

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: February Hatchery and Natural Production Report

Date: 8 March 2019

Cc: Distribution list.

HATCHERY ACTIVITIES

All 2017 brood fish at Methow Hatchery were reared on a mix of 7% well and 93% surface water during the month of February. All 2018 brood fish at Methow Hatchery remained on 100% well water. At Wells Hatchery, Columbia safety-net, Methow safety-net, and Omak conservation program steelhead were held on a mixed water source containing 37%, 50%, and 50% surface water, respectively. The yearling summer Chinook population was also held on surface water (90%) during February, but all other populations remained on 100% well water during the month.

2017 Twisp Spring Chinook Salmon

A total of 29,358 fish were on-station at the end of the month with 11 additional fish reported as mortalities. These fish had a mean fork length of 118.3 mm during the month (Table 1) and were approximately 22 fish per pound (FPP). The number of fish on-station that apply to Douglas PUD, Chelan PUD, and Grant PUD HCP mitigation obligations are listed in Appendix A.

2017 Methow Composite Spring Chinook Salmon

A total of 226,783 fish were on-station at the end of the month with 670 additional fish reported as mortalities, 631 of which were estimated from predation and ice loss in Pond 13. 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). These fish had mean fork lengths between 117.2 and 121.9 mm during the month (Table 1) and were approximately 20-23 FPP. The number of fish on-station that apply to Douglas PUD, Chelan PUD, and Grant PUD HCP mitigation obligations are listed in Appendix A.

2018 Twisp Spring Chinook Salmon

A total of 30,854 fry were on-station at the end of the month with 82 additional fry reported as mortalities. These fish had a mean fork length of 49.9 mm during the month (Table 1) and were approximately 341 FPP. The number of fish on-station that apply to Douglas PUD, Chelan PUD, and Grant PUD HCP mitigation obligations are listed in Appendix A.

2018 Methow Composite Spring Chinook Salmon

A total of 204,774 fry were on-station at the end of the month with 53 additional fry reported as mortalities. 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). These fish had mean fork lengths between 49.9 and 50.9 mm during the month (Table 1) and were approximately 322-343 FPP. The number of fish on-station that apply to Douglas PUD, Chelan PUD, and Grant PUD HCP mitigation obligations are listed in Appendix A.

Table 1. 2017 and 2018 brood spring Chinook salmon length and weight sampling at Methow Hatchery during the month of February. MC = MetComp.

Raceway	BY	Stock-release	Fork length (mm)				FPP
			Mean	N	SD	CV	
1	17	MC-Chewuch	117.2	100	8.0	6.8	23
2	17	MC-Chewuch	120.7	100	8.8	7.3	21
3	17	MC-Chewuch	121.9	101	10.0	8.2	20
4	17	MC-Goat Wall	120.5	100	8.4	7.0	21
5	17	Twisp	118.3	98	8.7	7.3	22
6	17	Twisp	118.3	100	8.0	6.8	22
8A	18	MC-On Station	49.9	100	3.1	6.3	343
9	18	MC-On Station	50.5	50	4.1	8.0	--
10	18	MC-On Station	50.6	50	3.9	7.6	324
11	18	MC-Chewuch	50.9	100	3.3	6.4	322
12A	18	Twisp	49.9	100	2.5	5.0	341
12B	18	MC-Goat Wall	50.1	100	2.6	5.1	340
13	17	MC-On Station	120.8	216	7.6	6.3	22

2017 Wells Summer Chinook Salmon

Wells Hatchery had an estimated 290,763 parr for the yearling program on-station at the end of February and mortality was not monitored during the month. This population was at approximately 12 FPP. Fish health examinations in February noted a slight increase in daily mortality observed at the pond outlet screen and sampling results of examined fish identified an

atypical type of bacterial gill disease resulting from a co-infection by *Flavobacterium branchiophilum* and *Pseudomonas* sp. bacterium. No treatment was currently recommended because of the relatively low mortality rate and the large size of the rearing unit. Summer Chinook are being reared to fulfill HCP mitigation obligations (Appendix A).

2018 Wells Summer Chinook Salmon

Wells Hatchery had 547,189 subyearling program fry on-station at the end of the month after removing 3,599 mortalities. An estimated 398,353 eggs for the yearling program remained in incubation during February. Summer Chinook are being reared to fulfill HCP mitigation obligations (Appendix A). A fish health examination of recent mortalities during the month identified systemic fungal disease caused by *Phoma herbarum*. This diagnosis is not expected to cause significant losses and no treatment was recommended.

2018 Summer Steelhead

Wells Hatchery had 451,390 steelhead progeny on-station at the end of the month. These progeny include 110,194 Methow safety-net, 184,399 Columbia safety-net, 28,909 Twisp Conservation, and 26,948 Methow Conservation program progeny. Okanogan Basin fish on-station included 82,721 HxH progeny from Omak Creek broodstock spawning, and 18,219 WxW progeny from Omak Creek broodstock spawning. Mortality during the month totaled an additional 15,247 progeny over all programs, most of which were attributed to avian predation of the Columbia safety-net group ($N = 15,000$). Steelhead progeny are being reared to fulfill Douglas PUD and Grant PUD HCP mitigation obligations (Appendix A).

2019 Summer Steelhead

Spawning of the 2019 brood began on 2 January and occurred weekly, as mature females were available, until the last fish from the Wells ladder fall 2018 collections were spawned on 6 March. A total of 27 females were spawned from the Wells ladder collection, and additional broodstock collection and spawning will occur when hook-and-line and tributary-collected fish are retained. Steelhead progeny from these collections are being reared to fulfill Douglas PUD and Grant PUD HCP mitigation obligations.

2018 Kamloops Rainbow Trout

Wells Hatchery had 31,411 Kamloops Rainbow Trout on-station at the end of the month and 18 additional fish were reported as mortalities in February. These fish were between 5.3 and 3.1 FPP depending on release goals to produce catchable- and jumbo-sized trout, respectively. Kamloops rainbow are reared under the Off-License Settlement Agreement (Appendix B).

2018 White Sturgeon

Wells Hatchery had 99 White Sturgeon progeny on-station at the end of the month and two additional fish were reported as mortalities in February. These fish were at approximately 2.5 FPP at the end of the month. White Sturgeon progeny were reared at Wells Hatchery under the Aquatic Settlement Agreement (Appendix C).

2018 Methow Coho

The new Douglas PUD Coho mitigation program began with brood year 2018. Wells Hatchery had 48,648 Methow Coho fry on-station at the end of February after removing 219 mortalities during the month. These fish will be reared at Wells Hatchery until transfer to the Twisp Acclimation Pond as pre-smolts in spring 2020.

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>

Appendix A. Number of fish reared at Wells and Methow hatcheries to meet Douglas County PUD 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 '18	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '19	Feb	
2016	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	67,333	--	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	67,075	--	--	--	--	--	--	--	--	--	--	--
2016	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	149,236	--	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	148,664	--	--	--	--	--	--	--	--	--	--	--
2016	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	32,404	--	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	32,280	--	--	--	--	--	--	--	--	--	--	--
2017	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	68,208	68,178	69,533	69,517	69,509	69,504	69,501	69,496	69,493	69,481	69,456	69,272	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2017	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	151,176	151,107	154,112	154,077	154,058	154,046	154,039	154,029	154,023	153,995	153,941	153,532	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2017	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	32,825	32,810	33,463	33,455	33,451	33,448	33,447	33,445	33,443	33,437	33,425	33,337	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2018	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	--	--	--	--	--	--	--	64,178	64,178	63,905	63,761	63,724	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2018	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	--	--	--	--	--	--	--	142,243	142,243	141,639	141,317	141,237	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2018	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	--	--	--	--	--	--	--	30,886	30,886	30,754	30,685	30,667	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2016	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000	356,240	--	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	356,240	--	--	--	--	--	--	--	--	--	--	--
2017	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000	431,642	419,498	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	--	417,000	--	--	--	--	--	--	--	--	--	--
2017	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000	332,000	332,000	332,000	317,168	315,852	297,425	297,425	297,228	295,363	290,763	290,763	290,763	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2018	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000	--	--	--	--	--	--	--	--	--	--	551,505	547,189	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer
					Mar '18	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '19	Feb	
2018	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	398,353	398,353	--
2017	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	313,447	--	--	--	--	--	--	--	--	--	--	--	313,429
2017	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	8,359	--	--	--	--	--	--	--	--	--	--	--	8,358
2017	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	83,586	--	--	--	--	--	--	--	--	--	--	--	83,581
2017	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	22,242	--	--	--	--	--	--	--	--	--	--	--	22,225
2018	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	--	--	--	394,887	410,943	409,210	385,464	352,434	349,045	347,112	346,916	334,926	--
2018	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	--	--	--	10,530	10,958	10,912	10,279	9,398	9,308	9,256	9,251	8,931	--
2018	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	--	105,303	109,585	109,123	102,790	93,982	93,079	92,563	92,511	89,314	--
2018	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	--	--	--	42,336	19,018	18,930	18,876	18,859	18,269	18,249	18,189	18,219	--
2018	Methow Coho	Yearling smolt	DCPUD Mitigation	37,000 <i>released</i>	--	--	--	--	--	--	--	--	--	43,493	43,170	48,648	--

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 '18	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '19	Feb	
2016	Rainbow trout	Juv	WDFW sport fish	Number (pounds) released	35,475 (14,853)	5,700 (2,509)	1,085 (1,850)	-- (1,955)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	-- (--)	61,461
				Goal is 20,000 pounds annual combined	--	30,525	3,875	1,760	--	--	--	--	--	--	--	--	--
2018	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (pounds) released	33,803 (66)	24,360 (115)	24,360 (312)	64,734 (617)	63,664 (984)	66,408 (1,794)	66,348 (3,606)	42,050 (539)	41,663 (1,042)	41,640 (2,449)	31,429 (4,135)	31,411 (7,479)	23,920
				Goal is 20,000 pounds annual combined	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix C. Fish reared at Wells Hatchery pursuant to the Aquatic Settlement Agreement – White Sturgeon Management Plan.

Brood year	Species	Life stage	Program	Target disposition	Month												Total released/culled /transferred		
					Mar '18	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '19	Feb			
2017	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 325</i>	1,135	340	--	--	--	--	--	--	--	--	--	--	--		
				<i>Culled</i>	--	36	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred</i>	--	853	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Wells reservoir</i>	--	--	338	--	--	--	--	--	--	--	--	--	--	--	
2018	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 325</i>	--	--	--	--	969	794	261	103	102	101	101	99			
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--		
				<i>Transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	--		
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	