

Annual Report for Dworshak National Fish Hatchery

**Ahsahka, Idaho
Fiscal Year 2006**



Jan Pelt

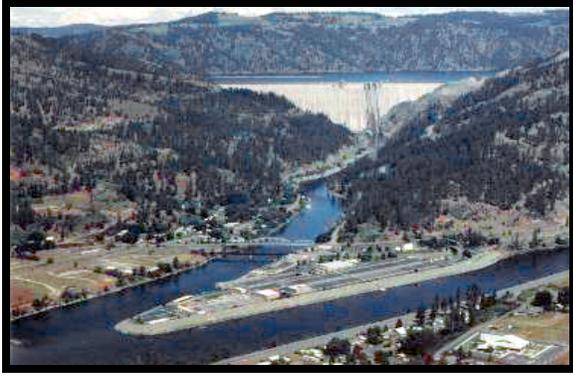
Complex Manager

1/16/07

Date

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Dworshak National Fish Hatchery at the confluence of the North Fork and main stem of the Clearwater River, below Dworshak Dam.

Dworshak National Fish Hatchery (DNFH) is located in North Central Idaho down river from Dworshak Dam, at the confluence of the North Fork and the main stem of the Clearwater River. Dworshak Dam was constructed by the Corps of Engineers (COE) between 1966-70. Operations of the hatchery was authorized by a 1969 COE Memorandum of Understanding with the United States Fish & Wildlife Service (USFWS). The hatchery has since served primarily as a mitigation hatchery for steelhead trout (*Oncorhynchus mykiss*), a unique run of the North Fork “B” strain threatened by the construction of Dworshak Dam. The USFWS has endeavored, over the past 30 years, to meet the “mitigation goal” of providing 20,000 adult steelhead to the Clearwater River and maintain the unique genetics of the stock.

In June, 1982, under the Lower Snake River Compensation Plan (LSRCP), DNFH was expanded from its primary function as a steelhead mitigation facility to include spring Chinook (*Oncorhynchus tshawytscha*) trapping, spawning and rearing. The new facilities were designed to rear 70,000 pounds of spring chinook to 20 fish per pound (fpp) for a total of 1.4 million smolts. Smolt numbers have since been reduced to 1.05 million because of reduced densities and rearing to a large size. The adult return goal for DNFH is 9,135 spring chinook (calculated using the 15 fpp smolt size, total rearing capacity, and 0.87 percent adult return rate guideline).

DNFH consists of a mechanical, electrical, water reuse and reconditioning system employing filtration, biological nitrification, pollution control and monitoring facilities, alarm system, water chillers, heaters, and numerous pumps. Initial construction at DNFH included 84 Burrow’s ponds, 64 nursery tanks, and 9 adult holding ponds. Twenty-five Burrow’s ponds (System I) were operated on a heated recycle water flow, for rearing steelhead smolts to the initial target size of 180 mm in only one year. In 1973, System II (25 ponds) and System III (34 ponds) were converted from single-pass, 2-year rearing cycle, to water reuse and heating for accelerated production growth. This second phase construction, with added mechanical systems (biological filters, electric grid, sand filters, U.V. lamps, chillers, and boilers), increased production capacity and allowed all three water systems to be environmentally controlled. In the late 1980’s, the target size for steelhead smolts was changed to 200 mm, based on data developed by FWS.

During the mid-1970’s, with DNFH not meeting either production or mitigation goals, major operational changes were made. Review and studies of the reuse systems, water temperature regime, water quality, and fish culture techniques were done by hatchery staff and university scientists. Corrective measures followed which removed the computerized pneumatic feed system, eliminated the ultraviolet treatment of water reuse, redesigned the water flows to maximize single-pass use and a return to a more hands-on basic fish culture. Selecting cooler water temperatures from Dworshak Reservoir during the summer, adding minerals (sodium chloride and potassium chloride) to a soft water supply, removing supersaturated nitrogen gas, along with other designed mechanical changes and more involvement of hatchery staff in monitoring fish culture, all contributed positively towards improving the hatchery’s program.

Further construction in the early 1980's added 18,000 square feet of nursery building, doubling the number of inside rearing tanks to 128. A new concept of biological filtration, known as a fluidized sand filter, replaced the oyster shell media in System I. This filtration system has proven to be unworkable, and the ability to operate reuse in System I is no longer available. In FY03-04 (Fiscal Year), the COE replaced and upgraded System I biofilters with a new plastic bead media filtration system. This system was operated successfully for a short period (3 months) in 2004. Also in the 1980's, an additional thirty 8'x80' raceways were constructed under the LSRCP to provide production facilities for spring Chinook salmon. Additionally in the 1980's, 5 of the 9 adult holding ponds were converted to raceways for needed rainbow trout mitigation for Dworshak Reservoir.

The uniqueness of DNFH's water systems provides several options for egg incubation and rearing. Three temperature options are available for egg development through the incubators. Different temperature regimes are also available to the nursery tanks. The outside steelhead ponds are furnished single-pass river water from May into November, when desired temperatures can be obtained through selector gates at Dworshak Dam. A pump station on the North Fork Clearwater River, one mile down river from the Dam, is capable of providing 92,500 gpm of water. In Systems II and III, water reuse and heating is used during the colder months of November through March, enabling the hatchery to get the desired fish growth. During reuse, 10-percent new water enters the system to make up for loss. Temperatures in each of the three outside steelhead rearing systems can be controlled independently when reuse and heated water are available.

Beginning in 1992, the hatchery was supplied with an additional 6400 gpm of gravity flow Dworshak Reservoir water directly by pipeline. This "clean" water, furnishing egg incubators and nursery rearing, has afforded disease protection from *Infectious Hematopoietic Necrosis Virus* (IHNV) in the early production stages. During 1998, a water line was completed between Mechanical Building I and the main water line from the large boilers in Mechanical Building II. This line now enables us to heat all the nursery reservoir water for better steelhead production.

A Dworshak National Fish Hatchery Rehab Plan was prepared in 1990-91 by the COE. This rehab plan detailed major upgrades and needs of the then 20-year-old hatchery. The hatchery continues to work with the COE on line items identified in the rehab plan. Some of the rehabilitation project items will be accomplished with Operations & Maintenance (O&M) funding. Larger items will be funded directly by the COE.

Future projects requested from the COE include converting Burrow's ponds (BP's) to raceways, structural work on the Main Hatchery Building and replacing the Nursery Building roof.

Kooskia National Fish Hatchery (KNFH), 35 miles upriver from Dworshak on the Clearwater River, has operated as a Complex with Dworshak since 1978. Kooskia hatchery mitigates for water development in the Columbia River. The administrative headquarters for the Dworshak-Kooskia Complex is located at the Dworshak hatchery. The Idaho Fishery Resource Office (IFRO) & Idaho Fish Health Center (IFHC) are also included in the Dworshak Complex.

DNFH produces 2.1 million steelhead smolts at 6 fpp (200 mm in length) and 1.05 million yearling Chinook salmon smolts at 18 to 20 fpp (140 to 145 mm in length). The hatchery's annual production capacity exceeds 400,000 pounds. Mitigation goals to the Clearwater River are 20,000 returning adult steelhead and 9,135 adult spring Chinook. Steelhead goals are being

satisfied in most years and were in 2006. Spring Chinook adult returns before 2000 were well below mitigation, but for three years (2000-2003) were near or over mitigation goals. Estimated adult returns for 2006 were 2,177, well short of the 9,135 goal for Dworshak.

Rainbow mitigation for Dworshak Reservoir is in an interim phase, with fish exchange with Idaho Fish and Game (IDFG) and use of production at Hagerman National Fish Hatchery (NFH). The IDFG now stock catchable size, sterile rainbow in reduced numbers because of fish health and species interaction concerns with native cutthroat trout, while the FWS produce replacement fish to stock other Idaho managed waters.

This report covers the period of hatchery activities from October 1, 2005, to September 30, 2006.

Dworshak Hatchery Production Summary FY2006

Steelhead Trout Brood Year 2005

At the beginning of October 2005, all of the summer steelhead trout (SST) from Brood Year 2005 (BY2005) were in outside Burrows ponds (BP's). Overall mortality from October 1, 2005 through final release on April 21, 2006 was about 7 percent. The final release number was 2.1million SST smolts at 6.4 fish per pound (fpp) with an average total length of 193 mm (7.6 inches). See Table 1 for details.

Table 1. Fish inventory summary for BY2005 SST on October 1, 2005 and final release summary in April, 2006.

Location	October 1, 2005				Oct 1 - April 22 % loss	Final Release April 11 - 21, 2006			
	Number	Wt (lbs)	fpp	Lgth mm		Number	Wt (lbs)	fpp	Lgth mm
Syst I	572,847	42,195	13.6	151	2.2	560,415	104,818	5.3	206
Syst II	721,418	26,832	26.9	120	5.1	684,374	120,442	5.7	202
Syst III	969,395	23,594	41.1	104	10.6	867,091	104,837	8.3	178
Tot/Ave	2,263,660	92,621	24.4	124	6.7	2,111,880	330,097	6.4	194

Source: Dworshak National Fish Hatchery (DNFH) - Final Release Summary, May, 2006.
Monthly Inventory Summary (MIS), October 1, 2005.
Production Narrative, May, 2006.

BY2005 SST were reared entirely in BP's. Table 2 illustrates the survival rates of various stages of development for BY05 SST along with a five-year comparison.

Table 2. Survival summary from green eggs to released smolts, BY2001 through BY2005 SST reared at DNFH.

Brood Year	% Survival from Previous Stage				Cumulative % Survival		
	(Green to) Eyed Egg ¹	Tanked Fry	Ponded Fingerlings	Smolt Release	Green Egg to Smolt ²	Eyed Egg to Smolt	Tanked Fry to Smolt
2001	90.7	90.0	91.3	96.8	61.1	80.7	84.6
2002	87.6	91.2	92.8	97.0	58.0	82.0	90.0
2003	92.5	93.4	90.6	91.8	56.1	77.8	83.2
2004	93.2	89.1	91.7	82.1	48.3	67.0	75.2
2005	91.6	95.5	88.6	87.1	61.9	73.7	77.2
5 Yr Ave	91.1	91.8	91.0	90.9	57.1	76.2	82.0
2006* YTD	91.6	93.8	98.7				

Egg counter malfunction BY2006, numbers are estimates. Note: Data are only for SST reared entirely at DNFH.

1 % Survival Green to eyed = Enumerated eyed eggs / Enumerated eyed eggs + enumerated dead eggs. i.e. survival after culling bad trays, females.

2 Green eggs to smolt = Total green eggs (incl females culled during enum) – Magic Valley green eggs - Clearwater Hatchery eggs.

Source: DNFH- Egg Enumeration and Disposition Summary- Egg Enumeration ST06.xls
Nursery Loss-nulo06st.wpd; Spawning/Egg Take Plan, BY2006 SST

Reuse and the boilers for heated water were turned on December 14, 2005 for System II. The boilers were turned off in System II on March 3 and reuse was turned off March 6.

Both reuse and the boiler were turned on December 20, 2005 for System III. Due to a heavy infestation of *Ichthyophthirius multifiliis* (ICH), heated water and reuse was turned off in System III on January 20, 2006. They were both turned back on in this system on March 6. Heated water was turned off April 3 and the reuse was turned off April 4.

System I did not use the water reuse system during the rearing season.

Some SST in all Systems received coded-wire-tags (CWT's) and left ventral (LV) clips. As in Fiscal Year 2005 (FY2005), there were no freeze brands placed on the SST this year because enough data is available from branding in past years to assess the needed information. The various marks are used for studies concerning system contribution of these fish to later adult returns, off-site release contribution, broodstock evaluations, and early-run predictions at Lower Granite Dam. Fish which received PIT tags will be monitored for residual studies and fish passage center studies. A total of 121,812 BY2005 SST were released with CWT's, and 1,494 were released with PIT tags in April, 2006. See the marking/tagging tables under each System for details.

There were 215,375 BY2005 SST which were unmarked and untagged released from Dworshak. This represents about 10 percent of the BY2005 SST released at Dworshak. This is being done under the Harvest Settlement Agreement between the United States Fish & Wildlife Service (USFWS) and the Columbia River Tribes.

System I

For BY2005 SST, System I production included 24 BP's. This System had 572,847 SST in it at the start of the fiscal year and 560,415 at release in April, 2006 (Table 3).

Table 3. System I BP production, BY2005 SST, FY2006.

Month	Year	1st of the Month			Growth During Month		% Mortality	Ave Temp F for Month
		Number	fpp	L mm	L mm	L in		
October	05	572,847	13.6	151	14	0.54	1.1	45.8
November	05	566,386	10.5	165	12	0.47	0.7	47.1
December	05	564,695	8.5	177	9	0.36	0.3	44.6
January	06	563,211	7.3	186	6	0.25	0.2	42.4
February	06	562,220	6.6	192	5	0.20	0.1	40.7
March	06	561,500	6.1	197	8	0.32	0.1	40.8
April	06	560,761	5.4	205	1	0.03	0.1	41.8
April 10-21 Release Numbers	06	560,415	5.4	206			2.2	

Source: DNFH - MIS, Sept 2005-May 2006; Final Release summary; BY2005 SST Production Narratives Sept-May; 2005-2006: Daily Water Temperature Records, Oct-April, 2005-2006

No reuse or heated water was needed this year on SST in System I as the fish reached the target release size of 200mm on river water alone. Adipose fins were clipped on BY2005 SST in System I from May 23, 2005 until July 6. Other marking of BY2005 SST in System I is summarized in Table 4.

Table 4. Marking and tagging of BY05 SST, System I, FY2006.

Released from BP #	Date	Number CWT	Number PIT tags	Fin Clips	Study	Release Site
BP 1	11/08/05	22,203		AD LV	Early Return Progeny	Dworshak
BP 1	01/11/06		250	AD	Smolt Monitoring @ Fish Passage Ctr	Dworshak
BP 41	11/14/05	22,101		AD LV	System I Contribution	Dworshak
BP 43	01/11/06		248	AD	Smolt Monitoring @ Fish Passage Ctr	Dworshak
Total		44,304	498			

Fin Clips = AD-Adipose fin; LV-Left ventral fin

Source: DNFH- MIS System I, November 2005
IFRO- MRKLPN06.wk4

During the 10 months of outside rearing of fish in System I, SST were occasionally treated with formalin for small outbreaks of parasites. Mortality for fish in System I from October 1, 2005 until final release in April, 2006 was approximately 2.2 percent. Details of the formalin treatments are in the chemical treatment log at Dworshak.

On April 10-13, 2006, there were 143,117 SST outplanted from System I. The Corps of Engineers (COE) assisted in outplanting the SST to Clear Creek and the South Fork of the Clearwater River at River Mile 8.7, Red House hole.

Direct release of 417,298 SST from System I took place on April 17 into the mainstem of the

Clearwater River. The total release from System I was 560,415 BY2005 SST (Final Release Summary, BY2005 SST).

System II

For BY2005 SST, System II production included 25 BP's. This System had 721,418 SST in it at the start of the fiscal year and 684,374 at release in April, 2006 (Table 5).

Table 5. System II production, BY2005 SST, FY2006.

Month	Year	1st of the Month			Growth During Month		% Mortality	Ave Temp F for Month
		Number	fpp	L mm	L mm	L in		
October	05	721,418	26.9	120	16	0.65	2.4	45.8
November	05	704,352	18.3	137	16	0.63	1.9	46.8
December	05	692,280	13.1	153	14	0.55	0.5	48.1*
January	06	688,562	10.1	167	11	0.44	0.2	50.9*
February	06	687,483	8.3	178	15	0.59	0.3	51.8
March	06	685,641	6.5	193	8	0.33	0.1	42.8
April	06	684,710	5.7	201	1	0.03	0.05	41.5
April 10-21 Release numbers	06	684,374	5.7	202			5.1	

System under heated reuse water for part or all of month

Source: DNFH - MIS, Sept 2005-May 2006
 Final Release summary, BY05 SST
 Production Narratives Sept-May, 2005-2006
 Daily Water Temperature Records, Oct-April, 2005-2006

Adipose fin clipping was done on BY2005 SST in System II from July 7 through July 25, 2005. Other marking of BY05 SST in System II is summarized in Table 6.

Table 6. Marking and tagging of BY2005 SST, System II, FY2006

Released from BP #	Date	Number CWT	Number PIT tags	Fin Clips	Study	Release Site
BP 2	11/10/05	22,277		AD LV	System II Contribution	Dworshak
BP 2	1/11/06		251	AD	Smolt Monitoring @ Fish Passage Ctr	Dworshak
BP 42	11/15/05	22,459		AD LV	System II Contribution	Dworshak
BP 42	1/11/06		248	AD	Smolt Monitoring @ Fish Passage Ctr	Dworshak
Total		44,736	499			

in Clips = AD-Adipose fin; LV-Left ventral fin

Source: DNFH- MIS System II, November 2005, January 2006
 IFRO- MRKLPN06.wk5

System II converted to reuse and the boilers for heated water on December 14, 2005. The boilers were turned off in System II on March 3 and reuse was turned off March 6.

Mortality was approximately 5.1 percent from October 1, 2005 until release in April, 2006.

On April 11-14, there were 326,481 SST outplanted from System II. The COE assisted in outplanting the SST to Clear Creek and the South Fork of the Clearwater River at River Mile 8.7, Red House hole.

Direct release of 357,893 SST from System II took place on April 19 into the mainstem of the Clearwater River. The total release from System II was 684,374 BY2005 SST (Final Release Summary, BY2005 SST).

System III

System III has 34 BP's. This System had 969,395 SST at the start of the fiscal year and 867,091 at release in April, 2006 (Table 7).

Table 7. System III production, BY2005 SST, FY2005.

Month	Year	1st of the Month			Growth During Month		% Mortality	Ave Temp F for Month
		Number	fpp	L mm	L mm	L in		
October	05	969,395	41.1	104	16	0.62	1.8	45.8
November	05	951,652	26.9	120	14	0.54	2.3	47
December	05	929,438	19.5	134	17	0.67	1.1	47.8*
January	06	919,603	13.6	151	6	0.24	1.4	48.4*
February	06	906,994	12.1	157	3	0.11	3.0	40.5
March	06	879,553	11.5	160	17	0.67	1.4	47.5
April	06	867,517	8.5	177	1	0.06	0.05	42.9
April 10-21 Release Numbers	06	867,091	8.3	178			10.6	

System under reuse part or all of month.

Source: DNFH - MIS, Sept 2005-May 2006

Final Release summary, BY2005 SST

Production Narratives Sept-May, 2005-2006

Daily Water Temperature Records, Oct-April, 2005-2006

Adipose fin clipping was done on BY2005 SST in System III from August 1 until August 24, 2005. Other marking of BY2005 SST in System III is summarized in Table 8.

Table 8. Marking and tagging of BY2005 SST, System III, FY2006.

Released from BP #	Date	Number CWT	Number PIT tags	Fin Clips	Study	Release Site
BP 73	11/17/05	21,141		AD LV	System III Contribution	Dworshak
BP 73	1/11/06		250	AD	Smolt Monitoring @ Fish Passage Ctr	Dworshak
BP 72	11/18/05	21,197		AD LV	System III Contribution	Dworshak
BP 74	1/11/06		247	AD	Smolt Monitoring @ Fish Passage Ctr	Dworshak
Total		42,338	497			

Fin Clips = AD-Adipose fin; LV-Left ventral fin

Source: DNFH- MIS System II, December 2005, January 2006,
Idaho Fish & Game (IDF&G)- Fish Marking Summary 2005

There were a total of 215,375 BY2005 SST from System III stocked into Newsome Creek and American River. These were fish raised and released from System III which received no fin clips to designate them as hatchery fish. These are the seventh generation of SST which will be released from Dworshak since 1984 without an external mark specifying a hatchery fish. This is being done under the Harvest Settlement agreement with the Columbia River Tribes.

System III converted to reuse and heated water on December 20, 2005. The boilers and reuse remained on in this System until January 20. At this time ICH infestations began causing significant mortality.

Both reuse and boilers were turned back on in System III on March 6, 2006. The boilers remained on until April 3 and reuse until April 6.

On April 10-13, there were 435,717 SST outplanted from System III (this includes the 215,375 unmarked tribal fish). The COE assisted in outplanting the SST to American River, Newsome Creek, Clear Creek and the South Fork of the Clearwater River at River Mile 8.7, Red House hole.

Direct release of 431,374 SST from System III took place on April 20-21 into the mainstem of the Clearwater River. The total release from System III was 867,091 BY2005 SST (Final Release Summary, BY2005 SST).

Distribution Summary

Release of BY05 SST began April 10 and ended April 21, 2006. Final release numbers are illustrated in Table 9.

Table 9. Fish distribution summary by site, BY2005 SST, April 10 to April 21, 2006.

Site	Number	Weight	fpp	Length	
				in	mm
Outplants 4/10 - 4/14					
Clearwater R. - Red House Hole	380,279	60,859	6.2	7.7	196
Clear Creek	309,661	52,769	5.9	7.9	200
Newsome Ck Unmarked SST	99,168	10,622	9.3	6.7	171
American R. - Unmarked SST	116,207	16,496	7.0	7.4	188
Subtotal	905,315	140,746	6.4	7.6	194
Direct Release 4/17 -4/21					
Main Stem of the Clearwater River	1,206,565	189,351	6.4	7.7	194
Totals/Averages	2,111,880	330,097	6.4	7.6	194

Source: Final Release Summary, BY2005 SST

Brood Year 2006

Adult Collection

Adult summer steelhead (SST) for Brood Year 2006 (BY2006) were collected in the fall of 2005 and in the winter and spring of 2006 to represent the entire run. The ladder was open from October 3, 2005 to October 17, then opened October 20 and closed the next day for collection of early-return SST. During this 15-day period there were 596 early-run steelhead collected for spawning in the spring of 2006. The ladder was also opened intermittently during the fall for collection of coho salmon for the Nez Perce Tribe (NPT). There were an excess of 635 BY2006 SST trapped during this process and anesthetized with carbon dioxide. They were then loaded onto NPT trucks and transported to Hog Island near Lewiston, Idaho, for release in the Clearwater River. The ladder was closed for the final time for coho collection on November 18, 2005. The ladder was reopened intermittently from February 21, 2006 throughout the spring to limit the number of SST entering the hatchery, and closed for the final time April 26. During this staggered ladder operation, a total of 3,243 adult SST entered the hatchery, including 323 jacks. There were also 29 wild SST trapped which were released back into the mainstem of the Clearwater River the day they were examined. Figure 1 illustrates the numbers of returning SST adults since 1994.

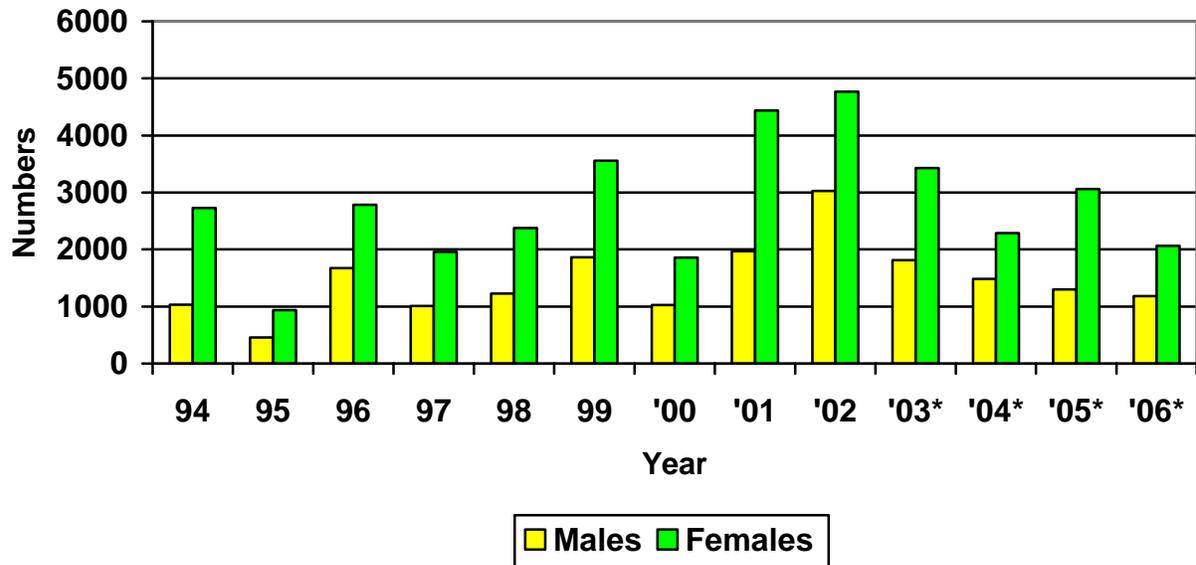


Figure 1. Dworshak adult SST returns 1994-2006

*Ladder only opened part of season

Source:DNFH -Spawning Report SST BY06

Spawning/Egg Take Plan SST BY06, ST06EgTk.wk4

IFRO - SST Rack Returns, Sth06ent.wk4

There were 16 fish of the 596 early returns which died before spawning began. Formalin treatments were started in October, 2005, and appeared to control fungus.

Spawning numbers/ratio

There were 1,911 SST spawned over the BY2006 season, 895 males (including 183 jacks) and 1,016 females. Females have always outnumbered males in returns to Dworshak so the goal of a 1:1 male:female spawning ratio is difficult to achieve. While the male:female return ratio was 1:1.7 for BY2006 SST, the spawning ratio was reduced to 1:1.4. Of the 183 jacks spawned during the season, 102 were for DNFH, 44 for Clearwater State Fish Hatchery (CWH), and 37 for Magic Valley State Fish Hatchery (MVH). These jack numbers are from the spawning table counts by the Idaho Fishery Resource Office (IFRO).

Idaho Fish Health Center Disease Sampling

On January 10, 2006, there were 50 adult males and 10 jacks from the early-returned BY2006 SST injected with salmon gonadotropin-releasing hormone analogue (sGnRHa). This was done to induce gamete maturation for spawning the following two weeks. These fish were transferred from Holding Pond 1 (HP1) into HP2 after injection. Of these injected males, there were 29 injected and two control males spawned during Take 1, and 29 injected and no controls were spawned during Take 2. The remaining males which were injected were mortalities before being used. All carcasses from injected males were disposed of in the landfill.

Approximately 3.1 percent (7/227) of the females sampled for MVH (Takes 6-7-8) tested positive for *infectious hematopoietic necrosis virus* (IHNV). Testing was done by personnel from the Idaho Fish Health Center (IFHC). Disease testing on eggs for CWH was done by the IDF&G

Eagle Creek Laboratory. Approximately 0.5 percent (1/187) of the females from Takes 5-6 for CWH tested positive for IHNV. All eggs taken for either MVH or CWH which tested positive for IHNV were discarded. There were 26.4 percent (28/106) adult SST sampled for Dworshak which tested positive for IHNV. Twenty-five of the 28 fish which tested positive were from the last egg Take on May 2. Dworshak does not cull eggs which test positive for IHNV in its production program.

Ponding of fingerlings out of the nursery

In an effort to reduce the amount of labor and formalin needed to treat later Takes of SST over the winter, the final 4 Takes were ponded in System I (25 ponds) this year rather than in System III (34 ponds). Therefore outside ponding of SST included Takes 1-5 into System III; Takes 6-8 into System II; and Takes 9-12 into System I.

Spawning Summary

A total of 12 egg Takes were spawned this season, beginning on January 24, 2006, and ending on May 2. There were 1,016 females and 895 males spawned and the average fecundity of SST enumerated at DNFH was 6,785 eggs/female. Early-returning adults (October) were spawned in Takes 1-2, and later returning adults (February-May) were spawned during Takes 3-12.

Egg Disposition

There were an estimated 6.9 million green eggs from BY2006 SST taken for all the programs at Dworshak. As was done in recent years, Dworshak incubated the CWH eggs until eye-up, at which time personnel from CWH shocked and transported the eggs for enumeration at the CWH facility. Eggs from only when one female (1/187) tested positive for IHNV for CWH. There were approximately 1.2 million eggs shipped to CWH from these two Takes. After enumeration, personnel from CWH stated there were 1.15 million eyed eggs available for their program, exceeding the 960,000 eyed egg target.

There were an estimated 1.5 million green eggs shipped from Dworshak to CWH for MVH from Takes 6-7-8. These eggs were shipped to CWH the same day spawning took place. Dworshak also provided 12,000 green eggs for IDF&G and Potlatch Pulp & Paper Mill School Outreach Program. These eggs were taken from Take 6 of Dworshak production. The hatchery also provided approximately 1,000 eyed eggs for aquarium-rearing at various elementary schools for the Information and Education program at Dworshak.

After shipping eggs for CWH, MVH, and Potlatch, Dworshak put an estimated 2.9 million eyed eggs into either hatching jars or incubator trays for its production

Research

Dworshak provided opportunities for three university research projects during BY2006 SST spawning, all from the University of Idaho (U of I). A summary of their research is in the BY2006 Steelhead Spawning Report.

Dworshak provided Matt Campbell from the IDF&G's Eagle Fish Genetics Lab in Eagle Idaho,

with fin clips from adult SST. His department is attempting to develop a genetic sampling and monitoring plan for Idaho's steelhead programs

Adult Disposition

There were 628 hatchery adults outplanted from Dworshak during the spring return of BY2006 SST. None returned to the hatchery. This outplanting was done by staff from Dworshak and the NPT. In addition, Dworshak donated 125 adult SST to the NPT on November 8, 2005. These fish were for tribal harvest training at the NPT Hatchery at Cherry Lane. These SST were categorized as outplanted by IFRO. There were also 29 wild fish which were caught in the trap this year. These fish were returned to the river the same day they were examined and not counted in the Adult Return data.

Usable fish carcasses from spawning and culling activities were provided to a processor to be packaged for human consumption under either a Food Bank program or a cooperative program with the Federal Bureau of Prisons. Complete adult disposition is illustrated in Table 1.

Table 1. Adult disposition of BY06 SST from Dworshak.

DESTINATION	NUMBER	COMMENTS
Bear/Eagle Program	183	Idaho Fish & Game bear program
Food Bank/Fed Bureau of Prisons	2,187	Latham Processing, Orofino, Idaho
Outplanted	628	None returned to Dworshak
Research	40	University research, School programs
Tribe	125	Nez Perce Tribal harvest training
Landfill	80	Carcasses deteriorated beyond use
Total	3,243	

Source: DNFH-Spawning Activity Report BY2006 SST, Final for BY2006 SST; Spawning and Run Summary, BY2006 SST
Nursery and Early Rearing

The first two egg-Takes were from early-return adults. Eggs were put into hatching jars in the nursery at an average rate of 18,000 eggs/tank. All eggs/fry were loaded at final rearing densities in the nursery so that no Takes needed to be subsequently split. This method reduces the amount of handling on the fish and will be repeated for BY2007 SST. When approximately 70 percent of the fry had hatched, the remaining fry were poured into the tank. Due to the lack of nursery space, Takes 10-12 were hatched in Heath trays (6,000 per tray). These were moved as fry from the incubation trays into vacated tanks once Take 1- 2 were transferred outside. Dead eggs and fry were picked and enumerated from each tank and tray. There was a 94 percent survival from the eyed-egg stage to feeding fry for BY2006 SST.

This year the fry averaged 74 fpp when moved out of the nursery into BP's. Fish which did not receive a CWT were transferred from the nursery directly to the adipose fin (AD) clipping trailer. The fins were clipped this year with an auto-trailer from the USFWS Columbia River Fisheries Program Office. From the trailer, fish were then distributed to the appropriate BP. Steelhead which received a CWT went directly from the nursery to a BP and were tagged during August and September, 2006.

A total of 2.58 million BY2006 SST were moved from the nursery to the BP's beginning with Take 1 on May 24, 2006, and ending with Take 12 on August 26. There were also 91,000 extra SST from Takes 4, 6, 7, and 8 which were transferred to the North Fork of the Clearwater River in Ahsahka, ID on August 14, 2006. These fish were 68 fpp and 88 mm total length and all received AD clips before release.

Feed

All steelhead in the nursery were fed Skretting feed for the third straight year with good results. Starter feed size #3 was omitted from the regime as it clogged the nursery tank screens. There appeared to be no detrimental effects by skipping this feed size.

Projected Release

Fish in numerous BP's in each system were either suspect or confirmed positive for IHNV by the end of FY2006. A release number of approximately 2.0-2.1 million SST in the spring of 2007 was estimated at the beginning of FY2007. Table 2 illustrates the steelhead on station at the end of 2006 and projected release numbers.

Table 2. BY2006 SST on station and projected release summary (9/30/2006)

As of September 30, 2006					Projected to Release - April 2007			
System	Number	Weight (lbs)	fpp	L mm	Proj % Loss to Release	Projected Release Number	Proj Size at Release fpp *	Proj Size at Release mm *
System I	745,607	18,450	40.4	105	9	678,502	7.3	186
System II	697,393	25,009	27.9	119	9	634,628	5.9	200
System III	792,265	51,076	15.5	145	9	720,961	5.8	201
Total/Ave	2,235,265	94,535	23.6	126	9.0	2,034,091	6.2	196

*Projected length based on Systems I & II going on reuse December through March 1, 2007

Source: DNFH - MIS data, October 1, 2006
DNFH - Production Narrative, September, 2006

System I

System I received 773,243 BY2006 SST during the summer of 2006. Steelhead in System I were moved out of the nursery beginning with Take 9 on August 11, 2006 and ending with Take 12 on August 26. Except for six ponds of SST which will remain unclipped under the U.S. vs. OR Harvest Settlement Agreement and two ponds of SST which received CWT's, fish were moved from the nursery to the auto-trailer.

There were 21,684 SST which received CWT's in BP15 and 22,358 SST which received CWT's in BP17. This tagging was done on August 28 and 29, respectively, and the study is for System I contribution to the fishery and hatchery returns.

System II

System II received 719,044 SST during July and August, 2006. Fish in System II were moved out of the nursery beginning with Take 6 on July 19 and ending with Take 8 on August 11. Steelhead from Takes 6-8 were loaded from the nursery into a transport tank and moved directly to the AD clipping trailer. From the trailer, fish were marked and stocked at final densities to the outside BP's.

There were 22,213 SST which received CWT's in BP18 and 22,009 SST which received CWT's in BP34. This tagging was done on August 30 and 31, respectively and the study is for System I contribution to the fishery and hatchery returns

Fish in BP's 4 and 6 were loaded unclipped from the nursery as part of the U.S. vs. OR Harvest Settlement Agreement.

System III

System III received 1,087,244 SST from Takes 1 through 5 beginning with Take 1 on May 24 and ending with Take 5 on July 18. These fish were loaded directly from the nursery to the marking trailer and then stocked at final rearing densities into System III BP's.

There were 21,664 SST which received CWT's in BP65 and 21,407 SST which received CWT's in BP68. This tagging was done on September 12 and 13, respectively and the study is for System III contribution to the fishery and hatchery return.

Spring Chinook Salmon

Brood Year 2004

On October 1, 2005, there were 1,016,480 BY2005 Spring Chinook Salmon (SCS) on station at Dworshak. All of these fish were from eggs of females which tested low ELISA status for Bacterial Kidney Disease (BKD). In January, 2006, there were a total of 52,953 BY2004 SCS which received PIT tags. Of these 51,955 were tagged for studying the survival comparison of barging, trucking and river-run smolts and the adult survival rates of these smolts in the Columbia Basin.

There were also 998 SCS PIT tagged for the USGS on January 10, 2006. There will be 10 of these fish pulled out at each of Lower Granite Dam, Bonneville Dam, and the barge at Lower Granite Dam. These fish will be included with the 44,540 BY2004 SCS which received PIT tags from Feb. 7-10, 2006. These fish were from eight different raceways and were tagged by Biomark, Inc. This study is by the COE and National Oceanic and Atmospheric Administration (NOAA) and will research disease susceptibility of hatchery reared yearly Snake River SCS with different migration histories in the Columbia River. The COE will be removing 3,360 smolts out of the Columbia River system at Granite and Bonneville Dams experiments in their facilities at Newport, Oregon.

Release dates of the BY2004 SCS were the evenings of March 27 and 29, 2006. During this time there were 1,007,738 BY2004 SCS released from Dworshak into the North Fork of the Clearwater River (Table 1). The release was performed late in the day to assist the smolts with predator avoidance.

Table 1. BY2004 SCS in System I Raceways, 10/01/05 and release data 03/27-29, 2006.

October 1, 2005				% Loss 10/01/05 to 3/29/06	Release March 27 & 29, 2006			
Number	Wt (lbs)	fpp	L mm		Number	Weight lbs	fpp	L mm
1,016,480	15,168	67.0	93	0.9	1,007,738	54,402	18.5	143

Source: DNFH- MIS, Oct 1, 2005; Production Narrative, March, 2006; Final Release Summary, BY2004 SCS

BY2004 SCS had an enumerated survival of green egg to eyed egg of 88.8 percent. As was done with BY1999-2003 SCS all BY2004 Kooskia stock SCS eggs were shipped to Kooskia for incubation after eye-up and enumeration at DNFH. Approximately ½ of Dworshak stock SCS went to Kooskia during the fall and ½ remained at Dworshak for incubation. Dworshak fry were then shipped from Kooskia back to Dworshak in the spring of 2005 and placed directly into outside rearing ponds.

Brood Year 2005

There were 882 adult BY2005 SCS which returned to DNFH and 270 returned to Kooskia, for a total of 1,152 to the Dworshak Complex. Adults spawned and eggs produced from BY2005 SCS are represented in Table 1.

Table 1. Dworshak and Kooskia adult spawners and both green & eyed egg numbers, BY2005 SCS.

Location of Adult Returns	Males Spawned	Females Spawned	Females Culled BKD	Dead Egg Trays Culled	# Eggs/Female	Total Eggs Enumerated	# Eyed Eggs Enumerated	% Surv Enum Eye-up
Dworshak	346	385	7	0	3,863	1,460,348	1,407,946	96.4
Kooskia	94	128	0	0	3,617	462,989	431,984	93.3
Total/Average	440	513	7	0	3,801	1,923,337	1,839,930	95.7

Source: DNFH - Final BY05 SCS Enumeration and % Survival of Eggs. SC05EGEN.xls
BY2005 SCS Spawning Report

As was done with BY1999-2004 SCS all BY2005 Kooskia stock SCS eggs were shipped to Kooskia for incubation after eye-up and enumeration at DNFH. A new chiller was installed at Dworshak over the summer of 2005 enabling all of Dworshak stock eggs to be incubated at Dworshak. This eliminating the need to ship half the Dworshak stock eggs to Kooskia for incubation over the winter months. This chilling delays hatching approximately three months compared to non-chilled water at Dworshak and assists in reaching the desired 20 fpp size at

release in the spring of the year 2007.

During spawning, the IFHC took ovarian fluid for viral inspection from 150 of Dworshak stock and 107 of Kooskia stock females. They also took spleen samples from 60 Dworshak males and 63 Kooskia males for viral inspection (see IFHC Broodstock Assessment report for results). Kidneys were also sampled for BKD from all females spawned. As in 2004, Dworshak used an ELISA test for BKD which employed a base-line test to compare all samples to a given ELISA reading. The results of the testing for adult females were 1.8 percent (7/385) greater than 0.213 ELISA for Dworshak stock and 0.0 percent (0/128) for Kooskia stock. Eggs from females of Dworshak stock which were above 0.213 ELISA were culled.

After the eggs were eyed-up and enumerated at Dworshak, there were 431,984 Kooskia stock eyed eggs shipped to Kooskia from October 20 through November 25, 2005. There were also 200,000 excess Dworshak stock eyed eggs shipped to Kooskia on November 17. Additionally, there were 156,594 excess Dworshak stock eyed eggs shipped to Clearwater Hatchery for the IDF&G on November 23. Dworshak incubated 1,050,000 eyed eggs of Dworshak stock for its program.

There were a total of 1.03 million BY2005 SCS fry of Dworshak stock moved from Dworshak incubators to outside raceways during April, 2006.

The USFWS fish marking trailer from the Columbia River Fisheries Program Office began tagging the BY2005 SCS with CWT's on August 9, 2006 and ended on August 19. The tagging is being done for contribution research. Personnel from the marking trailer also clipped adipose (AD) fins on all BY2005 SCS and split fish into several raceways during the tagging operation.

By the end of FY2006, there were 969,608 BY2005 SCS at DNFH.. Table 2 illustrates the size and number of BY2005 SCS on station at the end of the fiscal year and projected release numbers.

Table 2. BY2005 SC at the end of the FY and projected release from DNFH April 2007.

As of September 30, 2006					Projected to Release - April 2007		
Stock	Number	Weight (lbs)	fpp	L mm	Proj % Loss to Release	Projected Release Number	Proj Size at Release mm
Dworshak	969,608	17,558	55	100	1	959,912	145

Source: DNFH - MIS, October 2006

DNFH - Production Narrative, September 2006.

Brood Year 2006

Fish traps at both Dworshak and Kooskia were operated to collect BY2006 SCS. The fish ladder at DNFH was opened on June 1, 2006 and closed August 22. There were 1,354 BY2006 SCS returned to DNFH and 670 SCS returned to the Kooskia trap by the end of the spawning season (Table 1). Of the 670 SCS trapped at Kooskia, 640 were transferred to Dworshak for spawning.

Table 1. Adult returns, BY2006 SCS (09/30/06)

Age	Number/Dworshak	Number/Kooskia*	Total
I - Ocean	62	7	69
II - Ocean	1,136	617	1,753
III - Ocean	156	46	202
Total	1,354	670	2,024

*30 of these fish were passed over weir into Clear Creek - ISS fish

Source: IFRO - Dworshak/Kooskia Complex SCS News-2006 Edition
DNFH - Spawning Activity Report BY2006 SCS

Figure 1 displays the SCS returns to the Dworshak Complex since 1987.

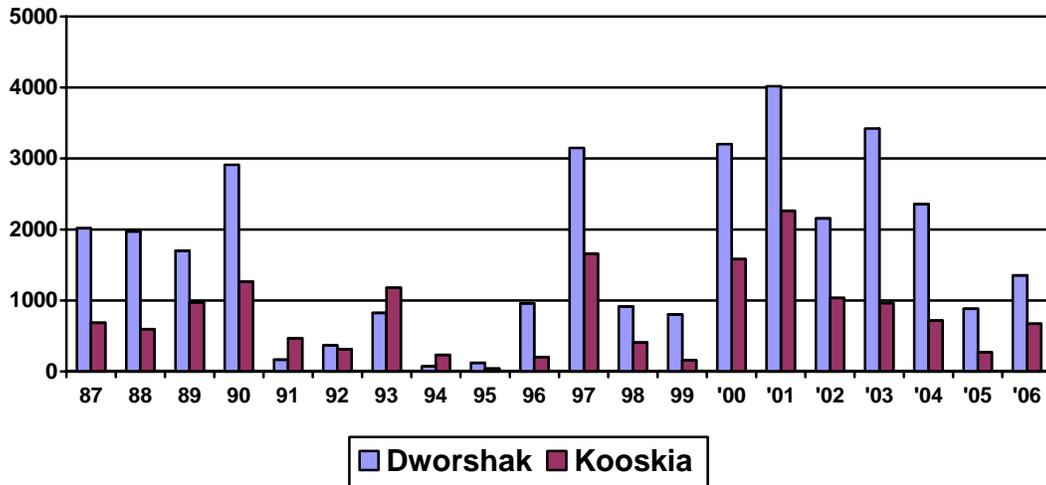


Figure 1. SCS returns to Dworshak/Kooskia 1987-2006

Source: IFRO - SCS rack returns

Adult returns for BY2006 SCS were enough to meet the production requirements for DNFH. A sport fishery took place in the Clearwater River in the spring of 2006. Idaho Fish and Game reported that the harvest was 564. A tribal harvest also took place along the Clearwater River and Clear Creek at Kooskia during the spring and summer of 2006. At the time of this writing no harvest numbers have been reported to Dworshak from the NPT.

Adult Holding

Dworshak stock was kept in HP1, 2, and 9. The 640 Kooskia stock transfers were held in HP3. Kooskia stock received a right opercule punch in order to distinguish between the two stocks. Formalin treatments were administered to the adults in order to retard fungus infection. Incoming females were also injected with erythromycin at a dosage of 20 mg/kg body weight as a preventative against vertical transmission of BKD.

Adult Mortality

There were 17 adult SCS of Dworshak stock and 32 of Kooskia stock which died before spawning on August 15 (prespawning mortalities). Table 2 depicts the mortality for BY2006 SCS held at DNFH.

Table 2. Mortality of adult BY2006 SCS held at DNFH.

Mortality	Dworshak		Kooskia	
	Number	Percent of total run at Dworshak	Number	Percent of run transferred to Dworshak
Prespawning	17	1.3	32	5.0
During Spawning	22	1.6	7	1.1
Total	39	2.9	39	6.1

Source: Spawning Activity Report, BY2006 SCS
IFRO-SCent.wk4

Adult Disposition

There were 221 adult males, 32 jacks, and 193 females (446 total) of BY2006 SCS returning to DNFH which were excess to spawning needs and outplanted. There were also 78 males, one jack and 84 females (163 total) of Kooskia stock SCS which were excess to spawning needs were also outplanted from Dworshak on September 7. Dworshak and NPT personnel sorted and loaded NPT transport trucks with all but 12 of these fish for stocking in the lower Selway River. This outplanting was for supplementation purposes. The remaining 12 fish were stocked into the mainstem of the Clearwater River since the truck destined for the Selway was filled to capacity. Table 3 illustrates details of the outplants.

Table 3. Adult BY2006 SCS outplants from DNFH.

Date 2006	Stock	Site	Adult Males	Adult Females	Jacks	Total Number
24-Aug	Dworshak	Lower Selway River	87	88	7	182
7-Sep	Dworshak	Lower Selway River	128	100	24	252
7-Sep	Dworshak	Mainstem Clearwater R.	6	5	1	12
Total	Dworshak		221	193	32	446
7-Sep	Kooskia	Lower Selway River	78	84	1	163
Grand Total			299	277	33	609

Source: DNFH- BY2006 SCS Spawning Activity Reports
IFRO- AdultOutplant BY2006SCS.wk4

Table 4 illustrates BY2006 SCS adult disposition form both DNFH and Kooskia stock held at Dworshak.

Table 4. Adult disposition of both Dworshak and Kooskia stock BY2006 SCS held at DNFH.

Location	Dworshak	Kooskia	Comments
Outplant	446	163	See Table 10
Outside Research Info/Education	0	10	NMFS, Univ of Idaho, School Prog
Pond morts/unknown losses	22	7	Carcasses deteriorated/not found
Landfill	886	460	Carcasses from spawning/ponds
Total	1354	640	

Source: BY2006 SCS Spawning Activity Report

Adult Spawning Numbers/Ratio

Spawning Season

The BY2006 Dworshak/Kooskia SCS spawning season began August 15, 2006, and ended on August 29 for both stocks. Fish from each HP were sorted and spawned once each week along with new fish coming up the ladder into HP9. There were 329 males (including 24 jacks) and 440 females (1:1.3 ratio) of Dworshak stock spawned during the season. There were also 158 males (including 3 jacks) and 252 females (1:1.6 ratio) of Kooskia stock spawned during the season.

The females averaged 3,853 eggs/female for Dworshak stock and 3,287 eggs/female for Kooskia stock.

Spawning Procedures

The spawning procedure was similar to past years; adults were crowded from the holding ponds into a crowding channel, moved into a channel basket, and placed into an anesthetic bin conditioned with 150 mg Tricaine methanesulfonate (MS-222). Also added to each bin was 250 ml of Pro-Polyaqua to reduce stress and susceptibility to infection. Oxygen was provided at a rate of 1.5 L/minute. Spinal columns of ripe females were severed using a pneumatic knife. The females were then placed on a table for 3-15 minutes for blood drainage. The ventral side was then cut open using a spawning knife and eggs were collected in disinfected colanders. After ovarian fluid was drained, the eggs were poured into a clean bucket. Milt from ripe males was stripped into Styrofoam cups and a one-percent saline solution was added to assist in milt motility. The milt solution was poured onto the eggs and swirled for more complete fertilization. The eggs remained in the bucket for one to two minutes to allow complete fertilization to take place, and then were rinsed of sperm, blood, and other organic matter.

After rinsing, eggs were placed in Heath incubator trays at an overall average of 3,612 eggs per tray (one female). In the tray was a 75 mg/l iodophor solution buffered with sodium bicarbonate. Eggs were maintained in this solution for approximately 30 minutes as a precaution against disease transmission. After sufficient time had elapsed for disinfection, the egg trays were then pushed into the incubator. Water flow rate was approximately four gallons/minute/tray. Eggs in C/D bank were incubated with no chiller on the cold-water intake line and temperature averaged

44.5°F during incubation. The number of adult spawners, eggs produced, and survival of BY2006 SCS are illustrated in Table 5.

Table 5. Dworshak and Kooskia adult spawners, and both green & eyed egg numbers, BY2006 SCS.

Location of Broodstock Return	Males Spawned	Females Spawned	Females Culled BKD	# Eggs/ Female	Total Eggs Enumerated	# of Eyed Eggs	% Enum Eye-up
Dworshak	329	440	109	3,853	1,155,892	1,115,047	96.5
Kooskia	158	252	25	3,287	733,054	702,181	95.8
Total/Ave	487	692	134	3,612	1,888,946	1,817,228	96.2

Source: DNFH - Spawning Activity Report BY2006 SCS
DNFH – BY2006 SCS Spawning Report

Idaho Fish Health Center (IFHC)

On July 25-26, personnel from IFHC injected all Dworshak and Kooskia stock females with erythromycin. This was done to help prevent vertical disease transmission of BKD to the egg.

During spawning, the IFHC took ovarian fluid for viral inspection from 150 of Dworshak stock and 150 of Kooskia stock females. They also took spleen samples from 60 Dworshak males and 60 Kooskia males for viral inspection (see IFHC Broodstock Assessment report for results). Kidneys were also sampled for BKD from all females spawned. As in 2005, Dworshak used an ELISA test for BKD which employed a base-line test to compare all samples to a given ELISA reading. The results of the testing for adult females were 0.7 percent (3/440) greater than 0.250 ELISA for Dworshak stock and 9.9 percent (25/252) for Kooskia stock. Eggs from females which were in the upper range of ELISA were culled for both stocks.

University Research

Dworshak continued to coordinate with researchers from the University of Idaho. Rolf Ingermann, Professor of Zoology from the University of Idaho, is studying motility and fertility of SCS semen fertility under various chemical and mineral applications. Dworshak provided a total of 20 ml milt from 10 Kooskia males. All milt samples were from excess spawning requirements at Dworshak.

Spawning Summary

BY2006 SCS adult return numbers were adequate to fulfill both DNFH's and Kooskia's production goals. Projected release of BY2006 smolts in the year 2007 is approximately 1.0 million smolts of Dworshak stock.

Coho Salmon Brood Year 2004

Coho salmon (COS) are being reared in raceways in C-bank in a cooperative program with the

NPT. No information was given DNFH to the status of these fish at beginning of FY2006. On April 5, 2006, an estimated 195,000 BY2004 COS were transferred from DNFH to Kooskia NFH by the NPT with assistance from Dworshak staff.

Brood Year 2005

BY2005 COS were trapped at DNFH, Clear Creek, Potlatch, Lolo, Eldorado and Lapwai creeks in the Clearwater Basin. Personnel from the NPT conducted the spawning at Dworshak with assistance from Dworshak staff. The eggs were incubated at Dworshak.

Spawning of BY2005 COS began in the fall of 2005 and ended Dec. 1. There were a total of 164 female COS from the Clearwater Basin which were spawned. There were also 140,000 eyed COS eggs from Eagle Creek NFH transported to Dworshak by the NPT in December. Also during December an unreported number of COS eggs were transferred from Dworshak to the Clearwater State Hatchery.

Coho were transferred from the egg trays to Dworshak's nursery during January and February of 2006. All COS were transferred from the nursery to C-bank Raceway (RW) on April 6, 2006.

Rainbow Trout (RBT) Brood Year 2005

There were a total of 16,117 BY2005 RBT divided into BP49 and RW's 9 and 10 in C-bank at the beginning of FY2006. On May 31, 2006 there were approximately 3,700 BY2005 RBT transferred from DNFH to Kooskia NFH for their June Open House program. On June 1, there were approximately 11,270 RBT transferred to the Dworshak settling pond for the annual Open House held on June 9. Approximately 844 were caught by the 422 kids 12 years of age and under who took part in the activities.

Table 1 illustrates outplanting of BY2005 RBT from the Open House fishing pond at Dworshak.

Table 1. Fish Distribution Summary BY2005 RBT (06/30/2006)

Date 2006	Number	Wt (lbs)	fpp	L in	L mm	Location
31-May	3,700	2,300	1.6	11.6	294	Kooskia NFH
9-Jun	844	620	1.4	12.2	311	Dworshak Open House
15-Jun	1,395	1,026	1.4	12.3	311	Worley Pond CDA Tribe
16-Jun	1,360	1,000	1.4	12.2	311	Agency Pond CDA Tribe
26-Jun	3,111	2,288	1.4	12.3	311	Mud Springs NPT
26-Jun	1,928	1,418	1.4	12.3	311	Talmac NPT
26-Jun	1,029	757	1.4	12.3	311	Tunnel Pond NPT
Total/Ave	13,367	9,409	1.4	12.1	307	

Source: DNFH - RBT MIS, June 2006
DNFH - Fish and Egg Fiscal Year 2006 Distribution Summary

Brood Year 2006

Rainbow Trout from BY2006 will be used for Open House Fishing Day 2007. On Jan. 18, 2006, Dworshak received Shasta strain RBT eyed eggs from Ennis NFH. For ease of record keeping at Dworshak, these RBT will be recorded as BY2006. At the end of FY2006 there were approximately 642 BY2006 RBT in BP51 at 8.8 fpp and 6.5 inches total length.

Dworshak Hatchery Production Summary FY2006

Steelhead Brood Year 2005

There were 2.1 million steelhead smolts released from Dworshak in April, 2006. The steelhead at release averaged 6.4 fpp and 194 mm in total length. The smolts were outplanted to the South Fork of the Clearwater River the week of April 10, 2006 and direct-released from Dworshak the following week of April. There were 330,097 pounds of steelhead produced with BY2005 SST. Under the Harvest Settlement Agreement with the Columbia River Tribes, included were approximately 215,375 smolts released without an adipose fin clip to designate them as a hatchery fish. None of these fish were marked or tagged in any way.

Steelhead Brood Year 2006

There were 3,243 adult steelhead returned to Dworshak NFH in the fall of 2006 and spring of 2006. A total of 2.9 million eyed eggs went into Dworshak's production program. Dworshak provided 1.15 million eyed eggs for the CWH. Also, 1.5 million green eggs were taken for MVH and another 12,000 green eggs for Potlatch Pulp & Paper school projects. As in 2005, spawning of Take 1 began at the end of January, resulting with a 30 percent increase in eyed egg survival versus starting in February. The timing for spawning the mid and late returning adults remained the same, maintaining the entire spectrum of the run. At the end of FY2006 there were 2.23 million BY2006 SST on station.

There will be approximately 200,000 BY2006 SST released in 2007 for the NPT which will have no external mark designating it as a hatchery fish. These fish will be counted in the Dworshak SST production program.

Chinook Salmon Brood Year 2004

Dworshak NFH released 1.0 million BY2004 SCS weighing 54,402 pounds. These fish were released on March 27 and 29, 2006.

Chinook Salmon Brood Year 2005

At the beginning of FY2006, BY2005 SCS eggs of both DNFH and Kooskia stock were incubating at Dworshak. During October and November, 2005, there were 200,000 eyed-eggs of Dworshak stock and 431,000 eyed-eggs of Kooskia stock shipped to Kooskia for final incubation and early rearing. There were also 156,000 eyed eggs of Dworshak stock which were transferred to Clearwater State Fish Hatchery (IDF&G) for incubation and rearing. There remained on station 1.05 million eyed eggs of Dworshak stock for incubation using a newly installed chiller.

At the end of FY2006, there were 970,000 BY2005 SCS on station, averaging 55 fpp and 100 mm (3.9 inches) total length.

Chinook Salmon Brood Year 2006

Adult returns of BY2006 SCS produced 1,354 Chinook adults to DNFH. Kooskia trapped 670 adult fish, 30 of which were passed over the weir as Idaho Supplementation Study fish (ISS), and 640 transferred to Dworshak for spawning. There were a total of 440 Dworshak and 252 Kooskia females spawned during the season.

Coho Salmon Brood Year 2004

The coho salmon (COS) at Dworshak are being reared in a cooperative program with the Nez Perce Tribe. On April 5, 2006, an estimated 195,000 BY2004 COS were transferred from DNFH to Kooskia NFH by the NPT with assistance from Dworshak staff.

Coho Salmon Brood Year 2005

Adult coho were trapped at Dworshak and various tributaries on the Clearwater River. Personnel from the NPT conducted the spawning at Dworshak with assistance from Dworshak staff. The eggs were incubated at Dworshak. There were a total of 164 female COS from the Clearwater Basin which were spawned. There were also 140,000 eyed COS eggs from Eagle Creek NFH transported to Dworshak by the NPT in December. Also during December of 2005 an unreported number of COS eggs were transferred from Dworshak to the Clearwater State Hatchery. All COS were transferred from the nursery to C-bank RW's on April 6, 2006.

Rainbow Trout Brood Year 2005

Dworshak raised approximately 16,000 BY2005 RBT. On May 31, 2006 there were approximately 3,700 BY2005 RBT transferred from Dworshak to Kooskia NFH for their June Open House program. On June 1, there were approximately 11,270 RBT transferred to the Dworshak settling pond for the annual Open House held on June 9. There were 422 participants fishing at the Open House for Dworshak. Approximately 11,500 12-inch RBT were stocked into tribal and public fishing lakes from Dworshak in June 2006.

Rainbow Trout Brood Year 2006

On January 18, 2006, Dworshak received Shasta strain RBT eyed eggs from Ennis NFH. At the end of FY2006 there were approximately 16,642 BY2006 RBT on station averaging 8.5 fpp and 167 (6.5 inches) total length.

Administration

Meetings

October, 2005

- Acting Complex Manager, Howard Burge, participated in a Snake River Basin Adjudication (SRBA) conference call with the Nez Perce Tribe (NPT) on Oct. 4.
- Information/Education (I/E) staff had a conference call with planners for the Lewiston Corps of Discovery II for the June, 2006 event in Spalding, ID on Oct. 21.
- I/E staff met with local agency partners for Orofino Elementary Schools for the after-school program startup on Oct. 17 and Oct. 31.
- I/E staff met with the Kamiah Lewis/Clark Corps II committee for September event wrap-up on Oct. 26 and Oct. 31.

November, 2005

- Hatchery Manager's workshop in Richland, WA attended Nov. 2-4, by Howard Burge, Bob Semple, Susan Sawyer and Megan Johnson.
- Acting Complex Manager, Howard Burge, participated in a conference call on Nov. 3 regarding the SRBA plan.
- The Annual Operating Plan (AOP) meeting was held in the main building Conference Room on Nov. 30.

December, 2005

- Acting Complex Manager, Howard Burge, participated in the monthly SRBA conference call on Dec. 1.
- Acting Complex Manager, Howard Burge, met with NPT staff to begin implementation of the SRBA transition.
- Wayne Hamilton, Jill Olson and James Niles attended the Northwest Fish Culture Conference in Boise, Dec. 6-8. FWS is host next year in Portland, OR.
- Hatchery Christmas parties were held at Kamiah's Hearthstone Bakery for 25 staff and spouses on Dec. 17, followed by the annual staff potluck at the hatchery on Dec. 21.

January, 2006

- Acting Complex Manager, Howard Burge, participated in the monthly SRBA conference call on Jan. 5.
- Acting Complex Manager, Howard Burge, and Bob Semple, Hatchery Manager attended a pre-Action Operating Plan (AOP).
- Acting Complex Manager, Howard Burge attended a meeting with the NPT on Jan. 25.

February, 2006

- Acting Complex Manager, Howard Burge, participated in the monthly SRBA conference call.
- Annual Operating Plan meeting was held in the main building Conference Room on Feb. 8.

- Staff meeting held on Feb. 15.
- Russ Thornton, U.S. Army Corps of Engineers in Walla Walla, WA and others were here to evaluate the Nursery Room roof on Feb. 15.
- Bob Semple and Penny Hasenoehrl began the annual U.S. Army Corps of Engineers and U.S. Fish & Wildlife Property Inventory.
- Howard Burge attended a meeting with the NPT on SRBA implementation on Feb. 22.
- Idaho Fish Health Center telephones were connected into the Dworshak Complex telephone system.

March, 2006

- Lorrie Gleghorn and Linda Askew, CGS, Portland, OR, performed an Acquisition Management Review of Dworshak's purchase orders for FY2004 and FY2005 on March 1.
- Acting Complex Manager, Howard Burge, participated in the monthly SRBA conference call.
- Howard Burge and Bob Semple attended a Lower Snake River Complex Plan (LSRCP) meeting in Boise on March 14.
- Diane Praest participated in a conference call with Janey Thomas in the Region office regarding Grants & Agreements on March 16.
- Howard Burge attended a meeting with the NPT in the Conference Room on March 23.
- Howard Burge, Bob Semple and Thomas Trock attended a FONS meeting in Portland, OR. on March 28.
- Mark Bright attended a Groundwater Systems Quality Workshop presented by the Department of Environmental Quality in the Main Building Conference room on March 28.

April, 2006

- Howard Burge participated in the monthly SRBA conference call.
- Howard Burge attended a Clearwater Policy Advisory meeting on April 13.
- Diane Praest, Jody Brostrom and Joan Sperber participated in a conference call from Region Office regarding Grants and Agreements on April 13.
- Admin staff and I/E staff met with Acting Complex Manager, Howard Burge regarding office layout changes.
- Howard Burge attended a meeting with the Nez Perce Tribe on April 20.

May, 2006

- Terry Weeks and Dave Trainor attended the Wage Grade Conference in Reno, NV, May 22-26.
- Roger Helm gave a slide show presentation to staff, "Australia, Rose Atoll, Costa Rica and Pribilof Islands" on May 8.
- A farewell potluck was held in the Main Bldg. Conference Room for Roger Helm who also gave a slide show presentation on Costa Rica.
- Office reorganization took place with Diane Praest, Susan Sawyer and Joan Sperber trading work spaces.

June, 2006

- Retirement luncheon held for Ray Rosales on June 8.

July, 2006

- Megan Johnson, I/E Assistant traveled to Post Falls to facilitate a Project WET workshop, July 17-21.

August, 2006

- Six Clearwater River Youth Program (CRYP) workers (4 from Dworshak and 2 from Clearwater Fish Hatchery) traveled to Idaho Fish & Game (IDF&G) Crooked River satellite facility to perform maintenance for the IDF&G through the Clearwater Fish Hatchery on Aug. 1-2.
- A reception was held in the Main Building Conference to honor the CRYP workers upon completion of the 8-week program. Certificates were presented to Dworshak workers: Lisa Huffman, Amanda Turner, Brandon Bolen and Lucas Rouse on Aug. 3.
- A conference call to discuss financial year-end procedures was attended by Admin. Support Assistant, Diane Praest and FRO Project Leader, Howard Burge on Aug. 8.
- A potluck luncheon was held to honor Herb Lawler's retirement from the U.S. Fish & Wildlife Service on Aug. 29.

September, 2006

- Presentation to staff by Penny Hasenoehrl to kick off the Combined Federal Campaign (CFC).

Training

- Diane Praest, Joan Sperber and Corie Samson sat in on a conference call to Region Office (R.O.) regarding the IDEAS program on Oct. 21.
- Diane Praest sat in on a conference call to R.O. regarding the IDEAS program, questions and answers on Oct. 22.
- Thomas Trock and Wayne Hamilton, Production Dpt., attended, "Introduction to Supervision," training in Seattle, WA, Jan. 30-Feb. 3.
- Dave Trainor, Dworshak Safety Officer, attended a Collateral Duty Course for Federal agencies in Portland, OR, Jan. 30-Feb. 2.
- SRBA training for all Complex employees was provided by the NPT Feb. 2 and 9.
- Megan Johnson, I/E Assistant, attended CISPUS training in Randle, WA, Feb. 27-March 3.
- Megan Johnson, I/E Assistant attended pre-retirement training at Spalding National Park. This was a tele-course offered through the National Park Service.
- Joan Sperber, John Vargas and Mark Bright attended Admin training in Portland, OR, March 14-16.
- Acting Complex Manager, Howard Burge, attended Negotiation Training at Ft. Collins, CO, April 3-7.
- I/E Assistant, Megan Johnson attended an Excel class in Lewiston, ID.
- Joan Sperber attended CON-100 training in Portland, OR on June 5.
- Terry Weeks, Maintenance, attended Heavy Equipment Safety Certification training in Corvallis, OR, June 19-23.

Safety & Wellness

October 2005

- Staff safety meeting held on Fire Safety.
- Complex fire drill conducted at 10:15 a.m. on Oct. 20.

November 2005

Staff met for a Safety Meeting and viewed a video, “*Survival Safety.*”

December 2005

Staff met for a Safety Meeting and viewed a video on cholesterol.

January 2006

OXARC presented their annual respirator fit to appropriate hatchery workers.

February 2006

Penny Hasenoehrl, OAC, Certified Medic One instructor, instructed her first CPR, First Aid and AED course to 12 hatchery employees: Herb Lawler, Aaron Garcia, Mark Bright, Frank Mullins, Rob Kellar, R.J. Hemingway, Thomas Trock, Steve Bradbury, Adam Izbicki, Dave Trainor, Holly Stanton-Smith and Jill Olson.

March 2006

R.J. Hemingway gave a presentation to the staff on spider bites.

April 2006

Staff met for a Safety Meeting and viewed a video on “*Unseen Dangers*” in the workplace.

May 2006

Staff met for a Safety Meeting and viewed a video on Safety in the Workplace.

June 2006

Michael Lounsbury, Physician Assistant from Clearwater Valley Hospital & Clinic gave a presentation to the staff, “*Cholesterol and the Cardiac Connection.*” Prior to the presentation a lab tech from the hospital drew blood for staff who wanted to have cholesterol screening, diabetes screening, thyroid screening and prostate screening. A flat fee was negotiated for the employees with the hospital by the Dworshak Safety Committee.

July 2006

Staff met for a Safety Meeting and viewed a video on Home Fire Prevention.

August 2006

- A “Golden Hour” tour of Clearwater Valley Hospital was attended by staff: Diane Praest, Megan Johnson, Susan Sawyer, Dave Trainor, Randy Bowen and Jody Brostrom. This tour was set up by Jeanette Gorman who arranges the “Your Doctor Speaks” presentations here at the Complex.
- On Aug. 16 a Complex fire drill was held.
- On Aug. 21-23, Al Williams, Safety Officer from R.O. inspected the Complex for safety

issues.

- On Aug. 24-25, Al Williams provided safety training to supervisors and employees.

September 2006

Staff met for a Safety Meeting and viewed a video on hearing protection.

Staffing

DNFH Employees, FY 2006.

Name	Position Title	Period of Employment	Status
Allain, Richard E.	Animal Caretaker	10/01/05–09/30/06	Permanent
Bisbee, Mike	Fishery Biologist	07/01/06-09/30/06	Permanent
Bright, Mark	Fishery Biologist	10/01/05-09/30/06	Permanent
Greene, Benny C	Electronics Mechanic	10/01/05-09/30/06	Permanent
Hamilton, William W	Animal Caretaker	10/01/05-09/30/06	Permanent
Hasenoehrl, Penny	Office Automation Clerk	10/01/05-09/30/06	Permanent
Izbicki, Adam H	Fishery Biologist	10/01/05-03/19/06	Permanent
Johnson, Megan	Information/Education Asst	10/01/05-09/30/06	Permanent
Kellar, Robbie D	Animal Caretaker	10/01/05-9/30/06	Permanent
King, Rick	Maintenance Worker	10/01/05-09/30/06	Permanent
Lawler, Herb	Maintenance Worker	10/01/05–08/30/06	Permanent
Minnick, Jim	Animal Caretaker	10/01/05-09/30/06	Temporary
Ochszner, Dennis J	Animal Caretaker	10/01/05-09/15/06	Permanent
Praest, Diane E	Supv. Admin Support Assistant	10/01/05–09/30/06	Permanent
Rosales, Raymundo A	Maintenance Worker	10/01/05–06/09/06	Permanent
Sawyer, Susan D	Information/Education Specialist	10/01/05-09/30/06	Permanent
Semple, Robert A	Supv. Fishery Biologist	10/01/05-09/30/06	Permanent
Sims, Hubert M	Maintenance Mechanic	10/01/05-09/30/06	Permanent
Sperber, Joan	Budget Technician	10/01/05–09/30/06	Permanent
Stretsbery, Gerald	Laborer	10/01/05–09/30/06	Permanent
Trainor, David A	Maintenance Worker	10/01/05–09/30/06	Permanent
Trock, Thomas J.	Fishery Biologist	10/01/05–09/30/06	Permanent
Vargas, John J	Animal Caretaker Leader	10/01/05–09/30/06	Permanent
Weeks, Terry C.	Maintenance Worker	10/01/05–09/30/06	Permanent

Wright, Benjamin A	Animal Caretaker	10/01/05–09/30/06	Permanent
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Personnel

- Terry Weeks promoted to WG-4749-8, Maintenance Mechanic Helper.
- Howard Burge, Acting Complex Manager, moved from the FRO building to the managers office so Roger Helm, Damage Assessment Branch Chief from R.O. Environmental Contaminants, could move into the FRO office as part of a 60 day trainee program to assist with FRO duties.
- Bob Semple appointed Acting Complex Manager on June 20, 2006.
- Ray Rosales, Maintenance Worker, took a medical retirement after 28 years with the U.S. Fish & Wildlife Service. His last day was June 9.
- I/ & E Assistant, Megan Johnson began her summer weekend tour schedule from the end of May through Labor Day in September.
- Herb Lawler, Maintenance Worker, retired from Federal Service on August 30.

Facilities Maintenance

October 2005

- Repairs: broken door knobs in the Feed Bldg. & Mech II., a leaking fire hydrant, broken sink drain, wood decking on truck bed and hydraulic pump from the John Deere farm tractor, two hydraulic leaks in loose hoses on the boom truck and repaired and adjusted electric door opener in Mech I and removed flaking paint on hot water lines above #2 incubator stacks.
- Fabrication and installation projects: Installed shelving in nursery room hallway and moved the nursery room tank chart, installed a new chilled water line from chiller line to egg picker and installed a hose bib on the line for shocking eggs in the Incubator room, built and installed a new stop sign support for Mech I doorway, built stairs for getting in and out of fish ponds, built and installed water level sight glass for incubation water in Chinook stacks and built a new trash can for moss removed from traveling water screen discharge in the main pump house.
- Cleaned the bone yard and hauled scrap to the COE bone yard. Hauled fish feed from KNFH to DNFH.
- Installed new brushes on the pond scrubber shafts and installed the same on the pond scrubber and re-welded cracks in the corners of the pond scrubber.
- Electrical repairs: replaced 388 electrical contactors in the four boilers in Mech II, repaired a defective 400-watt mercury vapor fixture in Mech I, installed and upgraded hatchery alarm system and installed two new chiller compressors in chiller room in the incubator room.
- Dug a ditch with the backhoe for a water line at the NPT church.
- Dug a hole for installation of a power pole in the Ahsahka sewer plant that will support the cable line for hatchery computers.
- Installed a new electric motor for a ventilator fan on the roof of the incubator room.
- Serviced the fish truck, Carts #3, #5 and #11, complex vehicles, Komatsu forklift, boom truck and crane and electric forklift.
- Did preventative maintenance checks and serviced traveling water screens, intake trash rake and six main pumps in the Main Pump House.
- Exercised #1, 2 & 3 standby generators for one hour. Changed the oil and oil filter in the circulation pump.
- Did a preventative maintenance check on the pond and channel crowders.
- Washed and cleaned #3 generator, serviced batteries and cleaned the main pump motors in the Main Pump House.

November 2005

- Removed and replaced brushes on axels for pond scrubber, removed and replaced brushes on pond scrubber.
- Fabrication and installation projects: Corner bracket with wheel for lifting sagging door for cool room in Feed Building, fabricated brackets for tool boxes for maintenance shop cart, new signs for Information & Education (I/E) and new lifting jib for welding shop.
- Made daily rounds consisting of: drawing off sludge in System I, II & III sludge ponds; raising flag; recording and reporting the weather; cleaning intakes and trash trap; checking

- pumps in main pump house; checking and cleaning screens in fire maintenance pump house; checking domestic water and chlorine system; check and adjust mechanical boilers.
- Lubed all motors and gear reducers in System I, II & III sludge scraper systems.
- Serviced complex vehicles, maintenance cart, Cart #11, Dodge one-ton, and tractor.
- Lubed bushings and bearings on motor and shaft of effluent pond aerator at the west end of filter beds #2 & 3.
- Replaced battery in Lincoln 308 portable welder.
- Replaced lifting cables on front of #1 channel crowder.
- Pumped water from the Feed Bldg. basement sump pump man hole, removed, cleaned and replaced one sump pump; cleaned out water damaged materials from basement.
- Troubleshooting and repair: 400-watt mercury vapor lights in Mech I, Exit signs in FHC, System I digester sump pump, barrier gate control on #1 channel crowder and heating thermostat in the Fishery Resource Office (FRO).
- Replaced start button control station for sludge scraper #3.
- Installed flood light with motion detector on southeast corner of Feed Bldg. for lighting the stairs and the loading of boats.
- Started boilers and building heat pumps. Changed air filters in the Main Building heat unit.
- Traveled to KNFH to inspect the hatchery sludge scraper system for Region I engineering.

December 2005

- Cleaned walls, sanded cabinets and painted the Water Quality Lab in the IFHC.
- Repair projects: a stuck float in the domestic water tank in Mech II, a broken bolt in air compressor belt guard in the Shop Building and the trash pump motor.
- Changed stand pipes, started channel pumps, started reuse pumps and switched from raw water to reuse water in System II and System III
- Installed a heater on System III reuse tower to thaw ice in tank.
- Started all four boilers and three make-up pumps, set heat exchangers in Mech II for heating System II & III reuse, checked Freon levels and adjusted, then started incubator chiller in the Incubator Room and adjusted Honeywell valve on #3 heater in Mech II.
- Mounted mud and snow tires on new maintenance cart and replaced tie-rod ends and aligned front end on the Taylor Dunn cart.
- Cleaned all sight glasses in System II & III effluent draw off tubes.
- Refilled waste oil furnace with oil.
- Designed and fabricated a pond scrubber roll jig, welded pond scrubber brushes to shafts. Built a stand for a R8000 PIT tag detector. Fabricated an aluminum landing to fit on top of the nursery room tanks.
- Troubleshooting and electrical repair projects: an electrical short in the Chinook pond, lighting in locker room in the main building, oil furnace in the shop, pump and controls on the Chinook pumps, east end pump house heater, electric furnace in the Feed Bldg and a belt on air compressor in the furnace room and #2 main pump, replaced brushes on pond scrubber, assisted Clearwater Power with voltage adjust, assisted Northwest Edison with lighting retrofit, replaced breakers adjusted the heating system in FRO building and set up transformer, run and support feeder cable to the BPA tagging trailer.

January 2006

- Replacement and repair projects: door knobs and locks in Mech I and Feed Building, #1,

2 and 3 fire maintenance pumps, bird netting at center light standard for Northwest Edison lighting upgrade, air bleeder on the reservoir water line in nursery room, broken water supply line to sturgeon fish tank in IFHC, Chinook ponds “B” pump and FRO grinder pump.

- Replaced a gasket on the water filter draw off pump in System II & III filter beds.
- Replaced drive belts on Sutobilter blower in System I reuse.
- Exercised #1, 2, & 3 generators.
- Cleaned and bubbled System I, II & III reuse filter beds each work day and daily rounds of monitoring Mech II boilers and systems temperature.
- Serviced the Taylor Dunn cart, complex vehicles, Cart #1 and Komatsu forklift.
- Installed 4 “I” beams in the Fire Maintenance Building for removal and installation of fire pumps.
- Installed new compressed air and acetylene hoses from Atomic Absorption Spectrometer to new location for cylinders in IFHC.
- Replaced incandescent light bulbs in the Main Building and Feed Building basement and converted 480—volt lighting circuit to 120-volt for retrofitting lights in Mech II.
- Replaced and calibrated the mother board in Boiler #4 in Mech II and calibrated the Honeywell transducer 3-way valves on make up sump in Mech II.

February 2006

- Replacement and repair projects: air bleeder valve in #4 boiler in Mech II a ruptured disk in “A” bank in nursery, chlorine analyzer and chlorine leak for domestic water system, guide wheels on the pond scrubber, heating element on Generator #1, heating unit and a thermostat in FRO building, burned wires to #3 main pump and a handle on stand pipe for System III ponds.
- Serviced the Lab’s Explorer, John Deere tractor, Cart #11, Scooter’s Cart and Dodge Caravan, Komatsu fork lift, repaired the front end suspension carriage to frame assembly on shop cart.
- Cleaned and checked threads to bolts for #2 main pump.
- Troubleshooting and electrical repair: #1 generator trouble alarm point and feeder circuit for System II chemical pump and installed new phone lines into IFHC.
- Designed and welded a new pit tagging station for FRO.
- Did daily rounds of cleaning offices, restrooms and drawing off water in sludge basin.

March 2006

- Replacement and repair projects: north heater in Main Pump house, replaced igniter in portable diesel heater, mixer in chlorine pump for domestic water system, replaced burned wires and contactors in Boiler #1 in Mech I, removed and replaced both turbochargers on #3 generator, and removed and replaced pond scrubber brushes.
- Installed three wall hanging hose reels in Incubator Room and Spawning Room basement.
- Rebuilt both diverter gates cylinders for spawning table.
- Replaced pneumatic hoses and quick disconnect for System II & III effluent drain valves.
- Serviced Maintenance carts #4, 5, 6, 10, 11, shop cart, Scooter’s, Tiger truck, serviced complex vehicles, tractor and Nursery cart.
- Removed and replaced engine oil cooler on #1 generator.
- Run traveling water screens in Main Pump House and cleaned filter screens in Fire Maintenance Pump House each day. Cleaned and drained off sludge in System II & III

effluent tanks on a daily basis.

- Troubleshooting and electrical repair: Re-started incubator chiller in Incubator Room, replaced V-belt and capacitor on Incubator Room north exhaust fan motor, repaired PA system and wireless microphone on Spawning Room balcony, repaired control voltage relay in Boiler #1 in Mech I, measured, laid out, configured and ordered parts for 100 amp feeder circuits for BPA tagging trailers and related equipment and adjusted and calibrated Honeywell heat exchanger valves in Mech II.
- Built vacuum head for vacuuming ponds.
- Built and installed new oxygen cylinder tubes for fish truck.

April 2006

- Replacement and repair projects completed: Damaged motor leads to main pump #2 in Main Pump house, freezer in Fish Health Center, north exhaust fan motor in Incubator Room, repaired and sealed J boxes in System I reuse drain channel, replaced GFI receptacle in System I reuse sludge settling ponds, repaired broken measuring device on the spawning table, replaced handle for stand pipe for Production and sharpened head chopper knife in the Spawning Room. Repaired broken domestic water line on southwest corner of shop. Removed, repaired and replaced Nursery room water supply line air escape valves.
- Troubleshooting and electrical repair: Replaced motor control switch on fish pump (10”), connections at LAN patch panel in the IFHC, new Exit lights in Lab and overload heaters in System I, conveyor scraper #3.
- Conducted annual safety audit.
- Traveled to KNFH to rescue fish trap in Clear Creek.
- Fabrication and installation projects: New portable bridge for screw trap at KNFH, built eight new tank platforms for incubator jars in Nursery, built a stack shelf unit with wheels for Fish Health Center, installed new pond scrubber brushes on extra axles and installed new counter on dead egg side of egg sorter in the Incubator Room.
- Participated in the annual valve exercise of the reservoir water valves.
- Installed main pump #2 in Main Pump house.
- Serviced complex vehicles, tractor, Dodge 1-ton truck, maintenance cart, Scooter’s cart, carts #3, 4, 5, 10 & 11, D-R trimmer mower and Komatsu fork lift and roof lawn mower.
- Lubed all three traveling water screens and lubed main pumps in Main Pump house.
- Drained and pumped down System I reuse ponds for annual inspection of the augers and scraper paddles, pumped down System III reuse sludge ponds and hosed down for inspection of chain drives, removed motor from #4 main pump.
- Pumped fish for COE trucks outplanting, pumped water from the hatchery man holes and added hydraulic fluid to the Feed Building truck leveler.
- Hauled one load of fall Chinook from Umatilla Hatchery to DNFH and two loads of fall Chinook from Lyons Ferry Hatchery to DNFH.
- Delivered fish baskets to Umatilla Fish Hatchery.
- Performed daily rounds of cleaning traveling water screens, fire and maintenance filters, domestic water and checking Mech I & II boilers.

May, 2006

- Troubleshooting and electrical projects: Connected System I clarifier #3 and 4 auger drive motor, adjusted Honeywell 3-way valves for make-up sump level in Mech II, prepped

conduit runs and J-boxes and pull points for installation of new circuits and switchgear for tagging trailer circuits pulled wire from Feed Bldg. to east end of System III., connected Bio-Mark tagging trailers to individual remote power supplies to free up large power supply for USFWS Auto-tag trailer and assisted contractor with air frame breaker maintenance and calibration, monitored power transfers, generators and assisted with scheduled maintenance during the annual power outage on May 17.

- Removed concrete curbing in front of Residence #2 and at the fishermen's bridge, repaired leaks at the waterfall and pond.
- Replacement and repair projects: System I make-up water line in Mech I, #4 main pump Repaired missing packing gland adjusting bolts on #1 System I reuse pump. Removed broken chain and flights from filter bed #4 in System III reuse and Chinook "B" sump.
- Hauled Open House RBT to KNFH.
- Serviced the John Deere Gator, Maintenance cart and Carts #10 & 11.
- Greased packing glands on all main pumps.
- Installed piping in filter bed #1 & 2 for transferring media in System II reuse.
- Removed aerator for sludge pond, then form the stand, disassembled it and ordered new parts.
- Designed and fabricated a stack shelf unit on wheels for IFHC.
- Built and installed a 2x2 lifting bracket for the Ingersoll Rand Main Pump #4.

June 2006

- Prepared for Open House by setting up piping and moving RBT from System I to fishing pond, setting up tents and tables, trimmed shrubs, removed brush, set up fishing poles, took all down after event for storage.
- Replacement and repair projects: a hand railing on the deck of House #4, a broken roller in the overhead door in the Nursery, installed and a new fuel transfer pump on #1 generator and serviced, repaired a hydraulic leak in the hydraulic motor hose on the pond scrubber the impeller on Main Pump #2 and System II & III sludge pond aerator.
- Serviced the Nursery feed cart, Lab cart and Carts #4, 5,6, 10 & 11.
- Fabrication and installation: A rolling work cart for IFHC, a stand for System II & III sludge pond aerator and safety signs for System II & III settling pond walls.
- Replaced wiring and switch in the floor drying blower.
- Make up motor leads and check rotation on Main Pump #2.
- Hauled six loads of adult Chinook from KNFH to DNFH and 2 loads of RBT to Coeur d'Alene Reservation.

July 2006

- Pressure washed A & B, System I, II & III banks, outside pond walls and repainted.
- Removed old rock, planted new plants, moved existing plants, installed new sprinklers and planted grass, laid Weed block on hatchery grounds and housing.
- Repair projects: Walkway in the Visitor parking lot, removed old wooden fence around hatchery housing, hydraulic motor on the MVH fish pump and gearbox from pump house trash rake and removed and replaced broken flights and chain in System II reuse pond #2.
- Reassembled main pump #4.
- Fabrication and installation: new Handicapped ramp for fisherman's bridge, built and installed new Keep Out signs for settling ponds on the hatchery point.
- Placed scrubber brushes on the pond scrubber.

- Installed new gear reduction box for System III sludge scraper ponds #5 and 6.
- Changed oil, oil filter and serviced the I/E Blazer, Dodge Grand Caravan and call-back pick-up.
- Transferred media from pond #2 to pond #1 in System II reuse.
- Installed new chamber assemblies for injectors on Generator #1.
- Made bottle blocks for IFHC.
- Took the hatchery backhoe to KNFH and removed rock and dirt from the weir bypass channel.
- Cut and removed asphalt in front of the Feed Building to install the conduit and pulled wire for new circuit on A&B bank.

August 2006

- Fabrication and installation: New air line in Spawning Room, stand for new fish killer, winch mount and boat motor for FRO boat trailer
- Installed new gear reducer on the trash rake at the Main Pumphouse.
- Repaired flat tire on right rear of the shop cart.
- Troubleshooting and electrical projects: AK-5 breaker in the Main Pumphouse, installation of two 100 amp, 208-volt single phase circuits, disconnects and pin and sleeve receptacles to power the auto-tag trailers, motor at motor junction box for main Pump #4, 480-volt cord to pond crowder charger, tap settings on transformer %-11 from 503-volt to 480-volt in Feed Bldg.
- Installed liquid line sight glass and check operation of incubator chiller.
- Repaired leak on the propane hose on the propane fill tank.
- Transferred media from effluent Pond #1 to Pond #2.
- Started annual maintenance on Mech I boilers.
- Built a box for condensation for the AC unit in the Copy Room of the Main Building.

September 2006

- Removed shade screens from the FRO building.
- Installation and fabrication: new pit tag detector in fish trap, formalin tank and stand for HP's, divider boards for installing in the rearing ponds, built condensation box for air conditioning unit, repaired a sign board for HP, and informational pamphlet holder for I/E.
- Repair and replacement projects: hydraulic leak on the boom truck, chain link gate at the north end of HP9, repair boiler #1 in Mech I and fire damage to boiler #1 in Mech II.
- Electrical projects: installed new power cord on the pond crowder, terminated and trimmed out 480-volt and 120-volt circuits, System III.
- Added and adjusted #2 incubator chiller.
- Serviced Cart #11 and Boom truck
- Tested incubator chiller #1 compressor high oil pressure.
- Performed annual maintenance on Mech I boilers.

Outreach and Visitor Activities

Statistics

Dworshak NFH Visitor Use Statistics, FY2006

Program/Contact Type	# of Contacts	% Change From FY2005
On-site Hatchery Visitors (Visitor Register and self-guided tour)	4269 *	(-30%)
Guided Tours	60 □	(-25%)
Tour Visitors	1191*	(-16%)
Web Visitors ¹ (virtual contacts from all sources)	11,521*	+100%
Open House (children 12 & under)	422*	(-15%)
Open House (other visitors)	884 *	(-11%)
Total On-Site Contacts (all *)	18,287	+90%
Off-site Programs/Displays/Events	170 □	(-33%)
Off-Site Contacts	17,142 * *	+28%
Total FY06 Programs (total all □)	230	-20%
Total FY06 Contacts (total on + offsite)	35,429	+48%

¹ – new category this year; data taken from monthly visitor (not hits) reports to DNFH website, via Weblog Expert, an internet access log analyzer.

Table Summary

Hatchery visitation (as measured by on-site visitor log and self-guided tours) decreased markedly from FY05 (- 30%), most likely a result of the skyrocketing fuel costs, making Idaho one of the most expensive states to purchase gas/diesel. Those visitors who made the journey to the hatchery were greeted by a full information kiosk in the main hatchery parking lot, and in cases of time or weather constraints, were able to acquire adequate information without completing the self-guided tour. The native plant garden held well over the winter, and thanks to a dedicated volunteer, was tended carefully during the visitor season.

The Information/Education Office (I/E) provided **20 fewer guided tours than last year, to 240 less** visitors. However the same number of school groups toured during the regular Spring season with continued proactive school outreach and scheduling. The decrease more than likely was due to the conclusion of regional Lewis/Clark bicentennial related events and programs and the overall drop in traveling visitors.

The Volunteer program saw an increase in total volunteers and hours worked on a variety of hatchery projects. A total of **58 volunteers contributed 480.5 hours** of service towards

spawning, field work, outreach events and public contact duties. The annual volunteer appreciation potluck was held in August. Information/Education Assistant Megan Johnson continued as the Complex Volunteer Coordinator.

The 16th annual Open House/Kids Fishing Day saw a decrease (-15%) in attendance for the fifth straight year, even though weather and fishing conditions were ideal. This was the lowest attendance (**422 children 12yrs and under registered to fish**) since the event began in 1991. Those who attended or worked the event felt it went very well, with vendors, exhibitors, staff and volunteers pleased with the manageable, steady turnout and catchable trout. In addition, for the first year ever, Idaho State Veterans Home in Lewiston, ID brought 9 WWII/Korean War veterans, 7 of which were wheelchair-bound for a day of fishing on the trout pond. Marine Corps Activity League (Orofino) and the VFW (Orofino Post) assisted along with many hatchery staff. Local web and newspaper reporters provided excellent photos/coverage for the day.

A new category included in this year's outreach stats is the number of virtual visitors to the Dworshak NFH website. An automated web-based access tracking program - WebLog Expert - provided monthly statistics ranging from unique IP addresses, origin countries, requests for image downloads, counts on each page visited, time of day, day of week for peak visits, etc. The results indicated higher online visitation volume during the standard 9 month school year – September to May – with an **average of 914 individual monthly visits**. The web **visits peaked in May, with 1,329 visitors**, most probably in preparation for summer vacation travel planning. These virtual visitors were grouped in the number of on-site hatchery contacts for FY06 statistics calculations.

Outreach and off-site programs continued to be quite strong: even though the total number of programs offered was less (-33%; **40 fewer presentations than FY05, due to conclusion of Idaho Lewis/Clark events**) there was a **large increase in the number of contacts at these off-site venues (+28%)**, most likely due to the **addition of a new event - the Spokane, WA 'Bighorn Outdoor Adventure Show'** in the Interstate Fairgrounds. The hatchery I/E staff coordinated this and the Idaho Sportsman's Show in March with local FWS offices and staff, providing comprehensive and informative displays on FWS Refuges, Fisheries and Ecological Services programs. Additionally, Dworshak I/E staff provided learning stations at the 4th Grade Rendezvous for 1,000+ students at the Nez Perce County, ID Fairgrounds; three 6th grade environmental programs (added Lewis County program this year); school career fairs; public meetings; the 12th annual Clearwater Earth Day events; and rounded out the year with a busy September, staffing the 10th Idaho Salmon and Steelhead Days in Boise for 1,000+ 5th graders, the Clearwater County Fair booth (winning a second place ribbon!) with 1,223 contacts, and assisting Leavenworth NFH at the annual Salmonfest event with over 5,900 contacts in 3 days .

The successful after-school program "**Dworshak Extreme Explorers Club**" was again implemented with Orofino Elementary school, coordinated by I/E Assistant Johnson, U.S. Army Corps of Engineers (COE)- Dworshak Dam and Dworshak Idaho State Park education staff.

Other I/E business: public contact and outreach team meetings; training and travel to specific events; editing and evaluating various outreach and education plans and drafts for FWS Fisheries Strategic Plan, other agencies and programs; and completing the final Region 1-FWS Communications Plan.

Dworshak Spawn Shop sales for FY06 (Oct 1 – Sept 30) were \$1,465.52, which was 20% less

than FY05. Lower revenues could be from lack of the usual brisk sales at the annual Open House events, due to the low overall turnout.

Grant projects currently managed by the Friends of Northwest Hatcheries, Inc:

- Idaho Community Foundation (ICF) grant for development of a Lewis/Clark Natural Science education trunk – curriculum and activities assembled, completion expected FY07. All funds expended.
- Challenge Cost Share \$10,000 grant and ID Governors Lewis/Clark Trail grant (\$13,650) remain in the Friends account, and will be combined with new grant (below) for completion of interior visitor balcony exhibit project, FY07.
- New Grant: ID Governors L/C Trail Committee, \$11,350 to complete indoor fish and history exhibit on visitor viewing balcony, by December 2007.

FWS managed grant funds (from ICF project balance) = \$2,814.00 which will go towards the balcony exhibit project.

Hatchery in The Classroom (HIC) projects went well in all schools, with a record high number of 10 schools participating in FY06, either with their own equipment purchased with grants from area agencies, or with Dworshak NFH equipment.

Egg to fry release success averaged 83% - all schools had post-project release activities with the students and hatchery staff participating. The largest and most publicized project was at new school McSorley Elementary in Lewiston, ID. This was truly a partner project with equipment provided by Idaho Fish and Game, curriculum and technical support by FWS, release site education event by National Park Service, Nez Perce Tribe, United States Forest Service (USFS), and the school board and parents providing lunch and media contacts. More schools have contacted the hatchery with interest in obtaining their own classroom incubation systems or applying for the HIC project.

Travel and training for the Information/Education staff included:

- Annual fisheries outreach meeting in November 2005, Richland, WA.
- Hatchery Managers Workshop in Richland, WA – Nov.
- Idaho Environmental Education Association annual conference planning and presentation in Boise (BSU) - March.
- Coordinate and staff Idaho Sportsman’s Show exhibit booth in Boise – March.
- Bighorn Outdoor Adventure Show, Spokane, WA – March; coordinated and staffed.
- Annual Open House/Kids Fishing Day event – June.
- Salmon and Steelhead Days in Boise – September; coordinated Gyotaku station.
- Wenatchee River Salmon Festival, Leavenworth NFH, WA – Sept.
- Corps of Discovery II National Signature event, Lewis-Clark State College, Lewiston, ID – June (National Park Service, National Guard, + 8 other state, federal, tribal and local agencies).
- Soil Conservation District environmental education outreach events - April and May.
- Nez Perce National Historic Trail board of directors and agency partner meeting – August.
- North Central Idaho Travel Association annual membership meeting (hatchery is a member).

Cooperative Programs

Dworshak Fisheries Complex personnel (Dworshak National Fish Hatchery, Kooskia National Fish Hatchery, and Idaho Fishery Resource Office) worked closely with the following agencies and groups to accomplish various activities throughout the year:

Federal Agencies

- Federal Emergency Management Administration (FEMA)
- National Marine Fisheries Service (NMFS)
- National Park Service (NPS)
 - Nez Perce National Historical Park
 - Corps of Discovery II National Planning Team
- National Weather Service
- United States Department of Agriculture (USDA)
 - Clearwater National Forest
 - Clearwater County Extension Office
 - Nez Perce County Extension Office
 - Natural Resource Conservation Service (NRCS)
- United States Army Corps of Engineers (COE), Walla Walla District
 - Dworshak Dam and Reservoir Project
- United States Fish & Wildlife Service (USFWS)
 - Hagerman National Fish Hatchery
 - Lower Snake River Compensation Plan Office
- United States Geological Survey (USGS)
 - Biological Services Division
 - Seattle Research Center
 - Columbia River Research Laboratory

State Of Idaho

- Idaho Department of Employment
 - Job Service - Orofino
- Idaho Department of Fish & Game (IDFG)
 - Boise Headquarters Office
 - Lewiston Office
 - Salmon Office
 - Clearwater State Hatchery
- Idaho Department of Lands
- Idaho Environmental Education Association
- Idaho Parks and Recreation Department
 - Dworshak State Park
- Idaho State Historical Preservation Office (SHPO)
- Idaho Historical Society
- Lewis-Clark State College
- Clearwater Economic Development Association
- University of Idaho (U of I)
 - Cooperative Fishery Research Unit (CFRU)
 - School of Forestry, Wildlife and Range Sciences
 - Aquaculture Research Center

Idaho Water Resources Research Institute

State of Washington

- Washington State University (WSU)
Bear and Eagle Research Unit

Tribal Entities

- Coeur d'Alene Tribe
- Nez Perce Tribe
 - Fisheries
 - Cultural and Natural Resources Division
 - Nez Perce Tribe Executive Council
- Kootenai Tribal Fisheries

Public Utilities

- Bonneville Power Administration (BPA)
- Clearwater Power Company (CPC)
- Idaho Power

Local Government

- Clearwater County Sheriff's Office (CCSO)
- Clearwater County Soil Conservation District
- Joint School District #171
- Latah Soil Conservation District
- Nez Perce Soil Conservation District
- Orofino Chamber of Commerce

Special Interest Groups

- Friends of Northwest Hatcheries, Inc.
- Idaho Community Foundation
 - Northern Region Grant Program
- Idaho Food Commodity Program
- Kiwanis Club
- Orofino Lewis/Clark Bicentennial Committee
- Project WET, Idaho
- Pulp and Paperworkers Resource Council (PPRC)
- Retired Senior Volunteer Program (RSVP)
- Rotary Club

Other

- Lewis-Clark Recyclers
- Latham's Meats
- NADL/Simmons Recycling