2009

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

April 10, 2009

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(Each section lists a contact for additional information, coordination, or notification – contact information is listed in Section 8, pg. 35)

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 2008 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, 2009 there were a total of 1.82 million steelhead on station, 177 mm average total length, 8.5 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 13, 2009. Onsite release is expected to occur the week of April 20. DNFH expects to release a total of 1.75 million steelhead, including ~230,000 un-clipped (notify Steve Rodgers, Mike Key, and Sherman Sprague at time of the un-clipped releases). Average total length > 200 mm (6 fpp). *Thomas Trock*

1.1.1.3. Fish health status – Other than IHNV occurring at the 18% rate in the adults, no significant pathogens were detected during spawning. June 16 was first documented isolation of the 2008 IHNV/Coldwater Disease event; this outbreak has caused chronic mortality as seen in previous years. The extended spill from Dworshak Dam likely exacerbated the mortality, adding an additional stressor. Gas bubbles were seen in the gills and fins of fish throughout the spill duration. These same bubbles were also seen in the wild Chinook in the river. System I reuse was started in January, allowing the fish to gain a larger size. Weekly formalin treatments continue to prevent mortality form Ich. All systems have been treated with formalin for Trichodina infections, a common parasite in the winter. 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 30,500 PIT tags will be inserted; 1,500 for the Smolt Monitoring Program, 9,000 for CSS, and 20,000 for Dworshak evaluation. Prior to release 500 marked fish from each CWT group (tag code) are checked for tag retention (ex. BY07 = 96.4%). Also 500 fish are checked for LV clip and AD clip quality. *Howard Burge / Carrie Bretz*

1.1.1.5. Research Requests – FPC requested 1,500 steelhead be PIT tagged for the Smolt Monitoring Program. For 2009 releases 9,000 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 BY08 steelhead to be released in the spring of 2009 is 836,600. 264,300 AD-clip and 50,720 no ad-clip production into the lower SF Clearwater, 205,263 no ad-clip and 266,200 ad-clip production will be released into the upper SF Clearwater River and 50,200 no ad-clip into Lolo Creek pursuant to the US v. Oregon 2008-20017 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. In February, 21,300 steelhead will be PIT tagged to evaluate juvenile timing and survival from release to Lower Granite Dam for each release group and to estimate a combined adult escapement back to Lower Granite Dam. This is also a cooperative effort with the CSS study to evaluate transport and in-river SARs. PIT tags are distributed across release groups in proportion to the release group size. *Jerry McGehee / Carl Stiefel*

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 306,100 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. If the road to Lolo Cr is impassable Browns Creek will be the default release site. Approximately 230,000 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 (notify Brett Bowersox, IDFG) and Newsome Creek where the NPT (Sherman Sprague) 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 affects 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 and the last year of evaluation of returning adults will be 2009. *Howard Burge*

1.2. Broodyear 2009 Steelhead

1.2.1. Dworshak

1.2.1.1. Projected adult return - Based average return rates, the predicted steelhead return to Dworshak NFH rack in 2008-2009 would be about 5,117 if the ladder were operated continuously. However, since we open the ladder to only capture what broodstock we need, we typically collect about 3,400 steelhead (**Table 2a**). *Howard Burge*

1.2.1.2. Ladder operation - The ladder was open October 1-2, 2008 and reopened October 8-9 for collection of early-return steelhead. During this period there were 513 early-run steelhead collected for spawning in the spring of 2009. The ladder was reopened two-three days/week until November 3 to collect coho. There were 447 excess adult steelhead trapped which were outplanted to the mainstem of the Clearwater River at the boat ramp at Ahsahka. 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 2009 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 12, 2009 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 GnRHa prior to spawning, using the implant form, under INAD. This was to insure that there were enough males that were ripe during the first two spawns. 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/marking – Ladder opening for collection of spring returns is not planned until February 12. Small numbers beyond what we need for spawning will be directly returned to the river. If larger numbers are collected they will be put into a separate holding pond until the NPT outplants them in SF Clearwater River tributaries. All released fish will all be marked with left opercle v-notch. Any outplanting involving the NPT will be coordinated with Mike Key. Due to the planned intermittent ladder operation in 2009 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 2003-07 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 - It appears there will be no food-processing of SST carcasses this year. Various research groups from WSU and the Idaho Fish and Game bear trapping program or similar alternatives will be used to dispose of the carcasses. *Thomas Trock*

1.2.1.6. Adult M&E – System contribution, and early return CWT are being recovered for all three age classes. Returning adults are measured and examined for gender, various clips and tags, and seal bites or other injuries, then sorted for spawning or holding. FWS-IFRO is radio tagging VIE identified fish at Lower Granite Dam to evaluate returns from the supplementation program. *Howard Burge / Carrie Bretz*

1.2.1.7. Spawning/egg take plans, mating protocol - Current plans are to take ~2.8 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. Starting this year Dworshak is cooperating with the University of Idaho in a Kelt Reconditioning Project. Females used in this project will be air and/or hand spawned so 100% expression of eggs is unlikely and we are also unsure of egg quality from these methods. Therefore, we will take additional eggs as necessary to ensure our collection goals are met. **Table 3**. *Thomas Trock*

1.2.1.8. Juveniles Production - Incubation: Dworshak will incubate eggs from approximately 630 steelhead females for its program, 150 fall-return adults and 480 from winter and spring returns. After eye-up and enumeration, approximately 2.8 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 2009. To accommodate the construction project replacing the roof on the nursery building we will be curtailing the typical hatchery spawning schedule by 2 weeks. Therefore the end of the steelhead run will not be fully represented in BY 2009. The contractor is scheduled to begin work on the nursery roof on August 1, 2009 and all fish and hatchery equipment must be out of the nursery to accommodate this work. New construction will include external water degassing and interior lighting to simulate natural photoperiod. The new nursery will be completed prior to the 2010 coho and steelhead production cycle. *Thomas Trock*
Outside Rearing: Approximately 2.4 million steelhead will be moved from nursery tanks to outside burrows ponds from the end of May until August 1, 2009. Up to 76 burrows ponds will be used for steelhead rearing; additionally the two burrows ponds modified into mixed cell units may be utilized. Five burrows ponds will be used to rear BY08 coho, which are typically reared in C-bank raceways (former adult holding ponds). One burrows pond will be used to rear rainbow trout for the 2010 Open House. Fish will be moved from the nursery to the ponds using a new fish pump. From August to November the marking trailer from Columbia River Fisheries Program Office will AD clip and CWT steelhead. The burrows ponds will be stocked at 50,000 or 30,000 fish/pond as part of a density evaluation study. Most steelhead will receive an adipose-fin clip to designate it as a hatchery fish, the exception being the 200,000 unclipped/unmarked South Fork releases. *Thomas Trock*
SF releases – 200,000 of Dworshak NFH reared steelhead are programmed for Clearwater tributary releases as part of the US v. OR agreement. Their release location in 2010 is still to-be-determined dependant on support infrastructure and co-managers decisions. *Howard Burge / Becky Johnson*

1.2.1.9. Juvenile Fish health - Upon ponding, juveniles will be monitored for viral pathogens, 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 BY08 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. In 2008 the CWT groups were 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, 9,000 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. *Mark Drobish*
- 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. *Ray Jones*
- Starting in 2009 Dworshak is cooperating with the University of Idaho in a Kelt Reconditioning Project. Females used in this project will be air and/or hand spawned and then transferred to U of I or tanks set up at Dworshak specifically for reconditioning. *Mark Drobish*

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 early to mid-March 2009 for BY09 steelhead adult collection. The proposed operation (depending upon approval by NMFS) is to close the trap about April 10, after Chinook and coho smolt releases, and bypass the water intake and Obermeyer weir during this usually high water period. We would reopen the trap about May 10. During this period we also propose to open the picket (fish) weir to allow passage of steelhead, since they could not be trapped anyway. The NPT and IDFG are also interested in operation of the weir and will be kept involved. *Howard Burge*

1.2.2.2. Adult handling/outplanting/marking - 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) for outplanting will be loaded into NPT truck 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.2126). 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 - BY09 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 3. 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. **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. 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 ovarian fluid sample from every fish and kidney/spleen tissue samples taken on 30 fish, 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 60 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 BY09 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 LSRCP evaluation. In February or March, approximately 20,000 fish will be PIT tagged to evaluate juvenile emigration timing and survival from release to Lower Granite Dam for each release group and to estimate a combined adult escapement back to Lower Granite Dam. This tagging is also a cooperative effort with the CSS study to evaluate transport and in-river SARs. PIT tags will be distributed across release groups in proportion to the release group size. *Tom Rogers / Carl Stiefel*

2. SPRING CHINOOK SALMON

The total adult return goal for Dworshak NFH and Clearwater Hatchery is 21,135 spring Chinook over Lower Granite Dam. An adult goal of 5,200 was calculated for Kooskia NFH and 1,176 adults for the NPTH program. Broodstock needs for all facilities total 4,460 adults, specifically: 1,000 for Dworshak, 600 for Kooskia (+250 for NPT release at Kooskia), 1,860 for Clearwater, 750 for NPTH. Additional details are listed in the pertinent sections below.

2.1. Broodyear 2007 Spring Chinook

2.1.1. Dworshak – *Approximately 1,000 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, 2009, there were 1,027,687 BY07 spring Chinook averaging 27 fpp and 127 mm (5.0 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 2009, projected release will be approximately 1,025,000 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 – 17% of the adult SCS sampled were positive for IHNV. BY07 SCS have done very well to date. No treatments have been necessary. 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 = 99.4 %). *Howard Burge*

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).
- 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 from 2005 - 2008 For 2009 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 600 Chinook are needed for broodstock for the Kooskia spring Chinook salmon mitigation program. This number includes jacks and accounts for pre-spawning mortality. This brood level produces 600,000 smolts for the Kooskia program at an average 80% eyed egg-to-smolt survival.*

2.1.2.1. Production status - There are 442,810 Kooskia Stock spring Chinook fry at Kooskia NFH weighing 14,257 lbs, 4.75 inches or 121 mm long, at 31.1 fish/lb (fpp). There are 161,862 Dworshak Stock spring Chinook fry at Kooskia NFH weighing 6,374 lbs, 5.08 inches or 129 mm long, at 25.4 fish/lb (fpp). The Burrows ponds were put on Clear Creek water September 29, 2008. Chinook will be split from Burrow's ponds into raceways in February, 2009 if densities warrant. *Adam Izbicki*

2.1.2.2. Projected release - KNFH will direct release an estimated total of 604,000 Spring Chinook at 20-25 fpp on or after the last week in March. (**Table 5**) *Adam Izbicki*

2.1.2.3. Fish health – 31% of adult SCS sampled were positive for IHNV. Treated for *Ich* in mid summer 2008. By late summer, cooler water (chilled) cleaned up the fish enough that treatments were no longer required. 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 162,000 Dworshak stock are CWT for production contribution monitoring and broodstock management. Prior to release 500 marked fish from each mark group (tag code) are checked for tag retention (BY06 = 95.6 %). 10,000 Kooskia stock Chinook will be PIT tagged for the 2009 release for juvenile and adult monitoring. *Howard Burge*

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 by the third week of March. Fish will be transported to each facility and placed in the ponds during the last week of March to first week of April. Smolts are then released directly from the ponds. At Crooked River, Red River and Powell non-acclimated smolts will be released directly from the ponds daily at sunset. 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 2007 & 2008, 80% of the Crooked River full-term smolts will be direct released at the lower facility 20% from the Upper Facility. The migration success of PIT tagged fish to Lower Granite Dam in 2006 – 2008 showed a 2:1 increase in survival of smolts released at the Lower Crooked River Facility over the Upper Crooked River Facility. In 2009 100% of the Crooked River smolts will be released at the lower site. Acclimated smolts at Powell will be transported to the acclimation pond and held for 3 to 10 days (TBD by IDFG Fisheries Research; Sam Sharr and Brian Leth). No screens will be installed to allow for volitional release as smolts have the urge to migrate. Aerators will be installed in the pond and ran 24 hours/day the entire time the fish are being acclimated to prevent the pond from freezing over. A permanent IDFG employee will be on duty for night monitoring of the ice buildup and cleaning of the intake screens. All production Chinook are Ad clipped. During the first week of April (dates) the NPT will transport approximately 299,900 smolts to the Selway River for release near the mouth of Meadow Creek. The 335k pre-smolts being used for Flow Index study were reared to full-term smolts and will be released into Clear Creek 234k and the Selway River 100k. The 234k going into Clear Creek will be 100% marked with and AD clip and oxy-tetracycline and 87k will be CWT. Selway transport should be coordinated with Steve Rodgers and Kooskia release coordinated with Adam Izbicki. Planned releases of BY07 spring Chinook smolts are for 2,246,370 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. In February, 68,900 Chinook salmon will be PIT tagged to evaluate juvenile timing and survival from release to Lower Granite Dam for each release group and to estimate an adult escapement back to Lower Granite Dam from each of the five major smolt release groups as well as to provide a tool for in-season harvest management (Table 5). Similar to the steelhead PIT tagging, this is a cooperative effort with the CSS study to evaluate transport and in-river SARs. PIT tags are generally distributed equally across release groups. The exception to this is the Powell and Clear Creek releases. In February 2009, it was decided that a portion of the original Powell release group would be released into Clear Creek. We had insufficient numbers of PIT tags to maintain 15,000 PIT tags across all releases. *Jerry McGehee / John Cassinelli*

2.1.4. Nez Perce Tribal Hatchery/Clearwater Hatchery

2.1.4.1. Production status - As of January 31, 2009, there were 133,190 BY07 spring Chinook averaging 28.5 fpp on station. These fish are being reared in the west “S” channel at NPTH. Target size at release is 20 fpp.

2.1.4.2. Projected release – In early April 2009, these fish will be allowed to leave volitionally directly into the Clearwater River. Forced release of remaining fish after approximately 2 weeks 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 to date. 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 marked with approximately 33% receiving an adipose fin clip. These fish will all receive an oxytetracycline mark at NPTH and approximately 1,100 fish will be PIT tagged prior to release.

2.2. Broodyear 2008 Spring Chinook

2.2.1. Dworshak

2.2.1.1. Production status - There were 725,000 eyed eggs of Kooskia stock BY08 SCS shipped to Kooskia NFH during October, 2008. There were also 820,000 eyed eggs of Dworshak stock SCS shipped to Kooskia during October. On January 1, 2009, there were approximately 370,000 Dworshak stock eggs/sac-fry incubating at Dworshak. In the spring of 2009, approximately 770,000 SCS fry of Dworshak stock will be ponded directly from Kooskia into seven raceways at Dworshak. There will be 110,000 SCS fry ponded from Dworshak incubators into each of three raceways at Dworshak; one group directly into a concrete raceway, one group into seven circular tanks, and one group into four rectangular aluminum tanks. *Thomas Trock*

2.2.1.2. Fish health status –Adult IHNV prevalence was 31%. BY08 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 BY08 spring Chinook eggs were taken from a total of 247 females spawned with a total of 217 males. This produced an estimated total of 864,500 green eggs. All of the Kooskia stock eggs were transferred to KNFH between October 7 - 27, 2008. Eggs were initially incubated on creek water (approximately 46°F), due to chiller compressor replacement. Eggs were switched to chilled well water (approximately 38°F) November 13 as repairs were completed on the Carrier chiller unit. Normally eggs all hatch out by mid January. Due to higher TUs caused by chiller problems the fry will be ready for tanking mid February. 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. Kooksia is carrying an additional 50,000 BY08 fry and these cannot be reared to full smolts due to limited summer rearing space, these fry need to be removed by May 20, 2009. Approximately 820K Dworshak Stock BY 2008 eggs are currently being incubated at Kooskia NFH. Early rearing of Dworshak stock SCS at Kooskia will alleviate egg chiller capacity demand at Dworshak and take advantage of extra rearing space at Kooskia. Fry will be tanked and reared to app 600-800fpp then trucked back to Dworshak for rearing and release. *Adam Izbicki*

2.2.2.2. Fish health status - Adult IHNV prevalence was 23%. BY08 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 approximately 100,000 in August, 2008 for contribution (**Table 6**) and 10,000 Kooskia stock smolts will receive PIT tags in February, 2010. *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 2008 is 2.135 million smolts, 200k-220k 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 BY08 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 2009 but does include 234k for Clear Creek and 100k Selway River pre-smolts being used for Flow Index study rearing to full-term smolts). The NPT will transfer the extra Clearwater stock fish to NPTH site 1705 during September 2009. Prior to transfer NPT will provide wire for 100% CWT and 33% AD clips. 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 each facility and placed in the ponds during the last week of March to first week of April. Smolts are then released directly from the ponds. At Crooked River, Red River and Powell non-acclimated smolts will be released directly from the ponds daily at sunset. 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 2007 & 2008, 80% of the Crooked River full-term smolts will be direct released at the lower facility 20% from the Upper Facility. The migration success of PIT tagged fish to Lower Granite Dam in 2006 – 2008 showed a 2:1 increase in survival of smolts released at the Lower Crooked River Facility over the Upper Crooked River Facility. In 2009 100% of the Crooked River smolts will be released at the lower site. Acclimated smolts at Powell will be transported to the acclimation pond

and held for 3 to 10 days (TBD by IDFG Fisheries Research; Sam Sharr and Brian Leth). No screens will be installed to allow for volitional release as smolts have the urge to migrate. Aerators will be installed in the pond and ran 24 hours/day the entire time the fish are being acclimated to prevent the pond from freezing over. A permanent IDFG employee will be on duty for night monitoring of the ice buildup and cleaning of the intake screens. All production Chinook are Ad clipped. NPT contact for transport is Steve Rodgers. (**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 60 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. In February or March 2010, approximately 50,000 Chinook salmon will be PIT tagged

to evaluate juvenile timing and survival from release to Lower Granite Dam for each release group and to estimate an adult escapement back to Lower Granite Dam from each of the five major smolt release groups as well as to provide a tool for in-season fisheries management (Table 5). If CSS funding is available, tag numbers will be closer to 60,000. *Jerry McGehee / John Cassinelli*

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 407 adults and 39 jack spring Chinook were trapped at Nez Perce Tribal Hatchery facilities in 2008: Lolo Creek (86 adults, 1 jacks), Newsome Creek (108 adults, 16 jacks), NPTH (174 adults, 22 jacks). In addition, 73 adults were obtained from Powell and South Fork Clearwater (IDFG facilities) for backup broodstock. Of these, 160 females were spawned: Lolo Creek (7), Newsome Creek (11), Powell (58), SF (15) and NPTH (69). Eggs from fourteen females were culled due to high BKD ELISA values. Resultant production was approximately 555,824 eyed eggs. As of January 31, 2009, a total of 551,871 sac fry were on hand at NPTH. Targeted 2009 releases: (**Table 5**).

- 150,000 presmolts (acclimated) into Yoosa/Camp/Lolo Creek in October
- 75,000 presmolts (acclimated) into Newsome Creek in October
- 305,000 parr (direct stream) into Meadow Creek (lower 20 miles) June 22 - 26

The NPT will transfer Clearwater stock broodyear 2008 spring Chinook from Clearwater FH during early September 2009 (section 2.2.3.2). Fish will be reared in the NATURES "S" channels or linear raceways until late-March or early-April 2010 and released at approximately 20 fpp. *Steve Rodgers*

2.2.4.2. Estimated numbers/planned marking & tagging – Fish destined for release from acclimation facilities will be 100% 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. For smolts being reared at Clearwater Hatchery NPT M&E staff will coordinate with IDFG for CWT and ad-clipping to occur at Clearwater Hatchery. These fish will be marked 36% CWT and Ad and 64% CWT only. Prior to release at NPTH 1,100 fish will be PIT tagged by NPT. *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 begin on approximately October 1, with all fish forced out by October 15, 2009. 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 begin on approximately September 30, with all remaining fish forced out by October 14, 2009. Target size at release is 29 fish per pound (15.6 g). **(Table 5)**.
- Meadow Creek – Approximately 305,000 parr will be direct stream released into Meadow Creek in 2009. Prior to release, 5,000 fish will receive a PIT tag. On June 22-26, 2009, the spring Chinook salmon parr will be transported and direct stream released via helicopter into lower 20 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 –None of the fish sampled were positive for IHNV. Eggs from 5 females were culled because of high ELISA values. *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 2009 Spring Chinook

There are weekly conference calls scheduled for Tuesdays (beginning May 5, 2009), to keep all parties updated, informed, and coordinated on in-season run development, harvest estimates, broodstock collection, outplanting plans, etc…

2.3.1. Dworshak

2.3.1.1. Projected adult returns - Based on 2008 draft tribal harvest, sport harvest data, and rack returns and ocean conditions during emigration; the

forecasted return for Dworshak BY09 adult spring Chinook to the Clearwater River is 18,080 fish **(Table 7a)**. Given this prediction FWS is highly optimistic that they will meet broodstock requirements. It's also highly likely IDFG and the NPT will open sport and tribal fisheries in the Clearwater River in the spring of 2009 after dam counts of PIT tagged adults verify the estimates. *Howard Burge / Billy Connor*

2.3.1.2. Ladder operation – Ladder opening will be heavily influenced by in-season run validation and timing. If the return is strong, as predicted, the plan and agreement of co-managers is to utilize fish for tribal subsistence earlier in the return when they are in better condition, rather than later when they are unfit for human consumption. So one option managers are looking at is several ladder openings in June to collect a maximum of 1,000 Chinook for tribal subsistence. Snouts would need to be removed from CWT tagged Chinook prior to subsistence distribution. The adult return will be closely monitored and if strong DNFH will wait until late June to early July to collect broodstock. *Howard Burge*

2.3.1.3. Adult outplanting / distribution plans – **Table 8a** lists the prearranged streams to receive adult spring Chinook salmon, table is updated with 2009 proposed limits. Outplanting will be coordinated between Mike Key (NPT) and Howard Burge (FWS). The earliest date the NPT trucks would be available for any outplanting is June 23. For outplants to the Upper Selway River, the truck will be loaded beginning at 6 AM to allow time for the trip. 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 current plan is for ISS to continue monitoring through 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. Either all of Dworshak eggs will be incubated at Dworshak or a portion will be shipped to Kooskia for incubation over the winter. *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 - *Starting in 2009 an additional 250 brood will be collected at Kooskia for a total of 850 broodstock. This brood level would produce 600,000 smolts for the Kooskia mitigation program and approximately 250,000 smolts (reared at Clearwater FH) for release into Clear Creek.*

2.3.2.1. Projected adult returns - Based on 2008 draft tribal harvest, sport harvest data, and rack returns and ocean conditions during emigration; the forecasted return for Kooskia BY09 adult spring Chinook to the Clearwater River is 6,108 fish **(Table 7a)**. Given this prediction FWS is highly optimistic that they will meet broodstock requirements. It's also highly likely IDFG and the NPT will open sport and tribal fisheries in the Clearwater River in the spring of 2009 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 10th of May. All natural returning adults will be released upstream for natural spawning in accordance with ISS protocol. Kooskia stock adults collected for broodstock will be transported to Dworshak for holding until spawning. Dworshak stock 2-ocean adults (100% CWT) trapped at Kooskia will be sorted in the trap then anesthetized with CO^2 and hauled and released at the Kamiah Bridge for fishery recycle. *Howard Burge*

2.3.2.3. Adult outplanting / distribution plans - **Table 8a** lists the prearranged 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 ouplanted from Kooskia will receive two right opercle v-notchs 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.2126)

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 09 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 - BY09 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 - *Starting in 2009 broodstock collection may be reduced at Powell, if broodstock for the Clear Creek release are collected at Kooskia NFH.*

2.3.3.1. Projected adults returns – IDFG pre-season forecast of spring Chinook return to the Clearwater is 31,000 with a range of 19,500 to 42,500. This is for all Clearwater hatcheries combined. IDFG will use in-season assessments of overall run strength and returns to specific hatcheries based on analyses of counts and PIT tag detections at dams, to finalize sport harvest seasons and limits. 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. *Sam Sharr, Tom Rogers*

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 for steelhead trapping, 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 954 females and 954 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 levels 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 estimates to Lolo and Newsome creeks are 1,600 and 583, respectively **(Table 7b).** At the present time, there are no adult return estimates for Meadow Creek. The 6 year harmonic mean of capture efficiency at our Lolo Creek Weirs is 31%, for Newsome Creek it is 92%. The total number of returning adults we expect to capture at our Lolo and Newsome Creek weir sites are 496 and 536, respectively. Broodstock needs are: 136 adults for Lolo Creek, 69 adults for Newsome Creek, and 322 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 2009 to collect spring chinook adults as a broodstock source for the Meadow Creek program and a backup broodsource for Lolo and Newsome programs. Trapping operations will begin mid-April and continue through July 31st. The ladder may 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.

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 16th, 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 will be used proposed for application at NPTH trap sites on fish that are passed; Lower Lolo Cr = Left Operculum Punch; 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 65º. 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 5th. Spawning will occur on Tuesday of each week at NPTH (moribund ripe females will not be spawned). 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).

- 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 0.25 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 as needed/requested 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 2007 Coho

3.1.1. Dworshak

3.1.1.1. Production status – There were 283,941 fish on hand (14,226 pounds, 19.96 fpp) at Dworshak as of January 31st, 2009. *Mike Bisbee*

3.1.1.2. Projected transfer date/acclimation period at Kooskia – Smolts will be transferred to Kooskia NFH during the first week of March for a 4-5 week acclimation. *Mike Bisbee*

3.1.1.3. Numbers/dates/marks & tags - 121,338 fingerling Coho were marked with a CWT (no AD clip) on July 1st-9th, 2008. Prior to release from Kooskia 5,000 fish will be PIT tagged. PIT tags will be provided by FWS through Mitchell Act funding (**Table 9**) *Mike Bisbee*

Fish health – These fish had problems with gas bubble disease suring the Dworshak spill and required treatment with florfenicol for Bacteria Coldwater Disease. 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. *Kathy Clemens*

3.1.1.4. 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. *Mike Bisbee*

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 2nd and 4th, 2009. Approximately 550,000 (275,000 each stream) will be direct released.

3.1.2.2. Numbers/dates/marks & tags - Coho were marked – 30,000 CWT/Ad and 30,000 CWT only per each release group at Eagle Creek. Prior to transfer from Eagle Creek 10,000 fish will be PIT tagged – 5,000 for release into Clear Creek and 5,000 for release into Lapwai Creek. PIT tags will be provided by FWS through Mitchell Act funding (**Table 9**) *Mike Bisbee*

3.1.2.3. 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*

3.1.2.4. M&E

- Smolt-to-adult survival and adult return timing based on counts at Lower Granite Dam.
- Juvenile survival to Lower Granite Dam *Mike Bisbee*

3.2. Broodyear 2008 Coho

3.2.1. Dworshak

3.2.1.1. Production status - Adults recognized at Lower Granite Dam totaled 3,485 and 1312 jacks in 2008. A total of 1,745 Coho salmon brood stock (598 females, 425 males, 722 jacks and 166 pre-spawn mortalities) were collected from Dworshak (383), Kooskia (1,329), Nez Perce Tribal (6) and Lyons Ferry (27) hatcheries. On November 14th – 371 excess adults were outplanted in Lolo, Musselshell, and El Dorado creeks. The total green egg collection from adults designated as Clearwater stock for 2008 is estimated at 1.5 million. Due to the large adult return an attempt was made to collect enough eggs to produce the Dworshak/Kooskia release and the 550,000 smolt production that occurs at Eagle Creek Hatchery. Although plans were in place to transfer approximately 700,000 eggs to Eagle Creek in December/January the transfer did not occur. Due to a series of logistical constraints involving fish health certification requirements and inclement weather (Eagle Creek was snowed in for 10 days) the eggs began to hatch before they could be transferred. On December 31st - 50,417 Clearwater stock eyed eggs were transferred to the Potlatch Corp Union Worker personnel – Brian Henrie. All brood year 2008 Clearwater Coho eggs were shocked, picked, and enumerated in November and December. Eggs were enumerated using a Van Gaalen egg sorter, which showed a 78.6% eye-up for a total of 1,081,320eyed eggs. As of 2/1/09 the total number of Coho fry at Dworshak NFH is 950,926. *Mike Bisbee*

3.2.1.2. Projected production - The projected Dworshak production will be 400,000 smolts reared through spring 2010. Coho juveniles will be inventoried in the spring and summer of 2010 to ensure that no more than 300,000 fish are reared in the space allotted at Dworshak NFH (System

III, Burrows Ponds). Excess Coho parr will be cropped and outplanted to the designated outplant streams; we anticipate approximately 500,000 will be outplanted during May 2009. Outplant sites, numbers and dates will be coordinated with co-managers (**Table 9**) *Mike Bisbee*

3.2.1.3. Fish health – Every adult female was sampled individually for BKD with ELISA; values above the cutoff (.25) values resulted in one female's eggs culled. Up to 150 ovarian fluid samples (3 pool) were sampled for viruses. 6% 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 - Current plans are to CWT 120,000 in July, 2009 for contribution (**Table 10**). If FWS, through Mitchell Act, is able to provide PIT tags 5,000 smolts be tagged in February, 2010. 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. *Mike Bisbee*

3.2.2. Transfers (Eagle Creek NFH)

3.2.2.1. Projected release - Smolts reared at Eagle Creek NFH will be released into Clear and Lapwai Creeks in mid-March 2010. Approximately 550,000 (275,000 each stream) will be direct stream released. *Mike Bisbee*

3.2.2.2. 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*

3.2.2.3. M&E – Marking of fish will occur at Eagle Creek Hatchery. Starting with BY08 fish will receive 30,000 CWT only mark per each release group (Lapwai Ck and Clear Ck) for a total of 60,000 CWT only. There will be no CWT/Ad clip groups. In addition, prior to transfer from Eagle Creek each release group will be marked with 5,000 PIT tags each for a total of 10,000 PIT tags (Table 10).

- Juvenile survival to Lower Granite Dam.
- Adult return timing based on PIT tags and counts at Lower Granite Dam.
- Approximate smolt-to-adult survival based on PIT tags and the the number of juveniles released and adult returns over Lower Granite Dam. *Mike Bisbee*

3.3. Broodyear 2009 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 2009, there will again be insufficient funds to operate a weir on Lapwai Creek for monitoring and broodstock collection; however, the Clear Creek releases are recaptured at Kooskia NFH as they were in 2008, with 1,329 fish captured. This change in release points has greatly added to our adult recovery monitoring and broodstock collection effort.

3.3.1. Dworshak

3.3.1.1. Ladder operation - Ladder operation will start around October 1, 2009 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. An alternative release may occur at the Clearwater ramp upstream of Dworshak FH in the event that adult steelhead returns are high (similar to 2008)..*Mike Bisbee*

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; all adults trapped at Kooskia NFH will replace the former Potlatch River weir counts as they did in 2008.
- Smolt-to-adult survival and adult return timing shall be based on PIT tag information and counts at Lower Granite Dam and ladder counts at Dworshak and Kooskia NFH, Lyons Ferry Hatchery, Nez Perce Tribal Hatchery. *Mike Bisbee*

3.3.1.4. Communication - – Clearwater Coho Project Leader produces monthly production, semi-annual, and annual reports. *Mike Bisbee*

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 2007 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 2-5, 2009. *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 and 80,000 CWT only. 19,000 will be PIT tagged (see M&E section below). (**Table 11**) *Bruce McLeod / Mike Key*

4.1.1.3. Fish health - Import permit sampling was done on Jan 8, 2009 and results sent to Eagle Fish health Lab and Bruce McLoud. 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/marking 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 2008 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, 2009. *Bruce McLeod / Mike Key*

4.2.1.2. Projected release – Target release is 500,000 subyearlings at 75-50 fpp on May 27, 2009. A group of 100,000 fish are CWT / ad-clipped and 100,000 CWT only for evaluation – the balance of fish are unmarked. 36,765 will be PIT tagged. (**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*

4.2.1.4. 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/marking 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*

4.2.1.5. 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 watered up to collect fall Chinook on September 9, 2008. The ladder was closed November 14, and reopened from November 25 to December 1, 2008, when it was closed for the remainder of the year. A total of 708 adults (497 males and 211 females) and 571 jacks (<53 cm) were collected at NPTH. Transportation of fall Chinook from Lower Granite Dam trap began August 26 and continued to September 27. A total of 965 adult (563 males and 402 females) fall Chinook and 102 jacks (<53 cm) were transported from Lower Granite Dam to NPTH for spawning. *Steve Rodgers*

4.2.2.2. Adult Outplant – A total of 1,047 fall Chinook returned or were transported to NPTH that were additional to broodstock needs. These fish were outplanted to spawn naturally: 846 - mainstem Clearwater Harpers Bend, 66 - mainstem Clearwater Kooskia bridge, and 135 - Selway River, O'Hara bridge.

4.2.2.3. Spawning – The first spawn occurred October 21 and the last spawn was November 25. A total of 532 females were spawned, which yielded 2,105,802 green eggs. Additional eggs were collected to provide a backup for Lyons Ferry Hatchery who thought they would be short during the spawning season. However, due to high fecundity and good eye up success Lyons Ferry did not need additional eggs which resulted in eggs/fish above NPTH production targets for BY08. Average eye up for all takes was 86%. Eye up for GnRH hormone injected females was 93%. *Steve Rodgers*

4.2.2.4. Production status - As of January 31, 2009, total fall Chinook fry on hand at NPTH: 1,781,892. *Steve Rodgers*

4.2.2.5. Projected release - Anticipated release: 1.7 million sub-yearlings.

- NPTH: A release of 800,000 sub-yearlings into the Clearwater River at 50 fish per pound (9.07 grams) is planned. This release is 300,000 fish above the target release goal and is a result of taking additional eggs as a backup for Lyons Ferry. The NPTH ponds are large enough to provide low densities and fish will be associated with an existing mark group for run reconstruction purposes. 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 NPTH 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 NPTH for acclimation and release. 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 fed 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. Volitional release of fish will begin June 1 with remaining fish forced out by June 15.

- North Lapwai Valley: A release of 500,000 sub-yearlings into Lapwai Creek at 50 fish per pound (9.07 grams) is planned. Transfer of the fish will occur in as soon as they can be marked at NPTH - 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 17º 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 30th. However, an earlier release may occur to avoid unfavorable water temperatures.
- Cedar Flats: A release of 200,000 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, 14,706 fish will be tagged with a PIT tag (3,000 for evaluation and 11,706 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 10th. However, an earlier release may occur to avoid unfavorable water temperatures.
- Lukes Gulch: A release of 200,000 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, 14,706 fish will be tagged with a PIT tag (3,000 for evaluation and 11,706 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 10th. However, an earlier release may occur to avoid unfavorable water temperatures. (**Table 11**) *Steve Rodgers*

4.2.2.6. Fish health – Kidney samples were assayed by ELISA on all spawned females; eggs from 5 females were culled due to ELISA OD's above the cut-off (.25). 150 ovarian fluid samples, 60 tissues samples and 30 cranial samples were taken for assay. IHNV was found in 6 % of samples tested

to date. 60 fish sample will be collected and assayed prior to release. *Kathy Clemens*

4.2.2.7. 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 11,706 PIT tag group 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.

2. 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*

4.2.2.8. 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, 2006, and 2008 for the transportation study. For 2009 roughly 328,000 fertilized eggs will be transported from Lyons Ferry and Umitilla Hatcheries to Dworshak. Of these, 70% are being incubated for ponding in February 2009 and 30% are being incubated for ponding in April 2009. 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 earl 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*

4.2.3.2. Dam Passage Strategies and Experiences Study - The U.S. Geological Survey, U.S. Fish and Wildlife Service, Pacific Northwest National Laboratory, and the University of Washington are involved in a

cooperative study of juvenile fall Chinook salmon life history. As part of that study, they will be collecting run-of-river fish from the lower Clearwater River for tagging that will enable them to estimate survival, mortality, and the extent of migratory delay in 2009. In 2008, they encountered problems while collecting and handling fish from the river due to elevated total dissolved gas levels in the river and fish exhibiting signs of gas bubble trauma. Although they will attempt to remedy such conditions should they occur this year, they would like to have a reserve of hatchery fish in the event river collections prove unsuccessful. They will be using 2,000 subyearling fall Chinook salmon from the Nez Perce Tribal Hatchery for use on the project in 2009. They would transfer the fish to the Dworshak National Fish Hatchery where they would be reared to suitable sizes in case they are needed. Should these fish not be used, they would at a minimum be PIT tagged and released. Given tag availability and other logistics, a portion of these fish may also be acoustic or radio tagged to provide a comparison to tagged run-of-river fish. *Billy Connor/ Kenneth Tiffan* (509) 538-2299 ext. 279 or ktiffan@usgs.gov.

4.3. Brood year 2009 Fall Chinook

4.3.1. Adult collection - Snake River Fall Chinook adults will be collected at Lower Granite Dam (LWG) and transported to NPTH, in accordance with the *U.S. vs. Oregon* Management Agreement. Additionally, adult fall Chinook may enter the fish ladder and be trapped at NPTH.

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 2009 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 2009 has not yet been determined, but should range from 13-20% 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 NPTH 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, 2009, and continuing through December 4, 2009, 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 1.7 million, approximately 565 females will be spawned at NPTH. Spawning will begin October 20, 2009, and may continue through December 8, 2009. At the completion of the third spawn un-spawned females may be injected with sGnRHa /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 2009. 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 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 52º F (11.1º 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 2009 (but are not likely) 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 - BY08: Dworshak will rear Shasta strain rainbow trout from Ennis NFH and triploid RBT from Hayspur SFH for the June 12, 2009 Kids' Fishing Day. On January 1, 2009, there were 9,360 Shasta and 2,800 Hayspur 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. About 70% of the Hayspur RBT has died due to IHN and various other problems during outside rearing. *Thomas Trock*

5.1.1.2. Production status – BY09: Dworshak will receive approximately 15,000 triploid RBT from Trout Lodge, WA for its 2010 Kid's Fishing Day program. These eggs should arrive at Dworshak during February, 2009. *Thomas Trock*

5.1.1.3. Excess outplanting - The plan is for several thousand fish to be transferred to Tunnel Pond for the Kid's Fishing Day and those will remain in that Pond, 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. *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 2006, the Nez Perce Tribe initiated a Pacific Lamprey restoration initiative. In December, 2008, the NPT have transported 15 adult lampreys that were collected in the Smolt Monitoring Facility at John Day Dam to Nez Perce Tribal Hatchery. An additional 126 lampreys were collected at the dewatered north ladder at John Day Dam and transported to NPTH in January, 2009. As a prophylactic treatment to control Furunculous, 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 and outfall returns to the Clearwater River downstream of the fish ladder. The adults will be held until

April/May of 2009, when the NPT will release them in selected streams to spawn naturally. *Steve Rodgers*

7. INFORMATION and EDUCATION

7.1. School Programs - The Dworshak Complex I&E program coordinates with approx. 12 schools annually to implement the Hatchery in the Classroom project. Either with their own equipment or hatchery-loaned, classes from 4^{th} – 12^{th} gr. raise either steelhead or Chinook from eyed egg to fry and release them in May.

The FWS, NPT, and IDFG staffs are partners in the Kamiah High School Environmental Science/Aquaculture curriculum and provide technical expertise, program development, hands-on field and classroom activities, mentorship. Egg and fish requests for 2009 are:

- Approximately 2,000 steelhead and 200 spring Chinook eyed eggs for Hatchery in the Classroom projects (12 schools).
- Approximately 200 fry (only needed in the event of high mortality with a Hatchery in the Classroom project).
- 25 pre-smolt steelhead and 25 coho for Kamiah High School display tanks and aquaculture lessons
- Approximately 40 adult steelhead carcasses for dissection and anatomy studies in elementary and high schools; and for outreach events with a Gyotaku (fish printing) activity (Boise Salmon/Steelhead Days in September). *Ed Larson / Susan Sawyer*

8. CONTACTS

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