

**WASHINGTON DEPARTMENT OF FISH AND WILDLIFE**

**Fish Program/Science Division/Methow Field Office**

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**To:** Shane Bickford and Greg Mackey  
**From:** Charlie Snow and Charles Frady  
**Subj:** November Hatchery and Natural Production Report  
**Date:** 6 December 2013  
**Cc:** Distribution list.

**HATCHERY ACTIVITIES**

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

**2012 Twisp Spring Chinook Salmon**

A total of 49,135 fry were on-station at the end of the month with 12 additional fish reported as mortalities. These fish had mean fork lengths between 101.3 mm and 103.7 mm, and were between 32 and 35 FPP during the month. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

**2012 Methow Composite Spring Chinook Salmon**

A total of 203,264 fish were on-station at the end of the month with 15 additional fish reported as mortalities. These fish had mean fork lengths between 95.6 mm and 107.4 mm, and were between 28 and 41 FPP during the month. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

**2013 Brood Spring Chinook Salmon**

All 2013 brood fish remained in incubators during the month of November. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

Table 1. 2012 brood spring Chinook salmon length and weight sampling at Methow Hatchery during the month of November and the first week of December.

Raceway	Stock	Fork length (mm)				FPP
		Mean	N	SD	CV	
1	MetComp	97.4	100	10.0	10.3	38
2	MetComp	95.6	100	11.2	11.7	41
5	MetComp	102.7	100	9.7	9.4	32
6	MetComp	107.4	100	9.8	9.1	28
15	Twisp	101.3	100	8.8	8.7	35
16	Twisp	103.7	100	8.8	8.5	32

### **2012 Wells Summer Chinook Salmon**

Approximately 318,902 yearling-program progeny were on-station at the end of November and four additional fish were reported as mortalities during the month. The number of fish on-station during November being held to fulfill HCP mitigation obligations can be found in Appendix A. A fish health exam during the month found these fish healthy overall and the recommendation was made to continue to monitor this population for signs of flashing. An additional 44,121 juvenile yearling Chinook were on-station at the end of November at the Chief Joseph Hatchery as part of the Wells HCP NNI start-up program for Chief Joseph Hatchery (Appendix A).

### **2013 Wells Summer Chinook Salmon**

Spawning of the 2013 brood summer Chinook was completed during the month of October with a total of 691 fish spawned (Table 1), and an estimated 1,561,025 eggs collected. Of the collected eggs, 345,000 were shipped to the Yakama Tribe and 173,429 were shipped to Chelan Hatchery. Wells Hatchery had an estimated 392,349 eggs for the yearling program and 505,798 eggs for the subyearling program on-station at the end of the month, with 104,500 additional eggs for Lake Chelan sport fishing enhancement also on-station.

### **2013 Summer Steelhead**

Wells Hatchery had a total of 593,223 steelhead progeny on-station at the end of the month. These fish were held to fulfill the Wells program (Methow, Okanogan, and Columbia releases; 514,641), Twisp WxW program (52,520), and the Omak Creek program (26,062). Monthly mortality for the Wells and Omak programs totaled 44 and 33 fish, respectively. Mortality for the Twisp program totaled 165 fish during the month. The number of fish on-station from these groups that apply to HCP mitigation obligations are listed in Appendix A. A fish health exam during the month of the Methow-Okanogan-Columbia group found the population healthy overall and the recommendation was made to continue to monitor the ponds for signs of flashing.

### **2014 Summer Steelhead**

Wells Hatchery collected 204 hatchery-origin summer steelhead adults for the 2014 brood from the east and west fish ladders at Wells Dam between 5 August and 30 October, 2013. However, because of an accidental chemical discharge by the contracted marking crew, 174 of the adult steelhead died in the broodstock pond during November. Collection of replacement hatchery-origin adult steelhead was initiated in November at the Wells Hatchery volunteer ladder trap, with a single steelhead retained from that location during the month. The broodstock on-station totaled 29 fish at the end of the month.

### **2012 Spokane Rainbow**

Wells Hatchery had 36,418 rainbow trout on-station at the end of November with 47 additional fish reported as mortalities during the month. These fish were at approximately 4.5 FPP during the month and will be reared to fulfill the Off-License Settlement Agreement (Appendix B).

### **2013 White Sturgeon**

Wells Hatchery had 7,269 white sturgeon progeny on-station at the end of the month. Although no mortalities were reported in November, the population was adjusted downward by 1,535 fish during the month. The fish on-station are reared at Wells Hatchery under the Aquatic Settlement Agreement (Appendix C).

### **2013 Palmer Lake Kokanee**

Kokanee eggs collected from Palmer Lake broodstock were incubated briefly at Wells Hatchery then transferred to the Omak Hatchery. In October, Wells Hatchery shipped 182,750 kokanee eggs, and shipped all remaining eggs (131,750) to Omak Hatchery in November. No eggs remained at Wells Hatchery at the end of November. These fish were incubated 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, including Twisp (TWR), lower Methow (LMR), Lost River (LOR), and Early Winters Creek (EWC) is 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>

### **2013 Smolt Trapping**

During the month, wild Chinook parr were the primary species captured at both the Methow and Twisp trap sites (Table 2). The Methow trap was not operated on 23 and 24 November due to ice. The Twisp trap was not operated from 22 November through the end of the month due to low river discharge and ice, although the trap remained at the site to allow operation in December if favorable environmental conditions returned. Biological data collected from

trapped fish is detailed in Table 3. Mark recapture trials conducted in April and May yielded observed trap efficiencies between 3.2 and 6.6 percent at the Methow trap and between 8.3 and 13.5 percent at the Twisp trap. These trials were conducted at river discharges between 51.9 and 92.9 m<sup>3</sup>s at the Methow trap and between 7.9 and 13.4 m<sup>3</sup>s at the Twisp trap.

Table 2. Monthly salmonid captures at Methow Basin smolt traps in 2013. SHR = wild steelhead/rainbow.

Species/origin	Methow				Twisp			Basin total
	Feb-Aug	Sep	Oct	Nov	Mar-Sep	Oct	Nov	
Yearling Chin/wild	771	0	0	0	443	0	0	1,214
Yearling Chin/hatch	81,386	0	0	0	3,285	0	0	84,671
Sub Chin/wild-parr	757	30	123	55	492	135	37	1,629
Sub Chin/hatch	0	15	67	47	0	0	0	129
Sub Chin/wild-fry	6,118	0	0	0	1,116	0	0	7,234
SHR/wild-fry	171	11	0	0	171	0	0	353
SHR/wild-parr	207	45	15	2	443	21	2	735
SHR/wild-trans.	449	0	0	0	249	0	0	698
SHR/wild-smolt	0	0	0	0	0	0	0	0
Hatchery steelhead	2,887	0	0	0	3,863	0	0	6,750
Coho/wild-smolt	79	0	0	0	0	0	0	79
Coho/wild-parr	6	3	3	0	76	1	0	89
Coho/hatchery	4,087	0	0	0	0	0	0	4,087
Coho/wild-fry	19	0	0	0	41	0	0	60
Bull trout	5	0	0	0	7	4	0	16
Cutthroat trout	1	1	1	0	2	0	1	6
Total	96,943	105	209	104	10,188	161	40	107,750

Table 3. Biological sampling of juvenile salmonids captured at Methow Basin smolt traps during November.

Species/stage	Location	Length (mm)			Weight (g)			K-factor
		Mean	SD	N	Mean	SD	N	
Sub Chinook/wild/parr	Methow	88.5	7.9	51	7.6	1.9	51	1.1
Sub Chinook/hatch/parr	Methow	99.8	7.2	44	12.1	3.2	44	1.2
Sub Chinook/wild/parr	Twisp	85.8	7.9	35	7.2	2.0	35	1.1
Steelhead/wild/parr	Methow	172.5	10.6	2	49.9	8.0	2	1.0
Steelhead/wild/parr	Twisp	59.0	5.7	2	2.4	0.7	2	1.2
Cutthroat trout	Twisp	265.0	--	1	147.0	--	1	0.8

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.	
					Dec	Jan '13	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov		
2011	Spring Chinook	Yearling smolt	DCPUD for CCPUD NNI	288,000 <i>released</i>	266,628 0	266,612 0	266,575 0	266,521 0	-- 266,007	--	--	--	--	--	--	--	--	266,007
2011	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	201,000 <i>released</i>	185,724 0	185,712 0	185,687 0	185,650 0	-- 185,291	--	--	--	--	--	--	--	--	185,291
2011	Spring Chinook	Yearling smolt	DCPUD Wells NNI	59,464 <i>released</i>	56,480 0	56,477 0	56,469 0	56,458 0	-- 56,439	--	--	--	--	--	--	--	--	56,439
2012	Spring Chinook	Yearling smolt	DCPUD for CCPUD NNI	60,516 <i>released</i>	66,230 0	65,972 0	65,884 0	65,839 0	65,795 0	65,775 0	68,599 0	68,541 0	68,285 0	68,273 0	68,267 0	68,260 0	0	0
2012	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	146,794 0	146,222 0	146,025 0	145,927 0	145,828 0	145,785 0	152,042 0	151,914 0	151,345 0	151,317 0	151,306 0	151,289 0	0	0
2012	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	31,874 0	31,749 0	31,707 0	31,685 0	31,664 0	31,655 0	33,013 0	32,985 0	32,862 0	32,856 0	32,853 0	32,850 0	0	0
2013	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	157,165 0	157,165 0	0	0
2013	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	-- --	34,125 0	34,125 0	0	0
2011	Summer Chinook	Yearling smolt	DCPUD Wells NNI Carlton Pond	105,714 <i>released</i>	115,559 --	115,551 --	115,548 --	115,421 --	-- 115,253	--	--	--	--	--	--	--	--	115,253
2011	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	289,998 --	289,998 --	289,995 --	289,955 --	289,995 --	-- 289,995	--	--	--	--	--	--	--	289,995
2012	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	638,000 --	622,798 --	588,302 --	586,261 --	563,364 --	-- 526,614 <sup>a</sup>	--	--	--	--	--	--	--	526,614
2012	Summer Chinook	Yearling Smolt	DCPUD NNI start-up for CHJ Hatchery	<i>Transfer to CHJ Hatchery</i>	48,401 --	48,401 --	48,401 --	48,401 --	47,074 --	47,516 --	46,902 --	46,783 --	44,853 --	44,837 --	-- 44,836	44,121 <sup>b</sup> --	--	44,836
2012	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	330,413 --	330,413 --	330,413 --	330,413 --	336,802 --	336,046 --	319,316 --	319,078 --	318,906 --	318,906 --	318,906 --	318,902 --	0	0

<sup>a</sup> Includes 63,199 fry shipped to the Yakama Nation's Prosser Hatchery.

<sup>b</sup> Rearing occurring at Chief Joseph Hatchery.

Appendix A, continued.

Brood year	Species	Life stage	Program	Target release No.	Month											Total released /trans.	
					Dec	Jan '13	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct		Nov
2012	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation <sup>1</sup>	300,000 <i>released</i>	307,511	307,494	307,491	303,940	256,741	--	--	--	--	--	--	--	212,890
2012	Summer steelhead	Yearling smolt	DCPUD Wells NNI <sup>1</sup>	8,000 <i>released</i>	8,203	8,200	8,200	8,200	8,105	6,847	--	--	--	--	--	--	5,677
2012	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	82,026	82,003	81,999	81,998	81,051	68,464	--	--	--	--	--	--	56,770
2012	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000 <i>transferred</i>	9,662	9,651	9,639	--	--	--	--	--	--	--	--	--	9,200
2013	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation <sup>1</sup>	300,000 <i>released</i>	--	--	--	--	--	479,519	459,942	443,176	441,224	434,124	438,688	438,527	0
2013	Summer steelhead	Yearling smolt	DCPUD Wells NNI <sup>1</sup>	8,000 <i>released</i>	--	--	--	--	--	12,787	12,247	11,818	11,766	11,577	11,698	11,694	0
2013	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	--	--	--	127,872	122,479	118,180	117,660	115,766	116,984	116,940	0
2013	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000 <i>transferred</i>	--	--	--	--	33,000	28,778	25,780	24,901	24,883	24,830	26,095	26,062	0
2013	Summer steelhead	Eyed egg	WDFW Ringold Hatchery	<i>as available transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	187,504
2010	Coho	Yearling smolt	Yakama N. Upper Col. Reintro.	N/A <i>released</i>	--	--	--	99,013	99,013	--	--	--	--	--	--	--	98,954

<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
					Dec	Jan '13	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
2011	Rainbow trout	Juv	WDFW sport fish		35,675	35,621	35,569	35,507	15,923	700	0	--	--	--	--	--	
					(5,946)	(8,295)	(9,423)	(10,264)	(6,260)	(1,820)	(1,560)	(--)	(--)	(--)	(--)	(--)	93,488
					--	--	--	--	19,537	13,252	699	--	--	--	--	--	(17,688)
2012	Rainbow trout	Juv	WDFW sport fish	Number (pounds) released	--	91,873	90,548	79,112	79,009	78,790	78,381	64,564	64,465	64,408	36,465	36,418	
					(--)	(20)	(30)	(171)	(384)	(1,212)	(2,010)	(3,397)	(6,786)	(9,909)	(7,293)	(8,093)	20,000
				Goal is 20,000 pounds annual combined	--	--	--	--	--	--	--	--	--	--	--	20,000	--
2013	Lahontan cutthroat	Juv	WDFW sport fish		--	--	--	--	164,500	157,284	152,030	0	--	--	--	--	
					(--)	(--)	(--)	(--)	(165)	(52)	(132)	(184)	(--)	(--)	(--)	(--)	127,902
					--	--	--	--	--	--	--	127,902	--	--	--	--	(184)
2013	Kokanee	Eyed-eggs	Palmer Lake		--	--	--	--	--	--	--	--	--	--	131,750	--	
					--	--	--	--	--	--	--	--	--	--	182,750	131,750	314,500
					--	--	--	--	--	--	--	--	--	--	131,750	--	

Appendix C. Fish reared at Wells pursuant to the Aquatic Settlement Agreement – White Sturgeon Management Plan.

Brood year	Species	Life stage	Program	Target disposition	Month												Total released /transferred
					Dec	Jan '13	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	
2013	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 5,000</i>	--	--	--	--	--	62,500	71,442	55,636	46,989	12,580	8,804	7,269	
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	3,963	--	--