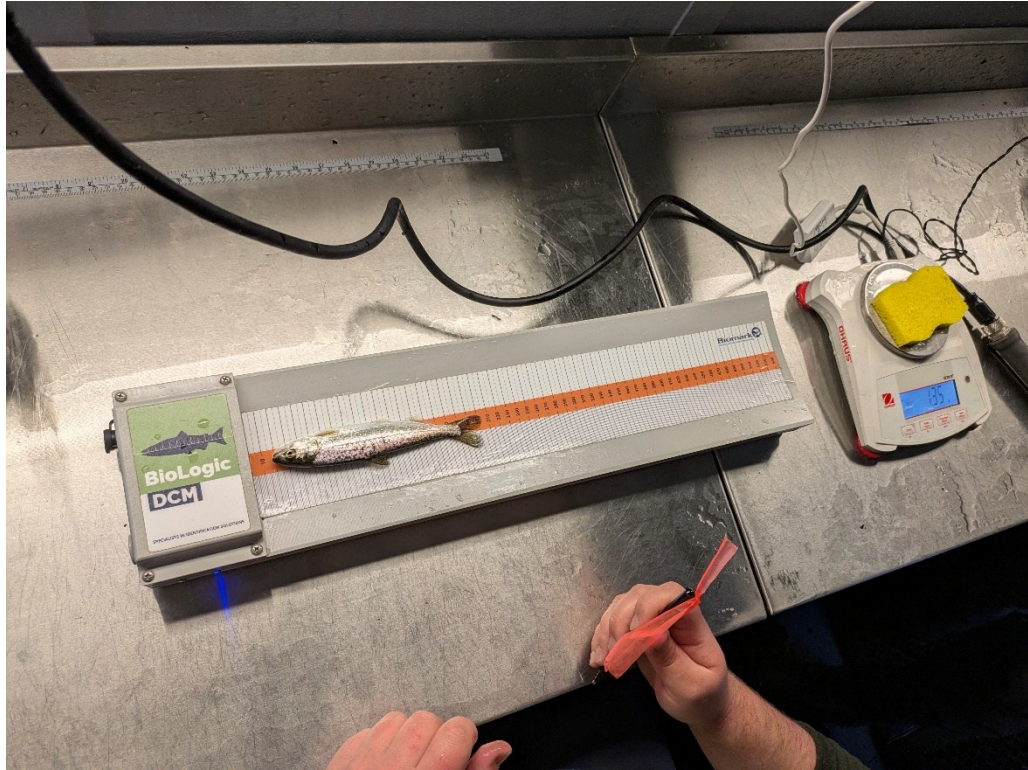


# WILLAMETTE VALLEY FISH PASSAGE MONITORING – BULK MARKING PROJECT

Bi-Weekly Report: March 1 – March 15, 2025



*Prepared for: United States Army Corps of Engineers*

*Prepared by: Cramer Fish Sciences*

March 21, 2025

## BULK MARKING SCHEDULE

Table 1. Tentative release schedule for brood years 2022 and 2023. Green rows highlight the release groups that have been tagged and released. Orange rows highlight release groups that have been tagged but have not yet been released. Date estimate is a rough estimate of when fish should be released to meet the intended target.

Date Estimate	Release Location	Target	Life Stage	#	Tag
<b>2023</b>					
<b>MF Willamette</b>					
Spring 2023	Head of Fall Creek Dam reservoir	Prior to reaching target elevation of 728 feet	fry	1000 0	8 mm PIT
Spring 2023	Head of Lookout Point Dam reservoir	30 day spill operations	fry	1000 0	8 mm PIT
Spring 2023	Head of Hills Creek Dam reservoir	Observed fry migration and RO operations	fry	1000 0	8 mm PIT
9/15/2023	Dexter Dam Tailrace	Fall deep drawdown	subyearling	2000	12 mm PIT
9/15/2023	Head of Lookout Point Dam reservoir	Fall deep drawdown	subyearling	5000	12 mm PIT
9/15/2023	Lookout Point Dam Forebay	Fall deep drawdown	subyearling	5000	12 mm PIT
10/15/2023	Fall Creek Dam Head of Reservoir	2-3 weeks prior to drawdown	subyearling	5000	12 mm PIT
10/15/2023	Fall Creek Dam tailrace	2-3 weeks prior to drawdown	subyearling	1000	12 mm PIT
11/15/2023	Fall Creek Dam Head of Reservoir	Midway between start of drawdown and streambed elevation	subyearling	5000	12 mm PIT
11/15/2023	Fall Creek Dam tailrace	Midway between start of drawdown and streambed elevation	subyearling	1000	12 mm PIT
11/16/2023	Hills Creek Dam Head of Reservoir	Prior to start of fall/winter RO operations	subyearling	5000	12 mm PIT
11/16/2023	Hills Creek Dam tailrace	Prior to start of fall/winter RO operations	subyearling	3000	12 mm PIT
11/16/2023	Hills Creek forebay or mid-reservoir	Prior to start of fall/winter RO operations	subyearling	5000	12 mm PIT

North Santiam					
Spring 2023	Breitenbush River	Prior to beginning of spill	fry	7500	8 mm PIT
Spring 2023	North Santiam River	Prior to beginning of spill	fry	7500	8 mm PIT
10/1/2023	Big Cliff Dam Tailrace	Prior to Detroit Reservoir reaching 1520 feet	subyearling	8000	12 mm PIT
10/1/2023	Breitenbush River	Prior to Detroit Reservoir reaching 1520 feet	subyearling	5000	12 mm PIT
10/1/2023	North Santiam River	Prior to Detroit Reservoir reaching 1520 feet	subyearling	5000	12 mm PIT
11/15/2023	Big Cliff Dam Tailrace	When Detroit reaches 1465 feet	subyearling	6000	12 mm PIT
SF McKenzie					
Spring 2023	Cougar Dam Head of Reservoir	Prior to start of spring drawdown	fry	5000	8 mm PIT
Spring 2023	Cougar Dam Head of Reservoir	After start of drawdown but prior to reaching 1520 feet	fry	5000	8 mm PIT
9/15/2023	Cougar Dam Head of Reservoir	Prior to start of drawdown	subyearling	3000	12 mm PIT
10/15/2023	Cougar Dam Forebay	Prior to reaching target elevation of 1505 feet	subyearling	5000	12 mm PIT
10/15/2023	Cougar Dam Tailrace	Prior to reaching target elevation of 1505 feet	subyearling	4000	12 mm PIT
10/15/2023	Cougar Head of Reservoir	Prior to reaching target elevation of 1505 feet	subyearling	4000	12 mm PIT
11/15/2023	Cougar Dam Forebay	At 1532 feet when RO is prioritized for day and night spill	subyearling	5000	12 mm PIT
11/15/2023	Cougar Dam Tailrace	At 1532 feet when RO is prioritized for day and night spill	subyearling	4000	12 mm PIT
11/15/2023	Cougar Head of Reservoir	At 1532 feet when RO is prioritized for day and night spill	subyearling	4000	12 mm PIT
South Santiam					
Spring 2023	Green Peter Head of Reservoir in Middle Santiam River	Spill operation block	fry	5000	8 mm PIT
Spring 2023	Green Peter Head of Reservoir in Quartzville Creek	Spill operation block	fry	5000	8 mm PIT

8/30/2023	South Santiam River - Foster Dam Tailrace	Undefined - Late August	subyearling	1000	12 mm PIT
8/30/2023	South Santiam River above Foster Dam	Undefined - Late August	subyearling	2000	12 mm PIT
9/15/2023	Green Peter Reservoir - Head of Reservoir, Middle Santiam River	Fall Operations at Green Peter Dam	subyearling	2500	12 mm PIT
9/15/2023	Green Peter Reservoir - Head of Reservoir, Quartzville Creek	Fall Operations at Green Peter Dam	subyearling	2500	12 mm PIT
10/15/2023	Green Peter Dam Tailrace	Prior to Green Peter reaching 887 feet.	subyearling	4000	12 mm PIT
10/15/2023	Green Peter Reservoir - Head of Reservoir, Middle Santiam River	Prior to Green Peter reaching 887 feet.	subyearling	2500	12 mm PIT
10/15/2023	Green Peter Reservoir - Head of Reservoir, Quartzville Creek	Prior to Green Peter reaching 887 feet.	subyearling	2500	12 mm PIT
10/15/2023	South Santiam River - Foster Dam Tailrace	Fall operations at Foster Dam	subyearling	4000	12 mm PIT
10/15/2023	South Santiam River above Foster Dam	Fall operations at Foster Dam	subyearling	5000	12 mm PIT
<b>2024</b>					
<b>MF Willamette</b>					
2/1/2024	Hills Creek Dam Head of Reservoir	Prior to end of fall/winter RO operations	yearling	5000	12 mm PIT
2/1/2024	Hills Creek Dam tailrace	Prior to end of fall/winter RO operations	yearling	3000	12 mm PIT
2/1/2024	Hills Creek forebay or mid-reservoir	Prior to end of fall/winter RO operations	yearling	5000	12 mm PIT
2/28/2024	Fall Creek Dam Head of Reservoir	Prior to beginning of refill	yearling	5000	12 mm PIT
2/28/2024	Fall Creek Dam Tailrace	Prior to beginning of refill	yearling	1000	12 mm PIT
2/28/2024	Head of Lookout Point Dam reservoir	Prior to 30-day spill	yearling	5000	12 mm PIT
2/28/2024	Dexter Dam Tailrace	Prior to 30-day spill	yearling	2000	12 mm PIT
2/28/2024	Lookout Point Dam Forebay	Prior to 30-day spill	yearling	5000	12 mm PIT

3/31/2024	Fall Creek Dam Head of Reservoir	After refill is completed	yearling	5000	12 mm PIT
3/31/2024	Fall Creek Dam Tailrace	After refill is completed	yearling	1000	12 mm PIT
4/1/2024	Head of Lookout Point Dam reservoir	After 30-day spill/beginning of nighttime spill	yearling	5000	12 mm PIT
4/1/2024	Dexter Dam Tailrace	After 30-day spill/beginning of nighttime spill	yearling	2000	12 mm PIT
4/1/2024	Lookout Point Dam Forebay	After 30-day spill/beginning of nighttime spill	yearling	5000	12 mm PIT
<b>North Santiam</b>					
2/1/2024	North Santiam River	Prior to start of Detroit refill	fry	3750	8 mm PIT
2/1/2024	Breitenbush River	Prior to start of Detroit refill	fry	3750	8 mm PIT
4/1/2024	Breitenbush River	Prior to start of Detroit spill	fry	3750	8 mm PIT
4/1/2024	North Santiam River	Prior to start of Detroit spill	fry	3750	8 mm PIT
4/1/2024	Big Cliff Dam Tailrace	Prior to Detroit reaching 1541 feet (spillway crest elevation)	yearling	2000	12 mm PIT
4/1/2024	Breitenbush River	Prior to Detroit reaching 1541 feet (spillway crest elevation)	yearling	2000	12 mm PIT
4/1/2024	North Santiam River	Prior to Detroit reaching 1541 feet (spillway crest elevation)	yearling	2000	12 mm PIT
10/1/2024	Big Cliff Dam Tailrace	Prior to Detroit Reservoir reaching 1520 feet	subyearling	8000	12 mm PIT
10/1/2024	Breitenbush River	Prior to Detroit Reservoir reaching 1520 feet	subyearling	5000	12 mm PIT
10/1/2024	North Santiam River	Prior to Detroit Reservoir reaching 1520 feet	subyearling	5000	12 mm PIT
11/15/2024	Big Cliff Dam Tailrace	When Detroit reaches 1465 feet	subyearling	6000	12 mm PIT
<b>SF McKenzie</b>					
2/28/2024	Cougar Dam Forebay	Prior to beginning of spring drawdown	yearling	2000	12 mm PIT

2/28/2024	Cougar Dam Tailrace	Prior to beginning of spring drawdown	yearling	1000	12 mm PIT
2/28/2024	Cougar Head of Reservoir	Prior to beginning of spring drawdown	yearling	2000	12 mm PIT
3/30/2024	Cougar Dam Forebay	After start of drawdown but prior to reaching 1520 feet	yearling	2000	12 mm PIT
3/30/2024	Cougar Dam Tailrace	After start of drawdown but prior to reaching 1520 feet	yearling	1000	12 mm PIT
3/30/2024	Cougar Head of Reservoir	After start of drawdown but prior to reaching 1520 feet	yearling	2000	12 mm PIT
<b>South Santiam</b>					
4/1/2024	Green Peter Head of Reservoir in Middle Santiam River	At the start of the first spring spill block	fry	2500	8 mm PIT
4/1/2024	Green Peter Head of Reservoir in Quartzville Creek	At the start of the first spring spill block	fry	2500	8 mm PIT
4/1/2024	Green Peter Dam Tailrace	At the start of Green Peter spring spill	yearling	1000	12 mm PIT
4/1/2024	Green Peter Reservoir - Forebay	At the start of Green Peter spring spill	yearling	2000	12 mm PIT
4/1/2024	Green Peter Reservoir - Head of Reservoir, Middle Santiam River	At the start of Green Peter spring spill	yearling	1000	12 mm PIT
4/1/2024	Green Peter Reservoir - Head of Reservoir, Quartzville Creek	At the start of Green Peter spring spill	yearling	1000	12 mm PIT
4/1/2024	Green Peter Reservoir - mid reservoir	At the start of Green Peter spring spill	yearling	2000	12 mm PIT
4/1/2024	South Santiam River - Foster Dam Tailrace	Prior to start of Foster refill	yearling	4000	12 mm PIT
4/1/2024	South Santiam River above Foster Dam	Prior to start of Foster refill	yearling	5000	12 mm PIT
4/20/2024	South Santiam River - Foster Dam Tailrace	Post refill operations	yearling	2000	12 mm PIT
4/20/2024	South Santiam River above Foster Dam	Post refill operations	yearling	1000	12 mm PIT
4/15/2024	Green Peter Head of Reservoir in Middle Santiam River	At the start of the second spring spill block	fry	2500	8 mm PIT
4/15/2024	Green Peter Head of Reservoir in Quartzville Creek	At the start of the second spring spill block	fry	2500	8 mm PIT

8/30/2024	South Santiam River - Foster Dam Tailrace	Undefined - Late August	subyearling	1000	12 mm PIT
8/30/2024	South Santiam River above Foster Dam	Undefined - Late August	subyearling	2000	12 mm PIT
9/15/2024	Green Peter Reservoir - Head of Reservoir, Middle Santiam River	Fall Operations at Green Peter Dam	subyearling	2500	12 mm PIT
9/15/2024	Green Peter Reservoir - Head of Reservoir, Quartzville Creek	Fall Operations at Green Peter Dam	subyearling	2500	12 mm PIT
10/15/2024	Green Peter Dam Tailrace	Prior to Green Peter reaching 887 feet.	subyearling	4000	12 mm PIT
10/15/2024	Green Peter Reservoir - Head of Reservoir, Middle Santiam River	Prior to Green Peter reaching 887 feet.	subyearling	2500	12 mm PIT
10/15/2024	Green Peter Reservoir - Head of Reservoir, Quartzville Creek	Prior to Green Peter reaching 887 feet.	subyearling	2500	12 mm PIT
10/15/2024	South Santiam River - Foster Dam Tailrace	Fall operations at Foster Dam	subyearling	4000	12 mm PIT
10/15/2024	South Santiam River above Foster Dam	Fall operations at Foster Dam	subyearling	5000	12 mm PIT
<b>2025</b>					
<b>North Santiam</b>					
2/1/2025	Breitenbush River	Prior to start of Detroit refill	fry	3750	8 mm PIT
2/1/2025	North Santiam River	Prior to start of Detroit refill	fry	3750	8 mm PIT
4/1/2025	Breitenbush River	Prior to start of Detroit spill	fry	3750	8 mm PIT
4/1/2025	North Santiam River	Prior to start of Detroit spill	fry	3750	8 mm PIT
4/1/2025	Big Cliff Dam Tailrace	Prior to Detroit reaching 1541 feet (spillway crest elevation)	yearling	2000	12 mm PIT
4/1/2025	Breitenbush River	Prior to Detroit reaching 1541 feet (spillway crest elevation)	yearling	2000	12 mm PIT
4/1/2025	North Santiam River	Prior to Detroit reaching 1541 feet (spillway crest elevation)	yearling	2000	12 mm PIT
<b>South Santiam</b>					
4/1/2025	Green Peter Head of Reservoir in Middle Santiam River	At the start of the first spring spill block	fry	2500	8 mm PIT

4/1/2025	Green Peter Head of Reservoir in Quartzville Creek	At the start of the first spring spill block	fry	2500	8 mm PIT
4/1/2025	Green Peter Dam Tailrace	At the start of Green Peter spring spill	yearling	1000	12 mm PIT
4/1/2025	Green Peter Reservoir - Forebay	At the start of Green Peter spring spill	yearling	2000	12 mm PIT
4/1/2025	Green Peter Reservoir - Head of Reservoir, Middle Santiam River	At the start of Green Peter spring spill	yearling	1000	12 mm PIT
4/1/2025	Green Peter Reservoir - Head of Reservoir, Quartzville Creek	At the start of Green Peter spring spill	yearling	1000	12 mm PIT
4/1/2025	Green Peter Reservoir - mid reservoir	At the start of Green Peter spring spill	yearling	2000	12 mm PIT
4/1/2025	South Santiam River - Foster Dam Tailrace	Prior to start of Foster refill	yearling	1000	12 mm PIT
4/1/2025	South Santiam River - Foster Dam Head of Reservoir	Prior to start of Foster refill	yearling	4000	12 mm PIT
4/15/2025	Green Peter Head of Reservoir in Middle Santiam River	At the start of the second spring spill block	fry	2500	8 mm PIT
4/15/2025	Green Peter Head of Reservoir in Quartzville Creek	At the start of the second spring spill block	fry	2500	8 mm PIT
4/20/2025	South Santiam River – Foster Head of Reservoir	Post refill operations	yearling	5000	12 mm PIT
4/20/2025	South Santiam River – Foster Tailrace	Post refill operations	yearling	2000	12 mm PIT



## BULK MARKING SUMMARY

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During this reporting period, Cramer Fish Sciences PIT-tagged and released a total of 5,002 BY2024 South Santiam stock juvenile Chinook salmon fry at the head of Green Peter Reservoir. The release aimed to evaluate downstream movement patterns during the first spring spill block at Green Peter Dam. These fish were released on March 12, 2025, and were evenly distributed between the Quartzville Creek and Middle Santiam arms of the upper reservoir. The fry had an average fork length of 46.5 millimeters and an average weight of 1 gram (Table 3).

North Santiam Chinook salmon fry remain below the threshold for safe handling due to their yolk sacs still being attached. Water temperatures this year have been colder than last year, and hatchery staff estimate that these fry will be ponded in early April. We project that clipping and tagging of this stock will begin between late May and early June.

## Recaptures

No PIT-tagged fish released under this project were detected and uploaded to the PIT Tag Information System (PTAGIS) during this reporting period. Since releases began in May 2023, we estimate that there has been a total of 5,957 unique detections of PIT-tagged fish across multiple sites (Table 4).

Table 2. Bulk marking summary statistics. Total number of fish marked (N), mean fork length (FL), mean weight, start date of marking, end date of marking, total mortalities from start of tagging to release, mortality percentage, total shed tags from start of tagging to release, and shed tag percentage.

Mark Group	N	Mean FL (mm)	Mean Weight (g)	Date Start	Date End	Mort	Mort. %	Sheds	Shed %
Green Peter Head of Reservoir - Middle Santiam	5,071	56.2	NA	5/15/2023	5/16/2023	74	1.46	32	0.63
Green Peter Head of Reservoir - Quartzville Creek	5,203	58.5	NA	5/17/2023	5/18/2023	18	0.35	19	0.37
Lookout Point Head of Reservoir	10,041	63.1	2.9	5/22/2023	5/24/2023	39	0.39	53	0.53
Hills Creek Head of Reservoir	10,117	64.7	2.9	5/30/2023	6/1/2023	22	0.22	9	0.09
Fall Creek Head of Reservoir	10,040	67.4	3.2	6/1/2023	6/7/2023	68	0.68	30	0.3
Detroit Head of Reservoir Breitenbush Arm	7,530	66.9	3.6	6/13/2023	6/14/2023	82	1.09	24	0.32
Detroit Head of Reservoir - North Santiam Arm	7,528	66.9	3.6	6/14/2023	6/15/2023	83	1.10	25	0.32
Cougar Head of Reservoir	5,626	67.7	3.5	6/20/2023	6/20/2023	475	8.40	44	0.78
North Santiam – Fall 23 & Spring 24 Bulk Group	30,680	67.3	3.5	6/26/2023	7/20/2023	3,437	10.6	99	0.32
M.F. Willamette – Fall 23 & Spring 24 Bulk Group	85,233	NA	NA	7/26/2023	12/7/2023	380	0.45	340	0.40
South Santiam – Fall 23 & Spring 2024 Bulk Group	43,407	NA	NA	8/14/2023	12/20/2023	128	0.29	101	0.23
McKenzie– Fall 23 & Spring 24 Bulk Group	45,210	NA	NA	8/30/2023	2/14/2024	987	2.18	60	0.13
M.F. Willamette – Additional 51,000 Group	51,000	145.1	35.9	1/1/2024	1/31/2021	NA	NA	NA	NA
Green Peter Head of Reservoir	5,006	50.1	1.4	3/1/2024	3/3/2024	17	0.33	13	0.25
Green Peter Head of Reservoir	5,000	54.9	1.7	3/18/2024	3/19/2024	12	0.23	20	0.39
Detroit Head of Reservoir North Santiam Arm	7,500	46.7	1.2	5/13/2024	5/15/2024	58	0.77	70	0.93
Detroit Head of Reservoir Breitenbush Arm	7,500	46.7	1.2	5/15/2024	5/17/2024	58	0.77	63	0.84
South Santiam – Fall 24 and Spring 25 Bulk Group	45,000	NA	NA	6/26/2024	7/11/2024	62	0.14	108	0.24
North Santiam – Fall 24 and Spring 25 Bulk Group	18,000	NA	NA	7/15/2024	11/6/2024	47	0.15	196	0.63
Green Peter Head of Reservoir	5,002	46.5	1	3/03/2025	3/10/2025	TBD	TBD	TBD	TBD

Table 3. PIT tagged juvenile Chinook salmon release group summary statistics.

Basin	Release Location	Release Date	N	Mean Length	Mean Weight	Lifestage
MFW	Hills Creek Head of Reservoir	5/18/2023 15:50	509	55.8	1.9	Fry

Basin	Release Location	Release Date	N	Mean Length	Mean Weight	Lifestage
MFW	LOP Head of Reservoir - Black Canyon	5/30/2023 10:30	9647	63.1	2.9	Fry
MFW	Hills Creek Head of Reservoir	6/5/2023 10:30	9784	64.7	2.8	Fry
MFW	Fall Creek Head of Reservoir - Old Boat Ramp	6/12/2023 15:00	9638	67.4	3.2	Fry
MFW	LOP Head of Reservoir - Black Canyon	9/18/2023 8:15	4998	122.9	23.8	Subyearling
MFW	LOP Forebay - Signal Point	9/18/2023 17:00	5002	128.3	25.1	Subyearling
MFW	LOP Tailrace - Pengra	9/19/2023 11:30	2011	128.4	25.2	Subyearling
MFW	Fall Creek Head of Reservoir - Old Boat Ramp	9/28/2023 14:45	5006	133.5	29.1	Subyearling
MFW	Fall Creek Tailrace	9/28/2023 19:15	1001	134.8	29.8	Subyearling
MFW	Fall Creek Head of Reservoir - Old Boat Ramp	11/6/2023 15:40	4999	139.4	32.2	Subyearling
MFW	Fall Creek Tailrace	11/6/2023 19:00	1000	134.9	30.2	Subyearling
MFW	Hills Creek Head of Reservoir	11/7/2023 15:45	4997	135.2	28.6	Subyearling
MFW	Hills Creek Mid Reservoir - Packard Creek Boat Ramp	11/8/2023 15:15	4998	145.3	36.9	Subyearling
MFW	Hills Creek Dam Tailrace	11/9/2023 14:35	2969	129.6	27	Subyearling
MFW	LOP Head of Reservoir - Black Canyon	1/3/2024 16:45	4634	143.3	33.7	Yearling
MFW	LOP Head of Reservoir - Black Canyon	1/4/2024 16:30	4828	143.3	NA	Yearling
MFW	LOP Head of Reservoir - Black Canyon	1/8/2024 15:40	3789	143.3	NA	Yearling
MFW	LOP Head of Reservoir - Black Canyon	1/9/2024 16:15	5115	143.3	NA	Yearling
MFW	LOP Head of Reservoir - Black Canyon	1/25/2024 11:30	7617	143.6	34.3	Yearling
MFW	Hills Creek Dam Tailrace	1/31/2024 14:05	24861	141.6	34.7	Yearling
MFW	Hills Creek Head of Reservoir	2/6/2024 11:15	4963	153.8	40.9	Yearling
MFW	Hills Creek Mid Reservoir - Packard Creek Boat Ramp	2/7/2024 10:10	5000	155.9	41.7	Yearling
MFW	Hills Creek Dam Tailrace	2/7/2024 15:20	2998	151.3	42.8	Yearling
MFW	Fall Creek Head of Reservoir - Old Boat Ramp	2/20/2024 12:45	4993	148.4	38.9	Yearling
MFW	Fall Creek Tailrace	2/20/2024 16:05	1002	150.5	39.9	Yearling
MFW	LOP Head of Reservoir - Black Canyon	2/28/2024 11:30	4994	141.5	34.2	Yearling
MFW	LOP Forebay - Signal Point	2/28/2024 16:30	4988	144.2	35.9	Yearling
MFW	LOP Tailrace - Pengra	2/29/2024 11:00	1998	149.7	39.2	Yearling
MFW	Fall Creek Head of Reservoir - Old Boat Ramp	4/2/2024 11:00	2500	146	37.1	Yearling
MFW	Fall Creek Head of Reservoir - Old Boat Ramp	4/3/2024 10:55	2497	154.6	43.2	Yearling
MFW	Fall Creek Tailrace	4/3/2024 14:05	999	159.5	44.5	Yearling

Basin	Release Location	Release Date	N	Mean Length	Mean Weight	Lifestage
MFW	LOP Head of Reservoir - Black Canyon	4/9/2024 10:35	2499	150.9	41.2	Yearling
MFW	LOP Head of Reservoir - Black Canyon	4/9/2024 13:00	2499	150.9	NA	Yearling
MFW	LOP Forebay - Signal Point	4/10/2024 11:00	2500	150.7	39.7	Yearling
MFW	LOP Forebay - Signal Point	4/11/2024 11:55	2500	150.7	NA	Yearling
MFW	LOP Tailrace - Pengra	4/11/2024 15:25	2000	149	38.9	Yearling
MCK	Cougar Head of Reservoir - Cougar Crossing Bridge	8/29/2023 11:30	5198	67.9	3.6	Fry
MCK	Cougar Head of Reservoir - Cougar Crossing Bridge	10/2/2023 14:20	5005	117.2	18.9	Subyearling
MCK	Cougar Head of Reservoir - Cougar Crossing Bridge	10/2/2023 19:05	3006	116.7	19	Subyearling
MCK	Cougar Head of Reservoir - Cougar Crossing Bridge	10/18/2023 11:50	3977	118.4	19.8	Subyearling
MCK	Cougar Forebay	10/18/2023 18:00	5010	120.8	21	Subyearling
MCK	Cougar Tailrace - USGS	10/19/2023 12:40	4000	112.5	16.8	Subyearling
MCK	Cougar Head of Reservoir - Cougar Crossing Bridge	11/13/2023 13:15	3999	121.3	23	Subyearling
MCK	Cougar Forebay	11/14/2023 15:15	4995	124.6	23.8	Subyearling
MCK	Cougar Tailrace - USGS	11/15/2023 11:45	2411	120.1	21.5	Subyearling
MCK	Cougar Head of Reservoir - Cougar Crossing Bridge	3/8/2024 11:20	4799	136.9	31	Yearling
MCK	Cougar Forebay	3/11/2024 11:25	4800	136.5	29.5	Yearling
MCK	Cougar Tailrace - USGS	3/11/2024 15:10	2081	129.5	25.4	Yearling
SST	Green Peter Head of Reservoir - Quartzville Creek Arm	5/22/2023 13:00	5171	58.5	NA	Fry
SST	Green Peter Head of Reservoir - Middle Santiam Arm	5/22/2023 20:30	4961	56.2	NA	Fry
SST	Foster Tailrace - South Santiam Hatchery	8/23/2023 16:30	1030	115.7	18.2	Subyearling
SST	Foster Reservoir Head of Reservoir - Cascadia Covered Bridge	8/24/2023 10:00	2059	105.6	14.5	Subyearling
SST	Green Peter Head of Reservoir - Quartzville Creek Arm	9/20/2023 14:00	2518	113.5	19.5	Subyearling
SST	Green Peter Head of Reservoir - Middle Santiam Arm	9/21/2023 13:40	2508	117.1	20.7	Subyearling
SST	Green Peter Head of Reservoir - Quartzville Creek Arm	10/3/2023 12:45	2502	122.8	25.1	Subyearling
SST	Green Peter Head of Reservoir - Middle Santiam Arm	10/4/2023 14:40	2516	119.6	23.8	Subyearling
SST	Green Peter Tailrace - Sunnyside Boat Ramp	10/9/2023 16:05	4002	125.9	26.4	Subyearling
SST	Foster Reservoir Head of Reservoir - Cascadia Covered Bridge	10/10/2023 14:20	5000	125.8	24.5	Subyearling
SST	Foster Tailrace - South Santiam Hatchery	10/11/2023 15:20	4000	135.2	31.8	Subyearling
SST	Green Peter Head of Reservoir - Middle Santiam Arm	2/21/2024 12:00	1004	164.4	51.6	Yearling
SST	Green Peter Head of Reservoir - Quartzville Creek Arm	2/22/2024 11:45	1014	150.8	40.2	Yearling

Basin	Release Location	Release Date	N	Mean Length	Mean Weight	Lifestage
SST	Green Peter Mid Reservoir - Thistle Boat Ramp	2/22/2024 17:45	2006	153.8	42.9	Yearling
SST	Green Peter Mid Reservoir - Thistle Boat Ramp	2/23/2024 10:40	2003	159.4	46.5	Yearling
SST	Green Peter Tailrace - Sunnyside Boat Ramp	2/23/2024 14:15	1014	163.4	50.1	Yearling
SST	Green Peter Head of Reservoir - Middle Santiam Arm	3/6/2024 15:30	2506	50.1	1.4	Fry
SST	Green Peter Head of Reservoir - Quartzville Creek Arm	3/6/2024 17:30	2500	51.3	1.4	Fry
SST	Foster Reservoir Head of Reservoir - Cascadia Covered Bridge	3/26/2024 13:30	2997	156.3	44.1	Yearling
SST	Foster Reservoir Head of Reservoir - Cascadia Covered Bridge	3/27/2024 11:00	3001	145.3	38	Yearling
SST	Foster Tailrace - South Santiam Hatchery	3/28/2024 13:30	3005	154.6	43.8	Yearling
SST	Foster Tailrace - South Santiam Hatchery	4/1/2024 12:55	2991	156	44.3	Yearling
SST	Foster Reservoir Head of Reservoir - Cascadia Covered Bridge	4/4/2024 13:15	1908	145.4	37.2	Yearling
SST	Green Peter Head of Reservoir - Middle Santiam Arm	4/12/2024 11:50	2350	52.4	1.5	Fry
SST	Green Peter Head of Reservoir - Quartzville Creek Arm	4/12/2024 13:15	2500	54.9	1.7	Fry
SST	Foster Reservoir Head of Reservoir - Cascadia Covered Bridge	8/27/2024 13:40	2000	120.1	17.8	Subyearling
SST	Foster Tailrace - South Santiam Hatchery	8/27/2024 18:55	934	121.5	18.2	Subyearling
SST	Green Peter Head of Reservoir - Quartzville Creek Arm	9/9/2024 17:55	2492	120.5	18.4	Subyearling
SST	Green Peter Head of Reservoir - Middle Santiam Arm	9/10/2024 16:35	2496	122.4	19.7	Subyearling
SST	Green Peter Head of Reservoir - Middle Santiam Arm	10/8/2024 16:00	2500	130.4	23	Subyearling
SST	Green Peter Head of Reservoir - Quartzville Creek Arm	10/9/2024 15:30	2450	131.5	24.6	Subyearling
SST	Green Peter Tailrace - Sunnyside Boat Ramp	10/10/2024 15:30	3999	133.2	26.3	Subyearling
SST	Foster Reservoir Head of Reservoir - Cascadia Covered Bridge	10/15/2024 13:45	4994	137.5	28.6	Subyearling
SST	Foster Tailrace - South Santiam Hatchery	10/15/2024 19:45	3998	136.9	28.7	Subyearling
SST	Green Peter HOR Quartzville	2/27/2025 11:45:00	1000	146.4	32.7	Yearling
SST	Green Peter HOR Middle Santiam	2/27/2025 7:20:00	1001	153.6	41	Yearling
SST	Green Peter Mid Reservoir	2/28/2025 10:27:00	2001	158.4	41.8	Yearling
SST	Green Peter Mid Reservoir	2/28/2025 14:54:00	2000	156.9	39.1	Yearling
SST	Green Peter Tailrace	2/28/2025 20:16:00	1000	160	41.8	Yearling
SST	Green Peter HOR Quartzville	3/12/2025 11:47	2500	45.9	0.9	Fry
SST	Green Peter HOR Middle Santiam	3/12/2025 18:00	2502	47	1	Fry
NST	Marion Forks Hatchery Escape	6/16/2023 12:00	1247	66.5	3.4	Fry
NST	Detroit Head of Reservoir - Breitenbush River	7/13/2023 8:45	7000	66.8	3.6	Fry

Basin	Release Location	Release Date	N	Mean Length	Mean Weight	Lifestage
NST	Detroit Head of Reservoir - North Santiam River	7/13/2023 11:35	6638	67	3.6	Fry
NST	Detroit Head of Reservoir - Breitenbush River	9/26/2023 10:45	5002	106.5	11.8	Subyearling
NST	Detroit Head of Reservoir - North Santiam River	9/26/2023 16:00	4997	102.6	10.4	Subyearling
NST	Big Cliff Tailrace - Packsaddle Boat Ramp	9/27/2023 15:30	8009	106.5	11.9	Subyearling
NST	Big Cliff Tailrace - Packsaddle Boat Ramp	11/20/2023 16:50	5998	112.4	16.6	Subyearling
NST	Detroit Head of Reservoir - North Santiam River	3/20/2024 14:45	2000	128.4	25.5	Yearling
NST	Detroit Head of Reservoir - Breitenbush River	3/21/2024 11:15	2000	124	21.3	Yearling
NST	Big Cliff Tailrace - Packsaddle Boat Ramp	3/21/2024 16:30	1998	129.4	24.1	Yearling
NST	Detroit Head of Reservoir - North Santiam River	5/20/2024 12:00	7530	47	1.2	Fry
NST	Detroit Head of Reservoir - Breitenbush River	5/20/2024 18:00	7491	47	1.2	Fry
NST	Detroit Head of Reservoir - Breitenbush River	9/24/2024 15:45	5004	103.2	12.9	Subyearling
NST	Detroit Head of Reservoir - North Santiam River	9/24/2024 17:35	4997	104.2	13	Subyearling
NST	Big Cliff Tailrace - Packsaddle Boat Ramp	9/25/2024 16:20	7998	101.3	12.1	Subyearling
NST	Big Cliff Tailrace - Packsaddle Boat Ramp	12/4/2024 18:15	2458	110.6	15.3	Subyearling
NST	Big Cliff Tailrace - Packsaddle Boat Ramp	12/5/2024 18:00	3539	110.6	15.3	Subyearling

Table 4. Summary of Unique PIT-Tag Detections Across Observation Locations in the Willamette and Columbia River Basins (May 2023–March 2025). Basins are abbreviated as MCK (McKenzie), MFW (Middle Fork Willamette), NST (North Santiam), and SST (South Santiam). Observation locations are abbreviated as follows: MCKESF (South Fork McKenzie, head of Cougar Reservoir), SFM (South Fork McKenzie above Cougar Reservoir), SFC (South Fork McKenzie below Cougar Dam), SID (Sauvie Island, Columbia River), Columbia (Columbia River mainstem), RICEIS (Rice Island, Columbia River), ASMEBR-Astoria (Astoria-Megler Bridge, Columbia River), WILRMF (Middle Fork Willamette River below Oakridge), CRESIS (Crescent Island, Columbia River), TTOWER (Transmission Towers near Troutdale, Columbia River), HANIS (Islands in the Hanford Reach, Columbia River), ML1 (Lower Mill Creek), ESANIS (East Sand Island, Columbia River), COLR1 (Columbia River, mouth to Three Tree Point, WA, km 0), COLR2 (Columbia River, Three Tree Point, WA to Lewis River, km 49), NSANTR (North Santiam River), MSANTR (Middle Santiam River), SSANTR (South Santiam River), QUARTC (Quartzville Creek), PIER3 (Pier 3, Columbia River).

Basin	Observation	Detection Method	RKM	Total	Reporting Period
MCK	MCKESF	Screw Trap	552	139	0
MCK	SFM	Instream Array	551	15	0
MCK	Cougar Dam Powerhouse	Screw Trap	542	155	0
MCK	Cougar Dam Regulating Outlet	Screw Trap	542	2089	0

Basin	Observation	Detection Method	RKM	Total	Reporting Period
MCK	SFC	Instream Array	542	254	0
MCK	SID	Instream Array	156	2	0
MCK	Columbia	Towed Array	75	12	0
MCK	Columbia	Instream Array	70	54	0
MCK	RICEIS	Predation Mark Recovery	34	1	0
MCK	ASMEBR - Astoria	Predation Mark Recovery	12	11	0
MCK	COLR1 - Columbia River - mouth to Three Tree Point, WA (km 0	Predation Mark Recovery	0	1	0
MCK	COLR2 - Columbia River - Three Tree Point, WA to Lewis River (km 49	Predation Mark Recovery	0	3	0
MFW	MCKESF	Screw Trap	552	1	0
MFW	WILRMF	Screw Trap	548	42	0
MFW	Hills Creek Dam Powerhouse	Screw Trap	537	181	0
MFW	Hills Creek Dam Tailrace	Screw Trap	537	139	0
MFW	Lookout Point Dam	Fyke Net	512	1	0
MFW	CRESIS	Predation Mark Recovery	510	1	0
MFW	WILRMF	Fyke Net	506	3	0
MFW	Lookout Point Dam	Gillnet Fishery or Research	496	6	0
MFW	Lookout Point Dam	Screw Trap	496	254	0
MFW	Dexter Dam	Screw Trap	491	93	0
MFW	Fall Creek Dam	Screw Trap	477	711	0
MFW	TTOWER	Predation Mark Recovery	190	1	0
MFW	Columbia	Towed Array	75	74	0
MFW	Columbia	Instream Array	70	197	0
MFW	RICEIS	Predation Mark Recovery	34	3	0
MFW	ASMEBR - Astoria	Predation Mark Recovery	12	29	0
MFW	ESANIS	Predation Mark Recovery	8	8	0
MFW	COLR1 - Columbia River - mouth to Three Tree Point, WA (km 0	Predation Mark Recovery	0	3	0
MFW	COLR2 - Columbia River - Three Tree Point, WA to Lewis River (km 49	Predation Mark Recovery	0	5	0
NST	HANIS	Predation Mark Recovery	594	1	0
NST	Cougar Dam Regulating Outlet	Screw Trap	542	1	0
NST	Big Cliff Dam	Screw Trap	429	123	0
NST	NSANTR	Screw Trap	429	6	0

Basin	Observation	Detection Method	RKM	Total	Reporting Period
NST	NSANTR	Bypass Sub-Sample	383	25	0
NST	TTOWER	Predation Mark Recovery	190	3	0
NST	SID	Instream Array	156	32	5
NST	ML1	Instream Array	88	1	0
NST	Columbia	Towed Array	75	56	0
NST	Columbia	Instream Array	62	103	0
NST	RICEIS	Predation Mark Recovery	34	1	0
NST	ASMEBR - Astoria	Predation Mark Recovery	12	11	0
NST	ESANIS	Predation Mark Recovery	8	2	0
NST	COLR2 - Columbia River - Three Tree Point, WA to Lewis River (km 49	Predation Mark Recovery	0	5	0
SST	MSANTR	Screw Trap	446	92	0
SST	QUARTC	Fyke Net	441	2	0
SST	QUARTC	Gillnet Fishery or Research	434	5	0
SST	SSANTR	Screw Trap	431	26	0
SST	MSANTR	Fyke Net	430	5	0
SST	Green Peter Dam	Screw Trap	429	120	0
SST	MSANTR	Gillnet Fishery or Research	420	76	0
SST	Lebanon Dam	Instream Array	388	512	6
SST	TTOWER	Predation Mark Recovery	190	1	0
SST	Columbia	Towed Array	75	66	0
SST	Columbia	Instream Array	68	162	0
SST	RICEIS	Predation Mark Recovery	34	1	0
SST	PIER3	Predation Mark Recovery	19	1	0
SST	ASMEBR - Astoria	Predation Mark Recovery	12	45	0
SST	ESANIS	Predation Mark Recovery	8	4	0
SST	COLR2 - Columbia River - Three Tree Point, WA to Lewis River (km 49	Predation Mark Recovery	0	4	0



## APPENDIX A. RELEASE SITE MAPS

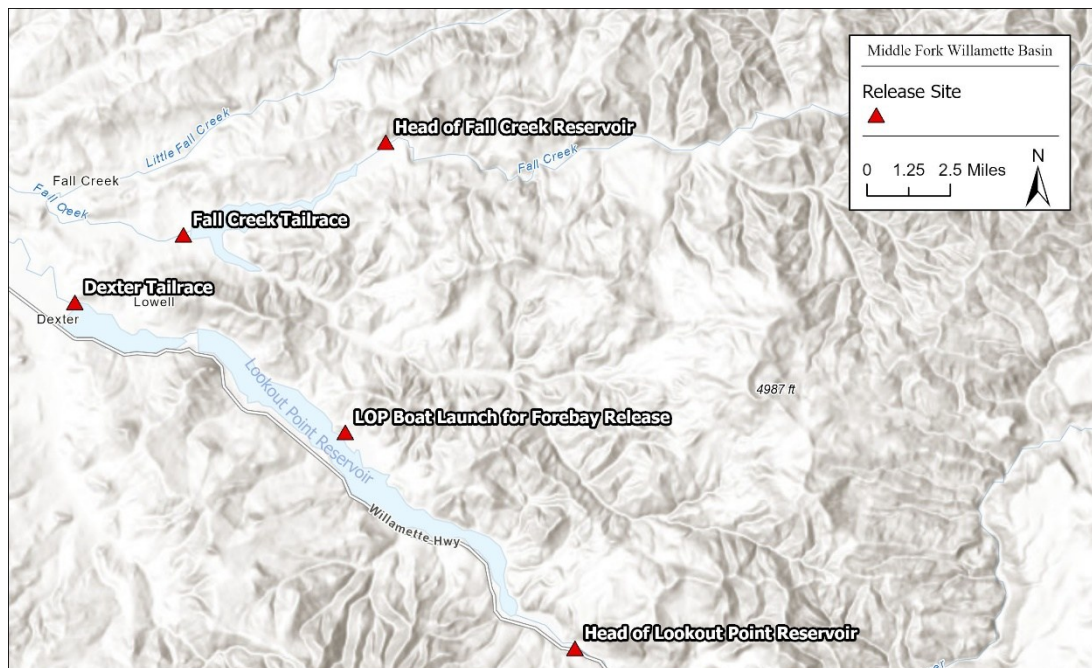


Figure A1. Map of LOP, Dexter tailrace and Fall Creek release locations within the Middle Fork Willamette Basin.

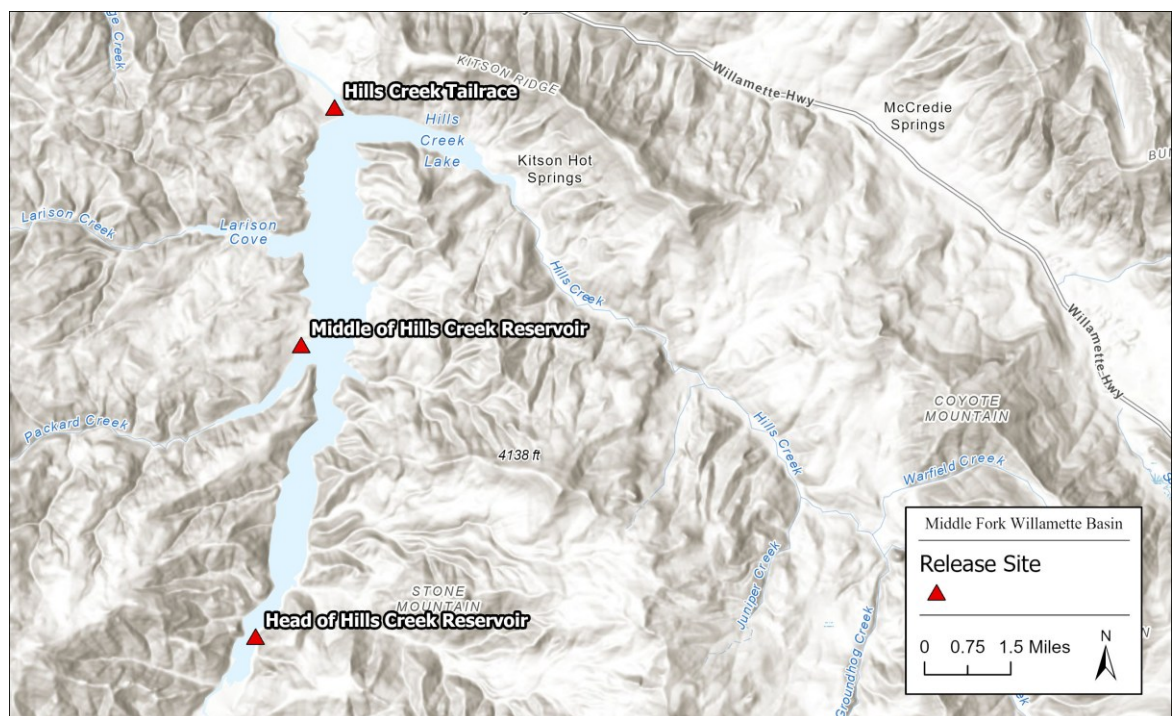


Figure A2. Map of Hills Creek Reservoir release locations within the Middle Fork Willamette Basin.



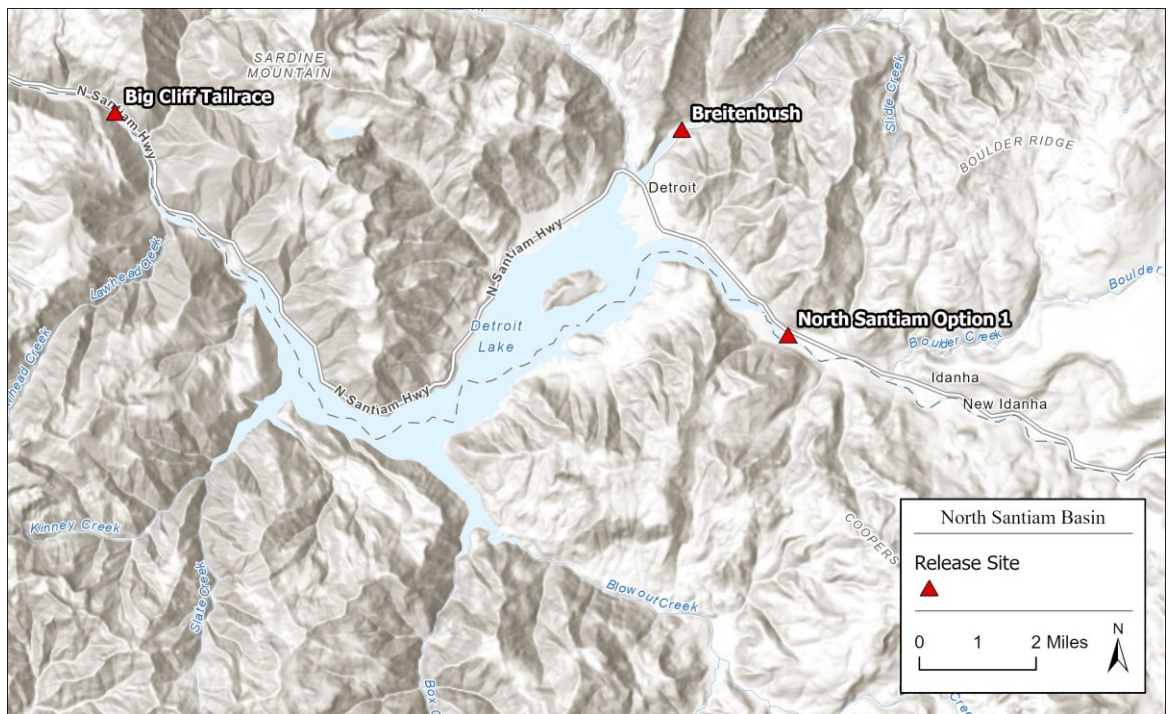


Figure A3. Map of release locations within the North Santiam Basin.

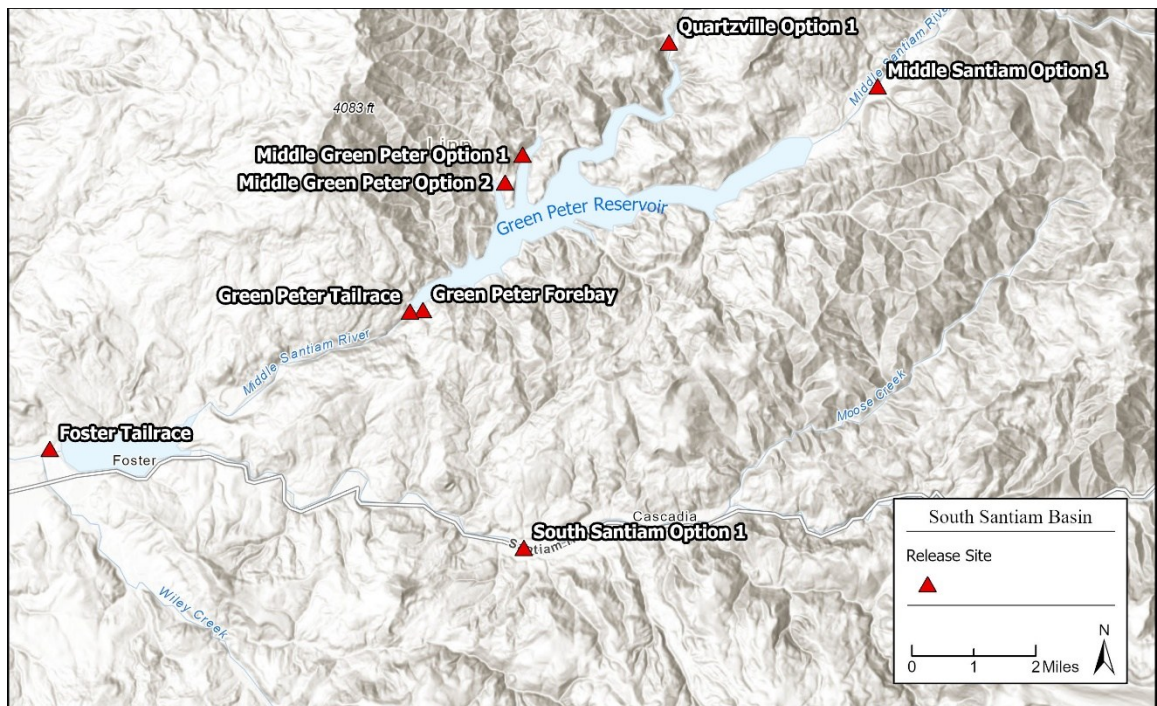


Figure A4. Map of release locations in the Middle/South Santiam basin including Green Peter Reservoir.

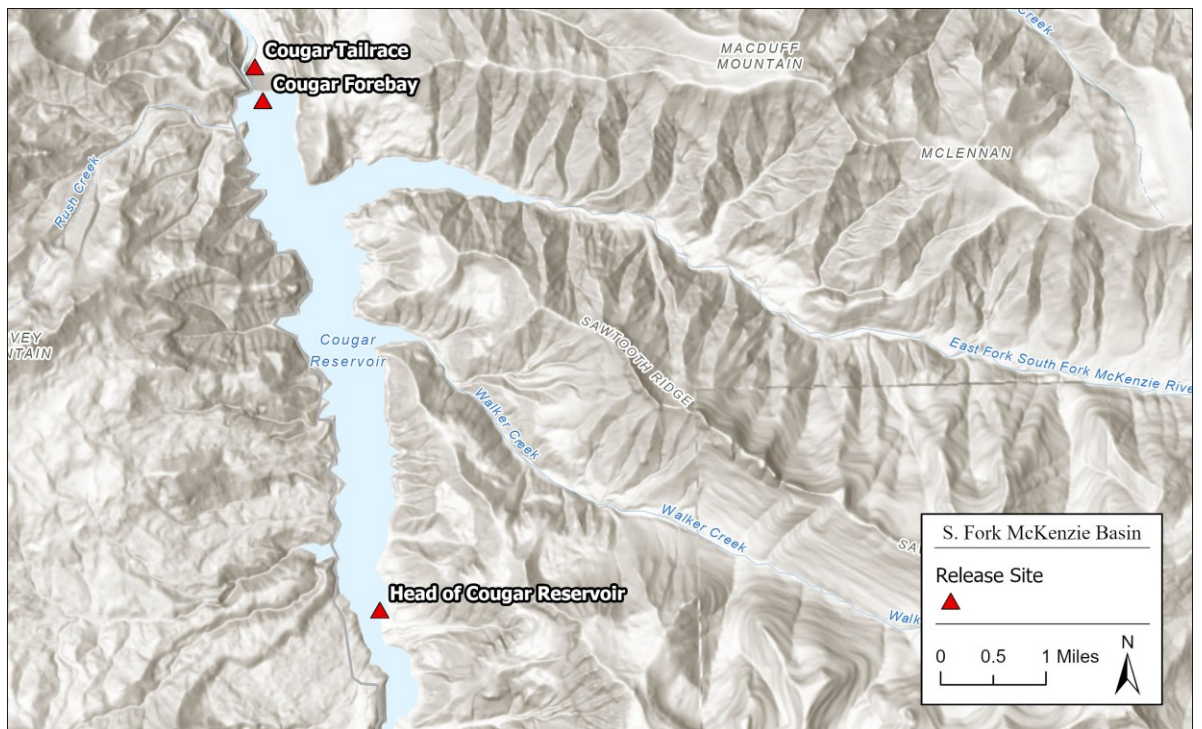


Figure A5. Map of release locations at Cougar Reservoir.

## APPENDIX B. HATCHERY FISH SOURCED FROM ODFW HATCHERIES

Table B1. Total brood year 2023 ODFW hatchery fish released for rotary screw trap efficiency tests (EAS) and for the bulk marking project (CFS) through February 28, 2025.

Brood Year 2023 - Juvenile Chinook for RM&E							
Subbasin	Life Stage	Pickup Timing Bulk Releases <sup>1</sup>	Total Allocation <sup>2</sup>	Total Used (EAS)	Total Used (CFS)	Total Used	Total Remaining
North Santiam (21H)	Fry	Late February - April 2024	16500	0	15021	15021	1479
	Subyearling	September - November 2024	47000	15580	23996	39576	7424
	Yearling	Feb-25	17000	5839	0	5839	11161
	All	NA	80500	21419	39017	60436	20064
South Santiam (24H)	Fry	Late February - April 2024	11000	0	9,856	9,856	1144
	Subyearling	August - October 2024	70000	26,250	25,863	52,113	17887
	Yearling	Feb-25	40000	8,000	7,002	15,002	24998
	All	NA	121000	34,250	42,721	76,971	44029
McKenzie (23H)	Fry	February-April 2024	1,900	0	0	0	1900
	Subyearling	September-November 2024	4,500	6250		6250	-1750
	Yearling	February-March 2025	0	0	0	0	0
	All	NA	6,400	6,250	0	6250	150
M. Fork Willamette (22H)	Fry	February-May 2024	0	0	0	0	0
	Subyearling	August-November 2024	8,000	8000		8000	0
	Yearling	January-February 2025	0	0	0	0	0
	All	NA	8000	8000	0	8000	0

1 - Stated pickup timing is for bulk release groups. Fish will be picked up at least once per month year-round for screw trap efficiency trials.

2 - Total numbers includes all fish needed for RM&E purposes per Brood Year (i.e., annual basis) and will come from a combination of 'routine production' and 'additional production for RM&E'. Numbers have been rounded up for general planning purposes as 'extra' fish are needed to account for tagging and holding studies.