

**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 and Charles Frady

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

**Date:** 9 October 2015

**Cc:** Distribution list.

**HATCHERY ACTIVITIES**

All fish populations at both the Wells and Methow hatcheries were held on 100% well water during the month of September.

**2014 Twisp Spring Chinook Salmon**

A total of 36,413 fish were on-station at the end of the month with two additional fish reported as mortalities. These fish were at 29 fish per pound (FPP) on 27 September. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

**2014 Methow Composite Spring Chinook Salmon**

A total of 183,677 fish were on-station at the end of the month with 14 additional fish reported as mortalities. Approximately 37,000 of these fish are designated as part of the Chelan County PUD obligation to be released in the Chewuch River. These fish were at 29 FPP on 27 September. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

**2015 Brood Spring Chinook Salmon**

A total of 47,589 Twisp and 226,510 Methow Composite eggs have been picked through the end of September; eggs from one Twisp and 12 Methow Composite females remain unpicked. Initial loss for the Twisp program was 1.1% ( $N = 544$ ). Initial loss for the Methow Composite program was 3.5% ( $N = 7,905$ ).

**2014 Wells Summer Chinook Salmon**

Wells had an estimated 358,953 yearling program fish on-station and no mortalities were reported during September. These fish were at about 29 FPP at the end of the month, and were being reared to fulfill HCP mitigation obligations (Appendix A).

### **2015 Wells Summer Chinook Salmon**

Wells Hatchery had retained 769 summer Chinook Salmon for the 2015 brood from the volunteer ladder during July, and two of those fish were reported as pre-spawn mortalities (0.3%), leaving 767 adults on-station at the end of the month. These fish will be used as broodstock to support the Wells subyearling (41% of adults), Wells yearling (26%), Lake Chelan triploid (9%), and Yakima River reintroduction (24%) programs. Spawning of collected fish will be initiated in October.

### **2015 Summer Steelhead**

Wells Hatchery had a total of 502,672 steelhead progeny on-station at the end of the month with 1,867 additional fish reported as mortalities. Of the fish on-station, 42,210 were Omak Creek WxW progeny and 61,655 were Twisp WxW progeny. An additional 94,143 HxH progeny were shipped to Ringold Springs Hatchery on 28 September. The fish on-station were reared to fulfill Douglas HCP (Methow and Columbia releases) and Grant PUD (Okanogan releases) mitigation obligations (Appendix A).

### **2014 Spokane Rainbow**

Wells Hatchery had 54,078 rainbow trout progeny from the 2014 brood on-station at about six FPP and an additional 82 fish were reported as mortalities during the month of September. These fish were reared to fulfill the Off-License Settlement Agreement (Appendix B).

### **2015 White Sturgeon**

Wells Hatchery had 10,374 sturgeon progeny originating from Lake Roosevelt and 10,521 sturgeon progeny originating from the Marion Drain Hatchery on-station at the end of the month, with 341 and 177 additional fish from each group reported as mortalities, respectively. The hatchery also had 97 sturgeon progeny from Wanapum Reservoir on-station at the end of the month after subtracting a single mortality. White sturgeon progeny are reared at Wells Hatchery under the Aquatic Settlement Agreement (Appendix C).

### **2015 Palmer Lake Kokanee**

Wells Hatchery had an estimated 420,000 eggs on-station from Kokanee spawned at the Palmer Lake trap in September. These fish were 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>

### **Spawning Ground Surveys**

By the end of September, a total of 967 spring Chinook salmon redds were found in the Methow River Basin. Of those redds, 642 (66.4%) were found in the upper Methow subbasin, 206 (21.3%) were found in Chewuch subbasin, and 119 (12.3%) were found in the Twisp subbasin. The upper Methow subbasin count includes 143 redds documented by USFWS personnel.

### **2015 Smolt Trapping**

The Twisp River trap did not operate at all during September due to low river discharge. The Twisp river discharge during the month was between 0.8 and 1.1 m<sup>3</sup>s, and this trap will likely be inoperable until river discharge increases to at least 1.7 m<sup>3</sup>s. The Methow trap operated every night in September, during which time sub-yearling Chinook were the primary salmonid captured (Table 1). Biological data collected from trapped salmonids is detailed in Table 2. Methow River discharge for the period operated ranged from 6.7 to 8.0 m<sup>3</sup>s, providing an estimated trap efficiency of approximately 1.8% based on historic mark/recapture trials.

Table 1. Monthly salmonid captures at Methow Basin smolt traps in 2015. SHR = wild steelhead/rainbow. F-June = February - June.

Species/origin	Methow				Twisp				Basin total
	F-June	July	Aug	Sep	F-June	July	Aug	Sep	
Yearling Chin/wild	448	0	0	0	447	0			895
Yearling Chin/hatch	50,071	0	0	0	4,050	1			54,122
Sub Chin/wild-parr	5,125	441	8	2	323	25			5,924
Sub Chin/wild-fry	7,337	1	0	0	1,585	0			8,923
SHR/wild-trans.	448	0	0	0	274	0			722
SHR/wild-parr	34	11	2	0	155	7			209
SHR/wild-fry	16	16	2	1	25	72			132
Steelhead/hatchery	3,295	0	0	0	3,636	3			6,934
Coho/wild-smolt	12	0	0	0	9	0			21
Coho/wild-parr	70	12	0	1	6	11			100
Coho/wild-fry	101	0	0	0	70	2			173
Coho/hatchery	7,266	2	0	0	3	0			7,271
Bull Trout	1	0	0	0	14	0			15
Cutthroat Trout	3	2	0	0	1	0			6
Sockeye/wild-fry	54	0	0	0	0	0			54
Total	74,281	485	12	4	10,598	121	0	0	85,501

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

Species/stage	Location	Length (mm)			Weight (g)			K-factor
		Mean	SD	N	Mean	SD	N	
Sub Chinook/wild/parr	Methow	90.5	34.6	2	9.9	9.1	2	1.3
Steelhead/wild/fry	Methow	42.0	--	1	--	--	--	--
Coho/wild/parr	Methow	87.0	--	1	--	--	--	--

Appendix A. Number of fish reared at Wells, Methow, and Chief Joseph (CJH) 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 /trans.	
					Oct '14	Nov	Dec	Jan '15	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
2013	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	158,376	158,367	158,352	158,299	158,251	158,201	--	--	--	--	--	--	--	158,141
2013	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	34,389	34,387	34,383	34,372	34,361	34,351	--	--	--	--	--	--	--	34,337
2014	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	192,145	192,145	185,669	184,774	184,013	183,934	183,906	183,868	181,980	180,905	180,840	180,827	--	--
2014	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	41,721	41,721	40,314	40,120	39,955	39,938	39,932	39,924	39,514	39,280	39,266	39,263	--	--
2013	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	349,680	349,433	347,158	347,024	347,020	347,020	351,977	--	--	--	--	--	--	339,236
2014	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	546,488	546,488	515,076	475,719	483,788	464,137	4,642	--	--	--	--	--	463,779
2014	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	378,446	378,446	378,446	378,446	378,446	351,977	351,285	360,101	358,953	358,953	358,953	--	--
2014	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation <sup>1</sup>	300,000 <i>released</i>	365,389	362,595	361,994	356,352	356,259	356,250	188,627	--	--	--	--	--	--	309,711
2014	Summer steelhead	Yearling smolt	DCPUD Wells NNI <sup>1</sup>	8,000 <i>released</i>	9,744	9,699	9,653	9,503	9,500	9,500	5,030	--	--	--	--	--	--	8,259
2014	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	97,437	96,692	96,532	95,027	95,002	95,000	50,300	--	--	--	--	--	--	82,589
2014	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000 <i>transferred</i>	22,856	25,597	25,584	24,012	23,997	--	--	--	--	--	--	--	--	26,625
2015	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation <sup>1</sup>	300,000 <i>released</i>	--	--	--	--	--	--	--	--	434,919	421,267	415,058	356,072	--	--
2015	Summer steelhead	Yearling smolt	DCPUD Wells NNI <sup>1</sup>	8,000 <i>released</i>	--	--	--	--	--	--	--	--	11,598	11,234	11,068	9,494	--	--

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month											Total released /trans.	
					Oct '14	Nov	Dec	Jan '15	Feb	Mar	Apr	May	Jun	Jul	Aug		Sep
2015	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	--	--	--	--	--	--	115,978	112,334	110,682	94,940	--
2015	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000 <i>transferred</i>	--	--	--	--	--	--	--	--	44,000	44,821	41,603	42,210	--

<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 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	
					Oct '14	Nov	Dec	Jan '15	Feb	Mar	Apr	May	Jun	Jul	Aug		Sep
2013	Rainbow trout	Juv	WDFW sport fish		35,728	35,152	35,129	35,111	35,101	35,090	21,734	10,691	--	--	--	--	52,924
					(6,137)	(7,218)	(9,330)	(11,143)	(12,795)	(15,350)	(10,867)	(5,035)	(--)	(--)	(--)	(--)	
					(4,000)	--	--	--	--	--	13,175	11,035	8,714	--	--	--	
2014	Rainbow trout	Juv	WDFW sport fish		73,169	70,085	64,727	65,548	65,374	64,645	62,884	54,160	54,078			--	
					(--)	(--)	(--)	(21)	(25)	(145)	(402)	(401)	(1,847)	(2,994)	(4,513)		(8,261)
					--	--	--	--	--	--	--	--	--	--	--		--
2015	Lahontan cutthroat	Juv	WDFW sport fish	Number (pounds) released	--	--	--	--	--	--	--	--	163,293	157,238	--	--	126,910
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(74)	(209)	(183)	(--)	
					--	--	--	--	--	--	--	--	--	--	126,910	--	
2014	Kokanee	Eyed-eggs	Palmer Lake	Goal is 20,000 pounds annual combined	400,000	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	400,000
					(400)	--	--	--	--	--	--	--	--	--	--	--	(400)
					--	--	--	--	--	--	--	--	--	--	--	--	420,000
2015	Kokanee	Eyed-eggs	Palmer Lake		(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(420)	--
					--	--	--	--	--	--	--	--	--	--	--	--	
					--	--	--	--	--	--	--	--	--	--	--	--	
2013	Summer Chinook	Eyed-eggs	Lake Chelan		(--)	(166)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	328,597
					--	166,500	--	--	--	--	--	--	--	--	--	--	
					--	--	--	--	--	--	--	--	--	--	--	--	(328)

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	
					Oct '14	Nov	Dec	Jan '15	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
2014	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 5,000</i>	33,711	25,131	12,726	9,769	8,004	5,559	5,021	5,007	--	--	--	--	97,586	
				<i>Culled</i>	84,287	--	9,855	2,945	--	499	--	--	--	--	--	--		
				<i>Transferred to Other Stations</i>	--	6,554	--	--	1,682	2,000	--	--	--	--	--	--		8,236
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	5,007	--	--	--		5,007
2015	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 5,000</i>	--	--	--	--	--	--	--	--	39,671	22,409	22,111	20,992	--	
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--		
				<i>Transferred to Other Stations</i>	--	--	--	--	--	--	--	--	--	--	--	--		
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	--		