Fall Chinook Acclimation Project

Pittsburg Landing, Captain John Rapids, and Big Canyon

Annual Report 2002

January 2003

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Fall Chinook Acclimation Project

Annual Report 2002

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The Fall Chinook Acclimation Program owes a special thanks to the U.S. Forest Service and the U.S. Army Corps of Engineers. The U.S. Forest Service agreed, in 1998, to allow the Nez Perce Tribe to leave assembled fish rearing tanks and related equipment at a storage area near the fish acclimation site at Pittsburg Landing. This agreement has resulted in considerable dollar savings, greatly reduced equipment fatigue and reduced assembly and disassembly time by half. The U. S. Army Corps of Engineers continues to address modifications needed to correct operational deficiencies at the Capt. John Rapids and Big Canyon facilities. In FY 2002 new pumps were installed and tested at Capt. John Rapids and Big Canyon acclimation facilities.

Nez Perce Tribe Department of Fisheries Resources Management production division shared vehicles and equipment that was invaluable to the success of the program. Becky Ashe, Production Coordinator, provided content and technical review for this report. Letitia Whitman collected information and provided valuable assistance with report editing, formatting, and graphics. Ed Larson, program director, and Becky Ashe assisted with budgets, staffing, facility improvements and with developing goals and objectives. The NPT Fall Chinook Monitoring and Evaluation Project provided assistance and information.

The Fall Chinook Acclimation Project staff members who were responsible for the daily operation of the facilities included Raphael Johnnie, Arnold Henry, Lou Ann Lasswell, Brett Bisbee, Austin Samuels, Mike Bisbee, John Kane, Ferris Paisano and Mark Wilson. Chuck Jackson assisted with fish transport and equipment maintenance. Mike Key, Assistant Project Leader, directed the assembly and disassembly of the facilities, provided technical assistance for the fish acclimation program and was responsible for staff supervision.

Bonneville Power Administration and Northwest Power Planning Council provide project reviews and budget recommendations for the Fall Chinook Acclimation Program. Ken Kirkman, Bonneville Power Administration Contracting Officers Technical Representative, facilitated programmatic and budget issues, Patricia O'Donnell, BPA Contract Specialist, was responsible for contract preparation and review and Arleen Henry, NPT Grants and Contracts Accountant, provided monitoring and evaluation of the project contracts.

ABSTRACT

Fisheries co-managers of *U.S. v Oregon* supported and directed the construction and operation of acclimation and release facilities for Snake River fall Chinook from Lyons Ferry Hatchery at three sites above Lower Granite Dam. In 1996, Congress instructed the U.S. Army Corps of Engineers (USCOE) to construct, under the Lower Snake River Compensation Plan (LSRCP), final rearing and acclimation facilities for fall Chinook in the Snake River basin to complement their activities and efforts in compensating for fish lost due to construction of the lower Snake River dams. The Nez Perce Tribe (NPT) played a key role in securing funding and selecting acclimation sites, then assumed responsibility for operation and maintenance of the facilities. In 1997, Bonneville Power Administrative (BPA) was directed to fund operations and maintenance (O&M) for the facilities. Two acclimation facilities, Captain John Rapids and Pittsburg Landing, are located on the Snake River between Asotin, WA and Hells Canyon Dam and one facility, Big Canyon, is located on the Clearwater River at Peck. The Capt. John Rapids facility is a single pond while the Pittsburg Landing and Big Canyon sites consist of portable fish rearing tanks assembled and disassembled each year. Acclimation of 450,000 yearling smolts (150,000 each facility) begins in March and ends 6 weeks later. When available, an additional 2,400,000 fall Chinook sub-yearlings may be acclimated for 6 weeks, following the smolt release.

The project goal is to increase the naturally spawning population of Snake River fall Chinook salmon upstream of Lower Granite Dam. This is a supplementation project; in that hatchery produced fish are acclimated and released into the natural spawning habitat for the purpose of returning a greater number of spawners to increase natural production. Only Snake River stock is used and production of juveniles occurs at Lyons Ferry Hatchery. This is a long-term project, targeted to work towards achieving delisting goals established by National Marine Fisheries Service (NMFS or NOAA Fisheries) and ultimately to provide fall Chinook adults through the Lower Snake River Compensation Plan program as mitigation for construction and operation of the four lower Snake River dams. Complete adult returns (all age classes) for all three acclimation facilities occurred in the year 2002. Progeny (which would then be natural origin fish) would be counted towards achieving Endangered Species Act delisting criteria.

In 2002, a total of 2,877,437 fish weighing 47,347 pounds were released from the three acclimation facilities. The total includes 479,358 yearling fish weighing 33,930 pounds and 2,398,079 sub-yearling fish weighing 19,115 pounds. This is the largest number of fish ever released in one year from the acclimation facilities.

1.0 INTRODUCTION

1.1 Project Background

Fall Chinook were once widely distributed in the Snake River from the confluence with the Columbia River upstream to Shoshone Falls, 615 river miles. Construction of the Hells Canyon Dam Complex and the Lower Snake River dams eliminated or severely degraded 530 miles of spawning habitat. The loss of spawning and rearing areas and the degradation of migration habitat are the primary reasons that Snake River fall Chinook salmon are threatened with extinction.

On 09 April 1990 the National Marine Fisheries Service (NMFS) announced that a status review of Snake River fall Chinook had been initiated and that this stock had experienced such a decline in abundance that it could be found only in a fraction of its former range. The Snake River fall Chinook was listed as a threatened species on 22 April 1992.

The NMFS proposed recovery plan for Snake River salmon recommends that Lyons Ferry Hatchery should operate as a gene bank for Snake River fall Chinook and that supplementation be carefully evaluated in areas above Lower Granite Dam to determine if it can assist in recovery (task 4.1.d). The Lyons Ferry Hatchery stock was derived from native fall Chinook salmon captured in the Snake River upon completion of the Hells Canyon Dam in the 1970's thus being the reason for its "gene bank" designation. Although the hatchery stock is considered part of the Snake River fall Chinook salmon Evolutionary Significant Unit (ESU), it is not considered listed under the Endangered Species Act (ESA) because of its captive rearing history at the time of listing (NMFS 1995). The proposed recovery plan task 4.7 also recommends that Snake River fall Chinook be reintroduced into historic habitat, and that areas in the Snake River below Hells Canyon Dam and in the lower Clearwater River be considered for reintroduction.

During 1994, through *U.S. v Oregon*, an agreement was made between the four Columbia River Treaty Tribes, States and Federal agencies to replace the natural production losses from adults trapped and taken out at Lower Granite Dam with about 150,000 Lyons Ferry Hatchery yearlings to be acclimated and released upstream of the dam in 1996. Further agreements were reached to release 450,000 yearlings at acclimation facilities above Lower Granite Dam in future years as long as 450,000 are available for on-station releases at Lyons Ferry Hatchery. In addition, the agreement states that if additional Lyons Ferry fall Chinook brood production is available above the full yearling program of 900,000, then these fish shall be released off-station as sub-yearlings. The fall Chinook acclimation project is designed to incorporate sub-yearling fall Chinook salmon into the existing program.

The fisheries co-managers (*U.S. v Oregon* parties) had agreed that they should take a more active role in rebuilding the Snake River fall Chinook populations within its critical habitat. Because the *U.S. v Oregon* parties largely control harvest and production issues, they revised the existing harvest agreements and production strategy to protect and encourage an increase in natural fish production. NMFS had determined that the Lyons Ferry Hatchery stock was the most appropriate stock to use for supplementation of the fall Chinook population, yet all the fish were released at the hatchery, which is located within the Snake River reservoir complex below Little

Goose Dam, many miles downstream of the natural production area. The fisheries co-managers therefore decided that this stock should be released within the principal fall Chinook spawning and rearing habitat above Lower Granite Dam, to encourage an increase in natural production. The parties also agreed that an acclimated release strategy would result in a greater amount of imprinting to the release area than a direct release and thus be more effective in returning adults to the spawning area. Additionally, the parties determined that research conducted at Lyons Ferry Hatchery showed that a much higher return rate was found for fish released as yearlings (0.27%) versus sub-yearlings (0.04%), and thus a yearling release strategy would be most effective in returning a larger number of spawners to the release area. Since the purpose was to take an active role in increasing natural production, a greater number of spawners would best accomplish the goals. Natural-origin Snake River fall Chinook salmon migrate primarily as a sub-yearling and therefore, a strategy was implemented to incorporate sub-yearlings into the existing programs as soon as feasible because of the uncertainty regarding genetics and ecological consequences of supplementing natural production with the yearling life-history variant. The yearling and sub-yearling groups are differentially marked so that a direct comparison of both life-history types can be made.

The U.S. Congress secured funding for construction of acclimation facilities during deliberations over the FY95 budget. Congress instructed the U.S. Army Corp of Engineers (USCOE) through the Lower Snake River Compensation Plan (LSRCP) to construct final rearing and acclimation facilities for fall Chinook in the Snake River basin to complement their activities and efforts in compensating for fish lost due to construction of the lower Snake River dams. The NPT along with State and Federal agencies selected three acclimation sites. Two acclimation facilities were located on the Snake River, at Capt. John Rapids and Pittsburg Landing, and one acclimation site was located on the Clearwater River at Big Canyon. The Capt. John Rapids facility is a single pond while the Pittsburg Landing and Big Canyon sites consist of portable fish rearing tanks assembled and disassembled each year. The sites were selected because of the proximity of spawning habitat for returning adults and because of good road access. ESA consultation by both NMFS and U.S. Fish and Wildlife Service (USFWS) determined that the rearing, acclimation, and release of Lyons Ferry Hatchery fall Chinook salmon at acclimation sites on the Snake and Clearwater Rivers was not likely to affect listed Snake River sockeye salmon, Snake River spring/summer Chinook salmon, Snake River fall Chinook salmon, or their critical habitat (Stelle 1996). The NPT assumed responsibility for operation and maintenance of the facilities. The LSRCP was to fund the operations and maintenance of facilities constructed under the plan however in 1997 the decision was changed and Bonneville Power Administration (BPA) was directed to direct fund operations and maintenance (O&M) and monitoring and evaluation (M&E) for the facilities. The title of this program is the Fall Chinook Acclimation Project (FCAP). This report covers operations and maintenance activities of the Project. Results of fish survival and performance reared and released from the FCAP facilities can be found in annual reports from BPA Project # 1998-010-04 (Rocklage and Kellar. 2005a, 2005b, 2005c, 2005d and Rocklage, S.J. 2004) and BPA Project # 1998-010-03 (Garcia et al. 1999-2004).

1.2 Project Goals

The immediate goal of the project is a concerted effort to ensure that the Snake River fall Chinook salmon above Lower Granite Dam are not extirpated. Long-term goals of the project are:

1. Increase the natural population of Snake River fall Chinook spawning above Lower Granite Dam.
2. Sustain long-term preservation and genetic integrity of this population.
3. Keep the ecological and genetic impacts of nontarget fish populations within acceptable limits.
4. Assist with the recovery of Snake River fall Chinook to remove from ESA listing.
5. Provide harvest opportunities for both tribal and non-tribal anglers.

The extended acclimation time at each site should provide natal homing of adults to the appropriate spawning habitat and diminish the likelihood that Lyons Ferry Hatchery fall Chinook will stray into other Columbia Basin populations. Because the Lyons Ferry Hatchery stock and the listed natural-origin fall Chinook are considered to be within the same ESU (Blankenship and Mendel 1993), there are no expected adverse effects to the listed population as a result of genetic introgression from non-native stocks (NMFS 1995).

The yearling to adult return rate is expected to be equal to the Lyons Ferry Hatchery survival rate of 0.269%. A total of 1,345 adults (or more) may return above Lower Granite Dam as a result of these annual releases. Sub-yearling releases at Lyons Ferry Hatchery have resulted in juvenile-to-adult survival rates of only 0.0364%. Thus, adult returns from yearling releases may be 8 times or more great than returns for sub-yearlings. Preliminary return data from sub-yearling releases at Big Canyon in 1997 would suggest that the adult return rate for sub-yearlings is equal to or greater than the yearling releases.

The success of the acclimation program depends upon three critical assumptions:

1. Three to six weeks acclimation is sufficient for fall Chinook salmon yearlings and sub-yearlings to imprint on the release location.
2. Smolt-to-adult survival will maintain at current levels or increase during the project.
3. Sufficient broodstock will return to Lyons Ferry Hatchery to supply 450,000 yearlings.

Monitoring and evaluation of the juvenile releases from the Fall Chinook Acclimation Facilities is being conducted by the Nez Perce Tribe through project #1998-010-04 (see Section 1.5).

1.2.1 Relationship to the 2000 FCRPS Biological Opinion

The FCAP project was termed a safety-net project in the 2000 Federal Columbia River Power System (FCRPS) Biological Opinion by Reasonable and Prudent Action (RPA) 177.

“This action funds the actual implementation and operation of safety-net projects. Depending on the planning results, specific measures may include funding modifications of existing facilities, or construction and operation of new facilities. The obligation to fund the safety-net

program, including O&M, monitoring, and evaluation, will continue indefinitely, as circumstances warrant.”

1.3 Description of Project Area

The three fish acclimation sites that were identified and developed through this project were selected due to their location and proximity to historic fall Chinook salmon spawning habitat: Pittsburg Landing on the Snake River below Hells Canyon Dam, Captain John Rapids on the Snake River near the confluence with the Grand Ronde River and Big Canyon site on the lower Clearwater River (Figure 1).

Figure 1 Map showing location of all acclimation facility sites.

Pittsburg Landing

Pittsburg Landing is located in the Hells Canyon National Recreation Area (HCNRA) near Whitebird, Idaho. The site is located on the Idaho side of the Snake River at River Mile (RM) 215, about 31 miles downstream of Hells Canyon Dam. Pittsburg Landing has the only road access to the Snake River on the Idaho side of the HCNRA suitable for passenger vehicles. Access to the site is by Deer Creek Road (U.S. Forest Service Road 433), 18 miles from US Highway 95.

This site was chosen because of its location near suitable spawning and rearing habitat and good road access, which is necessary for delivery of equipment and fish. The site is a temporary acclimation facility consisting of portable fish rearing tanks assembled and disassembled each year (Figure 2).

Figure 2 Pittsburg Landing Facility

Captain John Rapids

This site is located at Captain John Rapids on the Snake River between Asotin, Washington and the mouth of the Grand Ronde River at RM 164. The site is on the Washington side of the river, 20 miles upstream of Asotin, with vehicle access provided by the Snake River Road.

The site has favorable characteristics for fish acclimation that includes proximity to adult spawning habitats, has a good release point into an eddy instead of into the river current and is isolated from residences which reduces the possibility of conflicts with local citizens. The facility is a single in-ground 150'X 50' acclimation pond with two screened intakes and submersible electric pumps, which are located in the main river channel (Figure 3).

Figure 3 Captain John Rapids Facility

Big Canyon

Big Canyon acclimation site is located on the lower Clearwater River adjacent to US Highway 12 near Peck, Idaho. The site is 4 miles below the confluence of the North Fork and Middle Fork of the Clearwater River at RM 35. It is located on Nez Perce Tribal allotment 992 and the site of a Clearwater River boat launch facility that was previously leased to the Idaho Department of Fish and Game.

The site was selected because it is located within the designated critical habitat area for Snake River fall Chinook and has good road access. Listed fall Chinook are known to successfully spawn in the Clearwater River both immediately upstream and downstream of the facility. The Big Canyon site is a temporary facility with fish rearing tanks and aeration towers remaining on site while water pumps and related equipment is disassembled and stored offsite each year (Figure 4).

Figure 4 Big Canyon Facility

1.4 Project History

Operation of the facilities funded by this project began in 1996, which initiated supplementation of the Snake River fall Chinook upstream of Lower Granite Dam. In 1996, the Pittsburg Landing facility on the Snake River acclimated and released 114,000 fall Chinook yearlings. In 1997, both the Pittsburg Landing facility and the Big Canyon facility on the Clearwater River were operated and resulted in 147,000 yearlings and 451,000 yearlings and sub-yearlings released respectively. In 1998, Capt. John Rapids facility on the Snake River was operational and the three-acclimation facilities resulted in releases of 336,000 yearlings. In 1999, a total of 1,198,378 fish including 528,346 yearling fish and 670,032 sub-yearling fish were released. Fish releases in 2000 totaled 2,580,816 fish and included 397,339 yearlings and 2,183,447 sub-yearlings. In 2001, a total of 2,051,099 fish were released from the three acclimation facilities. The total includes 318,932 yearling and 1,732,167 sub-yearling fish. This report contains activities involving acclimation and release of fall Chinook juveniles from the acclimation facilities in 2002.

1.5 Relationship to other Projects

Activities that occur through the Fall Chinook Acclimation Project (FCAP) represent only the operations and maintenance (O&M), or production aspect, of the program of a larger comprehensive effort to restore Snake River fall Chinook salmon. Within this effort, in addition to the artificial production and release of fall Chinook juveniles are a number of monitoring and evaluation studies conducted by a host of fisheries management agencies (Table 1). The agencies include Washington Department of Fish and Wildlife (WDFW), U.S. Fish and Wildlife Service (USFWS), Idaho Power Company (IPC), and NPT. The associated projects are integrated and project operators work cooperatively to implement project activities, data collection and analysis, coordination, and management.

Table 1 Ongoing projects/activities associated with restoration of Snake River Fall Chinook Salmon.

Project	Agency	Funding Source	Activities
Lyons Ferry Hatchery	WDFW	Lower Snake River Compensation Plan Project # 200112, 200115, 200124,	Production of yearling and sub-yearling fall Chinook salmon for on-station releases and outplants above Lower Granite Dam.
LSRCP Fall Chinook Salmon Production and Evaluation Program	WDFW	Lower Snake River Compensation Plan Project # 200118 and 200121	Evaluate yearling and sub-yearling fall Chinook salmon released on-station from LFH. Run reconstruction of adult fall Chinook salmon returns to Lower Granite Dam.
Fall Chinook Acclimation Project	NPT	Bonneville Power Administration Project # 199801005	Acclimation and release of yearling and sub-yearling fall Chinook salmon from facilities on the Snake and Clearwater Rivers above Lower Granite Dam.
USFWS Dworshak National Fish Hatchery Fish Health Laboratory	USFWS	Lower Snake River Compensation Plan Project # 200101	Monitor health of FCAP yearling and sub-yearling fall Chinook salmon.
M&E of Yearling Fall Chinook Salmon Released From FCAP Facilities.	NPT	Bonneville Power Administration Project # 199801004	Monitor and evaluate yearling and sub-yearling fall Chinook salmon released from FCAP facilities. Spawning ground surveys – Imnaha and Grande Ronde Rivers (beginning 2003).

M&E Spawning Distribution of Yearling Fall Chinook Salmon Released From FCAP Facilities	USFWS	Bonneville Power Administration Project # 199801003	M&E of spawning distribution of fall Chinook salmon released as yearlings. Spawning ground surveys – Snake , Imnaha and Grande Ronde Rivers.
Nez Perce Tribal Hatchery	NPT	Bonneville Power Administration Project # 198335000	Production of fall Chinook for release throughout the Lower Clearwater River subbasin.
Nez Perce Tribal Hatchery M&E	NPT	Bonneville Power Administration Project # 198335003	M&E of NPTH fall Chinook salmon program. Spawning ground surveys – Clearwater, Salmon and Selway Rivers.
Idaho Power Fall Chinook Program	Idaho Power Corporation	Idaho Power Corporation	Spawning Ground Surveys – Snake, Imnaha and Grande Ronde Rivers. Production of fall Chinook salmon for release in the Snake River below Hells Canyon Dam. Habitat quality in Snake River above and below the Hells Canyon Complex.

2.0 METHODS AND MATERIALS

2.1 Facilities

Pittsburg Landing

The acclimation facility at Pittsburg Landing consists of: 16 -20ft aluminum circular tanks; 2 aluminum distribution boxes; 4 river intake screens; ringlock flexible hose: 4" = 1,260 ft, 6" = 1,780 ft, 8" = 3,110 ft; camlock flexible hose: 6" = 2,080 ft; 1 - 500 gallon diesel storage tank; 1 - 20ft storage container; 2 - 30ft camp trailers; 1 - 1996 Chevy S-10 pickup; two alarm systems; 16 emergency oxygen systems - hoses, microdiffusers and regulators (1 per tank); a trailer mounted 4,000 watt generator light plant; one utility storage trailer; 16 camouflage nets; 2 trailer mounted hydrocyclones; miscellaneous bolts, seals, camlock fittings, etc. Equipment used at Pittsburg Landing and the other two facilities was purchased by USCOE, Walla Walla under the FY95 Congressional Add-on (Senate Report, 103-672, p7).

Water is pumped directly from the Snake River to the acclimation tanks by four, 4-inch diesel pumps. Water pumps are rented from a Portland, Oregon contractor because leasing appeared to offer the least cost over a ten-year life cycle. Each pump has a portable water intake screen that is placed into the river each year and connected to the pump by 120 ft of 6-inch plastic hose. The pumps provide 500 gpm of water and operate 24 hours each day throughout the 6-week acclimation period except for oil checks and servicing. A 1,000 gallon tank, placed within a spill containment barrier, supplies fuel for the pumps. The water is pumped to one of two 12 ft. high water distribution boxes, containing degassing towers to remove nitrogen gas, before flowing through a series of downsizing pipes to the rearing units.

The rearing units consist of 16 circular aluminum tanks, 20 ft in diameter and 4 feet deep. The tanks are transported from the storage area by a 20 ft flatbed lift-truck and placed on leveled 6-inch by 6-inch wood timbers. The tanks, made in two pieces and bolted together, drain water from the center of the tank through an 8-inch pipe placed in a plywood manhole running under the tank. The tank is fitted with vertical 12-inch circular perforated aluminum screen and the water depth controlled by a 6-inch center PVC standpipe. The rearing water enters the tank through a 4-inch pipe located on the edge of the tank and is directed in a manner to facilitate a circular motion to aid the movement of fish waste and mortality to the center screen. Water flow is controlled by a 4-inch gate valve located on the incoming line and maintains flows at 100 gpm. The water discharge line is connected from the tank to the river by an 8-inch flexible plastic pipe, which is also used to release the fish.

Figure 5 Pittsburg Landing Acclimation Tanks

A 24-volt alarm system constantly monitors water levels in each rearing tank and each of the two water distribution towers. An enunciator panel that provides a visual and audio alarm when a low water level is detected monitors the alarm system. The alarm control box and enunciator panel is located near the staff-housing trailer.

Assembly of the acclimation site begins in February each year with the transport of equipment and material from an offsite storage area. The U.S. Forest Service (USFS) agreed, in 1998, to allow the NPT to leave assembled fish rearing tanks and related equipment at a storage site near the fish acclimation site. This agreement resulted in considerable dollar savings, greatly reduced equipment fatigue and reduced assembly and disassembly time by half.

Big Canyon

The Big Canyon facility uses identical or similar equipment to that of Pittsburg Landing. The rearing tank assembly has been changed over the years to include a single row of tanks that sit flat on the gravel surface. The center drain line is located in a trench dug under the tank, thus eliminating the need for 12-inch deep gravel pad that was previously used. This method can only be used where the proper elevation is available to facilitate water discharge to the river.

The USCOE agreed to furnish electric pumps to replace the diesel units that were rented each year. Electric pumps were installed and tested before the 2002 acclimation season. The electric pumps provide the same performance as the diesel pumps while reducing rental and maintenance costs, allowing onsite staff reduction and eliminates the risk of a major fuel spill. .

FCAP Project Leader received verbal agreement from the Nez Perce Tribe that allows the fish rearing tanks and water distribution tower to remain assembled at the site the entire year. This eliminates the need for an assembly and disassembly contract and reduces equipment fatigue hence provides dollar savings to the program.

Capt. John Rapids

The Capt. John Rapids Fall Chinook Acclimation Facility is a single 150'X50' in-ground, lined pond that is supplied with Snake River water by two independent 1,250 gpm submersible electric pumps. Other facility equipment and capital construction consists of: 2 river intake screens; one camp trailer; one standby propane generator; one water well (domestic water); septic system; commercial electric service; alarm system; telephone service. The pumps and intake screens were designed to be placed into the river and then removed following fish acclimation each year but were replaced in 2001 with permanent intake screens located in the main Snake River channel (see facility improvements). The pump intake screens are provided with an air backflush system to remove debris and an alarm system is available to monitor flows.

The pumps continue to be inadequate to provide the water volume and quality required for acceptable fish culture rearing standards. The pumps deposit large amounts of sand in the acclimation pond which must be removed by hand tools between each group of fish. The alarm

system does not provide accurate data, if working at all. Negotiations are ongoing with the USCOE to provide the necessary changes to meet the standards required at the facility.

2.2 Operations

Assembly

No contractor is used for the assembly and disassembly of the portable tanks and associated equipment at Pittsburg Landing and Big Canyon sites. The facilities are assembled and disassembled using FCAP staff members and equipment. This effort reduces project costs and assures that facility assembly is consistent with fish rearing, acclimation and fish release goals.

Actual assembly of the temporary acclimation facilities begins in January and testing of the facilities completed by the last week of February. The Pittsburg Landing and Big Canyon facilities begin operation in March of each year and the Capt. John Rapids facility begins operation in February to allow for sub-yearling production at Lyons Ferry Hatchery.

Staffing

A two person crew works an 8-day on and 6-day off schedule. Crew members work 10 hours each day but are required to remain on site 24 hours to monitor the pumps and alarm system. Staff members live in an on-site travel trailer and receive a per diem allowance for food and personal items. Staff members are supervised by a project foreman who makes periodic visits to the site and have a radio-telephone for communications. Written schedules, manuals and oral instructions guide staff members. Some employees work 6 months on the project to assist in assembly, operations and disassembly while others work from 6 to 12 weeks during fish acclimation. Employees move to other projects immediately following the completion of operations.

Fish transport

Up to 150,000 fall Chinook salmon yearlings are transferred from Lyons Ferry Hatchery to each facility on or about 01 March, at a size of approximately 12 fish per pound. If sub-yearlings are available, up to 500,000 are transferred to each facility at 90 fpp in late April-early May. Priority release sites for sub-yearlings are: 1. Big Canyon, 2. Capt. John Rapids and 3. Pittsburg Landing. WDFW and NPT fish distribution vehicles share fish transport to all the acclimation facilities. Lyons Ferry Hatchery personnel provide schedules and facilitate loading and enumeration of the fish. Fish transport permits are requested and received before fish are distributed.

Figure 6 Fish Transport

Fish culture

Staff perform daily scheduled fish culture duties that includes: checking and recording oxygen levels in the rearing units three times each day, feeding the rearing units three times each day and picking fish mortality twice each day. Staff also observes fish behavior for abnormalities and assist in fish health checks and the fish-marking program. The fish are fed a semi-moist pellet manufactured by Bio-Oregon of Warrenton, Oregon. Fish culture methods are the same as per Integrated Hatchery Operations Team (IHOT) guidelines and consistent with WDFW fish culture techniques at Lyons Ferry Hatchery. The NPT-DFRM Production Division Director reviews any changes to standard procedures and other agencies are consulted if necessary. Environmental precautions are necessary to handle diesel and oil for the portable water pumps.

Figure 7 Fish Culture

Yearling fish are reared and acclimated in the temporary facilities for six weeks (10 weeks at Capt. John Rapids) before release into the Snake and Clearwater Rivers in April, at a size of approximately 10 fpp, or 160-170 mm fork length. Sub-yearling fish are reared and acclimated approximately four weeks for the first group and two to four weeks for the second group prior to release into the river in June, at 60 fpp. Release typically occurs during rising water conditions, at the same time or slightly preceding fall Chinook salmon releases at Lyons Ferry Hatchery, and at night to minimize predation by birds or other fish.

Fish health

Fish health services are provided by contract with the USFWS, Dworshak Fish Health Center (DFHC). The contract provides diagnostic and pathogen survey services for all fall Chinook juveniles and smolts transported to the fish acclimation facilities. The services include a fish health check before transfer, bi-weekly exams during acclimation and a pre-release exam. Other health checks are performed as requested. Fish health protocols are as per AFS Blue Book, IHOT and Nez Perce Tribe fish health protocols.

3.0 2002 OPERATIONS

3.1 Introduction

This report consists of activities conducted during 2002 at fall Chinook acclimation projects Pittsburg Landing (98-010-05), Big Canyon (98-010-08) and Capt. John Rapids (98-010-07).

This report is submitted by Bruce McLeod, Project Leader for the Fall Chinook Acclimation Project (FCAP). The project leader facilitates the implementation and completion of all task activities set forth in the project plan. The project leader was given the authority to define, implement and oversee all methods, protocols and procedures for assembly, operation and disassembly of the Pittsburg Landing, Big Canyon and Capt. John Rapids sites.

3.2 Administrative

Preparations for the 2002 fall Chinook acclimation season began in October 2001 with the ordering of supplies, assembly of staff, designing equipment experiments and consulting with the USCOE on facility improvements.

The FY 2002 funding process began with the submission of the Bonneville Power Administration FY 2002 Provincial Project Review document on 20 July 2001. The document was reviewed by the Independent Scientific Review Panel (ISRP) who recommended funding levels based upon the proposal review criteria worksheet. The worksheet scored the proposal for its consistency with the Power Act Amendment Criteria. The FCAP was approved for funding without further review. A power point presentation of the project was presented to Power Planning Council on 13 September at Enterprise, Oregon during the Blue Mountain Provincial Project review.

Task orders for the three projects were received from BPA on 24 January 2002. The Big Canyon (project # 4297) 2002 budget was \$266,493 with an additional \$168,996 in authorized carry-forward funds for equipment purchases and consultant & contracts. The Capt. John Rapids (project # 4186) 2002 budget was \$218,418 with carry-forward of \$87,000 and the Pittsburg Landing (project # 4235) 2002 budget was \$228,143 with \$38,000 carry-forward. Carry-forward funding is provided to complete purchases of equipment and contractual projects that could not be done in previous fiscal years because of justified constraints.

The Lyons Ferry Annual Operating Plan (AOP) draft was completed on 02 December 2001 and distributed by the Snake River Lab of WDFW. Nez Perce Tribe Fisheries management personnel attended the coordination meeting of 15 November 2001. Attachment 1 to the AOP summarizes the NPT plan of activities for the FCAP facilities in 2002. The plan covers activities at Lyons Ferry Hatchery from 01 October 2001 to 30 September 2002.

Fisheries Department staff members met with the U.S. Forest Service Supervisor for the Hells Canyon Recreational Area (HCRA) regarding the yearly removal of acclimation tanks and other equipment from the Pittsburg Landing site and the possibility of a permanent acclimation site in

the area. Following considerable discussion, it was concluded that the acclimation tanks and other equipment must be removed each year to allow other users access to the site and that the cost of completing a NEPA document and cultural resource survey for a permanent site would be more than the cooperators would be willing to spend.

Nez Perce Tribe fisheries personnel attended the Fall Chinook Technical Group meetings on 26 March and 30 July 2002. Cooperators met at Dayton, WA on 25 September to discuss the 2003 Lyons Ferry AOP.

3.3 Facility assembly

The assembly and disassembly of the facilities was done by FCAP personnel using equipment purchased by and shared with the Nez Perce Tribal Hatchery (project ID 83-350-00). This effort results in saving dollars that can be spent to improve other areas of the project needing improvements and equipment purchases. Assembly work on the acclimation sites began 04 January and was completed 28 February 2002.

3.4 Equipment Operation/Testing

New equipment that was tested during the 2002 acclimation season and the results include:

1. Evaluate the performance of new 8-inch electric water pumps at Big Canyon, which replaced the 4-inch diesel pumps that have been used in the past. It was proposed that an 8-inch electric pump may deliver enough water to replace two 4 inch diesel pumps and provide the same power and reliability while reducing the risk of a major fuel spill.

Results: The pumps performed very well and provided more than enough water to operate the acclimation tanks. The pump motors must be modified with variable speed drives to allow control of the pumping rate to reduce plugging of the intake screens and aeration towers.

2. Test the new 8-inch plastic pipe provided for the intake and discharge side of the new electric pumps. The new 8" hose did not appear to be as heavy duty as the original 4" hose.

Results: The new 8" hose could not handle the water discharge pressure from the pumps and developed many leaks which resulted in placing the fish in jeopardy on several occasions. The new hose was replaced with extra hose from Capt. John Rapids until a solution can be found.

3.5 Fish acclimation

Fish health exams indicated that the incidence of Bacterial Kidney Disease (BKD) in the yearling fish was lower than the past two years; however, mortality during acclimation was 2.5%. The mortality appeared to be BKD and/or Erythrocytic Inclusion Body Syndrome (EIBS) related with most fish having fungus on the tail and other parts of the body. Bacterial Kidney Disease (BKD) was not diagnosed in fish health samples of sub-yearling fish

The large group of sub-yearling fish required the use of Pittsburg Landing for one group, with two groups at Big Canyon and Capt. John Rapids. The sub-yearling fish were much smaller in size than in previous years with sizes ranging from 115 to 278 fish per pound. The smaller size was a result in part to the outbreaks of Bacterial Gill Disease while rearing at Lyons Ferry Hatchery.

Yearling fish were again transferred to the Capt. John Rapids facility one month early (02 February) to allow Lyons Ferry Hatchery rearing space for the large group of sub-yearlings on hand this year. The long acclimation season (10 weeks) results in greater potential for fish health risks due to environmental stress and mechanical failures. Staff members continue to add improvements that minimize fish stress and help to reduce the risk of a catastrophic fish loss due to mechanical failure.

Pittsburg Landing

A total of 162,193 yearling fish @ 14.2 fpp (11,422 lbs.) were received on 04-06 March 2002 at the Pittsburg Landing facility. This is the largest group of yearling fish ever received at Pittsburg Landing. Following six weeks of acclimation, 159,731 fall Chinook yearlings were released from the Pittsburg Landing facility into the Snake River on 15-17 April 2002 (Table 2). These fish were all marked with an adipose fin clip, a Coded Wire Tag (CWT 63-06-78) and a Green Visual Implant Elastomer (VIE) tag near the right eye. Passive Integrated Transponder (PIT) tags were also implanted into 7,545 fish released from this group

A total of 401,289 sub-yearlings were received 06-07 May. A total of 399,315 sub-yearling fish were released on 27-28 May 2002 after three weeks of acclimation. The use permit for Pittsburg Landing requires removal of equipment from the acclimation site by 15 June. There were 199,965 fish in this group with CWT (66-25-01) and 2,539 PIT tagged fish.

Big Canyon

A total of 166,516 yearling fish @ 12.98 fpp (12,829 lbs.) were received at the Big Canyon facility from 04-07 March 2002. Approximately 159,472 fall Chinook yearlings were released from the Big Canyon facility into the Clearwater River on 10-12 April 2002 (Table 2). These fish were all marked with an adipose fin clip, a CWT (63-06-77) and (63-06-25) and a green VIE tag near the left eye. This release group received 7,482 PIT tags.

A total of 500,524 sub-yearling fish at 192.5 fpp (2,600 lbs.) were received at Big Canyon facility on 07-08 May and acclimated for 3 weeks. A total of 495,215 sub-yearlings were released on 27-28 May 2002 (Table 2). There were 197,763 fish with CWT (61-26-39) in this group of fish and 2,499 were PIT tagged.

A second group of 506,865 sub-yearlings at 178.2 fpp (2,844 lbs) were received on 30-31 May and acclimated for three weeks. A total of 505,674 sub-yearlings were released into the Clearwater River on 18-19 June 2002. There were no external marks on this group of fish however, 2,517 were PIT tagged.

Capt. John Rapids

A total of 162,969 yearling fish @ 16.6 fpp (9,818 lbs.) were received 06 February at the Capt. John Rapids acclimation facility. Yearling fish were transferred to the Capt. John Rapids facility in February to allow Lyons Ferry Hatchery rearing space for the sub-yearling group on hand each year. Bacterial Kidney Disease (BKD) was verified by fish health exams throughout the acclimation period however fish mortality was not excessive even with the long acclimation season (10 weeks). Following ten weeks of acclimation, approximately 160,155 yearling fish were released into the Snake River on 16 April 2002 (Table 2). These fish were all marked with an adipose fin clip, a CWT (63-01-83), and a blue VIE tag near the left eye. PIT tags were implanted in 2,487 fish in this release group.

Transport of 499,876 sub-yearling fish @ 215 fpp (2325 lbs) to the Capt. John Rapids facility occurred on 06-08 May. These fish were acclimated for three weeks and a total of 498,927 sub-yearling fish were released into the Snake River on 28 May 2002 (Table 2). There were 185,010 with CWT (61-01-06) and 2,507 PIT tags in this group.

A second group of 500,026 sub-yearlings at 152 fpp (3290 lbs) were received on 30 May to 06 June. A total of 498,948 were released on 20 June when river water flows were favorable for migration. There were 184,429 fish with CWT (61-01-05) and 2,517 fish with PIT tags.

Table 2. Summary of fall Chinook juveniles reared, acclimated and released from the Fall Chinook Acclimation Project facilities, 2002.

Facility	Number Received at Facility	Age	Size at Release (fpp)	Date Received	Number Released from Facility	Date Released	Survival to release (%)
Pittsburg Landing	162,193	1+	10.9	3/4-6/02	159,731	4/15-17/02	98.5%
Big Canyon	166,516	1+	11.7	3/4-7/02	159,472	4/19-12/02	95.8%
Capt. John	162,969	1+	12.0	2/04/02	160,155	4/16/02	98.3%
<i>Total Yearlings</i>	<i>491,678</i>				<i>479,358</i>		<i>97.5%</i>
Pittsburg Landing	401,289	0+	108.0	5/6-7/02	399,315	5/27-28/02	99.5%
Big Canyon	500,524	0+	126.0	5/7-8/02	495,215	5/27-28/02	98.9%
Big Canyon	506,865	0+	141.7	5/30-31/02	505,674	6/18-19/02	99.8%
Capt. John	499,876	0+	119.4	5/06-08/02	498,927	5/28/02	99.8%
Capt. John	500,026	0+	133.4	5/30-6/5/02	498,948	6/26/02	99.8%
<i>Total Subyearlings</i>	<i>2,408,580</i>				<i>2,398,079</i>		<i>99.6%</i>
2002 Total					2,877,437		

A total of 2,877,437 fish weighing 53,045 pounds were released from the three acclimation facilities. The total includes 479,358 yearling fish weighing 33,930 pounds and 2,398,079 sub-yearling fish weighing 19,115 pounds. A complete production summary, including marking information, is presented in Appendix A.

3.6 Facility Disassembly

Disassembly of the acclimation tanks and related equipment at Pittsburg Landing was completed by FCAP staff members. The USFS agreed, in 1998, to allow the Nez Perce Tribe to leave assembled fish rearing tanks and related equipment at a storage area near the fish acclimation site. This agreement has resulted in considerable dollar savings, greatly reduced equipment fatigue and reduced assembly and disassembly time by half.

Nez Perce Tribal Fisheries personnel has received verbal permission from the Nez Perce Tribe for the Big Canyon acclimation site which allows the fish acclimation tanks and related equipment to remain on site. Leaving the tanks at the site each year provides the same benefits as at Pittsburg landing but with additional dollar savings because annual assembly and disassembly of the tanks is not necessary.

3.7 Major Problems

Above normal snow pack in the Snake and Clearwater River Basins resulted in water flow problems at all three acclimation facilities. This follows two years of extreme low snow pack which also caused water flow problems of a different kind.

Idaho Power Company fluctuated water flows from Hells Canyon Dam from very high down to allowed minimums in an effort to control water levels in Hells Canyon Reservoir. High water flows caused large amounts of algae to break loose from the river bottom and plug the water intake screens at Pittsburg Landing. The increased water flow and depth prevented facility staff from being able to clean the screens which forced staff to pull the screens closer to the river bank. The river flows would then suddenly be reduced causing the intake screens to be exposed and forced staff to pull the screens deeper into the river. The intake screens are very heavy and require a minimum of two people and a vehicle winch to move them. Staff members called Idaho Power Company on a daily basis for flow information in an effort to assure that staff members and equipment was available to move the intakes. Idaho Power Company's flow forecasts are habitually inaccurate and only the dedication of staff members has prevented fish loss due to inadequate water flows to the acclimation tanks.

In early February, snow melt combined with heavy rain created high water flows in the Clearwater River causing the water pump intakes at Big Canyon acclimation facility to plug with debris. The plugging of the intake screens was compounded by the new electric pumps which draw more water through the same intake screen area than the old 4" diesel pumps. The additional water volume provided by the electric pumps is more than is needed for fish acclimation and hastens screen plugging. No method was provided to maintain the minimum flows needed from the pumps. Staff members were able to pull the screens closer to the river bank and brush them clean as needed.

Several mechanical and operational problems that will require modification and construction were noted during fish acclimation. At Capt. John Rapids a large amount of sand is pumped with the water from the river and deposited in the acclimation pond. The problem will require a settling basin or a concrete pad at the water discharge pipe to assist in sand removal. The alarm system must be modified to include more alarm points. Modifications needed for the new water pumps at Big Canyon include; variable speed starter motors to control pumping rate, replacement of new 8 inch pump intake and discharge hose with heavier duty hose, replacement of discharge tees with "y" fittings to reduce hose torque and redesign of aeration towers to reduce water spill and assist in cleaning of Koch rings.

3.8 Facility improvements

The USCOE continues to address modifications needed to correct operational deficiencies at the Capt. John Rapids and Big Canyon facilities. FCAP personnel worked with COE engineers and contractors with installation and testing of new pumps at Capt. John Rapids and Big Canyon. Several concerns must be corrected before the 2003 acclimation program.

At Capt. John Rapids the USCOE contracted with Mark Heuett Construction to furnish and install two new 3-phase water intake pumps capable of pumping 1250 gpm at 70-ft TDH minimum. The modifications included new electrical line for the larger pumps, moving valves in the pump vault to allow removal of one pump while the other is operating, installing new reduced voltage motor starters and providing a meter base for 240-volt electrical power. The modifications were made and the new pumps installed on 20 January 2002.

The USCOE contracted with Clearwater Power Company to provide 240-volt 3-phase power to the Capt. John Rapids site to operate the new water intake pumps and related equipment. A rotophase was used in previous years to provide 3-phase power but was not reliable. This project consisted of adding a third line to existing power poles for several miles and crossing the Snake River two times.

At Big Canyon the USCOE provided new electric pumps and associated electrical panel with motor starters and control switches. The pumps were installed and tested prior to the 2002 acclimation season. New 8-inch pump intake and discharge hose was purchased by the USCOE. A 125 kw standby diesel generator for Big Canyon was purchased by the FCAP project at a cost of \$23,800.

The new alarm system at Capt. John Rapids operates by sending an alarm signal if a pump shuts down completely while operating. FCAP staff members installed an additional alarm that will send a signal if the water level in the pond drops for any reason.

Meetings will continue with USCOE, USFWS and WDFW personnel to discuss operational deficiencies at Capt John Rapids and Big Canyon. The addition of new pumps and other recent modifications at both Big Canyon and Capt. John Rapids facilities provide the basic needs for building a functional acclimation program. Nez Perce Tribe Fisheries personnel will continue to communicate with the Corps about problems that must be corrected before the facilities are fully operational.

With the basic equipment needs identified or in place at the acclimation facilities, carry-forward funding is being used to complete purchases of equipment and contractual projects that could not be done in previous fiscal years because of justified constraints. Facility improvements contracted for in 2002 but that will not be completed until 2003 include; metal canopy cover for staff trailers at Capt. John Rapids and Big Canyon (\$15,000), equipment storage building at Sweetwater Compound (\$30,000) and gravel placement at Sweetwater Compound (\$4,500). Equipment purchased in 2002 for delivery in 2003 includes; Ford F-250 pickup truck (\$29,584), Kenworth tractor truck for equipment and fish transport (\$77,867), fish transport trailer (\$26,954), equipment transport trailer (\$18,243), forklift for moving equipment and materials (\$21,989), replacement of 6 and 8-inch water hose (\$23,700) and four 400 gallon fish distribution tanks (\$25,950).

A domestic water well was drilled at the Big Canyon acclimation site for use by staff members during operations of the facility. The well was completed in January 2002 at a cost of \$9,160.

4.0 FY 2002 OBJECTIVES AND TASKS

OBJECTIVE 1. COORDINATION/PLANNING:

The Nez Perce Tribe formally and informally consulted with all the Fall Chinook Acclimation Project cooperators. NPT staff improved coordination and information exchange this fiscal year.

The project represents a cooperative effort between the Nez Perce Tribe, State and Federal agencies.

Task 1.1: Coordinate with WDFW to arrange for the transfer of 450,000 yearlings (150, 000 yearlings to each of three facilities). Provide release summaries and other information to WDFW to assist in the M&E of releases from all three facilities.

Response: Fish transfers this fiscal year included 491,678 yearling and 2,408,580 sub-yearling fish. The Nez Perce Tribe provided trucks and staff to assist WDFW with the fish transfers. Release summaries are being finalized and will be distributed to WDFW and other cooperators. WDFW did provide a copy of the Lyons Ferry monthly production summary which allowed FCAP staff to track fish numbers, size and condition. A change in management at the Lyons Ferry hatchery contributed to a breakdown in communication which resulted in FCAP personnel purchasing more fish food than was needed for the smaller size sub-yearlings.

Task 1.2: Coordinate with USFWS to collect pre-release fish health samples, securing a fish transport permit from IDFG, and M&E of Pittsburg Landing releases.

Response: A cooperative agreement with the USFWS Upper Columbia Fish Health Lab provides for the collection of pre-release fish health samples and routine fish health exams during acclimation. Fish health exams were conducted at Lyons Ferry Hatchery prior to fish transport to the three acclimation facilities and a final health exam conducted before fish releases at all the facilities. Fish transport permits, dated 19 February and 08 March 2002, were received from Idaho Fish and Game. USFWS personnel have been represented at all M&E meetings and discussions. USFWS personnel did not PIT tag at Pittsburg Landing this year but did conduct redd surveys.

Task 1.3: Coordinate with NMFS to ensure that the planned activities as presented in the biological assessments are adhered to and include NMFS in the review of changes to planned production that may affect listed stocks.

Response: Coordination between NMFS and the Nez Perce Tribe is an ongoing process through *U.S. v Oregon PAC* meetings. No production changes were made during the 2002 acclimation season.

Task 1.4: Coordinate with LSRCF to facilitate transport of the yearlings and sub-yearling fish.

Response: Transportation by LSRCP trucks was not needed this year. Fish transport was provided by WDFW and Nez Perce Tribe fisheries department.

Task 1.5: Participate in U.S. v Oregon PAC, to keep them informed of activities in these facilities and changes in planned actions.

Response: The Nez Perce Tribe is represented in U.S. v Oregon PAC, and presents any requested changes in planned actions to the members for consideration.

Task 1.6: Coordinate with USFS to renew the Special Use Permit to operate the temporary acclimation facility at Pittsburg Landing.

Response: Task completed during the first quarter of the fiscal year.

Task 1.7: Coordinate with NPT M&E projects 98-010-01 and 98-010-04 on fish rearing and release protocol to facilitate the fish monitoring program

Response: Coordination with M&E projects during the quarter required continuous contact to facilitate the numerous production changes due to river water conditions. Cooperation from the M&E projects was excellent and provided the best rearing and release strategy for fish survival.

OBJECTIVE 2. FACILITY DEVELOPMENT:

Task 2.1: Work with the USCOE, Walla Walla, and their contractors to modify the facility and equipment at Capt. John Rapids and schedule an operational test before fish transport.

Response: FCAP staff members continue to work with USCOE in an effort to complete facility modifications. For the first time since operations began at Capt. John Rapids a full operational test was conducted before the arrival of fish at the facility.

Task 2.1.1: Closely monitor and ensure all elements of construction are consistent with fish rearing, acclimation and release goals.

Response: FCAP staff members have identified components and accessories of the facilities that will require modification before being consistent with established fish acclimation and release goals.

Task 2.1.2: Test the river intakes prior to installation and facilitate modification if necessary.

Response: Testing of the river intakes this year, following installation of new river pumps, identified problems that must be corrected by the USCOE.

Task 2.1.3: Become familiar with the operation and maintenance of all parts of the facility before the contractor is released.

Response: When all of the new water intake system and related work is completed, training of personnel to operate the river intakes and a modified alarm system will be necessary.

Task 2.2: Work closely with the USCOE to facilitate the design and installation of pumps at Big Canyon acclimation facility.

Response: Pump design and installation was completed before the 2002 fish acclimation season and tested during the acclimation season. Components requiring modification were identified in the introduction.

Task 2.3: Determine the feasibility of relocating the Pittsburg Landing acclimation facility to a permanent location near the temporary site to reduce assembly costs and increase fish survival.

Response: Nez Perce Tribe fisheries staff members met with the USFS personnel (Hells Canyon National Recreation Area) concerning a permanent site for the Pittsburg Landing fish acclimation facility and as a result will not pursue a permanent location.

Task 2.3.1: Site investigations for permanent Pittsburg Landing facility including initial road design work, schematic facility design and cultural resource survey(s).

Response: NPT will not pursue a permanent site and this task will be eliminated.

Task 2.3.2: Initiate NEPA work contingent on task 2.3.1

Response: This task will be eliminated from the 2003 objectives.

OBJECTIVE 3. OPERATIONS AND MAINTENANCE:

Task 3.1: Solicit bids and select a contractor to install the portable tanks and associated equipment at the three sites.

Response: No contractor was used for assembly this year. The facilities were assembled and disassembled using FCAP staff members and equipment.

Task 3.2: Work with the facility assembly contractor to ensure that the tanks and associated equipment are transported and installed correctly. Install water pumps at Capt. John Rapids.

Response: See task 3.1.

Task 3.3: Prior to fish transport, test the facilities for one week to identify faulty components.

Response: Testing of all facilities was completed before the arrival of fish this year.

Task 3.4: On or about 01 March, receive at each facility, 150,000 yearlings @ 14 fpp, and rear to 10 fpp for release on or about 15 April. If sub-yearlings are available, rear up to 1,000,000 per site and release on or about 01 June.

Response: Received 491,678 yearling fish at @ 14.4 fpp and 2,408,580 sub-yearling fish @ 181 fpp between 06 February and 31 May 2002. The fish average size of the sub-yearling was very small as compared to previous years. Fish health of the sub-yearlings was good while in the acclimation facilities.

Task 3.4.1: Collect and record all criteria relevant to fish rearing, e.g. feed use, mortality, fish health checks, oxygen levels, nitrogen saturation, etc.

Response: Relevant fish rearing data and parameters is collected and recorded daily. Staff members are diligent in assuring pertinent data is assembled. Fish health was not performed weekly as in past years.

Task 3.5: Upon release of fish, monitor the disassembly of the facility and check that equipment is properly stored.

Response: Task was completed in the 2002-second quarter immediately following fish acclimation.

Task 3.6: Critique the assembly, operation and disassembly of the facilities to improve operations and reduce costs.

Response: Task was completed in the 2002-second quarter. Several changes are planned for the 2003 acclimation season including modifying electric pumps at Big Canyon, addressing the sand problem at Capt. John Rapids and replacing 6-inch hoses at Pittsburg Landing.

Task 3.7: Repair and replace equipment as needed (e.g. paint tanks, winterize pumps and travel trailers).

Response: Task will be completed before starting the 2003 acclimation season.

OBJECTIVE 4. REPORTS:

Task 4. 1: Submit quarterly progress reports based on the objectives and tasks contained within the statement of work, within 30 days following the quarter.

Response: Quarterly reports submitted as required.

Task 4.2: Submit a final operational report of all activities for all three facilities by 01 February 2003 to include: numbers of fish released, procedures, daily observations (morts, etc), problems, operational changes, cost summaries, location of information concerning monitoring activities, copies of permits, and recommendations.

Response: A final report will be submitted as required.

5.0 SUMMARY

The 2002 fall Chinook fish acclimation program had an excellent season with both yearling and sub-yearling fish being successfully acclimated. A total of 2,877,437 fish were released from the three acclimation facilities, including 479,358 yearling fish and 2,398,079 sub-yearling fish. Fish health was improved over the last several years in both fish received and released.

Acclimation sites continue to experience environmental and mechanical problems but staff members were able to make repairs or find alternative methods. Negotiations with the Corps of Engineers for improvements at both Capt. John Rapids and Big Canyon facilities will continue as long as needed. Agreements with the Nez Perce Tribe at Big Canyon and U. S. Forest Service at Pittsburg Landing to leave equipment on or near the acclimation sites will provide a large dollar savings for the program and reduce equipment fatigue. Equipment experiments resulted in finding new methods for next year that will improve fish culture and make it easier for staff members

Cooperation and communication between the Nez Perce Tribe and cooperators has been excellent and is largely responsible for the success of the program. Cooperation between Nez Perce Tribe fisheries programs has provided needed equipment and manpower for the program.

Table 3 Summary of juvenile fall Chinook salmon released from Fall Chinook Acclimation Project 1995-2002.

Year	# of yearlings released	# of sub-yearlings released	# of FCS adults over LGR	# of FCS jacks over LGR	# of FCS redds in Clearwater R.	# of FCS redds in Snake R.
1995			1,067	308	20	65
1996	114,299		1,308	424	69	104
1997	345,769	252,705	1,451	504	72	58
1998	336,191		1,909	2,002	78	185
1999	529,503	670,033	3,384	1,863	184	373
2000	397,339	2,183,447	3,602	7,112	180	346
2001	318,932	1,732,167	8,915	8,834	336	770
2002	479,358	2,398,079	12,347	5,729	527	1,113

6.0 LITERATURE CITED

- Blankenship, H.L., and G.W. Mendel. 1993 Upstream Passage Spawning, and Stock Identification of Fall Chinook Salmon in the Snake River. Annual Report FY 92-93, December 1993.
- Garcia et al. 1999 Spawning Distribution of Fall Chinook Salmon in the Snake River: Annual Report 1998, Project No. 1998-01003, (BPA Report DOE/BP-3776-1).
- Garcia et al. 2000. Spawning Distribution of Fall Chinook Salmon in the Snake River: Annual Report 1999, Project No. 1998-01003, (BPA Report DOE/BP-3776-2).
- Garcia et al. 2001. Spawning Distribution of Fall Chinook Salmon in the Snake River: Annual Report 2000. Project No, 1998-01003, (BPA Report DOE/BP-00004700-1).
- Garcia et al. 2003. Fall Chinook Salmon Spawning Ground Surveys in the Snake River Basin upriver of Lower Granite Dam: Annual Report 2001. Project No. 1998-01003, (BPA Report DOE/BP-00004700-2)
- Garcia et al. 2004. Fall Chinook Salmon Spawning Ground Surveys in the Snake River Basin upriver of Lower Granite Dam: Annual Report 2002. Project No. 1998-01003, (BPA Report DOE/BP-00004700-3)
- NMFS. 1995. Biological Opinion for 1995 to 1998 hatchery operations in the Columbia River basin. NOAA/NMFS, April 5, 1995, 82 p.Consultation No (383).
- Rocklage, S.J. 2004. Monitoring and Evaluation of Yearling Fall Chinook Salmon Released from Acclimation Facilities Upstream of Lower Granite Dam: Annual Report 1998, Project No. 1998-0100 4, (BPA Report DOE/BP-00004025-1).
- Rocklage, S.J. and D.S. Kellar. 2005a. Monitoring and Evaluation of Yearling Fall Chinook Salmon Released from Acclimation Facilities Upstream of Lower Granite Dam: Annual Report 1999, Project No. 1998-01004, (BPA Report DOE/BP-00004025-2).
- Rocklage, S.J. and D.S. Kellar. 2005b. Monitoring and Evaluation of Yearling Fall Chinook Salmon Released from Acclimation Facilities Upstream of Lower Granite Dam: Annual Report 2000, Project No. 1998-01004, (BPA Report DOE/BP-00004025-3).
- Rocklage, S.J. and D.S. Kellar. 2005c. Monitoring and Evaluation of Yearling Fall Chinook Salmon Released from Acclimation Facilities Upstream of Lower Granite Dam: Annual Report 2001, Project No. 1998-01004, (BPA Report DOE/BP-0004025-4).

Rocklage, S.J. and D.S. Kellar. 2005d. Monitoring and Evaluation of Yearling Fall Chinook Salmon Released from Acclimation Facilities Upstream of Lower Granite Dam: Annual report 2002, Project No. 1998-01004, (BPA Report DOE/BP-0004025-5).

Stelle, W. 1996. Informal Consultation letter from W. Stelle, NMFS, to W. Shake, USFWS. Dated November 7, 1996, on Operation of Big Canyon Fall Chinook Acclimation Facility, Consultation Number 649.

7.0 APPENDICES

Appendix A: 2002 Fish Production Summaries

Lyons Ferry Hatchery fall chinook releases above Lower Granite Dam in 2002 (data compiled by Bill Arnsberg, Steve Rocklage and Bruce McLeod, Nez Perce Tribe).

Release Type		Release Location	Release Dates	Number ad-clipped w CWT	CWT Code	Number ad-clipped w/o CWT	Number CWT w/o ad clip	Number Unmarked w/o CWT	Number PIT tagged	Gms/fish	Fish/Lb	Total Lbs	Avg FL	CV of Avg FL	Elastomer (side, color/retention %)*
Age	Brood Year														
1+	2000	Pittsburg	4/15-17	156,372	63-06-78	672	2,687	0	7,545	41.5	13.4	11,920	153.0	8.5	RG/83.0
		Total number of yearlings released at Pittsburg Landing: 159,731													
		Captain John	4/16	155,692	63-01-83	0	4,463	0	2,487	37.1	16.6	9,648	146.7	8.1	LB/80.3
		Total number of yearlings released at Captain John: 160,155													
		Big Canyon	4/10-12	155,827 1,661	63-06-77 63-06-25	1,440 15	523 6	0	7,482	38.9	12.9	12,362	151.7	8.1	LG/86.2
		Total number of yearlings released at Big Canyon: 159,472													
0+	2001	Pittsburg	5/27-28	n/a	61-25-01	n/a	199,965	199,350	2,539	4.2	166.0	2,406	72.4	7.2	None
		Total number of sub-yearlings released at Pittsburg: 399,315													
		Big Canyon	5/27-28	n/a	61-26-39	n/a	197,763	297,452	2,499	3.6	193.0	2,566	70.8	7.6	None
			6/18-19	n/a	n/a	n/a	n/a	505,674	2,517	3.2	178.0	2,841	68.2	7.3	None
		Total number of sub-yearlings released at Big Canyon: 1,000,889 (495,215 1st group, 505,674 2nd group)													
		Captain John	5/28	n/a	61-01-06	n/a	185,010	313,917	2,507	3.8	215.0	2,321	68.7	7.4	None
			6/20	n/a	61-01-05	n/a	182,429	316,519	2,517	3.4	152.0	3,283	68.9	8.1	None
		Total number of sub-yearlings released at Captain John: 997,875 (498,927 1st group, 498,948 2nd group)													

*Note: Elastomer tag behind eye. Side/color: RG=Right/Green, LG=Left/Green, LB=Left/Blue

Appendix B: Acclimation Site Fish Inventories

Nez Perce Tribe											
Inventory - Pittsburg Landing Acclimation Facility											
2002 FALL CHINOOK YEARLINGS											
Received	40500	fish on 03/04	tanks 9,14,15,16					Released	49418	fish on 4/15	tanks 12-16
	81353	fish on 3/05	tanks 1,3,5,7,10,11,12,13						60539	fish on 4/16	tanks 6-11
	40340	fish on 3/06	tanks 2,4,6,8						49774	fish on 4/17	tanks 1-5
Total	162193							Total	159731		
	Starting		Pre-release		Percent	Date		Release		Days	
Tank	Inventory	Morts	Sample	Inventory	Mortality	Received	FPP *	Release Date	FPP **	Acclimated	
1	10,152	113	0	10,039	1.11	03/05/2002	12	04/17/2002	10.9	43	
2	9,676	52	0	9,624	0.54	03/06/2002	14.4	04/17/2002		42	
3	10,146	135	0	10,011	1.33	03/05/2002	12.9	04/17/2002		43	
4	10,180	42	0	10,138	0.41	03/06/2002	14.4	04/17/2002		42	
5	10,139	178	0	9,961	1.76	03/05/2002	13.5	04/17/2002		43	
6	10,347	37	0	10,310	0.36	03/06/2002	14.4	04/16/2002		41	
7	10,152	162	0	9,990	1.60	03/05/2002	13.5	04/16/2002		42	
8	10,137	48	0	10,089	0.47	03/06/2002	14.4	04/16/2002		41	
9	10,125	237	0	9,888	2.34	03/04/2002	13.9	04/16/2002		43	
10	10,200	66	0	10,134	0.65	03/05/2002	12.0	04/16/2002		42	
11	10,241	113	0	10,128	1.10	03/05/2002	12.2	04/16/2002		42	
12	10,155	89	0	10,066	0.88	03/05/2002	12.4	04/15/2002		41	
13	10,168	84	0	10,084	0.83	03/05/2002	12.4	04/14/2002		40	
14	10,098	461	0	9,637	4.57	03/03/2002	13.5	04/15/2002		43	
15	10,152	305	0	9,847	3.00	03/04/2002	13.5	04/15/2002		42	
16	10,125	340	0	9,785	3.36	03/04/2002	13.5	04/15/2002		42	
	162193	2462	0	159731	1.52		14.22				
								Avg. FPP	10.9**		
* Sample sizes from Lyons Ferry Hatchery when transported.											
** PIT tag sampling, 4 tanks only to minimize stress, one week prior to release.											
CWT Code - 63-06-78 - Elastomer RG/83.0											

Nez Perce Tribe											
Inventory - Pittsburg Landing Acclimation Facility											
2002 FALL CHINOOK SUB-YEARLINGS											
Received	300968	fish on 5/06	tanks 1,3,5,7,9-16			Released	224660	fish on 5/27	tanks 7,9-16		
	100321	fish on 5/07	tanks 2,4,6,8				174655	fish on 5/28	tanks 1-6,8		
Total	401289					Total	399315				
Tank	Starting Inventory	Morts	Pre-release Sample	Inventory	Percent Mortality	Date Received	FPP *	Release Date	FPP **	Days Acclimated	
1	25,080	56	0	25,024	0.22	05/06/2002	178	05/28/2002	108	22	
2	25,080	196	0	24,884		05/07/2002	205.0	05/28/2002		21	
3	25,080	80	0	25,000	0.32	05/06/2002	178.0	05/28/2002		22	
4	25,080	142	0	24,938	0.57	05/07/2002	205.0	05/28/2002		21	
5	25,080	86	0	24,994	0.34	05/06/2002	178.0	05/28/2002		22	
6	25,080	157	0	24,923	0.63	05/07/2002	205.0	05/28/2002		21	
7	25,080	154	0	24,926	0.61	05/06/2002	178.0	05/27/2002		21	
8	25,081	189	0	24,892	0.75	05/07/2002	205.0	05/28/2002		21	
9	25,081	105	0	24,976	0.42	05/06/2002	188.0	05/27/2002		21	
10	25,081	100	0	24,981	0.40	05/06/2002	216.0	05/27/2002		21	
11	25,081	144	0	24,937	0.57	05/06/2002	216.0	05/27/2002		21	
12	25,081	90	0	24,991	0.36	05/06/2002	216.0	05/27/2002		21	
13	25,081	84	0	24,997	0.33	05/06/2002	216.0	05/27/2002		21	
14	25,081	99	0	24,982	0.39	05/06/2002	188.0	05/27/2002		21	
15	25,081	105	0	24,976	0.42	05/06/2002	188.0	05/27/2002		21	
16	25,081	187	0	24,894	0.75	05/06/2002	188.0	05/27/2002		21	
	401289	1974	0	399315	0.49		196.80				
								Avg. FPP	108		
* Sample sizes from Lyons Ferry Hatchery when transported.											Running Tot
** PIT tag sampling, 4 tanks only to minimize stress, one week prior to release.											
CWT Code - 61-25-01 - no elastomer											% per day:

Nez Perce Tribe

Inventory - Big Canyon Acclimation Facility

2002 FALL CHINOOK YEARLINGS

Received	41628 fish on 3/04 tanks 9-10-11-12	Released	59297 fish on 4/10 tanks 1-6
	31221 fish on 3/05 tanks 6-7-8		60503 fish on 4/11 tanks 7-12
	72853 fish on 3/06 tanks 1,2,3,13,14,15,16		39672 fish on 4/12 tanks 13-16
	20814 fish on 3/07 tanks 4-5		
Total	166516	Total	159472

Tank	Starting Inventory	Morts	Pre-release Sample	Inventory	Percent Mortality	Date Received	FPP *	Release Date	FPP **	Days Acclimated
1	10,407	450		9,957	4.32	03/06/2002	12.9	04/10/2002	11.70	35
2	10,407	653		9,754	6.27	03/06/2002	13.4	04/10/2002		35
3	10,407	488		9,919	4.69	03/06/2002	13.4	04/10/2002		35
4	10,407	537		9,870	5.16	03/07/2002	13.0	04/10/2002		34
5	10,407	594		9,813	5.71	03/07/2002	13.3	04/10/2002		34
6	10,407	423		9,984	4.06	03/05/2002	12.7	04/10/2002		36
7	10,407	387		10,020	3.72	03/05/2002	12.7	04/11/2002		37
8	10,407	393		10,014	3.78	03/05/2002	11.9	04/11/2002		37
9	10,407	311		10,096	2.99	03/04/2002	12.9	04/11/2002		38
10	10,407	267		10,140	2.57	03/04/2002	12.8	04/11/2002		38
11	10,407	298		10,109	2.57	03/04/2002	12.9	04/11/2002		38
12	10,407	283		10,124	2.72	03/04/2002	12.9	04/11/2002		38
13	10,408	443		9,965	4.26	03/06/2002	13.1	04/12/2002		37
14	10,408	489		9,919	4.70	03/06/2002	13.1	04/12/2002		37
15	10,408	564		9,844	5.42	03/06/2002	13.3	04/12/2002		37
16	10,408	464		9,944	4.46	03/06/2002	13.4	04/12/2002		37
	166516	7044	0	159472	4.23		12.98			

Avg. FPP

11.7

CWT Code - 63-06-77 (155,827) - 63-06-25 (1,661) - Elastomer LG/86.2% retention

* Samples from Lyons Ferry hatchery

** PIT tag sampling, 4 tanks only to minimize stress, one week prior to release.

Nez Perce Tribe										
Inventory - Big Canyon Acclimation Facility										
2002 FALL CHINOOK SUB-YEARLINGS (group # 1)										
Received	333665	fish on 5/07	tanks 1-4,10-16				Released	180626	fish on 5/27	tanks 1-6
	166859	fish on 5/08	tanks 5-9					163453	fish on 5/28	tanks 7-11
								151136	fish on 5/29	tanks 12-16
Total	500524						Total	495215		
	Starting		Pre-release		Percent	Date		Release		Days
Tank	Inventory	Morts	Sample	Inventory	Mortality	Received	FPP *	Date	FPP **	Acclimated
1	28,696	127		28,569	0.44	05/07/2002	136	05/27/2002	126	20
2	28,696	151		28,545	0.53	05/07/2002	136	05/27/2002		20
3	28,696	219		28,477	0.76	05/07/2002	136	05/27/2002		20
4	28,829	233		28,596	0.81	05/07/2002	136	05/27/2002		20
5	33,399	188		33,211	0.56	05/08/2002	158	05/27/2002		19
6	33,414	186		33,228	0.56	05/08/2002	243	05/27/2002		19
7	33,339	247		33,092	0.74	05/08/2002	243	05/28/2002		20
8	33,339	397		32,942	1.19	05/08/2002	243	05/28/2002		20
9	33,360	793		32,567	2.38	05/08/2002	278.0	05/28/2002		20
10	33,145	801		32,344	2.42	05/07/2002	207.0	05/28/2002		21
11	33,145	637		32,508	1.92	05/07/2002	207.0	05/28/2002		21
12	33,150	620		32,530	1.87	05/07/2002	207.0	05/29/2002		22
13	28,756	226		28,530	0.79	05/07/2002	182.0	05/29/2002		22
14	28,756	109		28,647	0.38	05/07/2002	182.0	05/29/2002		22
15	28,756	226		28,530	0.79	05/07/2002	182.0	05/29/2002		22
16	33,048	149		32,899	0.45	05/07/2002	204.0	05/29/2002		22
	500524	5309	0	495215	1.06		192.50			
								Avg. FPP	126	
* Samples taken at Lyons Ferry Hatchery										
** Pit tag sampling only: to prevent stress										
CWT Code - 61-26-39 (197,763) - No Elastomer										

Nez Perce Tribe										
Inventory - Big Canyon Acclimation Facility										
2002 FALL CHINOOK SUB-YEARLINGS (group 2)										
Received	379,497	fish on 5/30	tanks 5-16				Released	253131	fish on 6/18	tanks 1-8
	127368	fish on 5/31	tanks 1-4					252543	fish on 6/19	tanks 9-16
Total	506865						Total	505674		
	Starting		Pre-release		Percent	Date		Release		Days
Tank	Inventory	Morts	Sample	Inventory	Mortality	Received	FPP *	Date	FPP **	Acclimated
1	31842	74		31768	0.23	05/31/2002	174	06/18/2002	141.7	18
2	31842	101		31741	0.32	05/31/2002	174	06/18/2002		18
3	31,842	97		31745	0.30	05/31/2002	174	06/18/2002		18
4	31842	106		31736	0.33	05/31/2002	174	06/18/2002		18
5	31313	61		31252	0.19	05/30/2002	173	06/18/2002		19
6	31313	78		31235	0.25	05/30/2002	173	06/18/2002		19
7	31,313	42		31,271	0.13	05/30/2002	173	06/18/2002		19
8	32,538	155		32,383	0.48	05/30/2002	184	06/18/2002		19
9	32,886	83		32,803	0.25	05/30/2002	174.0	06/19/2002		20
10	31,248	45		31,203	0.14	05/30/2002	186.0	06/19/2002		20
11	31,248	45		31,203	0.14	05/30/2002	186.0	06/19/2002		20
12	31,248	77		31,171	0.25	05/30/2002	186.0	06/19/2002		20
13	31,356	71		31,285	0.23	05/30/2002	186.0	06/19/2002		20
14	32,538	59		32,479	0.18	05/30/2002	174.0	06/19/2002		20
15	31,248	38		31,210	0.12	05/30/2002	174.0	06/19/2002		20
16	31,248	59		31,189	0.19	05/30/2002	186.0	06/19/2002		20
	506865	1191	0	505674	0.23		178.20			
							Avg. FPP		141.7	
* Sample sizes from Lyons Ferry hatchery										
** PIT tag sampling, 4 tanks only to minimize stress, one day prior to release.										
No CWT or Elastomer marks										

Nez Perce Tribe										
Inventory: Capt John Rapids Acclimation Facility										
2002 Fall Chinook Yearlings										
Received	162,969	fish on 02/06					Released	160155	fish on 4/16	***
Total	162969						Total	160155		
	Starting		Ending	Percent	Date		Release		Days	
Pond	Inventory	Morts	Inventory	Mortality	Received	FPP *	Date	FPP **	Acclimated	
1	162,969	2,814	160,155	1.73	02/06/2002	16.6	04/16/2002	12.20	69	
*** Volitional release begin 04/11										
CWT Code - 63-01-83 - Elastomer LB/80.3% retention										
*Sample size from Lyons Ferry hatchery										
** Pit tag sampling only: to prevent stress										

Nez Perce Tribe											
Inventory: Capt John Rapids Acclimation Facility											
2002 Fall Chinook Sub-Yearlings (group 1)											
Received	190,387	fish 05/06	*					Released	498927	fish 05/28/02	***
	124,200	fish 05/07									
	185289	fish 05/08									
Total	499876	*						Total	498927		
	Starting		Pre-release		Percent	Date		Release		Days	
Pond	Inventory	Morts	Sample	Inventory	Mortality	Received	FPP	Date	FPP **	Acclimated	
1	499,876	949		498,927	0.19	05/06/2002	215.0	05/28/2002	119.40	22	
*** Volitional release began 05/24											
CWT Code 61-01-06 (185,010) - no Elastomer											
* sample counts ranged from 189 to 278 fpp											
** Pit tag sampling only: to prevent stress											

Nez Perce Tribe											
Inventory: Capt John Rapids Acclimation Facility											
2002 Fall Chinook Sub-Yearlings (group 2)											
Received	93,697	fish 05/30						Released	498948	fish 06/20/02	***
	198369	fish 06/03									
	125856	fish 06/04									
	82104	fish 06/05									
Total	500026							Total	498948		
	Starting		Pre-release		Percent	Date		Release		Days	
Pond	Inventory	Morts	Sample	Inventory	Mortality	Received	FPP	Date	FPP **	Acclimated	
1	500,026	1,078		498,948	0.22	05/30/2002	152.0	06/20/2002	133.40	21	
*** volitional release begin 06/15											
CWT Code - 61-01-05 (182,429) - No Elastomer											
*Sample size ranged from 115 to 228 fpp											
** Pit tag sampling only: to prevent stress											

Appendix C: Fish Health Report

Fall Chinook Acclimation - 2002

Hematocrits were taken from 20 fish from each yearling group. The groups from Lyons Ferry, Big Canyon, and Captain John Rapids had hematocrit within the normal range; Pittsburg Landing had 2/20 below normal range. The two fish with low hematocrits were also positive for EIBS. Pittsburg Landing had 9/60 fish with swollen kidneys or swollen with pustules in the kidney. Big Canyon had 3/60 fish with pustules in the kidney, Captain John Rapids had no abnormal internal organs, and Lyons Ferry SFH had 3/60 fish with pustules in the kidney. Descaling was seen in all 4 sites.

Individual ELISA assays were run on the yearling groups except for the Lyons Ferry 1/24 group, these were two pooled. The sub-yearlings were pooled because of the small size. Because of the change in ELISA reagents by Kirkegaard & Perry, we are unable to compare ELISA OD values to previous years. The new antibody is less sensitive and we are now comparing samples to our controls and blanks. Trends from year to year can be compared.

The following table summarizes ELISA values for all groups.

DATE	SITE/AG E	V. HIGH	HIGH	MEDIU M	LOW	V. LOW	ND
1/24/02	LF - Y	5	2	4	18	1	0
4/2/02	BC - Y	22	5	10	22	1	0
4/10/02	PL - Y	17	1	8	22	12	0
4/01/02	CJ - Y	18	5	12	22	9	0
4/08/02	LF - Y	5	3	6	22	19	2
5/31/02	LF - SY	0	0	0	0	10	10
6/18/02	CJ - SY	0	0	0	2	19	1
4/2/01	LF - SY	0	0	1	1	9	9

ELISA values varied considerably between the first sample (1/24/02) and the pre-release samples in the yearling group at the acclimation sites but not in the group held at Lyons Ferry. The two Lyons Ferry groups had a preponderance of lows and very lows at both sampling times, while the acclimated groups switched to a majority of lows through very highs. This is the reverse of what has happened the last four years.

Again, there has been no statistical analysis done with this data. Clinical signs of BKD were few with 3/60 at BC, 9/60 at PL, 0/60 at CJ, and 3/60 at LF.

There were no viruses isolated from these groups other than the EIBS in the Pittsburg Landing group and no *M. cerebralis* (sampled only from the LF group). In the yearling groups, bacteria isolated included *A. hydrophila* and *A. sobria* from Lyons Ferry and *A. sobria* from Captain John Rapids. These are environmental bacteria but can be pathogenic under the right conditions. No significant bacteria was isolated from the sub-yearling group. Overall, the sub-yearlings were very healthy fish, smolting and with good fat levels.

Weekly monitoring samples for BKD were collected at the acclimation sites. The following table summarizes the monitoring results. What monitoring shows is that BKD is still there, regardless of time.

DATE	SITE/AG E	V. HIGH	HIGH	MEDIU M	LOW	V. LOW	ND
4/01/02	CJ - Y	5	0	0	0	0	0
3/05/02	CJ - Y	2	2	3	2	1	0
3/12/02	CJ - Y	7	1	0	2	0	0
3/14/02	PL - Y	1	2	2	4	1	0
3/25/02	PL - Y	8	2	0	0	0	0
3/12/02	BC - Y	4	1	2	3	0	0

Conclusions - Yearling groups pretty typical of past years, just switched around a bit. The sub-yearlings, however, were a different story. At none of the sites, was there high levels of BKD, all were very low or not detected. A pleasant change from previous years, when BKD was prevalent in the sub-yearlings.

Appendix D: The Columbia Basin Bulletin

TRIBE'S HATCHERY PROGRAM BRINGING BACK SNAKE FALL CHINOOK 09/13/2002

By Barry Espenson

The Nez Perce Tribe's hatchery supplementation program -- and to some extent Mother Nature -- can be credited for this year's fall Chinook salmon count at Lower Granite Dam, which is expected to set a record with a return of 10,000 adult fish.

On Monday, 604 fall Chinook were counted at the dam, located 20 miles northwest of Lewiston, Idaho, on the Snake River. That's higher than the total fall season counts in six individual years since the dam was built in 1975.

"For most years, the counts have been less than 1,000," said Stuart Ellis, fishery scientist with the Columbia River Inter-Tribal Fish Commission. Snake River fall Chinook have been listed as "threatened" under the Endangered Species Act since 1992.

Ellis says this year's cumulative count at the dam already makes the fall Chinook run the second highest count since the dam was built. The tally stood at 3,959 adult fall Chinook and 432 "jacks" through Wednesday with more fish on the way.

"Last year, we set a record run with a dam count of 8,900 fall Chinook, and this year will be more," Ellis said. "In 2000, we had 3,500 fish, and that was a record run."

The count through Wednesday at Ice Harbor was 7,108 adult fall Chinook. Ice Harbor is the first hydro project the upriver migrants must pass after they enter the Snake from the Columbia River. Lower Granite is the fourth and final hydro hurdle for the fall Chinook, and eighth overall in the Columbia-Snake system.

Ellis and other fishery managers attribute the high numbers to the Nez Perce Tribe's supplementation program, which has outplanted millions of fall Chinook yearlings and sub-yearlings from the Lyons Ferry Hatchery throughout the upper Snake River since 1996. An Idaho Power mitigation project has also begun to see returns from juvenile fall Chinook outplanted below the power company's Hells Canyon complex of dams on the Snake River.

The Nez Perce program began as a result of the 1994 litigation and a subsequent negotiated settlement between the parties to *United States v. Oregon*, the federal court case regarding the tribes' treaty fishing rights. In 1995, the parties agreed to begin outplanting hatchery-reared Snake River fall Chinook above Lower Granite Dam, according to a CRITFC press release. Since 1996, fall Chinook have been outplanted to Pittsburgh Landing and Captain John's Rapids, both on the mainstem Snake River, and at Big Canyon on the Clearwater River.

The Nez Perce Tribe has taken the lead in the Snake River fall Chinook supplementation program at these facilities. On Oct. 9, the tribe will dedicate the Nez Perce Tribal Hatchery on the Clearwater River. The program has largely been funded by the Bonneville Power Administration through the Northwest Power Planning Council's fish and wildlife program. The hatchery, which includes the primary facility and five satellite facilities, cost about \$16 million. With the addition of the hatchery, the Snake River fall Chinook supplementation program will outplant more than 4 million fall Chinook above Lower Granite Dam in 2003.

Mike Matylewich, head of CRITFC's fish management department, also credited a scaled-down Canadian fishery off Vancouver Island and "a couple good water years" between 1996 and 1998 for the big returns to the upper Snake River. "All of that pushed things in the right direction," Matylewich said.

In addition to increased returns, counts of redds -- nests of fish eggs covered with gravel, indicating a spawning area -- have increased each year as well, said Dave Johnson, fisheries program manager for the Nez Perce Tribe.

"We're getting a good distribution of those redds," Johnson said. "The supplementation fish are returning to the release areas and spawning, indicating that this cooperative rebuilding effort is leading to recovery." Johnson says progeny of outplanted fish also are returning to spawn. "We believe we're going to see more of that every year from now on."

The first of progeny of outplanted fish to return as adults -- "fish that count, in listing language," Johnson says -- spawned last year. They were produced by the fish that were released in June 1996 and returned to spawn in 1998. The progeny would have left the Snake River Basin as sub-yearling in the spring of 1999 and returned last year as "two-ocean" adults to spawn.

This year's "progeny" that are returning to spawn would include "three-ocean" fish from the 1996 bloodline and two-ocean fish that are the offspring of the 1997 releases. Johnson said that the National Marine Fisheries Service is now processing data to determine what share of this year's spawners are hatchery releases and what share are natural spawners and the second-generation of outplanted fish. Under NMFS guidelines, that second generation, and future generations, are considered a part of the wild stock. A certain portion of subsequent hatchery releases were marked by various means, including coded-wire tags, so that a wild vs. hatchery spawning ratio can be extrapolated.

The NMFS continues to develop its recovery plan for Snake River fall Chinook, but the stock likely will achieve recovery before the plan is completed, said Don Sampson, CRITFC executive director. "The Nez Perce Tribe has worked diligently for many years to bring this essential Snake River species back to its historic numbers, and its efforts are finally paying off," Sampson said.

The Idaho Department of Fish and Game's regional fisheries manager, Ed Schriever, likewise said the hatchery program shows promise, but says that "everyone needs to take a deep breath" as regards supplementation.

"The true test of supplementation is when you stop," Schriever said of the hatchery practice's value as a recovery tool. He said there is no doubt that the outplanting of hatchery fish will produce adults, particularly when juvenile migrants are buoyed by augmented flows from Dworshak reservoir and mainstem and ocean conditions are favorable.

"There is habitat that was unseeded and they are doing that," Schriever said. That true test, however, is if the progeny of those outplanted fish also come back and reproduce at rates that can sustain the wild population above ESA recovery goals. "At some point we would hope the program meets recovery goals" and ultimately allows the harvest of marked hatchery fish, Schriever said.

Johnson said that it's unfair to expect the population to totally sustain itself without some sort of boost from hatchery fish. "They're facing the same obstacles as the wild fish faced," he said of Columbia-Snake mainstem habitat that has been vastly altered with the construction of eight hydroelectric projects. The climatic and ocean conditions that helped the revival effort is also likely to shift again as it has historically.

Fall Chinook continue to rush up the Columbia River and its tributaries in large numbers. More than 660,000 fish are expected to reach the mouth of the river, including nearly 274,000 "upriver bright" fall Chinook that spawn primarily in the Hanford Reach. The preseason forecast included an expected upriver (above Bonneville) return of nearly 92,000 Mid-Columbia brights, 45,700 Bonneville upriver brights, 46,100 pool upriver bright and 136,000 Bonneville pool hatchery (tule) fall Chinook in addition to the URBs.

Through Tuesday, 344,731 fall Chinook adults and 17,961 jacks had been counted at Bonneville Dam. Daily counts at the dam have averaged more than 20,000 adults per day.

The IDFG has alerted the state's sport steelhead anglers of the expected appearance of fall-run Chinook and coho salmon in area rivers this fall. The tribal hatchery program is also being employed in an attempt to build flagging coho populations.

Some of these fish will have missing adipose fins, similar to hatchery steelhead, but there is no open season for fall Chinook and coho salmon, and they must be released immediately. The easiest way to distinguish a Chinook salmon from a steelhead is by checking the lower gum line of the jaw. If the lower gum is black, it's a Chinook. Using the gum line test, identification can be made quickly without taking the fish out of the water, according to the IDFG.

Another feature that helps differentiate Chinook salmon from steelhead is the spotting on the back and tail. The dark spots on the back of a Chinook are blotchy and irregular in shape. On a steelhead, the spots are rounded and more uniform. The black spots on the upper part of the tail fin of a Chinook are large in comparison to the spots on the tail of a steelhead. Fall Chinook may range in size from 5 to 40 pounds.

Coho salmon usually have dark gums also, but the easiest distinguishing mark is the tail fin. On a steelhead, black spots are distributed throughout the tail fin. On a coho salmon, spots appear only

on the upper lobe of the fin, if at all. A second identifier is the anal fin, located on the underside of the fish in front of the tailfin. On a steelhead, the trailing edge of the anal fin lines up perpendicular to the fish's body, while the trailing edge of a coho's anal fin slants toward the body.

The steelhead outlook is also bright with 448,000 -- including 126,000 wild or listed fish -- expected to pass Bonneville Dam on their way upriver. That would be the second highest count on record since counts began in 1938. Already, through Wednesday, 372,721 steelhead (including 121,541 wild fish) had passed Bonneville. Of that number, 68,222 (18,834 wild) had reached Ice Harbor and 50,008 (15,894) had passed Lower Granite. Daily Counts over the past week have ranged from 1,000 to over 2,000.

The expected return to Idaho is about 170,000 steelhead. That would be about twice the 10-year average, subtracting last year's record run of 630,200 steelhead above Bonneville, according to the IDFG. About 85,000 steelhead at Lower Granite Dam is the average, without considering the 260,000 that showed up last year.

The CRITFC is the technical support and coordinating agency for fishery management policies of the Columbia Basin's four treaty tribes: the Confederated Tribes of the Umatilla Indian Reservation, the Confederated Tribes of the Warm Spring Reservation of Oregon, the Confederated Tribes and Bands of the Yakama Nation, and the Nez Perce Tribe. Formed in 1977 and based in Portland, CRITFC employs biologists, other scientists, public information specialists, policy analysts, and administrators who work in fisheries research and analyses, advocacy, planning and coordination, harvest control and law enforcement.