

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

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Subj: December Hatchery and Natural Production Report

Date: 6 January 2017

Cc: Distribution list.

HATCHERY ACTIVITIES

All 2015 brood fish at Methow Hatchery were switched to a mix of 95% surface and 5% well water on 1 December. All 2016 brood fish at Methow Hatchery and all juvenile fish at Wells Hatchery were held on 100% well water during the month.

2015 Twisp Spring Chinook Salmon

A total of 40,382 fish were on-station at the end of the month with two additional fish reported as mortalities. These fish had a mean fork length of 125.1 mm and were at 24 fish per pound (FPP) at the end of the month. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2015 Methow Composite Spring Chinook Salmon

A total of 202,322 fish were on-station at the end of the month with 103 additional fish reported as mortalities. These fish had a mean fork length of 125.1 mm and were at 24 fish per pound (FPP) at the end of the month. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2016 Twisp Spring Chinook Salmon

A total of 14,756 fry were ponded during the month of December leaving 16,254 fry still in incubation. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2016 Methow Composite Spring Chinook Salmon

A total of 38,831 fry were ponded during the month of December leaving 184,099 fry still in incubation. Approximately 70,000 and 29,000 WxW MetComp fry on-station are destined for the Chewuch (61,000 release target) and Goat Wall (25,000 release target) acclimation ponds, respectively. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2015 Wells Summer Chinook Salmon

Wells Hatchery had 336,117 summer Chinook Salmon progeny for the yearling program on-station at the end of the month and no mortalities were reported. Monthly length sampling indicated these fish had a mean fork length of 137 mm and were at approximately 16 FPP. These fish are being reared to fulfill HCP mitigation obligations (Appendix A).

2016 Wells Summer Chinook Salmon

Wells Hatchery had an estimated 583,000 eggs on-station for the subyearling program and 372,107 eggs on-station for the yearling program. The number of yearling program eggs was adjusted upwards by 3,167 eggs during the month. These progeny are being reared to fulfill HCP mitigation obligations (Appendix A).

2016 Summer Steelhead

Wells Hatchery had a total of 441,677 steelhead parr on-station at the end of the month including an estimated 34,542 Omak WxW progeny, 56,884 Twisp progeny, and 350,251 progeny for Okanogan, Columbia, and Methow River (OCM) release. Monthly mortality included 1,064 fish from the Omak WxW group, 23 fish from the OCM group, and 80 Twisp WxW fish. The Twisp WxW population was adjusted downward by 3,639 fish during the month, and the OCM group was adjusted downward by 6,826 fish during December. Steelhead progeny are being reared to fulfill HCP mitigation obligations (Appendix A).

2017 Summer Steelhead

Trapping of 2017 brood summer steelhead began in August and finished during November with a total of 386 adults trapped from the Wells Dam fish ladders or the Wells Hatchery volunteer channel. A total of 163 of the hatchery-origin fish trapped were retained for broodstock. Wild fish (as determined from the lack of external marks) have totaled about 28% of the fish trapped, although scale sample confirmation of fish origin has not been completed to-date. Spawning of these fish will commence in January 2017.

2015 Spokane Rainbow

Wells Hatchery had 32,975 rainbow trout on-station at the end of the month after subtracting 76 mortalities. About 2,500 of these fish are larger sized fish at about two FPP, with the remaining fish at about seven FPP. These fish are reared to fulfill the Off-License Settlement Agreement (Appendix B).

2016 Spokane Rainbow

Wells Hatchery received 75,000 rainbow trout eggs from the 2016 brood from Spokane Hatchery on 27 December and had 72,878 eggs on-station at the end of the month after subtracting 2,122 dead eggs. These fish are reared to fulfill the Off-License Settlement Agreement (Appendix B).

2016 White Sturgeon

Wells Hatchery had 9,343 sturgeon progeny on-station at the end of the month after subtracting 593 mortalities, and accounting for a negative population adjustment of 522 fish. White sturgeon progeny are reared at Wells Hatchery under the 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), Lost River (LOR), Early Winters Creek (EWC), 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>

2016 Smolt Trapping

Both the Methow and Twisp traps operated for the first five nights of December without interruption. Freezing daytime temperatures and ice accumulation required the removal of both traps from their respective rivers on 5 December. During the month, sub yearling wild Chinook parr were the primary species captured at both the Methow and Twisp trap sites (Table 1). Biological data collected from trapped fish is detailed in Table 2. Methow River discharge for the period operated ranged from 25.5 to 29.7 m³s, providing expected trap efficiencies between 1.4 and 1.5 percent. Twisp River discharge for the period operated ranged from 3.2 to 4.1 m³s, providing expected trap efficiencies between 4.3 and 5.8 percent.

Table 1. Monthly salmonid captures at Methow Basin smolt traps in 2016. SHR = wild steelhead/rainbow. F-S = February through September total.

Species/origin	Methow				Twisp				Basin total
	F-S	Oct	Nov	Dec	F-S	Oct	Nov	Dec	
Yearling Chin/wild	487	0	0	0	403	0	0	0	890
Yearling Chin/hatch	3,339	0	0	0	2,177	0	0	0	5,516
Sub Chin/wild-parr	1,931	58	109	12	618	244	207	13	3,192
Sub Chin/wild-fry	4,587	0	0	0	195	0	0	0	4,782
SHR/wild-trans.	191	0	0	0	160	0	0	0	351
SHR/wild-parr	101	8	3	0	220	43	12	1	388
SHR/wild-fry	23	0	0	0	51	0	0	0	74
Steelhead/hatchery	473	0	0	0	2,098	2	0	0	2,573
Coho/wild-smolt	118	0	0	0	49	0	0	0	167
Coho/wild-parr	13	0	0	0	12	2	1	0	28
Coho/wild-fry	0	0	0	0	3	0	0	0	3
Coho/hatchery	98	0	0	0	0	0	0	0	98
Bull trout	2	0	3	0	10	4	1	0	20
Cutthroat trout	1	0	0	0	5	2	0	0	8
Sockeye/wild-fry	18	0	0	0	0	0	0	0	18
Total	11,382	66	115	12	6,001	297	221	14	18,108

Table 2. Biological sampling of juvenile salmonids captured at Methow Basin smolt traps during December.

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	91.6	7.6	12	8.3	2.1	12	1.1
Sub Chinook/wild/parr	Twisp	89.6	8.4	13	7.9	2.0	13	1.1
Steelhead/wild/parr	Twisp	66.0	--	1	3.5	--	1	1.2

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	
					Jan '16	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
2014	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	71,862	71,847	71,821	--	--	--	--	--	--	--	--	--	--	
				<i>released</i>	--	--	--	71,812	--	--	--	--	--	--	--	--	--	--
2014	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	159,272	159,240	159,183	--	--	--	--	--	--	--	--	--	--	
				<i>released</i>	--	--	--	159,161	--	--	--	--	--	--	--	--	--	--
2014	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	34,583	34,576	34,564	--	--	--	--	--	--	--	--	--	--	
				<i>released</i>	--	--	--	34,559	--	--	--	--	--	--	--	--	--	--
2015	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	65,494	65,330	65,270	65,259	65,211	65,701	65,697	65,695	65,692	65,691	65,666	65,638		
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2015	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	145,158	144,794	144,664	144,638	144,531	145,618	145,610	145,604	145,600	145,595	145,541	145,478		
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2015	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	31,519	31,440	31,411	31,405	31,382	31,618	31,616	31,615	31,614	31,613	31,602	31,588		
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2016	Spring Chinook	Yearling smolt	CCPUD NNI	60,516	--	--	--	--	--	--	--	--	--	--	68,677	68,677	68,677	
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2016	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126	--	--	--	--	--	--	--	--	--	--	152,213	152,213	152,213	
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2016	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123	--	--	--	--	--	--	--	--	--	--	33,050	33,050	33,050	
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2014	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000	358,953	358,953	358,953	43,953	--	--	--	--	--	--	--	--	--	
				<i>released</i>	--	--	--	314,000	36,000	--	--	--	--	--	--	--	--	--
2015	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000	494,310	427,696	427,075	439,709	--	--	--	--	--	--	--	--	--	
				<i>released</i>	--	--	--	--	439,709	--	--	--	--	--	--	--	--	--
2015	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000	350,845	350,845	348,172	345,069	344,395	344,121	343,198	336,304	336,117	336,117	336,117	336,117		
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2016	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000	--	--	--	--	--	--	--	--	--	--	--	583,000	583,000	
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer	
					Jan '16	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		
2016	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	368,940	372,107	--	
2015	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	310,570	310,158	310,143	134,985	--	--	--	--	--	--	--	--	--	307,697
2015	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	8,282	8,270	8,270	3,599	--	--	--	--	--	--	--	--	--	8,205
2015	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	82,819	82,709	82,705	35,996	--	--	--	--	--	--	--	--	--	82,052
2016	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	--	--	--	--	--	358,776	371,024	373,452	337,536	331,315	317,688	314,795	--	
2016	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	--	--	--	--	--	9,567	9,893	9,958	9,001	8,835	8,471	8,395	--	
2016	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	--	--	--	95,673	98,939	99,587	90,009	88,350	84,716	83,945	--	
2016	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	--	--	--	--	--	34,627	34,010	34,716	34,616	34,616	35,606	34,761	--	

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
					Jan '16	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
2014	Rainbow trout	Juv	WDFW sport fish		33,647	33,617	13,732	10,709	3,037	--	--	--	--	--	--	--	50,717
					(9,861)	(11,566)	(6,638)	(4,951)	(1,380)	(740)	(--)	(--)	(--)	(--)	(--)	(--)	
2015	Rainbow trout	Juv	WDFW sport fish	Number (pounds) released	75,181	74,402	73,936	63,618	63,352	60,608	36,100	36,052	33,026	32,949	32,897	32,975	20,000
					(75)	(39)	(114)	(260)	(792)	(1,377)	(1,570)	(2,488)	(3,471)	(4,308)	(5,178)	(7,516)	(873)
2016	Rainbow trout	Juv	WDFW sport fish	Goal is 20,000 pounds annual combined	--	--	--	--	--	--	20,000	--	--	--	--	72,878	
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(73)	
2016	Lahontan cutthroat	Juv	WDFW sport fish		--	--	--	200,000	161,503	156,757	--	--	--	--	--	--	150,000
					(--)	(--)	(--)	(200)	(161)	(156)	--	(--)	(--)	(--)	(--)	(--)	(200)

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		
					Jan '16	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec			
2015	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	Up to 5,000	7,416	7,405	5,203	5,198	5,153	--	--	--	--	--	--	--	--		
				Culled	--	--	--	--	--	--	--	--	--	--	--	--	--	1,462	
				Transferred	--	--	2,200	--	--	--	--	--	--	--	--	--	--	--	5,000
				Wells reservoir	--	--	--	--	--	5,288	--	--	--	--	--	--	--	--	5,288
2016	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	Up to 5,000	--	--	--	--	--	35,845	25,087	17,246	15,235	13,560	10,458	9,343			
				Culled	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
				Transferred	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
				Wells reservoir	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--