

**WASHINGTON DEPARTMENT OF FISH AND WILDLIFE**

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**From:** Charlie Snow, Charles Frady, and David Grundy

**Subj:** June Hatchery and Natural Production Report

**Date:** 10 July 2017

**Cc:** Distribution list.

**HATCHERY ACTIVITIES**

All 2016 and 2017 brood fish at Methow Hatchery, and all populations at Wells Hatchery reared through the end of the month were held on 100% well water.

**2016 Twisp Spring Chinook Salmon**

A total of 30,718 fish were on-station at the end of the month with four additional fish reported as mortalities. These fish had a mean fork length of 88 mm during the month and were at approximately 59 fish per pound (FPP). 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 220,003 fish were on-station at the end of the month with 26 additional fish reported as mortalities. Approximately 67,000 and 29,000 of the WxW MetComp fry on-station are destined for the Chewuch (61,000 release target) and Goat Wall (25,000 release target) acclimation ponds, respectively. These fish had a mean fork length of 88 mm during the month and were at approximately 59 FPP. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

**2017 Brood Spring Chinook Salmon**

By the end of June, a total of 883 spring Chinook salmon were trapped and sampled at Wells Dam. Of these, 59 wild MetComp and seven wild Twisp fish were retained for broodstock. Through 5 July, a total of 31 spring Chinook salmon were trapped and sampled at the Twisp weir. Of these, seven potential wild and four hatchery adults were retained for broodstock. A total of 53 hatchery spring Chinook salmon were retained from trapping at the Methow Hatchery outfall trap to complete collection for the 2017 brood. During the month of June, a total of 48 adults and 67 jacks were transferred to Winthrop NFH to be incorporated into broodstock or removed as surplus.

### **2016 Wells Summer Chinook Salmon**

Wells Hatchery released the remaining population of subyearling program fish during the month (234,710), for a total brood release of 469,420 fish. The hatchery also had 359,464 fry on-station for the yearling program, with an additional 2,232 yearling program fry counted as mortality during June. These progeny are being reared to fulfill HCP mitigation obligations (Appendix A).

### **2017 Summer Steelhead**

Wells Hatchery had 425,849 steelhead progeny on-station from spawning of the 2017 brood, and these progeny will support releases into the Methow, Columbia, and Okanogan rivers. An additional 54,600 eyed-egg progeny from the Winthrop National Fish Hatchery conservation program, which includes progeny from Twisp River broodstock collections, were shipped to Methow Hatchery on 7 June for rearing to the fry stage. These fish will be transferred to Wells Hatchery for rearing until release. Steelhead progeny are being reared to fulfill HCP mitigation obligations (Appendix A).

### **2015 Spokane Rainbow**

Wells Hatchery planted the remaining population ( $N = 3,594$ ) of 2015 brood rainbow into Okanogan County lakes during the month of June. About 694 of these fish were larger (jumbo) sized fish at about 1 FPP, with the remaining fish (catchable size) at about 2.5 FPP. These fish are reared to fulfill the Off-License Settlement Agreement (Appendix B).

### **2016 Spokane Rainbow**

Wells Hatchery had 59,120 fry from the 2016 brood on-station at the end of the month after subtracting 2,492 mortalities. These fish were at 56 FPP and are reared to fulfill the Off-License Settlement Agreement (Appendix B).

### **2016 White Sturgeon**

Wells Hatchery had 5,090 sturgeon progeny on-station at the end of the month and no mortalities were reported during June. White sturgeon progeny are reared at Wells Hatchery under the Aquatic Settlement Agreement (Appendix C).

### **2017 Lahontan Cutthroat**

Wells Hatchery had 169,589 Lahontan Cutthroat Trout progeny from broodstock spawned at Lake Lenore (Grant County) on-station at the end of the month. Mortality during the month totaled an additional 8,937 fish. These fish are reared to fulfill 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), 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>

### 2017 Smolt Trapping

Both the Methow and Twisp trap sites experienced interruptions in operation during June due to high river discharge. The Twisp trap, which was lifted from the river on 6 May, remained out until river discharge dropped enough to operate the trap again on 14 June. The Twisp trap then remained operational from 14 June through the end of the month. The Methow trap did not operate between 22 May and 13 June due to high river discharge. During the month of June, sub yearling wild Chinook fry and wild steelhead parr were the primary species captured at the Methow and Twisp trap sites, respectively (Table 1). Biological data collected from trapped fish is detailed in Table 2. Methow River discharge for the period operated ranged from 109.3 to 175.0 m<sup>3</sup>s, providing expected trap efficiencies between 0.9 and 2.7 percent. Twisp River discharge for the period operated ranged from 17.2 to 34.0 m<sup>3</sup>s, providing expected trap efficiencies below 5.7 percent.

Table 1. Monthly salmonid captures at Methow Basin smolt traps in 2017. SHR = wild steelhead/rainbow.

Species/origin	Methow				Twisp				Basin total
	Mar	Apr	May	June	Mar	Apr	May	June	
Yearling Chin/wild	47	426	15	2	141	621	34	13	1,299
Yearling Chin/hatch	0	13,299	26	0	0	3,826	1	0	17,152
Sub Chin/wild-parr	0	8	24	212	0	0	0	12	256
Sub Chin/wild-fry	773	1,896	914	241	17	143	16	14	4,014
SHR/wild-trans.	0	312	61	0	0	163	64	9	609
SHR/wild-parr	1	31	5	2	7	120	21	27	214
Steelhead/hatchery	0	1,913	776	6	0	2,403	194	16	5,308
Coho/wild-smolt	0	4	1	0	0	3	1	0	9
Coho/wild-fry	0	0	1	1	0	0	0	0	2
Coho/hatchery	0	1,715	506	0	0	0	0	0	2,221
Bull trout	0	0	2	0	1	2	0	2	7
Cutthroat Trout	0	0	0	0	0	0	0	1	1
Sockeye/wild-fry	187	71	0	3	0	0	0	0	261
<b>Total</b>	<b>1,008</b>	<b>19,675</b>	<b>2,331</b>	<b>467</b>	<b>166</b>	<b>7,281</b>	<b>331</b>	<b>94</b>	<b>31,353</b>

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

Species/stage	Location	Length (mm)			Weight (g)			Mean K-factor
		Mean	SD	<i>N</i>	Mean	SD	<i>N</i>	
Yearling Chinook/wild	Methow	105.0	4.2	2	12.9	0.8	2	1.1
Yearling Chinook/wild	Twisp	101.3	9.1	13	11.9	3.1	13	1.1
Sub Chinook/wild/parr	Methow	58.9	7.4	189	2.4	1.1	186	1.1
Sub Chinook/wild/parr	Twisp	55.5	4.0	12	1.9	0.6	12	1.1
Sub Chinook/wild/fry	Methow	43.0	4.3	164	--	--	--	--
Sub Chinook/wild/fry	Twisp	46.3	2.7	12	--	--	--	--
Steelhead/wild/transitional	Twisp	128.4	18.8	9	25.4	11.1	9	1.1
Steelhead/wild/parr	Methow	75.0	9.9	2	5.5	2.5	2	1.2
Steelhead/wild/parr	Twisp	95.3	12.0	27	10.0	3.9	27	1.1
Steelhead/hatchery/smolt	Methow	159.2	19.2	6	41.9	11.1	6	1.0
Steelhead/hatchery/smolt	Twisp	155.8	7.4	11	40.4	9.9	11	1.1
Coho/wild/fry	Methow	47.0	--	1	--	--	--	--
Sockeye/wild/fry	Methow	31.3	3.5	3	--	--	--	--
Cutthroat Trout	Twisp	205.0	--	1	86.3	--	1	1.0
Bull Trout	Twisp	184.0	22.6	2	55.3	20.4	2	0.9

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		
					Jul '16	Aug	Sep	Oct	Nov	Dec	Jan '17	Feb	Mar	Apr	May	Jun			
2015	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	65,697	65,695	65,692	65,691	65,666	65,638	65,618	65,608	51,720	--	--	--	51,697	51,697	
2015	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	145,610	145,604	145,600	145,595	145,541	145,478	145,435	145,413	114,630	--	--	--	114,579	114,579	
2015	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	31,616	31,615	31,614	31,613	31,602	31,588	31,578	31,574	24,890	--	--	--	24,879	24,879	
2016	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	--	--	--	68,677	68,677	68,677	68,677	68,594	68,032	68,032	67,814	67,806	--	--	
2016	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	--	--	--	152,213	152,213	152,213	152,213	152,030	150,785	150,785	150,302	150,284	--	--	
2016	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	--	--	--	33,050	33,050	33,050	33,050	33,011	32,740	32,740	32,635	32,631	--	--	
2015	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	343,198	336,304	336,117	336,117	336,117	336,117	336,117	335,239	333,462	--	--	--	329,809	329,809	
2016	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	--	--	--	583,000	583,000	513,238	444,000	443,117	470,247	234,710	--	234,710	234,710	469,420
2016	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	368,940	372,107	372,107	372,107	366,490	362,301	361,696	359,464	--	--	
2016	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation <sup>1</sup>	300,000 <i>released</i>	371,024	373,452	337,536	331,315	317,688	314,795	314,694	314,555	314,262	217,219	--	--	90,679	206,362	297,041
2016	Summer steelhead	Yearling smolt	DCPUD Wells NNI <sup>1</sup>	8,000 <i>released</i>	9,893	9,958	9,001	8,835	8,471	8,395	8,392	8,388	8,380	5,793	--	--	2,418	5,503	7,921
2016	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	98,939	99,587	90,009	88,350	84,716	83,945	83,918	83,881	83,803	57,925	--	--	24,181	55,030	79,211
2016	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000 <i>transferred</i>	34,010	34,716	34,616	34,616	35,606	34,542	34,542	33,461	32,868	--	--	--	26,054	--	26,054

<sup>1</sup>40,000 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 A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer
					Jul '16	Aug	Sep	Oct	Nov	Dec	Jan '17	Feb	Mar	Apr	May	Jun	
2016	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation <sup>1</sup>	300,000	--	--	--	--	--	--	--	--	--	--	--	329,265	
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2016	Summer steelhead	Yearling smolt	DCPUD Wells NNI <sup>1</sup>	8,000	--	--	--	--	--	--	--	--	--	--	--	8,780	
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2016	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000	--	--	--	--	--	--	--	--	--	--	--	87,840	
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--

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	
					Jul '16	Aug	Sep	Oct	Nov	Dec	Jan '17	Feb	Mar	Apr	May	Jun		
2015	Rainbow trout	Juv	WDFW sport fish		36,100	36,052	33,026	32,949	32,897	32,975	33,741	33,652	33,280	20,308	5,398	--		
					(1,570)	(2,488)	(3,471)	(4,308)	(5,178)	(7,516)	(8,656)	(8,288)	(11,110)	(9,104)	(2,720)	(1,854)	51,384	
					20,000	--	--	--	--	--	--	--	--	--	12,900	14,890	3,594	(11,117)
2016	Rainbow trout	Juv	WDFW sport fish	Number (pounds) released	--	--	--	--	--	72,878	68,293	62,418	62,379	61,927	61,612	59,120		
					(--)	(--)	(--)	(--)	(--)	(73)	(20)	(65)	(142)	(405)	(692)	(1,056)	--	
				Goal is 20,000 pounds annual combined	--	--	--	--	--	--	--	--	--	--	--	--	--	--
2016	Lahontan cutthroat	Juv	WDFW sport fish		--	--	--	--	--	--	--	--	--	--	--	--		
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	150,000	
					150,000	--	--	--	--	--	--	--	--	--	--	--	--	--
2017	Lahontan cutthroat	Juv	WDFW sport fish		--	--	--	--	--	--	--	--	--	--	178,526	169,589		
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(178)	(169)	--	
					--	--	--	--	--	--	--	--	--	--	--	--	--	--

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		
					Jul '16	Aug	Sep	Oct	Nov	Dec	Jan '17	Feb	Mar	Apr	May	Jun			
2016	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 5,000</i>	25,087	17,246	15,235	13,560	10,458	9,343	9,495	6,690	6,654	6,654	5,090	5,090			
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred</i>	--	--	--	--	--	--	2,293	--	--	--	--	1,362	--	--	3,655
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--