

WASHINGTON DEPARTMENT OF FISH AND WILDLIFE

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Subj: April Hatchery and Natural Production Report

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Cc: Distribution list.

HATCHERY ACTIVITIES

At Methow Hatchery, all 2011 brood fish were held on 100% surface water during the month, and all 2012 brood fish were held on 100% well water. At Wells Hatchery, yearling summer Chinook, some rainbow, and steelhead held in the dirt-ponds were held on mixed surface and well water containing a minimum of 30% surface water. All other populations were held on 100% well water during the month.

2011 Twisp Spring Chinook Salmon

A total of 18,190 fish were released from the Twisp Acclimation Pond between 18 and 30 April with an additional 24 fish reported as mortalities. These fish had a mean fork length of 135.6 mm and were 14.6 fish per pound (FPP) at release (Table 1). These fish were co-acclimated with yearling summer steelhead and monitoring indicated the fish remained in good condition for release. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2011 Methow Composite Spring Chinook Salmon

A total of 93,372 fish were released from the Chewuch Acclimation Pond between 18 and 20 April with an additional 102 fish reported as mortalities. These fish had a mean fork length of 155.6 mm and were 17.5 FPP at release (Table 1). A total of 54,686 fish were released from the Heath Acclimation Pond between 12 and 23 April with an additional 753 fish reported as mortalities. These fish had a mean fork length of 141.6 mm and were at 15.1 FPP at release (Table 1). A total of 341,399 fish were released on-station between 15 and 21 April with 103 additional fish reported as mortalities. These fish had a mean fork length of 142.8 mm and were at 13.5 FPP at release (Table 1). The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

Table 1. Mean length and weight of anadromous fish stocks at time of release from Wells Hatchery Complex facilities.

Stock/location	Species	CWT	Number released	Length (mm)				Weight		
				Mean	N	SD	CV	Mean (g)	FPP	K-factor
Twisp Acc. Pond	Spring Chin.	636179	18,190	135.6	68	8.7	6.4	31.1	14.6	1.23
Chewuch Acc. Pond	Spring Chin.	635664	93,372	145.6	200	12.8	9.8	26.0	17.5	1.13
Methow River	Spring Chin.	636409	234,642	--	--	--	--	--	--	--
Methow River ^a	Spring Chin.	636411	23,844	142.8	200	16.1	11.3	33.6	13.5	1.10
Methow River	Spring Chin.	636413	31,496	--	--	--	--	--	--	--
Methow River	Spring Chin.	636414	29,071	--	--	--	--	--	--	--
Methow River	Spring Chin.	636415	22,346	--	--	--	--	--	--	--
Heath Acc. Pond ^a	Spring Chin.	636410 636412	54,686	141.6	200	12.9	9.1	30.0	15.1	1.03
Twisp W x W	Steel	636387	51,473	182.3	132	18.1	9.9	67.9	6.7	1.12
Wells H x W	Steel	--	In progress	187.9	200	25.9	13.8	75.3	6.0	1.14
Wells yearling	Summer Chin.	635773	In progress	163.7	200	13.9	8.5	50.3	9.0	1.15

^a Data provided by YN Fisheries.

2012 Twisp Spring Chinook Salmon

A total of 47,909 fry were on-station at the end of the month with 98 additional fish reported as mortalities. These fish had mean fork lengths between 62 and 64 mm and were between 160 and 170 FPP during the month. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2012 Methow Composite Spring Chinook Salmon

A total of 195,379 fry were on-station at the end of the month with 66 additional fish reported as mortalities. These fish had mean fork lengths between 60 and 64 mm and were between 160 and 170 FPP during the month. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A.

2011 Wells Summer Chinook Salmon

Wells Hatchery had approximately 289,995 fish for the yearling program on-station at the end of April and no mortalities were reported during the month. This population had a mean fork length of 163 mm and was at approximately nine FPP prior to release (see Table 1). Volitional

release of these fish was initiated on 15 April and continued through the month. The number of fish on-station that apply to HCP mitigation obligations are listed in Appendix A. A fish health exam during the month found this population healthy overall and the recommendation was made to release as planned.

2012 Wells Summer Chinook Salmon

Approximately 336,802 yearling-program progeny and 563,364 subyearling-program fry were on-station at the end of April. Yearling program fish were ponded beginning on 1 April and monthly mortality totaled an additional 4,516 yearling and 1,060 subyearling fry. Additionally, 47,074 fry were on-station from spawning of CCT-collected Chinook, and monthly mortality from this group totaled an additional 665 fish. The number of fish on-station during April were held to fulfill HCP mitigation obligation programs (Wells yearling and subyearling programs; Appendix A), or for other purposes (interim Wells HCP NNI start-up program for Chief Joseph Hatchery; Appendix C).

2012 Brood Summer Steelhead

Wells Hatchery had 256,578 steelhead on station from the Wells Dam collection and no additional mortalities were reported during April. From this population, Wells Hatchery planted 19,034 fish into Salmon Creek, and transferred 65,686 fish to Methow Hatchery during April. Fish transferred to Methow Hatchery had a mean fork length of 188 mm and were at approximately six FPP prior to release (see Table 1). Volitional release of 2012 brood summer steelhead from the Twisp Acclimation Pond was initiated on 18 April and continued until 30 April. A total of 51,473 fish were release and an additional 46 fish were reported as mortalities during the month. These fish were co-acclimated with Twisp spring Chinook in the pond during acclimation and had a mean fork length prior to release of 182 mm (see Table 1). The number of fish on-station from these groups that apply to HCP mitigation obligations are listed in Appendix A. A fish health exam found the steelhead population at Wells Hatchery healthy overall and the recommendation was made to release as planned.

2013 Summer Steelhead

Spawning of the Wells-collected steelhead was initiated on 9 January, and continued weekly through March with a total of 229 steelhead spawned by the end of the month. Approximately 190,883 progeny of these fish were ponded during the month with additional losses totaling 12,530 fry. A fish health exam of the mortality noted coagulated yolk in some samples but the fish were healthy overall. Wells Hatchery received 12 adult steelhead broodstock for the Omak Creek program during the month of April, two of which died prior to spawning. The hatchery crew collected an estimated 33,000 eggs from the remaining fish during spawning events between 3 and 16 April. No broodstock for this program remained on-station at the end of the month. The Twisp River weir was installed on 19 March, and a total of 9 wild male and 13 wild female steelhead were collected for broodstock at the weir to-date. Spawning of these fish at Methow Hatchery started on 15 April and continued weekly throughout the month with a total of four females spawned by 6 May. The number of fish on-station from these groups that apply to HCP mitigation obligations are listed in Appendix A.

2011 Spokane Rainbow

Wells Hatchery had 15,923 rainbow on-station at the end of the month with an additional 47 fish reported as mortality during April. Wells Hatchery planted an additional 19,537 rainbow into Okanogan County lakes during the month of April. Overall, these fish were at approximately 2.5 FPP at the end of the month, and were reared to fulfill the Off-License Settlement Agreement (Appendix B).

2012 Spokane Rainbow

Wells Hatchery had 79,009 rainbow fry on-station at the end of April with an additional 103 fish reported as mortalities. These fish were at approximately 206 FPP and will be reared to fulfill the Off-License Settlement Agreement (Appendix B).

2011 Brood Carlton Summer Chinook

A volitional release of approximately 436,092 fish took place on 15 April and ended on 23 April, of which approximately 115,253 apply to Wells NNI obligation (Appendix A). Mortality during the month was 342 fish. Fish health exams conducted in April revealed no significant condition, and no recommendations were made.

2011 Brood Coho

Wells Hatchery had 99,013 coho salmon on-station at the end of the month and an additional 97 fish were reported as mortalities during the month of April. Overall, this population had a mean fork length of approximately 145 mm and a mean weight of 16 FPP at the end of the month. A fish health exam found the population healthy overall and noted clear indications of smolting behavior. The recommendation was made to release the fish as planned, or at the first sign of external fungus.

2012 Lahontan Cutthroat

Wells Hatchery received 164,500 Lahontan cutthroat trout eyed eggs from Omak Hatchery on 24 April. These eggs were collected from cutthroat trout at Lake Lenore, and are reared under the Off-License Settlement Agreement (Appendix B).

NATURAL PRODUCTION ACTIVITIES

PIT Tag Antenna Arrays

Data collected at both the Twisp (TWR) and lower Methow (LMR) PIT tag monitoring sites is uploaded to the PTAGIS database regularly, and can be viewed at the following website:

http://www.ptoccentral.org/dbaccess/InStrmDtctn/InStrmDtctn_query.html

Steelhead Spawning Ground Surveys

Steelhead spawning ground surveys were initiated in March. Since the concurrent BPA-funded study estimating surveyor efficiency relies on unbiased surveys in established census reaches, redd counts will not be reported during the survey period. Multiple temporary PIT tag antenna arrays were maintained in select tributaries during the month to determine the upper extent of steelhead spawning and to estimate escapement in areas typically difficult to survey.

2012 Smolt Trapping

During the month, hatchery Chinook smolt and hatchery steelhead smolt were the primary species captured at the Methow and Twisp trap sites, respectively (Table 2). Biological data collected from trapped fish is detailed in Table 3. Observed trap efficiencies ranged from 3.2 to 6.6 percent at the Methow trap and 8.3 to 13.5 percent at the Twisp trap.

Table 2. Monthly salmonid captures at Methow Basin smolt traps in 2013. SHR = wild steelhead/rainbow.

Species/origin	Methow			Twisp		Basin total
	Feb	Mar	Apr	Mar	Apr	
Yearling Chin/wild	0	43	662	74	340	1,119
Yearling Chin/hatch	0	14	81,206	0	3,283	84,503
Sub Chin/wild-parr	0	0	27	0	1	28
Sub Chin/wild-fry	117	1,273	747	130	507	2,774
SHR/wild-fry	0	0	0	0	6	6
SHR/wild-parr	0	1	128	21	194	344
SHR/wild-trans.	0	0	365	1	187	553
SHR/wild-smolt	0	0	0	0	0	0
Hatchery steelhead	0	0	2,114	0	3,561	5,675
Coho/wild-smolt	0	0	69	0	0	69
Coho/hatchery	0	0	2,286	0	0	2,286
Coho/wild-fry	0	0	6	1	17	24
Bull trout	0	0	3	0	3	6
Cutthroat trout	0	0	0	0	1	1
Total	117	1,331	87,613	227	8,100	97,388

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

Species/stage	Location	Length (mm)			Weight (g)			K-factor
		Mean	SD	<i>N</i>	Mean	SD	<i>N</i>	
Yearling Chin/wild/smolt	Methow	96.2	9.4	618	9.5	2.9	584	1.1
Yearling Chin/wild/smolt	Twisp	90.5	8.7	332	8.1	2.4	332	1.1
Sub Chin/wild/parr	Methow	54.6	5.2	24	2.2	0.92	15	1.4
Sub Chin/wild/parr	Twisp	60	--	1	2.4	--	1	1.1
Sub Chin/wild/fry	Methow	39.9	4.0	231	--	--	0	--
Sub Chin/wild/fry	Twisp	35.3	1.7	383	--	--	0	--
Steelhead/wild/trans	Methow	173.3	18.9	347	51.4	17.2	335	1.0
Steelhead/wild/trans	Twisp	163.9	17.4	167	42.4	13.6	167	1.0
Steelhead/wild/parr	Methow	88.5	16.5	125	8.2	4.2	124	1.2
Steelhead/wild/parr	Twisp	70.1	10.2	191	3.8	1.7	191	1.1
Steelhead/wild/fry	Twisp	45.2	2.8	6	1.3	0.13	4	1.4
Coho/wild/smolt	Methow	110.6	8.9	69	14.7	3.8	67	1.1
Coho/wild/fry	Methow	44.2	4.8	6	--	--	0	--
Coho/wild/fry	Twisp	40.8	3.7	13	--	--	0	--
Cutthroat trout	Twisp	169	--	1	43.6	--	1	0.9
Bull trout	Methow	254.7	25.0	3	155.1	40.8	3	0.9
Bull trout	Twisp	167.3	11.6	3	40.8	6.6	3	0.9

Appendix A. Number of fish reared at Wells and Methow hatcheries, and Carlton Pond, 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. Target release values for the DCPUD Wells NNI steelhead category for the 2012 brood includes 40,000 fish from the DCPUD Fixed Hatchery Compensation category to reflect release objectives for the Twisp WxW program.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /trans.
					May '13	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '13	Feb	Mar	Apr	
2011	Spring Chinook	Yearling smolt	DCPUD for CCPUD NNI	288,000 <i>released</i>	267,076 0	266,785 0	266,709 0	266,682 0	266,666 0	266,645 0	266,634 0	266,628 0	266,612 0	266,575 0	266,521 0	-- 266,007	266,007
2011	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	201,000 <i>released</i>	186,035 0	185,832 0	185,780 0	185,762 0	185,750 0	185,735 0	185,728 0	185,724 0	185,712 0	185,687 0	185,650 0	-- 185,291	185,291
2011	Spring Chinook	Yearling smolt	DCPUD Wells NNI	59,464 <i>released</i>	56,575 0	56,513 0	56,498 0	56,492 0	56,488 0	56,484 0	56,482 0	56,480 0	56,477 0	56,469 0	56,458 0	-- 56,439	56,439
2012	Spring Chinook	Yearling smolt	DCPUD for CCPUD NNI	117,253 <i>released</i>	--	--	--	--	--	128,327 0	128,327 0	128,327 0	127,827 0	127,656 0	127,569 0	127,483 0	0
2012	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	81,674 <i>released</i>	--	--	--	--	--	89,388 0	89,388 0	89,388 0	89,040 0	88,920 0	88,860 0	88,800 0	0
2012	Spring Chinook	Yearling smolt	DCPUD Wells NNI	24,838 <i>released</i>	--	--	--	--	--	27,184 0	27,184 0	27,184 0	27,078 0	27,041 0	27,023 0	27,005 0	0
2011	Summer Chinook	Yearling smolt	DCPUD Wells NNI Carlton Pond	105,714 <i>released</i>	116,486 --	116,106 --	115,753 --	115,526 --	115,639 --	115,599 --	115,569 --	115,559 --	115,551 --	115,548 --	115,421 --	115,253 --	0
2011	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	0 492,777	--	--	--	--	--	--	--	--	--	--	--	492,777
2011	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	358,248 --	312,649 --	290,000 --	290,000 --	290,000 --	290,000 --	290,000 --	289,998 --	289,998 --	289,995 --	289,955 --	289,995 --	0
2012	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	--	--	--	--	--	638,000 --	638,000 --	622,798 --	588,302 --	586,261 --	563,364 --	0
2012	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	--	--	330,413 --	330,413 --	330,413 --	330,413 --	330,413 --	336,802 --	0

Appendix A, continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /trans.
					May '13	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '13	Feb	Mar	Apr	
2011	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation	300,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	251,226
2011	Summer steelhead	Yearling smolt	DCPUD Wells NNI	47,571 <i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	41,200
2011	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	23,058	--	--	--	--	--	--	--	--	--	--	--	42,977
2011	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI Omak	20,000	--	--	--	--	--	--	--	--	--	--	--	--	41,423
2012	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation	260,000 <i>released</i>	261,787	266,106	252,275	237,460	239,371	239,118	252,194	252,212	252,203	252,195	252,269	144,650	62,569
2012	Summer steelhead	Yearling smolt	DCPUD Wells NNI (Twisp)	48,000 <i>released</i>	63,747	58,159	56,202	48,858	54,800	54,747	55,441	55,328	55,313	55,310	51,519	--	51,473
2012	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	94,786	95,218	89,890	83,000	85,099	85,009	90,192	90,174	90,176	90,183	89,308	51,209	22,151
2012	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000 <i>transferred</i>	11,562	10,602	10,280	9,422	10,426	9,965	9,677	9,662	9,651	9,639	--	--	9,200
2012	Summer steelhead	Eyed egg	WDFW Ringold Hatchery	248,571 <i>transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	284,860
2013	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI (Omak)	20,000 <i>transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	33,000
2010	Coho	Yearling smolt	Yakama N. Upper Col. Reintro.	200,000 <i>released</i>	--	--	--	--	--	--	--	--	--	--	99,013	99,013	--

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
					May '13	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '13	Feb	Mar	Apr	
2010	Rainbow trout	Juv	WDFW sport fish		0	--	--	--	--	--	--	--	--	--	--	--	
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	92,773
					16,823	--	--	--	--	--	--	--	--	--	--	--	--
2011	Rainbow trout	Juv	WDFW sport fish		143,780	116,197	111,975	111,625	36,403	35,880	35,739	35,675	35,621	35,569	35,507	15,923	
					(841)	(1,659)	(2,488)	(3,189)	(1,916)	(2,760)	(4,205)	(5,946)	(8,295)	(9,423)	(10,264)	(6,260)	79,537
					--	--	--	--	60,000	--	--	--	--	--	--	--	19,537
2012	Rainbow trout	Juv	WDFW sport fish	Number (pounds) released	--	--	--	--	--	--	--	--	91,873	90,548	79,112	79,009	
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(20)	(30)	(171)	(384)		
				Goal is 20,000 pounds annual combined	--	--	--	--	--	--	--	--	--	--	--	--	--
2012	Lahontan cutthroat	Juv	WDFW sport fish		177,110	169,892	0	--	--	--	--	--	--	--	--	--	
					(51)	(112)	(217)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	168,742
					--	--	168,742	--	--	--	--	--	--	--	--	--	--
2013	Lahontan cutthroat	Juv	WDFW sport fish		--	--	--	--	--	--	--	--	--	--	--	164,500	
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(165)		
					--	--	--	--	--	--	--	--	--	--	--	--	--
2012	Summer Chinook	Eyed egg	WDFW Lake Chelan		--	--	--	--	--	--	149,600	--	--	--	--	--	
					(--)	(--)	(--)	(--)	(--)	(--)	(150)	(--)	(--)	(--)	(--)	149,600	
					--	--	--	--	--	--	149,600	--	--	--	--	--	(150)

Appendix C. Fish reared at Wells or Methow hatcheries for other purposes.

Brood year	Species	Life stage	Program	Target disposition	Month												Total released /transferred	
					May '13	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '13	Feb	Mar	Apr		
2011	Summer Chinook	Adult brood-stock	USFWS Entiat NFH	248	--	--	0	--	--	--	--	--	--	--	--	--	--	
				<i>transferred</i>	--	--	266	--	--	--	--	--	--	--	--	--	--	--
2012	Summer Chinook	Adult brood-stock ^a /eggs collected	CCT Purse seine		--	--	--	26 ^a	26 ^a	--	48,401	48,401	48,401	48,401	48,401	47,074		
				<i>On-station</i>	--	--	--	--	--	26 ^a	--	--	--	--	--	--	--	--
2012	Summer Chinook	Green egg transfer	YN Yakima River reintro.	345,000	--	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Green egg transfer</i>	--	--	--	--	--	340,400	--	--	--	--	--	--	--	--

^a Denotes adult broodstock.