

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 2018

Cc: Distribution list.

HATCHERY ACTIVITIES

All 2016 brood fish at Methow Hatchery were held on a mix of 93% surface and 7% well water, and all 2017 brood fish were reared on 100% well water during the month. At Wells Hatchery, the yearling Chinook in dirt-pond 1 and the steelhead in dirt-ponds 3 and 4 were held on 100% surface water during February, all other populations remained on 100% well water during the month.

2016 Twisp Spring Chinook Salmon

A total of 30,640 fish were on-station at the end of the month with 21 additional fish reported as mortalities. These fish had a mean fork length of 121 mm during the month and were at approximately 21 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.

2016 Methow Composite Spring Chinook Salmon

A total of 218,580 fish were on-station at the end of the month, of which approximately 66,000 and 29,000 are destined for the Chewuch (61,000 release target) and Goat Wall (25,000 release target) acclimation ponds, respectively. Monthly mortalities totaled 114 fish. These fish had a mean fork length of 121 mm during the month and were at approximately 21 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 Twisp Spring Chinook Salmon

A total of 28,681 fry were on-station at the end of the month with 25 additional fry reported as mortalities. These fish had a mean fork length of 41 mm during the month and were at approximately 390 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 223,592 fry were on-station at the end of the month with 135 additional fry reported as mortalities. These fish will support releases from the Chewuch Acclimation Pond (release target = 60,516), Goat Wall Acclimation Pond (release target = 25,000), and from Methow Hatchery (release target = 109,126). These fish had a mean fork length of 41 mm during the month and were at approximately 350 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.

2016 Wells Summer Chinook Salmon

Wells Hatchery had 356,240 fish on-station for the yearling program. These fish had a mean fork length of approximately 169 mm and were at about 12 FPP at the end of the month. Post-marking mortality for this population will be assessed after release from dirt-pond 1. Summer Chinook are being reared to fulfill HCP mitigation obligations (Appendix A).

2017 Wells Summer Chinook Salmon

Wells Hatchery had an estimated 332,000 fry for the yearling program and 447,267 fry for the subyearling program on-station at the end of the month. Mortality during February totaled an additional 16,915 subyearling fry, which was attributable to presumptive bacterial coldwater disease in conjunction with coagulated yolk disease (egg sac retention). Clinical symptoms resolved after five days of 20,000 ppm (2%) solar salt immersion baths. A high number of physical deformities were also reported across all groups, contributing to mortality and elevated fall-out. The two defects most consistently observed were severe caudal vertebral compression with tail malformation and maxillary hypoplasia (“pug head” deformity). The direct cause is unknown but both have been correlated to suboptimal water temperatures during egg incubation and yolk-sac period. Summer Chinook are being reared to fulfill HCP mitigation obligations (Appendix A).

2017 Summer Steelhead

Wells Hatchery had 351,190 steelhead progeny for releases into the Methow, Columbia, and Okanogan (MCO) rivers. The hatchery also had 33,396 Omak WxW progeny and 54,309 progeny from the Winthrop National Fish Hatchery (WNFH) conservation program, which includes progeny from Twisp River broodstock collections, on-station at the end of February. The WNFH-Twisp group represents a single year stop-gap measure instituted by the HCP Hatchery Committee to address potential genetic risks to the Twisp population. A longer term plan is to be implemented for brood year 2018. Mortality during the month totaled an additional 19 Omak WxW progeny, 19 WNFH conservation progeny, and 32 MCO progeny during the month. Steelhead progeny are being reared to fulfill Douglas PUD HCP and Grant PUD mitigation obligations (Appendix A).

2018 Summer Steelhead

Spawning of the 2018 brood began on 26 December and continued weekly through the end of February with a total of 73 females spawned. Overall mortality has totaled 28 fish by the end of February (17%), including three fish that died during trapping. Approximately 22 fish remain on-station and spawning is expected to continue weekly until production goals have been met. Diquat (Reward®) treatments commenced on 23 January for control of mortality associated with external flavobacteriosis and continued until 10 February when the desired results were achieved. Steelhead progeny are being reared to fulfill Douglas PUD and Grant PUD HCP mitigation obligations.

2016 Spokane Rainbow Trout

Wells Hatchery had 35,511 rainbow trout from the 2016 brood on-station at the end of the month, of which, 2,114 are reared for a larger size (jumbo) at release. An additional 53 catchable-sized, and two jumbo-sized fish were reported as mortalities during the month. These fish are reared to fulfill the Off-License Settlement Agreement (Appendix B).

2017 White Sturgeon

Wells Hatchery had 1,175 White Sturgeon progeny on-station at the end of the month with seven additional fish reported as mortalities during February. White Sturgeon progeny were at approximately six FPP during the month and are reared at Wells Hatchery under the Aquatic Settlement Agreement (Appendix C).

2018 Kamloops Rainbow Trout

Wells Hatchery had 24,819 Kamloops Rainbow Trout on-station at the end of the month after removing 580 additional mortalities. These progeny will be planted in the fall and are reared under the Off-License Settlement Agreement (Appendix B).

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 '17	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '18	Feb	
2015	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	51,720	--	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	51,697	--	--	--	--	--	--	--	--	--	--	--
2015	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	114,630	--	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	114,579	--	--	--	--	--	--	--	--	--	--	--
2015	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	24,890	--	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	24,879	--	--	--	--	--	--	--	--	--	--	--
2016	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	68,032	68,032	67,814	67,806	67,792	67,783	67,765	67,700	67,628	67,546	67,437	67,400	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2016	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	150,785	150,785	150,302	150,284	150,253	150,234	150,192	150,049	149,890	149,707	149,464	149,384	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2016	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	32,740	32,740	32,635	32,631	32,625	32,620	32,611	32,580	32,546	32,506	32,454	32,436	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2017	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	--	--	--	--	--	--	--	68,820	68,817	66,059	68,269	68,226	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2017	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	--	--	--	--	--	--	--	152,530	152,526	146,413	151,310	151,214	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2017	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	--	--	--	--	--	--	--	33,119	33,118	32,915	32,854	32,833	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2015	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000	333,462	--	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	329,809	--	--	--	--	--	--	--	--	--	--	--
2016	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000	443,117	470,247	234,710	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	--	234,710	234,710	--	--	--	--	--	--	--	--	--
2016	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000	366,490	362,301	361,696	359,464	359,127	356,640	356,340	356,340	356,340	356,240	356,240	356,240	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2017	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000	--	--	--	--	--	--	--	--	--	--	468,729	447,267	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2017	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000	--	--	--	--	--	--	--	--	--	--	332,000	332,000	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer	
					Mar '17	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '18	Feb		
2016	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000	314,262	217,219	--	--	--	--	--	--	--	--	--	--	--	297,041
				<i>released</i>	--	90,679	206,362	--	--	--	--	--	--	--	--	--	--	
2016	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000	8,380	5,793	--	--	--	--	--	--	--	--	--	--	--	7,921
				<i>released</i>	--	2,418	5,503	--	--	--	--	--	--	--	--	--	--	
2016	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000	83,803	57,925	--	--	--	--	--	--	--	--	--	--	--	79,211
				<i>released</i>	--	24,181	55,030	--	--	--	--	--	--	--	--	--	--	
2016	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000	32,868	--	--	--	--	--	--	--	--	--	--	--	--	26,054
				<i>transferred</i>	--	26,054	--	--	--	--	--	--	--	--	--	--	--	
2017	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000	--	--	--	329,265	324,326	354,002	357,470	343,318	314,831	286,515	313,570	313,530	--	
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2017	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000	--	--	--	8,780	8,649	9,440	9,533	9,155	8,395	7,640	8,362	8,316	--	
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2017	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000	--	--	--	87,840	86,487	94,400	95,325	91,551	83,955	76,404	83,619	83,608	--	
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2017	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000	--	--	--	--	33,977	31,787	31,787	31,755	33,962	33,426	33,415	33,396	--	
				<i>transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--

¹40,000 Inundation steelhead to be released in the Twisp 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 '17	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '18	Feb		
2015	Rainbow trout	Juv	WDFW sport fish		33,280	20,308	5,398	--	--	--	--	--	--	--	--	--	--	
					(11,110)	(9,104)	(2,720)	(1,854)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)
				Number (pounds) released	--	12,900	14,890	3,594	--	--	--	--	--	--	--	--	--	(11,117)
2016	Rainbow trout	Juv	WDFW sport fish		62,379	61,927	61,612	59,120	57,374	57,001	57,001	37,001	35,951	35,784	35,566	35,511		
					(142)	(405)	(692)	(1,056)	(1,739)	(3,563)	(6,333)	(7,400)	(8,988)	(8,750)	(12,454)	(14,869)		25,301
				Goal is 20,000 pounds annual combined	--	--	--	--	--	--	--	--	--	--	--	--	--	(5,325)
2017	Lahontan cutthroat	Juv	WDFW sport fish		178,526	169,589	169,589	3,768	5,541	5,533	--	--	--	--	--	--		
					(178)	(169)	(242)	(5)	(32)	(64)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	177,288
					--	--	--	--	171,747	--	--	5,541	--	--	--	--	--	(314)
2018	Kamloops Rainbow trout	Juv.	WDFW sport fish		--	--	--	--	--	--	--	--	--	--	26,199	24,819		
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(26)	(11)		
					--	--	--	--	--	--	--	--	--	--	--	--	--	--

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 '17	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '18	Feb		
2016	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	Up to 5,000	6,654	6,654	5,090	--	--	--	--	--	--	--	--	--		
				Culled	--	--	--	--	--	--	--	--	--	--	--	--		
				Transferred	--	--	1,362	--	--	--	--	--	--	--	--	--		3,655
				Wells reservoir	--	--	--	5,125	--	--	--	--	--	--	--	--	--	
2017	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	Up to 325	--	--	--	--	2,053	1,581	1,461	1,440	1,299	1,262	1,182	1,175		
				Culled	--	--	--	--	--	--	--	--	--	--	--	--		
				Transferred	--	--	--	--	--	--	--	--	--	--	--	--		
				Wells reservoir	--	--	--	--	--	--	--	--	--	--	--	--	--	