

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: February Hatchery and Natural Production Report

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Cc: Distribution list.

HATCHERY ACTIVITIES

All 2013 brood fish at Methow Hatchery were held on a mix of 83% surface water and 17% well water while all 2014 brood fish were held on 100% well water during the month. At Wells Hatchery, the summer Chinook Salmon yearlings and the 2013 brood catchable rainbow were held on 98% surface water, and the 2014 brood Wells and Omak Creek steelhead were held on a mixed water source containing about 15% surface water during the month. All other populations at the hatchery were held on 100% well water.

2013 Twisp Spring Chinook Salmon

A total of 31,350 fish were on-station at the end of the month with 33 additional fish reported as mortalities. These fish were on average 136 mm and 18.5 fish per pound (FPP) during the month. The numbers of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2013 Methow Composite Spring Chinook Salmon

A total of 161,262 fish were on-station at the end of the month with 26 additional fish reported as mortalities. These fish were on average 136 mm and 18.5 FPP during the month. The numbers of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2014 Twisp Spring Chinook Salmon

A total of 36,036 fish were on-station at the end of the month with 40 additional fish reported as mortalities. These fish were on average 44.6 mm and 460 FPP during the month. The numbers of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2014 Methow Composite Spring Chinook Salmon

A total of 187,932 fish were on-station at the end of the month with 886 additional fish reported as mortalities. By the end of the month, a total of 140,446 fish have been moved outside to raceways; fish from these raceways were on average 44.6 mm and 460 FPP. Approximately 37,000 fish may be surplus to the program and will be held at Methow Hatchery pending a decision on final rearing location. Previously, two start tanks comprising four families were experiencing loss as a result of skin lesions. A fish health recommendation to reduce stress in these tanks has proven beneficial as losses have decreased. A fish health report on 2 March states that these fish appear healthy enough to be mixed with other families. The numbers of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2013 Wells Summer Chinook Salmon

Wells Hatchery had an estimated 347,020 fish for the yearling program on-station at the end of the month, and four additional fish were reported as mortalities during the month. These fish were at approximately 12 FPP. These fish were being reared to fulfill HCP mitigation obligations (Appendix A).

2014 Wells Summer Chinook Salmon

Wells Hatchery had 475,719 fry on-station at the end of the month after subtracting 39,357 mortalities. An additional 378,446 eggs for the yearling program remain in incubators at Wells Hatchery. Fish for both release types were being reared to fulfill HCP mitigation obligations (Appendix A).

2014 Summer Steelhead

Wells Hatchery had an estimated 52,178 Twisp WxW progeny and 23,997 Omak Creek WxW progeny on-station at the end of the month, and mortality totaled 79 Twisp fish and 15 Omak fish during February. Wells Hatchery also had 408,584 steelhead progeny from HxH crosses on-station at the end of the month after subtracting 41 mortalities. Some of these progeny that are surplus to the Douglas PUD and Grant PUD mitigation programs will be shipped to Ringold Hatchery, and the remaining fish will be used to fulfill Methow River (29% of total), Columbia River (47%), and Okanogan River (24%) releases. Steelhead were being reared to fulfill Wells HCP and Grant PUD mitigation obligations (Appendix A). Fish health exams of the Omak and Twisp steelhead groups found a mild *Ich* infection in the Omak population during the month. The recommendation was made to monitor both groups for signs of increasing infection (e.g., flashing, rubbing).

2015 Summer Steelhead

Wells Hatchery collected a total of 194 hatchery origin fish for the 2015 broodstock. Spawning of those fish was initiated in December 2014 with a total of 118 fish spawned as of the end of February, producing an estimated 308,000 eggs. Pre-spawn mortality (including two mortalities during trapping) has totaled four fish (2.0%).

2013 Spokane Rainbow

Wells Hatchery had 35,101 2013 brood rainbow trout on-station at the end of February with an additional 10 fish reported as mortalities during the month. These fish were at approximately 2.7 FPP and were reared to fulfill the Off-License Settlement Agreement (Appendix B).

2014 Spokane Rainbow

Wells Hatchery had 70,085 2014 brood rainbow trout progeny at approximately 2,800 FPP on-station with an additional 3,084 fish reported as mortalities during the month of February. These fish were reared to fulfill the Off-License Settlement Agreement (Appendix B).

2014 White Sturgeon

Wells Hatchery had 8,004 white sturgeon fry on-station at the end of the month after subtracting 83 mortalities. The fish remaining on-station were from two sources; Marion Drain ($N = 2,999$) and Lake Roosevelt ($N = 5,005$). An additional 1,682 fish from the Lake Roosevelt population that were surplus to the Douglas PUD program were shipped to the Colville Tribe on 9 February. Both populations were at approximately 8 FPP at the end of February. 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, 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>

2015 Smolt Trapping

The Methow River trap was installed on 18 February, and the Twisp Trap was installed on 26 February. Traps at both sites operated through the end of the month with no interruptions. During the month, sub yearling wild Chinook fry and yearling wild Chinook were the primary species captured at the Methow and Twisp trap sites respectively (Table 1). Biological data collected from trapped fish is detailed in Table 2. River discharge was well above historical records for this time period at both trapping locations for the majority of the month. Minimal fish capture did not allow for efficiency trials at either trapping site, but trials conducted in previous years were used to estimate efficiencies. Methow river discharge for the period operated ranged from 37.4 to 43.3 m³s, providing expected trap efficiencies between 1.2 and 1.3 percent. Twisp river discharge for the period operated ranged from 7.0 to 7.9 m³s, providing expected trap efficiencies between 13.2 and 13.7 percent.

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

Species/origin	Methow	Twisp	Basin total
	February	February	
Yearling Chin/wild	5	6	11
Sub Chin/wild-fry	302	2	304
SHR/wild-parr	0	1	1
Coho/wild-smolt	1	0	1
Coho/wild-fry	1	0	1
Sockeye/wild-fry	6	0	6
Total	315	9	324

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

Species/stage	Location	Length (mm)			Weight (g)			K-factor
		Mean	SD	N	Mean	SD	N	
Yearling Chinook/wild	Methow	105.0	6.0	5	12.8	2.7	5	1.1
Yearling Chinook/wild	Twisp	86.2	5.6	6	7.1	1.2	6	1.1
Sub Chinook/wild/fry	Methow	37.1	1.7	302	--	--	--	--
Sub Chinook/wild/fry	Twisp	34.5	0.7	2	--	--	--	--
Steelhead/wild/parr	Twisp	71.0	--	1	3.6	--	1	1.0
Coho/wild/smolt	Methow	94.0	--	1	9.8	--	1	1.2
Coho/wild/fry	Methow	35.0	--	1	--	--	--	--
Sockeye/wild/fry	Methow	27.0	1.1	6	--	--	--	--

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.	
					Mar '14	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '15	Feb		
2012	Spring Chinook	Yearling smolt	DCPUD for CCPUD NNI	60,516 <i>released</i>	68,172	68,145	--	--	--	--	--	--	--	--	--	--	--	68,145
2012	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	151,094	151,035	--	--	--	--	--	--	--	--	--	--	--	151,035
2012	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	32,807	32,794	--	--	--	--	--	--	--	--	--	--	--	32,794
2013	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	155,159	155,134	155,092	158,719	158,433	158,399	158,383	158,376	158,367	158,352	158,299	158,251	--	--
2013	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	33,690	33,685	33,675	34,463	34,401	34,394	34,390	34,389	34,387	34,383	34,372	34,361	--	--
2014	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	--	--	--	--	--	--	--	192,145	192,145	185,669	184,774	184,013	--	--
2014	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	--	--	--	--	--	--	--	41,721	41,721	40,314	40,120	39,955	--	--
2012	Summer Chinook	Yearling Smolt	DCPUD NNI start-up for CJH Hatchery	<i>Transfer to CJH Hatchery</i>	44,267 ^a	--	--	--	--	--	--	--	--	--	--	--	--	44,267
2012	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	318,902	50,000	--	--	--	--	--	--	--	--	--	--	--	318,902
2013	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	448,837	445,410	--	--	--	--	--	--	--	--	--	--	--	443,636
2013	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	392,030	386,456	372,365	363,416	349,774	349,739	349,698	349,680	349,433	347,158	347,024	347,020	--	--
2014	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	--	--	--	--	--	--	--	546,488	546,488	515,076	475,719	--	--
2014	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	--	--	--	--	378,446	378,446	378,446	378,446	--	--
2013	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	437,161	334,835	--	--	--	--	--	--	--	--	--	--	--	273,140

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /trans.
					Mar '14	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '15	Feb	
2013	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000	11,658	8,929	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	1,681	5,603	--	--	--	--	--	--	--	--	--	--
2013	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000	116,576	78,844	--	--	--	--	--	--	--	--	--	--	--
				<i>released</i>	--	27,253	56,029	--	--	--	--	--	--	--	--	--	--
2013	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000	--	--	--	--	--	--	--	--	--	--	--	--	--
				<i>transferred</i>	25,632	--	--	--	--	--	--	--	--	--	--	--	--
2014	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000	--	--	--	--	--	422,658	416,145	365,389	362,595	361,994	356,352	356,259	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2014	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000	--	--	--	--	--	11,271	11,097	9,744	9,699	9,653	9,503	9,500	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2014	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000	--	--	--	--	--	112,709	110,972	97,437	96,692	96,532	95,027	95,002	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--
2014	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000	--	--	--	--	--	22,916	22,881	22,856	25,597	25,584	24,012	23,997	--
				<i>transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	--

^aRearing or release occurring at Chief Joseph Hatchery facilities.

¹40,000 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
					Mar '14	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '15	Feb	
2012	Rainbow trout	Juv	WDFW sport fish		34,144	20,455	1,250	200	100	100	--	--	--	--	--	--	52,500
					(12,067)	(9,048)	(2,750)	(200)	(100)	(100)	(100)	(--)	(--)	(--)	(--)	(--)	
					--	13,550	17,700	1,050	--	--	100	--	--	--	--	--	
2013	Rainbow trout	Juv	WDFW sport fish		58,347	58,227	57,826	56,033	55,915	55,862	55,797	35,728	35,152	35,129	35,111	35,101	20,000
					(120)	(431)	(850)	(1,514)	(2,663)	(4,866)	(6,710)	(6,137)	(7,218)	(9,330)	(11,143)	(12,795)	
					--	--	--	--	--	--	--	(4,000)	--	--	--	--	
2014	Rainbow trout	Juv	WDFW sport fish	Number (pounds) released	--	--	--	--	--	--	--	--	--	--	73,169	70,085	
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(21)	(25)	
					--	--	--	--	--	--	--	--	--	--	--	--	
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		--	--	--	--	--	--	--	--	--	--	--	--	314,500
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	
					--	--	--	--	--	--	--	--	--	--	--	--	
2014	Kokanee	Eyed-eggs	Palmer Lake		--	--	--	--	--	--	400,000	--	--	--	--	--	400,000
					(--)	(--)	(--)	(--)	(--)	(--)	(400)	400,000	(--)	(--)	(--)	(--)	
					--	--	--	--	--	--	--	(400)	--	--	--	--	
2013	Summer Chinook	Eyed-eggs	Lake Chelan		--	--	--	--	--	--	--	--	--	--	--	328,597	
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(166)	(--)	(--)		(--)
					--	--	--	--	--	--	--	--	--	166,500	--		--

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
					Mar '14	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '15	Feb	
2013	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	<i>Up to 5,000</i>	5,034	2,108	2,107	--	--	--	--	--	--	--	--	--	--
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	28,369
				<i>Transferred to Other Stations</i>	--	--	--	--	--	--	--	--	--	--	--	--	5,475
				<i>Wells reservoir</i>	--	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	33,711	25,131	12,726	9,769	8,004	
				<i>Culled</i>	--	--	--	--	--	--	--	84,287	--	9,855	2,945	--	97,087
				<i>Transferred to Other Stations</i>	--	--	--	--	--	--	--	--	6,554	--	--	1,682	8,236
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	--	--