Fall Chinook Acclimation Project (FCAP)
2006-07 AOP

1. Facilities

1.1 Pittsburg Landing

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

Water is pumped directly from the Snake River to the acclimation tanks by four, 4-inch diesel pumps. Water pumps are rented from a contractor because leasing appeared to offer the least cost over a ten-year life cycle. Each pump has a portable water intake screen that is placed into the river each year and connected to the pump by 120 ft of 6-inch plastic hose. The pumps provide 500 gpm of water and operate 24 hours each day throughout the 6-week acclimation period except for oil checks and servicing. A 1,000 gallon tank, placed within a spill containment barrier, supplies fuel for the pumps. The water is pumped to one of two12 ft. high water distribution boxes, containing degassing towers to remove nitrogen gas, before flowing through a series of downsizing pipes to the rearing units.

Figure 1 Pittsburg Landing Acclimation Tanks.

The rearing units consist of 16 circular aluminum tanks, 20 ft in diameter and 4 feet deep. The tanks are transported from the storage area by a 20 ft flatbed lift-truck and placed on leveled 6-inch by 6-inch wood timbers. The tanks, made in two pieces and bolted together, drain water from the center of the tank through an 8-inch pipe placed in a plywood manhole running under the tank. The tank is fitted with vertical 12-inch circular perforated aluminum screen and the water depth controlled by a 6-inch center PVC standpipe. The rearing water enters the tank through a 4-inch pipe located on the edge of the tank and is directed in a manner to

facilitate a circular motion to aid the movement of fish waste and mortality to the center screen. Water flow is controlled by a 4-inch gate valve located on the incoming line and maintains flows at l00 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. In 2006, the U.S. Forest Service (USFS) agreed to a trial operation of allowing the NPT to leave half of the assembled fish rearing tanks in place and remove the other half and related equipment at a storage site near the fish acclimation site. This agreement should greatly reduced equipment fatigue and reduced assembly and disassembly time by half.

1.2 Big Canyon

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

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

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

1.3 Capt. John Rapids

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

with permanent intake screens located in the main Snake River channel. The pump intake screens are provided with an air backflush system to remove debris and an alarm system is available to monitor flows.

The pumps deposit large amounts of sand in the acclimation pond, which must be removed by hand tools between each group of fish. The alarm system does not provide accurate data, if working at all. Negotiations with the USCOE have resulted in a new alarm system and two additional new pumps and associated electric and control panels being purchased that will pump from downstream of the pond location. We are hopeful that this will result in less sand accumulation in the pond. Installation of the new equipment will begin in the summer of 2007 and will be tested with the 2008 acclimation season.

2. Operations

2.1 Fish transport

Approximately 150,000 fall Chinook salmon yearlings will be transferred from Lyons Ferry Hatchery to Captain John Rapids about February 01, at 12.5 fish per pound. Fish acclimated at Captain John Rapids are transported by WDFW one month earlier than the other acclimation facilities to make rearing space available for sub-yearlings at Lyons Ferry Hatchery. On or about 01 March 150,000 yearlings will be transported to Pittsburg Landing and Big Canyon at 12 fish per pound. Transport to Pittsburg Landing and Big Canyon will be shared by WDFW and NPT.

Approximately 500,000 subyearlings will be transferred to the Big Canyon and Capt. John Rapids facilities and 400,000 will be transferred to Pittsburg Landing during the first week in May. Captain John sub-yearlings will be transported by WDFW, while Pittsburg Landing and Big Canyon transports will be shared by NPT and WDFW. Lyons Ferry Hatchery personnel provide schedules and facilitate loading and enumeration of the fish. Fish transport permits will be requested from IDFG.

2.2 Rearing

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

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.

2.3 Marking

Yearling and subyearling fish will be marked with coded wire tags (CWT) and adipose fin clips prior to transfer to the FCAP facilities.

Approximately 5,000 yearling fish will be PIT tagged prior to release at each of the FCAP Acclimation facilities by Nez Perce Tribal staff.

Subyearling fish acclimated at the FCAP facilities may be PIT tagged as part of q COE transportation evaluation study (pending a decision by U.S. vs. Oregon). PIT tagging will occur at Lyons Ferry Hatchery prior to transport to the acclimation facilities.

In the event that the transportation evaluation does not go forward in 2007, approximately 2,500 subyearlings at the FCAP facilities will be PIT tagged by Nez Perce Tribal staff for juvenile survival/passage information.

2.4 Release

Yearling fish are reared and acclimated in the temporary facilities for six weeks (10 weeks at Capt. John Rapids) before release into the Snake and Clearwater Rivers in April, at a size of approximately 10 fpp, or 160-170 mm fork length. Anticipated release dates for 2007:

- Pittsburg Landing – April 15
- Captain John Rapids – April 14
- Big Canyon – April 15

Sub-yearling fish are acclimated approximately three to four weeks before release in late May or early June at 60 fpp. Release typically occurs during rising water conditions and at night to minimize predation by birds or other fish. Anticipated release dates for 2007:

- Pittsburg Landing – May 22-23
- Captain John Rapids – May 22
- Big Canyon – May 24-25

The release of subyearlings from Captain John Rapids is being used to compare a direct stream release of fall Chinook from Lyons Ferry Hatchery near Couse Creek on the mainstem Snake. FCAP staff will coordinate size information and current or anticipated changes in environmental conditions.

Emergency low water, water temperatures or facility failure may necessitate an early release of fish from the facilities. Should emergency circumstances warrant an early release the facility operator will be responsible to make the determination to release fish. Co-management agencies will be contacted within 24 hours with notification of an early release.

Bruce – can you please add in a communications section – the one below is from NPTHC AOP – not very complex – just a list of reporting that occurs – also add a contact list with names and phone numbers….thanks!

2.4 Communication

Verbal communications between FCAP personnel and co-managers is done on a as needed basis to facilitate planning, transportation and acclimation. Co-managers will be involved in any planned deviation to the fish acclimation schedule.

Fish release numbers will be reported and a FCAP fish acclimation summary will be completed by Nez Perce Tribe Research division. FCAP fish acclimation summary and other pertinent information will be presented to co-managers at the Snake River Fall Chinook Technical Group meeting.

FCAP personnel will complete and submit a project annual report to BPA in January each year.

FCAP contact list:

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