
CLEARWATER FISH HATCHERY
ANNUAL OPERATIONS REPORT
OCTOBER 1, 2008 – September 30, 2009

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INTRODUCTION

Location

Clearwater Fish Hatchery is located on the North Fork of the Clearwater River, 1.5 miles downstream from Dworshak Dam, 72.5 miles upstream from Lower Granite Dam, and 504 miles upstream from the mouth of the Columbia River.

Red River satellite facility is located 15 miles east of Elk City, Idaho—186 miles upstream from Lower Granite Dam and 618 miles from the mouth of the Columbia River.

Crooked River satellite facility is located 20 miles downstream of Red River. The trap is located one-half mile upstream of the mouth of Crooked River, a tributary of the South Fork of the Clearwater River. The juvenile rearing ponds are ten miles upstream from the Crooked River adult trap. Crooked River is 172.5 miles upstream from Lower Granite Dam and 604 miles upstream from the mouth of the Columbia River.

Powell satellite facility is located 122 miles east of the Clearwater Fish Hatchery (CFH) at the headwaters of the Lochsa River. Missoula, Montana, 45 miles east is the closest town. Powell is 192.5 miles upstream from Lower Granite Dam and 624 miles upstream from the mouth of the Columbia River.

See Appendix 1 for property details.

Mitigation Goals

Lower Snake River Compensation Plan:

The annual goal of Clearwater Fish Hatchery and satellite facilities is to return 12,000 adult salmon and 14,000 adult Steelhead over Lower Granite Dam.

Idaho Department of Fish and game Objectives:

The objectives of Idaho Department of Fish and Game (IDFG) for the Clearwater Hatchery are to reestablish historic fish runs into the upper Clearwater River tributaries, to enhance the wild spawning population, and to increase sport and tribal fishing opportunities.

SPRING CHINOOK SALMON

South Fork Brood Year 2009

(Red River / Crooked River)

In 1997, Red River and Crooked River stock Chinook were combined to make the South Fork stock and was continued in 2009 due to the straying of Chinook between the two drainages.

The Red River trap was put into operation March 24, 2009 for steelhead trapping. It was left in operation for Chinook trapping, and the first Chinook was trapped on June 20 and the last on September 1, 2009. The Red River trap was operated 161 days. A total of 591 fish were trapped of which 20 were wild/natural and 571 were hatchery origin.

The Crooked River trap was put into operation April 7, 2009 for steelhead trapping. It was left in operation for Chinook trapping, and the first Chinook was trapped on June 17 and the last on September 1, 2009. The Crooked River trap was operated 146 days. A total of 511 fish were trapped of which 37 were wild/natural and 474 hatchery origin.

South Fork (Red River and Crooked River) 1,102 fish trapped

Red River 398 adults, 193 jacks: Crooked River 351 adults, 160 jacks

<u>Age Classes</u>	<u>Females</u>	<u>Males</u>	<u>Unknown</u>
3 years	5	350	2
4 years	423	239	2
5 years	43	38	0
Total	471	627	4

See Appendix A for disposition details.

A total of 433 females were spawned between August 4 and September 9, 2009 for a total of 10 egg takes. Eggs from 0 females were culled at spawning. During incubation, eggs from a total of 25 females were culled due to high BKD levels and an additional 31 were culled to a lower BKD 0.2 rating and 5 were culled for bad eggs. Three hundred seventy two (372) females were kept for CFH production.

A total of 1,672,136 green eggs taken for South Fork stock egg allocations yielded 1,611,356 eyed eggs for an eye-up average of 95.18%.

See Appendix B1 for egg take breakdown.

A total of 1,102 fish were trapped of which 57 were wild/natural and 1,045 were hatchery.

Powell Brood Year 2009

For the 12th year, the Fishery Research trap on Crooked Fork Creek was operated in conjunction with our Powell trap on Walton Creek to collect hatchery fish in the upper Lochsa basin. The Walton Creek weir was installed on June 12, 2009 and taken out of operation on September 22, 2009. The Powell trap was operated 102 days. The first Chinook was trapped on June 15 and the last Chinook was trapped on September 17, 2009.

The Crooked Fork trap was in operation between June 26 and September 18, 2009. A total of 79 fish were trapped at Crooked Fork Creek. The first fish was trapped on June 27 and the last on September 12, 2009. A total of 59 ad-clipped fish were transported to Powell holding pond and used in hatchery spawning. A total of 20 wild/natural fish were trapped and released above the weir.

A total of 994 fish were trapped in the Powell/Crooked Fork traps of which 20 were wild/natural origin and 974 were hatchery origin.

Powell (994 fish trapped) 788 adults, 206 jacks

<u>Age Classes</u>	<u>Females</u>	<u>Males</u>	<u>Unknown</u>
3 years	1	199	3
4 years	423	241	8
5 years	22	95	2
Total	446	535	13

See Appendix A for disposition details.

A total of 428 females were spawned between August 6 and September 11, 2009 for a total of 11 egg-takes. Zero female was culled at spawning, 8 in incubation for BKD, an additional 11 were culled to lower 0.2 BKD rating and two for bad eggs. Eggs from 407 females were kept for hatchery production.

A total of 1,715,279 green eggs taken for Powell stock egg allocation yielded 1,565,250 eyed eggs with an overall eye-up average of 91.25%.

See Appendix B2.

A total of 3,387,415 green eggs from Powell and South Fork stock for CFH production yielded 3,176,606 eyed eggs with an overall eye-up average of 93.77%.

TRANSFER OF LIVE FISH TO NPTH AND FOOD BANKS

A total of 153 jacks (SF 90 and 63 Powell stock) were given to the Kamiah food bank on July 8 (Powell) and July 9, 2009 (Red River). No adults were out planted or transferred to NPTH.

CHINOOK EGGS TRANSFERRED TO OTHER HATCHERIES

No eggs were transferred to other hatcheries.

CHINOOK EGGS TRANSFERRED FROM OTHER HATCHERIES.

A total of 963,868 green Spring Chinook eggs were received from Rapid River Hatchery yielding 935,031 eyed eggs for a 97.01% eye-up. All eggs were culled as a sufficient number of adults returned in the last 10 days of trapping at Clearwater Fish Hatchery to meet our rearing allocations.

A total of 330,859 green Summer Chinook eggs from 72 females were received from McCall Hatchery yielding 288,935 eyed eggs for a 87.33% eye-up. Four females were culled for high BKD, four for bad eggs and 14 to lower BKD levels. A total of 50 were kept for production.

DISTRUBUTION

Chinook

Distribution of acclimated brood year 2007 spring Chinook smolts by CFH personnel began March 23, 2009 with the transport of smolts to Powell acclimation pond and finished April 9 with transport of South Fork stock to the Red River Facility. Powell smolts were acclimated and released on April 1, 2009. Direct release plants occurred on April 6-8 at Crooked River where 100% of the smolts were direct released at the lower facility. Transportation of CFH smolts to Lower Selway River by CFH staff began on April 2 and finished on April 3, 2009. Smolts were transported to Red River and direct released on April 8 and April 9, 2009. No acclimation was possible due to extreme ice conditions on acclimation pond. A total of 2,145,538 smolts (128,123 pounds) were transported to and released from CFH. All of these fish were marked. See Appendix G for detailed release information by release site. See Appendices C, E, and H for rearing cost.

Summer time releases of brood year 2008 Chinook occurred at one release site. The parr (315,252: 3,713 pounds) were released at McGruder Corridor of Selway River. These fish were reared at CFH and transported by NPTH personnel. No pre-smolts were released at Red River, Upper Crooked River, or Powell acclimation ponds. See Appendix G for detailed release information by release site.

TRANSFER TO OTHER STATIONS

Brood year 2008 pre-smolts were transferred to NPTH on September 16, 2009 (201,291: 4,792 lbs) for final rearing and release in spring of 2010.

STEELHEAD TROUT

Crooked River Trapping

Crooked River trap was put into operation to trap steelhead April 7, 2009. The first fish was trapped on April 28 and the last on June 15, 2009. A total of five fish were trapped of which one was a hatchery male, four were wild/natural males, zero was wild/natural female and zero were hatchery females. All wild/natural fish were released above the weir, and all hatchery fish were released below the weir.

Red River Trapping

Red River trap was put into operation to trap steelhead on March 24, 2009. Zero Steelhead were trapped during 2009.

An excessive amount of snowfall during the previous winter created abnormally high runoff, which pressed the floating weir to the bottom of Red River. On May 7 to June 17, 2009, the weir was not operating properly, but the trap remained accessible to fish.

Steelhead eggs received from other station BY-09

A total of 1,031,613 brood year 2009 green eggs were received from Dworshak National Fish Hatchery (DNFH) for rearing to full term smolts at the Clearwater Hatchery. This was the fifth year Dworshak was unable to shock and pick CFH steelhead eggs before shipping them to CFH. Dworshak incubated the eggs to eye-up. CFH staff shocked them at Dworshak, transported them to CFH incubation room, and picked them the next day. From these green eggs 994,863 eyed eggs were produced. Eye-up percentage was 96.4%. A total of 909,739 swim-up fry were ponded for CFH production. These fish will be released in the spring of 2010. CFH also received approximately 1,608,000 green eggs for early incubation, egg picking and enumeration for Magic Valley Hatchery. From these green eggs 1,000,000 eyed eggs were produced for Magic Valley. Eye-up percentage was 92.7%. Also, 21,270 eyed eggs were culled at Clearwater Fish Hatchery and 212,256 for Magic Valley, to a full hatchery allocation.

DISTRIBUTION

Steelhead

A total of 835,636 brood year 2008 North Fork steelhead smolts were transported to eight release sites from CFH. See Appendix F for release details. CFH staff and two Idaho Fish and Game transportation drivers transported a total of 178,150 pounds of steelhead smolts. Some of the fish released at Red River and Crooked River had no external marks. See Appendices D, E, and H for rearing cost.

Rainbow

Clearwater Fish Hatchery staff released rainbow trout throughout the Clearwater region. CFH staff released 94,486 catchable size rainbows (30,501 pounds) April through October. These catchable rainbows were all of Troutlodge triploid stock reared at Nampa, Mackay and American Falls Hatcheries. They were released into streams, lakes and ponds at 22 sites for a total of 105 plants.

A total of 100 three-to-eight pound trout were recovered from the sediment basin and released throughout the year with the normal fish allocation.

Fish and Game license fees funded this project with cooperation from the U.S. Fish and Wildlife Service.

CONSTRUCTION PROJECTS

Storage Mezzanine
Red River-New security fence and gate
Truck disinfection station
Interpretive signs and self guided tour

MAINTENANCE AND REPAIRS

Red River installed electrical for aerators
Crooked River hoist at trap
Red River Low level alarm on acclimation pond
Red River intake valves
Satellite storage painted room and insulated incubation pipeline
Adult holding CFH sprinkler replumb
Upper Crooked river fence repair
Residence 1 and 6 new carpet
Residence 1, 6 and 7 exterior paint
Exterior paint on Administration building
Replumb Administration building
Replace skylight in Administration building
Wheelchair users ramp and handrail at Administration building
Electric start pond vacuum for EPA, BMP Quiescent zone cleaning
New motor and hydraulic pump for 8" fish pump
Repaired interpretive signs at Red River
Multiple HVAC repairs
Backhoe repair-hydraulics and cylinders

NEW TOOLS AND EQUIPMENT PURCHASED

D.O. Meter
Automatic Electric Defibrillator
3 Aerators for Powell Acclimation pond
3 Aerators for Red River Acclimation pond
3/8" cordless De Walt drill
Powell washing machine
5 Incubator stacks
Walk behind snow thrower
Back hoe trailer

Appendix A.

Chinook Adult Returns to Clearwater Hatchery Satellite Facilities 2009

	Powell	Crooked River	Red River
Date of first return	6/15/2009	6/17/2009	6/20/2009
Date of last return	9/17/2009	9/1/2009	9/01/2009
Number of females returning	446**	471*	
Number of males returning	535**	627*	
Number of unknown sex returning	13	3	1
Date of peak returns	7/4/2009	7/2/2009	7/3/2009
Total trapped	1000	511	591
Number released to spawn naturally above weir	7 females 34 males 13 unknowns	12 females 22 males 3 unknowns	8 females 11 males 1 unknown
Released to spawn below weir	0 females 0 males	0 females 0 males	0 females 29 males
Trap Mortality	0 females 0 males	1 females 0 male	0 females 0 males
Sport Fishery Outplant	0	0	0
Fish transferred from other traps	59**	0	0
Number Spawned	428 females 431 males	433 females* 456 males*	
Pre-spawning mortality	11 females 7 males	18 females* 19 males*	
Fish transferred to other hatcheries	0	0	0
Fish given to Kamiah Food Bank	63 males	90 males	

* In 1997, Red River and Crooked River Chinook were combined to make the South Fork stock.

**Includes fish trapped at Crooked Fork Weir.

APPENDIX B1. Chinook Spawning Record 2009 for South Fork.

SOUTH FORK (Red River / Crooked River).

Lot	Spawn Date	Total Females	BKD Females Culled		Other Females Culled		Females Kept	Green Eggs	Eyed Eggs	Percent Eye Up	Fecundity
			Table	Incubation	Table	Incubation					
1	8/4/09	6	0	0	0	0	6	27,595	22,663	82.1	4,599
2	8/11/09	15	0	0	0	0	15	65,266	61,814	94.7	4,351
3	8/14/09	15	0	1	0	0	14	65,308	63,469	97.2	4,665
4	8/18/09	55	0	7	0	0	48	194,961	188,542	96.7	4,062
5	8/21/09	110	0	3	0	1	106	447,298	435,177	97.3	4,220
6	8/25/09	102	0	11	0	1	90	369,197	350,320	94.9	4,102
7	8/28/09	52	0	2	0	2	48	194,652	189,128	97.2	4,055
8	9/1/09	53	0	1	0	1	51	209,231	204,286	97.6	4,103
9	9/4/09	15	0	0	0	0	15	57,743	56,832	98.4	3,850
10	9/9/09	10	0	0	0	0	10	40,885	39,125	95.7	4,089
Total/Average		433	0	25	0	5	403	1,672,136	1,611,356	95.18	4209.5

APPENDIX B2. Chinook Spawning Record 2009 for Powell.

POWELL

Lot	Spawn Date	Total Females	BKD Females Culled		Other Females Culled		Females Kept	Green Eggs	Eyed Eggs	Percent Eye Up	Fecundity
			Table	Incubation	Table	Incubation					
1	8/6/2009	28	0	1	0	0	27	112,721	95,528	84.7	4,175
2	8/10/2009	23	0	0	0	0	23	90,893	86,103	94.7	3,952
3	8/13/2009	78	0	2	0	1	75	307,664	279,168	90.7	4,102
4	8/17/2009	83	0	3	0	0	80	326,789	308,993	94.6	4,085
5	8/20/2009	69	0	2	0	0	67	268,384	240,300	89.5	4,006
6	8/24/2009	74	0	0	0	1	73	301,505	274,331	91.0	4,130
7	8/27/2009	19	0	0	0	0	19	82,455	79,100	95.9	4,340
8	8/31/2009	23	0	0	0	0	23	101,487	89,700	88.4	4,412
9	9/3/2009	13	0	0	0	0	13	50,931	43,642	85.7	3,918
10	9/8/2009	15	0	0	0	0	15	59,596	55,886	93.8	3,973
11	9/11/2009	3	0	0	0	0	3	12,854	12,499	97.2	4,285
Total/Average		428	0	8	0	2	418	1,715,279	1,565,250	91.25%	4,103

Appendix C
CHINOOK REARING FY09

Rearing to fry stage only

BY-08

Hatched from eyed eggs	NA
Percent hatched – eyed to fry	NA
Percent mortality to stocking	NA
Total number of fry stocked	NA
Total weight of fry stocked	NA
Average number/lb. of fry	NA
Conversion rate	NA

Rearing to Fingerling stage only (parr & pre-smolts)

BY-08

Fingerlings produced	516,543*
Weight of fingerlings produced	8,505*
Percent mortality to stocking	4.6%
Average number/lb. of fingerlings	Parr 84 Pre-smolt 42
Conversion rate	1.05

Smolts reared (**BY-07 all stocks combined**)

Hatched from eyed eggs	2,617,736
Percent hatched – eyed to fry	96.6%
Percent mortality to stocking	1.5%
Number of smolts produced	2,145,596
Weight of smolts produced	128,123
Average number/lb. of smolts	16.36
Average Conversion rate	1.32

BY-07 Chinook
 Total number of trips at release: 72 @ 1,800 lbs per trip.

*See Table G for details

Appendix D
STEELHEAD REARING FY09

Rearing to fry stage only

BY-08

Hatched from eyed eggs	NA
Percent hatched – eyed to fry	NA
Percent mortality to stocking	NA
Total number of fry stocked	NA
Total weight of fry stocked	NA
Average number/lb. of fry	NA
Conversion rate	NA

Rearing to Fingerling stage only

BY-08

Fingerlings produced	NA
Weight of fingerlings produced	NA
Percent mortality to stocking	NA
Average number/lb. of fingerlings	NA
Conversion rate	NA

Smolts reared

Dworshak

BY-08

Hatched from eyed eggs	903,261
Percent hatched – eyed to fry	94.6
Percent mortality to stocking	7.5
Number of smolts produced	835,636
Weight of smolts produced	178,150
Average number/lb. of smolts	4.71
Average Conversion rate	0.94

BY-08Steelhead

Total number of trips at release: 85 @ 2,100 lbs per trip.

Appendix E

CHINOOK
FOOD FED & WEIGHT GAINED

	BY-07	BY-08
Period Fed: 10.01.08-9.30.09		
Feed Used (lb.) (LSRCP)	79,924**	65,991
Weight Gain (lb.)	69,888	74,164
Feed Purchased FY09	\$35,553*	\$140,433*
Conversion	1.32	0.84

STEELHEAD
FOOD FED & WEIGHT GAINED

	North Fork	
	BY-08	BY-09
Period Fed: 10.01.08-9.30.09		
Feed Used (lb.) (LSRCP)	137,522**	41,847
Weight Gain (lb.)	146,300	46,385
Feed Purchased FY08	\$5,654	\$210,865*
Conversion	0.94	0.90

Fish reared on station for other projects.
Feed cost provided by surplus feed from CFH.

Species	Rainbow
Agency reared for	Idaho Fish & Game
Period fed	June – Sept 2009
Feed fed (lb.)	3,000
Weight gain (lb.)	3,000
Cost	\$3,750
Conversion	1.0

*Portion of feed purchased will carry over to FY10
** Portion of feed purchased in FY08

Appendix F

Clearwater Fish Hatchery

2009 Steelhead Release

RELEASE BYO8 SH full-term smolts									
Date	Site	Number Released	Stock	Length	FPP	Pounds	Marks	Raceway	Comments
04/13-04/14/2009	Red River	131,803	DWOR B	8.48	4.69	28,103	131,803 No Clip-3,569 No Clip/PIT	5-7E	acclimated in tanks-direct release
04/14-04/16/2009	Peasley Creek/SF. CLW	265,589	DWOR B		4.73	56,150	143,064 AD Only- 122,523 Ad/CWT- 2,184 AD/CWT/PIT-4,972 AD/PIT	8, 9, 12E, 11, 12W	direct release
04/17-04/20/2009	Upper Crooked R	73,287	DWOR B	8.69	4.41	16,618	52,071 No Clip-21,216 No Clip/CWT-1,986 NO Clip/PIT	10E, 11E	direct release
04/16-04/17/2009	Red House Hole	263,999	DWOR B	8.48	4.69	56,290	139,499 AD-124,500 AD/CWT-6,416 AD/PIT-674 AD/CWT/PIT	6-10W	direct release
4/20/2009	Newsome Creek	25,354	DWOR B	8.38	4.81	5,271	25354 No Clip-0 No Clip/PIT	1/2 of 4W	direct release
4/20/2009	Mill Creek	25,354	DWOR B	8.38	4.81	5,271	25354 No Clip-0 No Clip/PIT	1/2 of 4W	direct release
4/28/2009	Lolo Creek	50,250	DWOR B	8.38	4.81	10,447	50,250 No Clip-1398 No Clip/PIT	5W	hauled by NPTH-1 Truck CFH staff
	TOTAL	835,636				178,150			

Appendix G

Clearwater Fish Hatchery 2009 Chinook Releases

<u>Date</u>	<u>Site</u>	<u>Number Released</u>	<u>Stock</u>	<u>Length</u>	<u>FPP</u>	<u>Pounds</u>	<u>Marks</u>
3/30/2009	Clear Creek	234,151	Powell	5.91	16.00	14,634	234,151 Oxy-Tet, 147,123 AD, 87,028 AD/CWT, 6,642 AD/PIT, 4,914 AD/CWT/PIT
4/8-4/9/2009	Red River	404,856	South Fork	5.78	17.10	23,675	338,770 AD, 66,086 AD/CWT, 15,088 AD/PIT
3/23-4/1/2009	Powell Pond Acclimated	201,998	Powell	5.84	16.73	12,073	97,624 AD, 104,374 AD/CWT, 2,709 AD/PIT, 3,281 AD/CWT/PIT
4/1/2009	Powell Pond Direct R.	202,117	Powell	5.86	16.42	12,309	99,032 AD, 103,085 AD/CWT, 2,886 AD/PIT, 3,109 AD/CWT/PIT
4/2-4/3/2009	Lower Selway	399,257	Powell	5.86	16.42	24,315	99,541 AD, 200,166 AD/CWT, 99,550 CWT, 9,970 AD/CWT/PIT, 4,971 CWT/PIT
4/6-4/8/09	Lower Crooked River	703,101	South Fork	5.78	17.10	41,117	624,980 AD, 63,039 AD/CWT, 15,082 AD/PIT
	TOTAL	2,145,480				128,123	
	AVERAGE			5.84	16.63		
	RELEASE BY08 CH parr					-	-
6/22, 6/24, 6/29/2008	Selway Parr	315,252	Rapid River	3.30	84.9	3,713	315,252 Oxy-tet & noclip
	TOTAL	315,252				3,514	
	RELEASE BY08 CH pre-smolts						
No BY08 Presmolts were released at CFH Satellites							
	TRANSFER BY07						
9/16/2009	NPTH	201,291	Powell	4.08	42.0	4,793	66,000 AD, 135,291 CWT Only

Appendix H

OPERATION COST 2009

Total Pounds Gain Reared on LSRCP budget	336,737 lbs
Total Feed Cost	\$392,505*
Feed Cost per LB Gain (Feed only)	\$1.17

COST TO OPERATE ENTIRE PROJECT FOR 2008-2009

	Actual Spent	As of 9/30/2009 \$ encumbered
Personnel Cost	838,003	0
Operation Cost	326,056	0
Capital Outlay	34,063	0
Sub-Total	1,198,122	0
\$ Actual spent & \$ encumbered	0	
Overhead	198,705	0
Feed Cost	392,505	
Grand Total	1,789,332	

Total pounds reared by LSRCP funded personnel	336,737 lbs
Cost per pound using entire budget w/o overhead	\$4.72/ lb

*A portion of this feed will be used in FY10

Appendix I

Clearwater Fish Hatchery Property Information

Clearwater Hatchery

24 buildings
0 wells
1.8 miles of pipeline
17.5 acres

Red River

4 buildings
0 wells
300 yards of pipeline
3.25 acres (approximately)

Crooked River (lower)

2 buildings*
1 well
187 yards of pipeline
6 acres

Crooked River (upper)

1 building
0 wells, 1 spring box
167 yards of pipeline
6.27 acres

Powell

2 buildings
1 well, 1 spring box, 1 direct creek source.
1 pump station from White Sands Cr.
200 yards of pipeline
7.77 acres

Total acreage is 40.79

* Building added: 7/2008 Lower Crooked River Storage shed