

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: Shane Bickford and Greg Mackey
From: Charlie Snow, Charles Frady, and David Grundy
Subj: September Hatchery and Natural Production Report
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Cc: Distribution list.

HATCHERY ACTIVITIES

All populations at the Wells and Methow hatcheries were reared on 100% well water during the month of September.

2019 Twisp Spring Chinook Salmon

A total of 37,950 fish were on-station at the end of the month with one additional fish reported as a mortality. These fish had mean fork lengths between 107.9 and 115.3 mm (Table 1) and were at about 26 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 204,318 fish were on-station at the end of the month with 602 additional fish reported as mortalities. These fish had mean fork lengths between 111.5 and 115.7 mm (Table 1) and were approximately 25 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). A fish health exam during the month noted a slight increase in mortality over the last month due to bacterial kidney disease (BKD) and a moderate *Ichthyophthirius multifiliis* (Ich) infection. The recommendation was made to initiate a formalin treatment to eliminate the Ich and reduce stress on the population since an efficacious and safe drug therapy for active BKD has yet to be clinically proven. 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 September. MC = MetComp.

Raceway	Stock-release	Fork length (mm)				FPP
		Mean	<i>N</i>	SD	CV	
1	Twisp	107.9	144	10.5	9.7	28.9
2	Twisp	115.3	142	10.4	9.0	23.7
3	MC-Goat Wall	115.7	91	10.7	9.2	23.2
4	MC-Goat Wall	112.3	126	13.0	11.6	24.9
5	MC-Chewuch	111.5	143	11.4	10.2	26.2
6	MC-Chewuch	113.6	117	10.8	9.5	25.3
7	MC-Chewuch	114.0	104	11.7	10.3	25.5
10	MC-on-station	113.5	103	11.2	9.9	25.3
11	MC-on-station	112.8	100	10.8	9.6	25.2
12	MC-on-station	112.3	145	11.4	10.1	25.7
13	MC-on-station	111.9	315	11.3	10.1	28.1

2020 Spring Chinook Salmon Brood Collection

Methow Hatchery had an estimated 221,558 eggs for the MetComp program and 24,980 eggs for the Twisp program incubating on-station at the end of the month. Some eggs from hatchery females (HxW crosses) in excess of program goals may be culled or transferred to WNFH depending on need.

2019 Summer Chinook

Wells Hatchery had 367,786 yearling program summer Chinook parr on-station and no mortalities were reported during the month. These fish were at approximately 35 FPP at the end of the month. Summer Chinook are being reared to fulfill Wells HCP mitigation obligations (Appendix A).

2020 Summer Chinook

The first spawning of the 2020 brood Wells summer Chinook occurred in late September with a total of 212 fish spawned by 1 October. Spawning is planned to occur weekly through the month of October or until all broodstock have been utilized.

2020 Summer Steelhead

Wells Hatchery had 173,677 parr for the Columbia safety-net group, 107,145 parr for the Methow safety-net group, 16,804 parr for the Omak conservation group, and 98,679 parr for the Okanogan hatchery group on-station at the end of September. Mortality during the month for these populations totaled 588 fish, primarily from the Columbia ($N = 338$) and Methow safety-net ($N = 117$) groups. On-station values for the Columbia safety-net group reflect a post-

marking decrease of 9,725 fish, while the Methow safety-net population reflects a post-marking decrease of 5,628 fish and the release of 3,110 extra fish into Spectacle Lake during the month.

In addition, the hatchery had 25,749 parr for the Methow conservation program and 27,640 parr for the Twisp conservation program on-station at the end of September, and these groups experienced mortalities of 43 fish and 32 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.

2019 Kamloops Rainbow Trout

After adjusting the population due to routine inventory assessments, Wells Hatchery had 2,618 trout from the 2019 brood on-station at the end of the month at about 0.3 FPP to support lake plants in fall 2020 when water conditions in local lakes become favorable. Mortality during the month totaled one additional fish. Kamloops Rainbow Trout are reared under the Off-License Settlement Agreement between Douglas PUD and WDFW (Appendix B).

2020 Kamloops Rainbow Trout

Wells Hatchery had 19,352 trout on-station at the end of September at approximately 7 FPP and an additional 41,446 fry on-station at about 2,500 FPP. Mortality for both groups totaled 435 fish and the population of larger (7 FPP) fish was decreased by 3,450 after routine inventory adjustments during the month. These fish will support trout plants in Okanogan County in 2020-2021. Kamloops Rainbow Trout are reared under the Off-License Settlement Agreement between Douglas PUD and WDFW (Appendix B).

2019 Methow Coho

Wells Hatchery had 39,920 Methow Coho fry on-station at the end of September, with 32 additional mortalities reported during the month. These fish were at approximately 70 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 White Sturgeon

Wells Hatchery had 1,203 White Sturgeon progeny on-station at the end of the month. These fish were at 35-225 FPP and mortality during September totaled an additional 181 fish. 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 Spawning Ground Surveys

Surveying for spring Chinook ceased by the end of September with a total of 203 redds found in the Methow River Basin, including 23 redds counted by USFWS in Methow River sections M8, M7, M6, M5 and WN1. Of the basin-wide redd count, 120 (59.1%) were found in the upper Methow subbasin, 47 (23.1%) were found in Chewuch subbasin, and 36 (17.7%) were found in the Twisp subbasin.

2020 Smolt Trapping

River conditions were favorable for trapping at both the Methow and Twisp sites during the month of September, and traps at both locations operated for the entire month with no interruptions. During the month, wild steelhead parr and sub yearling wild Chinook parr were the primary species captured at the Methow and Twisp trap sites, respectively (Table 2). Biological data collected from trapped fish is detailed in Table 3. Methow River discharge for the period operated ranged from 6.8 to 9.8 m³s, providing expected trap efficiencies greater than 1.5 percent. Twisp River discharge for the period operated ranged from 1.0 to 2.3 m³s, providing expected trap efficiencies greater than 21.3 percent.

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

Species/origin	Methow			Twisp			Basin total
	Feb-July	Aug	Sept	Feb-July	Aug	Sept	
Precocial Chin/wild	0	1	0	0	2	0	3
Precocial Chin/hatch	0	0	0	2	1	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	691	7	1	36	22	39	796
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	50	5	4	220	33	25	337
SHR/wild-fry	67	4	0	17	1	0	89
Steelhead/hatchery	2,659	0	0	1,670	3	0	4,332
Coho/wild-smolt	48	0	0	51	0	0	99
Coho/wild-parr	34	0	0	8	6	17	65
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	9	0	0	13
Cutthroat Trout	3	2	0	3	1	1	10
Brown Trout	1	0	0	0	0	0	1
Sockeye/wild-fry	52	0	0	1	0	0	53
Total	21,367	19	5	13,441	69	81	34,982

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

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	112.0	--	1	15.8	--	1	1.1
Sub Chinook/wild/parr	Twisp	92.7	8.0	39	9.3	2.4	39	1.1
Steelhead/wild/parr	Methow	84.8	52.3	4	12.6	21.0	4	1.0
Steelhead/wild/parr	Twisp	110.0	45.3	25	21.6	22.0	25	1.1
Coho/wild/parr	Twisp	90.8	7.2	17	8.8	2.3	17	1.2
Cutthroat Trout	Twisp	267.0	--	1	180.5	--	1	0.9

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		
					Oct '19	Nov	Dec	Jan '20	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep			
2018	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	64,432	64,423	64,410	64,384	64,346	64,298	--	--	--	--	--	--	64,190	64,190	
2018	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	142,806	142,786	142,757	142,698	142,614	142,508	--	--	--	--	--	--	142,270	142,270	
2018	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	31,008	31,003	30,997	30,984	30,966	30,943	--	--	--	--	--	--	30,891	30,891	
2019	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	66,257	66,257	66,051	65,918	65,836	65,782	65,760	65,808	65,796	65,751	65,683	65,520	--	--	
2019	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	146,850	146,850	146,394	146,098	146,918	145,798	145,749	145,857	145,829	145,730	145,578	145,217	--	--	
2019	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	31,886	31,886	31,787	31,723	31,683	31,657	31,647	31,670	31,664	31,642	31,610	31,531	--	--	
2018	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	357,089	356,733	352,886	352,313	352,104	351,894	50,926	--	--	--	--	--	300,818	50,923	351,741
2019	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	--	502,857	563,508	561,522	532,441	--	--	--	--	--	--	531,860	--	531,860
2019	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	450,402	400,000	400,000	400,000	393,904	393,160	391,819	378,059	367,786	367,786	--	--	--
2019	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	348,991	324,432	323,833	323,307	323,068	322,779	--	--	--	--	--	--	300,660	--	300,660
2019	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	9,306	8,652	8,636	8,622	8,615	8,607	--	--	--	--	--	--	8,018	--	8,018
2019	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	93,064	86,515	86,355	86,215	86,152	86,074	--	--	--	--	--	--	80,176	--	80,176

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer
					Oct '19	Nov	Dec	Jan '20	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
2019	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	19,747	19,719	19,710	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	--
2020	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	--	--	--	--	--	--	--	--	9,456	9,433	9,319	8,926	--
2020	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	--	--	--	--	--	--	94,564	94,331	93,193	89,256	--
2020	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	--	--	--	--	--	--	--	--	16,926	16,879	16,833	16,804	--
2018	Methow Coho	Yearling smolt	DCPUD Mitigation	37,000 <i>released</i>	43,302	43,279	43,243	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	--

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
					Oct '19	Nov	Dec	Jan '20	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
2019	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (pounds) released	40,818	40,604	38,600	34,831	34,702	34,065	2,413	2,643	2,631	2,624	2,619	2,618	50,670
				Goal is 20,000 pounds annual combined	(57)	(148)	(965)	(1,742)	(4,338)	(8,516)	(1,207)	(1,317)	(2,631)	(2,624)	(5,238)	(8,727)	
2020	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (pounds) released	21,520	--	--	--	--	--	25,500	3,650	--	--	--	--	60,798
				Goal is 20,000 pounds annual combined	--	--	--	--	--	--	25,832	25,613	25,532	22,435	64,683	60,798	

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			
					Oct '19	Nov	Dec	Jan '20	Feb	Mar	Apr	May	Jun	Jul	Aug		Sep		
2019	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 325</i>	580	575	575	571	571	571	571	--	--	--	--	--	--		
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred</i>	365	--	--	--	--	--	--	--	--	--	--	--	--	--	365
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	570	--	--	--	--	--	--	570
2020	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 325</i>	--	--	--	--	--	--	--	--	--	1,543	1,384	1,203	--		
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--