

**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:** July Hatchery and Natural Production Report

**Date:** 7 August 2014

**Cc:** Distribution list.

**HATCHERY ACTIVITIES**

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

**2013 Twisp Spring Chinook Salmon**

A total of 31,425 fish were on-station at the end of the month with 12 additional fish reported as mortalities. These fish were at 40 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 161,409 fish were on-station at the end of the month with 336 additional fish reported as mortalities. These fish were at 40 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**

By the end of July, a total of 310 spring Chinook salmon were trapped and sampled at the Twisp River Weir. Of these fish, 12 adult Chinook were retained for the 2014 Twisp program and 13 were retained for the Methow Composite program because DNA analysis indicated they were MetComp stock fish (Table 1). Trapping was discontinued 19 August due to extended loss of power resulting from wildfires. Incidental species trapped included 226 bull trout and 21 bridgelip sucker. A total of 33 unmarked, adipose present fish were sampled at Winthrop NFH during surplus events during the month of June, three of which were wild fish of MetComp stock origin and were retained for broodstock (Table 1). Two of these fish were transferred to Methow Hatchery in July while gametes from the remaining fish will be transferred upon maturity.

Table 1. 2014 Spring Chinook salmon broodstock collection by program and origin.

Program	Origin	Target	Broodstock retained			Total to date	% of target
			Wells Dam	Twisp Weir	WNFH Outfall		
Twisp	NOR	24	15	11	0	26	108.3
Twisp	HOR	balance of 24	0	1	0	1	N/A
MetComp	NOR	96	79	12	3	94	97.9
MetComp	HOR	balance of 96	0	1	0	1	1.0
Total		120	94	25	3	122	101.6

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

Wells Hatchery had an estimated 349,774 fry for the yearling program on-station at the end of the month. These fish were at approximately 89 FPP and an additional 226 fish were reported as mortalities during July. 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. By the end of the month a total of 731 fish were retained; about 5.6% of which were estimated to be natural origin. Mortality has totaled one fish (0.14%) and the male:female ratio of the collected fish was 1:1. Collection is expected to continue through the month of August.

### **2014 Summer Steelhead**

Wells Hatchery had an estimated 500,323 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. Additionally, approximately 62,372 steelhead progeny from spawning of Twisp River steelhead were on-station at Methow Hatchery at the end of the month with an additional 1,646 fry listed as mortalities; these fish were between 24.5 and 26.8 mm at ponding. 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. A fish health exam during the month noted Bacterial Cold Water Disease in some groups of steelhead and recommended treating the affected fish with medicated feed.

### **2012 Spokane Rainbow**

Wells Hatchery planted 100 jumbo rainbow trout into Okanogan County lakes during the month of July and no additional fish were reported as mortalities. An additional 100 jumbo-sized rainbow remained at the hatchery at the end of the month, and were reared to fulfill the Off-License Settlement Agreement (Appendix B).

### **2013 Spokane Rainbow**

Wells Hatchery had 55,915 rainbow trout fry on-station at the end of July with an additional 118 fish reported as mortalities during the month. These fish were at approximately 21 FPP and will be reared to fulfill the Off-License Settlement Agreement (Appendix B).

### **2014 White Sturgeon**

Wells Hatchery had 134,964 white sturgeon fry on-station at the end of the month after subtracting 50,554 mortalities. The fish on-station are from two sources; Marion Drain ( $N = 48,788$ ) and Lake Roosevelt ( $N = 15,752$ ). The Lake Roosevelt progeny were received by the hatchery between 10 and 18 July, and 16,720 of the Marion Drain progeny were received by the hatchery on 2 July. White sturgeon progeny are reared at Wells Hatchery under the Aquatic Settlement Agreement (Appendix C).

### **2014 Lahontan Cutthroat**

Wells Hatchery shipped the entire population of 150,000 Lahontan cutthroat trout to Columbia Basin Hatchery on 22 July. At transfer, these fish were at approximately 826 FPP. Additionally, 2,513 fish were reported as pond mortalities during the month. These fish were reared to fulfill the Off-License Settlement Agreement (Appendix B). A fish health exam during the month noted that losses were from a combination of gut fungus, air bladder fungus, and coagulated yolk disease. Losses were expected to decline and no health recommendations were made.

## **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>

### **2014 Smolt Trapping**

During the month, wild Chinook parr and wild steelhead fry were the primary species captured at the Methow and Twisp trap sites, respectively (Table 2). We began fishing in the Low position at the Methow site on 15 July. The Methow trap was not fished between 17 and 19 July because of the Carlton Complex Wildfire. Biological data collected from trapped fish is detailed in Table 3. Mark recapture trials conducted with Chinook smolt 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 51.3 m<sup>3</sup>s. Trials conducted with Chinook smolt 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 8.9 m<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-Apr	May	Jun	Jul	Mar-Apr	May	Jun	Jul	
Yearling Chin/wild	804	74	15	0	581	86	2	0	1,562
Yearling Chin/hatch	23,960	211	0	1	3,999	15	0	1	28,187
Sub Chin/wild-parr	20	35	147	703	0	0	29	182	1,116
Sub Chin/hatch	0	0	0	0	0	0	0	0	0
Sub Chin/wild-fry	2,230	1,313	925	130	117	109	119	110	5,053
SHR/wild-fry	0	0	4	47	0	0	6	216	273
SHR/wild-parr	39	29	2	7	78	92	5	6	258
SHR/wild-trans.	373	220	5	0	172	156	2	0	928
SHR/wild-smolt	0	0	0	0	0	0	0	0	0
Hatchery steelhead	2,179	2,844	51	13	3,111	309	27	11	8,545
Coho/wild-smolt	29	11	0	0	61	55	0	0	156
Coho/wild-parr	0	0	0	2	0	1	1	3	7
Coho/hatchery	4,157	2,769	7	1	2	0	0	0	6,936
Coho/wild-fry	0	1	1	0	2	0	3	4	11
Bull trout	1	1	1	0	2	6	1	0	12
Cutthroat trout	0	0	0	5	0	2	0	1	8
Total	33,792	7,508	1,158	909	8,125	831	195	534	53,052

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

Species/stage	Location	Length (mm)			Weight (g)			K-factor
		Mean	SD	N	Mean	SD	N	
Sub Chinook/wild/parr	Methow	66.8	12.9	496	3.9	2.6	487	1.3
Sub Chinook/wild/parr	Twisp	60.5	8.5	157	2.8	1.5	141	1.3
Sub Chinook/wild/fry	Methow	46.3	3.0	96	--	--	0	--
Sub Chinook/wild/fry	Twisp	42.4	5.1	64	--	--	0	--
Steelhead/wild/parr	Methow	117.3	44.4	7	22.9	15.6	7	1.4
Steelhead/wild/parr	Twisp	124.7	8.0	6	24.1	3.4	5	1.2
Steelhead/wild/fry	Methow	28.9	5.2	43	--	--	0	--
Steelhead/wild/fry	Twisp	29.6	5.2	155	--	--	0	--
Coho/wild/parr	Methow	56.5	9.2	2	3.4	--	1	1.9
Coho/wild/parr	Twisp	62.3	8.0	3	3.0	1.1	3	1.2
Coho/wild/fry	Twisp	42.5	4.8	4	--	--	0	--
Cutthroat trout	Methow	194.4	76.9	5	151.9	214.7	4	2.1
Cutthroat trout	Twisp	158.0	--	1	39.8	--	1	1.0

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.
					Aug '13	Sep	Oct	Nov	Dec	Jan '14	Feb	Mar	Apr	May	Jun	Jul	
2012	Spring Chinook	Yearling smolt	DCPUD for CCPUD NNI	60,516 <i>released</i>	68,285	68,273	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>	151,345	151,317	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>	32,862	32,856	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	--
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	--
2012	Summer Chinook	Yearling Smolt	DCPUD NNI start-up for CJH Hatchery	<i>Transfer to CJH Hatchery</i>	44,853	44,837	--	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	318,906	318,906	318,902	318,902	318,902	318,902	318,902	50,000	--	--	--	268,902
2013	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	--	--	--	--	514,237	471,269	448,837	445,410	--	--	--	443,636
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	--
2013	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation <sup>1</sup>	300,000 <i>released</i>	441,224	434,124	438,688	438,527	438,444	438,391	438,369	437,161	334,835	--	--	--	63,029
2013	Summer steelhead	Yearling smolt	DCPUD Wells NNI <sup>1</sup>	8,000 <i>released</i>	11,766	11,577	11,698	11,694	11,691	11,690	11,690	11,658	8,929	--	--	--	1,681
2013	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	117,660	115,766	116,984	116,940	116,917	116,904	116,898	116,576	78,844	--	--	--	27,253
2013	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000 <i>transferred</i>	24,883	24,830	26,095	26,062	26,038	26,016	26,012	--	--	--	--	--	25,632

<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
					Aug '13	Sep	Oct	Nov	Dec	Jan '14	Feb	Mar	Apr	May	Jun	Jul	
2012	Rainbow trout	Juv	WDFW sport fish		64,465	64,408	36,465	36,418	36,360	34,240	34,188	34,144	20,455	1,250	200	100	52,400
					(6,786)	(9,909)	(7,293)	(8,093)	(9,179)	(9,818)	(10,727)	(12,067)	(9,048)	(2,750)	(200)	(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	
					(--)	(--)	(--)	(--)	(--)	(31)	(25)	(120)	(431)	(850)	(1,514)	(2,663)	
					--	--	--	--	--	--	--	--	--	--	--	--	
2013	Lahontan cutthroat	Juv	WDFW sport fish	Number (pounds) released	--	--	--	--	--	--	--	--	--	--	--	--	127,902
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	
					--	--	--	--	--	--	--	--	--	--	--	--	
2014	Lahontan cutthroat	Juv	WDFW sport fish	Goal is 20,000 pounds annual combined	--	--	--	--	--	--	--	--	269,149	254,510	182,140	--	150,000
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(269)	(255)	(73)	150,000	
					--	--	--	--	--	--	--	--	--	--	--	(182)	
2013	Kokanee	Eyed-eggs	Palmer Lake		--	--	131,750	--	--	--	--	--	--	--	--	--	314,500
					(--)	(--)	182,750	131,750	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	
					--	--	131,750	--	--	--	--	--	--	--	--	--	
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		
					Aug '13	Sep	Oct	Nov	Dec	Jan '14	Feb	Mar	Apr	May	Jun	Jul			
2013	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 5,000</i>	46,989	12,580	8,804	7,269	7,158	6,799	5,034	5,034	2,108	2,107	--	--			
				<i>Culled</i>	--	19,828	5,758	--	747	329	1,734	--	--	--	--	--	--	28,369	
				<i>Transferred to Other Stations</i>	--	3,963	--	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		
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--		
				<i>Transferred to Other Stations</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	