

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: January Hatchery and Natural Production Report

Date: 8 February 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 January. All 2018 brood fish at Methow Hatchery remained on 100% well water. At Wells Hatchery, Columbia safety-net steelhead and yearling summer Chinook populations were held on 100% surface water during January. All other populations remained on 100% well water during the month.

2017 Twisp Spring Chinook Salmon

A total of 29,369 fish were on-station at the end of the month with 15 additional fish reported as mortalities. These fish had a mean fork length of 119.45 mm during the month (Table 1) and were approximately 21 fish per pound (FPP). A fish health report during the month noted that approximately 3% of the population exhibited a slight deformity of the caudle peduncle resulting in a slightly shortened peduncle and exaggerated body taper near the tail attachment. While the cause of this phenomenon is unclear, sampling to investigate possible causes, including genetic linkages, is ongoing. 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 227,453 fish were on-station at the end of the month with 75 additional fish 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 117.2 and 120.8 mm during the month (Table 1) and were approximately 21-23 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.

Table 1. 2017 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	MC-Chewuch	119.3	100	9.1	7.7	22
2	MC-Chewuch	117.2	100	8.2	7.0	23
3	MC-Chewuch	119.9	107	8.5	7.1	21
4	MC-Goat Wall	120.8	100	8.6	7.1	21
5	Twisp	119.4	106	10.0	8.3	21
6	Twisp	119.5	100	8.1	6.8	21

2018 Twisp Spring Chinook Salmon

A total of 30,936 fry were on-station at the end of the month with 150 additional fry reported as mortalities. 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 204,827 fry were on-station at the end of the month with 385 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). 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 Wells Summer Chinook Salmon

Wells Hatchery had an estimated 290,763 parr for the yearling program on-station at the end of January and mortality was not monitored during the month. This population was at approximately 13 FPP. Summer Chinook are being reared to fulfill HCP mitigation obligations (Appendix A).

2018 Wells Summer Chinook Salmon

Wells summer Chinook Salmon subyearlings from the 2018 brood were ponded during the month of January and the hatchery had 551,505 fry on-station at the end of the month after removing 36,496 mortalities. Progeny for the yearling program remain in incubation and an estimated 398,353 were on-station after an estimated 57,545 dead eggs were removed at the eyed stage. Summer Chinook are being reared to fulfill HCP mitigation obligations (Appendix A). A fish health exam noted that some losses in the subyearling population were due to caudle peduncle deformities. Although the exact cause of the deformities is not known, they may possibly relate to temperature fluctuations during incubation, and the recommendation was made

to review incubation protocols and operate the chiller system for two to three weeks prior to fish use to allow the water temperature output to stabilize.

2018 Summer Steelhead

Wells Hatchery had 448,678 steelhead progeny on-station at the end of the month. These progeny include 110,344 Methow safety-net, 199,399 Columbia safety-net, 28,937 Twisp Conservation, and 26,986 Methow Conservation program progeny. Okanogan Basin fish on-station included 83,012 HxH progeny from Omak Creek broodstock spawning, and 18,189 WxW progeny from Omak Creek broodstock spawning. Mortality during the month totaled an additional 254 progeny over all programs, most of which were from the Okanogan HxH program ($N = 202$). 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. Spawning was also conducted on 9 and 29 January but it was postponed mid-month due to lack of mature females. Through the end of January, seven females were spawned for the Okanogan H-H program. Two additional Ringold stock females matured during this period, one of which was euthanized. There were no mortalities through the month of January. Approximately 31 fish remain on-station and spawning is expected to continue weekly. Steelhead progeny are being reared to fulfill Douglas PUD and Grant PUD HCP mitigation obligations.

2018 Kamloops Rainbow Trout

Wells Hatchery had 31,429 Kamloops Rainbow Trout on-station at the end of the month with 16 mortalities reported in January. This population was adjusted downward by 10,195 fish after routine inventory monitoring was conducted at the hatchery. These fish were at approximately 7.6 FPP. Kamloops rainbow are reared under the Off-License Settlement Agreement (Appendix B).

2018 White Sturgeon

Wells Hatchery had 101 White Sturgeon progeny on-station at the end of the month and no mortality was reported in January. These fish were at approximately 5.4 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 in brood year 2018. Wells Hatchery received 43,493 eyed Methow Coho eggs on 4 December 2018 from the Winthrop National Fish Hatchery. A total of 43,170 eggs were on-station at the end of January after removing 323 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
					Feb '18	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '19	
2016	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	67,400	67,333	--	--	--	--	--	--	--	--	--	--	67,075
2016	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	149,384	149,236	--	--	--	--	--	--	--	--	--	--	148,664
2016	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	32,436	32,404	--	--	--	--	--	--	--	--	--	--	32,280
2017	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	68,226	68,208	68,178	69,533	69,517	69,509	69,504	69,501	69,496	69,493	69,481	69,456	--
2017	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	151,214	151,176	151,107	154,112	154,077	154,058	154,046	154,039	154,029	154,023	153,995	153,941	--
2017	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	32,833	32,825	32,810	33,463	33,455	33,451	33,448	33,447	33,445	33,443	33,437	33,425	--
2018	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	--	--	--	--	--	--	--	--	64,178	64,178	63,905	63,761	--
2018	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	--	--	--	--	--	--	--	--	142,243	142,243	141,639	141,317	--
2018	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	--	--	--	--	--	--	--	--	30,886	30,886	30,754	30,685	--
2016	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	356,240	356,240	--	--	--	--	--	--	--	--	--	--	356,240
2017	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	447,267	431,642	419,498	--	--	--	--	--	--	--	--	--	417,000
2017	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	332,000	332,000	332,000	332,000	317,168	315,852	297,425	297,425	297,228	295,363	290,763	290,763	--
2018	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	551,505	--

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer	
					Feb '18	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '19		
2018	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	398,353	--
2017	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	313,530	313,447	--	--	--	--	--	--	--	--	--	--	--	313,429
2017	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	8,316	8,359	--	--	--	--	--	--	--	--	--	--	--	8,358
2017	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	83,608	83,586	--	--	--	--	--	--	--	--	--	--	--	83,581
2017	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	33,396	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	--	--
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	--	--
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	--	--
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	--	--
2018	Methow Coho	Yearling smolt	DCPUD Mitigation	37,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	43,493	43,170	--	--

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
					Feb '18	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '19	
2016	Rainbow trout	Juv	WDFW sport fish	Number (pounds) released	35,511 (14,869)	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	24,819 (11)	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)	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		
					Feb '18	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '19			
2017	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supple-mentation	<i>Up to 325</i>	1,175	1,135	340	--	--	--	--	--	--	--	--	--	--		
				<i>Culled</i>	--	--	36	--	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred</i>	--	--	853	--	--	--	--	--	--	--	--	--	--	--	
				<i>Wells reservoir</i>	--	--	--	338	--	--	--	--	--	--	--	--	--	--	
2018	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supple-mentation	<i>Up to 325</i>	--	--	--	--	--	969	794	261	103	102	101	101			
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--		
				<i>Transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	