Annual Report for

Dworshak National Fish Hatchery

Ahsahka, Idaho

Fiscal Year 2002

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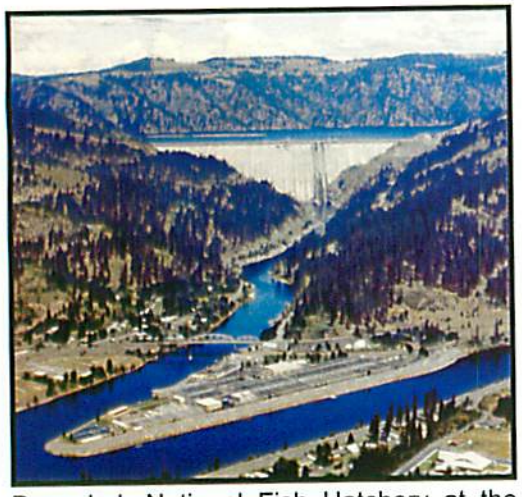
Introduction



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. Operation of the hatchery by the Fish and Wildlife Service (FWS) was authorized by a 1969 COE Memorandum of Understanding. 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 FWS 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 Burrows ponds, 64 nursery tanks, and 9 adult holding ponds. Twenty-five Burrows 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 1980s, the target size for steelhead smolts was changed to 200 mm, based on data developed by FWS.

During the mid-1970s, 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 1980s 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. We are presently working with COE to rehabilitate this system. Also in the 1980s, an additional thirty 8'×80' raceways were constructed under the LSRCP to provide production facilities for spring chinook salmon. Additionally in the 1980s, 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 (IHN) virus 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. We are trying to accomplish some of the rehabilitation project items through O&M funding. Larger items will need to be funded directly by the COE. This year, the COE started the contract process to repair the System I reuse and bring the reservoir water lines into Mechanical Building I. This work is expected to be done in the fall of 2002.

Future projects we are asking the COE to undertake include converting Burrows ponds 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 is operated to mitigate 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) is also included in the Dworshak Complex. The Idaho Fish Health Center (IFHC) is a separate entity functioning on DNFH grounds.

DNFH has the capacity to produce 2.3 million steelhead smolts at 6 fpp (200 mm in length); 1.05 million yearling chinook salmon smolts at 18 to 20 fpp (140 to 145 mm in length); and 200,000 sub-catchable rainbow trout for stocking Dworshak Reservoir. The hatchery's annual production capacity exceeds 550,000 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 some years but were not in 2000. Spring chinook adult returns have historically been well below mitigation but were met this year.

Rainbow mitigation for Dworshak Reservoir is in an interim phase, with fish exchange with IDFG and use of production at Hagerman 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, 2001, to September 30, 2002.

FY 2002 Highlights

Fish Culture Operations

Brood Year 2001 Steelhead
There were 2.2 million steelhead smolts released from Dworshak in April, 2002. The steelhead at release averaged 205 mm in total length, meeting the 200 mm target size. Fish health and condition was good throughout the rearing cycle as water temperature was kept about 2°F lower in the reuse systems than normal (52°F rather than 54°F). The reuse system effects growth in about 2/3 of the steelhead on station. The smolts were outplanted to the South Fork of the Clearwater River the third week of April, and direct-released from Dworshak the last week of April, 2002. There were 406,000 pounds of steelhead produced with BY01 SST.

Brood Year 2002 Steelhead
There were 7,797 adult steelhead returned to Dworshak NFH in the fall of 2001 and spring of 2002. A total of 2.6 million eyed eggs went into Dworshak's production program. Dworshak provided 1.15M eyed eggs for the Clearwater Hatchery. Also, 1.6M green and 280K eyed eggs were taken for Magic Valley Hatchery and another 15,000 eyed eggs for Potlatch Pulp & Paper school projects. The production program at Dworshak completed another early rearing phase in the hatchery's nursery without any problems with the IHN virus, largely due to a program that relied entirely on the water supply from Dworshak Reservoir rather than the North Fork of the Clearwater River. There has been an early outbreak of IHN in outside rearing ponds, however, as mortalities of approximately 100,000 SST have been recorded due to IHN. At the end of FY2002 there were 2.1 million BY02 SST on station.

There will be 100K BY02 SST released at the hatchery under a Harvest Settlement Agreement with Columbia River Tribes. These fish will have no external mark designating them as hatchery fish.

Brood Year 2000 Chinook Salmon
Dworshak NFH released 1.0M BY00 spring Chinook salmon weighing 50,123 pounds. These fish were released on March 27-28, 2002.

Brood Year 2001 Chinook Salmon
At the beginning of FY2002, all BY01 SCS eggs were incubating at Dworshak. During November/December, 2001, there were 1.16 million eyed-eggs of Dworshak stock and 765K eyed-eggs of Kooskia stock shipped to Kooskia for final incubation and early rearing. On April 22 and May 2, 2002, there were 1.1M Dworshak stock SCS returned to Dworshak. At the end of FY2002, there were 1.04 million BY01 SCS on station, averaging 77 fpp and 89 mm (3.5 inches) total length.

Brood Year 2002 Chinook Salmon
SCS adult returns in 2002 totaled 2,157. Kooskia had 1,037 fish return, 54 of which were passed over the weir as Idaho Supplementation Study fish (ISS), and 716 transferred to Dworshak for spawning.

Brood Year 2000 Coho Salmon
The coho salmon (COS) at Dworshak are being reared in a cooperative program with the Nez Perce Tribe. There were 200-300K BY00 coho produced at Dworshak. These fish were transferred to Kooskia during April, 2002.

Brood Year 2001 Coho Salmon
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. Coho from Lyons Ferry Hatchery were also transported to Dworshak and mixed with coho adults trapped from the Clearwater River basin. There were 212 females spawned for an estimated 580,000 eggs. Spawning began October 30, 2001 and ended December 4. At the end of the FY2002 there were 300,000 BY01 COS on station. The Service has currently given office space at Dworshak for a NPT biologist to oversee the COS program.

Brood Year 2001 Rainbow Trout - Open House
Dworshak raised approximately 14,000 BY01 RBT. There were 10,000 stocked into a fishing pond at Dworshak for Open House in June, 2002 and about 4,000 shipped to Kooskia for their Open House. There were 748 participants at the Open House for Dworshak. The remaining RBT were then stocked into ponds for public fishing and Tribal waters.

Brood Year 2002 Rainbow Trout - Open House
On January 8, 2002, Dworshak received approximately 15K eyed RBT eggs from Ennis NFH, Montana. At the end of FY2002, there were 12K RBT in Burrows pond 49. These fish are for Open House 2003 at Dworshak.

Brood Year 2002 Rainbow Trout - Dworshak Reservoir Stocking
Due to concerns about stocking RBT in Dworshak Reservoir, the following fish exchange is planned: Hagerman NFH will raise approximately 145,000 10" Arlee and Shasta rainbows to be stocked in September and October into several locations including; L. Camas, Oxbow, Hells Canyon, Lucky Peak, and C.J. Strike reservoirs.

IDFG's Hayspur Hatchery will raise approximately 130,000 10-12" sterile rainbows for stocking into Dworshak Reservoir in March, April and May, 2003.

Administration

Cost
Funding for hatchery operations included $1,751,005 (does not include overhead) from the Corps of Engineers, $409,978 from LSRCP, and $16,626 quarters reimbursements. Fish marking costs billed during FY2002 were $76,310 to clip steelhead adipose fins. Marking of spring chinook cost $27,780 for coded-wire tagging and adipose fin clipping.

Staffing
Full-time staff years employed by Dworshak NFH in FY 2002 were 25.5; permanent employees 23.9 and temporary employees 1.6 staff years. Thirty permanent and temporary employees were represented in the staffing during the year.

Steelhead

Brood Year 2001

At the beginning of October 2001, all of the summer steelhead (SST) from Brood Year 2001 (BY01) were outside in Burrows ponds (BPs), totaling 2.27 million fish. Overall mortality from October 1, 2001 through final release on April 25, 2002 was about 2.3 percent. The final release number was 2.21 million SST smolts with an average total length of 205 mm (Table 1).

Table 1. Fish inventory summary, BY01 SST on Oct. 1, 2001, and final release summary in April 2002.

	October 1, 2001				Oct–Apr 25	Final Release April 15–25, 2002			
Location	Number[1]	Lgth in	Lgth mm	Wt Lbs	% Loss[1]	Number	Lgth in.	Lgth mm	Wt Lbs
Syst I	679,656	6.22	158	57,149	1.1	644,596	8.2	209	124,798
Syst II	644,756	5.09	129	29,692	4.4	643,577	8.0	204	117,200
Syst III	944,150	4.02	102	21,497	1.8	927,380	8.0	202	164,312
Tot/Ave	2,268,562	4.98	127	108,338	2.3	2,215,553	8.1	205	406,310

[1]On October 24, 2001, there were 27,984 SST from BP47 (System I) split into BP50 (System II).
Source: DNFH - Final Release Summary, May 2002.
Monthly Inventory Summary (MIS), October 1, 2001.
Production Narrative, April, 2002.

Dworshak steelhead from BY01 were reared entirely in BPs. Table 2 illustrates the survival rates of various stages of development for BY01 SST along with a five-year comparison. FY1991 was the first year that a direct water-line from Dworshak Dam to the incubators and nursery was available, helping reduce disease problems in the early rearing stages of SST.

Loading of SST from the middle and later egg Takes in Systems II and III was similar to FY2001, with System II being stocked with Takes 6–9 (partial) and System III receiving Takes 9 (partial)–14. This was due to construction of an aluminum release channel in System III in the summer of 2000. This strategy worked better for the marking crew than in previous years and was repeated in FY2001 and FY2002.

Table 2. Survival summary from green eggs to released smolts, BY97 through BY01 SST reared at Dworshak NFH.

	% Surviving from previous stage				Cumulative % Survival		
Brood Year	(Green to)Eyed Egg*	Tanked Fry	Ponded Finger lings	Smolt Release	Green Egg to Smolt**	Eyed Egg to Smolt	Tanked Fry to Smolt
1997	88.6	91.7	92.3	87.4	45.2	73.4	80.0
1998	87.5	90.0	96.6	89.5	49.1	77.7	86.4
1999	91.9	94.9	93.2	94.3	50.3	83.0	87.9
2000[1]	90.7	90.0	91.3	??	61.1	80.7	84.6
2001	87.6	91.2	92.8	97.0	58.0	82.0	90.0
5yr Ave	**89.3**	**91.6**	**93.2**	**92.0**	**52.7**	**79.4**	**85.8**
2002 YTD	92.5	93.4	90.6				

Note: Data are only for SST reared entirely at Dworshak NFH.
[1]Due to malfunction with egg picker, numbers are estimated.
* % Survival Green to eyed = Enum eyed eggs / Enum eyed eggs + enum dead eggs. i.e. survival after culling bad trays, females.
** Green eggs to smolt = Total green eggs (including those from females culled during enum) - Magic Valley grn eggs - Clearwater Hatchery eggs. (This calculation method beginning in 1997).
Source: DNFH- Egg Enumeration and Disposition Summary- EgEnumST02.wk4
Nursery Loss-nulo02st.wpd
Spawning/Egg Take Plan, BY02 SST

Target temperature for the reuse/heated water systems was 52°F. Reuse and heated water was turned on November 28, 2001, for Systems II and III. Temperature spiked from 48°F to 55°F in System II and 54°F in System III the next day. The reuse system was left on but the boilers turned off November 29 for both systems. The boilers were turned back on December 11 in System II and December 12 in System III. An outbreak of *Ichthyophthirius multifiliis* (ICH) occurred in both reuse Systems over the winter. On December 28 both boilers and reuse were turned off in System II. Formalin treatments also took place during the ICH outbreak. On January 16, 2002, reuse and boilers were turned back on in System II. The boilers were turned off in System III this same day. Although SST in System III showed high infestation of the ICH, mortality remained low and reuse was never turned off during the winter for System III. The boilers and reuse were both turned off in System II on March 13, 2002, and on April 2 in System III. See details of the water reuse strategy under each specific system below.

Some SST in all systems received coded wire tags (CWTs) and left ventral (LV) clips. Within these study groups, some fish also received freeze brands (FBs). The various marks and brands are used for studies concerning system contribution of these fish to later adult returns, offsite release contribution, broodstock evaluations, and early-run predictions at Lower Granite Dam. Fish which received a Passive Integrated Transponder (PIT) tag will be monitored for residual studies and Fish Passage Center studies.

All hatchery SST receive an adipose fin (AD) clip except for a total of 108K BY01 SST. These SST from System III received a CWT but no AD clip to designate them as hatchery fish. These are the third group of SST released from Dworshak since 1984 without an external mark

specifying a hatchery fish. This is being done under the Harvest Settlement Agreement between the USFWS and the Columbia River Tribes.

A total of 264,600 SST received CWTs, 43,900 received FBs, and 6,013 received PIT tags. See the marking/tagging tables under each System for details.

System I

For BY01 SST, System I's production included 24 BPs. This System had 679,656 SST in it at the start of the fiscal year and 644,596 at release in April, 2002 (Table 3). On November 24, 2001, there were 27,984 fish from BP47 (System I) transferred into BP 50 (System II). This transfer was done to study the survival differences between early-spawned fish reared both with and without reuse water.

Table 3. System I BP production, BY01 SST, FY2002.

Month	Year	1st of Month			Growth during previous month		% Mortality for Month	Ave Temp 0F for Month
		Number	fpp	L (mm)	in	mm		
October	01	679,656	11.9	158	0.58	15	0.05	46.4
November[1]	01	651,333	9.7	169	0.44	11	0.09	50.5
December[2]	01	650,747	8.2	179	0.4	10	0.63	45.3
January[2]	02	646,667	7.2	186	0.29	7	0.14	42.0
February	02	645,731	6.5	193	0.25	6	0.06	40.2
March	02	645,361	6.1	198	0.19	5	0.06	40.4
April	02	644,952	5.5	204	0.26	7	0.06	42.4
Release Tot/Ave		**644,596**	**5.17**	**209**			1.09	43.9

[1]On October 24, 2001, there were 27,984 SST from BP47 (System I) moved into BP50 (System II).
[2]Total fish reflect adjustments for CWT inventory numbers
Source: DNFH - MIS, Sept 2001-May 2002
Final Release summary, BY01 SST
Production Narratives Sept-May, 2001-2002
Daily Water Temperature Records, Oct-April, 2001-2002

Adipose fins were clipped on BY01 SST in System I from May 31, 2001 until July 12, 2001. Other marking of BY01 SST in System I is summarized in Table 4.

Table 4. Marking and tagging of BY01 SST, System I, FY2002.

Rel from BP #	Date Marked/ Tagged	Number CWT	Number Freeze Brands	Number PIT tags	Fin Clips	Study	Release Site
BP 9	11/29/01 4/9/02	21,517	10,999	 250	AD LV AD	System I Contribution/ Fish Passage Center	Dworshak
BP 25	4/11/02			300	AD	Residual	Dworshak
BP 35	4/10/02			301	AD	Residual	Dworshak
BP 37	4/10/02			300	AD	Residual	Clear Ck
BP 39	4/10/02			300	AD	Residual	S. Fork CWR
BP 45	4/11/02			300	AD	Residual	Dworshak
BP 47	12/03/01	22,746	10,964	250	AD LV	Early Return Progeny	Dworshak
Total		44,263	21,963	2,001			

Source: DNFH- MIS System II, December 2001, January 2002
IFRO- Branding, Tagging.DBF
IFRO- MRKLPN01.wk4
IDFG- Fish Marking Summary 2001

During the 10 month outside rearing cycle of fish in System I, SST were treated for small outbreaks of both Pseudomonas infection and Trichodina. Mortality for fish in System I from October 1, 2001 until final release in April of 2002 was approximately 1.1 percent.

On April 15-17, 2002, there were 216,603 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 427,993 SST from System I took place on April 23 into the mainstem of the Clearwater River. The total release from System I was 644,596 BY01 SST (Final Release Summary, BY01 SST).

System II

For BY01 SST, System II's production included 25 BPs. This System had 644,756 SST in it at the start of the fiscal year and 643,577 at release in April, 2002 (Table 5). On November 24, 2001, there were 27,984 fish from BP47 (System I) transferred into BP 50 (System II).

Table 5. System II production, BY01 SST, FY2002.

Month	Year	1st of Month			Growth during previous month		% Mortality for month	Ave Temp °F for Month
		Number	fpp	L (mm)	in	mm		
October	01	644,756	21.7	129	0.71	18	0.66	46.4
November1	01	668,289	15.3	145	0.63	16	0.26	50.8*
December2	01	666,540	11.5	160	0.58	15	0.31	49.3*
January2	02	664,817	9.6	170	0.39	10	2.68	49.3*
February	02	646,981	8.5	177	0.27	7	0.38	46.1*
March	02	644,518	6.8	190	0.53	13	0.11	45.1*
April	02	643,841	5.82	200	0.41	10	0.04	41.0
Release Tot/Ave		643,577	5.51	204			4.4	46.9

*System under heated reuse water for part or all of month.
1On October 24, 2001, there were 27,984 SST split from BP47 (System I) into BP50 (System II).
2 Total fish reflect adjustments for CWT inventory numbers
Source: DNFH - MIS, Sept 2001-May 2002
Final Release summary, BY01 SST
Production Narratives Sept-May, 2001-2002
Daily Water Temperature Records, Oct-April, 2001-2002

Adipose fin clipping was done on BY01 SST in System II from July 16 through August 1, 2001. Other marking of BY01 SST in System II is summarized in Table 6.

Table 6. Marking and tagging of BY01 SST, System II, FY2002.

Rel from BP #	Date Marked Tagged	Number CWT	Number Freeze Brands	Number PIT tags	Fin Clips	Study	Release Site
BP 16	12/07/01 4/9/02	22,220	5,506	 250	AD LV	System II Contribution/Fish Passage Center	Dworshak
BP 18	12/11/01 4/9/02	22,701	5,495	 250	AD LV	System II Contribution/Fish Passage Center	Dworshak
BP 24	4/11/02			313	AD	Residual	Dworshak
BP 28	4/10/02			300	AD	Residual	S. Fork CWR
BP 32	4/10/02			300	AD	Residual	Clear Creek
BP 40	4/12/02			300	AD	Residual	Dworshak
BP 46	4/11/02			300	AD	Residual	Dworshak
BP 48	4/11/02			299	AD	Residual	Dworshak
Total		44,921	11,001	2,312			

Source: DNFH- MIS System II, December 2001, January 2002,
IFRO- Branding, Tagging.DBF
IFRO- MRKLPN01.wk4
IDFG- Fish Marking Summary 2001

System II converted to reuse on November 28, 2001. Temperature spiked from 48°F to 55°F by the next day, so the boilers were turned off but reuse remained on. Maximum temperature desired for outside SST rearing on reuse was 52°F. On December 11 the boilers were turned on and temperature averaged 51.9°F until they were turned off December 28 due to an ICH outbreak. System II was flushed with river water and treated with formalin to help control the ICH. Water temperature averaged 43°F while the system was on river water. On January 16, 2002, System II was converted back to reuse and heated water. By the next day the water temperature was 49.6°F. This temperature decrease along with the formalin treatments resulted in a drastic reduction in the SST mortality rate. Approximately 20,000 SST were lost due to the ICH infection. System II went off heated water and reuse on March 13, 2002.

Mortality was approximately 4.4 percent from October 1, 2001 until release in April, 2002.

On April 17-19 there were 202,151 SST outplanted from System II. 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 441,426 SST from System II took place on April 22 into the mainstem of the Clearwater River. The total release from System II was 643,577 BY01 SST (Final Release Summary, BY01 SST).

System III

For BY01 SST, System III's production included 34 BPs. This System had 944,150 SST at the beginning of the fiscal year. Final release numbers were 927,380 fish which averaged 202 mm total length (Table 7).

Table 7. System III production, BY01 SST, FY2002.

Month	Year	1st of Month			Growth during previous month		% Mortality for month	Ave Temp 0F for month
		Number	fpp	L (mm)	in	mm		
October	01	944,150	43.9	102	0.59	15	0.33	46.4
November	01	941,081	29.1	117	0.59	15	0.32	50.7*
December[1]	01	937,035	19.5	134	0.66	17	0.45	50.7*
January1	02	934,330	13.6	151	0.67	17	0.47	49.6*
February	02	929,948	10.9	163	0.46	12	0.16	45.0*
March	02	928,476	7.9	181	0.72	18	0.08	51.0*
April	02	927,741	5.9	199	0.73	18	0.04	46.5*
Release Tot/Ave		927,380	5.6	202			1.8	48.6

*System under reuse part or all of month.
[1]Total fish reflect adjustments for CWT inventory numbers
Source: DNFH - MIS, Sept 2001-May 2002
Final Release summary, BY01 SST
Production Narratives Sept-May, 2001-2002
Daily Water Temperature Records, Oct-April, 2001-2002

Adipose fin clipping was done on BY01 SST in System III from July 30 until August 31, 2001. Other marking of BY01 SST in System III is summarized in Table 8.

Table 8. Marking and tagging of BY01 SST, System III, FY2002.

Rel from BP #	Date Marked Tagged	CWT	Freeze Brands	PIT Tags	Fin Clips	Study/Comments	Release Site
BP 52	12/06/01 4/10/02	22,601	5,439	 250	AD LV	System III Contribution/Fish Passage Center	Dworshak
BP 64	4/11/02			300	AD	Residual	Dworshak
BP 66	4/11/02			300	AD	Residual	Dworshak
BP 73	11/14/01	25,248			No AD No LV	NPT - No AD clip/ No marks to indicate hatchery fish	Dworshak
BP 74	11/16/01	27,756			No AD No LV	NPT - No AD clip/ No marks to indicate hatchery fish	Dworshak
BP 75	11/15/01	24,965			No AD No LV	NPT - No AD clip/ No marks to indicate hatchery fish Residual	Dworshak
BP 76	11/27/01	28,881			No AD No LV	NPT - No AD clip/ No marks to indicate hatchery fish Residual	Dworshak
BP 77	4/10/02			250	AD	Fish Passage Center	Dworshak
BP 77	11/30/01	22,948	5,497		AD LV	System III Contribution	Dworshak
BP 79	4/11/02			300	AD	Residual	Dworshak
BP 82	11/28/01	23,031			AD	Off-site Release Evaluation	Clear Creek
BP 85	4/11/02			300	AD	Residual	Clear Creek
Total		175,430	10,936	1,700			

Source: DNFH- MIS System II, December 2001, January 2002,
IFRO- Branding, Tagging.DBF; IFRO- MRKLPN01.wk4
IDFG- Fish Marking Summary 2001

There were a total of 108K BY01 SST in BPs 73, 74, 75, and 76 which received a CWT but no AD clip to designate them as hatchery fish. These are the third generation of SST which will be released from Dworshak since 1984 without an external mark specifying a hatchery fish. This is being done as a cooperative agreement between the USFWS and the Columbia River Tribes.

There was an infection of ICH over the winter for fish in System III. Control of the ICH was accomplished using formalin treatments and reducing water temperature in the reuse system.

Approximately 2,000 SST were lost due to the ICH infection.

Cumulative mortality in System III was approximately 1.8 percent from October 1, 2001 until release in April, 2002.

System III was converted to reuse on November 28, 2001. Temperature spiked from 48°F to 54°F overnight, so the boilers were turned off but the reuse was kept on. Maximum temperature desired for outside rearing of SST is 52°F. On December 12, 2001, the boilers were turned back on and temperature averaged 51°F until they were turned off January 4, 2002, due to the ICH infestation. System III remained on reuse and was treated with formalin to help control the ICH. Water temperature averaged 42°F while the system was on reuse without the boilers. The boilers were turned back on January 24, 2002 and temperature averaged about 51°F until the boilers and reuse system were turned completely off in System III on April 2, 2002.

On April 15-18, there were 430,976 SST outplanted from System III. 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 496,404 SST from System III took place on April 24-25 into the mainstem of the Clearwater River. The total release from System III was 927,380 BY01 SST (Final Release Summary, BY01 SST).

Distribution Summary

Release of BY01 SST began April 15 and ended April 25, 2002 Final release numbers are illustrated in Table 9.

Table 9. Fish distribution summary by site, BY01 SST, April 15 to April 25, 2002.

Site				Length	
Outplants 4/15–4/19	**Number**	**Weight**	**fpp**	**in**	**mm**
Clearwater R. - Red House Hole	585,699	106,280	5.51	8.0	204
Clear Creek	264,031	47,722	5.53	8.0	204
Subtotal	849,730	154,002	5.52	8.0	204
Direct Release 4/22-5/25					
Main Stem of the Clearwater River	1,365,823	252,308	5.41	8.1	205
Totals/Averages	**2,215,553**	**406,310**	**5.45**	**8.1**	**205**

Source: Final Release Summary, BY01SST

Brood Year 2002

Adult Collection

Adult summer steelhead (SST) for Brood Year 2002 (BY02) were collected in the fall of 2001 and again in the winter and spring of 2002 to represent the entire run. The ladder was first opened on October 1, 2001, through October 29 and again opened November 2 for collection of early-return SST. During this 29 day period there were 587 early-run steelhead collected. The fish ladder was reopened on February 25 and closed on May 6, 2002. During the February through April operation there were 7,201 steelhead collected for a total of 7,797 fish returned for the BY02 run. This number includes 1,133 jacks. The final spawning day was May 7, 2002.

Figure 1 illustrates the numbers of returning SST adults since 1989, the first year that opening the ladder in the fall became the standard operating procedure for Dworshak NFH.

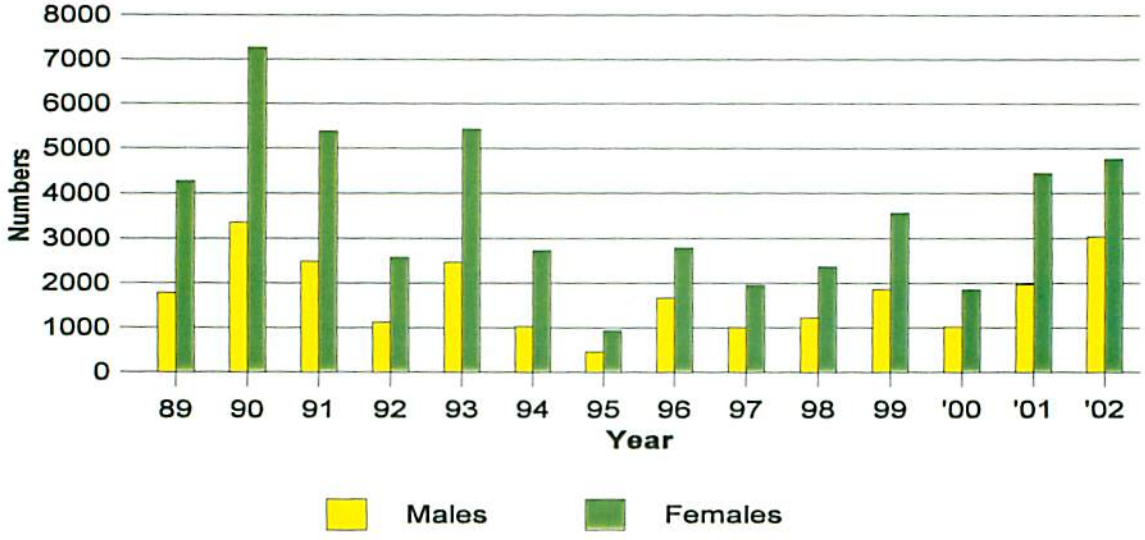


Figure 1. Dworshak adult SST returns 1989-2002
Source: DNFH - Annual Reports FY1989-2001
Spawning Report SST BY02
Spawning/Egg Take Plan SST BY02, ST02EgTk.wk4
IFRO - SST Rack Returns, Sth02ent.wk4

There were 28 fish of the 587 early returns which died before spawning began. Formalin treatments were started on November 9, 2001, and appeared to control fungus on the adults.

Spawning numbers/ratio

There were 1,878 SST spawned over the BY02 season, 888 males and 990 females. Because females have always outnumbered males in returns to Dworshak, the goal of a 1:1 male:female spawning ratio is difficult to achieve at Dworshak. While the male:female return ratio was 1:1.6 for BY02 SST, the spawning ratio was reduced to 1:1.1. There were 266 jacks spawned during the season, 168 for Dworshak, 45 for Clearwater State Fish Hatchery (CWH), and 53 for Magic Valley State Fish Hatchery (MVH). Green and surplus males and unripe females were returned to HP3 to be examined later if needed. Some surplus, over-ripe and spent fish went to HP1 to be outplanted.

Idaho Fish Health Center Disease Sampling
One jack and 29 early-return adult male SST were injected with LHRH on January 22, 2002. This was to induce gamete maturation in males the first two days of spawning in February. There were 14 of these males spawned during Take 1 on February 5, and 14 males spawned during Take 2 on February 12. All of these males were ripe when spawned. Two of the injected males died before spawning.

Approximately 4.6 percent (13 out of 280) of the females sampled for MVH (Takes 7-9) tested positive for infectious hematopoietic necrosis (IHNV). Testing was done by personnel from Idaho Fish Health Center (IFHC). Disease testing on eggs for CWH was done by the IDFG Eagle Creek Laboratory. Approximately 0.5 percent (1 out of 215) of the females from Takes 5-6 for CWH tested positive for IHN. All eggs taken for either MVH or CWH which tested positive for IHN were discarded. There were 11.2 percent (16 out of 143) of both males and females sampled for Dworshak which tested positive for IHN. Dworshak does not cull eggs which may test positive for IHNV in its production program.

Spawning Summary
A total of 14 egg Takes were completed this season, beginning on February 5, 2002, and ending on May 7. There were 990 females and 888 males spawned and the average fecundity of all SST enumerated at DNFH was 7,182 eggs/female. Early-returning adults (October) were spawned in Takes 1-3 and later returning adults (February-May) were spawned from Takes 4-14.

Egg Disposition
There were 1.63 million green eggs and 278,000 eyed eggs for MVH taken from Takes 7-9 by personnel from DNFH and CWH. The green eggs were transported to CWH on spawning day for initial incubation.

Throughout egg Takes 7-8, an experiment was conducted to see if incubating eggs at different temperatures would effect the survival of Dworshak SST eggs at MVH. During Takes 7-8, eggs from every other female, (for the first 46 females spawned for MVH), were put into 54°F water in incubator stacks at Dworshak. Eggs from every other female were also put into coolers for transport to CWH for incubation in 40°F water. The eyed eggs from the 23 females of both Takes 7-8 were incubated at Dworshak until eye-up, at which time personnel from Dworshak shocked and enumerated the eggs. Personnel from CWH packed the eggs for transport to MVH. After enumeration of Take 7 (148,600 eyed eggs) at Dworshak, the eggs were shipped to MVH on April 4, 2002. Eggs from Take 8 (129,420 eyed eggs) were shipped to MVH on April 11. Eggs from the 23 females of both Takes 7-8 incubated at 40°F from these corresponding Takes at CWH were shipped from CWH to MVH on May 9 and May 16, respectively. Results of survival between these study groups of eggs at MVH have not been reported to Dworshak at the time of this writing.

The policy for IDFG calls for culling of eggs from IHN positive females, and 13 of the 280 females spawned for MVH tested positive and were discarded.

There were 1.1 million eyed eggs from Takes 5-6 taken for CWH, incubated and enumerated at

Dworshak, and then transferred to CWH. In addition, there was one female taken for CWH which tested positive for IHN this year. The eyed eggs from this fish was discarded as per IDFG policy. Dworshak also provided 15,000 eyed eggs for IDFG and Potlatch Pulp & Paper Mill school outreach program. These eggs were also incubated and enumerated at Dworshak and transferred to CWH. These 15,000 eggs came from egg Take 10.

After shipping eggs for CWH, MVH, and Potlatch, Dworshak put an estimated 2.6 million eyed eggs into either hatching jars or incubator trays for its production.

University Research

Dworshak provided opportunities for five university researchers during BY02 SST spawning. Three researchers from the University of Idaho and two from Washington State University conducted data collection on Dworshak steelhead. A summary of their research is in the BY02 Steelhead Spawning Report.

Nez Perce Tribe Research

The Nez Perce Tribe (NPT) was funded in 1999 by the Bonneville Power Administration (BPA) to coordinate gene banking of male gametes from the Endangered Species Act listed steelhead in the Snake River Basin. Although Dworshak SST are part of the Endangered Species ESU, they are not essential for recovery. Dworshak stock are unique and represent the genetic stock of North Fork of the Clearwater basin. Dworshak provided milt and tissue samples from SST for cryopreservation to the NPT over 5 different egg Takes. A summary of their research is in the BY02 Steelhead Spawning Report.

Adult Disposition

Dworshak provided the Coeur d'Alene (CDA) Tribe from northern Idaho with adult SST carcasses from spawning operations. There were 375 carcasses (241 males and 134 females) picked up by the tribe in March and April. The tribe agreed to use these fish primarily for senior citizens, with secondary usage being dinners, funerals, general membership distribution, etc.

There were 3,119 hatchery adults outplanted from Dworshak during the return run of BY02 SST. This outplanting was coordinated by staff from Dworshak Fisheries Complex, the IDFG, and the NPT. Table 1 illustrates the dates, number of fish, and location of the outplantings.

Table 1. Returning adult steelhead outplanted from Dworshak NFH in 2002.

Date 2002	Male	Jacks[1]	Female	Total[1]	Location
Mar 8	90	13	569	659	Stites, S. Fork Clearwater R.
Mar 15	116	49	273	389	Stites, S. Fork Clearwater R.
Mar 15	69	14	231	300	Mill Creek, S. Fork Clearwater R.
Mar 21	62	35	247	309	Newsome Creek, S. Fork Clearwater R.
Mar 26	21	6	29	50	Lapwai Creek, Mainstem Clearwater R.
Mar 28	101	47	199	300	Lolo Creek, Mainstem Clearwater R.
Apr 4	46	21	99	145	Newsome Creek, S. Fork Clearwater R.
Apr 4	15	5	32	47	Lapwai Creek, Mainstem Clearwater R
Apr 17	194	84	232	426	Lolo Creek, Mainstem Clearwater R.
Apr 18	165	72	262	427	Lolo Creek, Mainstem Clearwater R.
May 1	16	13	51	67	Lolo Creek, Mainstem Clearwater R.
Total	895	359	2,224	3,119	

[1]Jack number included in Male number
Source: DNFH - Spawning Activity Report, BY02 SST.
IFRO - Summary by Stream for Supplementation, BY02 SST

Usable fish carcasses from spawning and culling activities were provided to a processor to be packaged for human consumption under a program with the Federal Bureau of Prisons. Complete adult disposition is illustrated in Table 2.

Table 2. Adult disposition of BY02 SST from Dworshak.

Destination	Number	Comments
Bear/Eagle Program	280	WSU captive bear/rapture rehab program
Fed Bureau of Prisons	2,629	Latham Processing
Outplanted	3,119	See Table 1 for details
Research	41	School programs, Univ research
Tribe	376	NPT, CDA
Landfill	1,302	Carcasses deteriorated beyond use
Mainstem, Clearwater R.	50	Wild - returned to river
Total	7,797	

Source: DNFH-Spawning Activity Report BY02 SST - Final
Spawning and Run Summary, BY02 SST.

Nursery and Early Rearing
The first three egg-Takes were from early-return adults. Eggs were put into hatching jars in the nursery at an average rate of 16,500 eggs/tank for Takes 1-7 and 11-12. Takes 8-10 were double loaded at a density of 33,000/tank due to lack of nursery tanks. These fish were later split into tanks from egg Takes 2-4 once these early fish were moved outside the nursery into BPs. When approximately 70 percent of the fry had hatched, the remaining fry were poured into the tank. Due to lack of nursery space, Takes 13-14 were hatched in Heath trays (4-6,000 per tray). These were moved as fry from the incubation trays into tanks once Take 1 was transferred outside. Dead eggs and fry were picked and enumerated from each tank and tray. There was a 93 percent survival from the eyed-egg stage to feeding fry for BY02 SST.

This year the fry from the nursery averaged 78 fish per pound (fpp) when moved out of the nursery into BPs. Fish which did not receive a coded-wire-tag (CWT) were transferred from the nursery directly to the adipose fin (AD) clipping trailer. From the trailer, fish were then distributed to the appropriate BP. Steelhead which will receive a CWT went directly from the nursery to a BP and will be tagged later in November, 2002. Idaho Department of Fish & Game (IDFG) provided the trailer and AD clipping crew. Some of the SST in System I were clipped using a new automated marking trailer. See details under the System I heading below.

A total of 2.2 million BY02 SST were moved from the nursery to the BPs beginning with Take 1 on June 4, 2002, and ending with Take 14 on August 30.

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

Projected Release
Historical losses indicate a projected release number of 2.0 million SST in the Spring of 2003. Table 4 illustrates the steelhead on station at the end of FY2002 and projected release numbers.

Table 4. BY02 SST on station and projected release summary (9/30/2002).

As of September 30, 2002					Projected to release - April/May 2003		
System	Number	Weight (lbs)	fpp	L (mm)	Proj % Loss to Release	Proj Release Number	Proj Size at Release (mm)*
Sys I	587,124	39,527	14.9	147	3	569,510	205
Sys II	655,336	29,272	22.4	128	3	635,676	204
Sys III	848,242	22,173	38.3	107	3	822,795	191
Total/ Average	2,090,702	90,972	26.7	125	3.0	2,027,981	199

*Projected length based on Systems II & III going on reuse end of November through March 1.
Source: DNFH - MIS data, October 1, 2002 DNFH - Production Narrative, September, 2002

System I
System I received 651,960 BY02 SST. Steelhead in System I were moved out of the nursery beginning with Take 1 on June 4, 2002 and ending with Take 5 on July 12. Usually infectious hematopoietic necrosis (IHN) first appears in September at Dworshak. In recent years the impact of the disease has been minimal and mortality negligible. However, SST in several ponds in System I broke with IHN early, with high mortality showing up as early as June. The first ponds which broke with the disease were handled using a new automatic marking trailer from IDFG (SST from Takes 1-2). Dworshak biologist noted stations in the trailer which appeared to be stressing the fish during the marking procedure. This additional stress on the fish from using the automatic marking trailer is being considered as a possible cause of this early outbreak of IHN. In 2001, this automatic trailer was not used at Dworshak and no ponds in System I were diagnoses with IHN during the entire 10-month outside rearing cycle. When IDFG returned to AD clip SST on July 8, the manual clipping trailer was used. Personnel handled all fish out of the nursery with the exception of the fish in two ponds which will later receive coded wire tags (CWTs). Fish in BPs 15 and 41 were later AD clipped and received coded wire tags (CWTs) in November, 2002.

System II
System II received 685,417 SST during July and August, 2002. Fish in System II were moved out of the nursery beginning with Take 6 on July 17 and ending with Take 9 on August 13. Steelhead from Takes 7-9 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 BPs. Steelhead in BPs 18, and 42 will be CWTed and AD clipped in November, 2002.

System III
System III received 859,033 SST from Takes 9 through 14 beginning with Take 9 on August 13 and ending with Take 14 on August 29. These fish were loaded directly from the nursery to the marking trailer and then stocked at final rearing densities into System III BPs. Fish in BPs 69, 71, and 72 will be coded wire tagged and AD clipped in November, 2002.

Fish in BPs 61, 63, 65 and 67 (approximately 100,000 fish) will be CWTed, but will receive no external mark to indicate a hatchery fish. This is the third time since 1984 that Dworshak will release hatchery fish without an AD clip. This is being done under the Harvest Settlement Agreement between the USFWS and the Columbia River Tribes.

Spring Chinook Salmon

Brood Year 2000

On October 1, 2001, there were 1,008,151 BY00 spring Chinook salmon (SCS) on station at Dworshak. All of these fish were from eggs with low bacterial kidney disease (BKD) status. Included in these numbers are 29,982 Rapid River stock which were also low BKD status. These fish were transferred from CWH on September 13-14, 2001.

BY00 Chinook received coded wire tags (CWTs) in the summer of 2001. The CWT retention rate for BY00 SCS averaged 90.6 percent. Retention rate was sampled in March, 2002.

In February and March, 2002, there were 54,785 BY00 SCS which received PIT tags and 54,726 of these fish which were released. This PIT tagging is part of a survival comparison of barging vs. trucking of smolts in the Columbia Basin.

Dworshak continued to work with outside researchers. On March 21, 2002, staff from Jim Congleton (University of Idaho professor) sampled 60 BY00 SCS for indices of fish conditioning; body lipid levels, blood glucose concentrations, cholesterol, triglycerides, total protein and activities of various enzymes involved in metabolism. These parameters are used to help determine the effects of fish condition concerning migration through the Snake and Columbia River hydropower system. Fish will also be examined at Lower Granite and John Day dams.

On March 21, 2002, there were 50 Dworshak stock BY00 SCS transferred to a 200 gallon rectangular trough. In early May there were 48 fish released (2 died before release) into the Main Stem of the Clearwater River. Each fish received a PIT tag before release. The area of release was then sampled with a beach seine which had a PIT tag monitor installed in it. Results from the capture were recorded and the seine modified to improve capture efficiency. Research and evaluation will continue for improving the efficiency of the seine.

Release dates of the BY00 SCS were the evenings of March 27-28, 2002. There were 1,000,561 BY00 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. BY00 SCS in System I Raceways, 9/30/01, and release data, 03/27-28/02.

September 30, 2001				% Loss 9/30/01 to 3/28/02	Release March 27-28, 2002			
Number	Weight lbs	fpp	Length mm		Number	Weight lbs	fpp	Length mm
1,008,151	14,379	70.1	92	0.8	1,000,561	50,123	20.0	140

Source: DNFH- MIS, Oct 1, 2001
Production Narrative, April, 2002
Final Release Summary, BY00 SCS

Brood Year 2000 SCS had an enumerated survival of green egg to eyed egg of 94.7 percent. All Dworshak and Kooskia SCS eggs were shipped to Kooskia in the fall as enumerated eyed eggs to

take advantage of the colder incubation water at Kooskia. Fry were then shipped back to Dworshak in the spring and placed directly into outside rearing ponds. Because the eggs were not kept on station, no precise data is available for percent survival to other life stages. The fry were shipped to Dworshak in incubator trays just before going on feed.

Information from the Idaho Fish Health Center indicates little or no increased survival of smolts when treated with erythromycin prior to release. Unlike previous years, there was no INAD investigation study for using erythromycin against bacterial kidney disease done with the BY97-BY00 SCS.

Brood Year 2001

In the summer of 2001 4,018 adult BY01 SCS returned to Dworshak and 2,261 returned to Kooskia for a total of 6,279 SCS adults returned to the Complex Adults spawned and eggs produced from BY01 SCS are represented in Table 1.

Table 1. Dworshak and Kooskia adult spawners and both green & eyed egg numbers, BY01 SCS.

Location Adult Return	Males Spwnd	Females Spwnd	Females Culled BKD	Dead Egg Trays Culled	# Eggs/ Female	Total Eggs Enumerated	# Eyed Eggs Enumerated	% Survl Enum Eye-up
Dworshak	288	409	92	6	4,180	1,195,486	1,163,838	97.4
Kooskia	212	304	74	4	4,128	829,648	770,079	92.8
Total/ Average	500	713	166	10	4,158	2,025,134	1,933,917	95.5

Source: DNFH - Final BY01 SCS Enumeration and % Survival of Eggs. SC01EGEN.wk4
BY01 SCS Spawning Report

For large-scale incubation, the water temperature in the incubation stacks at Dworshak can be reduced to approximately 42-44°F. The incubation temperature at Kooskia can be maintained at approximately 38°F. As was done with BY99-00 SCS, all BY01 SCS eggs were shipped to Kooskia for incubation after eye-up and enumeration at Dworshak. This effectively delayed hatching approximately three months and assists in reaching the desired 20 fish per pound (fpp) size at release in the spring of the year 2003.

All females spawned were sampled for Bacterial Kidney Disease (BKD) by personnel from the Idaho Fish Health Center (IFHC). The IFHC also took ovarian fluid from all females spawned for viral inspection. A different test was used for Bacterial Kidney Disease detection in FY 2001 at Dworshak. No longer was a base-line test done to compare all samples to a given ELISA reading. This year fish were tested relative to all others within the test group only. Within the group, individual fish were sorted relative to each other, from low to high. The adult females tested 13.2% high (54 out of 409) for Dworshak and 10.9% high (33 out of 304) for Kooskia. Eggs from all females which tested high were culled.

After eye-up and enumeration, there were 1,163,838 BY01 SCS eyed eggs of Dworshak stock shipped to Kooskia during November/December, 2001. There were a total of 765,061 eyed eggs

from Kooskia stock also shipped to Kooskia during this time.

From April 22 to May 6, 2002, there were five shipments of BY01 SCS sac-fry from Kooskia to Dworshak, totaling 1,114,089 fish. These are all Dworshak stock SCS.

The USFWS fish marking trailer from the Columbia River Fisheries Program Office began coded wire tagging (CWTing) the BY01 SCS on August 7 and ended on August 23, 2002. The tagging is being done for contribution research. Personnel from the marking trailer also clipped adipose (AD) fins on all BY01 SCS and split fish into several raceways during the tagging operation.

By the end of FY 2002, there were 1,038,713 BY01 SCS at Dworshak. Table 2 illustrates the size and number of BY01 SCS on station at the end of the fiscal year and projected release numbers.

Table 2. BY01 SCS at the end of the FY and projected release from Dworshak, April 2003.

September 30, 2002					Projected Release - April 2003			
Stock	Number	Wt(lb)	fpp	L mm	Proj % loss to Release	Proj Release Number	Proj Size at Release fpp	Proj Size at Release (mm)
Dworshak	1,038,713	13,431	77.3	89.0	1.5	1,023,132	20	145

Source: DNFH - MIS, October 2002
DNFH - Production Narrative, September 2002.

Brood Year 2002

Fish traps at both Dworshak and Kooskia were operated to collect BY02 SCS. The fish ladder at Dworshak was opened on June 3, 2002, and closed June 7. During that time there were approximately 255 adult SCS collected. The ladder was reopened June 27 and closed July 3. These were examined on July 16, yielding 386 adults. The ladder was then reopened July 16 and closed September 12, 2002.

There were 2,157 BY02 SCS returned to Dworshak and 1,037 SCS returned to Kooskia by the end of the spawning season (Table 1). Of those returning to Kooskia, 716 were transferred to Dworshak for spawning and 54 were passed above the weir at Clear Creek.

Table 1. Adult returns, BY02 SCS (09/30/02).

Age	Number/Dworshak	Number/Kooskia*	Total
I-Ocean	62	14	76
II-Ocean	1,480	852	2,332
III-Ocean	615	171	786
Unknown	0	0	0
Total	2,157	1,037	3,194

*54 of these fish were passed over weir into Clear Creek - ISS fish
Source: IFRO - Dworshak/Kooskia Complex SCS News-2002 Edition
DNFH - Spawning Activity Report BY2002 SCS

Figure 1 displays the SCS returns to Dworshak since 1988.

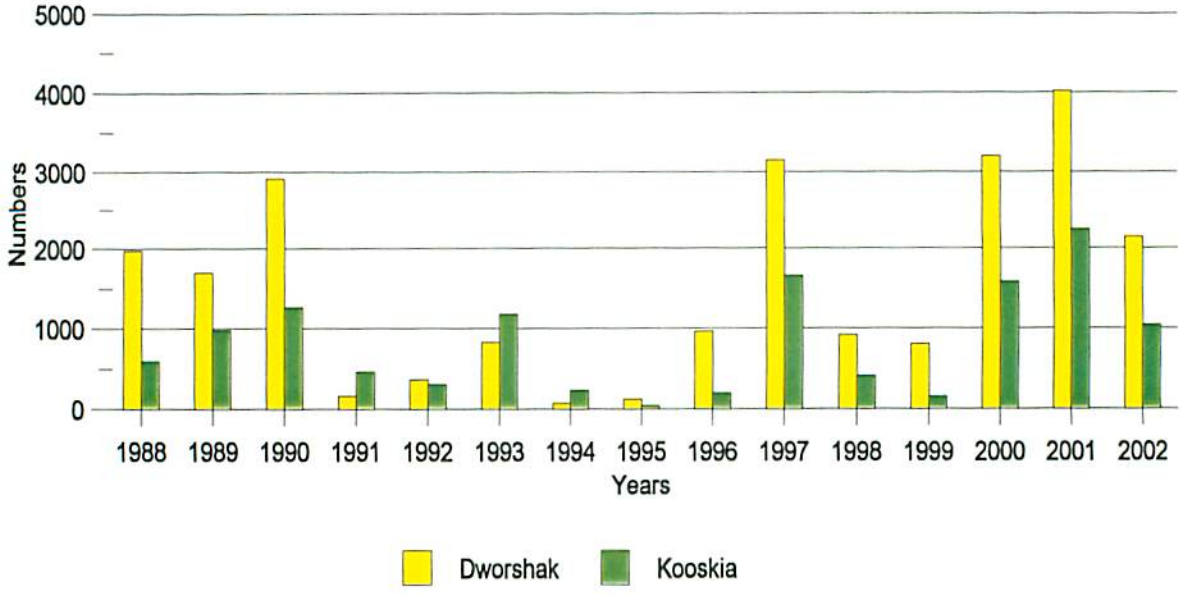


Figure 1. SCS returns to Dworshak/Kooskia 1988-2002
Source IFRO - SCS rack returns

Adult returns for BY02 SCS were enough to meet the production requirements for Dworshak and Kooskia. A sport fishery and tribal harvest took place along the Clearwater River in the spring and summer of 2002. Excess fish to spawning needs were outplanted by the Nez Perce Tribe to the McGruder Corridor on the upper Selway River for supplementation. The sport harvest on fish in the Dworshak area of the river is estimated at 3,380 by the Idaho Department of Fish & Game (IDFG). This estimate may be adjusted as data from coded-wire tags recoveries is analyzed. The Nez Perce Tribe has not provided any information on tribal harvests at Dworshak and Kooskia NFHs at this time.

Adult Holding

Dworshak stock was kept in holding pond (HP) 2 and 9, Kooskia stock was held in HP3. Kooskia transported 716 adults to Dworshak as spawning stock. Kooskia stock received an 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 transmission of BKD.

Adult Mortality

There were 167 adult SCS of Dworshak stock and 71 of Kooskia stock which died before spawning began on August 20 (prespawning mortalities). Table 2 depicts the mortality for BY02 SCS held at Dworshak.

Table 2. Mortality of adult BY02 SCS held at Dworshak

Mortality	Dworshak		Kooskia	
	Number	Percent	Number	Percent
Prespawning	106	4.9	60	5.8
During Spawning	153	7.1	29	2.8
Total	259	12.0	89	8.6

Source: Spawning Activity Report, BY02 SCS
IFRO-SCent.wk4

Adult Disposition

There were 1,142 adult BY02 SCS returning to Dworshak that were excess to spawning needs which were outplanted. There were also 49 Kooskia stock outplanted from Dworshak. These were from the 716 fish which were transferred from Kooskia to Dworshak which were excess to spawning needs. (This total of 1,191 adult SCS outplants does not include the 244 adult SCS outplanted from Kooskia NFH). Dworshak and NPT personnel sorted and loaded NPT transport trucks to various sites in the Clearwater River basin. The outplanting was for supplementation purposes. Table 3 illustrates details of the outplants.

Table 3. Adult BY02 SCS outplants from Dworshak NFH.

Date 2002	Location	Adults	Jacks	Total Number
07/24	Selway-McGruder	347	3	350
08/02	Selway-McGruder	392	8	400
08/14	Selway-McGruder	300	11	311
08/23	Lower Selway	121	9	130*
Total		1,160	31	1,191*

* 1,142 were Dworshak stock, 49 of these fish were Kooskia stock
Source: DNFH- BY02 SCS Spawning Activity Reports
IFRO- AdultOutplantBY02SCS.wk4

Tables 4 and 5 illustrate BY02 SCS adult disposition from both Dworshak and Kooskia stock.

Table 4. Dworshak stock SCS BY02 adult disposition

Location	Number	Comments
Outplant	1,142*	See Table 3
Outside Research	0	NMFS, Univ of Idaho
Washington State Univ	0	Captive Bear & Eagle Rehab
Landfill	1,015	Carcasses deteriorated
Total	2,157	

*1,142 Dworshak stock and 49 Kooskia stock were outplanted from Dworshak NFH.
Source: BY02 SCS Spawning Activity Report

Table 5. Kooskia stock SCS BY02 adult disposition (out of Dworshak only - Kooskia NFH adult transfers on Kooskia's reporting).

Location	Number	Comments
Outplant	49	Adults Outplanted from Dworshak NFH only
Washington State Univ	0	Captive Bear & Eagle Rehab
Landfill	667	Carcasses deteriorated
Total	716	

Source: BY02 SCS Spawning Activity Report

Adult spawning numbers/ratio

The BY02 Dworshak/Kooskia SCS spawning season began August 20, 2002, and ended on September 10 for Dworshak stock and September 17 for Kooskia stock. Fish from each HP were sorted and spawned once/week along with new fish coming up the ladder into HP9. There were 303 males and 425 females (1:1.4 ratio) of Dworshak stock spawned during the season. There were 239 males and 309 females (1:1.3 ratio) of Kooskia stock spawned during the season. Included in the Kooskia numbers are 46 ISS females and 35 ISS males.

Spawning Procedures

The spawning procedure was similar to past years. Tricaine methanesulfonate (MS-222) at 90 ppm was used as anesthetic for spawning purposes. Adults were crowded from the holding ponds into a crowding channel, moved into a channel basket, and placed into an anesthetic vat. Pro-Polyaqua was added (250 ml per vat) 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 approximately 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. After sufficient time had elapsed for fertilization to take place (one to two minutes), the eggs were rinsed of sperm, blood, and other organic matter.

After fertilization, eggs from each female were placed in individual Heath incubator trays. Dworshak stock averaged 3,996 eggs/female and Kooskia stock averaged 4,075 eggs/female. The trays contained a 75 mg/l iodophor solution buffered with sodium bicarbonate. Eggs were held in this solution for approximately 30 minutes as a precaution against disease transmission. The trays were then pushed into the incubator with a water-flow rate of approximately five gallons/minute. Due to a chiller malfunction, eggs in A/B bank were incubated at the same temperature as eggs in C/D bank. The water averaged 45°F throughout the incubation cycle at Dworshak.

The number of adult spawners, eggs produced, and survival of BY02 SCS are illustrated in Table 6.

Table 6. Dworshak and Kooskia adult spawners and both green & eyed eggs, BY02 SCS.

Location of Broodstock Return	Males Spwnd	Females Spwnd	Fmls Culled BKD	No Eggs /Female	Total Number of Eggs Enumerated	Percent Enum Eye-up	Number Eyed Eggs
Dworshak	303	425	124	3,996	1,182,945	97.4	1,151,759
Kooskia	239	309	109	4,075	798,666	96.8	769,162
Total/ Average	542	734	233	4,028	1,981,611	97.1	1,920,921

Source: DNFH - Spawning Activity Report BY02 SCS
DNFH - BY02 SCS Spawning Report

Idaho Fish Health Center (IFHC)

Kidneys were sampled for Bacterial Kidney Disease (BKD) from all females spawned. The IFHC also took ovarian fluid for viral inspection from 150 females from both Dworshak and Kooskia females spawned. A different test was used for Bacterial Kidney Disease detection the past two years at Dworshak than was used prior. No longer was a base-line test done to compare all samples to a given ELISA reading. As with BY01 SCS, fish were tested relative to all others within the test group only. Within the group, individual fish were sorted relative to each other, from low to high. Eggs which had values higher than 0.110 on the ELISA test were culled for the majority of Takes.

On July 29, 2002, personnel from IFHC injected all Dworshak and Kooskia stock females on station with erythromycin. This was done to help prevent vertical disease transmission to the egg. Late arriving females were injected up until one week before spawning began on August 20.

University Research

Dworshak continued to coordinate with researchers from the University of Idaho in the cryopreservation of salmonid gametes. Rolf Ingermann, Professor of Zoology from the University of Idaho, is studying the relationship between fertility and oxygen consumption of the Chinook egg along with studying the buffering capacity of the semen and blood. Dworshak provided a total of 130 ml milt from16 Kooskia males. Dworshak also provided a total of 3,800 eggs from eight Kooskia females along with 43 ml of blood from five male carcasses. All samples were from excess spawning requirements at Dworshak and were collected throughout the spawning season.

Gary Thorgaard, Professor at the School of Biological Science, Washington State University, collected a total of 30 ml of milt from six males and 3,000 eggs from three female adult SCS. This research is related to domestication behavior of Chinook. All samples were from excess spawning requirements at Dworshak

Dworshak also provided kidney samples from 78 Kooskia males and 127 Dworshak males for the Washington Animal Disease Diagnostic Laboratory. This research is related to collecting

tissues in order to compare results from different assays, including; culture, fluorescent antibody (FA) assay, enzyme-linked immunosorbent assays (ELISA), single round polymerase chain reaction (PCR) and molecular array assay. The kidneys were taken from spawned out SCS carcasses.

Idaho Supplementation Study (ISS)
There were 46 females and 35 males of Idaho Supplementation Study (ISS) fish spawned this year at Dworshak. After BKD culling, 105,367 eyed eggs from 29 of these females will be incorporated into Kooskia production. There were 54 ISS fish passed over the weir at Kooskia, 29 unmarked and 25 with fin clips. A total of 185 ISS fish returned this year to Kooskia, 43 unmarked fish and 142 fish with fin clips.

Spawning Summary
BY02 SCS adult return numbers were more than adequate to fulfil Dworshak's and Kooskia's production goals. Projected release of BY02 smolts in the year 2004 is approximately 1.03 million smolts of Dworshak stock.

There were 1,142 adult BY02 SCS of Dworshak stock and 49 Kooskia stock outplanted for supplementation purposes by the NPT.

Coho Salmon

Brood Year 2000
Coho salmon (COS) are being reared in raceways in C-bank in a cooperative program with the Nez Perce Tribe (NPT).

There were approximately 300K Brood Year 2000 (BY00) coho salmon (COS) on station at the beginning of the FY2002. During April, 2002, the BY00 COS from Dworshak were transferred to Kooskia by the NPT with help from Dworshak staff.

Brood Year 2001
Brood Year 2001 (BY01) COS were trapped at Dworshak hatchery, 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 BY01 COS began on October 30, 2001 and ended December 4. There were a total of 212 female COS spawned, producing an estimated 580,000 eggs. Program goals at Dworshak call for 320,000 eggs to produce 280,000 smolts.

Coho were transferred from egg trays to Dworshak's nursery during February and March, 2002. There were approximately 300,000 BY01 COS on station at Dworshak at the end of the fiscal year. Currently, a NPT biologist oversees the COS program using office space at Dworshak.

Rainbow Trout

Brood Year 2001

There were 14,385 BY01 RBT in Burrows pond 49 at the beginning of FY2002. On June 6, 2002, there were approximately 10,000 BY01 RBT moved to the hatchery settling pond for the annual Open House held on June 14. Approximately 1,496 were caught by the 748 kids 12 years and under who took part in the activities.

On June 12 there were 3,312 RBT transferred to Kooskia for their annual Open House. Table 1 illustrates outplanting of BY01 RBT from the Open House fishing pond at Dworshak.

Table 1. Fish Distribution Summary BY01 RBT (09/30/2002).

Date 2002	Number	Fish/lb	Weight	Harvest/Release Site	Comments
6/12	3,312	1.0	3,312	Kooskia NFH	Open House
6/14	1,496	1.0	1,496	Dworshak NFH	Open House
6/19	1,508	1.0	1,508	Worley Pond	Coeur d' Alene Tribe
6/24	3,021	1.0	3,021	Soldier Meadows	Public Water
6/25	2,723	1.0	2,723	Talmak Lake	Nez Perce Tribe
6/26	1,076	1.0	1,076	Mud Springs Lake	Nez Perce Tribe
Total/Ave	13,136	1.0	13,136		

Source: DNFH - RBT MIS, July 2002; Production Narrative, June 2002.
DNFH - Fish and Egg Fiscal Year 2002 Distribution Summary
IFRO - Rainbow Trout Planting, Dworshak and Kooskia. RBTPLN02.wk4

Brood Year 2002

Rainbow Trout from BY02 for Open House/Kids Fishing Day 2003:

On January 8, 2002, Dworshak received approximately 15,000 Shasta-strain RBT eyed eggs from Ennis NFH. For ease of record keeping at Dworshak, these RBT will be recorded as BY02. These eggs were kept on chilled water (50°F). On February 1, approximately 14,000 RBT fry were moved from the incubation trays to circular tanks in the incubation room. Cold water from a small chiller in the incubation room was plumbed into the circular tanks and temperature was maintained at approximately 47°F. On June 12, 2002, these fish were moved from the circular tanks to Burrows pond 49. At the end of FY2002 there were 12,236 RBT averaging 6.8 fpp and 182 mm (7.2 inches total length) on station.

Rainbow Trout for Outplanting:

Dworshak's current RBT program commitment is to provide fish for stocking into Dworshak Reservoir. Kooskia raised RBT for this program in 1991, 92, 93, and 95. The 1995 RBT from Kooskia were never stocked into Dworshak Reservoir. Rainbow trout reared at Dworshak NFH (river water) have not been stocked into the reservoir since 1984. There are several concerns with the stocking of these fish into Dworshak Reservoir, including disease introduction into Dworshak's and Clearwater Fish Hatchery's water supply, RBT crossbreeding with cutthroat in the North Fork, low catch rate by fishermen, etc. Therefore, the following agreement has been made with the state of Idaho:

> Hagerman NFH will raise approximately 145,000 10" Arlee and Shasta rainbows to be stocked in September and October into several locations including; L. Camas, Oxbow, Hells Canyon, Lucky Peak, and C.J. Strike reservoirs.
>
> IDFG's Nampa hatchery will raise approximately 130,000 10-12" sterile rainbows for stocking into Dworshak Reservoir in March, April and May, 2003.

Production Photos - FY 2002

Above, left: Idaho Fish Health lab worked with Bozeman lab staff during anesthesia trials on adult steelhead.

Above: Dworshak production Supervisor Bob Semple bids farewell to steelhead trout smolts as they are released into the Clearwater River last April.

Left: Production staff crowd steelhead smolts to release channel, April.

Right: New pond scrubber on maiden voyage.

Left: Coho salmon were spawned by the Nez Perce tribe last Fall, as part of their production program, with assistance from Dworshak production staff.

Administration

Budget

Dworshak NFH's FY2002 Operations & Maintenance funding package from the Corps of Engineers (COE), including overhead costs, was $2,035,088. Included in the COE funding was $70,000 budgeted to the Idaho Fishery Resource Office for continuation of their monitoring/evaluation of Dworshak's steelhead smolt production and $70,000 for the Idaho Fish Health Center for water monitoring and fish disease work. Another $16,626 was received from quarters rental reimbursements (8610 sub-activity).

Lower Snake River Compensation Plan (LSRCP) provided $409,978 (1936 sub-activity) for production of spring chinook salmon. This funding included $24,000 for the 8-week Clearwater River Summer Youth Program of nine students working at Dworshak NFH and Clearwater Fish Hatchery.

Major purchases included:

• Sludge draw-off upgrade, Systems II & III biofilters	$ 84,669
• Three electric carts	$ 28,986
• Bird exclosure materials	$ 27,591
• Minivan	$ 23,646
• Siding on two hatchery houses	$ 20,800
• Waterman water valve operations	$ 19,950
• Honeywell water valves	$ 12,870
• New welder w/cart	$ 8,313
• Two Main Building doors + one for IFHC	$ 7,685
• Wallace & Tiernan pumps	$ 6,454
• Upgraded telephone system	$ 6,123
• Flow meter	$ 4,963
• Egg picker	$ 4,904
• Incubator stacks	$ 4,847
• Piping, cold water supply system	$ 4,497
• Evaporator for Feed Building	$ 4,140
• Wire tugger	$ 3,445
• Automated external defibrillator (safety)	$ 3,420
• PVC cold water pipe, Nursery Building	$ 3,204
• Digester scraper gear box	$ 2,431
• Boiler Contactors, Mechanical I	$ 2,036

Meetings

October 2001

- Complex Manager Miller attended a Clearwater Policy Advisory Committee meeting in Lewiston.
- Complex Manager Miller met with Larry Dawson, the new Forest Supervisor for the Clearwater National Forest. This was a "get acquainted" meeting to provide the new supervisor with background on Service programs on the Clearwater River.
- I/E Specialist Sawyer and I/E Assistant Grant attended the Regional Outreach Workshop in Richland, Washington
- An all-staff meeting was held for Dworshak Fisheries Complex and the Idaho Fish Health Center to discuss safety and security issues in light of current events, and answered employee questions. Other employee issues, such as open season for FEHB and TSP, were also covered.
- Assistant Hatchery Manager Semple attended the Comprehensive Hatchery Management Plan (CHMP) meeting in Portland, Oregon, where the group reviewed and edited the draft CHMP.
- Complex Manager Miller attended a Clearwater Management Council Meeting.
- Assistant Complex Manager and Regional Uniform Coordinator Dave Owsley attended the annual Uniform Committee Meeting in Kansas City, Missouri.
- Assistant Complex Manager Owsley met with Inca/Beck and COE engineers in regard to the System I reuse rehabilitation plans.
- The annual Pacific Region Hatchery Manager's Workshop was held in Richland, Washington. Dworshak Fisheries Complex staff attending included Complex Manager Miller, Assistant Hatchery Manager Semple, Assistant Hatchery Manager Eaton (Kooskia NFH), Fishery Biologist Trock, Project Leader Burge (IFRO), and Fishery Biologists Jones and Roseberg (IFRO).
- Assistant Complex Manager Owsley met with COE engineers on the Dworshak Reservoir cold water line extension into the Nursery Building and Incubation Room.

November 2001

- Assistant Complex Manager Owsley met with Brian D'Aoust of Common Sensing on nitrogen gas monitors and sampling.
- Assistant Complex Manager Owsley and Maintenance Supervisor Clifford assisted the COE with a contractor's site visit for the System I Reuse Upgrade—Phase I. Thirty eight contractors attended.
- The semi-annual Dworshak Coordination Meeting was held; In attendance were: Bill Miller, Kelly Gardner, Bob Semple, Dave Owsley, Thomas Trock, Adam Izbicki, and Mark Bright Dworshak NFH; Bill Horton, Tom Rogers, Jerry McGehee, Chris Harrington, Jody Brostrom, Brad George, Dmitri Vidergar and Tom Tighe from Idaho Fish & Game; Dan Herrig, Lower Snake River Compensation Plan; Herb Pollard, NMFS, Craig Eaton, Kooskia NFH, R. Ed Larson, Sherman Sprague and Aaron Penney from the Nez Perce Tribe; Kathy Clemens, IFHC; Howard Burge, Ralph Roseberg and Ray Jones, IFRO; Tim Roth from the Columbia River Fisheries Program Office; Lee Hillwig, FWS; Charlie Krahenbuhl and Rex Baxter from COE. Notes from the meeting will be emailed and posted to the Dworshak website.
- Assistant Complex Manager Owsley assisted the COE with additional site visits for contractors for the Reuse System I Upgrade—Phase I.

- Complex staff Miller, Burge, Semple, Trock and Jones, along with FHC staff Blair, met with IDFG Clearwater and Magic Valley hatchery staff and IDFG Boise staff to discuss egg survival problems with Magic Valley eggs supplied by DNFH. A plan was discussed to determine possible causes.

December 2001

- I/E Specialist Sawyer traveled with I/E staff from Region 1 to NCTC for the Visitor Services and Communications Workshop. Over 250 outreach staff from mostly refuges and a few hatcheries attended.
- Assistant Complex Manager Owsley, Fishery Biologist Clark, Supervisory Animal Caretaker Vargas and Animal Caretaker Wright attended the Northwest Fish Culture Conference in Portland, Oregon.
- A special meeting was held to discuss the creation of a Friends of Northwest Hatcheries non-profit gift shop at Dworshak. Kim Strassburg, FWS liason to the FNH group at Leavenworth NFH shared her experience and ideas for getting started. Dworshak staff attending the meeting included Complex Manager Miller, I/E Specialist Sawyer, I/E Assistant Grant, Assistant Complex Manager Owsley and Budget Assistant Praest. For more details, see the Dworshak I/E section below.

- ***January 2002***
- Assistant Complex Manager Owsley traveled to Arizona to meet with hatchery personnel and engineers regarding an upgrade to the Williams Creek NFH. He also visited the Alchesay NFH.
- Assistant Complex Manager Owsley traveled to Walla Walla, Washington for a meeting on Phase II of the System I Reuse modification design.
- Assistant Complex Manager Owsley and Maintenance Supervisor Clifford met with Russ Thornton and Mike Remington, COE, Walla Walla, on the hatchery roofing project.

February 2002

- Spawn Shop committee meeting held; In attendance were Dave Owsley, Susan Sawyer, Connie Grant and a representative of the Western Images giftware and designs. Possible custom Dworshak Complex shirt and hat designs were discussed for development.
- Complex Manager Miller and I/E Specialist Sawyer attended a retreat meeting hosted by Friends of Northwest Hatcheries in Leavenworth, to lay groundwork for Dworshak Complex to become a part of the group. This will help in getting recognition and public participation in promoting information and education efforts at the Complex.
- A monthly Supervisor's Meeting was held.
- Complex Manager Miller attended a Whirling Disease workshop.
- Assistant Complex Manager Owsley met with Helen Savage, Americorps Community Youth Coordinator.
- Complex Manager Miller attended the Clearwater PAC meeting and the Clearwater Management Council Meeting.
- Assistant Complex Manager Owsley attended a Hunter Education workshop in Lewiston.
- Assistant Complex Manager Owsley met with Service engineers, BPA, IDFG and others on the Coeur d'Alene Tribal hatchery proposal and design.

March 2002

- I/E Assistant Grant attended the annual CISPUS communications workshop for natural resource professionals in Randall, WA.
- Assistant Complex Manager Owsley met with Hana Pierce, COE, Walla Walla, regarding the Main Hatchery Building floor settling contract and repair.
- Assistant Complex Manager Owsley and Maintenance Supervisor Clifford met with Dan Forge, COE, Clarkston, and approximately 35 contractors for a site review of phase II of the System I reuse contract award.
- Complex Manager Miller, Project Leader Burge (IFRO), and Fishery Biologist Jones (IFRO) attended the LSRCP coordination meeting in Boise. All LSRCP projects were represented, and a good exchange of information occurred during the meeting.
- Dworshak's Spring Coordination Meeting was held with all coordinating officers present.
- Assistant Complex Manager Owsley traveled to Little Rock, Arkansas, and then to Greers Ferry NFH, Norfolk NFH and on to Dale Hollow NFH in Tennessee for a contract meeting with Region 2 Engineer, Region 2 Assistant ARD and Merrick engineers.

April 2002

- Complex Manager Miller, Assistant Hatchery Manager Semple attended the Project Leader's Meeting in Reno.
- Assistant Complex Manager Owsley and Maintenance Supervisor Clifford assisted Randy Rogers of BRACO Services with a BPA-funded energy conservation audit.
- Complex Manager Miller and I/E Specialist Sawyer presented a program for the National Lewis & Clark Bicentennial Planning Committee conference in Lewiston. The program discussed the fishery issues in the Clearwater basin.
- Complex Manager Miller attended a FWS *O. mykiss* meeting at the Regional office to discuss issues on resident rainbow and ESA listed steelhead.
- Complex Manager Miller attended part of the technical workshop on hatchery and wild fish issues at the Western Division AFS Conference in Spokane, Washington.
- Assistant Complex Manager Owsley and Maintenance Supervisor Clifford attended a pre-construction meeting at Dworshak NFH with COE staff and Shannon Heating and Cooling. Shannon, a company from Coeur d'Alene, won the Phase I contract for modifying System I.

May 2002

- Complex Manager Miller attended a Clearwater Policy Advisory Committee (PAC) meeting and a technical subcommittee meeting. The PAC is overseeing the preparation of the subbasin plans for the Clearwater Basin.
- A Dworshak Complex Supervisor's meeting was held.
- Assistant Complex Manager Owsley and Maintenance Supervisor Clifford participated in a pre-construction meeting with the COE, Walla Walla, and R.H. Grover Construction, Missoula, Montana. This company got the bid to do Phase II of the System I modifications contract.
- Assistant Complex Manager Owsley traveled to Boise and met with LSRCP office staff, Hagerman NFH, and IDFG personnel on the new NPDES permit and the LSRCP projects.
- Complex Manager Miller attended the monthly Clearwater Management Council meeting.

June 2002

- Complex Manager Miller attended a meeting on Dworshak Reservoir Operation held by COE at the Dworshak Dam Visitors Center.
- Assistant Complex Manager Owsley and Maintenance Supervisor Clifford met with Brian Miller and other engineers from the Corps of Engineers, Walla Walla District, and R.W. Grover, contractor, for System I phase II modifications.

July 2002

- Regional Office ARD Diggs and Dunn led a meeting with Dworshak Complex staff regarding changes in Fish & Wildlife management.
- Vicki Finn and a SCEP student Megan Hill from the Regional Office visited Dworshak to review station operations.
- Complex Manager Miller and IFRO Project Leader Burge attended a Hatchery/Native Fish team meeting in Boise.
- Assistant Complex Manager Owsley traveled to Nevada for a site visit at Lahontan NFH. Mr. Owsley attended a design meeting with Regional Office engineer, a contractor, and an A&E firm. Mr. Owsley also visited the Desert Creek Ranch hatchery.

August 2002

- Assistant Complex Manager Owsley attended the annual AFS meeting in Baltimore, Maryland.
- Assistant Complex Manager Owsley and Supervisory Administrative Support Assistant Praest participated in a Year-End Budget Procedures conference call with Regional Office.

September 2002

- Assistant Complex Manager Owsley assisted Mark Lowman, COE, Walla Walla, on the annual railroad overpass inspection.
- Complex Manager Miller and IFRO Project Leader Burge attended a Columbia River workshop in Portland, Oregon. Miller and Burge also attended an Idaho FWS field office coordination meeting at Deer Flat NWR.
- Assistant Complex Manager Owsley assisted GeoEngineers on a spill prevention plan and drinking water system evaluation.
- A Complex Supervisors meeting was held.
- Assistant Complex Manager Owsley, Maintenance Supervisor Clifford and Complex Manager Miller attended a pre-construction meeting with GeoGrouting from San Francisco in regard to the floor slab jacking contract for the Main Hatchery Building (COE contract).

Training

- I/E Assistant Grant attended *New Employee Orientation* in Portland, Oregon, along with Justin Bretz from the Idaho Fishery Resource Office.
- Dworshak Complex staff members Dave Clifford (maintenance) and Gerry Fogleman (Kooskia NFH) attended *OSHA* training in Lewiston, Idaho.
- Maintenance Worker Weeks attended *Domestic Water Training.*
- I/E Assistant Grant attended the annual *CISPUS Workshop* natural resources communications skills training in Randle, Washington.

- Assistant Complex Manager Owsley and Maintenance Worker Weeks attended a the annual Idaho Rural Water Association *Domestic Water* course in Boise.
- Animal Caretaker Hamilton, of Dworshak's production crew and Animal Caretaker Simpson, of Kooskia's crew, attended *Cold Water Fish Culture* training, NCTC, Bozeman, Montana.
- I/E Assistant Grant attended *Education Programs for Youth: School's Out!* summer programs training at NCTC.
- Fish Culturist Wright and Fishery Biologist Izbicki of the Dworshak production section attended the *Mid-Career Retirement Workshop* in Reno.
- Maintenance Worker Rosales and Sims attended *Pre-Retirement Training.*
- OAC Gardner attended *Basic Records Operations* training at the Regional Office in Portland.
- I/E Assistant Grant attended Volunteer Recruitment and Management in Portland.

Safety & Wellness

October 2001
A staff safety meeting and fire drill held this month.

November 2001
Oxarc, Spokane, performed required annual respirator masks fit testing, care and use training.

December 2001
A staff safety meeting was held with Orofino resident State Police Officer Kevin Rouse talking about drunk driving laws and signs of impaired driving.

January 2002
Ginger Christiansen from the U.S. Forest Service, conducted two First Aid/CPR classes for 23 employees.

March 2002
The 2002 Dworshak Safety Committee was selected. Safety Officer Dave Owsley heads up the committee, with Wayne Hamilton from the Production section as chairman; Justin Bretz (IFRO), Marilyn Blair (IFHC), Ben Greene (Maintenance)and Kelly Gardner(Administration).

A staff safety meeting was held with Regional Watercraft Safety Coordinator Aaron Garcia, IFRO, who provided a presentation on personal safety in watercraft operation.

Hobo spider traps have been purchased and placed around the hatchery. There are no reports of hobo spiders to date.

April 2002
Staff at Dworshak were treated to a "Safety Snack Break", in acknowledgment of DOI Safety Week.

The Safety Committee met to discuss two injuries which occurred this month, and to plan for upcoming staff safety meetings.

May 2002
Deputy Complex Manager Owsley assisted Thomas Skinner, Fire Management Officer from Mid-Columbia NWR Complex, in an evaluation/site tour of the Wildland Fire Management Plans for Dworshak and Kooskia NFHs.

The monthly staff safety meeting was held; Maria Gray, from the Orofino Job Service (Idaho State Employment Office) spoke to the crew on the subject of Youth Worker Safety.

June 2002
Once again, the Safety Committee made a brief presentation to staff regarding the specific hazards involved in our Open House and Kids' Fishing Day event. Handouts were provided for both employees and volunteers which outlined many common hazards, as well as the procedures for reporting accidents and injuries.

July 2002
Don Gardner, Fire Prevention Officer for the Orofino Volunteer Fire Department, gave a presentation to Dworshak Complex staff regarding protecting private homes and property from brush fires and other exterior fires.

The Complex Safety Program document was updated by the safety committee and approved by the station Safety Officer.

Purchases for safety in the month of July included software for OSHA compliance reference and for customizing station safety plans, safety committee handbooks, and an automated external defibrillator (AED).

August 2002
The Safety Committee met briefly to discuss the possible purchase of new videos for the Complex safety video library and prepare a recommendation for whether or not the Complex should purchase bicycle helmets for the three bicycles recently purchased that will be used only on-site.

An Automated External Defibrillator was installed in the main hallway of the Administration Office, after key staff received certified training in its use.

Staffing

DNFH Employees, FY 2002.

Name	Position Title	Period of Employment	Status
Allain, Richard E.	Animal Caretaker	06/30/01–09/30/02	Permanent
Bohn, Robert R.	Laborer	04/23/02–06/20/02	Temporary
Bright, Mark G.	Fishery Biologist	10/01/01–09/30/02	Permanent
Clark, David J.	Laborer	04/23/02–06/20/02	Temporary
Clark, Robert W.	Fishery Biologist	10/01/01–03/22/02	Permanent
Clifford, David E.	Maintenance Supervisor	10/01/01–09/30/02	Permanent
Gardner, Kelly J.	Office Automation Clerk	10/01/01–09/30/02	Permanent
Grant, Connie	Information/Education Assistant	10/01/01–09/30/02	Part-Time/ Seasonal
Greene, Benny C.	Electronics Mechanic	10/01/01–09/30/02	Permanent
Hamilton, William W.	Animal Caretaker	10/01/01–09/30/02	Permanent
Izbicki, Adam H.	Fishery Biologist	10/01/01–09/30/02	Permanent
Kellar, Robbie D.	Animal Caretaker	12/19/01–02/18/02 06/02/02–09/30/02	Temporary
King, Rick A.	Maintenance Worker	10/01/01–09/30/02	Permanent
Miller, William H.	Complex Manager	10/01/01–09/30/02	Permanent
Ochszner, Dennis J.	Animal Caretaker	10/01/01–09/30/02	Permanent
Owsley, David E.	Environmental Engineer/Assistant Complex Manager	10/01/01–09/30/02	Permanent
Praest, Diane E.	Supv Admin Support Assistant	10/01/01–09/30/02	Permanent
Rosales, Raymundo A.	Maintenance Worker	10/01/01–09/30/02	Permanent
Sawyer, Susan D.	Information/Education Specialist	10/01/01–09/30/02	Permanent
Seldon, Kimberly K.	Animal Caretaker	10/01/01–09/30/02	Permanent
Semple, Robert A.	Supv. Fishery Biologist	10/01/01–09/30/02	Permanent
Sims, Hubert M.	Maintenance Mechanic	10/01/01–09/30/02	Permanent
Sperber, Joan M.	Budget Technician	10/01/01–09/30/02	Permanent
Stretsbery, Gerald	Laborer	10/01/01–09/30/02	Permanent
Trainor, David A.	Maintenance Worker	10/01/01–09/30/02	Permanent
Trock, Thomas J.	Fishery Biologist	10/01/01–09/30/02	Permanent
Vargas, John J.	Animal Caretaker Leader	10/01/01–09/30/02	Permanent
Walker, Cliff L.	Social Services Assistant	10/01/01–09/30/02	Permanent/ Seasonal
Weeks, Terry C.	Maintenance Worker	10/01/01–09/30/02	Permanent
Wright, Benjamin A.	Animal Caretaker	10/01/01–09/30/02	Permanent

Personnel Actions

- Rob Kellar, Laborer, WG-3502-3, working on a 30-day emergency hire, effective December 19.
- Robert Clark, Fishery Biologist, transferred to a new assignment at Wolf Creek NFH in Kentucky, effective March 23.
- Two 30-day emergency temporaries, Rob Bohn and David Clark, were hired for production, effective April 23.
- W. Wayne Hamilton was promoted to WG-5 Animal Caretaker, effective May 5.
- Joan M. Sperber was promoted to GS-6 Budget Technician, effective May 19.
- David Clark and Robert Bohn, Laborers, hired as emergency hire 30-day temporaries in the production section, completed their term of duty effective June 21.
- Rob Kellar was hired as a 6-month temporary Laborer, WG-3502-4, in the production section, effective June 2.
- Richard Allain was hired as a permanent, full-time WG-5048-3 Animal Caretaker on the production crew, effective June 30.
- Diane E. Praest was promoted to GS-9 Supervisory Admin Support Assistant, effective August 11.

Administration Photos - FY 2002

Left: Supervisory Administrative Support Assistant Diane Praest models the latest in back brace hardware after her surgery. Praest was promoted to full performance level in August.

Above: The Complex Safety Committee sponsored a Snack Attack meeting for DOI Annual Safety awareness campaign.

The Complex staff Christmas party and gift exchange were held at the VFW; Wayne Hamilton, Production crew, received the coveted cookie jar award from Assistant Complex Manager Dave Owsley.

Fish Biologist Bob Clark, right, receives gifts at his going-away party in March. Clark transferred to Wolf Creek NFH in Kentucky.

Facilities Maintenance

October 2001

- A new rain spout was fabricated for the Feed Building.
- A new cover and tow device was fabricated for the production power supply cart for the pressure washer.
- The digesters for System I were vacuum cleaned by Big Sky.
- The heat exchanger and pipe removal in Mechanical Building II was completed during the month.
- All manholes were pumped of water. An air leak in the air supply line of holding pond #1 was repaired.
- Battery cable ends were replaced on the Komatsu forklift.
- A new hold-down bracket was fabricated for the battery charger on Cart #11.
- A new battery box was fabricated for Cart #3.
- The exhaust fan was wired properly to conform with the new flame specification in the Fish Health Lab.

November 2001

- Problems occurred this month when switching to reuse; gaskets failed, and the boilers in Mechanical Building II had to be shut down due to a water leak inside Electrode #2.
- New lift assist cylinders and travel limit chains were installed on the L9000 distribution truck.
- A new electrical power supply cart was assembled for the production spray washer.
- The two Magic Valley fish pumps were re-painted.
- The cutting edge on the John Deere tractor front bucket was replaced.
- The Spawning Room booster pump was replaced, and the old one repaired.
- The emergency brake on cart #3 was replaced.
- Six aluminum screen frames were fabricated for chinook A- and B-bank raceways.
- Maintenance was done on the Komatsu forklift. In preparation for upcoming contract work on the boilers, a fire & maintenance line was removed.
- Repairs were made to the System I sludge scraper system (swing arm). The drive chains were taken off and soaked in oil; the electric motors were removed and sent to Idaho Machine for rebearing and cleanup.

December 2001

- A new electrode assembly jig was fabricated for Mechanical Building II boilers. Also in Mechanical Building II, electrodes for the #2 boiler were rebuilt, and the packing was replaced on the #2 electrode boiler circulation pump.
- Boilers #1 and #2 in Mechanical I were started for reuse, and the #2 gear box for the System II filter bed system was replaced.
- A fuel line leak was repaired on the #1 standby generator, and the generator room was cleaned and painted.
- A new axle was fabricated for the pond cleaning pump.
- Two pond cleaning pumps were cleaned and painted.
- A new front jack and wheel were installed on the #2 Magic Valley fish pump.

- *The John Deer lawn tractor* plow was repaired in preparation for snow removal, and all manholes were pumped of rain water.
- Front tires were replaced on carts #10 and #11, and a tire leak was repaired on cart #6.
- Repairs were made to the electric forklift at the Feed Building, and a new compressed gas carrier was fabricated for the Production forklift for spawning room gas (safety).
- The tank was removed from the Dodge flatbed, and the right rear hold-down was repaired.
- Body repair was done on the Dodge Caravan by Bill's Auto Body, Orofino.
- Sink fixtures in the Crew Room were replaced.

January 2002

- Painting of Generator #1 in the Generator Room and Generator #2 in Mechanical Building I was completed.
- A new flat bed insert was fabricated and painted for Cart #3.
- The fountain at the front of the Main Hatchery Building was drained, cleaned and refilled.
- A new water system for the relocation of the PIT tagging station in Mechanical I was plumbed.
- Staff from Big Sky looked at the cleanup of the Burrows ponds sumps for bid.
- The batteries and hold-down brackets on Cart #5 were replaced.
- Four tag holders were fabricated for the Spawning Room.
- A hot water pressure valve was repaired, and a new bracket was fabricated for the Spawning Room hot water supply.
- A new aluminum female fitting was installed on the #3 Magic Valley fish pump.
- New screens were installed on their frames for the A- and B-bank chinook raceways.
- Two aluminum adult fish measuring devices were fabricated for the Spawning Room.
- Level indicators were fabricated for the reuse channels in Systems II & III.

February 2002

- All manholes were pumped of water.
- Lights were replaced and an electrical plug re-routed for the stove in the Fish Health Center.
- A sliding glass window in Quarters #2 was replaced by a local contractor.
- Traveling water screens in the Main Pump House were lubricated.
- Mechanical Building I bathroom floors were painted.
- Stainless steel limit chains were installed on the top doors of the distribution truck to prevent overextending the hydraulic cylinders.
- The Mitsubishi cooling unit (compressor) in the Maintenance Shop was replaced under warranty.
- A new lock was installed on the call-back computer cabinet.
- The ruler on the Fish Health Center's mobile spawning room table was replaced.
- The safety pressure relief valve and piping on the #1 boiler in Mechanical Building I was replaced.
- The control wire connector on the snow plow of the Dodge 4x4 1-ton truck was replaced.
- The barrier gate cable in the spawning room was repaired, and the rear gate channel crowder cable was replaced.
- The ozone piping was modified to allow straight-through flow for warm water for the Open House fish.

March 2002

- An aluminum pedestal was fabricated for the counter in the Spawning Room.
- An aluminum egg shocking cart with an aluminum screened insert was fabricated for the Incubation Room.
- Repairs were done on the aluminum steps and catwalks on the C-bank raceways.
- A 4" supplemental supply line was fabricated to add warm water from System II's heated reuse supply to BP49 in order to warm water for the Open House rainbow trout.
- A 3" valve for chilled water in the Incubation Room was removed for later replacement due to a leak.
- Air lines to the Spawning Room guillotine were cleaned, the cylinder for the fish clamp replaced, and the frame ground down for alignment purposes.
- The refrigeration unit in the freezer room of the Feed Building failed during March. The evaporator was removed and replaced, and the refrigeration lines were re-plumbed and insulated. A crew from Quality Heating & Air, Lewiston, recharged the system with new refrigerant.
- The Ford Aerostar had a bad pinion bearing which knocked the seal out of place and caused a leak. This occurred while the vehicle was in travel status in the Tri-Cities area. It was necessary to send a maintenance worker with another vehicle and a rented U-Haul vehicle tow trailer to retrieve the vehicle. Repairs were made.
- Remodeling was begun on the office of Supervisory Animal Caretaker. Cabinets were removed and concrete poured in the space. The room was re-carpeted by 1-2-3 Floors.
- Damage to the traffic guard rail at the hatchery entrance was repaired. Damage was caused by a feed truck exiting the visitor parking lot.
- The front fork guard on the #2 Komatsu forklift was straightened and replaced.
- Maintenance staff cut animal figures from plywood for an activity planned for the upcoming Earth Week event at Big Eddy.
- A pull-out shelf for a computer keyboard was fabricated for the Idaho Fish Health Center.

April 2002

- Trail marker stands were fabricated for Dworshak State Park.
- An oil leak was checked and repaired on the AMZ50 manlift.
- The heat pump for Mechanical Building I was removed for repair of the seals.
- The motor fan on the pond aerator was replaced.
- Remodeling was done on the office of the Supervisory Fish Culturist. New carpet and paneling were installed, and a new work station assembled. An accordion door has been ordered.
- A temporary warm water line was fabricated for the rainbow trout for the 2002 open house. When the fish were split into two groups, a line splitter was also fabricated to accommodate both ponds.
- Maintenance crew hauled adult steelhead to Newsome Creek for the Nez Perce Tribe.
- Cleanup was done and repairs made on the System II and III filter beds.
- Maintenance Worker Rosales cut plywood figures for an educational painting activity planned for the annual Earth Day event at Big Eddy.
- Catwalks along the Holding Ponds raceways were reinforced, per request from NPT fisheries.
- New mud valve openers were fabricated for the Holding Pond raceways.
- The trap structure for Holding Pond 9 was dismantled for cleanup.

May 2002

- American Leak Detection Company repaired the expansion joint in System III reuse aeration chamber.
- Grover Construction began work in System I.
- Mechanical Building II was cleaned out in preparation for the boiler contract work.
- The remaining 9"-wide catwalks on the Burrows ponds were replaced with 18"-wide grip strut. This project, which was begun after the steelhead release one year ago, is now complete, bringing the catwalks up to OSHA standards.
- New stems, pedestals and valve operators were installed on Holding Ponds 1, 2 and 3.
- An adapter was fabricated to fit the Big Sky Vacuum Truck for clearing out the drainage systems on the System I–III Burrows ponds. Big Sky Industrial cleaned the discharge sumps, the reuse channels and reuse channel pump sumps. Dworshak Maintenance staff provided the labor for movement.
- The annual power-outage was held.
- The emergency breaker in the Main Pump House failed, and an emergency call was made out for a technician from Spokane to repair it.
- An extension line was fabricated for the System I clarifier pump down.
- The guard rail for the sludge basin was removed to allow waste from the Burrows pond drainage cleanup to be dumped. The basin aerator was also removed for servicing.
- Maintenance Electrician Greene went to Kooskia to assist Maintenance Worker Fogleman in hooking up a new transformer unit.

June 2002

- The Honeywell valves on the heat exchanger in Mechanical I were replaced.
- The damaged air drier for the Honeywell valves was removed for replacement.
- The 2-inch line for the condenser water was replaced for the refrigeration system.
- Open House set-up included:
  - Prison crew for one week to clean up grounds.
  - Paramount Weed Company provided weed control throughout the hatchery.
  - COE picnic tables were brought to the hatchery for temporary use.
  - Charlie Frakes re-striped driving and parking areas throughout the hatchery.
  - CRYP youth assisted with setup of event, setting up cabanas, posting signs, etc.
  - Trout were transferred from Burrows ponds to the point for fishing.
- A 4-inch aluminum 45° elbow was fabricated for moving fingerling.
- Steps were repaired for one of the contractors.
- Rainbow trout were hauled to Kooskia for the Open house.
- An idler bracket was fabricated for the System II sludge scraper system. Idaho Machine fabricated shafts and assembled the units.
- Quality Heating & Air serviced all HVAC units on the hatchery grounds.
- The leaking hydrant by the Maintenance Shop was excavated. A new hydrant has been ordered.
- Dworshak maintenance crew assisted in hauling adult chinook from Kooskia NFH to Holding Ponds at Dworshak NFH.

July 2002

- The final sign holders for Dworshak State Park were fabricated.

- Brush adjustment modifications were made to the pond cleaner.
- The points and distributor on the #1 Komatsu fork lift were pulled and replaced.
- All gate drives were lubricated.
- The diverter gate was repaired and all components in the spawning room lubricated.
- The #5 sludge scraper drive sprocket was removed for replacement in the System III filter beds.
- The front springs were replaced on electric carts #10 and #6.
- Bolts on the #7 reuse pump packing gland were replaced.
- The #6 main pump motor was pulled, rewound and replaced.
- Two pond cleaner brush heads were fabricated.
- Dworshak Maintenance staff hauled SCS adults from Kooskia NFH to Dworshak on July 10.
- Contacts and wires were replaced on electric boilers #1 and #2 in Mechanical Building I, and all wire connections were re-torqued.
- Clearwater River Youth Program workers completed several projects, including weeding, pouring concrete curbs at the residences and the Fish Health Center, and various production projects.
- Materials for new steps and ramps at the IFRO office were purchased. Grip strut material salvaged from the Burrows pond walkway upgrade were cleaned of brackets and will be used in the fabrication as well.
- Sprinklers were capped and/or repaired in preparation for construction of a new water line.
- They System I mineralization pump station was cleaned up and repaired, and prices were obtained for a new chemical resistant door.
- Repairs were done on the scraper system for Systems II and III, and prices were obtained from Kaman Industrial Supply for new fiberglass scrapers and plastic chain.
- Several items of equipment received oil changes during July, including channel and reuse pumps, incubator equipment in Mechanical Building I, pumps in the Main Pumphouse, all sludge scrapers in System II and III, the Ranger 8 portable welder and portable air compressor, and the north bushing for the #3 traveling water screen.

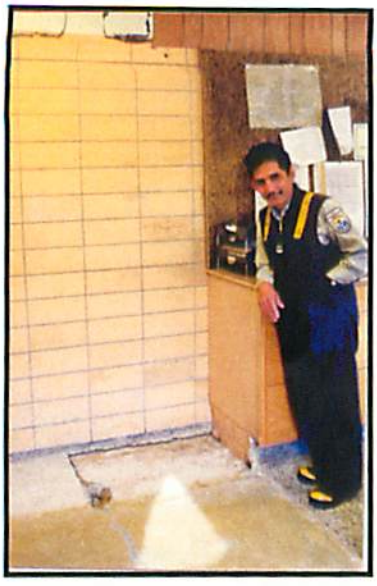
August 2002

- A pond cleaner stand was fabricated and painted.
- A new tee and valve were installed on the incubator head tank, and the cold water line for the chiller unit was plumbed. Pipe stands were fabricated for Production.
- The feed sack stand was repaired and anchored to concrete.
- Idler brackets were fabricated and painted for the System II and III sludge scraper system.
- A pedestal mount was fabricated for the egg picker stand.
- A 4" valve was plumbed in for the tempering line to each tank in the Nursery.
- The dewatering pumps for the System I clarifiers were removed.
- A new flow meter was installed on the domestic water system in Mechanical I.
- The oil shed was cleaned and new storage units ordered.
- New storage units were assembled and installed in the long room storage (custodial supplies).
- The #6 pump motor was set and adjusted.
- Work began on the new steps and ramp at the Idaho Fishery Resource Office.
- The fire hydrant in front of the shop was repaired.
- Bids were obtained for new doors for the Main Hatchery Building and the Lab.

September 2002

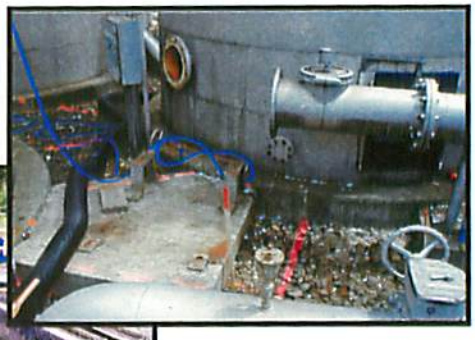
- Work on the Nursery Room cold water line continued, installing tempering piping to each nursery tank.
- The "No Vehicle Traffic" sign on the east end of the Burrows ponds was repaired (safety).
- New brushes were installed on the pond cleaner, and an 8-foot diameter galvanized disinfection tank was purchased and installed for the pond cleaner.
- The chemical room door and frame for System I was replaced. Also, the System I gear reducer and chains in the sludge digester were reassembled.
- The north end step and landing on the IFRO building was completed, and the south landing was installed. The ramp and ramp footings will be completed next month.
- Eight broom heads were fabricated for the Nez Perce Tribe coho program.
- Quality Heating & Air was called in to service the Incubation Room chiller following freezing up of the system.
- Sprinkler repairs were done for Residence #1, and new vinyl siding was installed on Residence #4 exterior walls.
- Maintenance staff worked with R.H. Grover staff to locate and repair sprinkler heads.
- A crew from GeoGrout began work this month on raising the floor in the Main Hatchery Building lobby. Holes are being drilled into the floor and a heavy-duty grout pressed into the space under the floor to lift it. On September 26, the sewer line for the Main Hatchery Building was compromised, causing the pipe to fill with debris and grout and backing up the sewer system. At month's end, all bathroom facilities were "out of order," and portable toilets were on order for the Hatchery Building staff. No other buildings were affected.

Maintenance Photos - FY 2002



John Vargas, left, Animal Caretaker Supervisor, takes a look at his new office renovation. At right,Terry Weeks, Maintenance Mechanic, finishes the grip-strut walkway upgrade project to meet OSHA standards.

Grover Construction of Montana was awarded the System 1 reuse upgrade contract. The old sludge ponds were drained, all mechanics replaced, and the hatchery tour route was blocked or rerouted for much of the summer and fall months due to construction. The contract experienced several delays, and work continued into FY03.



Left: Nursery building roof damage was documented for a repair/replace funding request to ACOE. Cracks, moss, roof sealant bubbles and several large holes were all noted inside and out. **Right:** Laborer Scooter Stretsbery plows heavy January snow from main walkway.

Statistics

Dworshak NFH Visitor Use Statistics, FY2002

Program Type	# of Contacts	% Change From FY2001
On-site Hatchery Visitors (Register and self-guided tour)	7882 *	21%
Guided Tours	97 ◇	(- 4%)
Tour Visitors	1770 *	(- 2%)
Open House (children 12 & under)	748 *	(- 16%)
Open House (other visitors)	1645 *	(- 16%)
Total On-Site Contacts (all *)	12045	8%
Off-site Programs/Displays/Events	55 ◇	7%
Total Off-Site Contacts (* *)	15,700 * *	.8%
Total FY2002 Programs (total ◇)	152	no change
Total FY2002 Contacts (* + * *)	27,745	4%

Table Summary

Overall hatchery visitation increased over 20% from the past 3 years. This was due in part to increased contractor/construction traffic on site for 6 months, mild winter weather, excellent salmon returns and viewing opportunities, and an increase in programs offered onsite. Although fewer guided tours were given, there was only a slight decrease in the number of visitors taking tours.

Summer weekend tours were offered once again, with good attendance recorded. The 12th annual Open House/Kids Fishing Day saw a marked drop in attendance, possibly due to extreme heat. Many visitors came out for the day, but due to the structure of the fishing pond waiting line, and

no shade or water close by, many left early without registering. The format of this event was modified during the day, and will be permanently changed next year to offer more comfort for visitors, and more participation by visitors in the exhibitor vending area.

Off site programs increased slightly, with staff participating in regularly scheduled events through partnership efforts in the region, and a few new events such as the National Lewis and Clark Bicentennial Conference in Lewiston, ID this year. Staff provided a field trip to conference attendees, with an exhibit and handouts highlighting our outreach efforts, and the history of anadromous fish runs since the time of Lewis and Clark.

New additions under the Information/Education umbrella included the approval and installation of the Dworshak Spawn Shop, operated through an MOU with the Friends of Northwest Hatcheries, Inc. based in Leavenworth, WA. The shop opened late May with a Public Open House, and sold more than $1000 in outdoor-themed gifts and educational merchandise. The Friends group also sponsored a new art project for the annual Earth Day activities at Big Eddy marina.

Fisheries Outreach staff continued to meet regularly and work toward improving Region-wide and field station programs. Meetings occurred in Richland, WA. with Regional Office staff providing public relations, web site design training, and a group tour of the Hanford NWR.

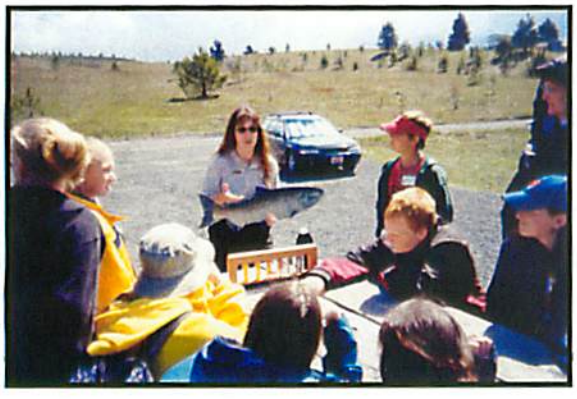
Hatchery in the Classroom was very successful overall this year - with an average 88% survival of eyed-egg to release of steelhead fry. Four schools participated in the program. I/E staff is working with schools to write grants for their own aquarium units.

Outreach partnerships with several local, state and federal agencies continued in promoting natural resource education throughout the Clearwater and Snake River basins.

The hatchery continued preparations for the upcoming Lewis and Clark Bicentennial celebration by finalizing the grant agreement for development of the new interpretive kiosk in the main visitor parking lot, drafting a comprehensive Visitor Use Plan for facilities upgrade, providing a living history interpretive program on and off-site (*"After the Journey - Through a Mother's Eyes"*); and designing new lobby entry area with more interactive and visitor-friendly features.

Outreach Photos - FY 2002

Photos clockwise, from right: Connie Grant portrays Lucy Marks, mother of Meriwether Lewis, in living history program; Nezperce High School students release their chinook fry into local stream; Orofino Elementary students dissect steelhead as part of their Hatchery in the Classroom project; I/E staff participate in several off-site natural resource education events; FWS teamed up with ACOE to staff a booth at the Clearwater County Fair; left - young fisher-girl at12th annual Kids Fishing Day and Open House event in June.



Cooperative Programs

Dworshak Fisheries Complex personnel (Dworshak National Fish Hatchery, Kooskia National Fish Hatchery, and Idaho Fisheries 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
- 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 Parks and Recreation Department
  - Dworshak State Park
- Idaho State Historical Preservation Office (SHPO)
- Lewis-Clark State College
- University of Idaho (U of I)
  - Cooperative Fishery Research Unit (CFRU)
  - School of Forestry, Wildlife and Range Sciences
  - Aquaculture Research Center

State of Washington

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

Tribal Entities

- Coeur d'Alene Tribe
- Nez Perce Tribal Fisheries
- 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
- Pulp and Paperworkers Resource Council (PPRC)
- Retired Senior Volunteer Program (RSVP)
- Rotary Club

Other

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

Cooperative Program Photos - FY 2002

Photos, from left: Dworshak Spawn Shop opened under Cooperative Agreement with Friends of Northwest Hatcheries; **Above right**: Hatchery Hosts Jesse Lyda and Joe Davis work under MOU with local RSVP program; **Right:** staff from ACOE - Dworshak Dam offered kids activities at annual Fishing Day event; **Below, right:** Art project funded by FNWH for local Earth Day event; **Below:** Clearwater River Youth Program employed 9 high school students in an 8 week summer program at Dworshak NFH and Clearwater State fish hatchery.

Left: Nez Perce Tribe continued producing Coho salmon through a Memorandum of Understanding with the hatchery. Training, equipment, storage and office space are provided on-site under the terms of the agreement.