

WALLOWA HATCHERY ANNUAL REPORT FY2007

INTRODUCTION

Location

Wallowa Hatchery is located in northeast Oregon, two miles west of Enterprise. The hatchery is adjacent to Spring Creek, one mile upstream from the confluence of Spring Creek and the Wallowa River. Five rivers comprise the 613 river miles to the ocean: Spring Creek, Wallowa, Grande Ronde, Snake and Columbia Rivers. Two satellite stations, Big Canyon (Wallowa system) 30 miles west of the hatchery and Little Sheep (Imnaha system) 30 miles east of the hatchery, are used for adult trapping, spawning and smolt acclimation.

OBJECTIVES

Mitigation Goals

Wallowa Hatchery is operated as part of the Lower Snake River Compensation Program. Mitigation goals include, collecting 1,112,000 (green) Wallowa stock (56) summer steelhead eggs and 368,000 (green) Imnaha stock (29) summer steelhead eggs. The smolt release goal for the Wallowa stock is 800,000 smolts. The Imnaha stock goal is 265,000 smolts, 165,000 to Little Sheep (acclimated) and 100,000 to Big Sheep (direct stream). The adult return goal is 9,200 for the Wallowa stock and 2,000 for the Little Sheep stock into their respective mitigation areas.

This is the fourth year of supplementing our existing Wallowa steelhead program with Fall Collected Brood (FCB) and the third year of FCB smolt releases. The main goals of the program are reduce the potential for straying into Columbia River tributaries and enhance fall harvest opportunities within the LSRCP compensation area. The goal of 50 pairs of early returning adult steelhead are to be collected and segregated until they are spawned. All eggs collected from the FCB adults are segregated, uniquely marked as smolts, and then incorporated into our rearing program. We replaced conventional program eggs with eggs from the FCB thus maintaining our goal of 800,000 smolts.

SUMMER STEELHEAD

Adult Returns

There was a slightly lower return of adult steelhead to Wallowa and Big Canyon facilities compared to spring 2006 however the mitigation goal was met. Little

Sheep also met its mitigation goal however; saw a substantial decrease in returns. The stock designations for adults collected during the 2007 season were, Wallowa and Big Canyon (5607) and Little Sheep/Imnaha (2907).

Wallowa Hatchery collected 2,837 hatchery origin steelhead. Of those, 1,402 were male and 1,435 were female. This number includes the FCB adults (43 males and 34 females) that were collected by volunteer anglers in the fall of 2006. This was an 8% decrease from the 3,079 returning adults in 2006.

Big Canyon satellite facility had a return of 815 adult hatchery origin steelhead consisting of 351 males and 464 females. This was a 61% decrease from the 1,982 returning adults in 2006. We had 48 (21 males, 27 females) natural origin steelhead return, all of which were passed above the weir in Deer Creek to spawn naturally. The natural origin steelhead returns in 2006 were 89 adults.

Little Sheep facility had 1,712 hatchery adults return (763 males, 949 females), which is 31% lower than the 2006 return of 2,349. Natural origin returns were 24% lower with 91 adults (37 male, 83 female), compared to 120 in 2006. Of the adults collected, 156 hatchery and 85 natural origin steelhead were passed above the weir in Little Sheep Creek. Additional releases include 1,318 hatchery adults transferred to Big Sheep Creek to spawn naturally.

Egg Production - Wallowa Stock (5607) Summer Steelhead

There were a total of 1,177,850 Wallowa stock eggs taken during the season, 1,041,900 production and 135,950 FCB eggs. 1,044,830 eyed eggs were transferred to Irrigon Hatchery. 1,000 eggs were transferred to local school education programs (STEP). The green to eyed egg loss was 8.3% for the Wallowa stock as a whole. The FCB segregated eggs continued to have higher loss at 16.1%.

Egg Production - Imnaha Stock (2907) Summer Steelhead

A total of 397,990 green eggs were taken in the 2007 season. We transferred 342,280 eyed eggs to Irrigon Hatchery. Egg loss was 10.8%, comparable to the 9.3% loss in 2006.

Smolt Acclimation Summer Steelhead

There were 479,123 Wallowa stock (5606) smolts acclimated and released from Wallowa Hatchery. Big Canyon acclimated and released 322,368 Wallowa stock (5606) smolts.

Little Sheep satellite facility acclimated and released 158,103 Imnaha stock (2906) smolts to Little Sheep Creek. There were 9,701 potential residual smolts out-planted to Kinney Lake in 2007.

Irrigon Hatchery reared the above stocks of smolts acclimated and release at our facilities.

CAPITAL CONSTRUCTION AND MAINTENANCE

There were no capital construction projects at Wallowa Hatchery or its satellite facilities during the report period.

MAJOR PROJECTS ACCOMPLISHED BY ODFW PERSONNEL

Wallowa Facility

The 12 willow trees that were topped by Executive Tree Care were cut down and their stumps were dug up and hauled away continuing the facility tree health issue. October and November 2006.

Moved the plumbing and valve for the adult holding pond return pipe on the spawning table to underneath the table. This quieted the sounds of water and provides more room on the spawning table for handling fish. January 2007.

On spawning days and a holding area out of anesthetic was identified as being needed. So, a plastic 300 gallon tank was purchased and installed in the spawning room for live storage of adult fish prior to spawning. February 2007.

The Wallowa Intake building had a facelift this year. To remove the disarray of dam boards inside and outside of the building a raised storage compartment was built. The new storage compartment can be locked to prevent theft of other important tools that have been stored inside the building. The intake building itself was scraped, sanded; all of the cracks and holes were sealed, and then repainted. The old shingles and some of the rotten plywood were removed and new plywood, roofing felt and shingles were put on. In all, the building was repaired and improved to a much safer and weather proof condition. June and July 2007.

The 10' x 18' Upper Well building was removed from its foundation with help from the Enterprise Screen Shop boom truck and Chuck Simpson. Removal of the building was needed to provide access for Purswell's Pump Co. to remove the old upper well pump and replace the 378' of 4" pipe and install a new pump. After the well repair was completed Chuck again helped with moving the building back onto the foundation. The project was a success as nothing was damaged

in the process. The old well pipe was found to have several holes that had rusted through the pipe and were causing reduced flow. However, after installing the new pipe and pump the well flow was found to be reduced by about 50% from over historically 80 gpm to only 47 gpm. September 2007.

The grounds along Fish Hatchery Lane where the willow trees were removed last year as cleared of all rocks, sticks, and roots then leveled by bringing in and dispersing 50 cubic yards of top soil and mulch. After leveling, 8 maple trees were planted and grass seed was started to complete the project. July and August 2007.

Six other diseased and hazardous willow trees were also removed from the hatchery grounds. This area will be completed next summer. Trees probably will not be planted back in this area to reduce leaf accumulations and improve mowing efficiency. September and October 2007.

Big Canyon Facility

Expansion joints in the acclimation pond were filled with sealant to slow the deterioration of the cement. This is a short term attempt which will be followed up by a more permanent solution. November 2006.

Little Sheep Facility

The garage door was permanently sealed to prevent insects and rodents from entering during the winter. October 2006.

Expansion joints in the acclimation pond were filled with sealant to slow the deterioration of the cement. This is a short term attempt which will be followed up by a more permanent solution. November 2006.

A plywood fish slide was constructed at the fish barrier spillway. The slide will provide a less harmful landing on the concrete for downstream migrating smolts/ parr and adult steelhead that are moving down after spawning. February 2007.

MAINTENANCE PROJECTS ACCOMPLISHED BY CONTRACTORS

Wallowa Hatchery

Lep's Welding modified the stainless steel spawning table to allow better access to the anesthetic tank and handling fish. January 2007.

Leroy Bennett was hired to apply herbicides at all three facilities to control weeds. June 2007.

Casper Roofing re-roofed the north side of the manager's house with new felt and shingles. June 2007.

Rogers Asphalt repaired areas of deteriorating and sinking asphalt around the office building and bridge approaches. August 2007.

Waterwell Developing and Surveys videoed the upper well casing to determine if there was a loss of water occurring in the 942 foot deep well. The camera found no water loss in the upper 577 feet of the well. At 573 feet down the camera ran into a 6" pipe that blocked passage of the camera. The reason for the pipes presence is a mystery. They could only speculate that at one time someone dropped a section of pipe in the well while trying to "fish" something out of the well. The pipe is not blocking water flow and has been there since at least the 1980's. We contacted a company that could remove the pipe and he quoted a price of over \$5000 to remove it. Since the well pump is only 378' down and flow has not been reduced by the mystery pipe, we could not justify this expenditure. September 2007.

Purswell's Pump Company removed and subsequently replaced the upper well pump and associated wiring and plumbing in hopes of gaining the water flow back to the historic flow of 80+ gpm. They found several holes in the 4" pipe which was thought to be the reason for the flow loss. After testing the new pump and completing drawdown and recovery tests it was determined that the well only has a sustainable flow of 47 gpm. One possibility for our loss of flow could be the 1315 foot deep City of Enterprise well which was drilled in 1996 and now provides 1023 gpm for the community. September 2007.

Tony's Heating and AC completed annual heating and air conditioning maintenance at all three facilities.

Rahn Sanitary provided septic maintenance, system inspection and ADA portable toilet rental throughout the year.

E.C. Power Systems completed the annual inspection and maintenance of all three facility's backup generators.

Big Canyon Facility

Tony's Heating replaced the oil burning furnace with a propane furnace after a potentially hazardous hole was discovered in the fire box of the oil burner. March 2007.

Little Sheep Facility

There were no renovations or major repairs made at Little Sheep Facility this year.

MAJOR PURCHASES

Well Pump, Wiring, Air line	\$3,719
Upper Well camera flow investigation	\$775
Upper Well 4" black iron pipe and fittings	\$3,857
Poly tank for adult holding	\$600
Top soil and Maple trees	\$2699
Fish Food	\$9707
INAD participation fee	\$800
DEQ water analysis	\$789

MAJOR REPAIRS and MAINTENANCE

Managers house roof	\$2,670
Replace heating system at Big Canyon	\$~4,000
Asphalt at Wallowa Hatchery	\$4,904
Upper Well Removal and Install	\$4,990
Intake storage building, shingles, and paint	\$1,125
Jensorter maintenance	\$853
Spawning table modification	\$2,385
220 volt plug and light installation in spawning room	\$916
New door for Lib truck building	\$812
Weed spraying at 3 facilities	\$636
Annual maintenance on backup generators at 3 facilities	\$2,728
Annual hoist inspections at 3 facilities	\$600
Expansion joint caulk	\$412
Bollards around propane tank	\$400

Adult Returns to Hatchery

Steelhead Wallowa Stock BY07

Big Canyon Facility	
Date of first return:	February 16, 2007
Date of last return:	May 21, 2007
Number of females returning:	464
Number of males returning:	351
Date of peak returns:	March 16, 2007
Number of fish released to spawn naturally:	27 females, 21 males
Number of fish planted for angling opportunity:	
<i>Roulet Pond</i>	24 females, 31 males
<i>Wallowa River</i>	48 females, 41 males
Mortality of all adult returns:	0 females; 0 males

Wallowa Fish Hatchery	
Date of first return:	February 14, 2007
Date of last return:	May 21, 2007
Number of females returning:	1,401
Number of males returning:	1,359
Date of peak returns:	March 21, 2007
Number of fish released to spawn naturally:	7 females, 6 males
Number of fish planted for angling opportunity:	
<i>Ladd Pond</i>	15 females, 25 males
<i>Marr Pond</i>	38 females, 62 males
<i>Wallowa Wildlife Pond</i>	36 females, 34 males
Mortality of all adult returns:	2 females; 5 males

Wallowa Fish Hatchery - <i>Fall Caught Brood</i>	
Date of first return:	October 13, 2006
Date of last return:	October 20, 2006
Number of females returning:	34
Number of males returning:	43
Date of peak collection:	October 20, 2006
Number of females released to spawn naturally:	0
Number of males released to spawn naturally:	0
Mortality of all adult returns:	0 females; 2 males

Fall Caught Brood are Wallowa stock steelhead which were collected from the lower Grande Ronde River by angling during October 2005. They were spawned exclusively with other Fall Caught Brood fish and their offspring will be reared and marked separately from steelhead that returned to Wallowa Fish Hatchery in the spring of 2007. Survival of progeny returning from both groups will be evaluated.

**Steelhead
Imnaha Stock BY07**

Little Sheep Creek Facility	
Date of first return:	March 12, 2007
Date of last return:	May 21, 2007
Number of females returning:	949
Number of males returning:	763
Date of peak returns:	March 26, 2007
Number of fish released to spawn naturally:	119 females, 122 males
Number of fish outplanted to Big Sheep Creek:	750 females, 568 males
Mortality of all adult returns:	0 females; 2 males

Spawning Record

**Steelhead
Wallowa Stock BY07** (*includes Fall Caught Brood fish*)

Wallowa Fish Hatchery

Date Spawned	Number of Eggs Taken	Females Spawned	Males Spawned
3/14/07	99,600	19	15
3/21/07	179,050	33	28
3/28/07	210,500	39	39
4/04/07	216,000	39	38
4/11/07	225,650	39	38
4/18/07	154,550	31	31
4/25/07	92,500	17	23

Total number of females spawned:	217
Total number of males spawned:	218
Total number of green eggs:	1,177,850
Total number of eyed eggs:	1,080,180
Number of eggs retained for rearing:	0*
Number of eyed eggs shipped:	1,045,830
Date of last spawning:	4/25/07

**1,000 eyed eggs were transferred to STEP, and the remainder were shipped to Irrigon Fish Hatchery for incubation and rearing.*

Spawning Record

Steelhead Imnaha Stock BY07

Little Sheep Creek Facility

Date Spawned	Number of Eggs Taken	Females Spawned	Males Spawned
3/20/07	34,880	7	7
3/27/07	43,030	9	8
4/03/07	59,000	11	11
4/10/07	35,850	6	5
4/17/07	81,050	16	16
4/24/07	57,050	12	9
5/01/07	60,950	12	11
5/07/07	17,380	4	2
5/14/07	8,800	2	2

Total number of females spawned:	79
Total number of males spawned:	71
Total number of green eggs:	397,990
Total number of eyed eggs:	355,490
Number of eggs retained for rearing:	0*
Number of eggs shipped:	342,280
Date of last spawning:	5/14/07

**Unfertilized eggs and milt were transported to Wallowa Fish Hatchery for fertilization.
All eyed eggs were shipped to Irrigon Fish Hatchery for incubation and rearing.*

Fingerlings Reared

Rainbow Trout

Cape Cod Triploid Stock BY05

120 fish were killed due to the presence of whirling disease; the remaining 70 fish were transferred to the hatchery display pond.

Smolts Reared

**Spring Chinook – Captive Brood Program
Grande Ronde River Stock BY05**

Number smolts produced:	150
Weight of smolts produced (lbs.):	13.60
Percent mortality to transfer:	0%
Average number/pound of smolts produced:	11.03
Conversion rate:	1.04

**Spring Chinook – Conventional Program
Grande Ronde River Stock BY05**

Number smolts produced:	149
Weight of smolts produced (lbs.):	14.33
Percent mortality to transfer:	4.5%
Average number/pound of smolts produced:	10.39
Conversion rate:	1.13

**Spring Chinook – Captive Brood Program
Catherine Creek Stock BY05**

Number smolts produced:	300
Weight of smolts produced (lbs.):	11.72
Percent mortality to transfer:	0.0%
Average number/pound of smolts produced:	25.60
Conversion rate:	1.11

**Spring Chinook – Captive Brood Program
Lostine River Stock BY05**

Number smolts produced:	290
Weight of smolts produced (lbs.):	10.0
Percent mortality to transfer:	3.7%
Average number/pound of smolts produced:	29.00
Conversion rate:	1.12

Smolts Reared

Spring Chinook – Captive Brood Program Lostine River Stock BY05

Number smolts produced:	290
Weight of smolts produced (lbs.):	10.0
Percent mortality to transfer:	3.7%
Average number/pound of smolts produced:	29.00
Conversion rate:	1.12

Steelhead Wallowa Stock BY06

Number of smolts produced:	801,491*
Weight of smolts produced (lbs.):	197,494.00
Percent mortality to stocking:	8.39%
Average number/pound of smolts produced:	4.05
Conversion rate:	1.02 at Irrigon Fish Hatchery

**Irrigon Fish Hatchery reared 805,008 smolts weighing 181,005 pounds for this program. A total of 322,368 smolts survived to release from Big Canyon Acclimation Facility. A total of 479,123 smolts survived to release from Wallowa Acclimation Facility.*

Pounds produced at Wallowa Fish Hatchery facilities totaled 16,489. Conversion rates at Big Canyon and Wallowa Acclimation facilities were 1.21 and 0.96, respectively.

Steelhead Imnaha Stock BY06

Number smolts produced:	267,842*
Weight of smolts produced (lbs.):	59,234.00
Percent mortality to stocking:	10.4%
Average number/pound of smolts produced:	4.52
Conversion rate:	1.12 at Irrigon Fish Hatchery

**Irrigon Fish Hatchery reared 269,264 smolts weighing 55,114 pounds for this program. A total of 100,038 smolts weighing 22,775 pounds were direct-stream released to Big Sheep Creek from Irrigon Fish Hatchery. A total of 167,804 smolts survived to release from Little Sheep Creek Facility, where they were acclimated prior to release; of these, 9,701 residuals were trucked to Kinney Lake. Pounds produced at Little Sheep Creek Facility totaled 4,140, and the conversion rate was 1.15.*

Food Fed and Weight Gain

**Chinook – Captive Broodstock Program
Grande Ronde River Stock BY05**

Wallowa Hatchery	
Total pounds of food fed	5.17
Conversion rate	1.04
Total pounds weight gained - all sizes produced	4.95

**Chinook – Captive Broodstock Program
Grande Ronde River Stock BY06**

Wallowa Hatchery	
Total pounds of food fed	2.01
Conversion rate	0.89
Total pounds weight gained - all sizes produced	2.26

**Chinook – Conventional Program
Grande Ronde River Stock BY05**

Wallowa Hatchery	
Total pounds of food fed	7.69
Conversion rate	1.15
Total pounds weight gained - all sizes produced	6.70

**Chinook – Conventional Program
Grande Ronde River Stock BY06**

Wallowa Hatchery	
Total pounds of food fed	5.72
Conversion rate	1.01
Total pounds weight gained - all sizes produced	5.64

**Chinook – Captive Broodstock Program
Catherine Creek Stock BY05**

Wallowa Hatchery	
Total pounds of food fed	9.30
Conversion rate	1.08

Total pounds weight gained - all sizes produced	8.65
Food Fed and Weight Gain	

**Chinook – Captive Broodstock Program
Lostine River Stock BY05**

Wallowa Hatchery	
Total pounds of food fed	9.00
Conversion rate	1.01
Total pounds weight gained - all sizes produced	8.91

**Steelhead
Wallowa Stock BY06**

Big Canyon Facility	
Total pounds of food fed	5,250.00
Conversion rate	1.19
Total pounds weight gained - all sizes produced	4,402.00

**Steelhead
Wallowa Stock BY06**

Wallowa Acclimation Pond	
Total pounds of food fed	16,150.00
Conversion rate	1.34
Total pounds weight gained - all sizes produced	12,087.00

**Steelhead
Imnaha Stock BY06**

Little Sheep Creek Facility	
Total pounds of food fed	4,750.00
Conversion rate	1.15
Total pounds weight gained - all sizes produced	4,319.00

Food Fed and Weight Gain

Rainbow Trout Cape Cod Triploid Stock BY06

Wallowa Hatchery	
Total pounds of food fed	8.70
Conversion rate	2.03
Total pounds weight gained - all sizes produced	4.28

On Hand at Wallowa Fish Hatchery September 30, 2006

Fish On Hand - BY06

Species	Stock	Number
Spring Chinook	Grande Ronde River Captive Brood	151
Spring Chinook	Grande Ronde Conventional	155

FY07 Stocking

Total number of distribution trips:	3*
Number of fry stocked	0
Weight of fry stocked:	0 lbs.
Number of fingerlings stocked:	0
Weight of fingerlings stocked:	0 lbs.
Number of smolts stocked:	969,295
Weight of smolts stocked:	233,973 lbs
Date, location, number and weight at each stocking:	See Attached

*Two trips were to transport Captive Broodstock to Manchester and Bonneville Hatchery.

Wallowa Fish Hatchery and Associated Facility Stocking Records
October 1, 2006 through September 30, 2007

HATCHERY	SPECIES	LOT	TYPE	DATE	FROM/TO	NO/LB	MORTS	NUMBER STOCKED	POUNDS STOCKED
BIG CANYON	SUMMER STEELHEAD	056 06	LIBERATION	4/11/07	DEER CREEK	4.05	0	79,398	19,604.00
BIG CANYON	SUMMER STEELHEAD	056 06	LIBERATION	4/12/07	DEER CREEK	4	0	78,544	19,636.00
BIG CANYON	SUMMER STEELHEAD	056 06	LIBERATION	5/1/07	DEER CREEK	3.95	0	82,352	20,849.00
BIG CANYON	SUMMER STEELHEAD	056 06	LIBERATION	5/2/07	DEER CREEK	4.35	0	82,074	18,868.00
LITTLE SHEEP	SUMMER STEELHEAD	029 06	LIBERATION	4/10/07	SHEEP CR, L	4.6	0	158,103	34,370.00
LITTLE SHEEP	SUMMER STEELHEAD	029 06	LIBERATION	5/3/07	KINNEY LK	4.6	0	9,701	2,109.00
WALLOWA ACC	SUMMER STEELHEAD	056 06	LIBERATION	4/8/07	SPRING CR	4.05	0	183,603	45,334.00
WALLOWA ACC	SUMMER STEELHEAD	056 06	LIBERATION	4/9/07	SPRING CR	3.9	0	173,782	44,559.00
WALLOWA ACC	SUMMER STEELHEAD	056 06	LIBERATION	4/28/07	SPRING CR	4.25	0	121,738	28,644.00
WALLOWA	SPRING CHINOOK	080 05	TRANSFER	5/10/07	BONNEVILLE HATCHERY	10.4	0	149	14.33
WALLOWA	SPRING CHINOOK	080Z05	TRANSFER	5/10/07	BONNEVILLE HATCHERY	11	0	150	13.60
WALLOWA	SPRING CHINOOK	200Z05	TRANSFER	5/3/07	MANCHESTER	29	0	290	10.00
WALLOWA	SPRING CHINOOK	201Z05	TRANSFER	5/10/07	BONNEVILLE HATCHERY	25.6	0	300	11.72
WALLOWA	SPRING CHINOOK	200F05	SHIP	5/3/07	MANCHESTER RESEARCH LAB	17	0	327	19.24