

**WASHINGTON DEPARTMENT OF FISH AND WILDLIFE**

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

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**Cc:** Distribution list.

**HATCHERY ACTIVITIES**

All 2014 brood fish at Methow Hatchery were held on a 95% surface, 5% well water mix during the month of January while all 2015 brood fish were maintained on 100% well water. All fish populations at Wells Hatchery were held on 100% well water during the month of January except the 2014 brood Chinook yearlings (90% surface water), the 2014 brood rainbow (30% surface water) and the 2015 brood safety-net steelhead (25% surface water).

**2014 Twisp Spring Chinook Salmon**

A total of 36,349 fish were on-station at the end of the month with 22 additional fish reported as mortalities. These fish had a mean fork length of 114.6mm and were at 24 fish per pound (FPP) during the month (Table 1). 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 229,368 fish were on-station at the end of the month with 37 additional fish reported as mortalities. These fish had mean fork lengths that ranged between 108.3 and 114.7 mm and were at 25-28 FPP during the month (Table 1). The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

**2015 Twisp Spring Chinook Salmon**

A total of 40,222 fry were on-station at the end of the month with 5,798 additional fish reported as mortalities. Approximately 5,700 of these mortalities were from one female: On 7 January, a fish health exam found progeny of this family not feeding or swimming on their own and gasping/gulping rapidly for air. An exam found blunted snouts, bumps over brains, some slight ocular bulging, and some crooked spines. Diagnosis was cranial congestion/hemorrhaging with cellular necrosis and edema. Because of the severity of the condition, these progeny were culled. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

### **2015 Methow Composite Spring Chinook Salmon**

A total of 201,949 fry were on-station at the end of the month with 1,128 additional fish reported as mortalities. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

Table 1. 2014 brood spring Chinook salmon length and weight sampling at Methow Hatchery during the month of January.

Raceway	Stock	Fork length (mm)				FPP
		Mean	<i>N</i>	SD	CV	
1	MetComp	108.3	100	9.1	8.4	27
5	MetComp	110.5	100	9.5	8.6	28
6	MetComp	114.6	100	10.2	8.9	25
13	MetComp	114.7	100	10.9	9.5	26
16	Twisp	114.5	100	9.9	8.6	24

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

Wells Hatchery had an estimated 358,953 yearling program fish on-station and no mortalities were reported during January. These fish were at about 12 FPP at the end of the month, and are being reared to fulfill HCP mitigation obligations (Appendix A).

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

Wells Hatchery had 350,845 summer Chinook Salmon eggs for the yearling program and 494,310 fry for the subyearling program on-station at the end of the month. An additional 66,233 subyearling progeny were reported as mortality during the month. These progeny are being reared to fulfill HCP mitigation obligations (Appendix A).

### **2015 Summer Steelhead**

Wells Hatchery had a total of 445,387 steelhead progeny on-station at the end of the month with 2,387 additional fish reported as mortalities. Of the fish remaining on-station, 43,717 were Omak Creek WxW progeny, 57,976 were Twisp WxW progeny, and 343,694 were HxH progeny for Methow, Columbia, and Okanogan river releases. The fish on-station are reared to fulfill Douglas HCP (Methow and Columbia releases) and Grant PUD (Okanogan releases) mitigation obligations (Appendix A).

## **2016 Summer Steelhead**

Wells Hatchery collected a total of 212 hatchery-origin summer steelhead for broodstock in 2015 and no mortality has occurred. Broodstock spawning was initiated at the hatchery in January 2016 with a total of 20 fish spawned by the end of the month yielding an estimated 55,000 fertilized eggs (Table 2).

Table 2. Spawning 2016 brood steelhead at Wells Hatchery by date.

Spawn date	Hatchery		Total	Est. eggs
	Male	Female		
1/6/2016	2	2	4	11,000
1/13/2016	0	0	0	-
1/20/2016	5	5	10	27,500
1/25/2016	3	3	6	16,500
Total	10	10	20	55,000

## **2014 Spokane Rainbow**

Wells Hatchery had 33,647 rainbow trout progeny from the 2014 brood on-station at about 3.5 FPP and an additional 23 fish were reported as mortalities during the month of January. These fish are reared to fulfill the Off-License Settlement Agreement (Appendix B).

## **2015 Spokane Rainbow**

Wells Hatchery received 78,400 rainbow trout eyed-eggs from Spokane Hatchery during the month and had 75,181 progeny on-station at the end of the month after subtracting 3,219 mortalities. These fish are reared to fulfill the Off-License Settlement Agreement (Appendix B).

## **2015 White Sturgeon**

Wells Hatchery had 7,416 sturgeon progeny originating from Lake Roosevelt on-station at the end of the month, with 73 additional fish reported as mortalities during the month. The population was adjusted downward by 176 during the month after a population inventory was conducted. White sturgeon progeny are reared at Wells Hatchery under the Aquatic Settlement Agreement (Appendix C).

## **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>

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.	
					Feb '15	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '16		
2013	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	158,251	158,201	--	--	--	--	--	--	--	--	--	--	--	158,141
2013	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	34,361	34,351	--	--	--	--	--	--	--	--	--	--	--	34,337
2014	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	--	--	--	--	--	--	--	--	71,930	71,892	71,878	71,862	--	--
2014	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	184,013	183,934	183,906	183,868	181,980	180,905	180,840	180,827	159,425	159,341	159,307	159,272	--	--
2014	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	39,955	39,938	39,932	39,924	39,514	39,280	39,266	39,263	34,616	34,598	34,591	34,583	--	--
2015	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	--	--	--	--	--	--	--	--	67,531	67,531	67,367	65,494	--	--
2015	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	--	--	--	--	--	--	--	--	149,676	149,676	149,310	145,158	--	--
2015	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	--	--	--	--	--	--	--	--	32,499	32,499	32,420	31,519	--	--
2013	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	347,020	347,020	351,977	--	--	--	--	--	--	--	--	--	--	339,236
2014	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	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	351,977	351,285	360,101	358,953	358,953	358,953	358,953	358,953	358,953	358,953	--	--
2015	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	560,543	494,310	--	--
2015	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	350,845	350,845	--	--

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /trans.	
					Feb '15	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '16		
2014	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation <sup>1</sup>	300,000 <i>released</i>	356,259	356,250	188,627	--	--	--	--	--	--	--	--	--	--	309,711
2014	Summer steelhead	Yearling smolt	DCPUD Wells NNI <sup>1</sup>	8,000 <i>released</i>	9,500	9,500	5,030	--	--	--	--	--	--	--	--	--	--	8,259
2014	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	95,002	95,000	50,300	--	--	--	--	--	--	--	--	--	--	82,589
2014	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000 <i>transferred</i>	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	339,722	312,263	312,164	310,570	--	--
2015	Summer steelhead	Yearling smolt	DCPUD Wells NNI <sup>1</sup>	8,000 <i>released</i>	--	--	--	--	11,598	11,234	11,068	9,494	9,059	8,327	8,324	8,282	--	--
2015	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	--	--	115,978	112,334	110,682	94,940	90,592	83,270	83,243	82,819	--	--
2015	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000 <i>transferred</i>	--	--	--	--	44,000	44,821	41,603	42,210	42,210	44,038	43,843	43,717	--	--

<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				
					Feb '15	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Jan '16			
2013	Rainbow trout	Juv	WDFW sport fish		35,101	35,090	21,734	10,691	--	--	--	--	--	--	--	--	--	52,924		
					(12,795)	(15,350)	(10,867)	(5,035)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)		(--)	(--)
					--	--	13,175	11,035	8,714	--	--	--	--	--	--	--	--		--	(19,688)
2014	Rainbow trout	Juv	WDFW sport fish	Number (pounds) released	70,085	64,727	65,548	65,374	64,645	62,884	54,160	54,078	33,778	33,728	33,670	33,647		20,075		
					(25)	(145)	(402)	(401)	(1,847)	(2,994)	(4,513)	(8,261)	(5,703)	(6,855)	(8,598)	(9,861)				
					--	--	--	--	--	--	--	--	20,075	--	--	--	--			
2015	Rainbow trout	Juv	WDFW sport fish	Goal is 20,000 pounds annual combined	--	--	--	--	--	--	--	--	--	--	--	75,181	--			
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)		(75)		
					--	--	--	--	--	--	--	--	--	--	--	--		--		
2015	Lahontan cutthroat	Juv	WDFW sport fish		--	--	--	--	163,293	157,238	--	--	--	--	--	--	126,910			
					(--)	(--)	(--)	(--)	(74)	(209)	(183)	(--)	(--)	(--)	(--)	(--)				
					--	--	--	--	--	--	126,910	--	--	--	--	--				
2015	Kokanee	Eyed-eggs	Palmer Lake		--	--	--	--	--	--	--	420,000	--	--	--	--	329,576			
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(420)	(329)	(--)	(--)	(--)				
					--	--	--	--	--	--	--	--	329,576	--	--	--				

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	
					Feb '15	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Jan '16
2014	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 5,000</i>	8,004	5,559	5,021	5,007	--	--	--	--	--	--	--	--	97,586
				<i>Culled</i>	--	499	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred to Other Stations</i>	1,682	2,000	--	--	--	--	--	--	--	--	--	--	
				<i>Wells reservoir</i>	--	--	--	--	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	11,728	8,638	7,665	7,416	1,462
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	1,462	--	--	
				<i>Transferred to Other Stations</i>	--	--	--	--	--	--	--	--	2,800	--	--	--	
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	--	