

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

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To: Shane Bickford and Greg Mackey
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Subj: February Hatchery and Natural Production Report
Date: March 9, 2021
Cc: Distribution list.

HATCHERY ACTIVITIES

At Wells Hatchery, the yearling Chinook Salmon, 2019 brood Coho, and safety-net steelhead were held on 100% surface water during February. The Okanogan basin steelhead release groups were held on a mix of 50/50 surface/well water during the month and all other populations were reared on 100% well water. At Methow Hatchery, 2020 brood fish were held on 100% well water, while 2019 brood fish were held on 100% surface water during the month.

2019 Twisp Spring Chinook Salmon

A total of 37,910 fish were on-station at the end of the month with 15 additional fish reported as mortalities. These fish had mean fork lengths between 124.5 and 125.8 mm (Table 1) and were approximately 19-20 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 200,637 fish were on-station at the end of the month with 478 additional fish reported as mortalities. These fish had mean fork lengths between 125.4 and 131.2 mm (Table 1) and were approximately 17-19 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 and 2020 brood spring Chinook Salmon length and weight sampling at Methow Hatchery during the month of February. MC = MetComp.

Raceway	Brood year	Stock-release	Fork length (mm)				FPP
			Mean	<i>N</i>	SD	CV	
1	2019	Twisp	124.5	107	12.9	10.3	20.3
2	2019	Twisp	125.8	111	12.7	10.1	19.3
3	2019	MC-Goat Wall	130.7	103	11.9	9.1	17.4
4	2019	MC-Goat Wall	129.7	107	13.3	10.3	17.8
5	2019	MC-Chewuch	127.9	101	13.3	10.4	17.8
6	2019	MC-Chewuch	126.7	104	11.3	8.9	18.9
7	2019	MC-Chewuch	131.2	106	14.0	10.7	17.1
9	2020	MC-on-station	50.9	104	3.8	7.4	339.2
10	2020	MC-on-station	50.6	102	3.6	7.1	311.6
11	2020	MC-Chewuch	50.2	108	3.2	6.5	358.9
12A	2020	Twisp	50.7	103	3.2	6.3	339.8
12B	2020	MC-Goat Wall	50.6	106	3.1	6.2	325.6
13	2019	MC-on-station	125.4	247	13.6	10.8	19.4

2020 Twisp Spring Chinook Salmon

A total of 25,091 fish were on-station at the end of the month with 137 additional fish reported as mortalities. These fish had a mean fork length of 50.7 mm (Table 1) and were approximately 340 FPP. A fish health examination attributed recent low-level loss to systemic fungal disease caused by *Phoma herbarum*. This organism is regionally common and, although untreatable, generally affects only a small percentage of the population. 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 215,079 fish were on-station at the end of the month with 445 additional fish reported as mortalities. These fish had mean fork lengths between 50.2 and 50.9 mm (Table 1) and were approximately 312-359 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). Recent mortalities have been caused by bacterial gill disease, a finding confirmed by a recent fish health examination. A change in feeding percentages and removal of organic material in the pond has improved water quality (the most important consideration in gill cases); a quick resolution of clinical signs is expected. 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.

2019 Summer Chinook

Wells Hatchery had 367,027 yearling program summer Chinook parr on-station with 250 additional fish reported as mortalities during the month. These fish were at approximately 14 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 sac-fry for the yearling program and 1,529,951 fry for subyearling programs on-station at the end of the month. The subyearling program includes releases for the Douglas PUD inundation compensation program, the State of Washington Orca-program, and the Pacific Salmon Treaty program. Mortality for the subyearling program fish totaled 42,085 fish overall during the month, primarily attributed to coagulated yolk disease. Summer Chinook are being reared to fulfill Wells HCP mitigation obligations (Appendix A).

2020 Summer Steelhead

Wells Hatchery had 173,209 parr for the Columbia safety-net group, 106,840 parr for the Methow safety-net group, 12,156 parr for the Omak conservation group, and 89,879 parr for the Okanogan hatchery group on-station at the end of February (102,035 Okanogan basin fish total). Mortality during the month for these populations totaled 289 fish, primarily from the Columbia ($N = 150$) and Methow safety-net ($N = 100$) programs.

Wells Hatchery also had 24,174 parr for the Methow conservation program and 27,645 parr for the Twisp conservation program on-station at the end of February and these groups experienced mortalities of 3 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 34,967 rainbow parr on-station at about 4 FPP with 11 additional fish reported as a mortality during February. Kamloops Rainbow Trout are reared under the Off-License Settlement Agreement between Douglas PUD and WDFW (Appendix B).

2019 Methow Coho

Wells Hatchery had 39,805 Methow Coho parr on-station at the end of February with 26 additional mortalities reported during the month. These fish were at approximately 24 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 had 28,464 Methow Coho eyed-eggs on-station at the end of February. These eggs were incubating at Wells Hatchery throughout 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 336 White Sturgeon progeny on-station at the end of the month. These fish were between 0.7 and 1.0 FPP and no mortality was reported during February. 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>

2021 Smolt Trapping

The Methow River trap was installed on 24 February and operated the last four nights of the month with no interruptions. During the month, subyearling wild Chinook fry were the primary species captured (Table 2). Biological data collected from trapped fish is detailed in Table 3. Methow River discharge for the period operated ranged from 12.7 to 13.1 m³s, providing expected trap efficiencies greater than 1.5 percent.

Table 2. Monthly salmonid captures at Methow Basin smolt traps in 2021.

Species/origin	Methow	Twisp	Basin total
	February	February	
Sub Chinook/wild/fry	24	--	24
Sockeye/wild/fry	11	--	11
Total	35	--	35

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

Species/stage	Location	Length (mm)			Weight (g)			Mean K-factor
		Mean	SD	N	Mean	SD	N	
Sub Chinook/wild/fry	Methow	37.9	1.3	24	--	--	--	--
Sockeye/wild/fry	Methow	27.6	0.9	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
					Mar '20	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '21	Feb	
2018	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	64,298	--	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	64,190	--	--	--	--	--	--	--	--	--	--	--
2018	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	142,508	--	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	142,270	--	--	--	--	--	--	--	--	--	--	--
2018	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	30,943	--	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	30,891	--	--	--	--	--	--	--	--	--	--	--
2019	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	65,782	65,760	65,808	65,796	65,751	65,683	65,520	65,321	64,984	64,820	64,647	64,514	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2019	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	145,798	145,749	145,857	145,829	145,730	145,578	145,217	144,716	144,028	143,665	143,282	142,987	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2019	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	31,657	31,647	31,670	31,664	31,642	31,610	31,531	31,435	31,273	31,194	31,111	31,047	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2020	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	--	--	--	--	--	--	--	65,706	65,706	65,287	65,110	64,953	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2020	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	--	--	--	--	--	--	--	145,629	145,629	144,700	144,308	143,959	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2020	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	--	--	--	--	--	--	--	31,621	31,621	31,419	31,334	31,258	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2018	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000	351,894	50,926	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	300,818	50,923	--	--	--	--	--	--	--	--	--	--
2019	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000	532,441	--	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	531,860	--	--	--	--	--	--	--	--	--	--	--
2019	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000	400,000	393,904	393,160	391,819	378,059	367,786	367,786	367,786	367,777	367,527	367,277	367,027	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer
					Mar '20	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '21	Feb	
2020	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	--	--	--	--	415,479	375,479	375,479	375,479	--
2020	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	557,477	523,359	--
2019	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	322,779	--	--	--	--	--	--	--	--	--	--	--	300,660
2019	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	8,607	--	--	--	--	--	--	--	--	--	--	--	8,018
2019	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	86,074	--	--	--	--	--	--	--	--	--	--	--	80,176
2019	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	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	326,325	326,093	--
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	8,702	8,696	--
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	87,020	86,958	--
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	12,160	12,156	--
2018	Methow Coho	Yearling smolt	DCPUD Mitigation	37,000 <i>released</i>	43,111	--	--	--	--	--	--	--	--	--	--	--	43,111
2019	Methow Coho	Yearling smolt	DCPUD Mitigation	37,000 <i>released</i>	41,739	41,452	41,362	41,325	41,300	39,952	39,920	39,908	39,983	39,865	39,831	39,805	--

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
					Mar '20	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '21	Feb	
2019	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (pounds) released	34,065	2,413	2,643	2,631	2,624	2,619	2,618	--	--	--	--	--	53,290
				Goal is 20,000 pounds annual combined	(8,516)	(1,207)	(1,317)	(2,631)	(2,624)	(5,238)	(8,727)	(9,703)	(--)	(--)	(--)	(--)	(--)
2020	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (pounds) released	--	25,500	3,650	--	--	--	--	2,620	--	--	--	--	18,831
				Goal is 20,000 pounds annual combined	(--)	(9)	(32)	(96)	(431)	(1,310)	(2,781)	(79)	(318)	(921)	(3,653)	(8,742)	(4,351)

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		
					Mar '20	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '21	Feb			
2019	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supple-mentation	<i>Up to 325</i>	571	571	--	--	--	--	--	--	--	--	--	--	--		
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred Wells reservoir</i>	--	--	570	--	--	--	--	--	--	--	--	--	--	--	365
					--	--	570	--	--	--	--	--	--	--	--	--	--	--	570
2020	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supple-mentation	<i>Up to 325</i>	--	--	--	--	1,543	1,384	1,203	738	350	350	336	336	--		
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred Wells reservoir</i>	--	--	--	--	--	--	--	436	647	--	--	--	--	647	
					--	--	--	--	--	--	--	--	--	--	--	--	--	--	--