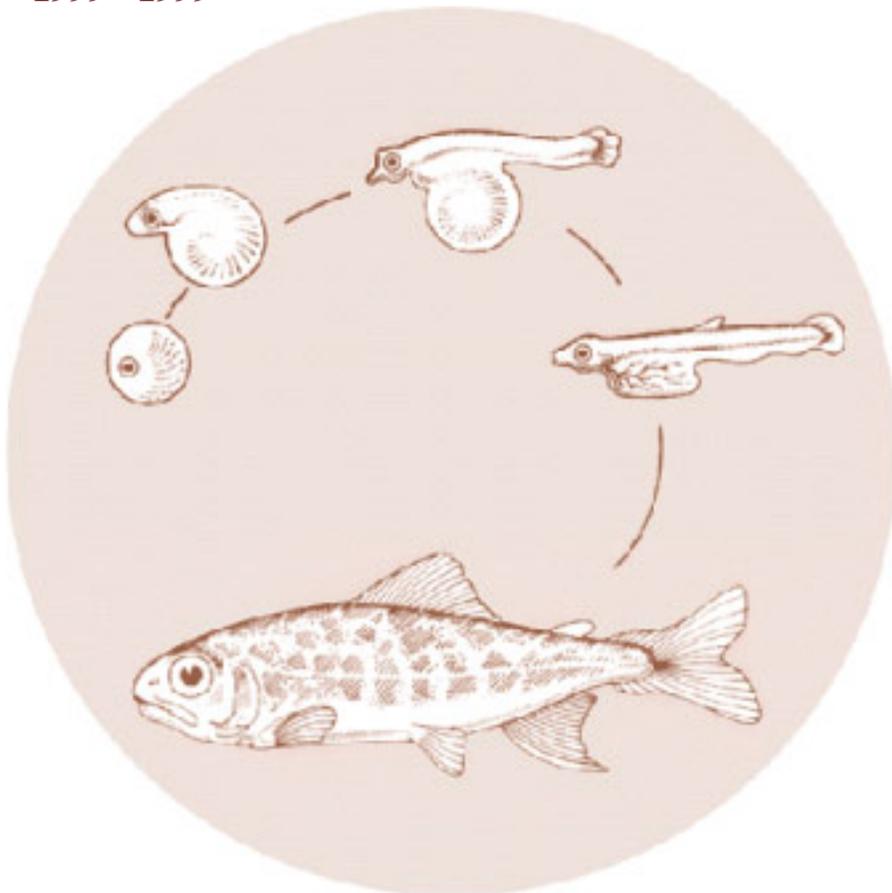


# Fall Chinook Acclimation Project

Pittsburg Landing, Captain John Rapids, and Big Canyon

Annual Report  
1999 - 1999



This Document should be cited as follows:

*McLeod, Bruce, "Fall Chinook Acclimation Project; Pittsburg Landing, Captain John Rapids, and Big Canyon", 1999-1999, Project No. 199801005, 48 electronic pages, (BPA Report DOE/BP-00004235-1)*

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This report was funded by the Bonneville Power Administration (BPA), U.S. Department of Energy, as part of BPA's program to protect, mitigate, and enhance fish and wildlife affected by the development and operation of hydroelectric facilities on the Columbia River and its tributaries. The views in this report are the author's and do not necessarily represent the views of BPA.

# **Fall Chinook Acclimation Project**

Annual Report 1999

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Project Numbers:

1998-010-05 (Pittsburg Landing),  
1998-010-07 (Capt. John Rapids), and  
1998-010-08 (Big Canyon)

Contract Numbers:

4235 (Pittsburg Landing)  
4186 (Capt. John Rapids)  
4297 (Big Canyon)

March 2003

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## ACKNOWLEDGEMENTS

The Washington Department of Fish and Wildlife provided the fish, assisted with fish transport and provided information for this report. The U.S. Fish and Wildlife Service (USFWS), Dworshak Fish Health Laboratory performed the fish health exams and provided the fish health report. Idaho Power Company, Idaho fish and Game Department, USFWS, Lower Snake River Compensation Plan, National Marine Fisheries Service, Bonneville Power Administration and Northwest Power Planning Council all provide assistance and information for the Fall Chinook Acclimation Program.

Nez Perce Tribe fisheries production program shared vehicles and equipment that was invaluable to the success of the program. Dave Johnson, NPT Production Coordinator and Becky Ashe, NEOH Project Leader provided content and technical review for this report. Brenda Axtell provided valuable assistance with report editing, formatting, and graphics. Grant Walker, NPT Hatchery Coordinator provided assistance with budgets, staffing, facility improvements and with developing goals and objectives. The NPT Fall Chinook Monitoring and Evaluation Project provided assistance and information.

The FCAP staff members who were responsible for the daily operation of the facilities included Aaron Moses, Rapheal Johnnie, Arnold Henry, Lou Ann Lasswell, Lyle Gould, William Coomer, Robert Mc Cormack, Brent Broncheau and Rudy Carter. 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.

Ken Kirkman was the Bonneville Power Administration Contracting Officers Technical Representative.

## 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, and will ultimately work towards achieving delisting goals established by National Marine Fisheries Service (NMFS). Complete returns for all three acclimation facilities will not occur until the year 2002. Progeny (which would then be listed fish) from those returns will be returning for the next five years, to begin the delisting cycle.

In 1999, a total of 1,199,536 fish weighing 59,178 pounds were released from the three-acclimation facilities. The total includes 529,503 yearling fish weighting 50,803 pounds and 670,033 sub-yearling fish weighing 8,375 pounds. Survival of fish from transfer to the acclimation facilities to release was 99% for yearling fish and 94% for sub-yearling fish. Bacterial Kidney Disease (BKD) levels within the fish population were low this year.

## 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 April 9, 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 in only in a fraction of its former range. The Snake River fall chinook was listed as a threatened species on April 22, 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 1994). The proposed recovery plan 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 (task 4.7).

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, 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 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.

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) to construct, under the 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 NPT along with State and Federal agencies selected three acclimation sites. Two acclimation facilities are located on the Snake River, at Capt. John Rapids and Pittsburg Landing, and one acclimation site is 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 is 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, USFWS/NPT 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 but in 1997 the decision was made for BPA to direct fund O&M for the facilities. The title of this program is the Fall Chinook Acclimation Project.

## **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 do not go extinct. 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 1345 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.

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 # 199801004 (see Section 1.5).

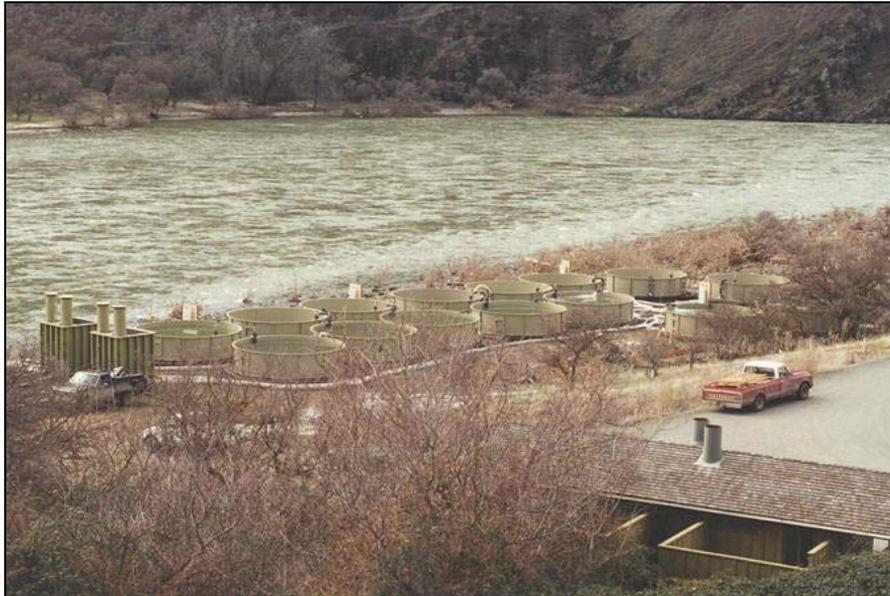
### 1.3 Description of Project Area

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).

#### **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 1**      **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 with submersible electric pumps, which are placed in the river each season.



**Figure 2**      **Captain John Rapids Facility**

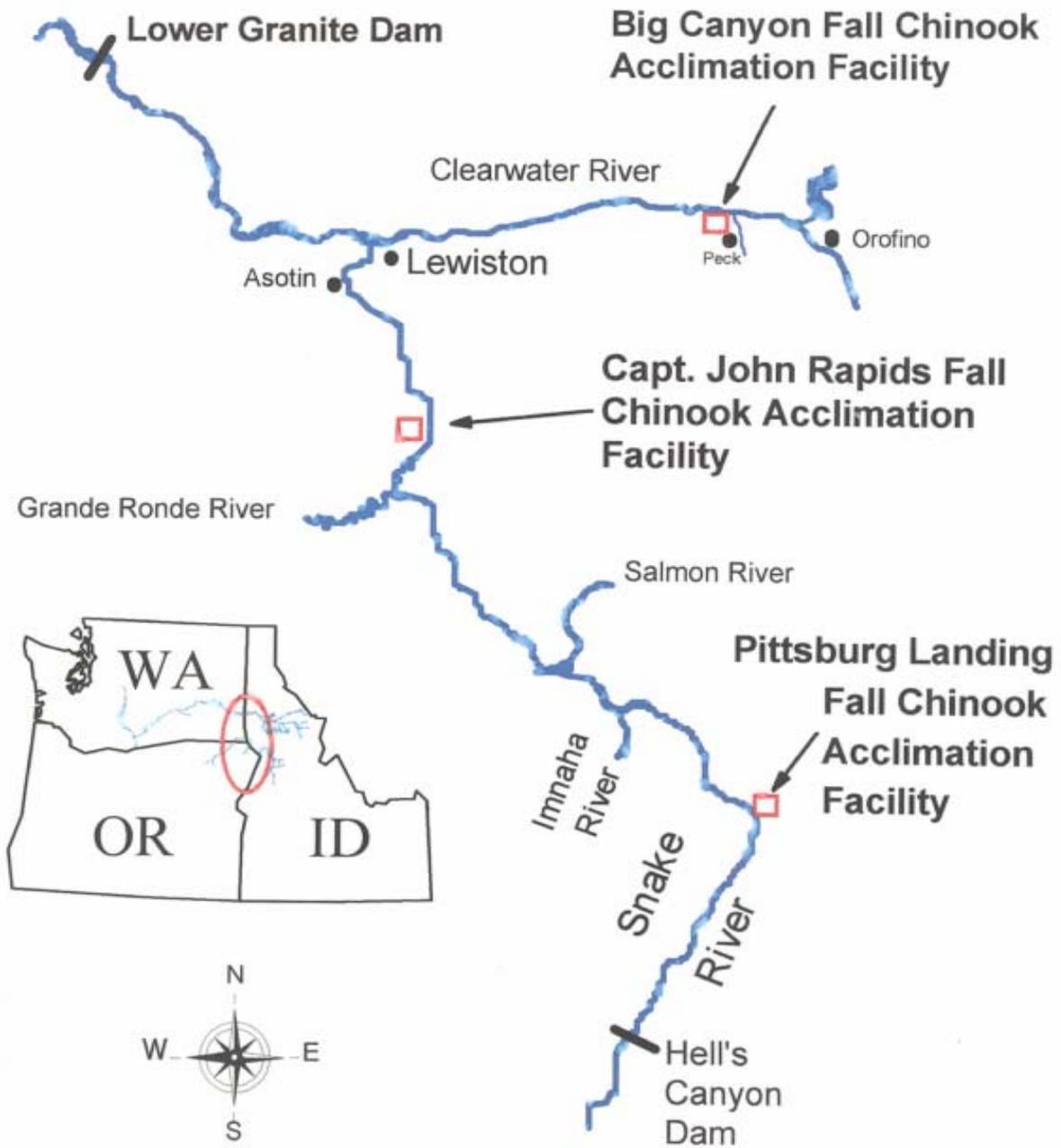
## **Big Canyon**

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 related equipment assembled disassembled and stored offsite each year.



**Figure 3**      **Big Canyon Facility**



**Figure 4** Map showing location of all acclimation facility sites.

## 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 were acclimated and released. 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. This report contains activities involving acclimation and release of fall chinook juveniles from the acclimation facilities in 1999.

## 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), USFWS, Idaho Power Company, 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<br><br>Project # 200112, 200115, 200124, | Production of yearling and subyearling 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<br><br>Project # 200118 and 200121       | Evaluate yearling and subyearling fall chinook salmon released on-station from LFH. Run reconstruction of adult fall chinook salmon returns to Lower Granite Dam. |

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

| Project   | Agency              | Funding Source  | Activities   |
|---|---------------------|---|--|
| Fall Chinook Acclimation Project  | NPT                 | Bonneville Power Administration<br><br>Project # 199801005  | Acclimation and release of yearling and subyearling 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<br><br>Project # 200101 | Monitor health of FCAP yearling and subyearling fall chinook salmon.   |
| M&E of Yearling Fall Chinook Salmon Released From FCAP Facilities.                      | NPT                 | Bonneville Power Administration<br><br>Project # 199801004  | Monitor and evaluate yearling and subyearling 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<br><br>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<br><br>Project # 198335000  | Production of fall chinook for release throughout the Lower Clearwater River subbasin.   |
| Nez Perce Tribal Hatchery M&E   | NPT                 | Bonneville Power Administration<br><br>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 Company | Idaho Power Company   | 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 (transported in two sections); 4 aluminum distribution boxes; 8 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; 4 - 400 gpm diesel pumps; 1 - 400 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 plants; 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 Addition (Senate Report, 103-672, p7).



Figure 5 Pittsburg Landing Acclimation Tanks

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 450 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 a 12-inch layer of level compacted gravel placed in a circle of connected plastic containment blocks. The

gravel is hauled from a nearby burrow pit. The tanks, made in two pieces and bolted together, drains 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 an 8-inch center PVC standpipe. The rearing water enters the tank through a 4-inch pipe located on the edge on 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.

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. In 1999, 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 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 COE has agreed to furnish electric pumps to replace the diesel units that are rented each year. The electric pumps should provide the same performance as the diesel pumps while reducing rental and maintenance costs, allowing an onsite staff reduction and eliminate the risk of a major fuel spill. No date for the pump replacement has been established.

FCAP Project Leader is preparing a lease agreement with the Nez Perce Tribe that would allow the fish rearing tanks and water distribution tower to remain assembled at the site the entire year. This would eliminate the need for an assembly and disassembly contract and reduce equipment fatigue hence provide 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 1,000 gpm submersible electric pumps. Other facility equipment and capital construction consists of: 2 river intake screens; anchoring system for river intakes; one camp trailer; one standby electric generator; one water

well (domestic water); septic system; commercial electric service; alarm system; telephone service. The pumps and intake screens are designed to be placed into the river and then removed following fish acclimation each year. The pump intake screens are provided with an air backflush system to remove debris and an alarm system is available to monitor flows and other water parameters.

The pumps have proven to be inadequate to provide the water necessary to provide the water volume and quality required for acceptable fish culture rearing standards. The alarm system does not provide accurate data, if working at all. Negotiations are ongoing with the COE to provide the necessary changes to meet the standards required at the facility.

## **2.2 Operations**

### **Assembly**

In November, bid solicitations are prepared for the assembly and disassembly of the portable tanks and associated equipment at Pittsburg Landing and Big Canyon sites. The solicitations include installation of water pumps at the Capt. John Rapids facility. A contractor is typically selected by December 31.

Actual assembly of the temporary acclimation facilities begin in January and testing of the facilities completed by the last week of February. The fall chinook Project Leader and his representatives monitor the project sites to ensure that the contractor adheres to the plans and specification of the contract and that all elements of construction are consistent with fish rearing, acclimation and fish release goals. All three facilities begin operation in March of each year.

### **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 March 01, 2000, at a size of approximately 12 fish per pound. If sub-yearlings are available, up to 300,000 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 BioProducts 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.

Yearling fish are reared and acclimated in the temporary facilities for six weeks before release into the Snake and Clearwater Rivers in April, at a size of approximately 10 fpp, or 160-170 mm fork length. Subyearling fish are reared and acclimated approximately six weeks before 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.



**Figure 7      Fish Culture**

### **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 1999 OPERATIONS**

### **3.1 Introduction**

This report describes activities conducted during 1999 through fall chinook acclimation projects 98-010-05 Pittsburg Landing, 98-010-07 Big Canyon and 98-010-08 Capt. John Rapids. Activities that addressed each objective and task detailed in the 1999 Statement of Work (SOW) are detailed in Section 5.

### **3.2 Administrative**

Preparations for the 1999 fall chinook acclimation season began in November 1998 with the ordering of supplies, assembly of staff, writing of consultant contracts, designing equipment experiments and consulting with the COE on facility improvements.

The FY 1999 budget process started with the completion and submittal of BPA Fish and Wildlife Program FY 99 budget proposal form. This 17-page form was submitted to BPA on 23 January 1998. The proposal was reviewed and approved by the Northwest Power Planning Council.

Task orders for the three projects were received from BPA on 02 February 1999. The Big Canyon 1999 budget was \$219,224, with an additional \$59,000 in authorized carry-over funds for equipment purchases and consultant & contracts. The Capt. John Rapids 1999 budget was \$196,435 with carry-over of \$6,000 and the Pittsburg Landing 2002 budget was \$208,342 with \$101,000 carry-over. Carry-over funding was provided to complete purchases of equipment and contractual projects that could not be done in previous fiscal years because of justified constraints.

The special use permit with the USFS, Hells Canyon National Recreational Area, approving use of the Pittsburg Landing acclimation site was modified on 19 January for 1999 and submitted to NPTEC for resolution.

Nez Perce Tribal fisheries personnel has requested a lease from the Nez Perce Tribe and BIA for the Big Canyon fish acclimation site (Tribal Allotment 992) that would allow the fish acclimation tanks and related equipment to remain in place throughout the year. The lease would eliminate the need for an assembly and disassembly contract, reduce wear and tear on equipment and reduce facility set up time. Responses from Tribal Officials have been positive and a lease agreement is being prepared for discussion.

Project staff worked with co-managers, Washington Department of Fish and Wildlife, Confederated Tribes of the Umatilla Indian Reservation, and U.S. Fish and Wildlife Service, to cooperatively develop the Lyons Ferry Annual Operating Plan (AOP) was completed on 16 February 1999 to cover the 1999 production season and distributed by WDFW. Attachment 1 of the AOP summarizes the NPT planned fall chinook activities for the year.

Nez Perce Tribe fisheries personnel accompanied by Bonneville Power Administration Contracting Officer Technical Representative, Ken Kirkman, toured Capt. John Rapids and Pittsburg Landing fish acclimation facilities by helicopter on 10, February 1999.

Fish transport permits, dated 20 January and 29 April 1999 were received from Idaho Fish and Game.

### **3.3 Facility Assembly**

A consultant contract for the assembly and disassembly of the Pittsburg Landing and Big Canyon acclimation sites was negotiated and awarded to Nez Perce Limestone Enterprises, a tribal construction contractor. This contractor assembled and disassembled the facilities in 1998 and project staff found it helpful to work with a company familiar with the project and who had a vested interest in its success. Assembly work on the acclimation sites began 04 January and was completed 28 February 1999.

### **3.4 Equipment Operation/Testing**

Equipment tests during the 1999 acclimation season included assessing the performance of 6-inch propane water pumps against the 4-inch diesel pumps that were currently being used. It was hypothesized that a 6-inch propane pump would 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.

These tests resulted in the determination that the 6-inch pump, while reliable, quiet, and clean burning, would not deliver enough water to replace two 4-inch pumps. An 8-inch pump will be tested during the FY 2000 acclimation season.

### **3.5 Fish Rearing and Acclimation**

#### **Pittsburg Landing**

A total of 145,364 fish @ 11.5 fpp (13,423 lbs.) were received on 01-02 March 1999 at the Pittsburg Landing facility. Fish health exams prior to transport showed that the fish carried low bacterial kidney disease (BKD) titer. Following six weeks of acclimation, 142,885 fall Chinook yearlings were released from the Pittsburg Landing facility into the Snake River on 12-15 April 1999 (Table 2, Figure 2). These fish were all marked with an adipose fin clip, a Coded Wire Tag (CWT 63-04-51) and a Green Visual Implant Elastomer (VIE) tag in the right eye. Passive Integrated Transponder (PIT) tags were also implanted into 9,943 fish released from this group.

#### **Big Canyon**

A total of 155,193 fish @ 11.6 fpp (13,416 lbs.) were received at the Big Canyon facility from 01-04 March 1999. Approximately 153,222 fall chinook yearlings were released from the Big Canyon facility into the Clearwater River on 12-15 April 1999 (Table 2, Figure 2). These fish were all marked with an adipose fin clip, a CWT (63-04-54) and a green VIE tag in the left eye. This release group contained 9,659 PIT tags.

An additional 77,148 yearling fish 10.6fpp (7,287 lbs.) were received at Big Canyon facility on 13-15 April and 76,386 fish were released from this group into the Clearwater River on 26-28 April 1999. These fish were all marked with an adipose fin clip, a CWT (63-09-38), and a green VIE tag in the left eye.

A total of 351,562 sub-yearling fish at 108 fpp (3,255 lbs.) were received at Big Canyon facility on 12 May and acclimated for 4 weeks. A total of 347,105 sub-yearlings were released on 03 June 1999 (Table 2, Figure 2). There were no external marks on this group of fish, however, 120,000 were tagged with a CWT (63-10-25).

#### **Capt. John Rapids**

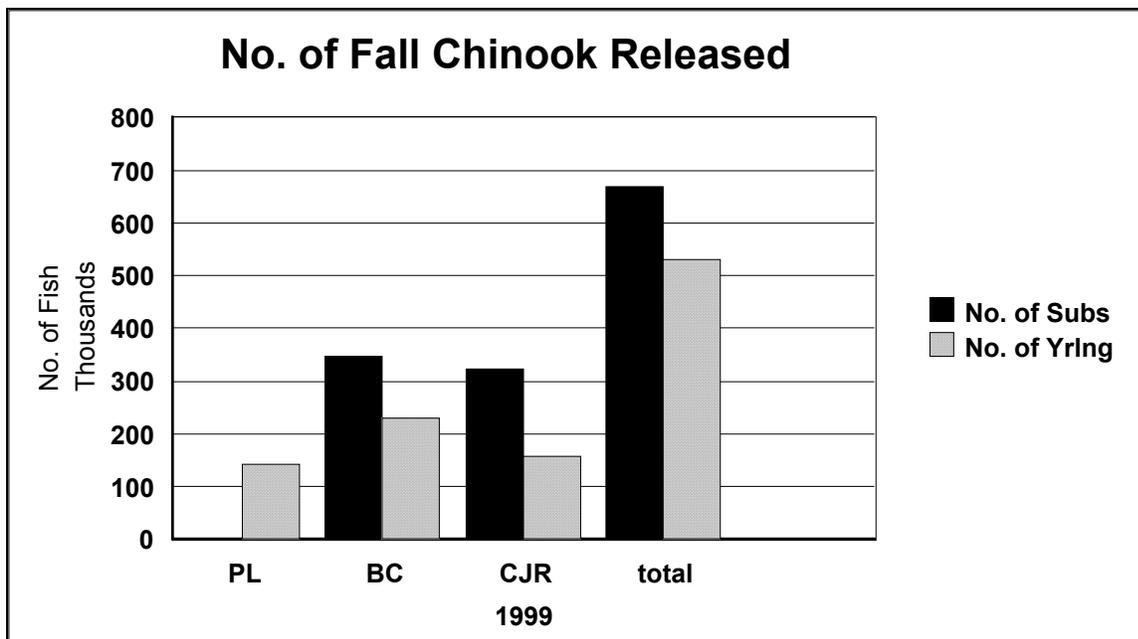
A total of 157,510 fish @ 11.9 fpp (13,236 lbs.) were received at Capt. John Rapids facility on 03 March 1999. Fish health exams indicated the fish carried low BKD titer and were free of other pathogens. Following six weeks of acclimation, approximately 157,010 yearling fish were released into the Snake River on 12-15 April 1999 (Table 2, Figure 2). These fish were all marked with an adipose fin clip, a CWT (63-04-53), and a blue VIE tag in the left eye. PIT tags were implanted in 2,551 fish in this release group.

Transport of 358,667 sub-yearling fish @ 108 fpp (3,321 lbs.) to the Capt. John Rapids facility occurred on 03 May. These fish were acclimated for 4 weeks and a total of 322,928 sub-yearling fish were released into the Snake River on 05 June 1999 (Table 2, Figure 2). These fish were all released unmarked.

**Table 2 Release information for juvenile fall chinook released from Fall Chinook Acclimation Project facilities in 1999.**

| Facility                 | Number Received at Facility | Age | Size at Release (fpp) | Date Received | Number Released from Facility | Date Released | Survival to release (%) |
|--------------------------|-----------------------------|-----|-----------------------|---------------|-------------------------------|---------------|-------------------------|
| Pittsburg Landing        | 145,364                     | 1+  | 10.0                  | 3/1-3/2/99    | 142,885                       | 4/12-4/15/99  | 98%                     |
| Big Canyon               | 155,193                     | 1+  | 10.4                  | 3/1-3/4/99    | 153,222                       | 4/12-4/15/99  | 99%                     |
| Big Canyon               | 77,148                      | 1+  | 11.1                  | 4/13-4/15/99  | 76,386                        | 4/26-4/28/99  | 99%                     |
| Capt. John               | 157,510                     | 1+  | 11.8                  | 3/3/99        | 157,010                       | 4/12-4/15/99  | 99%                     |
| <i>Total Yearling</i>    | <i>535,215</i>              |     |                       |               | <i>529,503</i>                |               | <i>99%</i>              |
| Big Canyon               | 351,562                     | 0+  | 108                   | 5/12/99       | 347,105                       | 6/3/99        | 99%                     |
| Capt. John               | 358,667                     | 0+  | 108                   | 5/3/99        | 322,928                       | 6/5/99        | 90%                     |
| <i>Total Subyearling</i> | <i>710,229</i>              |     |                       |               | <i>670,033</i>                |               | <i>94%</i>              |
| <b>1999 Total</b>        |                             |     |                       |               | <b>1,199,536</b>              |               |                         |

A total of 1,199,536 fish weighing 59,178 pounds were released from the three-acclimation facilities (Table 2, Figure 8). The total includes 535,215 yearling fish weighing 50,803 pounds and 710,229 sub-yearling fish weighing 8,375 pounds. Bacterial Kidney Disease (BKD) levels within the fish population were low this year. A complete production summary is provided in appendix A.



**Figure 8 Release summary of fall chinook yearling/subyearling fish in 1999.**

### **3.6 Facility Disassembly**

Disassembly of the acclimation tanks and related equipment at Pittsburg Landing was completed by the contractor. 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.

### **3.7 Major Problems**

Mechanical problems with water pumps were greatly reduced over previous years; however, several incidences did threaten fish survival. At Pittsburg Landing, the water pump intake screens were torn from three of four intake hoses by the river water current allowing debris to plug the water degassing columns. Temporary intake screens were fabricated and installed.

At Big Canyon, water pump intake screens and degassing columns plugged with debris many times during high river water flows caused by rain and melting snow. Staff members were able to back-flush the intake lines and manually remove the debris from the degassing towers. Other problems included water pump fuel and overheating problems, alarm failures and ruptured water lines. Many overtime hours were needed to respond to alarms and to perform needed repairs.

Mechanical and operational problems encountered at Capt. John Rapids included water pump starter box failure, alarm system failure and fish transport mortality. The electrical starter switch for pump number 1 would overheat and shut the pump down when the air temperature exceeded 75 F and was finally replaced by a new unit. The alarm system continued to malfunction with only 1 of 7-alarm point operable. Staff members used hand held meters to monitor water parameters. One transport tank of sub-yearling fish (35,000) was lost during the transfer from Lyons Ferry Hatchery due to contaminated water within the tank. The water was contaminated by dead fish trapped below a false floor within the tank from a previous fish distribution trip.

Bird predation (gulls) became a problem at Capt. John Rapids prior to fish release. Staff members, using scare devices, were successful in reducing predation to an acceptable level.

This was the first time that large numbers of sub-yearlings were available for rearing at Capt. John Rapids and Big Canyon. The acclimation program, following release of the yearling fish, went well despite warmer water temperatures and diminished water quality. Fish were diagnosed with Enteric Redmouth (ERM) at Big Canyon but mortality was quickly controlled by a medicated feed treatment. Fish at Capt. John Rapids were also diagnosed with ERM but required no treatment.

FCAP field employees did an exceptional job of maintaining quality fish production despite the many problems that occurred. The employees used their knowledge, experience, innovation and available resources to correct problems and devise alternate methods.

### **3.8 Facility Improvements**

The original contractor selected for the construction of the Capt. John Rapids acclimation facility completed the contract requirements and was released. Modifications needed to correct operational deficiencies will require new contracts.

The COE awarded contracts, in January, for the placement of gravel in the bottom of the fish acclimation pond and modifications to the water pump float system at Capt. John Rapids. Bids for moving the trailer residence at the site were rejected because the bid price was not reasonable.

Gravel was placed over the large stone cobble in the bottom of the fish acclimation pond at Capt. John Rapids. The gravel will allow fish to be flushed from the pond without being stranded in the stone cobble. The contractor was unsuccessful in attempting to modify the water pump floats at Capt. John Rapids, so the pumps could easily be placed into and removed from the river each year. The contractor was able to place the pumps into the river with the aid of a large crane truck.

Nez Perce Tribe Fisheries personnel continue to meet with the Corps of Engineers, USFWS and WDFW personnel to discuss operational deficiencies at the Capt. John Rapid and Big Canyon acclimation sites. On 12 May 1999, the Nez Perce Tribe presented the Corps with a list of problems that must be corrected before the facilities are fully operational. The COE agreed that pumps at Big Canyon should be replaced and that the river intake system at Capt. John Rapids is deficient. COE decided to take actions to correct deficiencies without further prompting.

FCAP staff members are reviewing plans for a new water intake design for Capt. John Rapids that is scheduled for bids in August and completed by February 2000. The contract would include painting and moving the air compressor, moving the trailer residence to a new location and a new entrance gate. FCAP project leader and hatchery coordinator met with COE personnel on 28 July to discuss the issue and view preliminary drawings.

#### 4.0 SUMMARY

The 1999 fall chinook fish acclimation program had an excellent season with both yearling and sub-yearling fish being successfully acclimated. A total of 1,199,536 fish weighting 59,178 pounds were released from the three-acclimation sites. For the first time a large number of sub-yearling fish were available for acclimation. Overall fish health was good in both fish received and released.

Acclimation sites experienced mechanical breakdowns and problems but staff members were able to make repairs or find alternative methods. Negotiations with the Corps of Engineers should result in improvements at both Capt. John Rapids and Big Canyon facilities. Possible lease agreement with the Nez Perce Tribe at Big Canyon would 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.

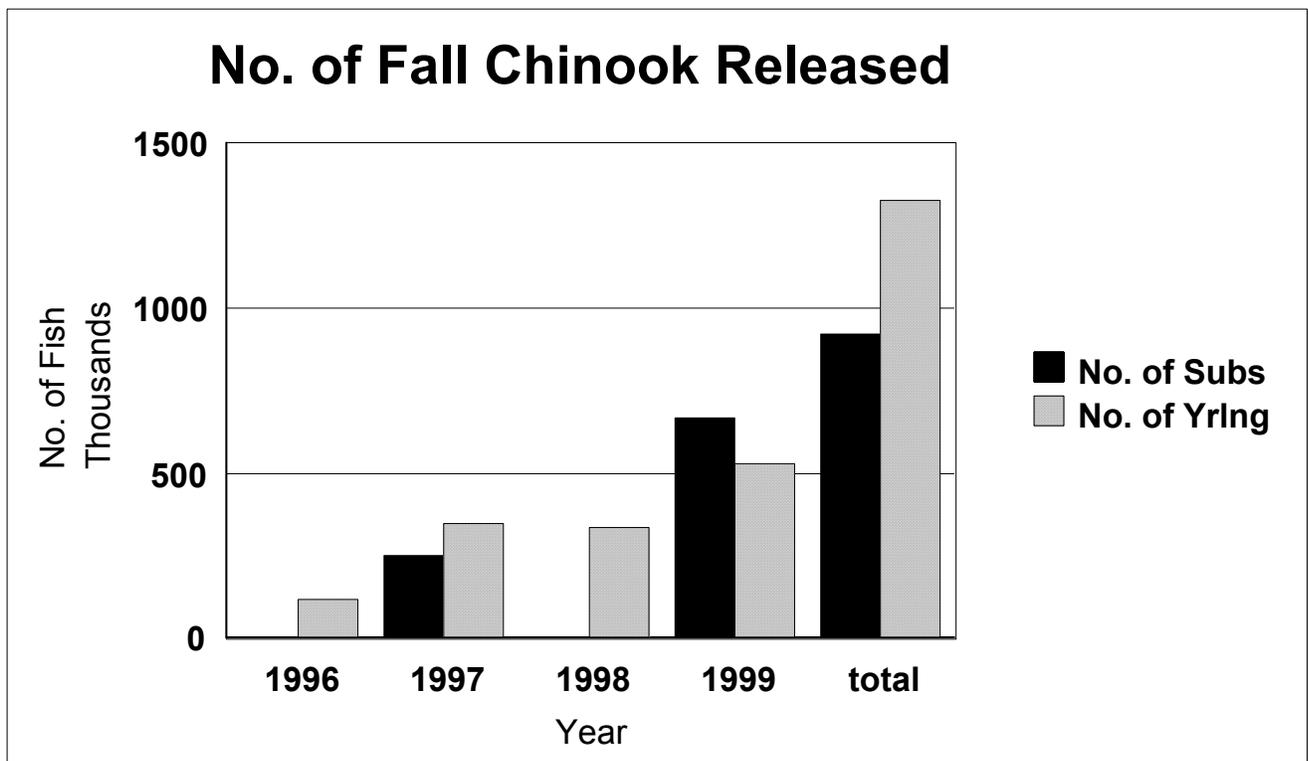


Figure 9 Summary of juvenile fall chinook salmon released from the Fall Chinook Acclimation Project 1996-1999.

## 5.0 1999 OBJECTIVES AND TASKS

This section summarizes activities that occurred in 1999 in relation to objectives and tasks that were in the statement of work submitted to Bonneville Power Administration as part of the funding package.

### OBJECTIVE 1, COORDINATION:

The project represents a cooperative effort between Tribal, State and Federal agencies. The Nez Perce Tribe formally and informally consulted with all of the fall Chinook acclimation project cooperators.

**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:** Coordination with WDFW to arrange for the transfer of yearling fish began on 05 January 1999. Assembly of the three facilities was fully completed before the transfer of yearling fish began on 01 March. NPT fisheries staff communicated with Lyons Ferry Hatchery personnel via telephone and fax as necessary. The Nez Perce Tribe provided distribution trucks and staff to transport many of the fish from the Lyons Ferry Hatchery to the acclimation sites.

Transport and release summaries for all the facilities are provided in Appendix A of this report.

Fish transport permits, dated 20 January and 29 April 1999 were received from Idaho Fish and Game.

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

**Response:** The cooperative agreement negotiated with the USFWS Upper Columbia Fish Health Lab in 1998 was modified for 1999. Fish health exams were conducted at Lyons Ferry hatchery prior to fish transport to the three acclimation facilities and weekly exams were conducted during the acclimation period. A final health exam was conducted before fish releases at all the facilities.

USFWS personnel were represented during all M&E planning discussions but did not participate in PIT and radio tagging of fish at Pittsburg Landing in 1999.

**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*, Production Advisory Committee, (PAC). The planned production changes for 1999 included consultation with all cooperators.

**Task 1.4:** Coordinate with LSRCP to facilitate transport of the yearlings.

**Response:** LSRCP transport vehicles were not needed this year. Fish transport was provided by WDFW and NPT.

**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:** Work closely with the COE to facilitate the construction of the Capt. John Rapids facility.

**Response:** Met with COE Capt. John Rapids Project Manager, Construction Manager, and Other COE personal numerous times during the year. Provided COE with a list of facility deficiencies that must be corrected before facility is fully operational. Monitored contractor during placement of gravel and water pumps for compliance with contract.

## **OBJECTIVE 2, FACILITY DEVELOPMENT AND OPERATION:**

**TASK 2.1:** In November 1998 identify and select a contractor to install the portable tanks and associated equipment at Pittsburg Landing and Big Canyon.

**Response:** The process of preparing bid solicitations began in December 1998 and the selection of a contractor completed 01 January 1999.

The goal in 1999 was to provide continuity to assembly and disassembly of the facilities by choosing one contractor for both sites.

Nez Perce Limestone Enterprises, a tribal construction contractor, provided a proposal that was similar to the 1998 consultant costs and presented an opportunity to work with a company familiar with the project and who had a vested interest in its success. NPTEC approved, by resolution NP 99-93, a Tribal Contract with Limestone Enterprises on 12 January 1999. The contractor formally began work on 15 January 1999.

The Project Leader and his representatives monitored the project sites to ensure that the project remained on target and that the contractor adhered to the plans and specifications of the contract.

**Task 2.2:** Work with the COE, Walla Walla, and their contractor to install the permanent pond at Capt. John Rapids and schedule an operational test before fish transport.

**Response:** Numerous man-hours were spent communicating with the COE project manager, contract manager, contract inspector and the contractor as the pond was being modified to correct operational deficiencies. A full operational test before fish transport indicated that many problems with pond design and equipment operation still need to be addressed.

A deficiency resolution plan is being developed to rectify facility and equipment problems that significantly impair the project's success or its implementation date.

**Task 2.2.1:** Closely monitor and ensure all elements of construction are consistent with fish rearing, acclimation and release goals.

**Response:** FCAP staff members are unable to operate all components and accessories of the facility and, as a result, have not established the appropriate protocols, methods and procedures required to generate the specific output needed to access the fish rearing, acclimation and release goals of the facility.

**Task 2.2.2:** Test the river intakes prior to installation and facilitate modification if necessary.

**Response:** Testing of the river intakes identified two major problems that must be corrected before final acceptance of the facility. The COE awarded a contract to design a new river water intake system for the facility and bids for a construction contract have been advertised.

**Task 2.2.3:** Become familiar with the operation and maintenance of all parts of the facility before the contractor is released.

**Response:** FCAP staff has been operating and maintaining the equipment to facilitate fish acclimation, however, most of the equipment is not fully operational at this time. Meetings with the COE have occurred on a regular basis since the fall of 1998 to address equipment problems at Capt. John Rapids and Pittsburg Landing.

### **TASK 2.3 BEGIN OPERATIONS OF THE PITTSBURG LANDING FACILITY.**

**Task 2.3.1:** Work with the facility assembly contractor to ensure that the tanks and associated equipment are transported and installed correctly.

**Response:** Experienced staff members directed the facility assembly, provided labor, technical assistance and assured that the contractor adhered to the implementation timetable. Assembly began on 01 February and was completed on 05 February 99. The contractor and staff members did an excellent job.

**Task 2.3.2:** Prior to fish transport, test the facility for one week to identify faulty components.

**Response:** Testing indicated that the diesel water pumps, provided by a subcontractor, did meet the required specifications and that all other components were operating as required. Fish transport was completed as scheduled.

**Task 2.3.3:** On or about 01 March 1999, receive 150,000 yearlings @ 14 fpp, and rear to 10 fpp for release on or about April 15.

**Response:** Received 145,364 fish @ 11.5 fpp on 01-02 March 1999. Fish health exams prior to transport showed that the fish carried low BKD titer. Released 142,885 on 12-15 April 1999.

**Task 2.3.4:** 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 exams are performed weekly.

**Task 2.3.5:** Upon release of fish, monitor the disassembly of the facility and check that equipment is properly stored.

**Response:** Task was completed within 14 days following fish release. The 20ft circular tanks, water distribution towers, external standpipes and containment blocks were transported intact to a storage area within 1 mile of the fish acclimation site. Water hoses, valves and miscellaneous items are placed in container trailers at the storage site. The project site was improved by the addition of gravel and grading.

#### **TASK 2.4: BEGIN OPERATIONS OF THE BIG CANYON FACILITY.**

**Task 2.4.1:** Work with the facility assembly contractor to ensure that the tanks and associate equipment are transported and installed correctly.

**Response:** FCAP staff members directed and assisted the contractor in assembly. Assembly began on 04 January 1999 and completed 27 January 1999.

**Task 2.4.2:** Prior to fish transport, test the facility for one week to identify faulty components.

**Response:** Testing indicated that the alarm system required repair but that all other components were operating satisfactorily.

Diesel water pumps originally purchased for the project have in past years performed poorly causing several pump failures that required major repairs and caused unnecessary stress to the fish. The pumps were replaced this year by rental units similar to those used at Pittsburg Landing.

**Task 2.4.3:** On or about 01 March 1999, receive 150,000 yearlings @ 14 fpp, and rear to 10 fpp for release on or about April 15. If sub yearlings are available rear and acclimate up to 300,000 for 3 to 6 weeks after the yearling release.

**Response:** A total of 155,193 fish weighing 13,416 lbs. were received from 01-04 March 1999. Released 153,222 fish 12-15 April 1999.

Received 177,148 surplus yearling fish weighing 7,287 lbs on 13-15 April and 76,386 fish from this group on 26-28 April 1999.

Received 351,562 sub-yearlings fish weighing 3,255 lbs on 12 May and acclimated for 4 weeks. A total of 347,105 sub-yearlings were released on 03 June 1999.

**Task 2.4.4:** Collect and record all criteria relevant to fish rearing, e.g. feed use, mortality, fish health exams, oxygen levels, nitrogen saturation, etc.

**Response:** Fish rearing data is collected and recorded on a daily basis and fish health exams conducted weekly.

**Task 2.4.5:** Upon release of fish, monitor the disassembly of the facility and check that equipment is properly stored.

**Response:** The FCAP Project Leader has requested a lease agreement with the Nez Perce Tribe and BIA that would allow the fish acclimation tanks and water distribution towers to remain at the Big Canyon fish acclimation site on a yearly basis. The site is located on tribal property (allotment 992). The tanks and distribution towers remain at the site pending the results of the release agreement request.

## **TASK 2.5: BEGIN OPERATIONS OF THE CAPT. JOHN RAPIDS FACILITY.**

**Task 2.5.1:** Work with the facility contractor to ensure that the pond and river intakes are operational.

**Response:** Many man-hours were spent working with the COE and contractors on making the facility operational. Numerous problems with the electrical system, pumps and alarm system still exist and remain to be fixed.

The availability of fish for acclimation necessitated the use of the pond before it was fully operational. This decision resulted in less than ideal fish rearing conditions and the use of innovative fish culture methods.

**Task 2.5.2:** Prior to fish transport, test the facility for two weeks to identify faulty components.

**Response:** Staff tested the pond and equipment to assure that fish acclimation could take place despite faulty facility equipment and components. Alternative methods were employed where necessary to assure that risks to fish health were minimized.

**Task 2.5.3:** On or about 01 March 1998, receive 150,000 yearlings @ 14 fpp, and rear to 10 fpp for release on or about April 15. If sub-yearlings are available rear and acclimate up to 300,000 for 3 to 6 weeks after the yearling release.

**Response:** A total of 157,510 fish @ 11.9 fpp was received on 03 March 1999. Fish health exams indicated the fish carried low BKD titer and were free of other pathogens. Released 157,010 yearling fish on 12-15 April 1999.

Received 358, 667 sub-yearling fish weighing 3321 lbs on 03 May and acclimated for 4 weeks. A total of 322,928 sub-yearling fish were released 05 June 1999.

**Task 2.5.4:** Collect and record all criteria relevant to fish rearing, e.g. feed use, mortality, fish health checks, oxygen levels, nitrogen saturation, etc.

**Response:** Fish rearing criteria is collected and recorded daily. Problems with flow meters, oxygen meters and temperature recorder make the fish rearing data unreliable or unavailable.

**Task 2.5.5:** Upon release of fish arrange for the removal of the river intakes, draining water from the pond and all pipes, cleaning the pond, removal of the trailer and other portable components, e.g., hoses, generator, storage container, etc.

**Response:** This task cannot be completed until repairs and modifications are made by the COE, Walla Walla.

### **OBJECTIVE 3, REPORTS:**

**Task 3. 1:** Submit quarterly progress reports based on the objectives and tasks contained within the statement of work.

**Response:** Quarterly reports were submitted as required.

**Task 3.2:** Submit a final operational report of all activities for all three facilities by 30 September 1999.

**Response:** A final report will be submitted in detail by 30 September 1999.

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USFWS/NPT. 1996. Biological Assessment of fall chinook smolt releases. Nez Perce Tribe and U.S. Fish and Wildlife Service, July 1996.

**APPENDIX A**  
**FACILITY PRODUCTION WORKSHEETS 1999**

Lyons Ferry Hatchery fall chinook releases above Lower Granite Dam in 1999 (data compiled by Bill Arnsberg, Steve Rocklage and Bruce McLeod, Nez Perce Tribe).

| Release Type  |            | Release Location   | Release Dates | Number CWT | CWT Code | AD-Only Marked | Number Unmarked | Gms/fish | Fish/Lb | Total Lbs | Avg FL | CV of Avg FL | Elastomer (side, color/retention %) |
|---|------------|--|---------------|------------|----------|----------------|-----------------|----------|---------|-----------|--------|--------------|-------------------------------------|
| Age   | Brood Year |  |               |            |          |                |                 |          |         |           |        |              |                                     |
| Yearling  | 97         | Pittsburg  | 4/12-15       | 134,983    | 63-04/51 | 3,401          | 4,501           | 45.2     | 10.0    | 14,238    | 163.7  | 11.1         | RG/82.8                             |
|   |            | Total number of yearlings released at Pittsburg Landing: 142,885 |               |            |          |                |                 |          |         |           |        |              |                                     |
|   |            | Captain John   | 4/12-15       | 154,750    | 63-04/53 | 816            | 1,444           | 38.4     | 11.8    | 13,292    | 147.4  | 12.0         | LB/81.1                             |
|   |            | Total number of yearlings released at Captain John: 157,010      |               |            |          |                |                 |          |         |           |        |              |                                     |
|   |            | Big Canyon   | 4/12-15       | 150,648    | 63-04/54 | 1,241          | 1,333           | 43.7     | 10.4    | 14,761    | 158.5  | 10.7         | LG/88.8                             |
|   |            | Total number of yearlings released at Big Canyon: 153,222        |               |            |          |                |                 |          |         |           |        |              |                                     |
|   |            | Big Canyon   | 4/26-28       | 75,332     | 63-09/38 | 603            | 451             | 40.7     | 11.1    | 6,854     | 149.5  | 14.1         | LG/97.6                             |
| Total number of yearlings released at Big Canyon: 76,386      |            |  |               |            |          |                |                 |          |         |           |        |              |                                     |
| Sub-yearling  | 98         | Captain John   | 6/5           | None       | n/a      | n/a            | n/a             | 5.52     | 82.18   | 3,930     | 82.07  | 8.07         | None                                |
|   |            | Total number of sub-yearlings released at Captain John: 322,928  |               |            |          |                |                 |          |         |           |        |              |                                     |
|   |            | Big Canyon   | 6/3           | 195,231    | 63-10/25 | n/a            | 151,874         | 5.42     | 83.76   | 4,145     | 80.86  | 9.26         | None                                |
| Total number of sub-yearlings released at Big Canyon: 347,105 |            |  |               |            |          |                |                 |          |         |           |        |              |                                     |

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

**Nez Perce Tribe  
Inventory - Pittsburg Landing Acclimation Facility  
1999 FALL CHINOOK YEARLINGS**

**Received** 86988 fish on 3/1 tanks 2-4-6-8-10-11-12-13-14  
58376 fish on 3/2 tanks 3-5-6-7-9-15-16

**Released** 28549 fish on 4/12 tanks 2-3-4  
37993 fish on 4/13 tanks 5-6-7-8  
37966 fish on 4/14 tanks 9-10-11-12  
38377 fish on 4/15 tanks 13-14-15-16

**Total 145384**

**Total 142885**

| Tank | Starting Inventory | Morts       | Pre-release Sample | Inventory     | Percent Mortality | Date Received | FPP*            | Release Date | FPP**       | Days Acclimated |
|------|--------------------|-------------|--------------------|---------------|-------------------|---------------|-----------------|--------------|-------------|-----------------|
| 1    |                    |             |                    |               |                   |               |                 |              |             |                 |
| 2    | 9,667              | 50          | 0                  | 9,617         |                   | 03/01/1999    | 11.4            | 04/12/1999   |             | 42              |
| 3    | 9,676              | 231         | 0                  | 9,445         | 2.39              | 03/02/1999    | 11.7            | 04/12/1999   |             | 41              |
| 4    | 9,667              | 180         | 0                  | 9,487         | 1.86              | 03/01/1999    | 11.4            | 04/12/1999   |             | 42              |
| 5    | 9,676              | 341         | 0                  | 9,335         | 3.52              | 03/02/1999    | 11.7            | 04/13/1999   |             | 42              |
| 6    | 9,667              | 59          | 0                  | 9,608         | 0.61              | 03/01/1999    | 11.4            | 04/13/1999   |             | 43              |
| 7    | 9,676              | 251         | 0                  | 9,425         | 2.59              | 03/02/1999    | 11.7            | 04/13/1999   |             | 42              |
| 8    | 9,671              | 46          | 0                  | 9,625         | 0.48              | 03/01/1999    | 11.8            | 04/13/1999   |             | 43              |
| 9    | 9,674              | 66          | 0                  | 9,608         | 0.68              | 03/02/1999    | 11.4            | 04/14/1999   |             | 43              |
| 10   | 9,671              | 161         | 0                  | 9,510         | 1.66              | 03/01/1999    | 11.8            | 04/14/1999   |             | 44              |
| 11   | 9,671              | 223         | 0                  | 9,448         | 2.31              | 03/01/1999    | 11.8            | 04/14/1999   |             | 44              |
| 12   | 9,628              | 228         | 0                  | 9,400         | 2.37              | 03/01/1999    | 11.3            | 04/14/1999   |             | 44              |
| 13   | 9,673              | 230         | 0                  | 9,443         | 2.38              | 03/01/1999    | 11.3            | 04/15/1999   |             | 45              |
| 14   | 9,673              | 187         | 0                  | 9,486         | 1.93              | 03/01/1999    | 11.3            | 04/15/1999   |             | 45              |
| 15   | 9,899              | 136         | 0                  | 9,763         | 1.37              | 03/02/1999    | 11.3            | 04/15/1999   |             | 44              |
| 16   | 9,775              | 90          | 0                  | 9,685         | 0.92              | 03/02/1999    | 11.3            | 04/15/1999   |             | 44              |
|      | <b>145384</b>      | <b>2479</b> | <b>0</b>           | <b>142885</b> | <b>1.71</b>       |               |                 |              |             |                 |
|      |                    |             |                    |               |                   |               | <b>Avg. FPP</b> |              | <b>10.1</b> |                 |

\* Sample sizes from Lyons Ferry Hatchery when transported.

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

c:\npth97\pittsbrg\inv.wk4

**Nez Perce Tribe**  
**Inventory: Capt John Rapids Acclimation Facility**  
**1999 Fall Chinook Yearlings**

**Received** 155510 fish on 03/03 **Released** 157010 fish on 04/11-15/99

**Total 155510 Total 157010**

| Pond | Starting Inventory | Morts | Pre-release Sample | Inventory | Percent Mortality | Date Received | FPP* | Release Date | FPP** | Days Acclimated |
|------|--------------------|-------|--------------------|-----------|-------------------|---------------|------|--------------|-------|-----------------|
| 1    | 157,510            | 500   |                    | 157,010   | 0.32              | 03/03/1999    | 11.9 | 4/12-15/99   | 10.89 | 43              |

\*Sample size ranged from 12.3 to 10.2 fpp  
 \*\* Pit tag sampling only. to prevent stress

**Nez Perce Tribe**  
**Inventory: Capt John Rapids Acclimation Facility**  
**1999 Fall Chinook Sub-Yearlings**

**Received** 35866 fish 05/03 \*

**Released** 322928 fish 06/05/9

**Total 358667 \***

**Total 322928**

| Pond | Starting Inventory | Morts | Pre-release Sample | Inventory | Percent Mortality | Date Received | FPP   | Release Date | FPP ** | Days Acclimated |
|------|--------------------|-------|--------------------|-----------|-------------------|---------------|-------|--------------|--------|-----------------|
| 1    | 326,667            | 739   |                    | 322,928   | 0.02              | 05/03/1999    | 108.0 | 06/05/1999   | 82.00  | 33              |

\*number includes 35,000 fish lost during transport.

\*\* Pit tag sampling only: to prevent stress

**Nez Perce Tribe**

**Inventory: Big Canyon Acclimation Facility  
1999 FALL CHINOOK YEARLINGS**

**Received** 9863 fish on 3/01 tank 16  
 49353 fish on 3/02 tanks 11-15  
 55931 fish on 3/03 tanks 5-10  
 40048 fish on 3/04 tanks 1-4  
**Total 155193**

**Released** 38852 fish on 4/12 tanks 13-16  
 38838 fish on 4/13 tanks 9-12  
 35806 fish on 4/14 tanks 5-8  
 39726 fish on 4/15 tanks 1-4  
**Total 153222**

| Tank | Starting Inventory | Morts       | Pre-release Sample | Inventory     | Percent Mortality | Date Received | FPP *           | Release Date | FPP **      | Days Acclimated |
|------|--------------------|-------------|--------------------|---------------|-------------------|---------------|-----------------|--------------|-------------|-----------------|
| 1    | 10,500             | 48          |                    | 10,452        | 0.48              | 03/04/1999    | 11.5            | 04/15/1999   | 11.80       | 43              |
| 2    | 9,856              | 120         |                    | 9,736         | 1.22              | 03/04/1999    | 11.5            | 04/15/1999   |             | 43              |
| 3    | 9,045              | 65          |                    | 9,780         | 0.66              | 03/04/1999    | 12.2            | 04/15/1999   |             | 43              |
| 4    | 9,045              | 87          |                    | 9,758         | 0.88              | 03/04/1999    | 12.2            | 04/15/1999   |             | 43              |
| 5    | 9,863              | 120         |                    | 9,743         | 1.22              | 03/03/1999    | 11.7            | 04/14/1999   |             | 43              |
| 6    | 9,875              | 127         |                    | 9,748         | 1.29              | 03/03/1999    | 11.7            | 04/14/1999   |             | 43              |
| 7    | 6,588              | 83          |                    | 6,505         | 1.26              | 03/03/1999    | 12.3            | 04/14/1999   |             | 43              |
| 8    | 9,852              | 42          |                    | 9,810         | 0.43              | 03/03/1999    | 12.3            | 04/14/1999   |             | 43              |
| 9    | 9,889              | 80          |                    | 9,809         | 0.81              | 03/03/1999    | 12.3            | 04/13/1999   |             | 43              |
| 10   | 9,864              | 111         |                    | 9,753         | 1.13              | 03/03/1999    | 12.3            | 04/13/1999   |             | 43              |
| 11   | 9,857              | 225         |                    | 9,632         | 1.13              | 03/02/1999    | 10.3            | 04/13/1999   |             | 43              |
| 12   | 9,857              | 213         |                    | 9,644         | 2.16              | 03/02/1999    | 10.3            | 04/13/1999   |             | 43              |
| 13   | 9,857              | 166         |                    | 9,691         | 1.68              | 03/02/1999    | 10.3            | 04/12/1999   |             | 43              |
| 14   | 9,917              | 124         |                    | 9,793         | 1.25              | 03/02/1999    | 11.6            | 04/12/1999   |             | 43              |
| 15   | 9,865              | 163         |                    | 9,702         | 1.65              | 03/02/1999    | 11.8            | 04/12/1999   |             | 43              |
| 16   | 9,863              | 197         |                    | 9,666         | 2.00              | 03/01/1999    | 11.7            | 04/12/1999   |             | 43              |
|      | <b>155193</b>      | <b>1971</b> | <b>0</b>           | <b>153222</b> | <b>1.27</b>       |               |                 |              |             |                 |
|      |                    |             |                    |               |                   |               | <b>Avg. FPP</b> |              | <b>11.5</b> |                 |

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

**Nez Perce Tribe**  
**Inventory: Big Canyon Acclimation Facility**  
**1999 FALL CHINOOK YEARLINGS (Surplus Yearlings)**

**Received** 24561 fish on 4/13 tanks 14-16  
 27691 fish on 4/14 tanks 12-13  
 24896 fish on 4/15 tanks 10-11

**Released** 21638 fish on 4/26 tanks 10,12  
 32836 fish on 4/27 tanks 11,13,14  
 21912 fish on 4/28 tanks 15,16

**Total 77148**

**Total 76386**

| <u>Tank</u> | <u>Starting Inventory</u> | <u>Morts</u> | <u>Pre-release Sample</u> | <u>Inventory</u> | <u>Percent Mortality</u> | <u>Date Received</u> | <u>FPP*</u>     | <u>Release Date</u> | <u>FPP**</u> | <u>Days Acclimated</u> |
|-------------|---------------------------|--------------|---------------------------|------------------|--------------------------|----------------------|-----------------|---------------------|--------------|------------------------|
| 1           |                           |              |                           |                  |                          |                      |                 |                     |              |                        |
| 2           |                           |              |                           |                  |                          |                      |                 |                     |              |                        |
| 3           |                           |              |                           |                  |                          |                      |                 |                     |              |                        |
| 4           |                           |              |                           |                  |                          |                      |                 |                     |              |                        |
| 5           |                           |              |                           |                  |                          |                      |                 |                     |              |                        |
| 6           |                           |              |                           |                  |                          |                      |                 |                     |              |                        |
| 7           |                           |              |                           |                  |                          |                      |                 |                     |              |                        |
| 8           |                           |              |                           |                  |                          |                      |                 |                     |              |                        |
| 9           |                           |              |                           |                  |                          |                      |                 |                     |              |                        |
| 10          | 11,062                    | 157          |                           | 10,905           | 1.42                     | 04/15/1999           | 10.6            | 04/26/1999          | 10.6         | 11                     |
| 11          | 11,005                    | 70           |                           | 10,935           | 0.64                     | 04/15/1999           |                 | 04/27/1999          |              | 12                     |
| 12          | 11,020                    | 287          |                           | 10,733           | 2.60                     | 04/14/1999           |                 | 04/26/1999          |              | 11                     |
| 13          | 11,025                    | 70           |                           | 10,955           | 0.63                     | 04/14/1999           |                 | 04/27/1999          |              | 13                     |
| 14          | 11,015                    | 69           |                           | 10,946           | 0.63                     | 04/13/1999           |                 | 04/27/1999          |              | 14                     |
| 15          | 11,000                    | 332          |                           | 10,946           | 3.02                     | 04/13/1999           |                 | 04/28/1999          |              | 15                     |
| 16          | <u>11,021</u>             | <u>55</u>    |                           | <u>10,966</u>    | <u>0.50</u>              | 04/13/1999           |                 | 04/28/1999          |              | 15                     |
|             | <b>77148</b>              | <b>1040</b>  | <b>0</b>                  | <b>76386</b>     | <b>1.35</b>              |                      |                 |                     |              |                        |
|             |                           |              |                           |                  |                          |                      | <b>Avg. FPP</b> |                     | <b>10.6</b>  |                        |

\* Samples taken at Lyons Ferry Hatchery

\*\* Assume no growth during acclimation. Pit tagging done prior to transport from Lyons Ferry Hatchery.

**Nez Perce Tribe**

**Inventory: Big Canyon Acclimation Facility**

**1999 FALL CHINOOK SUB-YEARLINGS**

**Received** 180,000 fish on 05/12 tanks 7-8-13-14-15-16  
171562 fish on 05/1 tanks 6-9-10-11-12

**Released** 347105 fish on 6/03 tanks 6-16

**Total 351562**

**Total 347105**

| Tank | Starting Inventory | Morts       | Pre-release Sample | Inventory     | Percent Mortality | Date Received | FPP*            | Release Date | FPP**        | Days Acclimated |
|------|--------------------|-------------|--------------------|---------------|-------------------|---------------|-----------------|--------------|--------------|-----------------|
| 1    |                    |             |                    |               |                   |               |                 |              |              |                 |
| 2    |                    |             |                    |               |                   |               |                 |              |              |                 |
| 3    |                    |             |                    |               |                   |               |                 |              |              |                 |
| 4    |                    |             |                    |               |                   |               |                 |              |              |                 |
| 5    |                    |             |                    |               |                   |               |                 |              |              |                 |
| 6    | 34312              | 408         |                    | 33904         | 1.19              | 05/13/1999    | 116             | 06/03/1999   | 83.76        | 21              |
| 7    | 30,000             | 369         |                    | 29,631        | 1.23              | 05/12/1999    | 107             | 06/03/1999   |              | 22              |
| 8    | 30,000             | 189         |                    | 29,811        | 0.63              | 05/12/1999    | 107             | 06/03/1999   |              | 22              |
| 9    | 34,330             | 278         |                    | 34,052        | 0.81              | 05/13/1999    | 118.0           | 06/03/1999   |              | 21              |
| 10   | 34,281             | 425         |                    | 33,856        | 1.24              | 05/13/1999    | 118.0           | 06/03/1999   |              | 21              |
| 11   | 34,324             | 295         |                    | 34,029        | 0.86              | 05/13/1999    | 118.0           | 06/03/1999   |              | 21              |
| 12   | 34,315             | 722         |                    | 33,593        | 2.10              | 05/13/1999    | 118.0           | 06/03/1999   |              | 21              |
| 13   | 30,000             | 391         |                    | 29,609        | 1.30              | 05/12/1999    | 98.0            | 06/03/1999   |              | 22              |
| 14   | 30,000             | 315         |                    | 29,685        | 1.05              | 05/12/1909    | 98.0            | 06/03/1999   |              | 22              |
| 15   | 30,000             | 228         |                    | 29,772        | 0.76              | 05/12/1999    | 98.0            | 06/03/1999   |              | 22              |
| 16   | <u>30,000</u>      | <u>837</u>  |                    | <u>29,163</u> | <u>2.79</u>       | 05/12/1999    | 98.0            | 06/03/1999   |              | 22              |
|      | <b>351562</b>      | <b>4467</b> | <b>0</b>           | <b>347105</b> | <b>1.27</b>       |               |                 |              |              |                 |
|      |                    |             |                    |               |                   |               | <b>Avg. FPP</b> |              | <b>83.76</b> |                 |

\* Sample sizes ranged from 98 to 118 fpp.

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

**APPENDIX B**  
**FISH HEALTH REPORTS**

Fall Chinook Acclimation - 1999

An Organosomatic Index (Goede's Index) was taken for each release group of Fall Chinook Salmon (FCS) - four yearling and three sub-yearling groups. The Goede's Index was then converted to the Quantitative Field Health Index (QHAI), which gives the Index one number for that group, with 0 being perfect.

The following table summarizes the QHAI results for all groups during pre-release exam.

| SITE              | AGE      | Sample QHAI | AGE          | Sample QHAI |
|-------------------|----------|-------------|--------------|-------------|
| Big Canyon        | yearling | 19.6        | Sub-yearling | 26.8        |
| Captain John      | yearling | 10.2        | Sub-yearling | 27.9        |
| Lyons Ferry       | yearling | 15.0        | Sub-yearling | 17.3        |
| Pittsburg Landing | yearling | 14.6        | N/A          |             |

These numbers have not been evaluated statistically, but it appears that there is no difference in the health (by this index) between groups of yearlings, with Lyons Ferry acting as the control. However, there does appear to be a significant difference between the sub-yearling control group (again Lyons Ferry) and the two acclimation sites. The abnormal values, which give elevated QHAI's, are primarily attributed to levels other than normal in the blood parameters, with an occasional abnormal organ thrown in. Statistical comparisons need to be made on this data before any concrete conclusions should be made.

The following table summarizes ELISA values for all groups.

| DATE    | SITE/AGE        | HIGH | MEDIUM | LOW | NOT DETECTED |
|---------|-----------------|------|--------|-----|--------------|
| 1/5/99  | Lyons Ferry/Y   | 1    | 10     | 21  | 28           |
| 1/19/99 | Lyons Ferry/S   | 1    | 3      | 14  | 43           |
| 4/8/99  | Lyons Ferry/Y   |      | 1      | 9   | 49           |
| 4/12/99 | Big Canyon/Y    |      | 2      | 11  | 46           |
| 4/13/99 | Pittsburg L./Y  |      |        | 7   | 49           |
| 4/17/99 | Capt. John R/Y  |      |        | 1   | 58           |
| 5/26/99 | Capt. John R./S |      |        |     | 59           |
| 6/2/99  | Big Canyon/S    |      |        |     | 60           |

The January 5 and 19 sampling dates were done on the groups prior to importation in order to obtain an import permit from Idaho. The remaining sampling dates were all done just prior to release each group.

Prior to transport, there was concern about the effect that Bacterial Kidney Disease (BKD) would have on these fish populations after transport. Clinical BKD did occur at all three sites, appearing particularly worse at Captain John Rapids. When pre-release samples were collected, we tried not to get sick fish but rather tried to get a representative sample of healthy fish; we knew what the sick fish were. We wanted to see what ELISA profiles the 'healthy' population had. The results indicate that the fish improved after they left Lyons Ferry; indeed, at release, the sampled fish had low levels and incidence of *Renibacterium salmoninarum*, causative agent of BKD. Fish will tend to clear themselves of the bacteria, given reduced stress and time.

Finally, sub-yearling FCS at Big Canyon and Captain John Rapids experienced a clinical infection of Enteric Red Mouth, caused by *Yersinia ruckeri*, necessitating treatment with Oxytetracycline. Treatment was successful. One might suspect that the fish came from Lyons Ferry with the bacteria, however, we were unable to detect its presence at Lyons Ferry prior to release.

**No other pathogenic agents were found on the acclimated fish during acclimation.**

**APPENDIX C**  
**FISH TRANSPORT PERMITS**



STATE OF IDAHO
DEPARTMENT OF FISH AND GAME

Live Fish Transportation Permit

Permission to hereby grant to: Transportation Permit Number: HQ-99-02
Name: NEZ PERCE TRIBAL FISHERIES Issue Date: 3/1/99
Address: PO BOX 365 Expires: 4/30/99
LAPWAI ID 83540 Phone No. 208-843-7320
ATTN: GRANT WALKER Fax No. 208-843-7322

For:

XXX Import fish/eggs into the State of Idaho. Permit approved by the Fisheries Bureau (\*see#5 on back side).
and/or
Transport fish/eggs within the State of Idaho. Permit issued by the Regional office (\*\*see#5 on back side).

Number of fish or eggs and species listed below:

Table with 4 columns: NO. OF FISH, SPECIES, SOURCES/SUPPLIER (Body of Water, Name, Address, Phone No.), and DESTINATION. Rows include 150,000 Yearling Fall Chinook, 150,000 Yearling Fall Chinook, and 80,000 Yearling Fall Chinook.

ADDITIONAL STIPULATIONS: Pathology results to be provided by Cathy Clemens Dworshak Fish Health Center. Approval is contingent upon samples to be taken in January 99 being VHSV negative.

This transportation permit is issued in conjunction with the Permittee's Private Pond No. N/A and is not transferable.

Provisions of Permit Accepted: Please read the reverse side of Permit.

Signature of Permittee Date

IDAHO DEPARTMENT OF FISH AND GAME
Stephen P. Mealey, Director

By: [Signature]
Chief, Fisheries Bureau or Reg. Supervisor

300 20 1999
Date

c: Region: Clearwater
or Fisheries Bureau

Eagle Fish Health Laboratory
1800 Trout Rd OFF(208) 939-2413
Eagle ID 83616 FAX(208) 939-2415

Nampa Hatchery Transport Drivers Adj, Bittick Clemens DFHC



STATE OF IDAHO  
DEPARTMENT OF FISH AND GAME

Live Fish Transportation Permit

Permission to hereby grant to: \_\_\_\_\_ Transportation Permit Number: HQ-99-19  
 Name: NEZ PERCE TRIBAL FISHERIES Issue Date: 4/29/99  
 Address: PO BOX 365 Expires: 7/8/99  
LAPWAI ID 83540 Phone No. 208-843-7320  
ATTN: GRANT WALKER Fax No. 208-843-7322

For:

XXX Import fish/eggs into the State of Idaho. Permit approved by the Fisheries Bureau (\*see#5 on back side).  
 and/or  
 Transport fish/eggs within the State of Idaho. Permit issued by the Regional office (\*\*see#5 on back side).

Number of fish or eggs and species listed below:

| NO. OF FISH | SPECIES                      | SOURCES/SUPPLIER<br>Body of Water, Name, Address, Phone No. | DESTINATION                               |
|-------------|------------------------------|---|---|
| 300,000     | Sub-Yearling<br>Fall Chinook | Lyons Ferry Hatchery  | Big Canyon<br>Accl. Site Clearwater River |
| 24,000      | Sub-Yearling<br>Fall Chinook | Lyons Ferry Hatchery  | Big Canyon<br>Accl. Site Clearwater River |
|             |                              |   |   |

ADDITIONAL STIPULATIONS: Pathology results provided by Cathy Clemens Idaho Fish Health Center USFWS. VIRO were all negative date 4/29/99.

This transportation permit is issued in conjunction with the Permittee's Private Pond No. N/A and is not transferable.

Provisions of Permit Accepted: Please read the reverse side of Permit.

\_\_\_\_\_  
Signature of Permittee Date

IDAHO DEPARTMENT OF FISH AND GAME  
Stephen P. Mealey, Director

By: [Signature]  
Chief, Fisheries Bureau or Reg. Supervisor

4/23/99  
Date

c: Region: Clearwater  
APF Fisheries Bureau (Attn: S. K. ...)

Eagle Fish Health Laboratory  
1800 Trout Rd OFF(208) 939-2413