

# WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

## Fish Program/Science Division/Methow Field Office

20268 Hwy 20, Twisp WA, 98856  
Phone: (509) 997-0048 and 997-0066  
Fax: (509) 997-0072

**To:** Andrew Gingerich and John Rohrback  
**From:** Charlie Snow and Ben Goodman  
**Subject:** October Hatchery and Natural Production Report  
**Date:** 8 November 2023

**Cc:** Distribution list.

### **HATCHERY ACTIVITIES**

At Methow Hatchery, all 2022 brood progeny were reared on 100% well water during October. 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 25,388 Twisp parr from the 2022 brood were on-station at Methow Hatchery at the end of the month and three additional mortalities were identified. Twisp program parr had a mean fork length of 105-107 mm during October and were at 28-30 fish per pound (FPP; Table 1). 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 200,326 Methow Composite parr from the 2022 brood on-station at the end of the month after accounting for 48 mortalities during October. This population includes an estimated 63,975 parr for release from the Chewuch Acclimation Pond, and 136,351 parr for release from Methow Hatchery. Chewuch-release and Methow-release fish had mean fork lengths of 105-109 mm, and 104-107 mm, respectively, and were between 27-31 FPP overall (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.

#### **2022 Wells MEOK Summer Chinook Salmon**

Methow Hatchery received 18,945 MEOK summer Chinook Salmon from Wells Hatchery on 19 October and had 18,903 fish on-station at the end of the month after removing 42 mortalities. At transfer, these fish had a mean fork length of 105 mm and were at approximately 40 FPP. An additional 18,699 MEOK program fish were on-station at Wells Hatchery at the end of October after subtracting 128 mortalities during the month. The Methow Hatchery population will be acclimated on Methow river water over the winter, and both groups will be direct-planted at the

town of Carlton in spring 2024. MEOK summer Chinook Salmon are being reared to fulfill Wells HCP mitigation obligations (Appendix A).

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

Raceway	Brood year	Stock-release	Fork length (mm)				FPP
			Mean	N	SD	CV	
1	2022	Twisp	107.7	108	8.2	7.6	28.0
2	2022	Twisp	105.5	105	10.3	9.8	30.0
3	2022	MC-Chewuch	109.9	104	8.9	8.1	27.2
4	2022	MC-Chewuch	109.5	100	8.6	7.8	28.3
5	2022	MC-Chewuch	105.0	103	7.8	7.4	31.9
7	2022	MC-Methow	107.6	103	8.1	7.6	29.0
8	2022	MC-Methow	106.1	103	7.9	7.4	30.2
9	2022	MC-Methow	106.8	101	9.0	8.4	27.6
10	2022	MC-Methow	104.9	100	7.7	7.4	29.5
11	2022	MC-Methow	106.1	100	8.7	8.2	30.3
12	2022	MC-Methow	104.7	105	7.4	7.1	31.5

### **2022 Summer Chinook Salmon**

Wells Hatchery had an estimated 306,155 parr for the yearling program on-station at the end of October after removing 477 losses during the month. The hatchery also had 160,840 summer Chinook progeny from the Entiat National Fish Hatchery on-station by the end of October to support reintroduction of summer Chinook into the Columbia River upstream of Chief Joseph Dam. All fish from this population were transferred to state or tribal hatchery locations in the Rufus Woods or Lake Roosevelt reservoirs by 1 November. Summer Chinook are being reared to fulfill Wells HCP mitigation obligations (yearling program; Appendix A).

### **2023 Summer Chinook Salmon**

Spawning of the 2023 brood summer Chinook Salmon at Wells Hatchery began on 26 September and continued weekly until the final spawn day of 25 October. A total of 1,017 fish were spawned overall, including 65 suspected natural-origin fish (Table 2). Spawning produced an estimated 632,600 eggs for the yearling program, 83,200 eggs for the MEOK program, and 1,847,600 eggs for subyearling programs including 600,000 for production subyearlings and 1,247,600 eggs for the Orca and Pacific Salmon Treaty production programs (Appendix B).

Table 2. Spawning summary of summer Chinook Salmon at Wells Hatchery by sex, mark, and spawn week, including non-viable (NV), mortality (M), and surplus fish.

Date	Male					Female					Grand total
	Ad+CWT	Ad-only	CWTO	None	Total	Ad+CWT	Ad-only	CWTO	None	Total	
9/26/2023	27	14	2	0	43	37	4	1	1	43	86
10/3/2023	86	37	9	6	138	117	23	4	10	154	292
10/4/2023	40	29	8	6	83	69	8	5	0	82	165
10/10/2023	84	33	12	12	141	123	19	3	9	154	295
10/17/2023	62	15	4	5	86	65	11	1	9	86	172
10/25/2023	0	0	0	2	2	0	0	0	5	5	7
Spawn total	299	128	35	31	493	411	65	14	34	524	1,017
NV, M	38	9	2	11	60	32	2	1	8	43	103
Surplus	29	0	0	0	29	6	0	0	0	6	35
Grand total	366	137	37	42	582	449	67	15	42	573	1,155

### **2023 Summer Steelhead**

Wells Hatchery had 85,437 Methow safety-net (MSN), 212,841 Columbia safety-net (CSN), and 87,895 Okanogan safety-net (OSN) progeny on-station at the end of the month. These populations experienced 81 additional MSN mortalities and 99 OSN mortalities during the month of October. In addition, 5,455 parr were transferred from the OSN program to the Omak conservation program during the month. This resulted in a population of 25,450 parr for the Omak conservation program on-station at the end of October after accounting for 40 additional mortalities during the month.

Wells Hatchery also had a total of 17,309 Methow conservation program progeny and 23,739 Twisp conservation program progeny on-station at the end of October. These populations experienced mortalities of 42 and 40 fish, respectively. In addition to these losses, an estimated 3,629 Methow conservation progeny are believed to have escaped a circular tank during the marking process in October. The fish were apparently able to exit the rearing vessel through a small gap at the base of the sump pump screen. This screen location will be reinforced on all circular tanks to prevent similar instances in the future.

### **2023 Riverence Rainbow Trout**

Wells Hatchery had 23,303 Riverence Rainbow Trout on-station at the end of October after removing 60 mortalities during the month, and incorporating a population increase of 478 fish due to a routine inventory assessment. 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 Salmon**

Wells Hatchery had 26,573 Methow Coho fry from the 2022 brood on-station at the end of October and 11 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 2,228 White Sturgeon progeny from the 2023 brood on-station after removing 62 mortalities and accounting for a population decline of 558 fish due to routine inventory assessments during the month of October. 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 the Methow site during the month of October, and that trap operated for the entire month with no interruptions. The Twisp trap only operated for a portion of two nights during the month when there were brief increases in river discharge due to rain events. The Twisp trap did not operate due to low river discharge for the remaining 29 days in October. The U.S. Geological Survey stream gauge in the lower Twisp River logged the lowest daily gauge height readings in site history for 15 days of the month. During the month, subyearling wild Chinook Salmon parr were the primary species captured at both the Methow and Twisp trap sites (Table 3). Biological data collected from trapped fish is detailed in Table 4. Methow River discharge for the period operated ranged from 10.2 to 12.3 m<sup>3</sup>s, providing expected trap efficiencies greater than 1.5 percent. Twisp River discharge for the period operated ranged from 0.5 to 1.1 m<sup>3</sup>s, providing expected trap efficiencies greater than 20.5 percent.

Table 3. Monthly salmonid captures at Methow Basin smolt traps in 2023. SHR = wild steelhead/rainbow.

Species/origin	Methow			Twisp			Basin total
	Mar-Aug	Sept	Oct	Mar-Aug	Sept	Oct	
Precocial Chin/wild	1	0	0	0	1	0	2
Yearling Chin/wild	109	0	0	969	0	0	1,078
Yearling Chin/hatch	1,861	0	0	4,197	0	0	6,058
Sub Chin/wild-parr	988	22	85	356	9	3	1,463
Sub Chin/wild-fry	5,191	0	0	892	0	0	6,083
SHR/wild-transitional	142	0	0	490	0	0	632
SHR/wild-parr	49	41	35	372	5	1	503
SHR/wild-fry	82	0	0	22	0	0	104
Steelhead/hatchery	645	0	0	2,116	0	0	2,761
Coho/wild-smolt	211	0	0	538	0	0	749
Coho/wild-parr	12	0	1	3	0	0	16
Coho/wild-fry	34	0	0	4	0	0	38
Coho/hatchery	1,355	0	0	6,928	0	0	8,283
Bull Trout	2	1	0	12	0	0	15
Cutthroat Trout	8	10	2	13	0	0	33
Brook Trout	0	0	0	1	0	0	1
Sockeye/wild-fry	45	0	0	0	0	0	45
Total	10,735	74	123	16,913	15	4	27,864

Table 4. Biological sampling of juvenile salmonids captured at Methow Basin smolt traps during October.

Species/stage	Location	Length (mm)			Weight (g)			Mean K-factor
		Mean	SD	N	Mean	SD	N	
Sub Chinook/wild/parr	Methow	97.0	12.0	85	10.0	3.7	85	1.04
Sub Chinook/wild/parr	Twisp	91.7	12.5	3	8.6	3.9	3	1.07
Steelhead/wild/parr	Methow	188.1	31.7	35	72.6	31.3	35	1.01
Steelhead/wild/parr	Twisp	141.0	--	1	27.2	--	1	0.97
Coho/wild/parr	Methow	107.0	--	1	13.7	--	1	1.12
Cutthroat Trout	Methow	245.5	27.6	2	148.6	42.8	2	0.99

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		
					Nov '22	Dec	Jan '23	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct			
2021	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	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>	144,506	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>	31,377	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	62,271	62,256	62,760	62,750	62,736	62,703	62,676	62,662	--	--	
2022	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,000 <i>released</i>	--	134,588	137,016	136,889	136,793	136,759	137,866	137,845	137,813	137,740	137,682	137,651	--	--	
2022	Spring Chinook	Yearling smolt	DCPUD Wells NNI	24,728 <i>released</i>	--	24,836	25,285	25,261	25,243	22,237	25,441	25,438	25,432	25,418	25,396	25,402	--	--	
2021	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	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	306,649	306,632	306,155	--	--	
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	37,982	37,737	37,602	--	--	
2022	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation <sup>1</sup>	300,000 <i>released</i>	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 <sup>1</sup>	8,000 <i>released</i>	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>	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
					Nov '22	Dec	Jan '23	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
2022	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000	25,374	25,355	25,345	25,338	12,648	--	--	--	--	--	--	--	--
				<i>transferred</i>	--	--	--	--	12,686	12,643	--	--	--	--	--	--	--
2023	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation <sup>1</sup>	300,000	--	--	--	--	--	--	--	338,682	336,267	334,083	336,771	330,326	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2023	Summer steelhead	Yearling smolt	DCPUD Wells NNI <sup>1</sup>	8,000	--	--	--	--	--	--	--	9,032	8,967	8,909	8,981	8,809	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2023	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000	--	--	--	--	--	--	--	90,315	89,671	89,089	89,806	88,087	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2023	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000	--	--	--	--	--	--	--	21,078	21,056	21,018	20,035	25,450	--
				<i>transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2021	Methow Coho	Yearling smolt	DCPUD Mitigation	27,720	25,557	25,550	25,539	25,539	25,525	--	--	--	--	--	--	--	--
				<i>released</i>	--	--	--	--	--	24,788	--	--	--	--	--	--	--
2022	Methow Coho	Yearling smolt	DCPUD Mitigation	27,909	--	27,426	26,927	26,827	26,827	26,511	26,488	26,409	26,617	26,598	26,584	26,573	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--

<sup>1</sup>40,000 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
					Nov '22	Dec	Jan '23	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	
2022	Summer Chinook	Sub-yearling	Orca/PST	1,000,000	--	1,160,567	1,129,678	1,082,364	1,066,822	1,028,129	--	--	--	--	--	--	--
				<i>released</i>	--	--	--	--	--	--	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	
					Nov '22	Dec	Jan '23	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		Oct
2022	Riverence Rainbow trout	Juv.	WDFW sport fish	Number (Pounds) released	22,065	22,051	22,005	21,910	21,870	2,579	469	--	--	--	--	--	58,859
				Goal is 20,000 pounds annual combined	(3,678)	(4,410)	(6,568)	(11,532)	(16,823)	(3,352)	(610)	--	--	--	--	--	
2023	Riverence Rainbow trout	Juv.	WDFW sport fish	Number (Pounds) released	--	--	--	--	--	18,178	2,109	469	--	--	--	(27,070)	
				Goal is 20,000 pounds annual combined	--	--	--	--	--	--	25,536	25,271	25,255	22,962	22,885		23,303
					--	--	--	--	--	--	(16)	(16)	(90)	(81)	(738)	(1,665)	--
					--	--	--	--	--	--	--	--	--	--	--	--	--

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	
					Nov '22	Dec	Jan '23	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		Oct
2022	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supple-mentation	<i>Up to 325</i>	367	358	354	343	337	336	287	--	--	--	--	--	304
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred</i>	--	--	--	--	--	--	--	3	--	--	--	--	
				<i>Wells reservoir</i>	--	--	--	--	--	--	328	--	--	--	--	--	
2022	White Sturgeon	Juvenile rearing	Chelan White Sturgeon Supple-mentation	<i>Up to 2,000</i>	2,260	2,201	2,178	2,110	2,075	2,068	1,764	--	--	--	--	--	3,899
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred</i>	--	--	--	--	--	--	--	2,048	--	--	--	--	
				<i>Chelan PUD</i>	--	--	--	--	--	--	--	--	--	--	--	--	
2023	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supple-mentation	<i>Up to 325</i>	--	--	--	--	--	--	--	477	750	468	398	311	--
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	--	
2023	White Sturgeon	Juvenile rearing	Chelan White Sturgeon Supple-mentation	<i>Up to 2,000</i>	--	--	--	--	--	--	--	2,937	4,618	2,877	2,449	1,917	--
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Chelan PUD</i>	--	--	--	--	--	--	--	--	--	--	--	--	