

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 Greg Mackey

From: Charlie Snow and David Grundy

Subj: December Hatchery and Natural Production Report

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Cc: Distribution list.

HATCHERY ACTIVITIES

The 2020 brood spring Chinook Salmon at Methow Hatchery were held on a mixed water source containing 93% surface water and 7% well water during the month. All 2021 brood fish were held on 100% well water during December. At Wells Hatchery, the yearling summer Chinook, safety-net steelhead, and Omak conservation program steelhead were held on a mixed water source of 50% well and 50% surface water. All other populations were held on 100% well water during the month.

2020 Twisp Spring Chinook Salmon

A total of 23,856 fish were on-station at the end of the month with five additional fish reported as mortalities. These fish had a mean fork length of 108 mm and were approximately 27 fish per pound (FPP). The number of fish on-station that apply to Douglas PUD HCP, Chelan PUD HCP, and Grant PUD Salmon and Steelhead Settlement Agreement (SSSA) mitigation obligations is listed in Appendix A.

2020 Methow Composite Spring Chinook Salmon

A total of 212,678 fish were on-station at the end of the month with 106 additional fish reported as mortalities. These fish had mean fork lengths between 105 and 110 mm and were between 26-31 FPP. These fish will support releases from the Chewuch Acclimation Pond (CAP; release target = 60,516), Goat Wall Acclimation Pond (GWAP; release target = 25,000), and from Methow Hatchery (release target = 110,295). The number of fish on-station that apply to Douglas PUD HCP, Chelan PUD HCP, and Grant PUD Salmon and Steelhead Settlement Agreement (SSSA) mitigation obligations is listed in Appendix A.

2021 Twisp Spring Chinook Salmon

Ponding of the 2021 brood Twisp spring Chinook occurred between 3 and 27 December with a total of 29,246 fish ponded overall, and 29,163 fish were on-station at the end of the month after removing 83 mortalities. The number of fish on-station that apply to Douglas PUD HCP, Chelan

PUD HCP, and Grant PUD Salmon and Steelhead Settlement Agreement (SSSA) mitigation obligations is listed in Appendix A.

2021 Methow Composite Spring Chinook Salmon

Ponding of the 2021 brood Methow Composite Chinook occurred between 3 and 27 December with a total of 178,620 fish ponded overall, with 177,810 fish remaining on-station at the end of the month after removing 810 mortalities. An additional 33,340 Methow Composite progeny remained in incubation at the end of December. The number of fish on-station that apply to Douglas PUD HCP, Chelan PUD HCP, and Grant PUD Salmon and Steelhead Settlement Agreement (SSSA) mitigation obligations is listed in Appendix A.

2020 Summer Chinook

Wells Hatchery had a total of 355,320 parr for the yearling program on-station at the end of the month and no mortalities were reported in December. These fish were at approximately 15 FPP at the end of the month. Summer Chinook are being reared to fulfill Wells HCP mitigation obligations (Appendix A).

2021 Summer Chinook

After egg inventory assessments during the month, an estimated 23,132 dead eggs were removed from the yearling program and 15,000 live eggs were transferred to the subyearling program, leaving an estimated 375,037 eggs for the yearling program overall. An estimated 131,411 dead eggs were removed from the subyearling programs leaving an estimated 1,732,260 eggs for subyearling programs, including the 15,000 eggs transferred from the yearling program during the month. Subyearling programs including releases for the Douglas PUD inundation compensation program, the State of Washington Orca program, and the Pacific Salmon Treaty program.

2021 Summer Steelhead

Wells Hatchery had 174,844 parr for the Columbia safety-net program, 102,870 parr for the Methow safety-net program, 23,495 parr for the Methow conservation program and 27,203 parr for the Twisp conservation program on-station during December. Mortalities totaled four fish for the Columbia safety-net group, and 14 and 6 fish for the Methow and Twisp conservation groups, respectively. The hatchery also had 77,844 Okanogan hatchery parr and 24,865 Omak Creek conservation program parr on-station in December and these populations experienced monthly mortality of 142 and 11 fish 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 36,437 fry on-station at the end of the month after accounting for 171 mortalities. These progeny will be released as catchable trout in 2022. Kamloops Rainbow Trout are reared under the Off-License Settlement Agreement between Douglas PUD and WDFW (Appendix B).

2020 Methow Coho

Wells Hatchery had 26,012 Methow Coho parr on-station at the end of December. These fish were at approximately 39 FPP, and an additional 15 parr were reported as mortalities during the month. The 2020 brood Coho will be reared at Wells Hatchery until transfer to the Twisp Acclimation Pond as pre-smolts in spring 2022. These fish were reared to meet Wells HCP mitigation obligations (Appendix A).

2021 Methow Coho

Wells Hatchery received 27,000 eyed Methow Coho eggs on 9 December. These progeny remain in incubation at Wells Hatchery and will be reared to meet Wells HCP mitigation obligations.

2021 White Sturgeon

Wells Hatchery had 2,081 juvenile White Sturgeon on-station at the end of December. These fish were between 2 and 25 FPP and an additional 11 fish were reported as mortalities during the month. White Sturgeon progeny are reared at Wells Hatchery under the Wells Aquatic Settlement Agreement and under agreement with Chelan PUD (Appendix C).

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>

2021 Smolt Trapping

River conditions were favorable for trapping at both the Methow and Twisp sites during the first part of December. Freezing temperatures and ice accumulation necessitated the removal of the Twisp and Methow smolt traps on 14 and 16 December, respectively. During the month, subyearling wild Chinook parr and wild steelhead parr were the primary species captured at the Methow and Twisp trap sites, respectively (Table 1). Biological data collected from trapped fish is detailed in Table 2. Methow River discharge for the period operated ranged from 34.0 to 92.6 m³s, providing expected trap efficiencies of less than 1.5 percent. Twisp River discharge for the period operated ranged from 6.9 to 25.8 m³s, providing expected trap efficiencies greater than 12.9 percent.

Table 1. Monthly salmonid captures at Methow Basin smolt traps in 2021.

Species/origin	Methow			Twisp			Basin total
	Feb-Oct	Nov	Dec	Mar-Oct	Nov	Dec	
Precocial Chin/wild	0	0	0	7	0	0	7
Precocial Chin/hatch	0	0	0	1	0	0	1
Yearling Chin/wild	269	0	0	251	0	0	520
Yearling Chin/hatch	8,117	0	0	1,857	0	0	9,974
Sub Chin/wild-parr	542	219	41	588	345	21	1,756
Sub Chin/wild-fry	6,397	0	0	166	0	0	6,563
SHR/wild-transitional	312	0	0	297	0	0	609
SHR/wild-parr	182	68	9	405	347	66	1,077
SHR/wild-fry	511	0	0	19	1	0	531
Steelhead/hatchery	1,597	0	1	3,108	0	0	4,706
Coho/wild-smolt	40	0	0	43	0	0	83
Coho/wild-parr	88	57	14	235	218	42	654
Coho/wild-fry	234	0	0	163	0	0	397
Coho/hatchery	3,587	0	0	10,270	0	0	13,857
Bull Trout	1	2	0	15	6	0	24
Cutthroat Trout	0	0	0	5	0	0	5
Rainbow Trout	0	0	0	1	0	0	1
Sockeye/wild-fry	136	0	0	2	0	0	138
Total	22,013	346	65	17,433	917	129	40,903

Table 2. Biological sampling of juvenile salmonids captured at Methow Basin smolt traps during December.

Species/stage	Location	Length (mm)			Weight (g)			Mean K-factor
		Mean	SD	N	Mean	SD	N	
Sub Chinook/wild/parr	Methow	96.3	7.7	40	9.9	2.4	40	1.09
Sub Chinook/wild/parr	Twisp	92.2	8.8	21	8.9	2.4	21	1.10
Steelhead/wild/parr	Methow	97.8	39.5	9	14.0	19.9	9	1.02
Steelhead/wild/parr	Twisp	85.1	22.4	66	7.7	8.9	66	1.02
Steelhead/hatchery	Methow	204.0	--	1	82.6	--	1	0.97
Coho/wild/parr	Methow	93.4	9.6	14	9.1	2.6	14	1.09
Coho/wild/parr	Twisp	89.6	9.1	42	7.9	2.5	42	1.07

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	
					Jan '21	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
2019	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	64,647	64,514	64,311	--	--	--	--	--	--	--	--	--	63,562	63,562
2019	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	143,282	142,987	142,538	--	--	--	--	--	--	--	--	--	140,877	140,877
2019	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	31,111	31,047	30,950	--	--	--	--	--	--	--	--	--	30,589	30,589
2020	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	65,110	64,953	64,907	64,896	64,105	64,097	64,081	64,074	64,063	64,050	63,999	63,969	--	--
2020	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	144,308	143,959	143,859	143,835	142,082	142,064	142,027	142,011	141,988	141,959	141,845	141,780	--	--
2020	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	31,334	31,258	31,236	31,231	30,850	30,847	30,839	30,835	30,830	30,824	30,799	30,785	--	--
2021	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	65,233	--	--
2021	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	144,580	--	--
2021	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	31,393	--	--
2019	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	367,277	367,027	366,682	--	--	--	--	--	--	--	--	--	366,552	366,552
2020	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	375,479	375,479	375,479	373,967	372,146	359,214	358,932	355,327	355,327	355,327	355,320	355,320	--	--
2020	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	557,477	523,359	496,338	491,048	--	--	--	--	--	--	--	--	436,532	436,532
2020	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	326,325	326,093	325,870	--	--	--	--	--	--	--	--	--	325,762	325,762

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer
					Jan '21	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2020	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	8,702	8,696	8,690	--	--	--	--	--	--	--	--	--	8,687
2020	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	87,020	86,958	86,899	--	--	--	--	--	--	--	--	--	86,870
2020	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	12,160	12,156	--	--	--	--	--	--	--	--	--	--	12,155
2021	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	--	--	--	--	--	328,751	326,403	325,601	328,786	313,463	314,244	314,115	--
2021	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	--	--	--	--	--	8,767	8,704	8,683	8,768	8,359	8,380	8,376	--
2021	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	--	--	--	87,667	87,041	86,827	87,676	83,590	83,798	83,764	--
2021	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	--	--	--	--	--	24,221	23,910	23,898	23,889	24,885	24,876	24,865	--
2019	Methow Coho	Yearling smolt	DCPUD Mitigation	37,000 <i>released</i>	39,831	39,805	--	--	--	--	--	--	--	--	--	--	39,770
2020	Methow Coho	Yearling smolt	DCPUD Mitigation	37,000 <i>released</i>	--	--	--	26,935	26,881	26,814	26,787	26,047	26,040	26,035	26,027	26,012	--

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 or Methow hatcheries under the Off-License Settlement Agreement.

Brood year	Species	Life stage	Program	Target (pounds) disposition	Month												Total released /transfer
					Jan '21	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2020	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (pounds) released	32,879	34,967	34,778	30,377	62	--	--	--	--	--	--	--	45,068
				Goal is 20,000 pounds annual combined	(3,653)	(8,742)	(17,389)	(16,914)	(62)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)
2021	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (pounds) released	--	--	--	25,905	25,700	25,719	25,660	25,623	63,037	36,672	36,608	36,437	20,688
				Goal is 20,000 pounds annual combined	(--)	(--)	(--)	(9)	(31)	(214)	(467)	(1,601)	(5,131)	(18)	(84)	(499)	(499)

Appendix C. 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	
					Jan '21	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
2020	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 325</i>	336	336	336	336	--	--	--	--	--	--	--	--	--	
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				<i>Transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	1,083
				<i>Wells reservoir</i>	--	--	--	--	338	--	--	--	--	--	--	--	--	338
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	--	
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				<i>Transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2021	White Sturgeon	Juvenile rearing	Chelan White Sturgeon Supplementation	<i>Up to 2,000</i>	--	--	--	--	--	--	--	--	--	--	--	1,790	--	
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Chelan PUD</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	