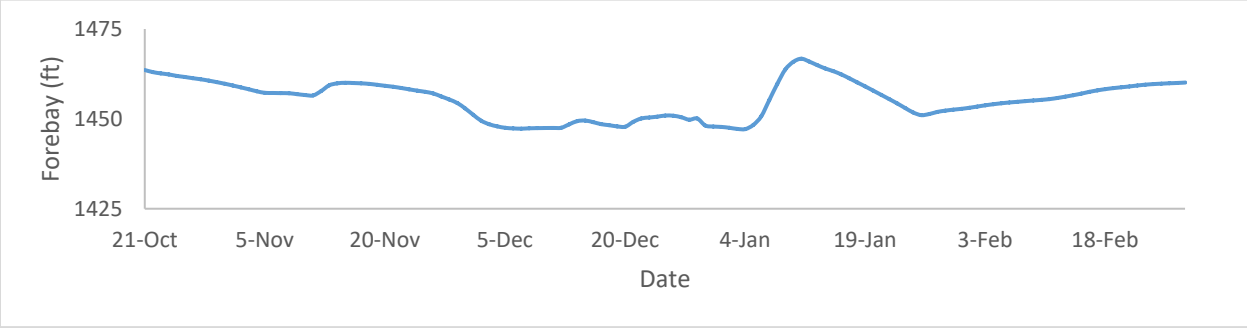


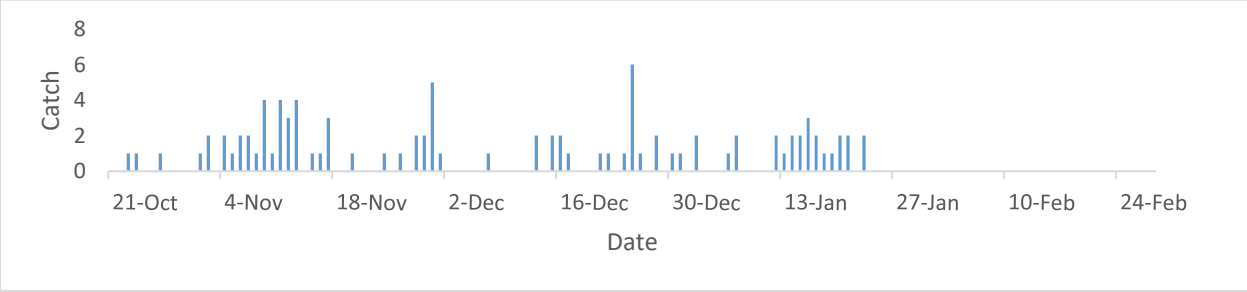


Hills Creek Dam Operational and Capture Data Since Start of Monitoring









Appendix C

Hills Creek Trapping Efficiency 1/6/2022

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)

*Live fish captured at the PH trap are released just downstream of the PH 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 PH trap are excluded from the RO trap capture efficiency estimate as they are not alive at time of re-release.

Appendix D

Summary of Project PIT Tagged Fish for Reporting Period

Site	Trap	# of PIT Tagged Fish
Big Cliff Dam	8 foot	3
Foster Dam Head of Reservoir-South Santiam	5 foot	17
Cougar Dam	PWR	21
Cougar Dam	RO	67
Cougar Dam Head of Reservoir	5 foot	25
Dexter Dam Tailrace	5 foot	1 (AD clipped)
Lookout Point Head of Reservoir	5 foot	14

Summary of ODFW PIT Tagged fish Encountered to Date

Site	Date	Trap	Species	PIT Tag #
Cougar Dam	3/3/22	PH	Chinook	3DD.003DA4DC74
Cougar Dam	3/4/22	PH	Chinook	3DD.003E14CA70
Cougar Dam	3/4/22	PH	Chinook	384.36.F2B2C5D2
Cougar Dam	3/5/22	PH	Chinook	3DD.003E14CC20
Cougar Dam	3/8/22	PH	Chinook	3DD.003E14CD8D
Cougar Dam	3/6/22	RO	Chinook	3DD.003E14C9D6
Cougar Dam	1/8/2022	RO	Chinook	3DD.0077780789
Cougar Dam	1/14/22	RO	Chinook	384.36F2B2C55F

List of Project PIT Tagged Fish for Reporting Period with site, tagging date, trap, species, and PIT Tag #

Site	**Date**	**Trap**	**Species**	**PIT Tag #**
Big Cliff	3/24/2022	8 ft	Chinook	3DD.003BD217F9
Big Cliff	3/31/2022	8 ft	Chinook	3DD.003BD2186C
Big Cliff	3/18/2022	8 ft	Chinook	3DD.003BD21875
Cougar Dam	3/20/2022	RO	Chinook	3DD.003BD217B9
Cougar Dam	3/17/2022	PH	Chinook	3DD.003BD94AB6
Cougar Dam	3/19/2022	PH	Chinook	3DD.003BD218B1
Cougar Dam	3/20/2022	PH	Chinook	3DD.003BD217CB
Cougar Dam	3/22/2022	PH	Chinook	3DD.003BD94A
Cougar Dam	3/22/2022	PH	Chinook	3DD.003BD94AD2
Cougar Dam	3/22/2022	PH	Chinook	3DD.003BD94AE5
Cougar Dam	3/22/2022	PH	Chinook	3DD.003BD94ACB
Cougar Dam	3/22/2022	PH	Chinook	3DD.003BD94AAB
Cougar Dam	3/24/2022	PH	Chinook	3DD.003BD217CB
Cougar Dam	3/24/2022	PH	Chinook	3DD.003BD94AE4
Cougar Dam	3/24/2022	PH	Chinook	3DD.003BD94AEF
Cougar Dam	3/25/2022	PH	Chinook	3DD.003BD94AC4
Cougar Dam	3/25/2022	PH	Chinook	3DD.003BD94ACO
Cougar Dam	3/26/2022	PH	Chinook	3DD.003BD94A9B
Cougar Dam	3/27/2022	PH	Chinook	3DD.003BD94A6D
Cougar Dam	3/27/2022	PH	Chinook	3DD.003BD94A4C
Cougar Dam	3/29/2022	PH	Chinook	3DD.003BD94B8D
Cougar Dam	3/31/2022	PH	Chinook	3DD.003BD94BA2
Cougar Dam	3/31/2022	PH	Chinook	3DD.003BD94BC8
Cougar Dam	3/31/2022	PH	Chinook	3DD.003BD94BAA
Cougar Dam	3/31/2022	PH	Chinook	3DD.003BD94B87
Cougar Dam	3/17/2022	RO	Chinook	3DD.003BD94B56
Cougar Dam	3/17/2022	RO	Chinook	3DD.003BD94B57
Cougar Dam	3/17/2022	RO	Chinook	3DD.003BD94B40
Cougar Dam	3/17/2022	RO	Chinook	3DD.003BD94ACC
Cougar Dam	3/18/2022	RO	Chinook	3DD.003BD94B7B

Cougar Dam	3/18/2022	RO	Chinook	3DD.003BD94B58
Cougar Dam	3/19/2022	RO	Chinook	3DD.003BD21892
Cougar Dam	3/19/2022	RO	Chinook	3DD.003BD94B1B
Cougar Dam	3/19/2022	RO	Chinook	3DD.003BD94B66
Cougar Dam	3/19/2022	RO	Chinook	3DD.003BD94B12
Cougar Dam	3/19/2022	RO	Chinook	3DD.003BD94B0D
Cougar Dam	3/20/2022	RO	Chinook	3DD.003BD217C4
Cougar Dam	3/20/2022	RO	Chinook	3DD.OO3BD217C1
Cougar Dam	3/20/2022	RO	Chinook	3DD.003BD217D4
Cougar Dam	3/20/2022	RO	Chinook	3DD.003BD21810
Cougar Dam	3/20/2022	RO	Chinook	3DD.003BD217E3
Cougar Dam	3/21/2022	RO	Chinook	3DD.003BD94ABB
Cougar Dam	3/21/2022	RO	Chinook	3DD.003BD94ACB
Cougar Dam	3/21/2022	RO	Chinook	3DD.003BD94AE9
Cougar Dam	3/21/2022	RO	Chinook	3DD.003BD94ABF
Cougar Dam	3/21/2022	RO	Chinook	3DD.003BD94AC9
Cougar Dam	3/22/2022	RO	Chinook	3DD.003BD94AE0
Cougar Dam	3/22/2022	RO	Chinook	3DD.003BD94ADE
Cougar Dam	3/22/2022	RO	Chinook	3DD.003BD94AF5
Cougar Dam	3/22/2022	RO	Chinook	3DD.003BD94AEE
Cougar Dam	3/22/2022	RO	Chinook	3DD.003DB94ACD
Cougar Dam	3/22/2022	RO	Chinook	3DD.003BD94AC1
Cougar Dam	3/22/2022	RO	Chinook	3DD.003BD94AEA
Cougar Dam	3/22/2022	RO	Chinook	3DD.003BD94AC5
Cougar Dam	3/22/2022	RO	Chinook	3CC.003BD94AE1
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217D9
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217BA
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217DF
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217E9
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217DC
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217BF
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217BC
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217B6
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD21814
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217EF
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217D7
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217B8
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217F1
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217B1
Cougar Dam	3/23/2022	RO	Chinook	3DD.003BD217BD
Cougar Dam	3/24/2022	RO	Chinook	3DD.003BD94BO4
Cougar Dam	3/25/2022	RO	Chinook	3DD.003BD94ABA

Cougar Dam	3/25/2022	RO	Chinook	3DD.003BD94AA8
Cougar Dam	3/26/2022	RO	Chinook	3DD.003BD94A8E
Cougar Dam	3/26/2022	RO	Chinook	3DD.003BD94A9F
Cougar Dam	3/26/2022	RO	Chinook	3DD.003BD94A8F
Cougar Dam	3/26/2022	RO	Chinook	3DD.003BD94A7A
Cougar Dam	3/27/2022	RO	Chinook	3DD.003BD94AA0
Cougar Dam	3/27/2022	RO	Chinook	3DD.003BD94A69
Cougar Dam	3/27/2022	RO	Chinook	3DD.003BD94A84
Cougar Dam	3/27/2022	RO	Chinook	3DD.003BD94A9C
Cougar Dam	3/27/2022	RO	Chinook	3DD.003BD94A9E
Cougar Dam	3/27/2022	RO	Chinook	3DD.003BD94A7D
Cougar Dam	3/28/2022	RO	Chinook	3DD.003BD94A74
Cougar Dam	3/28/2022	RO	Chinook	3DD.003BD94A77
Cougar Dam	3/29/2022	RO	Chinook	3DD.003BD94BB7
Cougar Dam	3/29/2022	RO	Chinook	3DD.003BD94BA6
Cougar Dam	3/29/2022	RO	Chinook	3DD.003BD94B97
Cougar Dam	3/31/2022	RO	Chinook	3DD.003BD94B79
Cougar Dam	3/31/2022	RO	Chinook	3DD.003BD94B8A
Cougar Dam	3/31/2022	RO	Chinook	3DD.003BD94B6F
Cougar Dam	3/28/2022	RO	Chinook	3DD.003BD94AA3
Cougar Dam Head of Reservoir	3/16/2022	5 ft	Chinook	3DD.003BD217CA
Cougar Dam Head of Reservoir	3/16/2022	5 ft	Chinook	3DD.003BD217BE
Cougar Dam Head of Reservoir	3/16/2022	5 ft	Chinook	3DD.003BD217B5
Cougar Dam Head of Reservoir	3/17/2022	5 ft	Chinook	3DD.003BD94B00
Cougar Dam Head of Reservoir	3/17/2022	5 ft	Chinook	3DD.003BD94AD5
Cougar Dam Head of Reservoir	3/17/2022	5 ft	Chinook	3DD.003BD94AC3
Cougar Dam Head of Reservoir	3/17/2022	5 ft	Chinook	3DD.003BD94AEC
Cougar Dam Head of Reservoir	3/21/2022	5 ft	Chinook	3DD.003BD21703
Cougar Dam Head of Reservoir	3/21/2022	5 ft	Chinook	3DD.003BD21808
Cougar Dam Head of Reservoir	3/21/2022	5 ft	Chinook	3DD.003BD217D0
Cougar Dam Head of Reservoir	3/22/2022	5 ft	Chinook	3DD.003BD94AA7
Cougar Dam Head of Reservoir	3/22/2022	5 ft	Chinook	3DD.003BD94ADB
Cougar Dam Head of Reservoir	3/23/2022	5 ft	Chinook	3DD.003BD217F2
Cougar Dam Head of Reservoir	3/23/2022	5 ft	Chinook	3DD.003BD21806
Cougar Dam Head of Reservoir	3/24/2022	5 ft	Chinook	3DD.003BD217EB
Cougar Dam Head of Reservoir	3/25/2022	5 ft	Chinook	3DD.003BD94AD0
Cougar Dam Head of Reservoir	3/26/2022	5 ft	Chinook	3DD.003BD94AAC
Cougar Dam Head of Reservoir	3/28/2022	5 ft	Chinook	3DD.003BD94A4D
Cougar Dam Head of Reservoir	3/28/2022	5 ft	Chinook	3DD.003BD94A6A
Cougar Dam Head of Reservoir	3/28/2022	5 ft	Chinook	3DD.003BD94A73
Cougar Dam Head of Reservoir	3/28/2022	5 ft	Chinook	3DD.003BD94A86

Cougar Dam Head of Reservoir	3/29/2022	5 ft	Chinook	3DD.003BD94A65
Cougar Dam Head of Reservoir	3/29/2022	5 ft	Chinook	3DD.003BD94A9O
Cougar Dam Head of Reservoir	3/30/2022	5 ft	Chinook	3DD.003BD94BC3
Cougar Dam Head of Reservoir	3/30/2022	5 ft	Chinook	3DD.003BD94B7D
Dexter Dam Tailrace	3/25/2022	5 ft	Chinook	3DD.003BD94A95
Fall Creek Head of Reservoir	3/17/2022	8 ft	Chinook	3DD.003BD2188E
Fall Creek Head of Reservoir	3/22/2022	8 ft	Chinook	3DD.003BD217B4
Fall Creek Head of Reservoir	3/22/2022	8 ft	Chinook	3DD.003BD21701
Fall Creek Head of Reservoir	3/23/2022	8 ft	Chinook	3DD.003BD94AE2
Fall Creek Head of Reservoir	3/18/2022	8 ft	Chinook	3DD.003BD21701
Foster Dam Head of Reservoir- South Santiam	3/17/2022	5 ft	Chinook	3DD.003BD21873
Foster Dam Head of Reservoir- South Santiam	3/23/2022	5 ft	Chinook	3DD.003BD2189F
Foster Dam Head of Reservoir- South Santiam	3/23/2022	5 ft	Chinook	3DD.003BD21881
Foster Dam Head of Reservoir- South Santiam	3/24/2022	5 ft	O. mykiss	3DD.003BD21891
Foster Dam Head of Reservoir- South Santiam	3/25/2022	5 ft	O. mykiss	3DD.003BD217D6
Foster Dam Head of Reservoir- South Santiam	3/25/2022	5 ft	O. mykiss	3DD.003BD217C8
Foster Dam Head of Reservoir- South Santiam	3/25/2022	5 ft	O. mykiss	3DD.003BD217CE
Foster Dam Head of Reservoir- South Santiam	3/26/2022	5 ft	O. mykiss	3DD.003BD21864
Foster Dam Head of Reservoir- South Santiam	3/27/2022	5 ft	O. mykiss	3DD.003BD2186F
Foster Dam Head of Reservoir- South Santiam	3/27/2022	5 ft	O. mykiss	3DD.003BD21823
Foster Dam Head of Reservoir- South Santiam	3/27/2022	5 ft	O. mykiss	3DD.003BD21833
Foster Dam Head of Reservoir- South Santiam	3/27/2022	5 ft	O. mykiss	3DD.003BD21878
Foster Dam Head of Reservoir- South Santiam	3/28/2022	5 ft	O. mykiss	3DD.003BD217B2
Foster Dam Head of Reservoir- South Santiam	3/28/2022	5 ft	O. mykiss	3DD.003BD217C7
Foster Dam Head of Reservoir- South Santiam	3/28/2022	5 ft	O. mykiss	3DD.003BD217B7
Foster Dam Head of Reservoir- South Santiam	3/28/2022	5 ft	O. mykiss	3DD.003BD217F7
Foster Dam Head of Reservoir- South Santiam	3/28/2022	5 ft	O. mykiss	3DD.003BD217CD
Lookout Point Head of Reservoir	3/16/2022	5 ft	Chinook	3DD.003BD94AD4
Lookout Point Head of Reservoir	3/16/2022	5 ft	Chinook	3DD.003BD94AFB
Lookout Point Head of Reservoir	3/16/2022	5 ft	Chinook	3DD.003BD94AE6
Lookout Point Head of Reservoir	3/17/2022	5 ft	Chinook	3DD.003BD94B61
Lookout Point Head of Reservoir	3/17/2022	5 ft	Chinook	3DD.003BD94B63
Lookout Point Head of Reservoir	3/18/2022	5 ft	Chinook	3DD.003BD94AD8
Lookout Point Head of Reservoir	3/19/2022	5 ft	Chinook	3DD.003BD94AF7
Lookout Point Head of Reservoir	3/21/2022	5 ft	Chinook	3DD.003BD94AE7
Lookout Point Head of Reservoir	3/22/2022	5 ft	Chinook	3DD.003BD21850
Lookout Point Head of Reservoir	3/22/2022	5 ft	Chinook	3DD.003BD21859
Lookout Point Head of Reservoir	3/23/2022	5 ft	Chinook	3DD.003BD94ABC
Lookout Point Head of Reservoir	3/24/2022	5 ft	Chinook	3DD.003BD94AD6
Lookout Point Head of Reservoir	3/26/2022	5 ft	Chinook	3DD.003BD94AA4
Lookout Point Head of Reservoir	3/27/2022	5 ft	Chinook	3DD.003BD94ADA