

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

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To: Andrew Gingerich and Tom Kahler
From: Charlie Snow and Ben Goodman
Subject: March Hatchery and Natural Production Report
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Cc: Distribution list.

HATCHERY ACTIVITIES

At Methow Hatchery, 2021 brood Twisp and Methow on-station release spring Chinook were held on a mixed water source containing 66-78% surface water during the month. All 2022 brood progeny were reared on 100% well water during March. At Wells Hatchery, the 2021 brood summer Chinook yearlings, 2022 brood Columbia safety-net steelhead, and the Twisp and Methow conservation steelhead were reared on 100% river water during the month. The Methow safety-net steelhead and the Okanogan Basin steelhead programs were reared on mixed water containing 50% river water during March. All other populations were held on 100% well water.

2021 Twisp Spring Chinook Salmon

A total of 28,903 fish were on-station at Methow Hatchery at the end of the month after subtracting 151 mortalities. Bacterial kidney disease, originally diagnosed in this cohort in late December, is still occasionally found in the pond; this population continues to be monitored. These fish were at about 16 fish per pound (FPP) during the month (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.

2021 Methow Composite Spring Chinook Salmon

Methow Hatchery had a total of 145,908 fish on-station at the end of the month after removing 37 mortalities. This population had a mean fork length of 139.7 mm and was at 13.5 FPP at the end of the month (Table 1). Hatchery personnel transferred an additional 65,745 Methow Composite spring Chinook to the Chewuch Acclimation Pond on 16 March. These fish had mean fork lengths between 125 and 128 mm at transfer (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 Twisp Spring Chinook Salmon

A total of 24,855 Twisp fry from the 2022 brood were on-station at Methow Hatchery at the end of the month after subtracting 9 mortalities. 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 199,453 Methow Composite fry from the 2022 brood on-station at the end of the month after removing 148 mortalities. This population includes an estimated 63,461 fry for release from the Chewuch Acclimation Pond, and 135,992 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.

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

Raceway	Brood year	Stock-release	Fork length (mm)				FPP
			Mean	<i>N</i>	SD	CV	
2	2021	Twisp	132.5	102	11.2	8.4	16.2
5	2021	MC-Chewuch	126.3	157	10.3	8.1	17.5
6	2021	MC-Chewuch	125.1	200	12.5	9.9	17.5
7	2021	MC-Chewuch	128.5	185	10.9	8.5	17.0
13	2021	MC-Methow	139.7	107	10.1	7.2	13.5

2021 Summer Chinook

Wells Hatchery had an estimated 351,273 parr for the HCP Inundation yearling program on-station at the end of March after removing 105 additional mortalities. These fish had a mean length of 176 mm and were at approximately 10 FPP during the month. Summer Chinook are being reared to fulfill Wells HCP mitigation obligations (Appendix A).

2022 Summer Chinook

Wells Hatchery had an estimated 356,568 fry for the yearling program, 1,583,164 fry for subyearling programs, and 41,264 fry for the Methow conservation (MEOK) program on-station. The subyearling programs experienced monthly losses of 8,610 fry during March. 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 production contract with WDFW (Appendix B).

In addition to these populations, the hatchery had 177,984 summer Chinook progeny from the Entiat National Fish Hatchery on-station at the end of March that will be used to support reintroduction of summer Chinook into the Columbia River upstream of Chief Joseph Dam.

2022 Summer Steelhead

Wells Hatchery had an estimated 102,767 parr on-station for the Methow safety-net program (MSN), 165,618 parr for the Columbia safety-net program (CSN), 80,667 parr for the Okanogan safety-net program (OSN), and 12,648 parr for the Omak Creek conservation (OCC) program on-station at the end of March. These programs experienced losses during the month of 6 MSN parr, 5 CSN parr, 36 OSN parr, and 4 OCC parr. Hatchery staff transferred an additional 12,686 OCC progeny to the St. Mary's Acclimation Pond on 14 March.

In addition to these populations, Wells Hatchery also had 20,465 Twisp and 19,324 Methow conservation program parr on-station at the end of the month after removing 5 and 45 mortalities, respectively. Steelhead are being reared to fulfill Douglas PUD Wells HCP mitigation obligations and to fulfill Grant PUD SSSA mitigation obligations (Appendix A).

2023 Summer Steelhead

Spawning of the 2023 brood steelhead was initiated at Wells Hatchery on 28 March. A total of 45 females were spawned on this date; 30 for the CSN program, 10 for the MSN program, and 5 for Okanogan Basin programs. Spawning will continue weekly until egg-collection goals for all programs have been met.

On 21 and 27 March, a total of 84 adult steelhead were collected from the Wells Hatchery Volunteer Channel and transferred to the Ringold Hatchery for broodstock. An additional 42 fish were retained from the channel for CSN program broodstock, and 17 fish not needed for broodstock purposes were removed from the channel as surplus.

Trapping at the Twisp River weir was on-going through the month of March, but low, clear, and cold river conditions persisted throughout the month and no steelhead were captured at the weir in March.

2022 Riverence Rainbow Trout

Wells Hatchery had 21,870 trout on-station at the end of March after removing 40 mortalities. These fish were at approximately 1.3 FPP and will be released in the spring of 2023. Riverence Rainbow Trout are reared under the Off-License Settlement Agreement between Douglas PUD and WDFW (Appendix C).

2021 Methow Coho

Wells Hatchery transferred 25,525 Methow Coho to the Twisp River Acclimation Pond on 15 March. At transfer, this population had a mean fork length of 132 mm and were at approximately 20 FPP. These fish are reared to meet Wells HCP mitigation obligations (Appendix A).

2022 Methow Coho

Wells Hatchery had 26,827 Methow Coho fry from the 2022 brood on-station at the end of March and no mortalities were identified during the month. These fish are reared to meet Wells HCP mitigation obligations (Appendix A).

2022 White Sturgeon

Wells Hatchery had 2,412 White Sturgeon on-station after subtracting 41 mortalities during the month of March. 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 Steelhead Redd Surveys

Steelhead redd surveys were conducted in the mainstem Methow River beginning in early March. By the end of the month, a total of 7 redds were identified in mainstem Methow River index areas. These redd counts will be used to inform PIT-based escapement modelling after spawning has been completed.

2023 Smolt Trapping

After ice accumulation receded, river conditions were favorable for trapping at both the Methow and Twisp sites during the month of March. The Methow and Twisp traps were installed on 9 and 14 March, respectively, and both operated the remainder of the month with no interruptions. During the month, subyearling wild Chinook fry was the primary species captured at the Methow trap while both yearling wild Chinook and yearling wild Coho were the primary species captured at the Twisp trap (Table 2). Biological data collected from trapped fish is detailed in Table 3. Methow River discharge for the period operated ranged from 8.9 to 14.2 m³s, providing expected trap efficiencies greater than 1.5 percent. Twisp River discharge for the period operated ranged from 1.4 to 2.9 m³s, providing expected trap efficiencies greater than 19.8 percent.

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

Species/origin	Methow	Twisp	Basin total
	March	March	
Yearling Chinook/wild	20	42	62
Yearling Chinook/hatchery	1	0	1
Sub Chinook/wild-fry	888	26	914
SHR/wild-transitional	0	6	6
SHR/wild-parr	0	7	7
Coho/wild-smolt	1	42	43
Bull Trout	1	2	3
Sockeye/wild-fry	44	0	44
Total	955	125	1,080

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

Species/stage	Location	Length (mm)			Weight (g)			Mean K-factor
		Mean	SD	<i>N</i>	Mean	SD	<i>N</i>	
Yearling Chinook/wild	Methow	104.4	9.4	20	11.8	2.6	20	1.02
Yearling Chinook/wild	Twisp	94.8	9.7	42	9.0	2.5	42	1.03
Yearling Chinook/hatch	Methow	108.0	--	1	12.7	--	1	1.01
Sub Chinook/wild/fry	Methow	39.2	1.5	888	--	--	--	--
Sub Chinook/wild/fry	Twisp	35.0	0.7	26	--	--	--	--
Steelhead/wild/transitional	Twisp	171.0	26.2	6	50.5	24.6	6	0.96
Steelhead/wild/parr	Twisp	87.0	9.7	7	7.4	2.3	7	1.09
Coho/wild/smolt	Methow	112.0	--	1	14.3	--	1	1.02
Coho/wild/smolt	Twisp	93.3	9.5	42	8.5	2.5	42	1.01
Bull Trout	Methow	385.0	--	1	--	--	--	--
Bull Trout	Twisp	197.0	41.0	2	72.8	48.2	2	0.87
Sockeye/wild/fry	Methow	27.6	1.8	44	--	--	--	--

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
					Apr '22	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '23	Feb	Mar	
2020	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	63,814	--	--	--	--	--	--	--	--	--	--	--	63,734
2020	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	141,495	--	--	--	--	--	--	--	--	--	--	--	141,259
2020	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	30,723	--	--	--	--	--	--	--	--	--	--	--	30,672
2021	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	64,629	65,297	65,291	65,284	65,271	65,237	65,213	65,199	65,187	65,166	65,109	65,057	--
2021	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	143,242	144,724	144,710	144,694	144,664	144,589	144,537	144,506	144,479	144,432	144,306	144,191	--
2021	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	31,102	31,242	31,421	31,418	31,411	31,395	31,383	31,377	31,371	31,361	31,333	31,308	--
2022	Spring Chinook	Yearling smolt	CCPUD NNI	61,000 <i>released</i>	--	--	--	--	--	--	--	--	61,268	62,373	62,315	60,663	--
2022	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,000 <i>released</i>	--	--	--	--	--	--	--	--	134,588	137,016	136,889	134,452	--
2022	Spring Chinook	Yearling smolt	DCPUD Wells NNI	24,728 <i>released</i>	--	--	--	--	--	--	--	--	24,836	25,285	25,261	29,194	--
2020	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	351,766
2021	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	507,990	--	--	--	--	--	--	--	--	--	--	--	501,100
2021	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	371,729	371,034	364,773	351,469	351,469	351,469	351,469	351,469	351,421	351,378	351,273	--
2022	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	--	--	--	--	--	--	--	561,715	546,764	523,864	516,342	--

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer
					Apr '22	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '23	Feb	Mar	
2022	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	--	--	--	--	360,000	356,568	356,568	356,568	--
2021	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	311,923	--	--	--	--	--	--	--	--	--	--	--	311,923
2021	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	8,381	--	--	--	--	--	--	--	--	--	--	--	8,381
2021	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	83,179	--	--	--	--	--	--	--	--	--	--	--	83,179
2021	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	12,114	--	--	--	--	--	--	--	--	--	--	--	24,827
2022	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	--	--	304,685	296,296	294,347	295,858	298,042	301,150	300,862	300,784	300,725	300,650	--
2022	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	--	--	8,125	7,901	7,849	7,890	7,948	8,031	8,023	8,021	8,020	8,018	--
2022	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	81,249	79,013	78,493	78,896	79,478	80,307	80,307	80,209	80,194	80,174	--
2022	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	--	--	19,191	18,698	18,684	18,664	25,399	25,374	25,355	25,345	25,338	12,648	12,686
2020	Methow Coho	Yearling smolt	DCPUD Mitigation	25,900 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	25,999
2021	Methow Coho	Yearling smolt	DCPUD Mitigation	27,720 <i>released</i>	25,969	25,940	25,882	25,859	25,612	25,591	25,570	25,557	25,550	25,539	25,539	25,525	--
2022	Methow Coho	Yearling smolt	DCPUD Mitigation	27,909 <i>released</i>	--	--	--	--	--	--	--	--	27,426	26,927	26,827	26,827	--

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	
					Apr '22	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '23	Feb		Mar
2021	Summer Chinook	Sub-yearling	Orca/PST	1,000,000	1,049,565	--	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	1,035,331	--	--	--	--	--	--	--	--	--	--	--
2022	Summer Chinook	Sub-yearling	Orca/PST	1,000,000	--	--	--	--	--	--	--	--	1,160,567	1,129,678	1,082,364	1,066,822	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--

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	
					Apr '22	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '23	Feb		Mar
2021	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (Pounds) released	2,662	2,657	1,630	1,628	1,627	1,625	--	--	--	--	--	--	--
					(1,331)	(2,657)	(1,630)	(2,171)	(2,905)	(3,250)	(4,266)	--	--	--	--	--	--
2022	Riverence Rainbow trout	Juv.	WDFW sport fish	Goal is 20,000 pounds annual combined	--	26,785	26,059	26,469	65,447	64,463	22,083	22,065	22,051	22,005	21,910	21,870	
					(--)	(21)	(63)	(212)	(699)	(1,678)	(2,453)	(3,678)	(4,410)	(6,568)	(11,532)	(16,823)	38,103
					--	--	--	--	--	--	38,103	--	--	--	--	--	(87)

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
					Apr '22	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '23	Feb	Mar	
2021	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 325</i>	287	239	--	--	--	--	--	--	--	--	--	--	--
				<i>Culled</i>	--	3	--	--	--	--	--	--	--	--	--	--	3
				<i>Transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
				<i>Wells reservoir</i>	--	332	--	--	--	--	--	--	--	--	--	--	332
2021	White Sturgeon	Juvenile rearing	Chelan White Sturgeon Supplementation	<i>Up to 2,000</i>	1,768	1,417	--	--	--	--	--	--	--	--	--	--	--
				<i>Culled</i>	--	17	--	--	--	--	--	--	--	--	--	--	17
				<i>Transferred</i>	--	--	1,346	--	--	--	--	--	--	--	--	--	1,346
				<i>Chelan PUD</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2022	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 325</i>	--	--	--	901	607	421	403	367	358	354	343	337	--
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
				<i>Transferred</i>	--	--	--	--	--	301	--	--	--	--	--	--	301
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2022	White Sturgeon	Juvenile rearing	Chelan White Sturgeon Supplementation	<i>Up to 2,000</i>	--	--	--	5,544	5,397	2,594	2,481	2,260	2,201	2,178	2,110	2,075	--
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
				<i>Transferred</i>	--	--	--	--	--	1,851	--	--	--	--	--	--	1,851
				<i>Chelan PUD</i>	--	--	--	--	--	--	--	--	--	--	--	--	--