Washington State Department
Of
Fish and Wildlife

LFH Complex
Annual Operation Report

October 1, 2005 thru September 30, 2006

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INTRODUCTION

Lyons Ferry Complex (LFC; See Figure 1) includes LFH, TFH, Cottonwood Acclimation Facility (Cottonwood AF), Dayton Acclimation Facility (Dayton AF), and Curl Lake Acclimation Pond (Curl Lake AP).

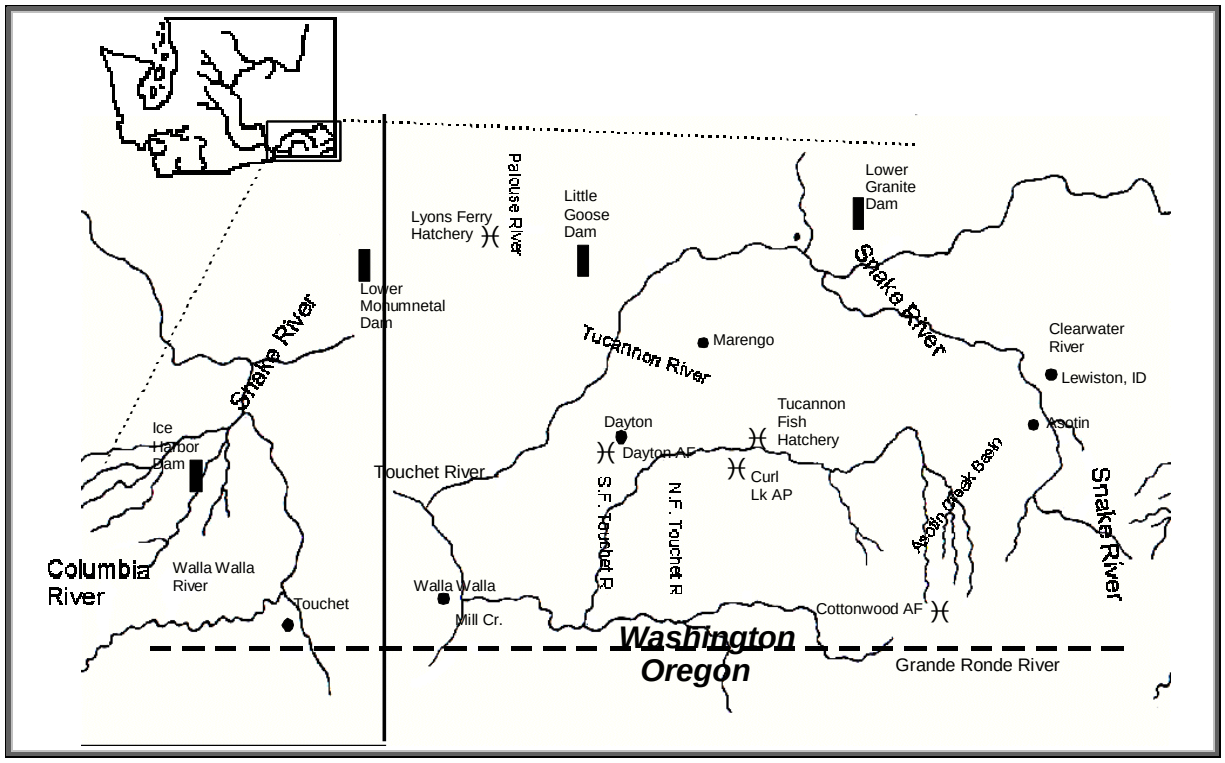

Figure 1. Map of the Lower Snake River Compensation Plan (LSRCP) LFC Facilities, and major rivers and streams in Southeast Washington.

LSRCP funded fish production in Washington began in 1983, with the construction of trout and steelhead rearing facilities at the LFH. Construction of salmon facilities and steelhead acclimation sites followed, and was completed in 1985. Major upgrades at TFH also occurred at that time, and operation of that facility has been funded by LSRCP every since. Production at all facilities has been directed toward meeting established program goals of returning 18,300 adult fall Chinook, 1,152 adult spring Chinook, 4,656 adult summer steelhead, and providing 67,500 angler days of fishing opportunity from 86,000 pounds of rainbow trout production, currently planted at 3 fish per pound (fpp). In addition to these LSRCP production goals, Washington Department of Fish and Wildlife (WDFW) funds a jumbo-sized (1.5 pounds each) rainbow trout program at TFH.

The LFH is located along the Snake River at river mile (RM) 59.1, directly below the confluence of the Palouse River in Franklin County, Washington. Initially it was operated as two separate facilities. Washington Department of Wildlife (WDW) operated the north hatchery, producing steelhead and rainbow trout. Washington Department of Fisheries (WDF) operated the south

hatchery, rearing spring and fall Chinook. A merger of the two agencies in 1994 led to a merging of the two facilities, and has since been operated by WDFW through LSRCP funding as LFH.

Facilities include two incubation buildings with office space and feed storage, plus adult fish trapping, holding and spawning structures. A visitor center provides interpretive information for guests of the hatchery. There are eight residences for staff on site to fulfill security and emergency response needs.

The LFH rearing facilities include twenty-eight raceways at 10 ft x 100 ft x 2.8 ft and nineteen raceways at 10 ft x 88.5 ft x 3.5 ft. These raceways were covered in 2" square mesh netting in 2005 and 2006. There are three rearing lakes covered in 4" netting (added in 2003-04), holding ~ 590,000 cubic feet (ft^3) of water each, approximately 1,100 ft x 90 ft x 10 ft in size. Netting has been added to these lakes and raceways to reduce predation losses. The adult holding facilities include three 83 ft x 10 ft x 5 ft adult raceways with housed spawning facilities incorporated over the center of these ponds, two 18 ft x 150 ft x 4.3 ft and two 21 ft x 150 ft x 4.3 ft adult salmon holding ponds, which also accommodate sub-yearling rearing when not needed for adult holding in the spring of the year. In 2005, channels were cut into two of these ponds, creating three temporary holding areas in each of the two modified ponds to accommodate marking and tagging of the subyearlings reared there. Screens were fabricated to fit the channels. Eight 20 ft x 4 ft fiberglass circular ponds are used for a captive brood spring Chinook program. These ponds were added in 1998 below the north raceways. No longer used for this program are fifteen 4 ft x 1.6 ft fiberglass circular ponds. Six 3.25 ft x 16 ft x 2.6 ft fiberglass tanks were added in the same area in 2006, allowing for decreased densities and improved flexibility in all stocks during early rearing. The incubation facilities include 112 full stacks (2 units of 8 trays each) of vertical incubators in the south trough room, and 88 shallow eyeing/hatching troughs and four 3.75 ft x 27.5 ft x 2 ft intermediate rearing troughs in the north trough room.

Water is supplied to LFH from the Marmes pump station, which has emergency power backup generation. The Marmes pump (wells) facility has three 300 horsepower (hp) pumps, four 200 hp pumps and one 75 hp pump. The well water right for LFH is 53,200 gallons per minute (gpm), or 118.5 cubic feet per second (cfs) of flow, and water temperature is a constant 52^o F.

The TFH is located along the Tucannon River, between the towns of Dayton and Pomeroy Washington, at RM 36 in Columbia County. Fish production began in 1949 by the Washington Department of Game. In 1983, construction began to remodel the hatchery as part of a transfer of ownership to LSRCP. In November 1986 construction was complete, and LSRCP has funded operations there ever since.

The TFH includes a combined incubation and office building, back-up power generation building, feed storage shed, shop, domestic water building, two well houses and a spring water collection building. There is also a river intake and trapping facility located upstream of Rainbow Lake, along the Tucannon River. There are two residences for staff on site to fulfill security and emergency response needs.

The TFH is supplied with three different water sources. River water is fed from the Tucannon River, and ranges in temperature from 33 to 60 ^{o} F, during use by the hatchery. The intake is located one half mile upstream of the hatchery. This water travels down an open channel into Rainbow Lake. From the outlet of Rainbow Lake the water travels through an 18" above ground

pipeline to the hatchery. This pipeline was completely replaced in 2005. Rainbow Lake functions as a reservoir to provide the hatchery with cooler water in the summer months and warmer water in the winter months. It also provides a pool of water to draw from when encountering adverse intake conditions, resulting in temporary loss of water flows. The water right for this source is 16 cfs. Well water is pumped from two separate sources to an aeration tower, and then gravity fed to the rearing units and the domestic pump building. The combined well water right is 2 cfs, with well #2 running around 54 - 57^{o} F and well #3 running a constant 61^{o} F. Spring water is pumped from an underground collection site to the same aeration tower and gravity fed to rearing units. The water right for this source is 5.3 cfs, and has a stable temperature of 51 or 52^{o} F.

The rearing vessels at TFH include forty concrete 1 ft x 15ft x .5 ft shallow troughs, six concrete round ponds approximately 40 ft in diameter with a maximum of 2,660 ft^{3} of rearing area each, two concrete 10 ft x 80 ft x 3 ft raceways, one concrete 15 ft x 136 ft x 5 ft raceway, and one earthen rearing pond with a maximum of 136,221 ft^{3} of rearing space. The pond is approximately 170 ft x 200 ft x 6.5 ft in size.

Cottonwood AF is located along the Grande Ronde River at RM 28.7, directly above the confluence with Cottonwood Creek in Asotin County, Washington. Construction was completed in February 1985.

This facility includes an adult trapping facility on Cottonwood Creek, a small storage building, and a single trailer unit used as housing during operations. Cottonwood AF has a concrete bottom with earthen walls and holds ~357,000 ft^{3} of water. It has a water right of 2,694 gpm (6 cfs) for the period January 1st through July 1st. It is supplied with water from Cottonwood Creek through a gravity water supply system, with the intake integrated into the adult trapping facility located ~ 0.10 miles above the pond. Water temperatures range from 34 to 52^{o} F during operation of the facility. It also has a small trailer for use by staff required to be on-site at all times while the pond is in operation. It is presently used for acclimation and release of Wallowa stock summer steelhead into the Grande Ronde River.

Dayton AF is located along the Touchet River at RM 53 in Columbia County, Washington. There is an adult trapping facility on the Touchet River just upstream of the acclimation pond at RM 53.3.

Construction of the Dayton AF was completed in October 1986. This pond is asphalt lined and holds ~ 200,000 ft^{3} of water. The water right to this pond is 2,694 gpm (6 cfs) for the period of Jan 1st – May 15th of each year. It is supplied with water from the Touchet River through a gravity water supply system, with the intake located at the temporary adult trapping facility just upstream of the pond. Water temperatures during use by hatchery staff for steelhead acclimation range from 34 to 52^{o} F. The pond is located adjacent to the Snake River Lab evaluation office and has a storage garage for equipment and feed. It also has a small trailer for use by staff required to be on-site at all times while the pond is in operation. It is presently used for acclimation and release of LFH stock summer steelhead into the Touchet River.

Curl Lake AP is located along the Tucannon River at RM 41 in Columbia County, Washington.

The construction of Curl Lake AP was completed in February 1985. Curl Lake AP is an earthen pond holding ~ 784,000 ft^3 of water. It has a water right of 2,694 gpm (6 cfs). It is supplied with water from the Tucannon River through a gravity water supply system. It is currently utilized for acclimation of spring Chinook yearlings for release into the Tucannon River. Water temperatures at this time of year range from 34 to 48 ^{o} F. Chinook acclimation in Curl Lake AP started in 1997. After the spring Chinook are released, the pond is stocked with resident trout for fishing. It is emptied after fishing season ends October 31st each year, and recharged by hatchery staff prior to spring Chinook acclimation the following January.

In addition to WDFW acclimation sites, LFC provides up to 465,000 yearling and 1,740,000 sub-yearling fall Chinook to three acclimation facilities operated by the Nez Perce Tribe (NPT): Pittsburg Landing and Captain John's Rapids on the Snake River between Asotin and Hells Canyon Dam, and Big Canyon on the Clearwater River. Size at transfer to the NPT AF's is 12 fpp for yearlings and 60 - 75 fpp for sub-yearlings. Size at release goal for acclimated fall Chinook yearlings is 10.0 fpp, and 50 fpp for sub-yearlings.

SPRING CHINOOK

Two Tucannon spring Chinook programs are currently in operation at LFC. Up to 100 adult Chinook (50 hatchery: 50 wild) are trapped from the Tucannon River for broodstock as part of the LSRCP supplementation program. Adults are held at LFH to reduce pre-spawning mortality. All fish are spawned, producing approximately 165,000 green eggs, which provide for the release of 132,000 yearling smolts with a maximum release of 150,000 yearling smolts. A captive brood program was initiated to aid the recovery of Tucannon spring Chinook. Small distinct family groups were selected from the supplementation program fish and are being held as part of the captive brood population. At full production the captive brood program is designed to annually produce 150 spawning females, which will provide an estimated 294,000 eggs (150,000 smolt goal annually). Fish over and above the maximum release goals for either of these two programs may be released as parr. Adult out-plants may be utilized in the captive broodstock program to keep with in egg-take goals but release of marked parr will be given priority if rearing space at LFH permits. The captive brood program is funded directly by BPA, and is being phased out (2006 was the last spawn of captive brood adults). Conventional production is scheduled to increase to a 225,000 yearling release with the 2006 and 2007 brood year returning adults, pending sufficient broodstock (the 2005-2007 Interim Management Agreement provides for 225,000 smolts). Yearling program fish are reared into the fall at LFH. They are then marked and transferred to TFH. They are reared at TFH during the winter due to the high probability of Curl Lake and its river intake freezing over. During early spring the yearling fish are transferred to Curl Lake for final acclimation and volitional release.

2004 Brood Year

The captive brood and supplementation Tucannon spring Chinook were planted in the spring of 2006. See tables 1 & 2.

2005 Brood Year

There were 161,345 supplemental and 261,845 captive brood spring Chinook eggs taken. See table 21. The captive brood and supplementation Tucannon spring Chinook were ponded and started feeding in December 2005. These fish were reared in raceways at LFH and were marked starting in early September 2006. The captive brood and supplementation yearlings were transferred from LFH to TFH in October 2006. These fish will be transferred to Curl Lake AF in February 2007.

2006 Brood Year

The 2006 Tucannon spring Chinook adults arrived at the Rainbow Lake trap between May and September of 2006. See tables 3, 4 & 5 for adult collection and spawning.

FALL CHINOOK

The LFH fall Chinook program is presently below its LSRCP adult mitigation goal. LFH origin fall Chinook that return to the hatchery are used for broodstock. Additionally, LFH origin fall Chinook captured at LGD are transported to LFH for spawning in accordance with an agreement under the Columbia River Fish Management Plan. Annual adjustments to the agreement are expected. The program has expanded to provide sub-yearlings and yearlings for NPT facilities, and eyed eggs to IPC to allow them to fulfill their mitigation obligation. Assuming a fecundity of 3,400 eggs/female, ~1,442 females are needed to provide the 4.9 million eggs for the production programs.

Rearing density reductions occurred for the 2002 brood year sub-yearlings. Modification of the four adult salmon holding ponds allowed for rearing of sub-yearling Chinook in those ponds, providing for a density index target of 0.09 or less. The purpose of this change was to reduce or eliminate the occurrence of Bacterial Gill Disease (BGD), which had been a continual problem as a result of expansion of the fall Chinook program to provide sub-yearling and yearling fish to NPT acclimation facilities. Bird predation in the rearing lakes and raceways has been significantly reduced due to installation of predation netting.

2004 Brood Year

The 2004 Snake River fall Chinook were planted in the spring of 2006. See table 6.

2005 Brood Year

There were 4,941,380 fall Chinook eggs taken in October and November of 2005. See table 21. These fall Chinook were ponded and started feeding in January 2006. The NPT hatchery and acclimation facilities received 1,044,301 sub-yearlings, Dworshak received 198,900 sub-yearlings, and LFH released 1,094,704 sub-yearlings in 2006. The yearling program fish were reared in raceways throughout the summer. The NPT acclimation yearlings and LFH yearlings

were marked during the fall of 2006. The NPT fish will be kept in raceways until they are transferred to their acclimation facilities in February and March 2007. The yearlings at LFH will be released in the spring of 2007 directly from rearing lake 2. See Plants and Transfers table 7.

2006 Brood Year

Snake River fall Chinook trapping started at LGD and LFH in September 2006. See adult collection and spawning tables 8 & 9 for adults trapped during this reporting period.

SUMMER STEELHEAD

LFC currently uses three stocks of steelhead in the Snake River Basin (LFH, Tucannon, and Wallowa), and two stocks in the Walla Walla Basin (Touchet and LFH). All of these stocks are collected from a variety of traps located throughout SE Washington.

The LFH stock are trapped on-station at LFH in September through November. The Trapping of Wallowa stock steelhead occurs on Cottonwood Creek (a small tributary to the Grande Ronde River) in March and April. Cottonwood Creek supplies water to the Cottonwood AF, and large numbers of hatchery adults return every year to the creek. A small trapping structure was installed in 1992 to capture returning adults for broodstock. Trapping of the Tucannon River Endemic Stock begins in September at a temporary weir/trap that is set up annually in the lower Tucannon River (river mile 10.6). The trap is run intermittently until April, when high stream flows usually disable the trap. Broodstock collections take place over the entire trapping period. Touchet stock steelhead are trapped at the Dayton AF trap on the Touchet River, from February through May each year.

The National Marine Fisheries Service's (NMFS) 1999 Biological Opinion ruled that continued use of LFH and Wallowa steelhead stocks constituted jeopardy to listed steelhead populations in the Snake and Columbia Rivers. Concerns about within and out-of-basin straying, and swamping of natural populations by the hatchery stocks, led NMFS to propose the development of endemic broodstocks where possible, and eventual elimination of non-endemic stocks. Following that ruling, WDFW and the co-managers were responsive to the BIOP by initiating endemic broodstock programs in the Tucannon and Touchet Rivers, and have since followed with a decrease in production of the LFH and Wallowa stocks.

Prior to any of the endemic steelhead being collected for broodstock, WDFW and the co-managers decided that the endemic programs should be tested and evaluated for 5-years at a minimum production level (50,000 smolts annually), before abandoning the LFH or Wallowa stocks from hatchery production, or increasing the production of endemic stocks. Each endemic broodstock program began with the 2000 BY, with the original goal to collected 16 pairs for spawning. Adjustments have been made to the broodstock collections because fecundity estimates and in-hatchery survival were greater than expected.

Lyons Ferry Stock

During August and September fish are adipose fin clipped and transferred to rearing lake 1 at LFH. A planned release goal is 345,000 juveniles for brood year 2005. Following is the release goal for each release location in the spring of 2006: 85,000 from the Dayton AF into the Touchet River; 100,000 direct release into the Tucannon River; 100,000 direct release into the Walla Walla River; and 60,000 on-site release at LFH. During December each year, about 68,000 are transferred from lake 1 to 4 raceways for additional marking. In January, ~20,000 fish programmed for transfer to the Dayton AF received a coded wire tag (CWT) and left ventral fin clip (LV). The LFH release marked group, ~20,000 fish, received CWT+LV marks. The Walla Walla River mark group, ~20,000 fish, received a CWT+LV mark. The Tucannon mark group, ~8,000 fish, received pit tags prior to release.

In February of each year Lyons Ferry summer steelhead are transferred to Dayton AF. These fish are acclimated on Touchet River water. The discharge outlet screens are removed on April 1st and the fish are volitional released by the 3rd week of April. After that date, feeding is discontinued and the pond level slowly lowered until the pond is completely drained by the end of April.

2005 Brood Year

There were 350,028 Lyons Ferry summer steelhead yearlings released at various locations in April of 2006. See table 10.

2006 Brood Year

There were 529,379 Lyons Ferry summer steelhead eggs taken. See adult collection and spawning table 11 and egg take table 21 for information. The yearling fish were reared into August in the raceways and were then adipose clipped and transferred to rearing lake 1.

2007 Brood Year

Collection of 2007 brood Lyons Ferry summer steelhead started in September 2006. See table 12 for adult collection numbers during this reporting period.

Wallowa Stock

In August and September these fish are adipose fin clipped, ~20,000 marked with an AD / LV / CWT and transferred into rearing lake 3. During the first week in February, the juveniles are transferred to Cottonwood AF. Transfer dates may vary due to weather and road conditions. The discharge outlet screens are removed on April 1st and the fish are volitionally released through the third week of April. After that date, feeding is discontinued and the pond level slowly lowered until completely drained by the end of April.

2005 Brood Year

There were 169,390 yearlings Wallowa summer steelhead released into the Grande Ronde River in April of 2006. See table 13.

2006 Brood Year

The Wallowa summer steelhead adults were trapped at Cottonwood Creek trap during March and April 2006. See table 14. There were 316,059 eggs taken in March and April from these adults. See table 21. They will be reared in raceways until they are adipose fin clipped in August and September and moved into rearing lake 3.

Tucannon Stock

All Tucannon River endemic stock steelhead are reared in standard raceways at LFH. These fish are VIE (right red elastomer) tagged in January. In mid-February the fish are transferred to TFH and placed into the large acclimation raceway (formerly used for spring Chinook holding and acclimation). They are then released into the Tucannon River near Curl Lake during the month of April. A portion of the fish will be pit tagged prior to release to monitor out-migration, and for comparison of within-year variation of migration performance among release groups. They are also being compared to natural origin smolts captured in the smolt trap.

2005 Brood Year

In April 2006 there were 65,245 yearlings released in the Tucannon River above the Curl Lake intake. See table 15 and 16 for additional release information.

2006 Brood Year

The Tucannon natural steelhead adults were captured at the Ducharme trap (river mile 11.0) in the lower Tucannon River for spawning use. Spawning generally occurs during February and March each year. 72,520 eggs were taken using 13 females. See table 17 for adult collection and spawning information, and table 21 for egg information.

Touchet Stock

All Touchet River Endemic stock are reared in standard raceways at LFH. These fish are all CWT+VI tagged in January. They were direct stream released in late April/early May into the upper basin above the WDFW trap on the Touchet River. PIT tags to monitor out-migration and for comparison of within-year variation of migration performance between release groups are inserted before the groups are released.

2005 Brood Year

In May of 2006 there were 30,473 yearlings released into the Touchet River at river mile 57.2. See table 18 for more information on this release.

2006 Brood Year

There were 88,668 eggs taken from Touchet summer steelhead adults. See tables 19 and 21 for spawning and egg information. IHN was detected in three of the eighteen spawned females. The progeny from these three were isolated separately to hatch and released back into the Touchet River as unfed fry, roughly a mile above the Dayton AF intake. Progeny from IHN negative fish started feeding in shallow troughs, were transferred to intermediate troughs where they were reared until September, and then were transferred into a raceway. They will be reared there until release, and will be planted in May of 2007 into the Touchet River.

COHO

Incidental catch of coho occurs during the trapping season for fall Chinook and steelhead at LFH. Trapped Coho are held at LFH, then transferred to Dworshak National Fish Hatchery by the Nez Perce Tribe on fall Chinook spawning days. See table 20 for adult coho collection.

BULL TROUT

Bull trout captured at the Tucannon trap are enumerated and passed upstream. See table 29.

RESIDENT FISH

Rainbow trout are reared to fulfill the resident fishing opportunity mitigation under LSRCP. Eggs are obtained from WDFW's Spokane Hatchery (Spokane stock) and from Idaho Fish and Game's (IDFG) Hayspur Hatchery (Kamloops stock). The production goal is 237,500 yearling and 160,00 sub-yearling Spokane rainbows, and 50,000 fingerling Kamloops (triploid) rainbows. This requires 500,000 eyed Spokane rainbow trout eggs for the Washington program, and 70,000 triploid eyed Kamloops stock eggs (provided by IDFG) to meet part of the LSRCP mitigation requirement within Idaho. IDFG prefer to use Kamloops stock because of the survival advantage they exhibit over the Spokane stock when released into the Clearwater and Salmon Rivers. A small State funded program at TFH utilizes Spokane stock rainbow reared to1½ lbs each, to provide a unique fishing opportunity in local lakes. Resident brood year 2004 and 2005 Spokane rainbow and Kamloops rainbow plants and transfers are listed in tables 22, 23 & 24 for TFH, and tables 25, 26, 27 & 28 for LFH.

FISH HEALTH

Introduction

The following section is a summary of fish health activities for the LFC for October 1, 2005 to September 30, 2006. Adult sampling for viral and bacterial pathogens and fish health inspections are included.

The only major fish health problem was bacterial coldwater disease (BCWD) in rainbow trout and steelhead. Also, detection of infectious hematopoietic necrosis (IHN) virus in the Touchet River summer steelhead adults required isolation and release of progeny of IHN positive females as fry rather then smolts.

Preventative fish health management was employed for bacterial gill disease (BGD), bacterial kidney disease (BKD) and IHN. To avoid or minimize BGD in sub-yearling fall Chinook, low rearing densities were followed. BKD preventive measures for Chinook included erythromycin injection of female brood fish, ELISA screening and segregation of BKD-positive progeny, low rearing densities, and prophylactic feeding of erythromycin medicated rations. To reduce risk for IHN in steelhead, female brood fish were screened for the virus, and progeny from IHN positive females were reared separately and planted as fry, or were destroyed by hatchery employees, as approved by the comanagers (see below for stock-specific management action taken)

Lyons Ferry Hatchery

Lyons Ferry Fall Chinook

Adults - 2005 Spawning

At spawning, samples are collected for viral and BKD-ELISA testing. Female fall Chinook from the second, third, fourth, fifth and sixth spawning week were sampled for BKD-ELISA testing. IHN virus was detected (Table 30). No management action was taken because of the positive virus finding.

BKD prevalence was low with 99.6% Below-Low females (Table 31). Progeny of Below-Low BKD females were selected for the yearling programs. Progeny of all other females were utilized in the sub-yearling programs.

2004 Brood year

The 2004 Lyons Ferry fall Chinook were healthy throughout the reporting period and upon release. As a BKD preventative strategy, the fish were treated with erythromycin-medicated feed in October and November, 2005.

2005 Brood year

Coagulated yolk syndrome was diagnosed in newly ponded fall Chinook in February, 2006. The cause was not known and total loss was minimal. As a BKD preventative strategy, the fish were treated with erythromycin-medicated feed in June, 2006.

Tucannon Spring Chinook

Adults - 2006 Spawning
At spawning, samples are collected for viral testing and BKD-ELISA testing. No viral pathogens were detected (Table 30).

The BKD-ELISA testing has not been completed for the samples collected from the 2006 spawning season. The BKD-ELISA results from the 2005 spawning season are shown in Table 31.

2004 Brood year
The Tucannon spring Chinook were healthy throughout the rearing cycle at LFH. The fish were transferred to TFH in October 2005.

2005 Brood year
The Tucannon spring Chinook were healthy throughout the rearing cycle at LFH. As a BKD preventative strategy, the fish were treated with erythromycin-medicated feed in May 2006.

Tucannon Spring Chinook - Captive Broodstock

Adults - 2006 Spawning
At spawning, samples are collected for viral testing and BKD-ELISA testing. No viral pathogens were detected (Table 30).

No management action was taken because of the negative virus finding.

The BKD-ELISA testing has not been completed for the samples collected from the 2006 spawning season. The BKD-ELISA results from the 2005 spawning season are shown in Table 31.

2004 Brood year
The Tucannon spring Chinook captive progeny were healthy throughout the rearing cycle at LFH. The fish were transferred to TFH in October 2005.

2005 Brood year
The Tucannon spring Chinook captive progeny were healthy throughout the rearing cycle at LFH. As a BKD preventative strategy, the fish were treated with erythromycin-medicated feed in May 2006.

Lyons Ferry Summer Steelhead

Adults - 2006 Spawning
All female steelhead adults were sampled for viral pathogens at spawning. No viral pathogens were detected (Table 30).

2005 Brood year
The 2005 brood year Lyons Ferry summer steelhead were healthy throughout the reporting period and upon release.

2006 Brood year
BCWD was observed in the 2006 brood year Lyons Ferry summer steelhead in April 2006. The fish were successfully treated with florfenicol coated fish pills at 15 mg/kg. After recovery from the BCWD outbreak, the fish were healthy throughout the reporting period.

Wallowa Summer Steelhead

Adults - 2006 spawning at Cottonwood AF
All female steelhead adults were sampled for viral pathogens at spawning. No viral pathogens were detected (Table 30).

2005 Brood year
The Wallowa summer steelhead were healthy throughout the reporting period and upon transfer to Cottonwood AF.

2006 Brood year
BCWD was observed in the 2006 brood year Wallowa summer steelhead in August 2006. The fish were successfully treated with florfenicol coated fish pills at 15 mg/kg. After recovery from the BCWD outbreak, the fish were healthy throughout the reporting period.

Tucannon River Summer Steelhead

Adults - 2006 Spawning
All female steelhead adults were sampled for viral pathogens at spawning. In 2006 no viral pathogens were detected (Table 30).

2005 Brood year
The Tucannon River summer steelhead were healthy throughout the reporting period and upon release.

2006 Brood year
BCWD was observed in the 2006 brood year Tucannon summer steelhead in July 2006. The fish were successfully treated with florfenicol coated fish pills at 15 mg/kg. After recovery from the BCWD outbreak, the fish were healthy throughout the reporting period.

Touchet River Summer Steelhead

Adults - 2006 Spawning
All female steelhead adults were sampled for viral pathogens at spawning. IHN virus was detected in 5 of 18 (28%) females spawned (Table 30). The progeny of IHN virus positive females were destroyed or released as newly feeding fry.

2005 Brood year
The Touchet River summer steelhead fish were healthy throughout the reporting period and upon release.

2006 Brood year
The Touchet River summer steelhead fish were healthy throughout the reporting period.

Spokane Rainbow Trout

Spokane rainbow trout are received as eyed eggs from the Spokane Hatchery. The Spokane rainbow broodstock are sampled annually for viral agents and are certified free of viral pathogens.

2004 Brood year
The fish were healthy throughout the reporting period and upon release.

2005 Brood year
Visceral mycosis (internal fungus) was observed in newly feeding fry. The fish recovered without treatment.

BCWD was observed in the Spokane rainbow in March through June, 2006. The rainbow trout were successfully treated with florfenicol coated fish pills. The fish recovered and were healthy throughout the remaining reporting period.

Tucannon Hatchery

Tucannon Spring Chinook

2004 Brood year
The Tucannon spring Chinook were healthy throughout the reporting period and upon release.

Tucannon Spring Chinook - Captive Broodstock

The Tucannon spring Chinook (captive broodstock progeny) were healthy throughout the reporting period and upon release.

Spokane Rainbow Trout

2004 Brood year
Minor losses to BCWD were observed in February 2006. No treatments were administered. The fish were healthy upon release.

2005 Brood year
BCWD was noted in the Spokane rainbow trout in May and June, 2006. The fish were successfully treated with florfenicol coated fish pills. The fish recovered and were healthy throughout the remaining reporting period.

Hayspur Rainbow Trout

2005 Brood year
The Hayspur rainbow trout were healthy throughout the reporting period.

Table 30. Broodstock viral testing at LFH, 2005 - 2006.

Location	Date	Species-Stock	No. OF	No. KS	Results
LFH	11-05	CHF-Snake River	60	60	IHNV
LFH	01-06	SS-Lyons Ferry	119	60	Negative
LFH	03-06	SS-Tucannon River	13	13	Negative
Cottonwood AF	04-06	SS-Wallowa	120	120	Negative
LFH	04-06	SS-Touchet River	18	18	IHNV
LFH	09-06	CHS-Tucannon River	45	45	Negative
LFH	09-06	CHS-Tucannon Captive	8	8	Negative

OF = ovarian fluid
KS = kidney/spleen

Table 31. BKD-ELISA testing of female Chinook broodstock at LFH in 2005.

Species-Stock	No. Tested	Below Low		Low		Mod		High	
		No	%	No	%	No	%	No	%
CHF Snake R.	947	943	99.6%	1	0.1%	1	0.1%	2	0.2%
CHS Tucannon - Anadromous	49	48	98.0%	1	2.0%	0	0%	0	0%
CHS Tucannon - Captive	167	0	100%	0	0%	0	0%	0	0%

Below-Low = < 0.10
Low = 0.11 - 0.199
Mod = 0.2 - 0.45
High = > 0.45

PERSONNEL/PURCHASES/MAINTENANCE

Lyons Ferry Hatchery

Personnel

Chris Hedges was hired January 16, 2006 into the vacant Hatchery Specialist 2 in-training position.

Brandon Kilmer moved off station, and Steve Jones moved on station into residence 8.

Significant Purchases

Ford F350 4X4 flatbed pickup was purchased for transporting the fry tank on-station, and for local plants of small fish groups.

Replaced the main office furnace.

Installed new coil and fan motor for the north hatchery freezer.

Projects

WDF&W construction crew installed a bird net structure over the 19 north side raceway ponds and the hatchery crew covered it with predation netting. All ponds except the outside intermediate raceways and round tanks are now netted, and predation is minimal.

New adult pond crowders were built to accommodate tagging.

Replaced all underground surge protectors after a significant electrical occurrence.

The old forklift was brought back to good working and external condition. This allows us to have a forklift on both sides of the main complex.

All vertical incubators (trays and inserts) were cleaned with ALB-12 and came out looking like new.

New landscaping was installed at the hatchery entrance around the head tank building. Various other landscaping projects were completed as well, dramatically improving the appearance of the facility.

The main hatchery wood signs were completely refurbished and reinstalled.

Old red rock was removed in several areas, and replaced with natural river rock.

Housing Maintenance

The decks for residences 7 & 8 were replaced due to old age and wear and tear.

The septic tanks for residences 1 & 5 were dug up and pumped.

All residences received new main breaker surge protectors after multiple electrical surges damaged some circuits and equipment.

Bath tubs in residences 5 & 8 were re-glazed. This seemed to work very well and eliminated the need to purchase and install new tubs.

Residence #1 was completely re-landscaped, including new edging, lawn, and a installation of a new retaining wall to stop the hillside from sloughing into the back yard. The old deck was removed for safety reasons, and will be replaced next year.

Significant Events

The USFWS initiated an Environmental Compliance audit, Americans with Disabilities Act (ADA) Audit, and a Facility Assessment during the year. Staff are correcting findings.

Tucannon Hatchery

Personnel

No significant personnel changes or issues occurred during this period.

Significant Purchases

No significant purchases were made during this period.

Projects

WDFW engineering staff installed a 2" McCracken air vent in the well #3 pipeline. The Tucannon hatchery staff dug up and exposed the old ¾" pipe for the engineering staff to replace. This will allow the air to vent off properly upon initial startup, and decrease the volume of air introduced into the domestic system.

WDFW engineering staff modified the hatchery truck fill stanchion. This will enable personnel to fill up our fish / water tanks with gravity river water, at a higher rate. We left the 2" pumping system intact, to use for well / spring water.

WDFW Yakima Screen Shop performed a complete rebuild of the earthen rearing pond outlet screen. The total cost of this project was $9,200 (including $1,000 for boom truck pickup and delivery).

BPA directly funded an electrical efficiency upgrade to the Tucannon Hatchery. Basically all of the ballasts and bulbs were changed to a more energy-efficient versions. The other cost savings they identified involved our three phase pump motors. Based upon the usage of each pump, the decision was made to utilize two variable speed drives in our system. Well #2 and spring pump #1 were both selected for upgrade to these more efficient drives. Besides realizing an electricity savings, they should also increase the longevity of the pumps / motors.

Hatchery staff re-painted the tank on the fish transport truck. The old fiberglass gel-coat that was once white was starting to yellow. The crew stripped, prepped, and painted the tank with acrylic enamel.

Hatchery staff obtained tree's / root wads for the Curl lake intake project that will commence in the summer of 2007. We worked with the Wooten Wildlife Area manager and the forester for the salvage operations to obtain the material for the project.

Housing Maintenance

Minor upkeep projects were performed on both residences. No major maintenance projects were required on either residence.

Significant Events

The USFW Service initiated an Environmental Compliance audit, ADA audit, and a Facility Assessment during the year.

Salvage logging occurred on the Wooten Wildlife area following the 2005 fire. During this activity some potential hazard trees were removed behind residence one.