

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

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To: Shane Bickford and Greg Mackey
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Subj: October Hatchery and Natural Production Report
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Cc: Distribution list.

HATCHERY ACTIVITIES

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

2014 Twisp Spring Chinook Salmon

A total of 36,413 fish were on-station at the end of the month with no fish reported as mortalities. These fish were reported as having an average fork length of 120.1 mm and weight of 27 fish per pound (FPP) on 2 November. 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 47,350 were transferred from Eastbank Hatchery to Methow Hatchery during the month. Mortality in this group totaled 1,457 fish, most of which occurred during transfer. The total of on-station Methow Composite fish, excluding transfers, was 183,665 fish with 12 additional fish reported as mortalities. Including fish received from Eastbank Hatchery for Chelan PUD's spring Chinook program, a total of 229,558 fish were on-station at the end of the month. Approximately 60,000 of these fish are destined for release in the Chewuch River. These fish were reported as having an average fork length of 120.1 mm and were at 27 FPP on 2 November. The numbers of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2015 Brood Spring Chinook Salmon

A total of 4,879 Twisp eggs and 64,672 Methow Composite eggs were culled during the month. Surplus eggs resulted from above average fecundities and extra hatchery females collected at the MH outfall trap. A total of 46,152 Twisp and 203,554 Methow Composite eggs were on-station

at the end of the month. The numbers of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2014 Wells Summer Chinook Salmon

Wells had an estimated 358,593 yearling program fish on-station and no mortalities were reported during October. These fish were at about 19 FPP at the end of the month, and were being reared to fulfill HCP mitigation obligations (Appendix A).

2015 Wells Summer Chinook Salmon

Wells Hatchery had retained 777 summer Chinook Salmon from the volunteer ladder for the 2015 broodstock. The hatchery spawned 726 of those fish and surplused 44 excess fish after spawning was completed. Seven additional fish were reported as pre-spawn mortalities (0.9%; Table 1). These fish will be used as broodstock to support the Wells subyearling (41% of adults), Wells yearling (26%), Lake Chelan triploid (9%), and Yakima River reintroduction (24%) programs.

Table 1. Weekly spawning totals, mortality, and excess sampling of 2015 brood Wells Hatchery summer Chinook Salmon by sex and origin.

Date	Wild		Hatchery		Grand total
	Male	Female	Male	Female	
10/7/2015	5	8	94	91	198
10/14/2015	9	8	115	116	248
10/21/2015	5	13	95	97	210
10/28/2015	1	3	34	32	70
Mortality	0	1	2	4	7
Excess 10/28/2015	5	3	26	10	44
Total	25	36	366	350	777

2015 Summer Steelhead

Wells Hatchery had a total of 481,585 steelhead progeny on-station at the end of the month with 791 additional fish reported as mortalities. Wells Hatchery also shipped 59,000 excess juveniles to Okanogan County lakes during the month to remain within numeric release guidelines. Of the fish remaining on-station, 42,210 were Omak Creek WxW progeny, 58,133 were Twisp WxW progeny, and 381,242 were HxH progeny for Methow, Columbia, and Okanogan river releases. The fish on-station were reared to fulfill Douglas HCP (Methow and Columbia releases) and Grant PUD (Okanogan releases) mitigation obligations (Appendix A).

2014 Spokane Rainbow

Wells Hatchery had 33,778 rainbow trout progeny from the 2014 brood on-station at about six FPP and an additional 225 fish were reported as mortalities during the month of October. In

addition to these fish, Wells Hatchery also planted 20,075 rainbow trout into Conconully Lake and reservoir during the month. These fish were reared to fulfill the Off-License Settlement Agreement (Appendix B).

2015 White Sturgeon

Wells Hatchery had 10,068 sturgeon progeny originating from Lake Roosevelt and 1,605 sturgeon progeny originating from the Marion Drain Hatchery on-station at the end of the month, with 171 additional fish from the Lake Roosevelt group reported as mortalities during the month. The hatchery also had 55 sturgeon progeny from Wanapum Reservoir on-station at the end of the month with no mortalities reported from this group. On 13 October, the hatchery shipped an additional 2,800 Marion Drain progeny back to the Marion Drain Hatchery for final rearing. White sturgeon progeny are reared at Wells Hatchery under the Aquatic Settlement Agreement (Appendix C).

2015 Palmer Lake Kokanee

Wells Hatchery shipped their entire population of Palmer Lake Kokanee eggs (329,576) to Omak Hatchery on 27 October. The overall population was adjusted down by 32,252 eggs after an inventory was conducted during the transfer. These fish were reared 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 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>

2015 Smolt Trapping

The Twisp River trap did not operate at all during October due to low river discharge. The Twisp River discharge during the month was between 0.9 and 1.8 m³s. There was a significant rainfall event on 31 October that increased river discharge enough to allow fishing of the Twisp trap for the beginning of November. The Methow trap operated every night in October, during which time steelhead parr were the primary salmonid captured (Table 2). Biological data collected from trapped salmonids is detailed in Table 3. Methow River discharge for the period operated ranged from 7.0 to 10.0 m³s, providing an estimated trap efficiency of approximately 1.8% based on historic mark/recapture trials.

Table 2. Monthly salmonid captures at Methow Basin smolt traps in 2015. SHR = wild steelhead/rainbow. F-July = February - July.

Species/origin	Methow				Twisp				Basin total
	F-July	Aug	Sep	Oct	F-July	Aug	Sep	Oct	
Yearling Chin/wild	448	0	0	0	447				895
Yearling Chin/hatch	50,071	0	0	0	4,051				54,122
Sub Chin/wild-parr	5,566	8	2	1	348				5,925
Sub Chin/wild-fry	7,338	0	0	0	1,585				8,923
SHR/wild-trans.	448	0	0	0	274				722
SHR/wild-parr	45	2	0	6	162				215
SHR/wild-fry	32	2	1	0	97				132
Steelhead/hatchery	3,295	0	0	0	3,639				6,934
Coho/wild-smolt	12	0	0	0	9				21
Coho/wild-parr	82	0	1	2	17				102
Coho/wild-fry	101	0	0	0	72				173
Coho/hatchery	7,268	0	0	0	3				7,271
Bull trout	1	0	0	1	14				16
Cutthroat Trout	5	0	0	1	1				7
Sockeye/wild-fry	54	0	0	0	0				54
Total	74,766	12	4	11	10,719	0	0	0	85,512

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

Species/stage	Location	Length (mm)			Weight (g)			K-factor
		Mean	SD	N	Mean	SD	N	
Sub Chinook/wild/parr	Methow	70.0	--	1	4.1	--	1	1.2
Steelhead/wild/parr	Methow	80.7	13.4	6	5.7	2.6	6	1.1
Coho/wild/parr	Methow	98.5	10.6	2	10.6	3.0	2	1.1
Cutthroat Trout	Methow	218.0	--	1	95.5	--	1	0.9

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.	
					Nov '15	Dec	Jan '15	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct		
2013	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	158,367	158,352	158,299	158,251	158,201	--	--	--	--	--	--	--	--	158,141
2013	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	34,387	34,383	34,372	34,361	34,351	--	--	--	--	--	--	--	--	34,337
2014	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	71,930	--
2014	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	192,145	185,669	184,774	184,013	183,934	183,906	183,868	181,980	180,905	180,840	180,827	159,425	--	--
2014	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	41,721	40,314	40,120	39,955	39,938	39,932	39,924	39,514	39,280	39,266	39,263	34,616	--	--
2015	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	67,531	--	--
2015	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	149,676	--
2015	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	32,499	--	--
2013	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	349,433	347,158	347,024	347,020	347,020	351,977	--	--	--	--	--	--	--	339,236
2014	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	546,488	546,488	515,076	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	378,446	378,446	378,446	351,977	351,285	360,101	358,953	358,953	358,953	358,953	--	--
2014	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	362,595	361,994	356,352	356,259	356,250	188,627	--	--	--	--	--	--	--	309,711
2014	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	9,699	9,653	9,503	9,500	9,500	5,030	--	--	--	--	--	--	--	8,259

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month											Total released /trans.		
					Nov '15	Dec	Jan '15	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep		Oct	
2014	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	96,692	96,532	95,027	95,002	95,000	50,300	--	--	--	--	--	--	--	82,589
2014	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000 <i>transferred</i>	25,597	25,584	24,012	23,997	--	--	--	--	--	--	--	--	--	26,625
2015	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	--	--	--	--	--	--	--	434,919	421,267	415,058	356,072	339,722	--	
2015	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	--	--	--	--	--	--	--	11,598	11,234	11,068	9,494	9,059	--	
2015	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	--	--	--	--	--	--	115,978	112,334	110,682	94,940	90,592	--	
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	--	

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			
					Nov '15	Dec	Jan '15	Feb	Mar	Apr	May	Jun	Jul	Aug		Sep	Oct	
2013	Rainbow trout	Juv	WDFW sport fish		35,152	35,129	35,111	35,101	35,090	21,734	10,691	--	--	--	--	--	52,924	
					(7,218)	(9,330)	(11,143)	(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	73,169	70,085	64,727	65,548	65,374	64,645	62,884	54,160	54,078	33,778				
					(--)	(--)	(21)	(25)	(145)	(402)	(401)	(1,847)	(2,994)	(4,513)	(8,261)	(5,703)		
					--	--	--	--	--	--	--	--	--	20,075			20,075	
2015	Lahontan cutthroat	Juv	WDFW sport fish	Goal is 20,000 pounds annual combined	--	--	--	--	--	--	--	163,293	157,238	--	--	--		
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(74)	(209)	(183)	(--)	(--)		
					--	--	--	--	--	--	--	--	--	126,910	--	--	126,910	
2015	Kokanee	Eyed-eggs	Palmer Lake		--	--	--	--	--	--	--	--	--	--	420,000	--		
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(420)	(329)		
					--	--	--	--	--	--	--	--	--	--	--	329,576	329,576	
2013	Summer Chinook	Eyed-eggs	Lake Chelan		--	--	--	--	--	--	--	--	--	--	--	--		
					(166)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	
					166,500	--	--	--	--	--	--	--	--	--	--	--	--	(328)

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			
					Nov '15	Dec	Jan '15	Feb	Mar	Apr	May	Jun	Jul	Aug		Sep	Oct	
2014	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	Up to 5,000	25,131	12,726	9,769	8,004	5,559	5,021	5,007	--	--	--	--	--		
				Culled	--	9,855	2,945	--	499	--	--	--	--	--	--	--	--	
				Transferred to Other Stations	6,554	--	--	1,682	2,000	--	--	--	--	--	--	--	--	
				Wells reservoir	--	--	--	--	--	--	--	--	5,007	--	--	--	--	
2015	White sturgeon	Juvenile rearing	Wells White Sturgeon Supplementation	Up to 5,000	--	--	--	--	--	--	--	39,671	22,409	22,111	20,992	11,728		
				Culled	--	--	--	--	--	--	--	--	--	--	--	--	--	
				Transferred to Other Stations	--	--	--	--	--	--	--	--	--	--	--	--	2,800	
				Wells reservoir	--	--	--	--	--	--	--	--	--	--	--	--	--	