

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: Andrew Gingerich and Greg Mackey
From: Charlie Snow, Charles Frady, and David Grundy
Subj: April Hatchery and Natural Production Report
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Cc: Distribution list.

HATCHERY ACTIVITIES

At Wells Hatchery, the yearling Chinook Salmon, 2019 brood Coho, and safety-net steelhead were held on 100% surface water prior to release in April. The Okanogan basin steelhead release groups were held on a mix of 50/50 surface/well water prior to release and all other populations were reared on 100% well water. At Methow Hatchery, 2020 brood fish were held on 100% well water while 2019 brood fish, both on-station and at remote acclimation sites, were held on 100% surface water during the month.

2019 Twisp Spring Chinook Salmon

A total of 37,857 fish were released from Twisp Acclimation Pond on 19 April with 40 additional fish listed as mortalities. Prior to release, these fish had a mean fork length of 146.5 mm (Table 1) and were approximately 12 fish per pound (FPP). The number of fish on-station that apply to Douglas PUD Habitat Conservation Plan (HCP), Chelan PUD HCP, and Grant PUD Salmon and Steelhead Settlement Agreement (SSSA) mitigation obligations is listed in Appendix A.

2019 Methow Composite Spring Chinook Salmon

A total of 66,229 fish were released from Chewuch Acclimation Pond on 19 April with 28 additional fish listed as mortalities. Prior to release, these fish had a mean fork length of 135.8 mm (Table 1) and were approximately 15 FPP. Approximately 24,000 fish were released from Goat Wall Pond between 19 and 22 April. Prior to release, these fish had a mean fork length of 140.0 mm (Table 1) and were approximately 15 FPP. A total of 106,942 fish were released from Methow Hatchery between 19 and 20 April with 2,261 additional fish reported as mortalities. Prior to release, these fish had a mean fork length of 139.0 mm (Table 1) and were approximately 14 FPP. The number of fish on-station that apply to Douglas PUD HCP, Chelan PUD HCP, and Grant PUD SSSA mitigation obligations is listed in Appendix A.

Table 1. Results of pre-release length and weight sampling conducted at Wells Hatchery, Methow Hatchery, and Methow Valley acclimation ponds (AP) in April. Data from Chewuch and Carlton Acclimation Ponds were provided by Chelan PUD. Data from the Goat Wall Pond were provided by Yakama Nation Fisheries personnel.

Species	Brood	Number released	Location (release site)	Fork (mm)		Weight (g)			K-factor
				Mean	CV	Mean	SD	FPP	
Sp. Chin	2019	66,229	Chewuch AP	135.8	11.7	31.1	12.6	14.6	1.24
Sp. Chin	2019	24,000	Goat Wall AP	140.0	7.9	30.5	8.3	14.9	1.11
Sp. Chin	2019	106,942	Methow H. (on-station)	139.0	10.9	32.0	11.0	14.2	1.19
Sp. Chin	2019	37,857	Twisp AP	146.5	12.0	39.0	14.8	11.6	1.24
Sum. Chin age-1	2019	366,552	Wells (Columbia)	158.7	8.1	47.2	11.4	9.6	1.18
Steelhead	2020	173,059	Wells (Columbia)	188.4	11.6	79.5	29.5	5.7	1.19
Steelhead	2020	106,640	Wells (Methow R.)	190.7	11.5	77.2	26.1	5.9	1.11
Steelhead	2020	27,635	Wells (Twisp)	173.2	12.0	68.6	51.6	6.6	1.32
Steelhead	2020	37,770	Wells (Salmon Creek)	174.1	14.8	67.0	26.2	6.8	1.27
Steelhead	2020	39,320	Wells (Similkameen/Aeneas)	174.8	15.2	67.4	27.9	6.7	1.26

2020 Twisp Spring Chinook Salmon

A total of 25,030 fish were on-station at the end of the month with six additional fish reported as mortalities. These fish were approximately 131 FPP. The number of fish on-station that apply to Douglas PUD HCP, Chelan PUD HCP, and Grant PUD Salmon and Steelhead Settlement Agreement (SSSA) mitigation obligations is listed in Appendix A.

2020 Methow Composite Spring Chinook Salmon

A total of 214,932 fish were on-station at the end of the month with 34 additional fish reported as mortalities. These fish were approximately 120-137 FPP. These fish will support releases from the Chewuch Acclimation Pond (CAP; release target = 61,000), Goat Wall Acclimation Pond (GWAP; release target = 25,000), and from Methow Hatchery (release target = 107,765). The number of fish on-station that apply to Douglas PUD HCP, Chelan PUD HCP, and Grant PUD Salmon and Steelhead Settlement Agreement (SSSA) mitigation obligations is listed in Appendix A.

2019 Summer Chinook

Wells Hatchery released the entire population of 366,552 yearling program summer Chinook juveniles into the Columbia River at Wells Dam between 15 and 23 April. An additional 130 fish were listed as mortalities in April prior to release. At release, these fish had a mean fork length of 159 mm and were at approximately 9.6 FPP (see Table 1). A fish health examination prior to release found these fish healthy overall although mild levels of *Saprolegnia* sp., protozoans, and filamentous bacteria were identified. Fat levels were considered less than

optimal in some rearing vessels, and the recommendation was made to increase feed to the population prior to release. Summer Chinook are being reared to fulfill Wells HCP mitigation obligations (Appendix A).

2020 Summer Chinook

Wells Hatchery had a total of 373,967 fry for the yearling program and 1,435,372 parr for subyearling programs on-station at the end of the month. The subyearling population reflects a decrease of 11,462 fish after routine population inventories resulting from the marking process. Additionally, a fish health examination attributed a recent increase in sub-yearling mortalities to bacterial gill disease; the affected raceway was successfully treated with diquat dibromite (Reward[®]). Subyearling populations include releases for the Douglas PUD inundation compensation program, the State of Washington Orca program, and the Pacific Salmon Treaty program. Mortality for the subyearling program fish totaled 4,024 fish overall during the month. Summer Chinook are being reared to fulfill Wells HCP mitigation obligations (Appendix A).

2020 Summer Steelhead

Wells Hatchery planted the entire population of Columbia safety-net steelhead ($N = 173,059$), Methow safety-net steelhead ($N = 106,640$), and Twisp conservation program steelhead ($N = 27,635$) during the month of April. In addition, Okanogan hatchery progeny were released in the Similkameen River ($N = 34,187$), Aeneas Creek ($N = 5,133$), Antoine Creek ($N = 12,726$), and Salmon Creek ($N = 37,770$). The hatchery transferred the entire population of Methow conservation program steelhead ($N = 24,169$) to the Winthrop National Fish Hatchery (WNFH) on 4 April.

Mortality during the month prior to release included additional fish from the Methow safety-net ($N = 100$), Okanogan hatchery ($N = 20$), and the Methow ($N = 3$) and Twisp ($N = 4$) conservation programs. Summer steelhead had mean fork lengths between 173 and 191 mm prior to release (see Table 1). A fish health examination identified mild levels of *Saprolegnia* sp. and protozoans in skin scrapes, but the fish were otherwise healthy and recommended for release as planned. Steelhead progeny are being reared to fulfill Douglas PUD Wells HCP mitigation obligations and to fulfill Grant PUD SSSA mitigation obligations.

2021 Summer Steelhead

The 2021 summer steelhead broodstock for Wells Hatchery and WNFH programs has primarily been collected through hook-and-line angling in the Methow River. Similarly, broodstock for Okanogan Basin programs has also been collected via angling in the Okanogan River. Spawning of Methow and Columbia safety-net fish was completed in March producing 152,504 and 232,581 eyed-eggs, respectively. About 87,599 of these eyed eggs were shipped to Ringold Hatchery, leaving 114,975 eggs for the Methow safety-net and 182,511 eggs for the Columbia safety-net programs on-station at the end of the month. Spawning of Okanogan Basin fish was completed in April with 19 males and 20 females spawned. Progeny of these crosses will be reared at Wells Hatchery until release or transfer in spring of 2022.

2020 Kamloops Rainbow Trout

Wells Hatchery had 31,527 rainbow parr on-station after releases at about 2 FPP with 2,101 additional fish reported as a mortality during April. A second pre-release fish health examination found these fish healthy overall after successful treatment for bacterial coldwater disease. The recommendation was made to release the fish in May after the observance of mandatory drug withdrawal periods. The hatchery planted 1,150 trout in Okanogan County lakes between 14 and 29 April. Kamloops Rainbow Trout are reared under the Off-License Settlement Agreement between Douglas PUD and WDFW (Appendix B).

2021 Kamloops Rainbow Trout

Wells Hatchery received 28,000 Kamloops Rainbow Trout eggs from the 2021 brood on 1 April from Troutlodge Inc. A total of 2,095 of these fish were listed as mortalities during April, leaving 25,905 fish on-station at the end of the month. These fish were at 2,750 FPP at the end of the month and will support lake plants in fall of 2021. Kamloops Rainbow Trout are reared under the Off-License Settlement Agreement between Douglas PUD and WDFW (Appendix B).

2020 Methow Coho

Wells Hatchery had 26,935 Methow Coho fry on-station at the end of April. These fish were at approximately 307 FPP, and an additional 90 fry were reported as mortalities during the month. The 2020 brood Coho will be reared at Wells Hatchery until transfer to the Twisp Acclimation Pond as pre-smolts in spring 2022. These fish were reared to meet Wells HCP mitigation obligations (Appendix A).

2020 White Sturgeon

Wells Hatchery had 336 White Sturgeon progeny on-station at the end of the month. These fish were between 0.25 and 0.5 FPP and no mortality was reported during April. White Sturgeon progeny are reared at Wells Hatchery under the Wells 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), Lower Chewuch (CRW), 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>

2021 Steelhead Spawning Ground Surveys

Steelhead spawning ground surveys were initiated 2 March in mainstem Methow reaches. A total of 150 redds were found in mainstem reaches by the end of April. Two redds were found in the Methow Hatchery outfall. Thirty-eight additional redds were documented in the WNFH outfall by USFWS personnel.

2021 Smolt Trapping

Traps at both the Methow and Twisp sites operated the entire month without interruption. With increasing river discharge, the 2.4 m cone was moved into the upper fishing position at the Methow site on 17 April, which operated in tandem with the 1.5 m cone for the remainder of April. During the month, hatchery spring Chinook smolts and hatchery Coho smolts 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. Methow River discharge for the period operated ranged from 29.2 to 148.4 m³s, providing expected trap efficiencies between 1.2 and 1.5 percent for the period in which the 1.5 m cone was operating in the low position, and between 1.4 and 3.5 percent for the period in which both cones were operating in the upper position. Twisp river discharge for the period operated ranged from 6.0 to 28.1 m³s, providing expected trap efficiencies between 7.5 and 17.6 percent.

Table 2. Monthly salmonid captures at Methow Basin smolt traps in 2021.

Species/origin	Methow			Twisp		Basin total
	February	March	April	March	April	
Yearling Chin/wild	0	60	193	52	166	471
Yearling Chin/hatch	0	0	8,044	0	1,855	9,899
Sub Chin/wild-parr	0	0	31	0	0	31
Sub Chin/wild-fry	24	1,012	1,032	5	58	2,131
SHR/wild-transitional	0	1	224	6	249	480
SHR/wild-parr	0	18	116	19	93	246
Steelhead/hatchery	0	0	999	0	2,806	3,805
Coho/wild-smolt	0	0	26	8	13	47
Coho/wild-parr	0	0	10	0	1	11
Coho/wild-fry	0	21	104	48	47	220
Coho/hatchery	0	2	1,831	0	8,401	10,234
Bull Trout	0	0	1	1	7	9
Cutthroat Trout	0	0	0	0	2	2
Rainbow Trout	0	0	0	1	0	1
Sockeye/wild-fry	11	68	42	0	1	122
Total	35	1,182	12,653	140	13,699	27,709

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

Species/stage	Location	Length (mm)			Weight (g)			Mean K-factor
		Mean	SD	<i>N</i>	Mean	SD	<i>N</i>	
Yearling Chinook/wild	Methow	103.1	8.0	193	11.7	2.7	193	1.06
Yearling Chinook/wild	Twisp	98.6	7.4	164	10.5	2.4	164	1.08
Yearling Chinook/hatchery	Methow	135.4	13.0	278	29.3	8.8	278	1.15
Yearling Chinook/hatchery	Twisp	135.1	13.6	289	27.8	9.7	289	1.09
Sub Chinook/wild/parr	Methow	52.9	2.7	28	1.6	0.4	21	1.01
Sub Chinook/wild/fry	Methow	38.5	3.9	461	--	--	--	--
Sub Chinook/wild/fry	Twisp	37.9	2.0	34	--	--	--	--
Steelhead/wild/transitional	Methow	168.7	20.5	223	47.1	16.1	223	0.95
Steelhead/wild/transitional	Twisp	168.6	16.4	249	46.1	13.5	249	0.94
Steelhead/wild/parr	Methow	94.2	16.0	116	9.2	4.5	116	1.02
Steelhead/wild/parr	Twisp	87.8	13.9	93	7.5	3.4	93	1.05
Steelhead/hatchery/smolt	Methow	195.7	18.0	130	82.8	23.7	129	1.08
Steelhead/hatchery/smolt	Twisp	195.3	13.8	347	81.6	18.2	347	1.08
Coho/wild/smolt	Methow	103.9	7.5	26	11.9	2.8	26	1.05
Coho/wild/smolt	Twisp	104.2	16.0	13	12.5	5.3	13	1.05
Coho/wild/parr	Methow	51.4	1.7	9	1.5	0.2	8	1.08
Coho/wild/parr	Twisp	51.0	--	1	1.2	--	1	0.90
Coho/wild/fry	Methow	38.9	5.4	88	--	--	--	--
Coho/wild/fry	Twisp	37.4	3.5	32	--	--	--	--
Coho/hatchery/smolt	Methow	136.2	11.0	57	29.8	8.5	57	1.15
Coho/hatchery/smolt	Twisp	135.3	8.0	189	28.1	4.9	189	1.12
Bull Trout	Methow	187.0	--	1	54.1	--	1	0.83
Bull Trout	Twisp	166.3	18.6	7	40.5	12.8	7	0.85
Cutthroat Trout	Twisp	201.0	--	1	79.6	--	1	0.98
Sockeye/wild/fry	Methow	26.4	1.6	27	--	--	--	--
Sockeye/wild/fry	Twisp	27.0	--	1	--	--	--	--

Appendix A. Number of fish reared at Wells and Methow hatcheries to meet Douglas County PUD’s Wells 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 /transfer	
					May '20	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '21	Feb	Mar	Apr		
2019	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	65,808	65,796	65,751	65,683	65,520	65,321	64,984	64,820	64,647	64,514	64,311	--	63,562	--
2019	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	145,857	145,829	145,730	145,578	145,217	144,716	144,028	143,665	143,282	142,987	142,538	--	140,877	--
2019	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	31,670	31,664	31,642	31,610	31,531	31,435	31,273	31,194	31,111	31,047	30,950	--	30,589	--
2020	Spring Chinook	Yearling smolt	CCPUD NNI	60,516 <i>released</i>	--	--	--	--	--	65,706	65,706	65,287	65,110	64,953	64,907	64,896	--	--
2020	Spring Chinook	Yearling smolt	GCPUD Priest Rapids NNI	134,126 <i>released</i>	--	--	--	--	--	145,629	145,629	144,700	144,308	143,959	143,859	143,835	--	--
2020	Spring Chinook	Yearling smolt	DCPUD Wells NNI	29,123 <i>released</i>	--	--	--	--	--	31,621	31,621	31,419	31,334	31,258	31,236	31,231	--	--
2018	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	50,923	--	--	--	--	--	--	--	--	--	--	--	--	351,741
2019	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	393,160	391,819	378,059	367,786	367,786	367,786	367,777	367,527	367,277	367,027	366,682	--	366,552	366,552
2020	Summer Chinook	Yearling smolt	DCPUD Fixed Hatchery Compensation	320,000 <i>released</i>	--	--	--	--	--	--	415,479	375,479	375,479	375,479	375,479	373,967	--	--
2020	Summer Chinook	Sub-yearling	DCPUD Fixed Hatchery Compensation	484,000 <i>released</i>	--	--	--	--	--	--	--	--	557,477	523,359	496,338	491,048	--	--
2020	Summer steelhead	Yearling smolt	DCPUD Fixed Hatchery Compensation ¹	300,000 <i>released</i>	--	354,615	353,741	349,474	334,709	323,726	326,821	326,589	326,325	326,093	325,870	--	325,762	325,762
2020	Summer steelhead	Yearling smolt	DCPUD Wells NNI ¹	8,000 <i>released</i>	--	9,456	9,433	9,319	8,926	8,633	8,715	8,709	8,702	8,696	8,690	--	8,687	8,687
2020	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	80,000 <i>released</i>	--	94,564	94,331	93,193	89,256	86,327	87,152	87,091	87,020	86,958	86,899	--	86,870	86,870

Appendix A. Continued.

Brood year	Species	Life stage	Program	Target release No.	Month												Total released /transfer	
					May '20	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '21	Feb	Mar	Apr		
2020	Summer steelhead	Yearling smolt	GCPUD Priest Rapids NNI	20,000	--	16,926	16,879	16,833	16,804	16,298	12,178	12,168	12,160	12,156	--	--	12,155	
				<i>transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--		12,155
2019	Methow Coho	Yearling smolt	DCPUD Mitigation	37,000	41,362	41,325	41,300	39,952	39,920	39,908	39,983	39,865	39,831	39,805	--	--	39,770	39,770
2020	Methow Coho	Yearling smolt	DCPUD Mitigation	37,000	--	--	--	--	--	--	--	--	--	--	--	--	26,935	--
				<i>released</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--

¹40,000 Inundation steelhead to be released in the Twisp or Methow 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		
					May '20	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '21	Feb	Mar	Apr			
2019	Kamloops Rainbow trout	Juv.	WDFW sport fish	Number (pounds) released	2,643	2,631	2,624	2,619	2,618	--	--	--	--	--	--	--	--	53,290	
					(1,317)	(2,631)	(2,624)	(5,238)	(8,727)	(9,703)	(--)	(--)	(--)	(--)	(--)	(--)	(--)		(--)
					3,650	--	--	--	--	2,620	--	--	--	--	--	--	--		--
2020	Kamloops Rainbow trout	Juv.	WDFW sport fish	Goal is 20,000 pounds annual combined	25,613	25,532	22,435	64,683	60,798	45,975	34,998	34,979	32,879	34,967	34,778	31,527	19,981		
					(32)	(96)	(431)	(1,310)	(2,781)	(79)	(318)	(921)	(3,653)	(8,742)	(17,389)	(15,764)			
					--	--	--	--	--	18,831	--	--	--	--	--	--		--	--
2021	Kamloops Rainbow trout	Juv.	WDFW sport fish	Goal is 20,000 pounds annual combined	--	--	--	--	--	--	--	--	--	--	--	25,905	--		
					(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(--)	(9)			
					--	--	--	--	--	--	--	--	--	--	--	--		--	

Appendix C. Fish reared at Wells Hatchery pursuant to the Wells Aquatic Settlement Agreement – White Sturgeon Management Plan.

Brood year	Species	Life stage	Program	Target disposition	Month												Total released/culled /transferred			
					May '20	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan '21	Feb	Mar	Apr				
2019	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supple-mentation	<i>Up to 325</i>	--	--	--	--	--	--	--	--	--	--	--	--	--			
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--		
				<i>Transferred</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	365	
				<i>Wells reservoir</i>	570	--	--	--	--	--	--	--	--	--	--	--	--	--	--	570
2020	White Sturgeon	Juvenile rearing	Wells White Sturgeon Supple-mentation	<i>Up to 325</i>	--	--	1,543	1,384	1,203	738	350	350	336	336	336	336	--			
				<i>Culled</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
				<i>Transferred</i>	--	--	--	--	--	436	647	--	--	--	--	--	--	--	--	647
				<i>Wells reservoir</i>	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--