

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

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To: Andrew Gingerich and Greg Mackey
From: Charlie Snow and David Grundy
Subject: June Hatchery and Natural Production Report
Date: 8 July 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 29,241 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 84 and 87 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 212,178 fish on-station at the end of the month after removing 25 mortalities. This population includes an estimated 26,747 fish for release at the Goat Wall Acclimation Pond, 65,975 fish for release from the Chewuch Acclimation Pond, and 119,456 fish for release from Methow Hatchery. Methow Composite populations had mean fork lengths between 83 and 89 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 June. MC = MetComp, FPP = fish per pound.

Raceway	Brood year	Stock-release	Fork length (mm)				FPP
			Mean	N	SD	CV	
1	2021	Twisp	87.2	99	5.4	6.2	62.4
2	2021	Twisp	84.7	108	5.8	6.8	67.4
3	2021	MC-Goat Wall	84.7	101	5.1	6.1	65.7
4	2021	MC-Goat Wall	84.3	105	5.7	6.7	67.6
5	2021	MC-Chewuch	83.0	112	5.5	6.6	71.5
6	2021	MC-Chewuch	83.0	101	5.5	6.7	64.6
7	2021	MC-Chewuch	87.9	110	6.8	7.8	61.4
8	2021	MC-Methow	87.4	100	5.5	6.3	65.1
9	2021	MC-Methow	89.6	106	6.9	7.7	58.7
10	2021	MC-Methow	86.5	107	5.5	6.3	69.2
11	2021	MC-Methow	85.6	108	4.8	5.7	63.8
12	2021	MC-Methow	87.6	105	6.2	7.1	65.1

2021 Summer Chinook

Wells Hatchery had an estimated 371,034 fry for the HCP Inundation yearling program on-station after subtracting 695 mortalities in June. These fish had a mean length of 53 mm and were at approximately 158 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 103,056 fry on-station for the Methow safety-net program (MSN), 170,454 fry for the Columbia safety-net program (CSN), 79,592 fry for the Okanogan safety-net program (OSN), and 19,191 fry for the Omak Creek conservation (OCC) program on-station at the end of June. These fry were ponded during June and experienced losses from incubation to ponding of 14,537 MSN progeny, 18,197 CSN progeny, 2,241 OSN progeny, and 224 OCC progeny.

On 9 June, Wells Hatchery received 21,259 Twisp Conservation program progeny and 24,988 Methow Conservation program progeny from the Winthrop National Fish Hatchery. There were 20,221 Twisp and 20,736 Methow conservation program progeny on-station at the end of the month after removing 1,038 and 4,262 mortalities, respectively. A fish health examination attributed the increase in loss to systemic bacterial coldwater disease and early life stage dropouts. Therapeutic intervention in the form of medicated (antibiotic) feed was undertaken to address the issue in the most affected tanks.

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 1,630 trout on-station at the end of the month after subtracting 23 additional mortalities. These progeny were at approximately 1 FPP and an additional 900 trout were planted into Chopaka Lake ($N = 100$), Bonaparte Lake ($N = 400$), and Fish Lake ($N = 400$) during the month. The remaining population was diagnosed with systemic bacterial coldwater disease after a number of trout were observed to have severe lesions indicative of advanced infection. Losses were numerically low but proportionately high given the small size of the population and mature life stage of the cohort. Fish were moved out of the dirt pond for better observation and treated with medicated (antibiotic) feed. Further plants will be delayed until fall when lake temperatures are again deemed appropriately cool. Kamloops Rainbow Trout are reared under the Off-License Settlement Agreement between Douglas PUD and WDFW (Appendix C).

2022 Kamloops Rainbow Trout

Wells Hatchery had 26,059 trout fry on-station at the end of June after adjusting the population down by 614 fish and removing 112 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 25,882 Methow Coho on-station at the end of the month. This population experienced an additional 58 mortalities during the month of June, and were at approximately 105 FPP. These fish are reared to meet Wells HCP mitigation obligations (Appendix A).

2021 White Sturgeon

Wells Hatchery transferred the remaining White Sturgeon progeny ($N = 1,346$) to Chelan PUD during June after a downward adjustment to the number on-station of 357 fish. 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

Both trapping locations experienced downtime during the first half of June due to high river discharge, but river conditions were favorable for trapping at both the Methow and Twisp sites

during the remainder of the month. The Methow trap did not operate between 4 and 14 June, and the Twisp trap did not operate between 4 and 13 June due to high river discharge. During the month, subyearling wild Chinook fry 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 149.5 to 212.7 m³s, providing expected trap efficiencies of less than 1.4 percent. Twisp River discharge for the period operated ranged from 25.6 to 54.7 m³s, providing expected trap efficiencies of less than 5.0 percent.

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

Species/origin	Methow			Twisp			Basin total
	Feb-Apr	May	June	Mar-Apr	May	June	
Yearling Chin/wild	93	15	0	200	82	0	390
Yearling Chin/hatch	2,621	293	0	3,196	303	0	6,413
Sub Chin/wild-parr	25	236	260	0	2	17	540
Sub Chin/wild-fry	2,080	7,630	1,284	101	275	43	11,413
SHR/wild-transitional	17	287	3	28	201	6	542
SHR/wild-parr	20	34	5	70	102	47	278
SHR/wild-fry	0	0	74	1	1	0	76
Steelhead/hatchery	86	1,256	7	904	978	27	3,258
Coho/wild-smolt	32	145	8	116	304	7	612
Coho/wild-parr	2	27	9	0	4	9	51
Coho/wild-fry	96	218	43	32	316	174	879
Coho/hatchery	318	2,681	5	254	7,964	5	11,227
Bull Trout	1	0	0	1	11	1	14
Cutthroat Trout	0	1	0	2	6	3	12
Rainbow Trout	0	0	0	1	0	0	1
Sockeye/wild-fry	24	8	0	2	1	0	35
Total	5,415	12,831	1,698	4,908	10,550	339	35,741

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

Species/stage	Location	Length (mm)			Weight (g)			Mean K-factor
		Mean	SD	N	Mean	SD	N	
Sub Chinook/wild/parr	Methow	57.6	8.2	260	2.2	1.2	260	1.06
Sub Chinook/wild/parr	Twisp	54.5	5.6	17	1.9	0.6	17	1.14
Sub Chinook/wild/fry	Methow	43.4	3.6	702	--	--	--	--
Sub Chinook/wild/fry	Twisp	44.7	2.6	43	--	--	--	--
Steelhead/wild/transitional	Methow	174.0	28.2	3	56.8	25.5	3	1.03
Steelhead/wild/transitional	Twisp	161.2	8.4	6	45.3	6.7	6	1.08
Steelhead/wild/parr	Methow	88.4	24.0	5	9.3	7.0	5	1.13
Steelhead/wild/parr	Twisp	100.8	20.2	47	12.9	8.3	47	1.10
Steelhead/wild/fry	Methow	27.8	1.1	74	--	--	--	--
Steelhead/hatchery/smolt	Methow	182.1	31.2	7	62.3	29.0	7	0.97
Steelhead/hatchery/smolt	Twisp	192.1	19.7	27	73.3	27.2	27	1.00
Coho/wild/smolt	Methow	101.1	11.2	8	12.1	4.0	8	1.13
Coho/wild/smolt	Twisp	114.1	9.0	7	16.4	3.0	7	1.10
Coho/wild/parr	Methow	64.4	11.4	9	3.4	2.0	9	1.14
Coho/wild/parr	Twisp	56.7	5.4	9	2.1	0.6	9	1.15
Coho/wild/fry	Methow	36.6	3.9	43	--	--	--	--
Coho/wild/fry	Twisp	36.9	3.2	174	--	--	--	--
Coho/hatchery/smolt	Methow	135.2	12.6	5	24.4	5.4	5	0.98
Coho/hatchery/smolt	Twisp	133.0	12.3	5	24.0	4.9	5	1.02
Bull Trout	Twisp	204.0	--	1	84.4	--	1	0.99
Cutthroat Trout	Twisp	177.3	13.4	3	62.7	15.2	3	1.11

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		
					Jul '21	Aug	Sep	Oct	Nov	Dec	Jan '22	Feb	Mar	Apr	May	Jun			
2020	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	64,081	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>	142,027	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>	30,839	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	--	--	
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	--	--	
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	--	--	
2020	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	358,932	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	--	--	
2021	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	326,403	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>	8,704	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>	87,041	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>	23,910	23,898	23,889	24,885	24,876	24,865	24,858	24,847	12,147	--	--	--	12,683	12,114	24,827

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer
					Jul '21	Aug	Sep	Oct	Nov	Dec	Jan '22	Feb	Mar	Apr	May	Jun	
2022	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	304,685	--
2022	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	8,125	--
2022	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	81,249	--
2022	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	--	--	--	--	--	--	--	--	--	--	--	19,191	--
2020	Methow Coho	Yearling smolt	DCPUD Mitigation	25,900 <i>released</i>	26,787	26,047	26,040	26,035	26,027	26,012	26,006	26,002	--	--	--	--	25,999
2021	Methow Coho	Yearling smolt	DCPUD Mitigation	27,720 <i>released</i>	--	--	--	--	--	--	--	--	26,082	25,969	25,940	25,882	--

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	
					Jul '21	Aug	Sep	Oct	Nov	Dec	Jan '22	Feb	Mar	Apr	May	Jun		
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	
					Jul '21	Aug	Sep	Oct	Nov	Dec	Jan '22	Feb	Mar	Apr	May	Jun		
2020	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (Pounds) released	--	--	--	--	--	--	--	--	--	--	--	--	--	45,068 (20,845)
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	
2021	Kamloops Rainbow trout	Juv.	WDFW sport fish	Goal is 20,000 pounds annual combined	25,660	25,623	63,037	36,672	36,608	36,437	36,301	33,000	33,000	2,662	2,657	1,630	49,158 (20,276)	
					(467)	(1,601)	(5,131)	(18)	(84)	(499)	(1,911)	(3,300)	(9,428)	(1,331)	(2,657)	(1,630)		900
2022	Kamloops Rainbow trout	Juv.	WDFW sport fish	Goal is 20,000 pounds annual combined	--	--	--	--	--	--	--	--	--	--	26,785	26,059		
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(21)	(63)		
					--	--	--	--	--	--	--	--	--	--	--	--		

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	
					Jul '21	Aug	Sep	Oct	Nov	Dec	Jan '22	Feb	Mar	Apr	May	Jun		
2021	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 325</i>	3,054	2,618	2,117	2,107	2,092	291	290	289	288	287	239	--	3 -- 332	
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	3	--		
				<i>Transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--		--
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	332		--
2021	White Sturgeon	Juvenile rearing	Chelan White Sturgeon Supplementation	<i>Up to 2,000</i>	--	--	--	--	--	1,790	1,784	1,780	1,770	1,768	1,417	--	-- 17 1,346 --	
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	17	--		
				<i>Transferred</i>	--	--	--	--	--	--	--	--	--	--	--	1,346		--
				<i>Chelan PUD</i>	--	--	--	--	--	--	--	--	--	--	--	--		--