

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

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Subject: July Hatchery and Natural Production Report

Date: 3 August 2022

Cc: Distribution list.

HATCHERY ACTIVITIES

All fish at the Wells and Methow hatcheries were held on 100% well water during the month.

2021 Twisp Spring Chinook Salmon

A total of 29,243 fish were on-station at Methow Hatchery at the end of the month after subtracting a single mortality. These fish had mean fork lengths during the month between 92 and 93 mm (Table 1). 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.

2021 Methow Composite Spring Chinook Salmon

Methow Hatchery had a total of 212,152 fish on-station at the end of the month after removing 26 mortalities. This population includes an estimated 26,747 fish for release at the Goat Wall Acclimation Pond, 65,966 fish for release from the Chewuch Acclimation Pond, and 119,439 fish for release from Methow Hatchery. Methow Composite populations had mean fork lengths between 85 and 91 mm during the month (Table 1). 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.

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	N	SD	CV	
1	2021	Twisp	92.4	102	7.2	7.8	56.7
2	2021	Twisp	93.3	109	7.0	7.5	52.1
3	2021	MC-Goat Wall	91.5	102	6.3	6.8	56.1
4	2021	MC-Goat Wall	88.8	101	6.4	7.2	60.8
5	2021	MC-Chewuch	85.8	101	6.7	7.8	66.9
6	2021	MC-Chewuch	89.1	100	6.7	7.6	60.0
7	2021	MC-Chewuch	89.6	101	7.9	8.9	56.6
8	2021	MC-Methow	91.3	104	6.2	6.8	55.2
9	2021	MC-Methow	91.6	100	6.5	7.1	53.7
10	2021	MC-Methow	91.2	103	6.6	7.3	55.9
11	2021	MC-Methow	90.8	100	7.5	8.2	55.1
12	2021	MC-Methow	89.8	100	7.3	8.2	52.6

2021 Summer Chinook

Wells Hatchery had an estimated 364,773 fry for the HCP Inundation yearling program on-station after subtracting 397 mortalities in July, and adjusting the population by -5,925 fish during the month due to routine inventory assessments. These fish had a mean length of 85 mm and were at approximately 85 fish per pound (FPP) during the month. Summer Chinook are being reared to fulfill Wells HCP mitigation obligations (Appendix A).

2022 Summer Steelhead

Wells Hatchery had an estimated 100,409 fry on-station for the Methow safety-net program (MSN), 167,407 fry for the Columbia safety-net program (CSN), 75,406 fry for the Okanogan safety-net program (OSN), and 18,698 fry for the Omak Creek conservation (OCC) program on-station at the end of July. These fry experienced losses during July of 2,647 MSN progeny, 3,047 CSN progeny, 4,186 OSN progeny, and 493 OCC progeny. A fish health examination attributed elevated losses to bacterial coldwater disease and early life stage fallout. Antibiotic feed was administered to fish in affected vessels.

Wells Hatchery also had 19,836 Twisp and 20,152 Methow conservation program progeny on-station at the end of the month after removing 385 and 584 mortalities, respectively. Steelhead progeny are being reared to fulfill Douglas PUD Wells HCP mitigation obligations and to fulfill Grant PUD SSSA mitigation obligations.

2021 Kamloops Rainbow Trout

Wells Hatchery had 1,628 trout on-station at the end of the month after subtracting two additional mortalities. These progeny were at approximately 0.75 FPP at the end of July.

Kamloops Rainbow Trout are reared under the Off-License Settlement Agreement between Douglas PUD and WDFW (Appendix C).

2022 Riverence Rainbow Trout

Wells Hatchery had 26,469 trout fry on-station at the end of July after adjusting the population upwards by 441 fish and removing 31 mortalities. These fry will be released as fall plants in 2022, and are reared under the Off-License Settlement Agreement between Douglas PUD and WDFW (Appendix C).

2021 Methow Coho

Wells Hatchery had 25,859 Methow Coho on-station at the end of the month. This population experienced an additional 23 mortalities during the month of July and were at approximately 85 FPP. These fish are reared to meet Wells HCP mitigation obligations (Appendix A).

2022 White Sturgeon

Wells Hatchery received 7,434 White Sturgeon progeny from the Colville Confederated Tribe on 17 July and had 6,445 progeny on-station at the end of the month after subtracting 989 mortalities. White Sturgeon progeny 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>

2022 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. Decreasing river discharge at the Methow site required us to switch to trapping with the 1.5 m diameter cone in the lower position starting on 23 July. During the month, subyearling wild Chinook parr and wild Coho fry were the primary species captured at the Methow and Twisp trap sites, respectively (Table 2). Biological data collected from trapped fish is detailed in Table 3. Methow River discharge for the period operated ranged from 30.3 to 172.4 m³s. The discharge when the trap operated in the low position ranged from 30.3 to 47.9 m³s, providing expected trap efficiencies between 1.2 and 1.4 percent. The discharge when the trap operated in the upper position (prior to 23 July) ranged from 47.9 to 172.4 m³s, providing expected trap efficiencies between 0.9 and 3.5 percent. Twisp River discharge for the period operated ranged from 6.2 to 39.9 m³s, providing expected trap efficiencies between 5.0 and 17.2 percent.

Table 2. Monthly salmonid captures at Methow Basin smolt traps in 2022. SHR = wild steelhead/rainbow.

Species/origin	Methow			Twisp			Basin total
	Feb-May	June	July	Mar-May	June	July	
Precocial Chin/wild	0	0	0	0	0	1	1
Yearling Chin/wild	108	0	0	282	0	0	390
Yearling Chin/hatch	2,914	0	0	3,499	0	0	6,413
Sub Chin/wild-parr	261	260	490	2	17	114	1,144
Sub Chin/wild-fry	9,710	1,284	111	376	43	21	11,545
SHR/wild-transitional	304	3	0	229	6	0	542
SHR/wild-parr	54	5	4	172	47	16	298
SHR/wild-fry	0	74	76	2	0	7	159
Steelhead/hatchery	1,342	7	3	1,882	27	9	3,270
Coho/wild-smolt	177	8	0	420	7	0	612
Coho/wild-parr	29	9	38	4	9	43	132
Coho/wild-fry	314	43	17	348	174	133	1,029
Coho/hatchery	2,999	5	0	8,218	5	0	11,227
Bull Trout	1	0	0	12	1	0	14
Cutthroat Trout	1	0	1	8	3	5	18
Rainbow Trout	0	0	0	1	0	0	1
Sockeye/wild-fry	32	0	0	3	0	0	35
Total	18,246	1,698	740	15,458	339	349	36,830

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	<i>N</i>	Mean	SD	<i>N</i>	
Precocial Chin/wild	Twisp	141.0	--	1	31.1	--	1	1.11
Sub Chinook/wild/parr	Methow	63.1	12.6	490	3.1	2.5	490	1.07
Sub Chinook/wild/parr	Twisp	59.7	6.8	113	2.6	0.9	113	1.15
Sub Chinook/wild/fry	Methow	46.4	2.5	111	--	--	--	--
Sub Chinook/wild/fry	Twisp	46.7	3.3	21	--	--	--	--
Steelhead/wild/parr	Methow	113.5	29.9	4	18.3	15.7	4	1.07
Steelhead/wild/parr	Twisp	124.5	25.5	16	25.0	17.1	16	1.15
Steelhead/wild/fry	Methow	29.5	4.7	75	--	--	--	--
Steelhead/wild/fry	Twisp	32.1	6.2	7	--	--	--	--
Steelhead/hatchery/smolt	Methow	163.3	12.6	3	44.7	10.9	3	1.01
Steelhead/hatchery/smolt	Twisp	183.9	13.6	9	64.5	12.8	9	1.03
Coho/wild/parr	Methow	68.2	15.4	38	4.5	3.4	38	1.21
Coho/wild/parr	Twisp	56.6	8.6	43	2.4	1.5	43	1.20
Coho/wild/fry	Methow	43.7	3.6	17	--	--	--	--
Coho/wild/fry	Twisp	41.3	3.9	133	--	--	--	--
Cutthroat Trout	Methow	140.0	--	1	28.8	--	1	1.05
Cutthroat Trout	Twisp	161.8	29.9	5	48.9	30.5	5	1.06

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 '21	Sep	Oct	Nov	Dec	Jan '22	Feb	Mar	Apr	May	Jun	Jul		
2020	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	64,074	64,063	64,050	63,999	63,969	63,908	63,898	63,878	63,814	--	--	--	63,734	63,734
2020	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	142,011	141,988	141,959	141,845	141,780	141,645	141,622	141,578	141,495	--	--	--	141,259	141,259
2020	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	30,835	30,830	30,824	30,799	30,785	30,756	30,751	30,741	30,723	--	--	--	30,672	30,672
2021	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	--	--	--	--	65,233	64,758	64,663	64,635	64,629	65,297	65,291	65,284	--	--
2021	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	--	--	--	--	144,580	143,528	143,318	143,255	143,242	144,724	144,710	144,694	--	--
2021	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	--	--	--	--	31,393	31,165	31,119	31,105	31,102	31,242	31,421	31,418	--	--
2020	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	355,327	355,327	355,327	355,320	355,320	355,320	355,320	355,320	--	--	--	--	351,766	351,766
2021	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	--	--	--	--	--	--	--	507,990	--	--	--	501,100	501,100
2021	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	--	--	--	--	--	371,729	371,034	364,773	--	--
2021	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	325,601	328,786	313,463	314,244	314,115	314,058	314,006	313,948	--	--	--	--	311,923	311,923
2021	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	8,683	8,768	8,359	8,380	8,376	8,375	8,374	8,372	--	--	--	--	8,381	8,381
2021	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	86,827	87,676	83,590	83,798	83,764	83,749	83,735	83,720	--	--	--	--	83,179	83,179
2021	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	23,898	23,889	24,885	24,876	24,865	24,858	24,847	12,147	--	--	--	--	12,683	12,114

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer
					Aug '21	Sep	Oct	Nov	Dec	Jan '22	Feb	Mar	Apr	May	Jun	Jul	
2022	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	304,685	296,296	--
2022	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	8,125	7,901	--
2022	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	81,249	79,013	--
2022	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	--	--	--	--	--	--	--	--	--	--	19,191	18,698	--
2020	Methow Coho	Yearling smolt	DCPUD Mitigation	25,900 <i>released</i>	26,047	26,040	26,035	26,027	26,012	26,006	26,002	--	--	--	--	--	--
					--	--	--	--	--	--	--	25,999	--	--	--	--	25,999
2021	Methow Coho	Yearling smolt	DCPUD Mitigation	27,720 <i>released</i>	--	--	--	--	--	--	--	26,082	25,969	25,940	25,882	25,859	--
					--	--	--	--	--	--	--	--	--	--	--	--	--

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 '21	Sep	Oct	Nov	Dec	Jan '22	Feb	Mar	Apr	May	Jun	Jul	
2021	Summer Chinook	Sub-yearling	Orca/PST	1,000,000 <i>released</i>	--	--	--	--	--	--	1,039,478	1,037,048	1,049,565	--	--	--	--
					--	--	--	--	--	--	--	--	--	1,035,331	--	--	1,035,331

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 '21	Sep	Oct	Nov	Dec	Jan '22	Feb	Mar	Apr	May	Jun	Jul	
2021	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (Pounds) released	25,623	63,037	36,672	36,608	36,437	36,301	33,000	33,000	2,662	2,657	1,630	1,628	49,158
				Goal is 20,000 pounds annual combined	(1,601)	(5,131)	(18)	(84)	(499)	(1,911)	(3,300)	(9,428)	(1,331)	(2,657)	(1,630)	(2,171)	
2022	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (Pounds) released	--	--	20,688	--	--	--	--	--	--	--	900	--	26,469
				Goal is 20,000 pounds annual combined	--	--	--	--	--	--	--	--	--	26,785	26,059	26,469	

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 '21	Sep	Oct	Nov	Dec	Jan '22	Feb	Mar	Apr	May	Jun	Jul		
2021	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	Up to 325	2,618	2,117	2,107	2,092	291	290	289	288	287	239	--	--	3	
				Culled	--	--	--	--	--	--	--	--	--	3	--	--		
				Transferred	--	--	--	--	--	--	--	--	--	--	--	--		--
				Wells reservoir	--	--	--	--	--	--	--	--	--	332	--	--		332
2021	White Sturgeon	Juvenile rearing	Chelan White Sturgeon Supplementation	Up to 2,000	--	--	--	--	1,790	1,784	1,780	1,770	1,768	1,417	--	--	17	
				Culled	--	--	--	--	--	--	--	--	--	17	--	--		
				Transferred	--	--	--	--	--	--	--	--	--	--	1,346	--		1,346
				Chelan PUD	--	--	--	--	--	--	--	--	--	--	--	--		--
2022	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	Up to 325	--	--	--	--	--	--	--	--	--	--	--	901	--	
				Culled	--	--	--	--	--	--	--	--	--	--	--	--		
				Transferred	--	--	--	--	--	--	--	--	--	--	--	--		
				Wells reservoir	--	--	--	--	--	--	--	--	--	--	--	--		
2022	White Sturgeon	Juvenile rearing	Chelan White Sturgeon Supplementation	Up to 2,000	--	--	--	--	--	--	--	--	--	--	--	5,544	--	
				Culled	--	--	--	--	--	--	--	--	--	--	--	--		
				Transferred	--	--	--	--	--	--	--	--	--	--	--	--		
				Chelan PUD	--	--	--	--	--	--	--	--	--	--	--	--		