

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

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To: Shane Bickford and Greg Mackey
From: Charlie Snow, Charles Frady, and David Grundy
Subj: January Hatchery and Natural Production Report
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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 January, all other populations remained on 100% well water during the month.

2016 Twisp Spring Chinook Salmon

A total of 30,661 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 121 mm during the month and were at approximately 23 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 218,694 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 mortality was low overall, not rising above six fish per day, and included 257 fish from the on-station release group, 8 fish from the Goat Wall release group, and 128 fish from the Chewuch release group. A fish health exam on 29 January found that recent mortalities likely resulted from increased stress during netting/crowding for routine sampling and an increase in organic debris in the raceways. Though bacterial kidney disease (BKD) is likely the cause, no recommendation or treatment was made due to the low level of mortality. These fish had a mean fork length of 121 mm during the month and were at approximately 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.

2017 Twisp Spring Chinook Salmon

Correcting last month's report, a total of 28,901 fry were ponded during the month of December. At the end of December, a total of 28,773 fry were on-station with an additional 128 fry reported as mortalities. A total of 28,706 fry were on-station at the end of January with an additional 67 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.

2017 Methow Composite Spring Chinook Salmon

Correcting last month's report, a total of 213,031 fry were ponded during the month of December bringing the MetComp ponding total to 216,931. An additional 8,636 fry remained in incubation. At the end of December, a total of 224,126 fry were on-station with an additional 1,433 fry reported as mortalities. During the month of January, 8,636 fry were ponded bringing the MetComp ponding total to 225,567. At the end of January, a total of 223,727 fry were on-station with an additional 399 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 = 108,249). 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, and no mortalities were reported during January. These fish had a mean fork length of approximately 169 mm and were at about 14 FPP at the end of the month and are being reared to fulfill HCP mitigation obligations (Appendix A).

2017 Wells Summer Chinook Salmon

Spawning of the 2017 brood of summer Chinook Salmon at Wells Hatchery produced an estimated 332,000 fry for the yearling program and 468,729 fry for the subyearling program. About half ($N = 233,923$) of the subyearling fry were ponded in January, and the remaining fry (subyearlings and yearlings) were still in incubation trays at the end of the month. Mortality during January totaled 1,077 of the subyearling fry. Summer Chinook are being reared to fulfill HCP mitigation obligations (Appendix A).

2017 Summer Steelhead

Wells Hatchery had 351,222 steelhead progeny for releases into the Methow, Columbia, and Okanogan (MCO) rivers. The hatchery also had 33,415 Omak WxW progeny and 54,328 progeny from the Winthrop National Fish Hatchery (WNFH) conservation program, which includes progeny from Twisp River broodstock collections, on-station at the end of January. This is a single year stop-gap measure instituted by the HCP Hatchery Committee to address potential genetic risk to the Twisp Population. A longer term plan is to be put in place for brood year 2018. Mortality during the month totaled an additional 11 Omak WxW progeny, 30 WNFH

conservation progeny, and 31 MCO progeny during the month. On 31 January hatchery staff reported that a portion of fish in the pond were consistently swimming sideways. Despite this tendency, the fish easily righted themselves when stimulated and continued to feed normally. Symptoms are believed to be the result of chronic latent bacterial coldwater disease with infiltration into the central nervous system. Since there has been no substantial increase in mortality or effects on fitness, no therapeutic intervention has been recommended. 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 January with a total of 54 females spawned. Overall mortality has totaled 27 fish by the end of January (16%), including three fish that died during trapping. Approximately 74 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 will continue weekly until spawning has ceased. Steelhead progeny are being reared to fulfill Douglas PUD and Grant PUD HCP mitigation obligations.

2016 Spokane Rainbow Trout

Wells Hatchery had 35,566 rainbow trout from the 2016 brood on-station at the end of the month, of which, 2,116 are reared for a larger size (jumbo) at release. An additional 86 catchable-sized, and nine 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 1,182 White Sturgeon progeny on-station at the end of the month with 10 additional fish reported as mortalities during January. White Sturgeon progeny were at approximately 21 FPP during the month and are reared at Wells Hatchery under the Aquatic Settlement Agreement (Appendix C).

2018 Kamloops Rainbow Trout

Wells Hatchery received 27,800 triploid Kamloops Rainbow Trout progeny (eyed eggs) from Troutlodge Inc. in January, and had 26,199 on-station at the end of the month after removing 1,601 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	
					Feb '17	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '18		
2015	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	65,608	51,720	--	--	--	--	--	--	--	--	--	--	--	51,697
				<i>released</i>	--	--	51,697	--	--	--	--	--	--	--	--	--	--	
2015	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	145,413	114,630	--	--	--	--	--	--	--	--	--	--	--	114,579
				<i>released</i>	--	--	114,579	--	--	--	--	--	--	--	--	--	--	
2015	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	31,574	24,890	--	--	--	--	--	--	--	--	--	--	--	24,879
				<i>released</i>	--	--	24,879	--	--	--	--	--	--	--	--	--	--	
2016	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	68,594	68,032	68,032	67,814	67,806	67,792	67,783	67,765	67,700	67,628	67,546	67,437	--	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	
2016	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	152,030	150,785	150,785	150,302	150,284	150,253	150,234	150,192	150,049	149,890	149,707	149,464	--	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	
2016	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	33,011	32,740	32,740	32,635	32,631	32,625	32,620	32,611	32,580	32,546	32,506	32,454	--	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	
2017	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	--	--	--	--	--	--	--	--	68,820	68,817	66,059	68,269	--	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	
2017	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	--	--	--	--	--	--	--	--	152,530	152,526	146,413	151,310	--	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	
2017	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	--	--	--	--	--	--	--	--	33,119	33,118	32,915	32,854	--	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	
2015	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000	335,239	333,462	--	--	--	--	--	--	--	--	--	--	--	329,809
				<i>released</i>	--	--	329,809	--	--	--	--	--	--	--	--	--	--	
2016	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000	444,000	443,117	470,247	234,710	--	--	--	--	--	--	--	--	--	469,420
				<i>released</i>	--	--	--	234,710	234,710	--	--	--	--	--	--	--	--	
2016	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000	372,107	366,490	362,301	361,696	359,464	359,127	356,640	356,340	356,340	356,340	356,240	356,240	--	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	
2017	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000	--	--	--	--	--	--	--	--	--	--	--	468,729	--	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	
2017	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000	--	--	--	--	--	--	--	--	--	--	--	332,000	--	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer	
					Feb '17	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '18		
2016	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	314,555	314,262	217,219	--	--	--	--	--	--	--	--	--	--	297,041
2016	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	8,388	8,380	5,793	--	--	--	--	--	--	--	--	--	--	7,921
2016	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	83,881	83,803	57,925	--	--	--	--	--	--	--	--	--	--	79,211
2016	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	33,461	32,868	--	--	--	--	--	--	--	--	--	--	--	26,054
2017	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	--	--	--	--	329,265	324,326	354,002	357,470	343,318	314,831	286,515	313,570	--	--
2017	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	--	--	--	--	8,780	8,649	9,440	9,533	9,155	8,395	7,640	8,362	--	--
2017	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	--	--	87,840	86,487	94,400	95,325	91,551	83,955	76,404	83,619	--	--
2017	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	--	--	--	--	--	33,977	31,787	31,787	31,755	33,962	33,426	33,415	--	--

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		
					Feb '17	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '18			
2015	Rainbow trout	Juv	WDFW sport fish		33,652	33,280	20,308	5,398	--	--	--	--	--	--	--	--	--	51,384	
					(8,288)	(11,110)	(9,104)	(2,720)	(1,854)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)		(--)
					--	--	12,900	14,890	3,594	--	--	--	--	--	--	--	--		--
2016	Rainbow trout	Juv	WDFW sport fish	Number (pounds) released	62,418	62,379	61,927	61,612	59,120	57,374	57,001	57,001	37,001	35,951	35,784	35,566	25,301		
					(65)	(142)	(405)	(692)	(1,056)	(1,739)	(3,563)	(6,333)	(7,400)	(8,988)	(8,750)	(12,454)	(5,325)		
					--	--	--	--	--	--	--	--	--	--	--	--	--	--	
2017	Lahontan cutthroat	Juv	WDFW sport fish	Goal is 20,000 pounds annual combined	178,526	169,589	169,589	3,768	5,541	5,533	--	--	--	--	--	177,288			
					(178)	(169)	(242)	(5)	(32)	(56)	(64)	(--)	(--)	(--)	(--)	(--)			
					--	--	--	--	--	171,747	--	--	5,541	--	--	--	(314)		
2018	Kamloops Rainbow trout	Juv.	WDFW sport fish		--	--	--	--	--	--	--	--	--	--	--	26,199			
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(26)			
					--	--	--	--	--	--	--	--	--	--	--	--	--		

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 '17	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '18		
2016	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	Up to 5,000	6,690	6,654	6,654	5,090	--	--	--	--	--	--	--	--	--	3,655
				Culled	--	--	--	--	--	--	--	--	--	--	--	--	--	
				Transferred	--	--	--	1,362	--	--	--	--	--	--	--	--	--	
				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	--	
				Culled	--	--	--	--	--	--	--	--	--	--	--	--		
				Transferred	--	--	--	--	--	--	--	--	--	--	--	--		
				Wells reservoir	--	--	--	--	--	--	--	--	--	--	--	--		--