

**WASHINGTON DEPARTMENT OF FISH AND WILDLIFE**

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

**Date:** 10 October 2014

**Cc:** Distribution list.

**HATCHERY ACTIVITIES**

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

**2013 Twisp Spring Chinook Salmon**

A total of 31,418 fish were on-station at the end of the month with three additional fish reported as mortalities. These fish were at 27 FPP during the month. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

**2013 Methow Composite Spring Chinook Salmon**

A total of 161,355 fish were on-station at the end of the month with 17 additional fish reported as mortalities. These fish were at 27 FPP during the month. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

**2014 Brood Spring Chinook Salmon**

Spawning of 2014 Methow Hatchery spring Chinook was completed 10 September. A total of 121 fish were spawned, of which 119 (98%) were wild (Table 1). Live-spawning of wild males occurred on 6 August ( $N = 5$ ). One female on 10 September was non-viable.

Table 1. 2014 Methow Hatchery spring Chinook salmon broodstock spawning summary.

Date	Males		Females		Crosses (females)		Estimated egg take	
	H	W	H	W	MetComp	Twisp	MetComp	Twisp
6-Aug	0	0	1	3	3	1	12,000	4,000
13-Aug	0	4	0	4	4	0	16,000	0
20-Aug	0	15	1	15	13	3	52,000	12,000
27-Aug	0	19	0	19	15	4	60,000	16,000
03-Sep	0	11	0	11	8	3	32,000	12,000
10-Sep	0	10	0	7	5	1	20,000	4,000
Total	0	59	2	59	48	12	192,000	48,000

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

Wells Hatchery had an estimated 349,698 fish for the yearling program on-station at the end of the month. These fish were at approximately 28 FPP and an additional 41 fish were reported as mortalities during September. These fish were being held to fulfill HCP mitigation obligations (Appendix A).

### **2014 Wells Summer Chinook Salmon**

Collection of the 2014 brood Wells summer Chinook broodstock from the Wells Hatchery volunteer ladder trap began on 7 July and continued through the month of August. By the end of September, the hatchery had a total of 719 adult Chinook on-station with 11 additional fish reported as mortality (1.5%). Spawning of the broodstock will commence in October.

### **2014 Summer Steelhead**

Wells Hatchery had an estimated 506,423 steelhead progeny on-station at the end of the month, a portion of which will be shipped to Ringold Hatchery. The remaining progeny will be used to fulfill Methow River (29% of total), Columbia River (47%), and Okanogan River (24%) releases. Approximately 22,881 of the fish on-station were progeny of Omak Creek WxW crosses. Mortality totaled 4,991 fish during the month, 35 of which were from the Omak group. In addition to the steelhead held at Wells Hatchery, Methow Hatchery had approximately 54,672 steelhead progeny from spawning of Twisp River steelhead on-station at the end of the month with an additional 3,467 fry listed as mortalities. These fish are being held in separate biosecure tanks for fish health assessment associated with the Yakima Nation steelhead kelt rejuvenation program prior to being shipped to Wells Hatchery to complete their rearing.

### **2012 Spokane Rainbow**

Wells Hatchery planted the 100 remaining jumbo rainbow trout into Perrygin Lake on 29 September 2014. These fish were at approximately one FPP at release and were reared to fulfill the Off-License Settlement Agreement (Appendix B).

### **2013 Spokane Rainbow**

Wells Hatchery had 55,797 rainbow trout fry on-station at the end of September with an additional 65 fish reported as mortalities during the month. These fish were at approximately 8.3 FPP and will be reared to fulfill the Off-License Settlement Agreement (Appendix B).

### **2014 White Sturgeon**

Wells Hatchery had 118,983 white sturgeon fry on-station at the end of the month after subtracting 4,604 mortalities. The fish on-station are from two sources; Marion Drain ( $N = 109,064$ ) and Lake Roosevelt ( $N = 9,919$ ). These populations of fish were at 580 and 561 FPP, respectively. White sturgeon progeny are reared at Wells Hatchery under the Aquatic Settlement Agreement (Appendix C).

### **2014 Palmer Lake Kokanee**

Wells Hatchery had an estimated 400,000 kokanee eggs on station at the end of the month from spawning of Palmer Lake kokanee. Spawning on 23 and 30 September each produced about 200,000 eggs. These fish will be reared to the eyed stage 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), 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 893 spring Chinook salmon redds were found in the Methow River Basin. This total does not include redds counted by USFWS in reaches M8, M7, M6 and WN1. Of the 893 redds, 534 (59.8%) were found in the upper Methow subbasin, 221 (24.7%) were found in Chewuch subbasin, and 138 (15.5%) were found in the Twisp subbasin. The complete spawner survey results, including data collected by USFWS, will be included in the 2014 annual report.

### **2014 Smolt Trapping**

During the month, wild Chinook parr were the primary species captured at the Methow trap site (Table 2). The Twisp trap was not fished in September due to low river discharge. Biological data collected from trapped fish is detailed in Table 3. Mark recapture trials conducted with Chinook smolts yielded observed trap efficiencies ranging from 1.3 to 3.6 percent in the low

position and 2.4 to 5.5 percent in the upper position at the Methow trap. Methow river discharge for these trials ranged from 20.3 to 51.3m<sup>3</sup>s. Trials conducted with Chinook smolts at the Twisp site yielded observed trap efficiencies ranging from 9.0 to 14.1 percent. Twisp river discharge for these trials ranged from 7.0 to 8.9m<sup>3</sup>s.

Table 2. Monthly salmonid captures at Methow Basin smolt traps in 2014. SHR = wild steelhead/rainbow.

Species/origin	Methow				Twisp				Basin total
	Feb-Jun	Jul	Aug	Sep	Mar-May	Jun	Jul	Aug	
Yearling Chin/wild	893	0	0	0	667	2	0	0	1,562
Yearling Chin/hatch	24,171	1	0	0	4,014	0	1	1	28,188
Sub Chin/wild-parr	202	703	78	5	0	29	182	52	1,251
Sub Chin/hatch	0	0	0	0	0	0	0	0	0
Sub Chin/wild-fry	4,468	130	0	0	226	119	110	1	5,054
SHR/wild-fry	4	47	21	2	0	6	216	20	316
SHR/wild-parr	70	7	19	0	170	5	6	29	306
SHR/wild-trans.	598	0	0	0	328	2	0	0	928
SHR/wild-smolt	0	0	0	0	0	0	0	0	0
Hatchery steelhead	5,074	13	0	0	3,420	27	11	0	8,545
Coho/wild-smolt	40	0	0	0	116	0	0	0	156
Coho/wild-parr	0	2	0	1	1	1	3	2	10
Coho/hatchery	6,933	1	0	0	2	0	0	0	6,936
Coho/wild-fry	2	0	0	0	2	3	4	0	11
Bull trout	3	0	0	0	8	1	0	0	12
Cutthroat trout	0	5	0	0	2	0	1	2	10
Total	42,458	909	118	8	8,956	195	534	107	53,285

Table 3. 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	97.2	14.6	5	11.3	0.8	5	1.2
Steelhead/wild/fry	Methow	35.5	12.0	2	--	--	0	--
Coho/wild/parr	Methow	96.0	--	1	10.3	--	1	1.2

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 '13	Nov	Dec	Jan '14	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep					
2012	Spring Chinook	Yearling smolt	DCPUD for CCPUD NNI	60,516 <i>released</i>	68,267	68,260	68,254	68,236	68,202	68,172	68,145	--	--	--	--	--	68,145				
2012	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	151,306	151,289	151,278	151,236	151,162	151,094	151,035	--	--	--	--	--	151,035				
2012	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	32,853	32,850	32,847	32,838	32,822	32,807	32,794	--	--	--	--	--	32,794				
2013	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	157,165	157,165	156,635	155,738	155,211	155,159	155,134	155,092	158,719	158,433	158,399	158,383	0	0	--		
2013	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	34,125	34,125	34,010	33,816	33,701	33,690	33,685	33,675	34,463	34,401	34,394	34,390	0	0	--		
2012	Summer Chinook	Yearling Smolt	DCPUD NNI start-up for CJH Hatchery	<i>Transfer to CJH Hatchery</i>	--	44,121 <sup>a</sup>	44,085 <sup>a</sup>	44,301 <sup>a</sup>	44,281 <sup>a</sup>	44,267 <sup>a</sup>	--	--	--	--	--	--	44,267				
2012	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	318,906	318,902	318,902	318,902	318,902	318,902	50,000	--	--	--	--	--	268,902	50,000	--	318,902	
2013	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	--	--	514,237	471,269	448,837	445,410	--	--	--	--	--	443,636	--	--	443,636	
2013	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	392,030	392,030	392,030	386,456	372,365	363,416	349,774	349,739	349,698	--	--	--	--	
2013	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation <sup>1</sup>	300,000 <i>released</i>	438,688	438,527	438,444	438,391	438,369	437,161	334,835	--	--	--	--	--	63,029	210,110	--	--	273,140
2013	Summer steelhead	Yearling smolt	DCPUD Wells NNI <sup>1</sup>	8,000 <i>released</i>	11,698	11,694	11,691	11,690	11,690	11,658	8,929	--	--	--	--	--	1,681	5,603	--	--	7,284
2013	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	116,984	116,940	116,917	116,904	116,898	116,576	78,844	--	--	--	--	--	27,253	56,029	--	--	83,282
2013	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000 <i>transferred</i>	26,095	26,062	26,038	26,016	26,012	--	--	--	--	--	--	--	--	--	--	--	25,632

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /trans.
					Oct '13	Nov	Dec	Jan '14	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	
2014	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation <sup>1</sup>	300,000	--	--	--	--	--	--	--	--	--	--	422,658	416,145	
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2014	Summer steelhead	Yearling smolt	DCPUD Wells NNI <sup>1</sup>	8,000	--	--	--	--	--	--	--	--	--	--	11,271	11,097	
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2014	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000	--	--	--	--	--	--	--	--	--	--	112,709	110,972	
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2014	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000	--	--	--	--	--	--	--	--	--	--	22,916	22,881	
				<i>transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	--

<sup>a</sup> Rearing or release occurring at Chief Joseph Hatchery facilities.

<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 '13	Nov	Dec	Jan '14	Feb	Mar	Apr	May	Jun	Jul	Aug		Sep
2012	Rainbow trout	Juv	WDFW sport fish		36,465	36,418	36,360	34,240	34,188	34,144	20,455	1,250	200	100	100	--	52,500
					(7,293)	(8,093)	(9,179)	(9,818)	(10,727)	(12,067)	(9,048)	(2,750)	(200)	(100)	(100)	(100)	
					20,000	--	--	--	--	--	13,550	17,700	1,050	--	--	100	
2013	Rainbow trout	Juv	WDFW sport fish		--	--	--	77,188	62,045	58,347	58,227	57,826	56,033	55,915	55,862	55,797	
					(--)	(--)	(--)	(31)	(25)	(120)	(431)	(850)	(1,514)	(2,663)	(4,866)	(6,710)	
					--	--	--	--	--	--	--	--	--	--	--	--	
2014	Lahontan cutthroat	Juv	WDFW sport fish	Number (pounds) released	--	--	--	--	--	--	269,149	254,510	182,140	--	--	--	150,000
					(--)	(--)	(--)	(--)	(--)	(--)	(269)	(255)	(73)	150,000	(--)	(--)	
					--	--	--	--	--	--	--	--	--	(182)	--	--	
2013	Kokanee	Eyed-eggs	Palmer Lake	Goal is 20,000 pounds annual combined	131,750	--	--	--	--	--	--	--	--	--	--	--	314,500
					182,750	131,750	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	
					131,750	--	--	--	--	--	--	--	--	--	--	--	
2014	Kokanee	Eyed-eggs	Palmer Lake		--	--	--	--	--	--	--	--	--	--	--	400,000	
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(400)	
					--	--	--	--	--	--	--	--	--	--	--	--	
2013	Summer Chinook	Eyed-eggs	Lake Chelan		--	162,097	--	--	--	--	--	--	--	--	--	--	162,097
					(--)	(--)	(162)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)		
					--	--	162,097	--	--	--	--	--	--	--	--	--	

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/culled /transferred	
					Oct '13	Nov	Dec	Jan '14	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		
2013	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 5,000</i>	8,804	7,269	7,158	6,799	5,034	5,034	2,108	2,107	--	--	--	--	28,369	
				<i>Culled</i>	5,758	--	747	329	1,734	--	--	--	--	--	--	--		
				<i>Transferred to Other Stations</i>	--	1,512	--	--	--	--	--	--	--	--	--	--		5,475
				<i>Wells reservoir</i>	--	--	--	17	--	--	2,108	--	2,107	--	--	--		4,232
2014	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 5,000</i>	--	--	--	--	--	--	--	--	146,403	134,964	123,587	118,983		
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--		
				<i>Transferred to Other Stations</i>	--	--	--	--	--	--	--	--	--	--	--	--		
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	--		