

WALLOWA FISH HATCHERY

FY2003

INTRODUCTION

LEFRIG	✓
KRAKKER	✓
STARR	✓
ANDERSON	
FROSCHER	

Location

Wallowa Fish Hatchery is located in northeast Oregon, one mile west of Enterprise. The hatchery is situated along Spring Creek, one mile from the confluence with the Wallowa River and 613 river miles from the Pacific Ocean, along a route that encompasses Spring Creek and the Wallowa, Grande Ronde, Snake and Columbia rivers. Two satellite stations, Big Canyon Facility (Wallowa River system) and Little Sheep Creek Facility (Imnaha River system) are used for adult trapping, smolt acclimation, and/or spawning. Big Canyon Facility is located approximately 30 miles west of Wallowa Fish Hatchery, and Little Sheep Creek Facility is located approximately 30 miles east of the hatchery.

OBJECTIVESMitigation Goals

Wallowa Hatchery is operated as part of the Lower Snake River Compensation Program. Mitigation goals include collection of 1,100,000 (green) Wallowa stock summer steelhead eggs and 448,000 (green) Imnaha stock summer steelhead eggs. The smolt release goal for the Wallowa stock is 870,000 smolts. The Imnaha stock goal is 330,000 smolts; 230,000 to Little Sheep (acclimated release) and 100,000 to Big Sheep (direct steam release).

SUMMER STEELHEADAdult Returns

We had a strong run of returning adult steelhead to all three facilities during the 2003 season. The 2003 adult returns ranged from 54% to 71% of the 2002 returns. Adults collected this past season included Wallowa (5603) stock, collected at Wallowa Fish Hatchery and Big Canyon Facility, and Imnaha (2903) stock, collected at Little Sheep Creek Facility.

Wallowa Fish Hatchery staff trapped 2,090 hatchery origin adults (935 males and 1,155 females), down from the 2,951 hatchery steelhead collected in 2002. We also collected three males and seven females of natural origin. These adults were transported back to the Wallowa River and released to spawn naturally.

A total of 1,369 hatchery adults (545 males and 824 females) returned to Big Canyon Facility, about half of the 2,736 adults captured in 2002. In addition, 140 steelhead of natural origin (48 males and 92 females) were collected and passed upstream to spawn naturally, down from the 209 natural-origin adults collected in 2002.

RECEIVED

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LSRCP OFFICE

A total of 1,904 hatchery adults (824 males and 1,080 females) returned to Little Sheep Creek Facility in 2003, slightly more than half of the 3,271 hatchery fish trapped in 2002. In addition, 99 steelhead of natural origin (47 males and 52 females) were collected in 2003, down from the 203 adults captured at Little Sheep Creek Facility in 2002.

Egg Production - Wallowa Stock (5603) Summer Steelhead

A total of 1,206,310 Wallowa stock eggs were taken during the 2003 spawning season, all from fish returning to Wallowa Fish Hatchery. The resulting 977,000 eyed eggs were shipped to Irrigon Fish Hatchery for incubation and rearing. Egg loss was 10.6%, up from last year's 8.7% loss, but still lower than the average loss projected in our annual operating plan.

Egg Production - Imnaha Stock (2903) Summer Steelhead

A total of 467,350 Imnaha stock eggs were taken at Little Sheep Creek Facility during the 2003 season. The resulting 408,320 eyed eggs were shipped to Irrigon Fish Hatchery for incubation and rearing. Egg loss was 12.6% for the season, well below last year's egg loss of 17.3%.

Summer Steelhead Smolt Acclimation

The Wallowa Fish Hatchery acclimation facility acclimated and released 524,388 Wallowa stock (5602) smolts. Big Canyon Facility released 292,121 (5602) acclimated smolts. An additional 8,880 non-migrants from Wallowa Acclimation Pond were released into Kinney Lake and 2,014 non-migrants from Big Canyon Facility were released into Morgan Lake. These fish remained in the ponds at the end of their volitional release periods and exhibited sex ratios of approximately 70% male. These traits made them high-risk candidates for residualization and Northeast Oregon fish managers chose to stock them in ponds. Little Sheep Creek Facility acclimated and released a total of 234,042 Imnaha stock (2902) smolts. All summer steelhead acclimated at and released from the above facilities were reared at Irrigon Fish Hatchery.

CAPITAL CONSTRUCTION AND MAINTENANCE

We initiated a contract to repair the asphalt surrounding the Wallowa Acclimation Pond. The goal of the project was to arrest the asphalt deterioration and solve a drainage problem that could potentially undermine the foundation of the acclimation pond.

PROJECTS ACCOMPLISHED BY ODFW PERSONNEL

Wallowa Fish Hatchery Complex

Few major projects were completed by hatchery personnel, primarily due to limited staffing resulting from the assistant manager's retirement on 30 June 2003.

Painted the old hatchery building in October 2002, with the exception of some window trim painting that was postponed due to cold weather.

Fabricated 18 new flush gates for Wallowa Acclimation Pond. The flush gates were designed to facilitate pond cleaning and last well into the future.

Installed aluminum sheeting on the adult barrier-rack to prevent stranding of adult steelhead behind the barrier during high water flows.

Prepared the hatchery to receive parr collected for the Chinook captive broodstock program:

Installed vinyl windows in the captive broodstock parr room;

Plumbed two water systems into the circular tank area;

Plumbed both water sources into each tank;

Designed and assembled an external drain system for each tank;

Tested and built an aerator for each tank;

Designed and fabricated a no-maintenance lid system for each tank.

The staff expended a great deal of time and energy on preparation and implementation of several less tangible projects. Complying with the new DEQ permit requirements consumed a large amount of time this past year. We were involved in two other much more enjoyable projects: outplanting adults returning to Big Canyon Facility back to the Wallowa River to give anglers additional fishing opportunity, and distributing surplus high-quality adults to the Oregon Food Bank, Enterprise Food Bank, Elgin Food Bank and the Salvation Army. American-Canadian Food Processors assisted with food distribution by transporting fish to the Oregon Food Bank in Portland. Both of these projects were very popular with the public and enhanced the steelhead program's image significantly.

ODFW screens program personnel installed 300 feet of perforated pipe in the upper spring canal and covered it with washed gravel. The project was initiated to improve water quality and eliminate the possible introduction of pathogens carried by avian visitors.

Big Canyon Facility

There were no major projects completed at Big Canyon Facility by hatchery personnel during the report period.

Little Sheep Creek Facility

Completed several modifications to the facility to increase safety in the spawning room, improve adult handling and streamline spawning operations.

MAINTENANCE PROJECTS ACCOMPLISHED BY CONTRACTORS

Wallowa Fish Hatchery Complex

Replaced the roof on the captive broodstock building. Work was completed in mid-October, 2002.

Added a two-foot strip of asphalt to the asphalt adjoining the acclimation pond.

Sealed all cracks in the asphalt around the acclimation pond and office parking area.

Slurry-coated the pavement surrounding the acclimation pond.

Big Canyon Facility

Replaced water-damaged sheetrock in the visitor bathroom area and bunkhouse living room. The water damage was caused by a broken water pipe.

Little Sheep Creek Facility

Modified the adult holding pens and the wild fish holding pen to facilitate adult handling.

MAJOR PURCHASES

Pickup 4x4 - replacement	\$20,663
Notebook computer	1,777
Software – upgrade	1,034
Desktop computer - replacement	2,587
Pressure Washer - replacement	2,025
Storage Shed – Little Sheep	2,075
Walk behind weed trimmer	528
Enhance steelhead release site	<u>555</u>
 Total	 \$31,244

MAJOR REPAIRS and MAINTENANCE

Asphalt repair	\$26,915
Roofing material for captive building	894
Annual generator maintenance – all facilities	1,558
Furnace replacement - Little Sheep	2,391
Battery charger – Big Canyon generator	1,265
Safety modifications to liberation truck	2,772
Smolt acclimation pond modifications	895
Adult holding modifications – Little Sheep	1,759
Exterior maintenance – Captive building	2,490
Repair water damage – Big Canyon	2,025
Window replacement in bunkhouse - Little Sheep	1,593
Crane/hoist inspection – all facilities	500
F250 pickup repair	985
Lighting & electrical work	2,300
Annual heating unit service – all facilities	668
Lighting & electrical work	3,244
Fish tank lids and tank modifications	1,820
Fish tank plumbing supplies	797
Fish tank material	<u>721</u>
 Total	 \$55,592

Adult Returns to Hatchery

Steelhead Wallowa Stock BY03

Big Canyon Facility

Date of first return:	February 4, 2003
Date of last return:	June 2, 2003
Number of females returning:	916
Number of males returning:	593
Date of peak returns:	April 3, 2003
Number of females released to spawn naturally:	92
Number of males released to spawn naturally:	48
Mortality of all adult returns:	0 females; 0 males

Wallowa Fish Hatchery

Date of first return:	February 21, 2003
Date of last return:	June 2, 2003
Number of females returning:	1,162
Number of males returning:	938
Date of peak returns:	March 9, 2003
Number of females released to spawn naturally:	7
Number of males released to spawn naturally:	3
Mortality of all adult returns:	2 females; 6 males

Steelhead Imnaha Stock BY03

Little Sheep Creek Facility

Date of first return:	March 10, 2003
Date of last return:	June 2, 2003
Number of females returning:	1,132
Number of males returning:	871
Date of peak returns:	March 18, 2003
Number of females released to spawn naturally:	1,038*
Number of males released to spawn naturally:	778**
Mortality of all adult returns:	0 females; 0 males

**203 females were released into Little Sheep Creek and 835 were released into Big Sheep Creek to spawn naturally. **210 males were released into Little Sheep Creek and 568 were released into Big Sheep Creek to spawn naturally. Three of the males released into Little Sheep Creek contributed sperm to the Imnaha steelhead program before being passed upstream. The only pre-spawning mortalities were fish that had initially been outplanted to Big Sheep Creek and kept returning to Little Sheep Creek until they expired; no fish held for broodstock died.*

Spawning Record

**Steelhead
Wallowa Stock BY03**

Wallowa Fish Hatchery

Date Spawned	Number of Eggs Taken	Females Spawned	Males Spawned
3/19/03	111,700	18	18
3/26/03	169,150	29	29
4/02/03	222,400	39	39
4/09/03	230,460	42	42
4/16/03	228,800	42	42
4/23/03	152,700	33	33
4/30/03	91,100	19	23

Total number of females spawned:	222
Total number of males spawned:	226
Total number of green eggs:	1,206,310
Total number of eyed eggs:	1,074,200
Number of eggs retained for rearing:	0*
Number of eggs shipped:	977,000**
Date of last spawning:	4/30/03

**All eyed eggs were shipped to Irrigon Fish Hatchery for incubation and rearing.*

***A total of 97,200 eyed eggs were destroyed at Wallowa Fish Hatchery as excess to program needs.*

Spawning Record

**Steelhead
Imnaha Stock BY03**

Little Sheep Creek Facility

Date Spawned	Number of Eggs Taken	Females Spawned	Males Spawned
3/25/03	85,350	15	15
4/01/03	70,290	13	14
4/08/03	55,540	9	9
4/15/03	100,560	18	20
4/22/03	60,010	11	11
4/29/03	38,760	7	7
5/06/03	28,960	6	6
5/12/03	27,880	5	6

Total number of females spawned:	84
Total number of males spawned:	90*
Total number of green eggs:	467,350
Total number of eyed eggs:	408,320
Number of eggs retained for rearing:	0**
Number of eggs shipped:	408,320
Date of last spawning:	5/12/03

**Three males were live spawned and immediately passed above the weir.*

***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.*

Spawning Record

***O. mykiss* Breeding Experiment**

Wallowa Stock Steelhead, Prairie Creek Stock Wild Rainbow, BY03

Wallowa Fish Hatchery

Date Spawned	Number of Eggs Taken	Females Spawned	Males Spawned
3/26/03	1,122	1 StS	1 StS
3/26/03	881	1 StS	2 Rb
3/26/03	2,413	3 Rb	3 Rb

Total number of females spawned:	2 Steelhead, 3 Rainbow Trout*
Total number of males spawned:	3 Rainbow Trout**
Total number of green eggs:	4,416
Total number of eyed eggs:	4,104
Number of eggs retained for rearing:	0***
Number of eggs shipped:	4,104
Date of last spawning:	3/26/03

**One Dixie cup of viable eggs was taken from each steelhead female. The majority of each steelhead female's eggs went into Wallowa Fish Hatchery production.*

***A total of three rainbow males was used for this experiment. Two of these contributed sperm to the steelhead female x rainbow male cross. All three contributed sperm to the rainbow x rainbow cross.*

****Eyed eggs were shipped to Irrigon Fish Hatchery for incubation and rearing.*

Smolts Reared

Steelhead**Wallowa Stock BY02**

Number of smolts produced:	816,509*
Weight of smolts produced (lbs.):	198,332.00
Percent mortality to stocking:	4.3%
Average number/pound of smolts produced:	4.12
Conversion rate:	1.03 at Irrigon Fish Hatchery

**Irrigon Fish Hatchery reared 830,090 smolts weighing 178,102.96 pounds for this program. A total of 292,121 smolts survived to release from Big Canyon Acclimation Facility. A total of 524,388 smolts survived to release from Wallowa Acclimation Facility. In addition, 2,014 non-migrants were released into Morgan Lake from Big Canyon Facility and 8,880 more were released into Kinney Lake from Wallowa Acclimation Facility. Both releases took place on 6/04/2003.*

Pounds produced at Wallowa facilities totaled 23,169. Conversion rates at Big Canyon and Wallowa Acclimation facilities were 0.95 and 1.10, respectively.

Steelhead**Imnaha Stock BY02**

Number smolts produced:	234,042*
Weight of smolts produced (lbs.):	54,813.00
Percent mortality to stocking:	3.2%
Average number/pound of smolts produced:	4.27
Conversion rate:	1.11 at Irrigon Fish Hatchery

**Irrigon Fish Hatchery reared 234,499 smolts weighing 49,587.70 pounds for this program. All smolts were acclimated at Little Sheep Creek Facility. A total of 234,042 smolts survived to release. Pounds produced at Little Sheep Creek Facility totaled 4,233.00, and the conversion rate was 1.19.*

Food Fed and Weight Gain

**Steelhead
Wallowa Stock BY02**

Big Canyon Facility	
Total pounds of food fed	6,000
Conversion rate	0.95
Total pounds weight gained - all sizes produced	6,342

**Steelhead
Wallowa Stock BY02**

Wallowa Acclimation Pond	
Total pounds of food fed	18,550
Conversion rate	1.10
Total pounds weight gained - all sizes produced	16,827

**Steelhead
Imnaha Stock BY02**

Little Sheep Creek Facility	
Total pounds of food fed	5,050
Conversion rate	1.19
Total pounds weight gained - all sizes produced	4,233

FY03 Stocking

Total number of distribution trips:	0
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:	1,050,551
Weight of smolts stocked:	253,145 lbs
Date, location, number and weight at each stocking:	See Attached

**Wallowa Fish Hatchery and Associated Facility Stocking Records
October 1, 2002 through September 30, 2003**

FACILITY	SPECIES	LOT	DATE	RELEASE SITE	NO/LB	MORTS	NUMBER		POUNDS	
							STOCKED	STOCKED	STOCKED	STOCKED
BIG CANYON ACCLIMATION	SUMMER STEELHEAD	056 02	04/14/03	DEER CREEK	4.3	0	86,669	0	20,156	
BIG CANYON ACCLIMATION	SUMMER STEELHEAD	056 02	04/16/03	DEER CREEK	4.2	0	78,593	0	18,713	
BIG CANYON ACCLIMATION	SUMMER STEELHEAD	056 02	05/08/03	DEER CREEK	4.6	0	68,182	0	14,822	
BIG CANYON ACCLIMATION	SUMMER STEELHEAD	056 02	05/16/03	DEER CREEK	4.2	0	58,677	0	13,971	
BIG CANYON ACCLIMATION	SUMMER STEELHEAD	056 02	06/04/03	MORGAN LK	4.6	0	2,014	0	438	
LITTLE SHEEP ACCLIMATION	SUMMER STEELHEAD	029 02	04/09/03	SHEEP CR, L	4.3	0	123,266	0	28,667	
LITTLE SHEEP ACCLIMATION	SUMMER STEELHEAD	029 02	05/07/03	SHEEP CR, L	4.3	0	136,076	0	31,646	
WALLOWA ACCLIMATION	SPRING CHINOOK	200F01	03/31/03	BEAR CR	11.79	0	66	0	6	
WALLOWA ACCLIMATION	SUMMER STEELHEAD	056 02	04/11/03	SPRING CR	4.1	0	158,647	0	38,694	
WALLOWA ACCLIMATION	SUMMER STEELHEAD	056 02	04/15/03	SPRING CR	4.15	0	172,775	0	41,633	
WALLOWA ACCLIMATION	SUMMER STEELHEAD	056 02	05/07/03	SPRING CR	4.1	0	96,193	0	23,462	
WALLOWA ACCLIMATION	SUMMER STEELHEAD	056 02	05/15/03	SPRING CR	3.6	0	96,773	0	26,881	
WALLOWA ACCLIMATION	SUMMER STEELHEAD	056 02	06/04/03	KINNEY LK	4	0	8,880	0	2,220	