

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

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Subject: July Hatchery and Natural Production Report

Date: 8 August 2023

Cc: Distribution list.

HATCHERY ACTIVITIES

At Methow Hatchery, all 2022 brood progeny, and all 2023 broodstock were reared on 100% well water during July. At Wells Hatchery, all populations on-station at the end of the month were reared on 100% well water.

2022 Twisp Spring Chinook Salmon

A total of 25,398 Twisp fry from the 2022 brood were on-station at Methow Hatchery at the end of the month and no mortalities were identified. The number of fish on-station that apply to Douglas PUD HCP and Grant PUD SSSA mitigation obligations is listed in Appendix A.

2022 Methow Composite Spring Chinook Salmon

Methow Hatchery had a total of 200,583 Methow Composite fry from the 2022 brood on-station at the end of the month after accounting for 52 mortalities during July. This population includes an estimated 64,105 fry for release from the Chewuch Acclimation Pond, and 136,478 fry for release from Methow Hatchery. The number of fish on-station that apply to Douglas PUD HCP, Chelan PUD HCP, and Grant PUD SSSA mitigation obligations is listed in Appendix A.

2023 Spring Chinook Broodstock Collection

Collection of spring Chinook broodstock at Wells Dam began on 8 May and continued weekly through the month of June. By the end of June, a total of 59 wild female and 60 wild male spring Chinook had been transferred to Methow Hatchery for broodstock for the Methow Composite program. In addition, one wild female was collected at Wells Dam for the Twisp program. The Twisp weir has been operating since mid-June, and through 24 July, six additional female Chinook (3 wild, 3 hatchery) and two wild male Chinook were retained. However, because of a lack of sufficient fish for the Twisp River program, all fish retained from the Twisp River weir were returned to the Twisp River at Buttermilk Bridge on 25 July. The reduced production from the lack of a Twisp River program will be replaced with extra production of Methow Composite fish for the 2023 brood.

In addition to these releases, surplus non-Twisp wild fish collected at Wells Dam and transferred to Methow Hatchery (4 males and 3 females) were released at the Methow River Bridge in Winthrop on 25 July (2 males and 2 females), or 1 August (2 males and 1 female). The single wild female Chinook trapped at Wells Dam and genetically identified as a Twisp fish was released on 1 August to the Twisp River at the Buttermilk Bridge.

Table 1. Spring Chinook Salmon length and weight sampling at Methow Hatchery during the month of July. MC = MetComp, FPP = fish per pound.

Raceway	Brood year	Stock-release	Fork length (mm)				FPP
			Mean	<i>N</i>	SD	CV	
1	2022	Twisp	94.4	100	6.2	6.5	44.8
2	2022	Twisp	95.3	103	6.5	6.8	43.1
3	2022	MC-Chewuch	95.2	103	6.1	6.5	47.1
4	2022	MC-Chewuch	94.4	111	5.2	5.5	47.9
5	2022	MC-Chewuch	95.5	101	5.9	6.2	46.0
7	2022	MC-Methow	97.7	100	5.4	5.6	43.5
8	2022	MC-Methow	95.8	102	6.5	6.8	45.4
9	2022	MC-Methow	95.9	101	6.8	7.1	44.5
10	2022	MC-Methow	96.0	104	6.1	6.3	45.9
11	2022	MC-Methow	95.0	109	6.6	6.9	45.3
12	2022	MC-Methow	94.9	106	7.3	7.7	47.4

2022 Summer Chinook

Wells Hatchery had an estimated 330,125 fry for the yearling program, and 38,033 fry for the Methow conservation (MEOK) program on-station at the end of July. These programs experienced monthly losses of 925 and 349 fish, respectively, in addition to a population adjustment of -608 fish for the MEOK program after routine inventory assessments at tagging. The hatchery also had 169,620 summer Chinook progeny from the Entiat National Fish Hatchery on-station at the end of July that will be used to support reintroduction of summer Chinook into the Columbia River upstream of Chief Joseph Dam. This population experienced 246 mortalities during the month of July and was reduced by 5,805 fish after tagging-related population adjustments. Summer Chinook are being reared to fulfill Wells HCP mitigation obligations (yearling and MEOK programs; Appendix A) and the Southern Resident Killer Whale and Pacific Salmon Treaty subyearling production contract with WDFW (Appendix B).

2023 Summer Steelhead

Wells Hatchery had 88,499 Methow safety-net (MSN), 206,609 Columbia safety-net (CSN), and 93,681 Okanogan safety-net (OSN) progeny on-station at the end of the month. These populations experienced 173 additional MSN mortalities, 468 CSN mortalities, and 273 OSN mortalities during the month of July. The hatchery also had 21,056 fry for the Omak conservation program on-station at the end of July after subtracting 22 mortalities during the month.

Wells Hatchery also had a total of 22,811 Methow conservation program progeny and 23,305 Twisp conservation program progeny on-station at the end of July. These populations experienced mortalities of 1,248 and 962 fish, respectively.

2023 Riverence Rainbow Trout

Wells Hatchery had 25,255 Riverence Rainbow Trout on-station at the end of July after removing 16 mortalities during the month. These fish will be used for 2024 spring plants and are reared under the Off-License Settlement Agreement between Douglas PUD and WDFW (Appendix C).

2022 Methow Coho

Wells Hatchery had 26,617 Methow Coho fry from the 2022 brood on-station at the end of July and 27 additional fish were identified as mortalities during the month. These fish are reared to meet Wells HCP mitigation obligations (Appendix A).

2023 White Sturgeon

Wells Hatchery had 5,369 White Sturgeon progeny from the 2023 brood on-station after receiving 3,419 fry on 9 July. The population on-station reflects the removal of 1,398 additional mortalities during the month of July. White Sturgeon are reared at Wells Hatchery under the Wells Aquatic Settlement Agreement and under agreement with Chelan PUD (Appendix D).

NATURAL PRODUCTION ACTIVITIES

PIT Tag Antenna Arrays

Data collected at all Methow basin PIT tag interrogation sites operated under this program, including Twisp (TWR), lower Methow (LMR), Lower Chewuch (CRW), Gold Creek (GLC), Libby Creek (LBC), and Wolf Creek (WFC) are uploaded to the PTAGIS database regularly, and can be viewed at the following website: <http://www.ptagis.org/data/quick-reports/small-scale-site-detections>

2023 Smolt Trapping

River conditions were favorable for trapping at both the Methow and Twisp sites during the month of July, and traps at both locations operated for the entire month with no interruptions. During the month, subyearling wild Chinook parr were the primary species captured at both the Methow and Twisp trap sites (Table 2). Biological data collected from trapped fish is detailed in Table 3. Methow River discharge for the period operated ranged from 12.9 to 37.4 m³s, providing expected trap efficiencies greater than 1.3 percent. Twisp River discharge for the period operated ranged from 1.0 to 5.7 m³s, providing expected trap efficiencies greater than 17.5 percent.

Table 2. Monthly salmonid captures at Methow Basin smolt traps in 2023. SHR = wild steelhead/rainbow.

Species/origin	Methow			Twisp			Basin total
	Mar-May	June	July	Mar-May	June	July	
Yearling Chin/wild	109	0	0	942	27	0	1,078
Yearling Chin/hatch	1,861	0	0	4,197	0	0	6,058
Sub Chin/wild-parr	226	408	291	8	203	96	1,232
Sub Chin/wild-fry	4,927	264	0	648	243	1	6,083
SHR/wild-transitional	138	4	0	482	8	0	632
SHR/wild-parr	19	0	2	304	22	29	376
SHR/wild-fry	3	71	7	0	1	19	101
Steelhead/hatchery	624	19	2	2,091	21	4	2,761
Coho/wild-smolt	160	51	0	502	36	0	749
Coho/wild-parr	7	1	4	2	0	0	14
Coho/wild-fry	34	0	0	4	0	0	38
Coho/hatchery	1,344	11	0	6,927	1	0	8,283
Bull Trout	1	0	1	10	2	0	14
Cutthroat Trout	0	1	0	2	7	3	13
Brook Trout	0	0	0	1	0	0	1
Sockeye/wild-fry	45	0	0	0	0	0	45
Total	9,498	830	307	16,120	571	152	27,478

Table 3. Biological sampling of juvenile salmonids captured at Methow Basin smolt traps during July.

Species/stage	Location	Length (mm)			Weight (g)			Mean K-factor
		Mean	SD	N	Mean	SD	N	
Sub Chinook/wild/parr	Methow	89.5	10.7	288	8.4	3.1	288	1.13
Sub Chinook/wild/parr	Twisp	67.8	10.5	96	3.8	2.0	96	1.13
Sub Chinook/wild/fry	Twisp	35.0	--	1	--	--	--	--
Steelhead/wild/parr	Methow	178.0	32.5	2	65.8	34.2	2	1.11
Steelhead/wild/parr	Twisp	138.6	18.6	29	30.7	12.9	29	1.10
Steelhead/wild/fry	Methow	29.0	3.4	7	--	--	--	--
Steelhead/wild/fry	Twisp	28.0	1.5	19	--	--	--	--
Steelhead/hatchery	Methow	170.0	21.2	2	54.3	14.6	2	1.10
Steelhead/hatchery	Twisp	180.3	15.1	4	58.1	13.1	4	0.99
Coho/wild/parr	Methow	98.3	15.7	4	11.0	4.3	4	1.11
Bull Trout	Methow	217.0	--	1	112.0	--	1	1.10
Cutthroat Trout	Twisp	202.7	24.0	3	98.2	39.3	3	1.12

Appendix A. Number of fish reared at Wells and Methow hatcheries to meet Douglas County PUD’s Wells Habitat Conservation Plan mitigation objectives and other hatchery rearing agreements. Values are derived by applying fixed mitigation levels to the entire population on-station, and do not necessarily reflect separate rearing or release strategies.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer		
					Aug '22	Sep	Oct	Nov	Dec	Jan '23	Feb	Mar	Apr	May	Jun	Jul			
2021	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	65,271	65,237	65,213	65,199	65,187	65,166	65,109	65,057	--	--	--	--	64,928	64,928	
2021	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	144,664	144,589	144,537	144,506	144,479	144,432	144,306	144,191	--	--	--	--	143,905	143,905	
2021	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	31,411	31,395	31,383	31,377	31,371	31,361	31,333	31,308	--	--	--	--	31,246	31,246	
2022	Spring Chinook	Yearling smolt	CCPUD NNI	61,000 <i>released</i>	--	--	--	--	61,268	62,373	62,315	60,663	60,648	61,139	61,129	61,115	--	--	
2022	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,000 <i>released</i>	--	--	--	--	134,588	137,016	136,889	134,452	134,418	135,570	135,486	135,454	--	--	
2022	Spring Chinook	Yearling smolt	DCPUD Wells NNI	24,728 <i>released</i>	--	--	--	--	24,836	25,285	25,261	29,194	29,186	29,423	29,418	29,411	--	--	
2021	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	351,469	351,469	351,469	351,469	351,469	351,421	351,378	351,273	--	--	--	--	350,893	350,893	
2022	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	--	--	--	561,715	546,764	523,864	516,342	497,615	--	--	--	490,926	490,926	
2022	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	360,000	356,568	356,568	356,568	356,568	332,541	331,050	330,125	--	--	
2022	Summer Chinook	Yearling smolt	DCPUD Wells NNI (Methow release)	35,437 <i>released</i>	--	--	--	--	--	41,264	41,264	41,264	41,264	39,136	38,990	38,033	--	--	
2022	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	294,347	295,858	298,042	301,150	300,862	300,784	300,725	300,650	79,458	--	--	--	221,040	79,458	300,498
2022	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	7,849	7,890	7,948	8,031	8,023	8,021	8,020	8,018	2,119	--	--	--	5,895	2,119	8,014
2022	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	78,493	78,896	79,478	80,307	80,307	80,209	80,194	80,174	21,189	--	--	--	58,944	21,189	80,133

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer
					Aug '22	Sep	Oct	Nov	Dec	Jan '23	Feb	Mar	Apr	May	Jun	Jul	
2022	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	18,684	18,664	25,399	25,374	25,355	25,345	25,338	12,648	--	--	--	--	25,329
					--	--	--	--	--	--	--	12,686	12,643	--	--	--	
2023	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	338,682	336,267	--
2023	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	9,032	8,967	--
2023	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	90,315	89,671	--
2023	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	--	--	--	--	--	--	--	--	--	--	21,078	21,056	--
2021	Methow Coho	Yearling smolt	DCPUD Mitigation	27,720 <i>released</i>	25,612	25,591	25,570	25,557	25,550	25,539	25,539	25,525	--	--	--	--	24,788
2022	Methow Coho	Yearling smolt	DCPUD Mitigation	27,909 <i>released</i>	--	--	--	--	27,426	26,927	26,827	26,827	26,511	26,488	26,409	26,617	--

¹40,000 Inundation steelhead to be released in the Twisp or Methow with 8,000 NNI fish to total 48,000. 100,000 inundation steelhead to be released in the Methow as a safety net program. 160,000 inundation steelhead to be released directly to the Columbia.

Appendix B. Fish reared at Wells Hatchery pursuant to the Southern Resident Killer Whale and Pacific Salmon Treaty production contract with WFDW.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer
					Aug '22	Sep	Oct	Nov	Dec	Jan '23	Feb	Mar	Apr	May	Jun	Jul	
2022	Summer Chinook	Sub-yearling	Orca/PST	1,000,000 <i>released</i>	--	--	--	--	1,160,567	1,129,678	1,082,364	1,066,822	1,028,129	--	--	--	1,021,947
					--	--	--	--	--	--	--	--	--	1,021,947	--	--	1,021,947

Appendix C. Fish reared at Wells or Methow hatcheries under the Off-License Settlement Agreement.

Brood year	Species	Life stage	Program	Target (pounds) disposition	Month												Total released /transfer	
					Aug '22	Sep	Oct	Nov	Dec	Jan '23	Feb	Mar	Apr	May	Jun	Jul		
2021	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (Pounds) released	1,627	1,625	--	--	--	--	--	--	--	--	--	--	50,779	
					(2,905)	(3,250)	(4,266)	--	--	--	--	--	--	--	--	(24,542)		
					--	--	1,621	--	--	--	--	--	--	--	--			
2022	Riverence Rainbow trout	Juv.	WDFW sport fish	Goal is 20,000 pounds annual combined	65,447	64,463	22,083	22,065	22,051	22,005	21,910	21,870	2,579	469	--	--	58,859	
					(699)	(1,678)	(2,453)	(3,678)	(4,410)	(6,568)	(11,532)	(16,823)	(3,352)	(610)	--	--		(27,070)
					--	--	38,103	--	--	--	--	--	18,178	2,109	469	--		
2023	Riverence Rainbow trout	Juv.	WDFW sport fish	Goal is 20,000 pounds annual combined	--	--	--	--	--	--	--	--	--	25,536	25,271	25,255	--	
					--	--	--	--	--	--	--	--	--	(16)	(16)	(90)		
					--	--	--	--	--	--	--	--	--	--	--	--		

Appendix D. Fish reared at Wells Hatchery pursuant to the Wells Aquatic Settlement Agreement – White Sturgeon Management Plan.

Brood year	Species	Life stage	Program	Target disposition	Month												Total released/culled /transferred	
					Aug '22	Sep	Oct	Nov	Dec	Jan '23	Feb	Mar	Apr	May	Jun	Jul		
2022	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	Up to 325	607	421	403	367	358	354	343	337	336	287	--	--	304	
				Culled	--	--	--	--	--	--	--	--	--	--	--	--		--
				Transferred	--	301	--	--	--	--	--	--	--	--	--	3		--
				Wells reservoir	--	--	--	--	--	--	--	--	--	--	328	--		--
2022	White Sturgeon	Juvenile rearing	Chelan White Sturgeon Supplementation	Up to 2,000	5,397	2,594	2,481	2,260	2,201	2,178	2,110	2,075	2,068	1,764	--	--	3,899	
				Culled	--	--	--	--	--	--	--	--	--	--	--	--		
				Transferred	--	1,851	--	--	--	--	--	--	--	--	--	2,048		--
				Chelan PUD	--	--	--	--	--	--	--	--	--	--	--	--		--
2023	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	Up to 325	--	--	--	--	--	--	--	--	--	--	477	750	--	
				Culled	--	--	--	--	--	--	--	--	--	--	--	--		
				Transferred	--	--	--	--	--	--	--	--	--	--	--	--		
				Wells reservoir	--	--	--	--	--	--	--	--	--	--	--	--		
2023	White Sturgeon	Juvenile rearing	Chelan White Sturgeon Supplementation	Up to 2,000	--	--	--	--	--	--	--	--	--	--	2,937	4,618	--	
				Culled	--	--	--	--	--	--	--	--	--	--	--	--		
				Transferred	--	--	--	--	--	--	--	--	--	--	--	--		
				Chelan PUD	--	--	--	--	--	--	--	--	--	--	--	--		