

**2008**

**ANNUAL OPERATING PLAN**

**for**

**FISH PRODUCTION PROGRAMS**

**in the**

**CLEARWATER RIVER BASIN**

by

U.S Fish and Wildlife Service

Idaho Department of Fish and Game

Nez Perce Tribe Fisheries

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**CONTENTS**

**CLEARWATER BASIN ANNUAL OPERATING PLAN (AOP) 2008**

	Page
<b>1. Steelhead</b> .....	1
1.1. Broodyear 2007 Steelhead .....	1
1.1.1. Dworshak .....	1
1.1.2. Clearwater .....	2
1.1.3. South Fork Un-clipped Releases .....	2
1.2. Broodyear 2008 Steelhead .....	3
1.2.1. Dworshak .....	3
1.2.2. Kooskia .....	5
1.2.3. Clearwater .....	6
1.2.4. South Fork Un-clipped Releases .....	7
<b>2. Spring Chinook Salmon</b> .....	7
2.1. Broodyear 2006 Spring Chinook .....	7
2.1.1. Dworshak .....	7
2.1.2. Kooskia .....	8
2.1.3. Clearwater .....	8
2.1.4. Nez Perce Tribal Hatchery .....	10
2.2. Broodyear 2007 Spring Chinook .....	10
2.2.1. Dworshak .....	10
2.2.2. Kooskia .....	11
2.2.3. Clearwater .....	11
2.2.4. Nez Perce Tribal Hatchery .....	12
2.3. Broodyear 2008 Spring Chinook .....	14
2.3.1. Dworshak .....	14
2.3.2. Kooskia .....	15
2.3.3. Clearwater .....	16
2.3.4. Nez Perce Tribal Hatchery .....	18
<b>3. Coho</b> .....	20
3.1. Broodyear 2006 Coho .....	20
3.1.1. Dworshak .....	20
3.1.2. Transfers from Eagle Creek NFH .....	21
3.1.3. Transfers from Cascade Fish Hatchery.....	21
3.2. Broodyear 2007 Coho .....	21
3.2.1. Dworshak .....	21
3.2.2. Clearwater .....	22
3.2.3. Transfers (Eagle Creek NFH) .....	22
3.3. Broodyear 2008 Coho .....	23
3.3.1. Dworshak .....	23
<b>4. Fall Chinook Salmon</b> .....	23

- 4.1. Broodyear 2006 Fall Chinook ..... 23
  - 4.1.1. NPT Fall Chinook Acclimation Project – Big Canyon Facility ..... 23
- 4.2. Broodyear 2007 Fall Chinook ..... 24
  - 4.2.1. NPT Fall Chinook Acclimation Project – Big Canyon Facility ..... 24
  - 4.2.2. Nez Perce Tribal Hatchery ..... 25
  - 4.2.3. Dworshak NFH ..... 27
- 4.3. Broodyear 2008 Fall Chinook ..... 27
  - 4.3.1. Adult Collection ..... 27
- 5. Rainbow Trout ..... 30**
  - 5.1. USFWS Program ..... 30
    - 5.1.1. Dworshak Kids’ Fishing Day ..... 30
  - 5.2. IDFG Programs ..... 30
    - 5.2.1. Dworshak Reservoir ..... 30
    - 5.2.2. Clearwater Basin ..... 30
- 6. Pacific Lamprey ..... 31**
  - 6.1. NPT Program ..... 31
    - 6.1.1. Nez Perce Tribal Hatchery ..... 31
- 7. Information and Education ..... 31**
  - 7.1. School Programs ..... 31
- 8. Contacts ..... 32**

## CLEARWATER BASIN ANNUAL OPERATING PLAN (AOP) 2008

**Version 3/21/2008 2:02 PM**

*(Each section names a contact person for additional information, coordination, or notification – contact information is listed in Section 7.)*

### 1. STEELHEAD

*The total adult return goal for Dworshak NFH and Clearwater Hatchery is 34,000 steelhead to the project area. Broodstock for all facilities are collected at Dworshak and total 4,300 adults. Additional details are listed in the pertinent sections below.*

#### 1.1. Broodyear 2007 Steelhead

**1.1.1. Dworshak** – *Broodstock need for Dworshak mitigation is ~2,300 fish, this number of steelhead is needed to provide enough males to allow a 1:1 spawning ratio for the 630 females needed for egg collection. (An additional 2,000 fish are needed to provide eggs for Clearwater and Magic Valley Hatchery steelhead programs.) Male to female return ratio for two ocean steelhead at Dworshak is typically 1:3, so to collect enough males, more females than needed are collected and then excess steelhead are typically outplanted for natural spawning. This number includes jacks, accounts for pre-spawning mortality, and the 500 steelhead that are collected in the fall to cover the early returning, early spawning component of the run. This brood level provides ~2.1 million smolts at an average of 80% eyed egg-to-smolt survival to meet the adult return goal of 20,000 to the Clearwater River.*

- 1.1.1.1. Production status - As of January 1, 2008 there were a total of 2.29 million steelhead on station, 173 mm average total length, 9 fpp. Length frequency and pound counts are performed monthly on representative ponds. *Thomas Trock*
- 1.1.1.2. Projected release – Offsite release is expected to occur the week of April 14, 2008. Onsite release is expected to occur the week of April 21. DNFH expects to release a total of 2.2 million steelhead, including ~220,000 un-clipped (notify Steve Rodger and Mike Key at time of the un-clipped releases). Average total length > 200 mm (6 fpp). *Thomas Trock*
- 1.1.1.3. Fish health status - First part of July started the IHNV/Coldwater Disease event; This outbreak has caused chronic mortality as seen in previous years. The reuse systems were started in January, allowing the fish to gain a larger size. After 1 month, Ich got so bad in System II, even with regular prophylactic treatments, that the fish were taken off of reuse in order for them to recover. Possibly the change in how this system is operated (no backwashing) caused a buildup of the parasite. System I continues to be free of Ich problems so far. A 60 fish sample will be tested for viral, bacterial, and parasitic pathogens prior to release. *Kathy Clemens*
- 1.1.1.4. M&E – Six CWT groups of 30k each will be tagged for system contribution and early return groups. Also 29,500 PIT tags will be inserted; 1,500 for the Smolt Monitoring Program, 8,000 for CSS, and 20,000 for Dworshak evaluation. Prior to release 500 marked fish from each mark group (tag code) are checked for tag retention (ex. BY06 = 82.6%). Also 500 fish are checked for LV clip and AD clip quality. Each

pond with un-clipped fish is sampled (100 fish) for dorsal fin erosion and presence of AD fins. *Howard Burge / Carrie Bretz*

- 1.1.1.5. Research Requests – FPC requested 1,500 steelhead PIT tagged for the Smolt Monitoring Program. New for 2008 releases 8,000 steelhead were PIT tagged for the Comparative Survival Study (CSS).

**1.1.2. Clearwater** - *Original design memorandum shows the production goal may be as high as two million steelhead smolts. Historically, the steelhead smolt releases from Clearwater Fish Hatchery have ranged from approximately 600 to 1.04 million. Adult return goal for the program is 14,000 steelhead.*

- 1.1.2.1. Production status / projected release - The estimated number of BY07 steelhead to be released in the spring of 2008 is 820,100. 248,500 AD-clip and 62,800 no ad-clip production into the lower SF Clearwater, 235,600 no ad-clip and 227,600 ad-clip production will be released into the upper SF Clearwater River and 45,600 no ad-clip into Lolo Creek pursuant to the US v. Oregon 2006-2008 Interim Management Agreement. **(Table 1)**

*Jerry McGehee*

- 1.1.2.2. Fish health status - For Egg Disease Certification, all females are sampled (individually) for viral replicating agents. Eggs from any females that test positive are destroyed, and only eggs that test negative for IHNV are taken to CFH. Juvenile rearing inspections are performed quarterly by Eagle Fish Health Lab. No prophylactic treatments are used during steelhead rearing. Inspections are conducted quarterly. No pathogens detected to date on inspection sampling. Diagnostics on demand. Pre-liberation samples performed on 20 fish sample prior to release. Viral pathogens have not been detected in these fish. *Flavobacterium psychrophilum, Aeromonas hydrophila, and Aeromonas sobria* were detected in all fish sampled in the outdoor raceways after these fish were marked. Mortality was not high enough to warrant treatment. *Doug Munson*

- 1.1.2.3. M&E - The fish are sampled monthly between the 25th and 28th of the month. During months of rapid growth, fish are sampled biweekly. Pound counts are taken to track fish growth and monitor if growth is following the annual growth projections. Length frequencies are taken monthly. Approximately 30 days prior to release, 100 fish are sampled to quality check adipose (Ad) fin clips, ventral fin clips, and coded wire tag (CWT) retention. *Jerry McGehee*

**1.1.3. South Fork Un-clipped Releases** - *533,000 un-clipped steelhead is the program goal for SF Clearwater releases stated in the harvest agreement between the States, Tribes and Federal parties. The agreement of releasing un-clipped fish was to offset reductions in down-river Tribal fisheries. The principle is that the returning un-clipped adult steelhead will escape the sport fishery therefore return at higher numbers to tributaries, to hopefully spawn, thereby increasing natural production.*

- 1.1.3.1. Production status – See Dworshak NFH and Clearwater FH for information.

- 1.1.3.2. Projected release – An estimated 344,000 unclipped steelhead from Clearwater Hatchery will be released into the South Fork tributaries and

Lolo Creek. IDFG and the NPT will coordinate the transport of the Lolo Creek release group. Approximately 200,000 unclipped steelhead from Dworshak NFH will be released into Newsome Creek and American River (50:50 split). The COE will transport the steelhead to American River and Newsome Creek and the NPT will assist with release site logistics. (**Table 1**) *Howard Burge*

- 1.1.3.3. M&E - Broodyear 03, 04 and 05 steelhead were uniquely marked by the FWS-IFRO with PIT, CWT, and elastomer tag groups to evaluate acclimated vs. direct release effects and upriver versus downriver groups. FWS will be analyzing tributary of release effect by comparing Red R (upriver) to Mill/Meadow (downriver). IFRO is also evaluating if unclipped steelhead perform differently than production steelhead by comparing Red River unclipped and production releases as paired release. Additional monitoring includes determination of any un-clipped steelhead straying into and spawning in wild production areas such as the Lochsa or Selway basins. The last release year of uniquely marked fish for this study was 2007, however evaluation of returning adults will continue through 2009. *Howard Burge*

## 1.2. Broodyear 2008 Steelhead

### 1.2.1. Dworshak

- 1.2.1.1. Projected adult return - Based average return rates, the predicted steelhead return to Dworshak NFH in 2007-2008 should be about 6,895. (**Table 2b**). *Howard Burge*
- 1.2.1.2. Ladder operation - The ladder was open October 1-11, 2007 and reopened October 18-19 for collection of early-return steelhead. During this period there were 503 early-run steelhead collected for spawning in the spring of 2008. The ladder was reopened two-three days/week until November 26 to collect coho. There were 1,057 excess adult steelhead trapped which were outplanted to Hog Island. There were also fall Chinook trapped along with the steelhead and coho at this time. Based on the steelhead returns we are planning on intermittent ladder operation in the spring of 2008 to prevent excess fish collection. This also keeps steelhead in the river where they are available for sport and tribal harvest and allows us to spawn fish that have not been held in the hatchery for more than a few days. Ladder operation may be modified in-season if weekly goals are not met. The ladder will be reopened February 22, 2008 for the collection of mid and late returning steelhead. *Thomas Trock*
- 1.2.1.3. Adult fish health – 75 males were injected with the hormone sGnRHa prior to spawning, using the implant form, under INAD. Fish are treated three times per week with formalin for fungus, under a veterinary prescription. A minimum of 60 tissues samples, and 150 ovarian fluid samples will be collected at spawning and assayed for viruses, bacteria, and parasites. *Kathy Clemens*
- 1.2.1.4. Adult outplanting/markings – Ladder opening for collection of spring returns is not planned until February 23. Any excess steelhead collected will be put in a separate holding pond until the NPT outplant them in SF

Clearwater River tributaries. These fish will all be marked with left opercle v-notch. The outplanting schedule will be coordinated with Mike Key, NPT. Due to the planned intermittent ladder operation in 2008 we will need to expand the number collected to estimate what the rack return would have been if we had not closed the ladder. Like 2003-06 we will use the average conversion between Lower Granite and Dworshak NFH to estimate 2 & 3-ocean hatchery 'B' steelhead. *Howard Burge*

- 1.2.1.5. Carcass disposition - Carcasses fit for human consumption from spawning and culling activities will be provided to a processor to be packaged for human consumption under either a Food Bank program or a cooperative program with the Federal Bureau of Prisons. Inedible carcasses will be disposed of using the Idaho Fish and Game bear trapping program or similar alternatives. *Thomas Trock*
- 1.2.1.6. Adult M&E – System contribution, and early return CWT are being recovered for all three age classes. FWS-IFRO is radio tagging un-clipped dorsal eroded adult steelhead and VIE identified fish at Lower Granite Dam to evaluate returns from the supplementation program. Returning adults are measured and examined for gender, various clips and tags, and seal bites or other injuries, then sorted for spawning or holding. *Howard Burge / Carrie Bretz*
- 1.2.1.7. Spawning/egg take plans, mating protocol - Current plans are to take ~2.75 million eyed eggs for Dworshak, ~1.3 million green for Clearwater and ~1.5 million green for Magic Valley. Potlatch will receive approximately 18,000 green eggs. **Table 3.** *Thomas Trock*
- 1.2.1.8. Juveniles Production - Incubation: Dworshak will incubate eggs from approximately 620 steelhead females for its program, 150 fall-return adults and 470 from winter and spring returns. After eye-up and enumeration, approximately 2.75 million eyed eggs will go into the Dworshak program. Dworshak will also provide incubation space for up to 1.4 million green eggs for Clearwater Fish Hatchery. *Thomas Trock*  
Nursery Rearing: Dworshak will early-rear 2.5 million steelhead in its nursery until the fish reach approximately 100 fpp during the spring and summer of 2008. The nursery will be empty by August 1, 2008 due to roof/building construction.  
Outside Rearing: Approximately 2.35 million steelhead will be moved from nursery tanks to 82 outside Burrows Ponds from the end of May until August 1, 2008. Fish will be ponded at final rearing densities, ~28,500 fish/pond. Most steelhead transferred outside will receive an adipose-fin clip when ponded to designate it as a hatchery fish. *Thomas Trock*  
SF releases – Approximately 200,000 of Dworshak NFH reared steelhead are programmed for SF Clearwater tributary releases as part of the US v. OR supplementation agreement. *Howard Burge*
- 1.2.1.9. Juvenile Fish health - Upon ponding, will be monitored for coldwater disease and parasites. A 60 fish sample will be tested for viral, bacterial, and parasitic pathogens prior to release. *Kathy Clemens*

- 1.2.1.10. Planned juvenile marking & tagging, release sites - Marking plans for BY07 steelhead at Dworshak NFH are found in **Table 4**. *Howard Burge*
- 1.2.1.11. Juvenile M&E FWS will be CWT 150,000 steelhead total from the three systems and early return progeny. The CWT groups are increased from 6 groups of 20K to 6 groups of 30k to increase CWT collection because of the intermittent ladder operation. Additional steelhead will receive PIT tags; 1,500 for SMP, 8,000 for CSS, and 20,000 for Dworshak evaluation. *Howard Burge / Carrie Bretz*
- 1.2.1.12. Research Requests –
- Rolf Ingerman, U of Idaho requested 0.4-0.5 ml of milt from 50 males and 600 eggs from 20 females for sperm motility research.
  - Matthew Campbell, IDFG requested fin clip samples from all remaining adult steelhead spawned at Dworshak (for all programs). He is investigating the utility of a parentage-based genetic tagging program for Snake River steelhead hatcheries. This involves the annual genotyping of all broodstock at each hatchery, creating a parental genotype database. Progeny from any of these parents (either collected as juveniles or returning adults), if genotyped, could be assigned back to their parents, thus identifying the hatchery they originated from and exact brood year they were produced in. *Howard Burge*
- 1.2.1.13. Communication FWS puts out weekly spawning reports and weekly return reports, and annual spawning and adult return reports are also produced.
- 1.2.2. Kooskia**
- 1.2.2.1. Weir/trap operation - The adult trap will be opened sometime in mid-March 2008 for BY 2008 SST adult collection. The trap will remain opened until late April. *Howard Burge*
- 1.2.2.2. Adult handling/outplanting/markings - All natural (unmarked) fish will be passed upstream of the weir. CWT steelhead will be sacrificed for tag recovery. Adult hatchery steelhead (not taken for CWT) will be loaded into NPT truck for outplanting at time of sorting; NPT contact will be Steve Rodger for spring outplants. Outplanted steelhead will be given a right opercle v-notch. Any Tribal requests for steelhead will be coordinated through Nancy McAllaster, NPT (208-843-7320 ext.2445). Other native species (bull trout, suckers, whitefish etc.) trapped will be passed upstream above the weir. *Ray Jones / Carrie Bretz*
- 1.2.2.3. M&E - Returning adults are measured and examined for gender, various clips and tags, and seal bites or other injuries, then sorted for spawning or holding. CWT steelhead will be sacrificed for tag recovery. No steelhead evaluation is planned at Kooskia at this time. *Howard Burge / Carrie Bretz*
- 1.2.3. Clearwater**
- 1.2.3.1. Clearwater Hatchery - BY08 smolt release has been set at 843K including 360K for tribal supplementation. 1,252,900 green eggs are requested for Clearwater Hatchery. **Table 3**. All spawning will occur at DNFH. Our

- expected first spawn date for Clearwater Hatchery egg collection is March 4. Spawning occurs on every Tuesday. When possible 1:1 male:female spawning will be used. On spawning days, eggs taken for CFH and Magic Valley will be from fresh fish that have entered DNFH trap since the last spawning day or fish that were green (not ripe) on previous spawning days and returned to the holding pond. Incubation to eyed stage of eggs destined for CFH production will occur at Dworshak Hatchery. All eggs from positive IHNV parentage will be culled at this point. At Dworshak Hatchery, the eggs will be shocked and then transferred to Clearwater Hatchery where they will be disinfected and placed in Heath egg trays. They will be picked and enumerated the next day. The eggs will then be placed in Heath egg trays for the remaining incubation period. The fry remain in the indoor vats until they are approximately 35 fish per pound. Each vat is loaded with approximately 45k swim-up fry. *Jerry McGehee*
- 1.2.3.2. Magic Valley - 1,326,600 green eggs are requested for Magic Valley and Hagerman NFH. **Table 3.** Our expected first spawn date for these hatcheries is March 18. Eggs are taken to CFH Isolation Incubation each spawning day where they are held until certification of disease status. The isolation incubation building will be used to house and incubate the Dworshak B strain steelhead eggs destined for Magic Valley/Hagerman NFH. Eggs will be received on three different spawning days and held until the fish pathology lab determines virus results. Each female will be tested for viral replicating agents. At that time, positive IHNV eggs will be destroyed and the negative will be picked, enumerated, and shipped to Magic Valley. *Jerry McGehee*
- 1.2.3.3. Fish health – Each female spawned at Dworshak NFH (eggs to be reared at Clearwater Hatchery) will have either ovarian fluid sample or kidney/spleen tissue samples taken, shipped to Eagle Fish Health Lab, and tested for viral replicating agents; only negative tested eyed eggs are transferred to Clearwater Fish Hatchery main incubation for rearing at CFH. Tissues samples (kidney/spleen) will be from at least 30 females. All eggs from virus positive females will be culled from production. Juvenile rearing inspections will be performed each quarter and diagnostic examination on demand by Eagle Fish Health Lab. Pre-liberation inspections will also be performed on a 20 fish sample within 45 days of liberation. No prophylactic treatments are planned at this time. *Doug Munson*
- 1.2.3.4. Marking plans - Plans for BY08 steelhead from Clearwater hatchery are found in **Table 4.** As fish are moved outside, they receive ad-clips, ventral fin clips, and test groups receive CWT's. Fish will remain there until they are full smolt size and age, maximum of 4.5 to 6.0 fish per pound. (Raceways are loaded with approximately 50,000 -70,000 fish). In February or March, 20,000 fish are injected with PIT tags for LSRCF evaluation. *Tom Rogers*

### 1.2.4. South Fork Un-clipped Program

- 1.2.4.1. Planned rearing / juvenile marking & tagging – See Dworshak NFH and Clearwater FH for information.

## 2. SPRING CHINOOK SALMON

*The total adult return goal for Dworshak NFH and Clearwater Hatchery is 21,135 spring Chinook over Lower Granite Dam. Currently Kooskia NFH and NPTH do not have established adult return goals. Broodstock needs for all facilities total 4,610 adults, specifically: 1,200 for Dworshak, 800 for Kooskia, 1,860 for Clearwater, 750 for NPTH. Additional details are listed in the pertinent sections below.*

### 2.1. Broodyear 2006 Spring Chinook

**2.1.1. Dworshak** – *Approximately 1,200 Chinook are needed for broodstock for the Dworshak spring Chinook salmon program. This number includes jacks and accounts for pre-spawning mortality. This brood level will provide 1.5 million green eggs and 1.05 million smolts at an average of 89% eyed egg-to-smolt survival to meet the adult return goal of 9,135 to the river above Lower Granite Dam.*

- 2.1.1.1. Production status - On January 1, 2008, there were 972,264 BY06 spring Chinook averaging 31 fpp and 121 mm (4.8 inches) total length on station. At present, these fish appear to be on schedule to meet the size-at-release requirements of 18–20 fish per pound. *Thomas Trock*
- 2.1.1.2. Projected release – In March 2008, projected release will be approximately 950,000 spring Chinook. Chinook will be released (forced out of raceways) on two consecutive evenings from A and B banks in mid to late March with a number of environmental factors considered: flows, turbidity, and an increasing hydrograph,– to give fish as much cover from predators as possible. *Thomas Trock (Table 5)*
- 2.1.1.3. Fish health - BY06 SCS were doing very well up to two weeks ago. Fish went off feed and it was discovered that they were being fed food manufactured in July. This may have contributed to inflamed GI tracts and some Hexamita infections. It was recommended that fish be placed back on newer food. There is now less inflammation in the hind gut and fish are improving. Because fish were not eating, there was a build-up of food and debris in the raceways. This has resulted in swollen gills and, in some cases, Bacterial Gill Disease, which required a Chloramne-T treatment. Monthly monitoring samples for BKD are currently being taken. A pre-release exam of 60 fish will be sampled for viral and bacterial pathogens prior to release. *Kathy Clemens*
- 2.1.1.4. M&E - Approximately 130,000 Dworshak stock are CWT for system contribution monitoring. Prior to release 500 marked fish from each coded-wire tag code are checked for tag retention (BY06 = 99.1 %).
- 2.1.1.5. Research Requests –
- 52,000 Dworshak spring Chinook salmon are PIT tagged by the FWS Columbia River Fisheries Program Office (Vancouver) for Dworshak’s contribution to the Comparative Survival Study (CSS).

- A COE/NOAA study requested 166,000 spring Chinook salmon smolts to be PIT tagged to estimate hydrosystem latent mortality associated with barge and in-river life history strategies. 60,000 of these would have also been coded-wire tagged to estimate the adult return of PIT tagged fish and the loss of PIT tags after smolts enter the ocean, in response to concerns and information needs expressed by the Nez Perce Tribe. This project was denied due to the above mentioned fish health problems.
- Kintama Research Corp. and Univ. of BC has conducted a Pacific Ocean Shelf Tracking Project which applied acoustic tags and monitored the early marine survival of spring Chinook salmon in 2005, 2006, and 2007. For 2008 they requested 1,000 spring Chinook salmon smolts for sonic tagging: 400 to represent barging, 400 to represent in-river migration, and 200 as controls to measure tag retention. *Howard Burge / Ray Jones*

**2.1.2. Kooskia** - *Approximately 800 Chinook are needed for broodstock for the Kooskia spring Chinook salmon program. This number includes jacks and accounts for pre-spawning mortality. This brood level produces 600,000 smolts at an average 80% eyed egg-to-smolt survival.*

- 2.1.2.1. Production status - There are 654,853 Kooskia spring Chinook fry at Kooskia NFH weighing 15,992 lbs, 4.33 inches or 110 mm long, at 40.9 fish/lb (fpp). The Burrows ponds were put on Clear Creek water October 10, 2007. Chinook will be split from Burrow's ponds into raceways late January, 2008. *Adam Izbicki*
- 2.1.2.2. Projected release - KNFH will direct release an estimated total of 653,000 Spring Chinook at 25-30 fpp on or after the last week in March. (**Table 5**) *Adam Izbicki*
- 2.1.2.3. Fish health – Treated for *Ich* in late summer 2007. Monthly monitoring samples for BKD are currently being taken. A sample of 60 fish will be taken and assayed for virus, bacteria, and parasites prior to release. *Marilyn Blair*
- 2.1.2.4. M&E – Approximately 100,000 Kooskia stock are CWT for production contribution monitoring. Prior to release 500 marked fish from each mark group (tag code) are checked for tag retention (BY06 = 96.3 %). 10,000 Kooskia stock Chinook will be PIT tagged for the 2008 release for juvenile and adult monitoring. *Howard Burge*
- 2.1.2.5. Research Request - The Corps requested 3,000 spring Chinook smolts to test a Removable Spillway Weir at Lower Monumental Dam. The tests employ the use of balloon tags for fish recovery and would effectively result in mortality and removal of the fish from production. *Howard Burge / Ray Jones*

**2.1.3. Clearwater** - *Approximately 1,860 Chinook are needed for broodstock for the Clearwater Fish Hatchery spring Chinook salmon program. This number includes 1,020 for Powell, 840 for the SF program and also accounts for pre-spawning mortality. Original design memorandum shows the production goal may be as high as three million Chinook smolts. Historically, Chinook releases from*

*Clearwater have ranged up to approximately 1.98 million smolts, 1.65million presmolts and 1.0 million parr. Adult return goal for the program is 12,000 adult Chinook over Lower Granite Dam.*

- 2.1.3.1. Production status/transfer date/projected release – Fish will be released from transportation trucks at designated release sites. The release number is determined by subtracting fish loss from the inventory at the time of Ad clipping. Red River, Powell, and Crooked River acclimation ponds will be watered up and screens put in place by the third week of March. Fish will be transported to the facility and placed in the pond during the last week of March to first week of April. Smolts are then released directly from the ponds between April 10 and 15. At Crooked River smolts will be released directly from the ponds between April 7 and 15 or daily if intake ice-up problems are anticipated. Due to unknown causes, a significant mortality has occurred to smolts somewhere between the upper and lower facilities during the spring of 2004 and 2005. During Spring 2008, 80% of the Crooked River full-term smolts will be direct released at the lower facility. All production Chinook are Ad clipped. During the first week of April (dates) the NPT will transport approximately 262,500 smolts to the Selway River for release near the mouth of Meadow Creek. Transport should be coordinated with Steve Rodgers. Planned releases of BY06 spring Chinook smolts are for 1,858,400 fish at an expected 16-20 fish per pound (103,245 pounds of fish). (**Table 5**) *Jerry McGehee*
- 2.1.3.2. Fish health – Brood Powell Spring Chinook: IHNV was detected in 20/60 pools (3 fish per pool) of ovarian fluids (60 fish sampled). These positive detections were reported to the APHIS veterinarian-in-charge. ELISA sampling detected 3 Highs (1.2%) out of 242 fish sampled. Eggs from females with high ELISA values were culled from the Clearwater Chinook salmon program. Prespawning mortality was at 5.25%.  
Broodyear 2006 Powell: Pathogens have not been detected in these fish to date during routine sampling.  
Brood S. F. Clearwater Spring Chinook: IHNV was detected in 5/60 pools (3 fish per pool) of ovarian fluids. These positive detections were reported to the APHIS veterinarian-in-charge. ELISA sampling detected 33 Highs (5.4%), out of the 607 females sampled. Eggs from females with high ELISA values were culled from the Clearwater Chinook salmon program. Prespawning mortality was at 4.5%.  
Broodyear 2006 S. F. Clearwater Spring Chinook: No pathogens have been detected during routine sampling.

#### Juvenile

- Rearing inspections – Quarterly inspections are performed by Eagle Fish Health Lab. No pathogens detected in regular monthly inspections except for 1 DFAT positive for *Renibacterium salmoninarum* in the South Fork of the Clearwater spring Chinook salmon.

- Pre-liberation inspections – These inspections are performed by Eagle Fish Health Lab within 45 days of release.
  - Pre-emptive – 1 Erythromycin medicated feed treatments throughout rearing cycle.
  - Three raceways received NO treatment as part of University of Idaho and IDFG Research.
  - Quarterly inspections. Pre-liberation prior to release at Satellites (20 fish samples). *Doug Munson*
- 2.1.3.3. M&E - The fish are sampled monthly between the 25th and 28th of the month. During months of rapid growth, fish are sampled biweekly. Pound counts are taken to track fish growth and monitor if growth is following the annual growth projections. Length frequencies are taken monthly. Approximately 30 days prior to release, 100 fish are sampled to quality check Ad clips, ventral fin clips, and CWT retention. *Jerry McGehee*
- 2.1.3.4. Research Request – Because of the denied Dworshak request (pg. 10). The COE / NOAA research team has proposed PIT tagging spring Chinook salmon at Clearwater Hatchery. This request will be allowed with a CWT Powell group of ~69,000 Chinook, to provide additional information on any PIT tag mortality.
- 2.1.4. Nez Perce Tribal Hatchery/Clearwater Hatchery**
- 2.1.4.1. As of February 19, 2008, there were 126549 BY06 spring Chinook averaging 20.30 fpp on station. These fish are being reared in the west “S” channel at NPTH. Target size at release is 18 fpp.
- 2.1.4.2. Projected release – In late March-early April 2008, these fish will be released directly into the Clearwater River. In preparation for release both sections of the “S” channel release structure will be set up and operational to provide a pool in the upper section of the release structure. Release will occur in the evening with a number of environmental factors considered: flows, turbidity, and an increasing hydrograph,– to give fish as much cover from predators as possible. *Steve Rodgers (Table 5)*
- 2.1.4.3. Fish health - Fish are doing well except for a Trichodina/Epistylis infection. Water is currently too cold to treat with formalin. Fish will be examined at a later date when the water is warmer to see if there will be a treatment needed. A pre-release exam of 60 fish will be sampled for viral and bacterial pathogens prior to release. *Kathy Clemens*
- 2.1.4.4. M&E – These fish were 100% marked with 36% receiving a CWT (61-27-17) and an adipose fin clip, 64% a CWT only (61-27-13), and 1,100 PIT tags.

## **2.2. Broodyear 2007 Spring Chinook**

### **2.2.1. Dworshak**

- 2.2.1.1. Production status - All of Kooskia stock spring Chinook eggs were shipped to Kooskia NFH during October-November, 2007. On January 1, 2008, there were approximately 1.1 million Dworshak stock eggs/sac-fry

incubating at Dworshak. In the spring of 2008, Dworshak stock will be ponded directly into raceways at Dworshak. *Thomas Trock*

2.2.1.2. Fish health status - BY07 has experienced no problems to date. 60 fish will be sampled prior to release. *Kathy Clemens*

2.2.1.3. M&E Approximately 130,000 Dworshak stock will be CWT in August for contribution monitoring (**Table 6**). Tagging plans also include 52,000 PIT tags for the Comparative Survival Study (CSS). The CSS is looking at adult survival of transported vs. non-transported and up-river vs. down-river releases. *Howard Burge*

### 2.2.2. Kooskia

2.2.2.1. Production status - Kooskia stock BY07 spring Chinook eggs were taken from a total of 136 females spawned with a total of 112 males. This produced an estimated total of 476,000 green eggs. All of the Kooskia stock were transferred to KNFH between October 29 and November 5, 2007. Due to low numbers of returning BY 07 Kooskia SCS adults, 265,000 Dworshak stock SCS eggs were brought to Kooskia NFH on Oct 29th to insure full production capacity at Kooskia NFH. Eggs were incubated on creek water, at temperatures of approximately 36°F.

Normally eggs all hatch out by mid January. The eggs will be incubated on chilled well water to prevent silt problems due to spring runoff and to protect the sac fry from ICH until tanking and feeding in late March.

Kooskia has approximately 100,000 extra Dworshak stock eggs it cannot rear to smolts. The NPT will transfer these extra Dworshak stock fish to NPTH site 1705 before June 15, 2008. Approximately 446k Kooskia stock and 161,000 Dworshak stock will be reared to ~25-20 fpp. These fish will be released April 2009. *Adam Izbicki*

2.2.2.2. Fish health status - BY07 has experienced no problems to date, 60 fish will be sampled prior to release. *Marilyn Blair*

2.2.2.3. M&E - Adult monitoring for the ISS will continue, as will monitoring of the Kooskia weir. Current plans are to CWT 100% of Dworshak stock (161,000) in August, 2008 for contribution (**Table 6**) and 10,000 Kooskia stock smolts will receive PIT tags in February, 2009. *Carrie Bretz / Howard Burge*

### 2.2.3. Clearwater

2.2.3.1. Production status – The proposed number of Clearwater Fish Hatchery fish to be allocated from brood year 2007 is 2.135 million smolts, a currently unknown number of pre-smolts for NPTH , and 300k parr. *Jerry McGehee*

2.2.3.2. Estimated numbers/planned marking & tagging - All production Chinook are Ad clipped. Planned releases of BY07 Chinook are for 2,135,000 smolts 15-20 fish per pound. (This does not include a TBD # at fish marking that will be transferred to NPTH in Sept 2008 but does include 335k Powell pre-smolts being used for Flow Index study rearing to FTS.) The NPT will transfer the extra Clearwater stock fish to NPTH site 1705 during September 2008. NO pre-smolts and 300K parr 30-50 fpp will be released from transportation trucks at designated release sites. Red River,

Powell, and Crooked River acclimation ponds will be watered up and screens put in place by the third week of March each year. Fish will be transported to the facility and placed in the pond during the third week of March. Smolts are then released directly from the ponds between April 1 and 10. The NPT will transport and release 300,000 smolts directly into the lower Selway River near the mouth of Meadow Creek. **(Table 6) Tom Rogers**

2.2.3.3. Fish health status – Brood Powell Spring Chinook: IHNV was detected in 12/78 (sampled individually) of ovarian fluids and kidney/spleen tissues. These positive detections were reported to the APHIS veterinarian-in-charge. ELISA sampling detected 8 Highs (1.52%) of the 526 females spawned. Eggs from females with high ELISA values were culled from the Clearwater Hatchery Chinook salmon program. Prespawning mortality was at 5.83% in 2007.

Brood S.F. Clearwater Spring Chinook: IHNV was detected in 0/28 of ovarian fluids and kidney/spleen tissues. These detections were reported to the APHIS veterinarian-in-charge. ELISA sampling detected 2 Highs (1.4%) of the 142 females sampled. Eggs from females with high ELISA values were culled from the Clearwater Hatchery Chinook program. Prespawning mortality was at 22.3% in 2007.

Eggs- Disease Sampling: When the females are spawned, kidney samples are collected from all females; ovarian samples are collected from 60 and kidney/spleen tissues from at least 30 females (viral replicating agent analysis) as well as head wedges from 20 fish for disease testing. All samples are air freighted weekly to the Eagle Fish Health lab for analysis. Females are screened for BKD using ELISA techniques. Females with optical densities (OD) over 0.25 are culled.

#### Juvenile

- Rearing inspections – quarterly inspections are performed by Eagle Fish Health Lab
- Pre-liberation inspections – These inspections are performed by Eagle Fish Health Lab
- Pre-emptive – 1 Erythromycin medicated feed treatments throughout rearing cycle.
- Three raceways will receive NO treatment as part of University of Idaho and IDFG Research.
- Quarterly inspections. Preliberations prior to release at Satellites (20 fish samples). *Doug Munson*

2.2.3.4. M&E - The fish are sampled monthly between the 25th and 28th of the month. During months of rapid growth, fish are sampled biweekly. Pound counts are taken to track fish growth and monitor if growth is following the annual growth projections. Length frequencies are taken monthly. Approximately 30 days prior to release, 100 fish are sampled to quality check Ad clips, ventral fin clips, and CWT retention. *Brian Leth*

**2.2.4. Nez Perce Tribal Hatchery** *Approximately 750 spring Chinook salmon adults are needed for broodstock for the Nez Perce Tribal Hatchery spring Chinook*

*program. This number includes jacks and accounts for pre-spawning mortality. This brood level will provide for a target release of 75,000 presmolts from Newsome Creek (South Fork Clearwater River) acclimation facility, 150,000 presmolts from Yoosa/Camp (Lolo Creek) acclimation facility and 400,000 parr into Meadow Creek (Selway River).*

2.2.4.1. Production status – A total of 159 adults and 115 jack spring Chinook were trapped at Nez Perce Tribal Hatchery facilities in 2007: Lolo Creek (56 adults, 4 jacks), Newsome Creek (34 adults, 19 jacks), Site 1705 (69 adults, 92 jacks). In addition, 89 adults were obtained from Dworshak for backup broodstock. Of these, 78 females were spawned: Lolo Creek (19), Newsome Creek (1), DNFH (43) and Site 1705 (15) and yielded approximately 299,997 eyed eggs. Throughout all phases of incubation, water temperatures were controlled to meet the following temperature regime: Aug. 10<sup>th</sup> - 9° C (48.2° F); Sept. 15<sup>th</sup> – 6.5° C (43.7° F); Sept. 30<sup>th</sup> – 6.0° C (42.8° F); Oct. 15<sup>th</sup> thru Feb. 15<sup>th</sup> – 4.0° C (39.2° F). At approximately 600 temperature units (TU's) eggs are shocked and machine sorted the following day. As of February 19, 2008, a total of 293,855 sac fry were on hand at NPTH. Targeted 2008 releases: (**Table 5**).

- 150,000 presmolts (acclimated) into Yoosa/Camp/Lolo Creek in October
- 75,000 presmolts (acclimated) into Newsome Creek in October
- 40,000 parr (direct stream) into Meadow Creek (lower) in June

The NPT will transfer Dworshak stock broodyear 2007 spring Chinook from Kooskia NFH before June 15, 2008 (section 2.2.2.1). Fish will be reared in the outside ponds or linear raceways until late-March or early-April 2009 and released at approximately 20 fpp. The NPT will transfer Clearwater stock broodyear 2007 spring Chinook from Clearwater FH during early September 2008 (section 2.2.3.2). Fish will be reared in the NATURES "S" channels or linear raceways until late-March or early-April 2009 and released at approximately 20 fpp.

Targeted 2009 releases:

- 100,000 Dworshak stock, smolt (direct stream) into Clearwater River in late-March or early-April
- Extra Clearwater stock, smolt (direct stream) into Clearwater River in late-March or early-April *Steve Rodgers*

2.2.4.2. Estimated numbers/planned marking & tagging – Fish destined for release from acclimation facilities will be marked (CWT) at approximately 180 fish per pound (2.52 g) in late April to early May, held in production room tanks or raceways at NPTH. Post marking, the Newsome Creek fish will be transferred to Sweetwater Springs held until early September and then transferred to the Newsome Creek AF for acclimation and final rearing. Lolo Creek fish will be held at NPTH until late August-early September and then transferred to Yoosa/Camp AF for acclimation and final rearing. NPT M&E staff will develop a marking and tagging plan for the extra spring Chinook from Clearwater and Kooskia Hatcheries. *Steve Rodgers*

2.2.4.3. Acclimation facility operations/release –

- Yoosa/Camp – Transfer of the fish will occur in late August (when water temperatures cool). Facility will be set-up and operational at least 2 days prior to transfer of fish. Prior to release, 9,000 fish will be tagged with a PIT tag. Volitional release will commence on October 1, with all fish forced out by October 13, 2008. Target size at release is 34 fish per pound (13.3 g). **(Table 5)**.
- Newsome Creek – After marking, fish will be transferred to the Sweetwater Spring facility, held until late August/early September (when water temperatures cool) and then be transferred to the Newsome AF facility. Prior to release, 6,000 fish will receive a PIT tag. Volitional release will commence October 2, with all remaining fish forced out by October 14, 2008. Target size at release is 29 fish per pound (15.6 g). **(Table 5)**.
- Meadow Creek – Due to NPTH facility limitations, there will be approximately 40,000+ parr for release into Meadow Creek in 2008. Prior to release, 5,000 fish will receive a PIT tag. On June 16, 2008, the spring Chinook salmon parr will be transported and direct stream released via helicopter into the lower 16 miles of Meadow Creek, Selway. Target size at release is 117 fish per pound (3.9 grams). **(Table 5)**. *Steve Rodgers*

2.2.4.4. Fish health status – A total of 30% of the fish sampled were positive for IHNV. No eggs were culled because no females had a high ELISA value. *Kathy Clemens*

2.2.4.5. M&E -

- Tag retention and delayed mortality – Estimate CWT delayed mortality rates within 5 days of tagging. Estimate CWT retention rates 25-35 days after tagging. Estimate PIT tag retention rates and delayed mortality within 5 days of tagging.
- PIT survival studies- Estimate smolt survival rates and migration timing **(Table 6)**.
- Downstream migration – Operate rotary screw traps within Meadow Creek, Lolo Creek and Newsome Creek to monitor movement, timing, condition factors, and population estimates. *Sherman Sprague*

2.2.4.6. Communication - NPTH produces monthly production and pathology reports. Fish Research produces weekly weir reports, final weir summary report, spawning ground summary reports, and SURPH survival summary reports.

### 2.3. Broodyear 2008 Spring Chinook

#### 2.3.1. Dworshak

2.3.1.1. Projected adult returns - Based on 2007 draft tribal harvest, sport harvest data, and rack returns and ocean conditions during emigration; the forecasted return for Dworshak BY08 adult spring Chinook to the Clearwater River is 6,769 fish, by regression method **(Table 7a)**. Given

this prediction FWS is optimistic that they will meet broodstock requirements. It's likely IDFG and the NPT will open sport and tribal fisheries in the Clearwater River in the spring of 2008 after dam counts of PIT tagged adults verify the estimates. *Howard Burge / Billy Connor*

- 2.3.1.2. Ladder operation – Ladder opening will be influenced by possible fisheries openings and in-season run projection adjustments. If fisheries are open and the run looks good the ladder may be opened around the first of June to collect ~200 Chinook and then closed until July, when regular spring Chinook trapping would begin. If the run estimate is close to our prediction or total brood needs we will likely open the ladder the end of June and leave it open to maximize collection of Dworshak broodstock and brood for other facilities. The NPT requested that adult spring Chinook in excess of DNFH broodstock requirements be provided for broodstock at NPTH. The Service will notify Steve Rodgers and Becky Johnson. *Howard Burge*
- 2.3.1.3. Adult outplanting / distribution plans – **Table 8a** list the priority of streams to receive adult spring Chinook salmon. Outplanting will be coordinated between Mike Key (NPT) and Howard Burge (FWS). All adults outplanted from Dworshak will receive a left opercle v-notch as shown in **Table 8b**. *Howard Burge*
- 2.3.1.4. Adult M&E Returning adults are measured and examined for gender, various clips and tags, and seal bites or other injuries, then sorted for spawning or holding. The last ISS release was in 2004 and returns from that group will be complete in 2008. The plan is to continue ISS monitoring until 2009. *Carrie Bretz*
- 2.3.1.5. Spawning plans Dworshak will spawn 350-425 females for its program and 250-300 females for Kooskia's program. *Thomas Trock*
- 2.3.1.6. Egg Incubation All eggs taken for Kooskia and Dworshak will be initially incubated at Dworshak. After eye-up and enumeration, all of Kooskia eggs will be shipped to Kooskia for final incubation. All of Dworshak eggs will be incubated at Dworshak. *Thomas Trock*
- 2.3.1.7. Fish health – Every adult female will be sampled individually for BKD with ELISA. Up to 150 ovarian fluid samples (3 pool) will be sampled for viruses. An additional 60 tissue samples will be taken for bacteria assays, and 20 samples for *Myxobolus cerebralis* and *C. Shasta*. Eggs from high and medium ELISA level females will be culled; exact level will depend upon number of fish returning. *Kathy Clemens*
- 2.3.1.8. Communication FWS puts out weekly spawning reports and weekly return reports, and annual spawning and adult return reports are also produced.
- 2.3.2. Kooskia**
- 2.3.2.1. Projected adult returns - Based on 2007 draft tribal harvest, sport harvest data, and rack returns and ocean conditions during emigration; the forecasted return for Kooskia BY08 adult spring Chinook to the Clearwater River is 2,515 fish, by regression method (**Table 7a**). Given this prediction FWS is optimistic that they will meet broodstock

requirements. It's likely IDFG and the NPT will open sport and tribal fisheries in the Clearwater River in the spring of 2008 after dam counts of PIT tagged adults verify the estimates. *Howard Burge / Billy Connor*

- 2.3.2.2. Trap operation – Trap will be opened for Chinook collection around the beginning of May. All natural returning adults will be released upstream for natural spawning in accordance with ISS protocol. Adults collected for broodstock will be transported to Dworshak for holding until spawning. *Howard Burge*
- 2.3.2.3. Adult outplanting / distribution plans - **Table 8a** list the priority of streams to receive adult spring Chinook salmon. Chinook loaded for adult outplanting will be loaded directly into NPT trucks at Kooskia. Outplanting will be coordinated between Mike Key (NPT) and Howard Burge / (FWS). All adults outplanted from Kooskia will receive two right opercle v-notches as shown in **Table 8b**. Tribal use of un-anesthetized jacks for the elder program will need to be coordinated prior to adult sorting. (NPT contact Nancy McAllaster, 208-843-7320 ext.2445)
- 2.3.2.4. Adult M&E Returning adults are measured and examined for gender, various clips and tags, and seal bites or other injuries, then sorted for spawning or holding. We also hope to have a PIT tag detector installed and operational on the adult trap intake by April. *Howard Burge*
- 2.3.2.5. Spawning plans - Kooskia spring Chinook BY 08 adult broodstock will be kept at Dworshak NFH. Spawning normally occurs the third week of August. Eggs collected that are in the low range of the BKD testing will be kept and the medium to high eggs are discarded. Jacks will be utilized for ~10% of the spawners. *Adam Izbicki*
- 2.3.2.6. Egg incubation - BY08 Kooskia stock (750k) eggs will be transferred to KNFH beginning of November after eye-up. Eggs will be incubated on chilled well water, approximately 38-40°F. Normally eggs all hatch out by mid January and are tanked mid March. *Adam Izbicki*
- 2.3.2.7. Fish Health - Every adult female will be sampled individually for BKD with ELISA. Up to 150 ovarian fluid samples (3 pool) will be sampled for viruses. An additional 60 tissue samples will be taken for bacteria assays, and 20 samples for *Myxobolus cerebralis* and *C. shasta*. Eggs from high and medium ELISA level females will be culled; exact level will depend upon number of fish returning. *Kathy Clemens*
- 2.3.2.8. Communication - FWS puts out weekly spawning reports and weekly return reports, and annual spawning and adult return reports are also produced.
- 2.3.3. Clearwater**
- 2.3.3.1. Projected adults returns – IDFG does not make formal pre-season forecasts of returns to the satellite facilities. The Technical Advisory Committee of US v Oregon has projected returns of Snake River spring/summer Chinook at Lower Granite Dam to be almost 4 times greater than than the 2007 pre-season forecast and just over 3 times greater than the actual numbers that returned in 2007. Nevertheless, depending upon in-season assessments of overall run strength and returns

to specific hatcheries based on analyses of counts and PIT tag detections at dams, IDFG may still seek sport harvest seasons. The State sport fishery will be managed to stay within allowable incidental take of ESA listed populations and for 50% of the harvestable share of adult spring Chinook. Real time predictions will be used to adjust the share. *Tom Rogers, Ed Schriever*

- 2.3.3.2. Trapping operations at satellite facilities - Spring Chinook will be trapped at the Crooked River and Red River weirs, which will be installed approximately the third week of March, prior to high water. Powell trap will go in around June 1. Trapping operations will continue until after September 1 and five consecutive days of zero fish are trapped. Proposed adult needs will be approximately 1,007 females and 1,007 males for Clearwater Hatchery allocations. NPT requested adult spring Chinook in excess of Clearwater broodstock requirements be available for broodstock at NPTH. Notify Steve Rodgers and Becky Johnson. If CFH manager predicts elevated prespawning mortality in holding adults, hatchery manager will compensate for loss by taking and holding additional adult fish. If by commencement of spawning too many adults have been taken, then adult outplants will be implemented at locations and priorities given in **Table 8a**. *Jerry McGehee*
- 2.3.3.3. Adult outplanting / distribution plans - The outplanting protocol [for excess hatchery broodstock] provides for distribution for natural spawning and subsistence use. If adult Chinook, available for release into natural spawning areas, exceed the numbers agreed to in **Table 8a**, further consultation will occur. The general procedure for providing fish for subsistence will be first to tribal programs, then to charitable organizations. Jack Chinook may go to subsistence programs directly. Please see **Tables 8a** and **8b** for outplanting priority streams and marks. *Tom Rogers*
- 2.3.3.4. Spawning plans - Spawning ratios of 1:1 will be used unless the brood stock population is less than 100 females. If the spawning population is less than 100 females, then eggs from each female will be split into two equal groups. A different male will fertilize each group. One cup of well water will be added to each bucket and set aside for 30 seconds to one minute. The two buckets will be poured together and continued through the spawning process. When brood stock population is 50 to 25 females, the eggs from each female will be split into three equal groups and each group fertilized by a different male. One cup of well water will be added to each bucket and set aside for 30 seconds to one minute; then all three buckets will be poured together. When brood stock population is 25 females or less, the eggs from each female will be divided into four equal groups, each fertilized by a separate male. The process will be completed as previously mentioned to finish the spawning process. During the entire spawning year, at least five to ten percent of the jacks will be used during the spawning process. An effort will be made to use all returning fish for spawning. If presented with an excess number of one sex, gametes from

individual parents may be subdivided and each part fertilized with gametes with different parents. The first sort will occur between August 5 and 10. All females will be sorted twice per week, and all ripe females will be spawned each time. Spawning will continue until all females are spawned. NPT assistance will be provided when spawning Chinook for NPTH. If too many eggs are taken for the hatchery program, these eggs can be used to backfill appropriate IDFG programs, other agency programs. If not needed, surplus eggs will be disposed. *Jerry McGehee*

2.3.3.5. Juvenile production - Original design memorandum shows a production goal may be as high as 1.5 million Chinook smolts reared at the main facility, and 1.5 million fall release pre-smolts reared at the three satellite facilities. *Jerry McGehee*

2.3.3.6. Fish Health - All females will be tested by ELISA for Bacterial Kidney Disease (BKD). All eggs from females that are identified at a level of 0.25 OD or higher will be culled. A 60 fish sample (ovarian fluids) and at least 30 kidney/spleen (tissue) samples will be taken for viral replicating agents. A 20 fish sample (head wedge) will be taken for *Myxobolus cerebralis* analysis. Juveniles will be inspected on a quarterly basis. Diagnostics on demand. Pre-liberation samples prior to release at satellites (20 fish sample). *Doug Munson*

#### 2.3.4. Nez Perce Tribal Hatchery

2.3.4.1. Projected adult returns - Projected adult returns (**Table 7b**) Adult return estimates to Lolo and Newsome creeks are 971 and 301, respectively. At the present time, there are no adult return estimates for Meadow Creek. The 5 year average capture efficiency at our Lolo Creek Weirs is 27%, for Newsome Creek it is 84%. The total number of returning adults we expect to capture at our Lolo and Newsome Creek weir sites are 62 and 55, respectively. Broodstock needs are: 120 adults for Lolo Creek, 60 adults for Newsome Creek, and 400 adults for Meadow Creek, Selway. The broodstock needs assumes a 50:50 sex ratio. *Sherman Sprague*

2.3.4.2. Trapping operations at NPTH – The adult ladder and trap, at Nez Perce Tribal Hatchery, will be operated in 2008 to collect spring chinook adults. Trapping operations will begin mid-April and continue through July 31<sup>st</sup>. The ladder will be operated intermittently to collect up to 400 adults needed for broodstock for the Meadow Creek, Selway program. Broodstock needs are based on an 85% survival from collection to spawning. In an attempt to select adults representatively across the return, the trap will be open in April and May until 34% (up to 136 adults) of the collection goal has been retained for broodstock. If the collection goal is reached, the trap will be closed until June 1. Beginning June 1, the trap will reopen until 33% (up to 132 adults) of the collection goal has been retained for broodstock. If the goal is reached, the trap will be closed until July 1. Beginning July 1, the trap will reopen until the remaining 33% (up to 132 adults) of the collection goal has been retained for broodstock.

Broodstock selection will be based on existing fin clips, marks, or tags. Only adipose fin clipped fish will be used as broodstock and will be retained at the rate described above. All natural, non-adipose fin clipped, known Idaho Supplementation Studies (ISS), and radio tagged fish will be returned to the Clearwater River and allowed to continue their spawning migration.

An alternative broodstock source for the Meadow Creek, Selway program is to obtain spring Chinook broodstock from other programs. Per agreement with IDFG and USFWS, adults returning to Crooked River, Rapid River, Red River, Powell satellites and transported to Clearwater Hatchery as well as Dworshak Hatchery may also be used for broodstock. Up to 560 adults (280 females and 280 males) will be collected at IDFG or USFWS facilities – provided they are available – preferably fish will be spawned at IDFG and USFWS facilities and eggs transported to Site 1705 for incubation and rearing. *Becky Johnson*

2.3.4.3. Trapping operations at Lolo Creek and Newsome Creek -

Trapping operations on Lolo and Newsome creeks usually begin at the end of May, after peak flows are reached. Trapping will continue through September 14<sup>th</sup>, or until zero fish are trapped for 7 consecutive days. Two weirs will be operated on Lolo Creek, an upper weir (RKM 51) and a lower weir (RKM 21). Pass/keep ratios will be adjusted on a weekly basis dependent on actual captures. The adult weirs will also be used for escapement, estimating sex composition, age structure, return timing and genetic tissue sampling. The following marks/tags are proposed for application at NPTH trap sites on fish that are passed; Lower Lolo Cr = Left Operculum Punch and Left Numbered Orange Tyvek Tag; Upper Lolo Cr = Right Operculum Punch; and Newsome Cr Left Operculum Punch. Adults collected for broodstock will be held at the Yoosa Camp and Newsome creek satellite facilities until water temperatures in Newsome and/or Yoosa/Camp creeks approach 65°. If water temperatures reach this level adults will be transferred to NPTH for maturation and spawning. *Sherman Sprague*

2.3.4.4. Adult outplanting plans - Please see **Table 8a** and **8b**. *Becky Johnson*

2.3.4.5. Spawning plans – The first sort and spawn will occur as early as August 5<sup>th</sup>. Spawning will occur on Tuesday of each week at NPTH (moribund ripe females will not be spawned). Spawning schedule: Tuesday and Wednesday. A spawning ratio of 1:1 will be used. Jacks will be limited to ten percent of the male contribution. Spawning will continue until the egg take goal is achieved or all females are spawned. *Steve Rodgers*

2.3.4.6. Juvenile production –

- Phase I production goals are 625,000 parr/pre-smolts. Distribution of juvenile production is 400,000 parr (Meadow Creek), 150,000 pre-smolts (Lolo Creek), and 75,000 pre-smolts (Newsome Creek). Throughout all phases of incubation, water temperatures will be

controlled to meet the following temperature regime: Aug. 10<sup>th</sup> - 9° C (48.2° F); Sept. 15<sup>th</sup> - 6.5° C (43.7° F); Sept. 30<sup>th</sup> - 6.0° C (42.8° F); Oct. 15<sup>th</sup> thru Nov. 30<sup>th</sup> - 4.0° C (39.2° F); Dec. 1<sup>st</sup> thru Dec. 31<sup>st</sup> - 2.5° C (36.5° F).

- Juvenile production destined for remote sites will be held in production room tanks, raceways or NATURES “S” channels at Site 1705, tanks at the Sweetwater facility and transferred when conditions permit (end of August to the second week of September. Production will be marked 100% with a CWT and sub-release groups will be PIT tagged. Monitor the in-hatchery survival and rearing conditions by treatment and rearing strategy. *Steve Rodgers*

2.3.4.7. Fish Health - All females will be tested by ELISA for Bacterial Kidney Disease (BKD). All eggs from females that are identified at a level of 0.20 OD or higher will be culled. A 150 fish sample (ovarian fluids) will be taken for viral replicating agents. A 20 fish sample (head wedge) will be taken for *Myxobolus cerebralis* analysis. Juveniles will be inspected on a quarterly basis. Diagnostics on demand. Pre-liberation samples prior to release (60 fish sample). *Kathy Clemens*

2.3.4.8. Communication - A monthly NPTH narrative and fish health report will be completed and submitted to BPA/COTR, NPT Research and Production divisions, IDFG/Clearwater Fish Hatchery and all other interested parties.

- 3. COHO** - *A coho reintroduction program was initiated by the Nez Perce Tribe in 1995. Recent production releases have occurred in Lapwai Creek (275,000 smolts), Potlatch Creek (275,000 smolts), Clear Creek (acclimated at Kooskia - 280,000 smolts), and Eldorado Creek, Lolo Creek, and Musselshell Creek (total 270,000 pre-smolts). Fish production for this program comes from Eagle Creek NFH, Dworshak, and Clearwater hatcheries.*

### 3.1. Broodyear 2006 Coho

#### 3.1.1. Dworshak

- 3.1.1.1. Production status - There were 292,660 fish on hand (17,131 pounds, 17.3 fpp) at Dworshak as of January 31<sup>st</sup>, 2007. *Zach Penney*
- 3.1.1.2. Projected transfer date/acclimation period at Kooskia - Smolts will be transferred to Kooskia NFH as soon as Kooskia spring Chinook are released in April 2008 for a 3-5 week acclimation. *Zach Penney*
- 3.1.1.3. Numbers/dates/marks & tags - 80,441 fingerling Coho were marked with a CWT (no AD clip) on May 21<sup>st</sup>-24<sup>th</sup>, 2007. **(Table 9)** *Zach Penney*
- 3.1.1.4. Fish health - Disease history for this broodyear of fish is complete at Lower Columbia River Fish Health Center for eggs that are transferred in. All fish are certified disease free. Fish are sampled no less than quarterly and prior to liberation; a 60 fish sample will be taken and assayed for virus, bacteria, and parasites. We suggest that the fish be treated with Florfenicol medicated feed under INAD prior to transfer to Kooskia to

help guard against mortality from Bacterial Coldwater Disease. *Kathy Clemens*

3.1.1.5. Juvenile M&E –

- Juvenile survival and emigration timing to Lower Granite Dam.
- Smolt-to-adult survival, and adult return timing based on counts at Lower Granite Dam and ladder counts at Dworshak and Kooskia National Fish Hatcheries. *Zach Penney*

**3.1.2. Transfers from Eagle Creek NFH**

3.1.2.1. Projected release - Smolts reared at Eagle Creek NFH will be released into Clear Creek, M.F. Clearwater River and Lapwai Creeks March 5<sup>th</sup> and 7<sup>th</sup>, 2008. Approximately 550,000 (275,000 each stream) will be direct released. Due to funding restrictions no marks or tags were applied to these fish (**Table 9**). *Zach Penney*

3.1.2.2. Fish health – Disease history for this broodyear of fish is complete at Lower Columbia River Fish Health Center. All fish are certified disease free. *Kathy Clemens*

3.1.2.3. M&E

- Smolt-to-adult survival and adult return timing based on counts at Lower Granite Dam. *Zach Penney*

**3.1.3. Transfers from Cascade Fish Hatchery**

3.1.3.1. Projected release – Approximately 74,889 CWT tagged Coho smolts reared at Cascade Fish Hatchery will be transported to Kooskia NFH on February 22<sup>nd</sup>, 2008. These Coho are excess mid-Columbia River stock from the Yakama Nation Coho Program, which will be acclimated and released with the BY06 Clearwater/Eagle Creek stock in April.

3.1.3.2. Fish health – Disease history for this brood year of fish is complete at Lower Columbia River Fish Health Center. All fish are certified disease free. *Kathy Clemens*

3.1.3.3. M&E

- Smolt-to-adult survival and adult return timing based on counts at Lower Granite Dam. *Zach Penney*

**3.2. Broodyear 2007 Coho**

**3.2.1. Dworshak**

3.2.1.1. Production status - Adults recognized at Lower Granite Dam totaled 2,532 and 266 jacks in 2007. A total of 597 Coho salmon brood stock (237 females, 269 males, 64 jacks and 27 pre-spawn mortalities) were collected from Dworshak and Kooskia NFH's, Nez Perce Tribal Hatchery, and Lyons Ferry FH. The total green egg collection from adults designated as Clearwater stock for 2007 is estimated at 354,000. On December 28th, 2007 an additional 100,000 eyed eggs were transferred from Eagle Creek NFH. On December 29th - 30,000 Eagle Creek NFH eggs were transferred to the Potlatch Corp Union Worker personnel (Brian Henry). All brood year 2007 Clearwater and Eagle Creek stock Coho eggs were shocked, picked, and enumerated in early January. Eggs were enumerated using displacement, which showed a 70.49% eye-up for a total of 332,322

eyed eggs. On 1/15/08 a brief power outage caused a rapid decrease of ~10 degrees °F in the water supplied to the brood year 2007 Coho eggs/alevins. This dramatically increased egg and alevin mortality (e.g. coagulated yolk sacs, fungus) in both stocks. As of 1/31/08, the estimated egg survival for the brood year 2007 Clearwater Coho stock was 49.25% for a total of 193,966 fry. Egg survival in the Eagle Creek Coho stock was not severely affected by the temperature fluctuation during incubation. However, high fry mortalities in the Eagle Creek stock occurred in the nursery due to Bacterial Coldwater Disease. The estimated total of Eagle Creek fry rearing in the Dworshak nursery is 50,137. As of 1/31/08 the total number of Coho fry at Dworshak NFH is 244,103. *Zach Penney*

- 3.2.1.2. Projected production - The projected production will be 280,000 smolts reared through spring 2009. Coho juveniles will be inventoried in the spring and summer of 2008 to ensure that no more than 300,000 fish are reared in the space allotted at Dworshak NFH (C-bank raceways 3-12). Any excess Coho will be cropped and outplanted to the Lolo and Musselshell systems in the fall of 2008. (**Table 10**) *Zach Penney*
- 3.2.1.3. Fish health – Every adult female was sampled individually for BKD with ELISA; low values resulted in no eggs culled. Up to 150 ovarian fluid samples (3 pool) were sampled for viruses. 4% of the adults sampled were positive for IHNV. An additional 60 tissue samples were taken for bacteria assays, and 60 samples for *M. cerebralis*. Brood fish health samples were taken by NPT staff and delivered to Idaho Fish Health Center personnel for analysis. Juvenile fish will be sampled quarterly and prior to liberation. We suggest treating with Florfenicol prior to transfer to Kooskia to help guard against post-transport, stress induced mortality from Bacterial Coldwater Disease. *Kathy Clemens*
- 3.2.1.4. M&E - Juvenile survival and emigration timing to Lower Granite Dam. Smolt-to-adult survival, and adult return timing based on counts at Lower Granite Dam and ladder counts at Dworshak and Kooskia National Fish Hatcheries. *Zach Penney*

### 3.2.2. Clearwater

- 3.2.2.1. Production status - Due to funding cuts in the Pacific Coastal Salmon Recovery Fund, the Nez Perce Tribe was forced to discontinue coho salmon production at Clearwater Hatchery. No eggs were allocated for this production from BY07. *Zach Penney*

### 3.2.3. Transfers (Eagle Creek NFH)

- 3.2.3.1. Projected release - Smolts reared at Eagle Creek NFH will be released into Clear and Lapwai Creeks in mid-March 2008. Approximately 550,000 (275,000 each stream) will be direct stream released. Due to funding restrictions no marks or tags were applied to these fish. *Zach Penney*
- 3.2.3.2. Fish health – Disease history for this broodyear of fish is complete at Lower Columbia River Fish Health Center. All fish are certified disease free. *Kathy Clemens*
- 3.2.3.3. M&E
- Adult return timing based on counts at Lower Granite Dam.

- Approximate smolt-to-adult survival based on the number of juveniles released and adult returns over Lower Granite Dam. *Zach Penney*

**3.3. Broodyear 2008 Coho** - *A primary program objective is to develop a local Clearwater River Coho stock. To accomplish this adult Coho returning to the Snake River basin and Clearwater River are a priority for use as broodstock. Fish are collected at fish ladders at Dworshak NFH, Kooskia NFH, Lyons Ferry FH, Nez Perce Tribal Hatchery and two weirs. In 2008, there will be insufficient funds to operate weirs on the Potlatch River and Lapwai Creek for monitoring and broodstock collection; therefore, the Potlatch smolt release will be transferred to Clear Creek to facilitate future broodstock collection at Kooskia NFH.*

**3.3.1. Dworshak**

- 3.3.1.1. Ladder operation - Ladder operation will start around October 1, 2008 to begin trapping steelhead and Coho salmon at Dworshak and Kooskia NFH. NPT requests that the Dworshak ladder be operated such that sorting can occur twice a week in order to maximize the adult take. *Howard Burge*
- 3.3.1.2. Adult transfers - Adult steelhead trapped (in excess of 500 fish) during operation of the Dworshak ladder to collect Coho will be loaded and hauled by NPT for release in the lower Clearwater River at Hog Island. *Zach Penney*
- 3.3.1.3. Juvenile M&E –
  - Smolt-to-adult survival based on weir monitoring in Lapwai Creek and the Potlatch River will not occur unless funding is restored. Limited redd surveys may occur in Lapwai Creek and the Potlatch River.
  - Smolt-to-adult survival and adult return timing shall be based on counts at Lower Granite Dam and ladder counts at Dworshak and Kooskia NFH, Lyons Ferry Hatchery, Nez Perce Tribal Hatchery. *Zach Penney*
- 3.3.1.4. Communication - – Clearwater Coho Project Leader produces monthly production, semi-annual, and annual reports. Fish Research produced weekly weir reports (prior to funding cuts). *Zach Penney*

**4. FALL CHINOOK SALMON** - *Fall Chinook salmon production in the Clearwater River occurs through two programs – Lower Snake River Compensation Plan/Fall Chinook Acclimation Project and Nez Perce Tribal Hatchery.*

**4.1. Broodyear 2006 Fall Chinook**

**4.1.1. NPT Fall Chinook Acclimation Project – Big Canyon Facility** - *The Big Canyon Acclimation facility is a portable acclimation setup designed and operated for acclimation and release of Snake River fall Chinook salmon that are reared at Lyons Ferry Hatchery. Big Canyon facility is operated by the Nez Perce Tribe as part of the Fall Chinook Acclimation Project (FCAP) funded by BPA. The facility has capacity to acclimate 150,000 yearlings and 500,000 subyearlings. The facility is operated in conjunction with two other acclimation facilities on the Snake River in an effort to restore ESA listed Snake River fall*

*Chinook salmon and achieve the LSRCP mitigation goal of 18,300 adults to the project area.*

- 4.1.1.1. Production status – Approximately 150,000 yearlings are being reared at Lyons Ferry Hatchery for transfer to the Big Canyon acclimation facility on March 1-3, 2008. *Bruce McLeod / Mike Key*
- 4.1.1.2. Projected release – Target release will be 150,000 yearlings at 10 fpp on April 15. Fish are 70,000 CWT and ad clipped, 80,000 CWT only, and 10,000 unmarked (see M&E section below). (**Table 11**) *Bruce McLeod / Mike Key*
- 4.1.1.3. Fish health - Yearling fish at Lyons Ferry SFH were sampled on 1/14/08 for ELISA and viral assays for the import permit for this program. Monitoring samples for BKD will be taken weekly and a 60 fish sample will be collected and assayed prior to release from each site. *Kathy Clemens*
- 4.1.1.4. M&E - Yearling release groups will be sampled for length at weight at time of release. We will sample 100 fish from each tank as they are being released. We sample 500 fish from each raceway at LFH for coded wire tag and adipose fin clip retention 30 days after tagging/markings is completed. We will PIT tag 4,000 yearlings to estimate survival, migration rate and timing through the FCRPS. An additional 15,000 PIT tags for the transportation evaluation study – PIT tagging will occur at Lyons Ferry Hatchery. All mortalities at Big Canyon will be scanned for PIT tags. Aerial redd counts and adult spawner carcass sampling in the Clearwater subbasin will be conducted by NPTH M&E personnel. Coded wire tags will provide SAR data. *Bill Arnsberg*
- 4.1.1.5. Communication - O&M and M&E quarterly and annual reports to BPA.

## **4.2. Broodyear 2007 Fall Chinook**

### **4.2.1. NPT – Fall Chinook Acclimation Project – Big Canyon Facility**

- 4.2.1.1. Production status – Approximately 520,000 subyearlings are being reared at Lyons Ferry Hatchery for transfer to the Big Canyon acclimation facility on May 01, 2008. *Bruce McLeod / Mike Key*
- 4.2.1.2. Projected release – Target release is 500,000 subyearlings at 75-50 fpp on June 1, 2008. A group of 100,000 fish are CWT / ad-clipped and 100,000 CWT only for evaluation – the balance of fish are unmarked. (**Table 11**) *Bruce McLeod / Mike Key*
- 4.2.1.3. Fish health - Import permit sampling will be done in March/April. A 60 fish sample will be collected and assayed prior to release from each site. *Kathy Clemens*  
Juvenile M&E – Subyearling release groups will be sampled for length at weight at time of release. We will sample 100 fish from each tank as they are being released. We sample 500 fish from each raceway at LFH for coded wire tag and adipose fin clip retention 30 days after tagging/markings is completed. We will PIT tag 4,233 subyearlings to estimate survival, migration rate and timing through the FCRPS. An additional 34,708 will be PIT tagged for the transportation evaluation

study. All mortalities at Big Canyon will be scanned for PIT tags. Aerial redd counts and adult spawner carcass sampling in the Clearwater subbasin will be conducted by NPTH M&E personnel. Coded wire tags will provide SAR data. *Bill Arnsberg*

- 4.2.1.4. Communication - O&M and M&E quarterly and annual reports to BPA.
- 4.2.2. Nez Perce Tribal Hatchery** – *Nez Perce Tribal Hatchery was constructed in 2001 and is authorized to produce 1.4 million subyearling fall Chinook juveniles. Target releases are 500,000 on station at Site 1705, 500,000 acclimated and released from North Lapwai Valley facility, 200,000 acclimated and released from Lukes Gulch facility (South Fork Clearwater) and 200,000 acclimated and released from Cedar Flats facility (Selway River).*
- 4.2.2.1. Ladder Operation - The ladder was open throughout the fall to collect fall Chinook. The first fall Chinook was trapped on October 4, 2007. The ladder was closed December 4, 2007. A total of 113 adults and 2,061 jacks (<53 cm) were collected at NPTH. An additional 2 females were collected at DNFH. In September, 575 adult fall Chinook and 313 jacks (<53 cm) were transported from Lower Granite Dam to NPTH for spawning. *Steve Rodgers*
- 4.2.2.2. Spawning – Over the course of seven weeks, a total of 286 females were spawned, which yielded 948,858 green eggs. Average eye up was 86.95%. *Steve Rodgers*
- 4.2.2.3. Production status - Due to space and water constraints at NPTH fall Chinook production on station has been limited to approximately 700,000 subyearlings. The first priority for eggs over the NPTH production was to backfill Lyons Ferry Hatchery. LFH met their egg take goal for BY07 so NPT reached an agreement with ODFW to rear approximately 200,000 fall Chinook for the NPTH program. On December 28, 2007, 197,192 eyed eggs were transferred to Irrigon Hatchery. These fish will be reared and transferred back to the Clearwater River for release at Site 1705. As of February 19, 2008, total fall Chinook fry on hand at NPTH: 717,454. *Steve Rodgers*
- 4.2.2.4. Projected release - Anticipated release: 900,000 sub-yearlings.
- Site 1705: A release of 500,000 sub-yearlings into the Clearwater River at 50 fish per pound (9.07 grams) is planned. The fish will be transferred directly into the ponds from the marking trailer. Unmarked fish (200,000) destined for release into the Clearwater River will be held in production room tanks at Site 1705 until they attain a size of ~180 fpp (2.52 grams). The fish will then be transferred and divided equally into the two fall Chinook acclimation ponds at Site 1705 for acclimation and release. Incorporated into this release are the 200,000 sub-yearlings transferred from Irrigon Fish Hatchery in late-March or early-April. These fish will be held in the outside linear raceways and marked into the two fall Chinook acclimation ponds. The ponds will be set-up and operational at least 2 days prior to receiving fish. Prior to release, 3,000 fish will be tagged with a PIT tag. Mortalities will be picked daily and the fish feed 2 times per day. At the start of the schedule volitional

release, lengths and weights will be taken and recorded on a minimum of 500 fish. Prior to release, a minimum 60 fish sample will be collected from each release group for a pre-release health inspection.

Bacteriology, virology and parasitic assays will be performed.

Scheduled release date from Site 1705 as early as June 2<sup>nd</sup>.

- **North Lapwai Valley:** A release of 200,000 sub-yearlings into Lapwai Creek at 50 fish per pound (9.07 grams) is planned. Lapwai Creek water temperatures will be monitored from late February through mid-April. In the event the water temperatures in Lapwai Creek exceed 55° F (12.8° C) in late March, the 200,000 sub-yearlings would most likely not be transferred to the North Lapwai Valley Acclimation Facility but held at Site 1705 and released into the Clearwater River. The transfer of the fish will occur in mid to late April. The facility will be set-up and operational at least 3 days prior to transfer of fish. Prior to release, 3,000 fish will be tagged with a PIT tag. PIT tagging operations will take place prior to water temperatures attaining 17° C. Lengths and weights will be taken and recorded on a minimum of 500 fish prior to release. Mortalities will be picked daily and the fish feed 2 times per day. Scheduled release date for North Lapwai Valley AF is May 5<sup>th</sup>.
- **Cedar Flats:** A release of 100,000 sub-yearlings into the Selway River at 50 fish per pound (9.07 grams) is planned. Transfer of the fish will occur in late April to early May. The facility will be set-up and operational at least 5 days prior to transfer of fish. Prior to release, 8,178 fish will be tagged with a PIT tag (3,000 for evaluation and 5,178 for the transportation study). Lengths and weights will be taken and recorded on a minimum of 500 fish prior to release. Mortalities will be picked daily and the fish feed 2 times per day. Schedule release date from Cedar Flats AF is June 15<sup>th</sup>. However, an earlier release may occur to avoid unfavorable water temperatures.
- **Lukes Gulch:** A release of 100,000 sub-yearlings into the South Fork Clearwater River at 50 fish per pound (9.07 grams) is planned. Transfer of the fish will occur in late April to early May. The facility will be set-up and operational at least 5 days prior to transfer of fish. Prior to release, 8,178 fish will be tagged with a PIT tag (3,000 for evaluation and 5,178 for the transportation study). Lengths and weights will be taken and recorded on a minimum of 500 fish prior to release. Mortalities will be picked daily and the fish feed 2 times per day. Scheduled release date from Lukes Gulch AF is June 15<sup>th</sup>. However, an earlier release may occur to avoid unfavorable water temperatures.

**(Table 11) Steve Rodgers**

- 4.2.2.5. **Fish health** – Kidney samples were assayed by ELISA on all spawned females; no eggs were culled due to ELISA OD's all below cut-off (.25). 150 ovarian fluid samples, 60 tissues samples and 30 cranial samples were taken for assay. IHNV was found in 16 % of samples tested to date. A single 5 fish pool was positive for *Aeromonas salmonicida*. A 60 fish sample will be collected and assayed prior to release. *Kathy Clemens*

4.2.2.6. M&E

- Scan all fish for CWT. Initial tag retention and tagging mortality estimated. Estimate final CWT retention rates 14 days or more after tagging.
- PIT survival studies- PIT tag 3,000 of each release group for survival estimates, growth rates, and migration timing.
- Each 3,000 PIT tag group will be accompanied by a 5,178 PIT tag groups for the transportation study.
- Redd surveys and carcass collection. Scales and genetic samples taken, hatchery/wild determination, scan for PIT tags and CWTs, along with all other biological information.
- Volunteers to NPTH will be scanned for PIT tags and CWTs and scales and genetics will be taken on a sub-sample of spawned fish and mortalities, along with all other biological information. *Bill Arnsberg / Jay Hesse*

4.2.2.7. Communication - NPTH produces monthly production and pathology reports, and M&E quarterly and annual reports to BPA.4.2.3. Dworshak NFH

4.2.3.1. Transportation Study – Fall Chinook salmon were temporarily reared at Dworshak NFH in 2005 and 2006 for the transportation study, however no fish were reared at Dworshak in 2007. For 2008 roughly 328,000 fertilized eggs will be transported from Lyons Ferry Hatchery to Dworshak. Of these, 70% are being incubated for ponding in February 2008 and 30% are being incubated for ponding in April 2008. After Dworshak spring Chinook salmon are released in early April, the fall Chinook fry will be disease tested and then transferred to Dworshak NFH for rearing to approximate the early life history of natural Snake River (the 70% ponded in February) and Clearwater River (the 30% ponded in April) fall Chinook salmon. The Snake River “surrogate” subyearlings will be reared to 65-70 mm for PIT tagging and release from mid-May to early June. The Clearwater River surrogates will be reared to 65-70 mm for release from mid-June to early July. Prior to release, disease testing will be conducted and the PIT-tag codes will be loaded into the separation-by-code systems at Lower Granite, Little Goose, Lower Monumental, and McNary dams. This will provide two groups of fish whose treatment at these four dams will differ to represent two different management strategies: transportation with summer spill and bypass with summer spill. Upon adult return, the smolt-to-adult return rates will be compared to determine if fall Chinook salmon should be transported or bypassed when summer spill is implemented. The transportation study duration is planned for 2008-2011. *Howard Burge / Jay Hesse*

4.3. **Broodyear 2008 Fall Chinook**

4.3.1. Adult collection - Snake River Fall Chinook adults will be collected at Lower Granite Dam (LWG) and transported to Site 1705, in accordance with the U.S. vs.

Oregon Interim Management Agreement. Additionally, adult fall Chinook may enter the fish ladder and be trapped at Site 1705.

- 4.3.1.1. Lower Granite Dam - Trapping and transport activities will occur under an ESA Section 10 Permit Number 1530 and will be coordinated with Lyons Ferry Hatchery, Jerry Harmon and U.S. Army Corps of Engineers. Adult fall Chinook will be trapped at LWG commencing the last week of August for brood year 2008 or as soon as water temperatures allow. Trapping will continue throughout the run and is anticipated to end by late November or early December. Fall Chinook are collected in the trap as a sub-sample of the returning run. The sub-sample rate for 2008 has not yet been determined, but should range from 13-15% of the run over LWG. Currently, all adults trapped at LWG and retained for broodstock will receive a right operculum punch (ROP). Also, all females trapped will be injected with erythromycin and oxytetracycline during the sorting process. Washington Department of Fish and Wildlife (WDFW) Fish Management, Lyons Ferry Hatchery (LFH) and NPTH will develop a transportation schedule for adults trapped at LWG. The goal of NPTH is to receive 30% of the adults trapped at LWG (anticipated to be approximately 750 fish). A portion of known LFH origin and unknown origin hatchery fall Chinook will be transported from LWG to Site 1705 for holding and spawning. Coded wire tagged adults, excess to broodstock needs, will be sacrificed for run-reconstruction purposes. Accurate run-reconstruction to LWG is based on a set sub-sampling protocol that requires that all hauled fish be accounted for (i.e., CWT's read and scales read on unmarked/untagged fish for expansion of fish not sampled at LWG). Adults, excess to broodstock needs and without a CWT, will be anesthetized and scale samples taken before they are released into the Clearwater River. *Steve Rodgers, Becky Johnson*
- 4.3.1.2. Trapping sites/Ladder operation - Commencing on August 20, 2008, and continuing through December 4, 2008, the adult ladder and trap will be operated at Nez Perce Tribal Hatchery to collect fall Chinook adults for broodyear 2008. Adults that voluntarily return to NPTH will be injected with erythromycin prior to the first spawning. Adults will receive formalin treatments every-other day to control fungus and decrease pre-spawning mortality. *Steve Rodgers, Becky Johnson*
- 4.3.1.3. Spawning plans – To meet the egg take goal of 1.978 million, approximately 565 females will be spawned at NPTH. Spawning will begin October 28, 2008, and may continue through December 9, 2008. At the completion of the third spawn (Nov. 13, 2008), un-spawned females may be injected with sGnRH $\alpha$  /Ovaplant-3. All out-of-Snake River Basin adults, identified as “strays” by CWT or other distinguishing marks, will be culled. WDFW may use scale pattern data to cull suspect “strays” and eggs. However, scale pattern data will not be used at NPTH in the culling of eggs. On all fish spawned the following data will be collected: Fork length, sex, fin clips, visual implant elastomer (VIE) tags (document side and color i.e. LR for left red), coded wire tag identification number and

opercle punches and side V-notches, radio tag number if present and any other identifying marks or tags. All fish will be scanned for a PIT tag and scales will be taken on all unmarked/untagged fish with a sub-sample taken on CWT tagged fish. In addition, tissue samples will be taken on a random sub-sample of 100 spawned females and 100 spawned males for DNA analysis and genetic monitoring. Data entry, verification and finalization of all data collected will be coordinated with WDFW and completed by mid-January 2007. Finalized database files will be sent to NPT (Bill Arnsberg, WDFW (Debbie Milks) and Technical Advisory Committee (TAC) (Cindy Lefleur). Coded wire tagged adults, excess to broodstock needs, will be sacrificed for run-reconstruction purposes. Accurate run-reconstruction to LWG is based on a set sub-sampling protocol that requires that all hauled fish be accounted for i.e., CWT's read and scales read on unmarked/untagged fish for expansion of fish not sampled at LWG. Adults excess to broodstock needs and without a CWT, will be anesthetized and scale samples taken before they are released into the Clearwater River. Adults transported from Lower Granite Dam (LWG) and excess to broodstock needs will be sampled. All CWT tagged adults will be sacrificed for run-reconstruction purposes. All fish transported from LWG without a CWT and, not needed for broodstock, will be anesthetized and scales taken for run-re-construction purposes (wild/hatchery origin) prior to release into the Clearwater River. Every adult female will be sampled individually for BKD with ELISA. Up to 150 ovarian fluid samples (3 fish pools) will be sampled for viruses. In addition 60 tissues samples will be taken for bacteria assays, and sampled for *Myxobolus cerebralis*. Broodstock fish health samples will be taken by NPTH staff and delivered to Idaho Fish Health Center for analysis. *Steve Rodgers*

- 4.3.1.4. Egg Incubation – Fertilized eggs will be water hardened for one hour in 100 parts per million (PPM) iodophore and placed in iso-incubation units. At between 550 and 620 temperature units (TU's) eyed eggs will be shocked; machine sorted the following day and transferred into Heath trays. Eggs will be incubated on processed (well and treated, chilled surface) water at a temperature of 52° F (11.1° C). Eggs from females with a BKD ELISA value of 0.2 and above will be culled. All eggs should be hatched out by late January or early February. At swim-up, ~1,500 fish per pound (0.30 grams), the fish will be transferred to production room tanks. *Steve Rodgers*
- 4.3.1.5. Egg transfers from Lyons Ferry - Egg transfers from Lyons Ferry Hatchery may occur for broodyear 2008 depending on the broodstock availability for NPTH and Lyons Ferry Hatchery. *Becky Johnson*
- 4.3.1.6. Adult M&E
- Redd surveys and carcass collection. Scales and genetic samples taken, hatchery/wild determination, scan for PIT tags and CWTs, along with all other biological information.

- Volunteers to NPTH will be scanned for PIT tags and CWTs and scales and genetics will be taken on all spawned fish and mortalities, along with all other biological information. *Bill Arnsberg, Jay Hesse*
- 4.3.1.7. Fish health – Every adult female will be sampled individually for BKD with ELISA. Up to 150 ovarian fluid samples (3 pool) will be sampled for viruses. An additional 60 tissue samples will be taken for bacteria assays, and 20 samples for *Myxobolus cerebralis*. Brood fish health samples will be taken by NPT staff and delivered to Idaho Fish Health Center personnel for analysis. Fish with a high BKD titer will be culled. *Kathy Clemens*
- 4.3.1.8. Communication - NPTH produces monthly production and pathology reports, and Fish Research produces quarterly and annual reports to BPA.

## 5. RAINBOW TROUT

### 5.1. USFWS Program

#### 5.1.1. Dworshak Kids' Fishing Day

- 5.1.1.1. Production status - BY07: Dworshak will rear Shasta strain rainbow trout from Ennis NFH for the June 13, 2008 Kids' Fishing Day. On January 1, 2008, there were 18,245 rainbows at Dworshak. Approximately 3,800 of these trout will be transported to Kooskia NFH for their Open-House. The rainbow trout are currently being reared in two Burrow's ponds in System III. The Service hopes to achieve 15 inches in length (0.75 per lb.) by Open House. No fish health problems to date in this group of fish. *Thomas Trock*
- 5.1.1.2. Excess outplanting - The plan is still tentative, but several thousand will be transferred to Tunnel Pond for the Kid's Fishing Day and will remain in that Pond, the unused fish will go to the Nez Perce and the Coeur D' Alene Tribes. The surplus fish from Kooskia's fishing day will go to the Idaho Dept. of Fish and Game. *Howard Burge*

### 5.2. IDFG Programs –

#### 5.2.1. Dworshak Reservoir

Nampa Fish Hatchery plans on stocking 30,000 sterile triploid rainbows into Dworshak Reservoir in May- July. Since 1997 Hagerman NFH has raised rainbows for stocking into Southern Idaho reservoirs and IDFG reciprocates by stocking Dworshak Reservoir. There are planned changes for the program this year due to fish loss at IDFG Grace Fish Hatchery. *Jerry McGehee / Howard Burge*

#### 5.2.2. Clearwater Basin

IDFG stocks approximately 50,000 Kamloops rainbow trout and 160,000 Spokane rainbow trout annually into the Clearwater River system. For 2008, the Kamloops rainbow are raised at Lyons Ferry and Nampa Fish Hatcheries (25,000 each) and stocked into the lower Clearwater River in October, after adipose and ventral fin-clipping.

Spokane rainbow from Lyons Ferry Hatchery will be stocked into lowland lakes within the Clearwater drainage in April and May; these unmarked fish provide additional fishing opportunities. This program is funded by the Lower Snake River Compensation Plan and the Dingle-Johnson Program to compensate for dam related losses. *Robert Hand*

The Clearwater Fish Hatchery regional rainbow program redistributes 100,000 Nampa reared trout. A total of 29 plant sites, requiring 110 trips are stocked May to August. *Jerry McGehee*

## 6. PACIFIC LAMPREY

### 6.1. NPT Program

**Nez Perce Tribal Hatchery** - In 2007, the Nez Perce Tribe initiated a Pacific Lamprey restoration initiative. In December, 2007, the NPT have transported 13 adult lampreys that were collected in the dewatered ladder at John Day Dam (and the Dalles?) to Nez Perce Tribal Hatchery/Site 1705. An additional 92 lampreys were transported to NPTH in February, 2008. In an effort to control Furunculosis, the lampreys were injected with oxytetracycline. Adults were then transferred into the M&E tanks located adjacent to the NATURES "S" channel release structure. To prevent escapement each tank is sealed with a plywood lid secured with clamps. The water flow source is from the Clearwater River, which is excess to NPTH production requirements. The M&E tanks outfall returns to the Clearwater River downstream of the fish ladder. The NPT Trout Ponds program is responsible for the care and maintenance of these fish. The adults will be held until the April/May of 2008, when the NPT will release them in selected streams to spawn naturally. NPT is currently working on a release plan that will identify release locations and numbers. *Steve Rodgers*

## 7. INFORMATION and EDUCATION

**7.1. School Programs** - Since 2004, the Service, NPT, and IDFG staff have supported Kamiah schools with their Environmental Science curriculum. Activities have focused on providing information, planning, eggs and fish, and field trips. Eggs and fish requested in 2008 are:

- Approximately 2,000 steelhead eggs, 500 spring Chinook eggs, and 1,000 rainbow trout eggs for Hatchery in the Classroom projects.
- Approximately 200 fry and pre-smolt steelhead and coho for display tanks and studies (these are generally only needed in the event of a 100% loss of fish from a Hatchery in the Classroom project).
- Approximately 40 adult steelhead carcasses for dissection and anatomy studies. *Susan Sawyer / Ed Larson*

## 8. CONTACTS

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