

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

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Subj: December Hatchery and Natural Production Report

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Cc: Distribution list.

HATCHERY ACTIVITIES

At Wells Hatchery, the yearling Chinook Salmon, 2019 brood Coho, and all 2020 brood steelhead except the conservation program fish were switched to a mix of 50/50 well/surface water during December. At Methow Hatchery, 2020 brood fish were held on 100% well water during the month, while 2019 brood fish were switched to 100% surface water on 3 December.

2019 Twisp Spring Chinook Salmon

A total of 37,939 fish were on-station at the end of the month with eight additional fish reported as mortalities. These fish had mean fork lengths between 119.1 and 120.7 mm (Table 1) and were approximately 22-23 fish per pound (FPP). The number of fish on-station that apply to Douglas PUD Habitat Conservation Plan (HCP), Chelan PUD HCP, and Grant PUD Salmon and Steelhead Settlement Agreement (SSSA) mitigation obligations is listed in Appendix A.

2019 Methow Composite Spring Chinook Salmon

A total of 201,740 fish were on-station at the end of the month with 598 additional fish reported as mortalities. These fish had mean fork lengths between 119.0 and 120.3 mm (Table 1) and were approximately 22 FPP. These fish will support releases from the Chewuch Acclimation Pond (CAP; release target = 61,000), Goat Wall Acclimation Pond (GWAP; release target = 25,000), and from Methow Hatchery (release target = 107,765). Low-level mortalities in one raceway have been attributed to chronic bacterial kidney disease; the affected fish remain isolated from the main group and are being monitored closely. No therapeutic interventions are recommended at this time due to a lack of effective and safe treatment options. 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. 2019 brood spring Chinook Salmon length and weight sampling at Methow Hatchery during the month of December. MC = MetComp.

Raceway	Stock-release	Fork length (mm)				FPP
		Mean	N	SD	CV	
1	Twisp	119.1	112	13.5	11.4	22.7
2	Twisp	120.7	104	12.1	10.1	21.6
4	MC-Goat Wall	119.0	105	12.5	10.5	22.2
6	MC-Chewuch	120.3	105	12.7	10.6	21.6
13	MC-on-station	119.1	193	16.6	13.9	22.0

2020 Twisp Spring Chinook Salmon

A total of 21,047 fish were ponded during the month of December. Initial loss totaled 58 fry leaving 20,989 fry in start tanks at the end of the month. An additional 4,287 fry were ponded 1 January. The number of fish on-station that apply to Douglas PUD Habitat Conservation Plan (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 194,611 fish were ponded during the month of December. Initial loss totaled 1,489 fry leaving 193,122 fry in start tanks at the end of the month. An additional 23,008 fry were ponded 1 January. The number of fish on-station that apply to Douglas PUD Habitat Conservation Plan (HCP), Chelan PUD HCP, and Grant PUD Salmon and Steelhead Settlement Agreement (SSSA) mitigation obligations is listed in Appendix A.

2019 Summer Chinook

Wells Hatchery had 367,527 yearling-program summer Chinook parr on-station with 250 additional fish reported as mortalities during the month. These fish were at approximately 17 FPP at the end of the month. Summer Chinook are being reared to fulfill Wells HCP mitigation obligations (Appendix A).

2020 Summer Chinook

Wells Hatchery had a total of 375,479 eyed-eggs for the yearling program and 1,641,589 eyed-eggs for subyearling programs on-station at the end of the month. The subyearling program includes releases for the DPUD inundation compensation program, the State of Washington Orca-program, and the Pacific Salmon Treaty program. Summer Chinook are being reared to fulfill Wells HCP mitigation obligations (Appendix A).

2020 Summer Steelhead

Wells Hatchery had 173,509 parr for the Columbia safety-net group, 107,040 parr for the Methow safety-net group, 12,168 parr for the Omak conservation group, and 89,978 parr for the Okanogan hatchery group on-station at the end of December (102,146 Okanogan basin fish total). Mortality during the month for these populations totaled 282 fish, primarily from the Columbia safety-net ($N = 150$) and Methow safety-net ($N = 100$) programs.

Wells Hatchery also had 24,192 parr for the Methow conservation program and 27,670 parr for the Twisp conservation program on-station at the end of December and these groups experienced mortalities of 16 fish and 12 fish during the month, respectively. Steelhead progeny are being reared to fulfill Douglas PUD Wells HCP mitigation obligations and to fulfill Grant PUD SSSA mitigation obligations.

2020 Kamloops Rainbow Trout

Wells Hatchery had 34,979 rainbow parr on-station at about 38 FPP with 19 additional fish reported as mortalities during December. Kamloops Rainbow Trout are reared under the Off-License Settlement Agreement between Douglas PUD and WDFW (Appendix B).

2019 Methow Coho

Wells Hatchery had 39,865 Methow Coho parr on-station at the end of December, with 18 additional mortalities reported during the month. These fish were at approximately 37 FPP and will be reared at Wells Hatchery until transfer to the Twisp Acclimation Pond as pre-smolts in spring 2021. These fish are reared to meet Wells HCP mitigation obligations (Appendix A).

2020 Methow Coho

Wells Hatchery received 28,464 Methow Coho eyed-eggs from the Winthrop National Fish Hatchery on 10 December. These eggs were incubated at Wells Hatchery throughout the remainder of 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.

2020 White Sturgeon

Wells Hatchery had 350 White Sturgeon progeny on-station at the end of the month. These fish were between 1.5 and 4 FPP and no mortality was reported during December. White Sturgeon progeny are reared at Wells Hatchery under the Wells Aquatic Settlement Agreement (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>

2020 Smolt Trapping

The Twisp trap operated through 1 December and the Methow trap operated through 23 December. There were four nights between 2 and 6 December in which the Methow trap was stopped by ice for at least a portion of the nighttime hours. Freezing temperatures and ice accumulation necessitated the removal of the Twisp and Methow smolt traps on 1 and 23 December, respectively. During the month, sub yearling wild Chinook parr were the primary species captured at both the Methow and Twisp trap sites (Table 2). Biological data collected from trapped fish is detailed in Table 3. Methow River discharge for the period operated ranged from 16.2 to 19.8 m³s, providing expected trap efficiencies greater than 1.5 percent. Twisp River discharge for the period operated ranged from 3.4 to 3.6 m³s, providing expected trap efficiencies between 5.6 and 6.2 percent.

Table 2. Monthly salmonid captures at Methow Basin smolt traps in 2020. SHR = wild steelhead/rainbow.

Species/origin	Methow			Twisp			Basin total
	Feb-Oct	Nov	Dec	Feb-Oct	Nov	Dec	
Precocial Chin/wild	1	0	0	2	0	0	3
Precocial Chin/hatch	0	0	0	3	0	0	3
Yearling Chin/wild	132	0	0	243	0	0	375
Yearling Chin/hatch	7,547	0	0	2,756	0	0	10,303
Sub Chin/wild-parr	717	293	17	576	473	6	2,082
Sub Chin/wild-fry	3,379	0	0	167	0	0	3,546
SHR/wild-transitional	340	0	0	200	0	0	540
SHR/wild-parr	66	47	1	402	253	3	772
SHR/wild-fry	71	0	0	18	0	0	89
Steelhead/hatchery	2,659	1	0	1,676	0	0	4,336
Coho/wild-smolt	48	0	0	51	0	0	99
Coho/wild-parr	34	5	0	54	42	2	137
Coho/wild-fry	40	0	0	23	0	0	63
Coho/hatchery	6,320	0	0	8,035	0	0	14,355
Bull Trout	4	0	0	20	7	0	31
Cutthroat Trout	5	0	0	7	0	0	12
Rainbow Trout	0	0	0	0	1	0	1
Brown Trout	1	0	0	0	0	0	1
Sockeye/wild-fry	52	0	0	1	0	0	53
Total	21,416	346	18	14,234	776	11	36,801

Table 3. 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	<i>N</i>	Mean	SD	<i>N</i>	
Sub Chinook/wild/parr	Methow	95.4	7.1	17	9.0	1.9	17	1.0
Sub Chinook/wild/parr	Twisp	92.7	4.5	6	8.5	1.3	6	1.1
Steelhead/wild/parr	Methow	80.0	--	1	4.2	--	1	0.8
Steelhead/wild/parr	Twisp	111.0	56.3	3	20.6	27.5	3	1.0
Coho/wild/parr	Twisp	87.5	2.1	2	7.1	0.6	2	1.1

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 '20	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2018	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	64,384	64,346	64,298	--	--	--	--	--	--	--	--	--	64,190
2018	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	142,698	142,614	142,508	--	--	--	--	--	--	--	--	--	142,270
2018	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	30,984	30,966	30,943	--	--	--	--	--	--	--	--	--	30,891
2019	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	65,918	65,836	65,782	65,760	65,808	65,796	65,751	65,683	65,520	65,321	64,984	64,820	--
2019	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	146,098	146,918	145,798	145,749	145,857	145,829	145,730	145,578	145,217	144,716	144,028	143,665	--
2019	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	31,723	31,683	31,657	31,647	31,670	31,664	31,642	31,610	31,531	31,435	31,273	31,194	--
2020	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	--	--	--	--	--	--	--	--	--	65,706	65,706	65,287	--
2020	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	--	--	--	--	--	--	--	--	--	145,629	145,629	144,700	--
2020	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	--	--	--	--	--	--	--	--	--	31,621	31,621	31,419	--
2018	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	352,313	352,104	351,894	50,926	--	--	--	--	--	--	--	--	351,741
2019	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	563,508	561,522	532,441	--	--	--	--	--	--	--	--	--	531,860
2019	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	400,000	400,000	400,000	393,904	393,160	391,819	378,059	367,786	367,786	367,786	367,777	367,527	--

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer
					Jan '20	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2020	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	415,479	375,479	--
2019	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	323,307	323,068	322,779	--	--	--	--	--	--	--	--	--	300,660
2019	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	8,622	8,615	8,607	--	--	--	--	--	--	--	--	--	8,018
2019	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	86,215	86,152	86,074	--	--	--	--	--	--	--	--	--	80,176
2019	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	19,691	19,680	9,548	--	--	--	--	--	--	--	--	--	19,653
2020	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	--	--	--	--	--	354,615	353,741	349,474	334,709	323,726	326,821	326,589	--
2020	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	--	--	--	--	--	9,456	9,433	9,319	8,926	8,633	8,715	8,709	--
2020	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	--	--	--	94,564	94,331	93,193	89,256	86,327	87,152	87,091	--
2020	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	--	--	--	--	--	16,926	16,879	16,833	16,804	16,298	12,178	12,168	--
2018	Methow Coho	Yearling smolt	DCPUD Mitigation	37,000 <i>released</i>	43,209	43,180	--	--	--	--	--	--	--	--	--	--	43,111
2019	Methow Coho	Yearling smolt	DCPUD Mitigation	37,000 <i>released</i>	41,739	41,739	41,739	41,452	41,362	41,325	41,300	39,952	39,920	39,908	39,983	39,865	--

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 '20	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2019	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (pounds) released	34,831	34,702	34,065	2,413	2,643	2,631	2,624	2,619	2,618	--	--	--	53,290
					(1,742)	(4,338)	(8,516)	(1,207)	(1,317)	(2,631)	(2,624)	(5,238)	(8,727)	(9,703)	(--)	(--)	
				Goal is 20,000 pounds annual combined	--	--	--	25,500	3,650	--	--	--	--	2,620	--	--	
2020	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (pounds) released	--	--	--	25,832	25,613	25,532	22,435	64,683	60,798	45,975	34,998	34,979	18,831
					(--)	(--)	(--)	(9)	(32)	(96)	(431)	(1,310)	(2,781)	(79)	(318)	(921)	
				Goal is 20,000 pounds annual combined	--	--	--	--	--	--	--	--	--	18,831	--	--	

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 '20	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
2019	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	Up to 325		571	571	571	571	--	--	--	--	--	--	--	--	365
				Culled	--	--	--	--	--	--	--	--	--	--	--	--	--	
				Transferred	--	--	--	--	--	--	--	--	--	--	--	--	--	
				Wells reservoir	--	--	--	--	570	--	--	--	--	--	--	--	--	
2020	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	Up to 325	--	--	--	--	--	--	1,543	1,384	1,203	738	350	350	647	
				Culled	--	--	--	--	--	--	--	--	--	--	--	--		--
				Transferred	--	--	--	--	--	--	--	--	--	--	436	647		--
				Wells reservoir	--	--	--	--	--	--	--	--	--	--	--	--		--