2015

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

Final March 27, 2015

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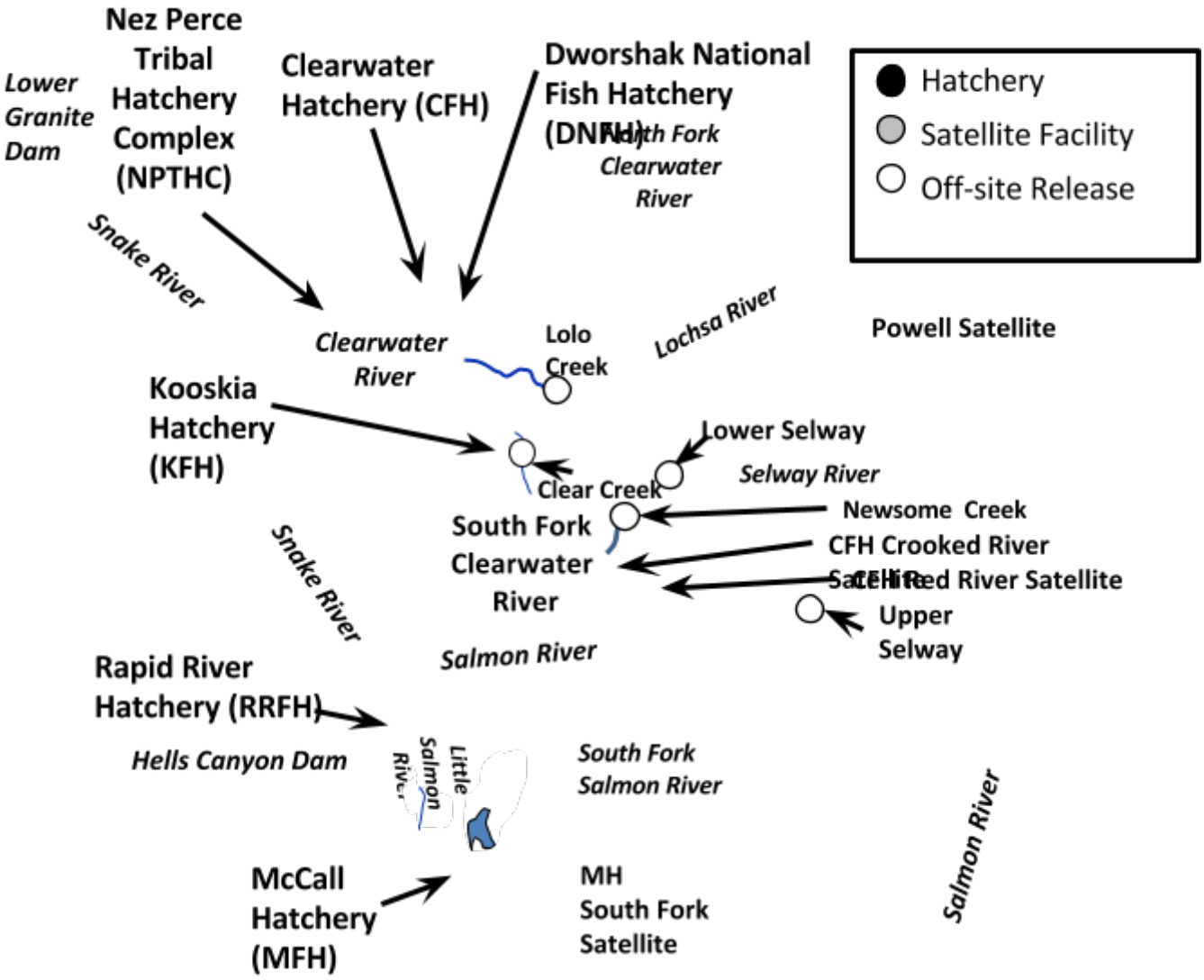
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Figure 1. Map of hatchery rearing facilities, hatchery adult trapping facilities, and juvenile release sites associated with hatchery Spring Chinook production in the Clearwater Sub-basin in 2015.

Figure 2. Map of hatchery rearing facilities, hatchery adult trapping facilities, and juvenile release sites associated with hatchery steelhead production in the Clearwater Sub-basin in 2014.

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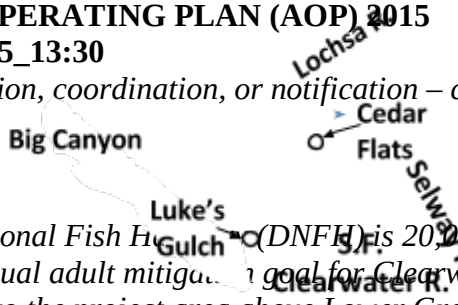
(Each section lists a contact for additional information, coordination, or notification – contact information is listed in Section 8, pgs. 56-57)



1. STEELHEAD

The annual adult return goal for Dworshak National Fish Hatchery (DNFH) is 20,000 steelhead back to the Clearwater River. The annual adult mitigation goal for Clearwater Fish Hatchery (CFH) is 14,000 adult steelhead to the project area above Lower Granite Dam. Escapement goals to the project area above Lower Granite Dam assumed a harvest rate of about 66% on Dworshak and Clearwater hatchery adult returns in ocean and Columbia River fisheries downstream of the project area.

While annual adult steelhead returns originating from the combined production at Dworshak and Clearwater hatcheries are intended primarily for harvest mitigation, approximately 18% is intended to supplement natural spawning in portions of the Clearwater drainage. Fish intended for supplementation are released with adipose fins intact and are not intended to contribute to mark-selective fisheries. Collaboratively managed hatchery production and supplementation efforts associated with this program are consistent with the intent and protocols of the 2008-2017 US vs. Oregon Management Agreement.

All broodstock for DNFH is collected at DNFH and totals approximately 2,400 adults annually. Broodstock for CFH programs is collected at DNFH (approximately 540 adults) and from adult returns to the SF Clearwater River (approximately 200 adults). Additional details are listed in the pertinent sections below.

1.1. Brood Year 2014 Steelhead

1.1.1. DNFH

Production status – As of January 1, 2015 there were a total of 2.48 million steelhead on station, averaging 155 to 169 mm total length, depending on take, 11.0 fpp. BY 14 STT were reared in 60 Burrows Ponds and two Mixed Cells. Sample counts are performed monthly on representative ponds. ***Jeremy Sommer/Tom Tighe***

1.1.1.1. Projected release – We plan to release smolts April 14th – 22nd, 2015. DNFH expects to release 1.4 million steelhead on-site and 1.05 million off-site. All unclipped steelhead (248K) will be released in Lolo Creek at El Dorado site April 18th – 22nd depending on snow conditions using

Figure 3. Map of hatchery rearing facilities, hatchery adult trapping facilities, and juvenile release sites associated with hatchery Fall Chinook production in the Clearwater Sub-basin in 2014.

[illegible] too large to maneuver in the Meadow Creek release site. If 192K fish are

released at Meadow Creek, all remaining fish will be released as soon as access conditions permit into El Dorado Creek via NPTHC trucks. Average total length at release is estimated at 200 mm (5.8 fpp) (**Table 1**). ***Jeremy Sommer/Tom Tighe/Steve Rodgers***

1.1.1.2. Fish health status – IHNV occurred at the 26.6% rate in the BY 2014 adults. In late Aug. and early Sept., IHN virus and gas bubbles were detected in several ponds in system 2 at low mortality levels. No reuse was used during BY 14 steelhead rearing. A 60 fish sample will be tested for viral, bacterial, and parasitic pathogens prior to release. ***Marilyn Blair***

1.1.1.3. M&E – Ten CWT groups ranging from 10K to 20K each were tagged for system contribution and early return groups during marking operations in June, July and August 2014. Thirty days post tagging 500 fish from each CWT-tagged pond were checked for tag retention (ex. BY14 = 81% to 99%). Thirty-four thousand nine hundred PIT tags were inserted in January 2015; 1,500 for the Smolt Monitoring Program, 11,400 for the Comparative Survival Study, and 20,000 for DNFH evaluation. Dead fish recovered from ponds containing PIT tagged fish are scanned for tags and the ponds are swept with magnets to recover shed tags. Sample length and weights were collected at the time fish were ponded, during PIT tagging and pre-release to monitor growth and condition. PIT tag records will be used to estimate survival and travel time to the ocean post-release. ***Chris Peery / Carrie Bretz***

1.1.1.4. Remote PIT Tag Array Monitoring and Evaluations - The Nez Perce Tribe operates four remote PIT tag arrays in the Clearwater River Basin as part of the ISEMP and B-run Project to monitor adult salmon and steelhead abundance. These PIT tag arrays will be operated year round and are part of a long-term monitoring effort. Information about PIT tag recapture information can be viewed online (www.ptoccentral.org). Arrays are located on SF Clearwater (Site Codes SC1 and SC2) and Lolo Creek (LC1 and LC2). ***Jason Vogel***

1.1.1.5. Research Requests – FPC requested 1,500 steelhead be PIT tagged for the Smolt Monitoring Program. For 2014 releases 11,400 steelhead were PIT tagged for the Comparative Survival Study (CSS). ***Chris Peery***

1.1.2. CFH

Original design memorandum shows the production for CFH may be as high as two million steelhead smolts; however, the annual production target has been reduced due to limited water availability and to provide more rearing space for Chinook salmon. Historically, the steelhead smolt releases from CFH have ranged from approximately 600K to 1.04 million. Currently the release goal for CFH is 843,000 full term smolts (FTS). The reduction of FTS release number is from downstream multi agency negotiations and insufficient water to rear fish in 28 one hundred foot sections of raceways. The adult return goal for the program is 14,000 steelhead. Currently, DNFH provides approximately 540 adults to meet egg take goals for this program. Additionally, 200 adults are captured in the SF Clearwater River by anglers for use as broodstock in an attempt to develop a locally adapted broodstock for the SF program.

1.1.2.1. Production status / projected release - The estimated number of BY14 steelhead to be released in the spring of 2015 is 926,000. This includes 546,000 AD-clip, zero AD/CWT, 129,500 No-clip/CWT and 250,500 No-clip into the lower SF Clearwater pursuant to the US v Oregon 2008-2017 Management Agreement (US v Oregon). IDFG will contact NPT (Sherman Sprague) to coordinate Newsome Creek releases (**Table 1**). ***Malia Gallagher/Tony Folsom***

1.1.2.2. Fish health status – Brood Year 2014. All females were individually sampled for viral replicating agents using ovarian fluid. Culling of eggs from IHNV positive females did not occur. Juvenile rearing inspections were performed quarterly by Eagle Fish Health Lab and diagnostics were performed as needed. No prophylactic treatments were used during steelhead rearing. Pre-liberation samples will be performed on 60 fish 30 to 45 days prior to liberation. ***David Burbank***

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 three times during the final rearing cycle, during marking as fish are moved outside, at the end of October and 2 weeks prior to release. Seven weeks after marking and just prior to release 300 fish are sampled to quality check adipose fin clips and coded wire tag retention. In February, 18,100 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. Therefore PIT tags are randomly separated by code with 70% of the tags representing the run-at-large migration group while the remaining 30% being default returned to the river during outmigration. PIT tags are representatively distributed across release groups in proportion to the release group size. ***Chuck Warren***

SF Clearwater Localized Stock Evaluation- South Fork Clearwater smolts will be released at Meadow Creek. Similar to other production at CFH, smolts 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 which will be used to estimate SARs. PIT tagging is a cooperative effort between CSS and LSRCP (**Table 1**). ***Chuck Warren***

CWT Tag Retention- A 300 fish sample from raceways which are 100% CWT will be checked for tag retention approximately three-weeks post tagging. These retention checks will satisfy marking QC/QA needs as well as release reporting requirements. ***Chuck Warren***

1.1.2.4. Remote PIT Tag Array Monitoring and Evaluations – Information can be seen in section 1.1.1.4.

1.2. Brood Year 2015 Steelhead

*DNFH collects broodstock to meet B-Run Steelhead production goals for its own program, the CFH and the Magic Valley Hatchery (***Table 2***). Approximately 800-900 females are needed to provide the eggs for these hatcheries. Fish collections via the trap exceed these numbers to ensure adequate numbers of adults are available on spawning day. Additional factors influencing the number of fish trapped and spawned include; 1) the female to males sex ratio (~2.3:1) and target 1:1 spawning ratio, 2) potential for request of additional eggs for the MVH USRB program if a brood shortfall is anticipated at Pahsimeroi weir, 3) the prevalence of viral replicating agents in adults and culling rate variability based on the level of viral replicating agents, 4) overall egg quality, 5) preserving the run-timing from August through April, and 6) reducing juvenile IHNV infections by maximizing limited reservoir water supplies. Any fish surplus to the spawning needs are returned to the Clearwater River for the fisheries. This brood level provides ~2.1 million smolts at a 5-year average of 74% eyed egg-to-smolt survival (excludes BY09 40% survival due to IHN) to meet the adult return goal of 20,000 to the Clearwater River. The program goal for SF Clearwater releases stated in the harvest agreement between the States, Tribes, and Federal parties is 533,000 un-clipped steelhead. The intent of releasing un-clipped fish is minimize harvest impacts down-river mark selective sport fisheries. Returning un-clipped adult steelhead that escape the sport fishery will return at a higher rate to tributaries to spawn, thereby increasing natural production.*

1.2.1. DNFH

1.2.1.1. Projected adult return – Based on estimated return rates, the predicted steelhead return to DNFH rack in 2014-2015 is lower than average. As such, broodstock utilization has been maximized to the extent possible. We open the ladder to only capture what broodstock we need. ***Chris Peery***

1.2.1.2. Ladder operation – The ladder was opened in the Fall (2014) with collections by month (October: 288 adults; November: 106 adults; December: 208 adults) for collection of early-return steelhead. Collection targets are generally 300 in October, 150 in November, and 150 in December. All excess SST (211 adults) were returned to the main stem of the Clearwater River at the Hocus boat ramp upstream of the hatchery. Based on the steelhead returns we are planning on intermittent ladder operation and avoiding weekend operation in the winter and spring of 2015 to prevent excess fish collection. This 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. ***Jeremy Sommer/Tom Tighe***

1.2.1.3. Adult fish health – 78 males were injected with the hormone sGnRHa prior to spawning, using the implant form, under INAD. This was to insure that there were enough males that were ripe during the early spawns. Fish were treated up to three times per week with formalin for

fungus, under a veterinary extra-label prescription. At spawning, a minimum of 60 tissues samples will be collected and assayed for viruses, bacteria, and parasites. About 30% of ovarian fluid samples from each take will be collected individually (not pooled) to assay for virus, except for in the case of transfers of eggs to Magic Valley State Hatchery where 100% ovarian fluid samples will be taken individually (not pooled) for virus testing from these females. In addition to samples taken during spawning, adults are also sampled for IHNV as soon as possible as they return to DNFH throughout the adult run in order to obtain a better idea of the numbers and timing of returning adults that have IHNV in the river and the genotype of this virus. Beginning on 10/15/2014 and for about every 2 weeks thereafter, 30 adults were sampled for IHNV. All samples were taken non-lethally by gill, fin, and mucus collection. ***Marilyn Blair***

1.2.1.4. Adult out-planting/marking – Ladder opening for collection of spring returns is done within one week of spawn dates (Table 2). Any fish beyond what is needed for spawning will generally be returned to the river at the Hocus boat ramp. All released fish will be marked with a left operculum v-notch. Any out-planting involving the NPT will be coordinated with Mike Key. ***Carrie Bretz / Chris Peery***

1.2.1.5. Carcass disposition – The food bank will be utilized when possible for carcass disposal. Approximately 150 carcasses will be provided to local schools for fish dissections in the Hatchery in the Classroom Program. To date there have not been any requests from research groups to acquire fish carcasses for scientific study. Any non-hormone injected carcasses that are not utilized by the food bank, or for classroom dissections will be returned to the Clearwater River. Any fish that have been exposed to hormone treatments (SGnRHa) will be disposed at the transfer station. ***Jeremy Sommer / Tom Tighe***

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, tags, and marks then sorted for spawning or holding. All CWT fish will be retained and utilized for broodstock to the extent possible. Remaining CWT fish will be killed for tag recovery. ***Carrie Bretz / Chris Peery***

1.2.1.7. Genetic samples – DNA samples are collected from all spawned adults at the DNFH to develop the Parentage Based Tagging (PBT) baseline by IDFG personnel (see Appendix 1 for detail).

1.2.1.8. Spawning/egg take plans, mating protocol - Current plans are to take ~2.8 million eyed eggs for DNFH, ~1.2 million green for CFH. Included in this number are ~300K eggs, or more, depending on availability of adults from the South Fork of the Clearwater River localized broodstock program. DNFH will also take ~405,000 green eggs for Magic Valley. A 1:1 male-female spawning ratio is achieved by trapping additional broodstock because the average trapped male-female ratio is 1:2.3. The number of eggs collected is based on historical adult survival, eye-up percentage, disease rates and smolt survival rates to meet smolt release targets. No more than 5% of broodstock will be composed of 1-ocean males. One-

ocean males will be used to fertilize eggs from no more than one female. In an attempt to improve production of larger returning steelhead, quality males, 90 cm fork length or larger, will be crossed with up to three females as possible and retained (not killed or released) so that they may be used during multiple spawning dates. Broodstock collection is minimized to the extent possible. This year we will be utilizing 10 takes into the nursery to reduce rearing stress. There will be a total of 11 spawns. **(Table 2)**

DNFH is cooperating with CRITFC and the Nez Perce Tribe (NPT) in a Kelt Reconditioning Project. NPT staff will air-spawn 169 females for the Kelt project. Air-spawned fish are to be reconditioned and retained until the spring of 2015. However, depending upon survival, some of these fish may need to be released after four to six weeks in order to make room for steelhead kelts transferred from Lower Granite Dam or Clearwater River tributaries. A portion of the surviving air-spawned fish will be euthanized to assess egg quality of reconditioned kelts. The remaining fish will be tagged and released.

Co-managers will discuss and determine appropriate release locations for both DNFH ladder returns, as well as any SF Clearwater River broodstock kelts. Average fecundity of air spawned fish has been estimated at 20% lower than kill-spawned fish. Also, kelt broodstock is collected as close to spawning as possible so that kelts are in the best condition possible. Hence, brood requirements are being accomplished with 3 takes of 56-57 fish each. For 2015, SF Clearwater steelhead broodstock may be incorporated into the reconditioning program if fish are available. We propose air-spawning 15% to 20% of the females collected from the SF Clearwater River.

Between 15 and 20 reconditioned kelts have matured from BY 2013/2014 and will be air-spawned in 2015. These eggs can be incorporated into DNFH production. See **Appendix 2** at the end of this document for a detailed summary of the Kelt reconditioning project. ***Jeremy Sommer /Tom Tighe/Scott Everett/Brett Bowersox***

1.2.1.9. Incubation: DNFH will incubate eggs from approximately 556 steelhead females for its program, 147 fall-return adults and 409 from winter and spring returns. After eye-up and enumeration, approximately 2.8 million eyed eggs will go into the DNFH program. DNFH will incubate up to 1.2 million green eggs for CFH. 405,542 green eggs for Magic Valley Hatchery will be brought to CFH for incubation. Eyed eggs in excess of program needs can be provided to the Kelt Reconditioning Project, the IDFG for sturgeon projects, or outplanted to the Yankee Fork of the Salmon River or the North Fork Clearwater River upon Co-Manager approval. ***Jeremy Sommer/Tom Tighe***

Nursery Rearing: DNFH will early-rear approximately 2.4 million steelhead in its nursery until the fish reach approximately 100-150 fpp

during the spring and summer of 2015. ***Jeremy Sommer/ Tom Tighe***
Outside Rearing: Approximately 2.4 million steelhead will be moved from nursery tanks to outside burrows ponds from the middle of May until September 1, 2015. Fifty four Burrows ponds will be used for steelhead rearing. Fish will be moved from the nursery to the ponds using a Heathro Fish Pump. A marking trailer from Columbia River Fisheries Program Office will AD clip and CWT steelhead. The Burrows ponds will be initially ponded at approximately 135K fish/pond. Most steelhead will receive an adipose-fin clip to designate it as a hatchery fish, the exception being the 200,000 unclipped/unmarked Lolo Creek releases.

Early rearing occurs in the nursery on reservoir water. After the fish are moved from the nursery tanks, initial stocking will be in System I, also on reservoir water. The fish will be kept on reservoir water until they are approximately 60 fish per pound to better manage against IHN outbreaks from exposure to the river water. As density and flow levels increase in System I, the steelhead will be moved into Systems II and III using the Heathro Fish Pump in conjunction with the Vaki Micro Fish Counter to inventory these fish into ponds where they will remain until release. ***Jeremy Sommer/ Tom Tighe***

1.2.1.10. Juvenile Fish health - Upon ponding, juveniles will be monitored for any disease problems including parasites, viral, and bacterial pathogens once per month at a minimum. A 60 fish sample will be tested for viral, bacterial, and parasitic pathogens prior to release. ***Marilyn Blair***

1.2.1.11. Planned juvenile marking & tagging, release sites – Tentative marking plans for BY15 steelhead at DNFH are found in **Table 3**. The number of BY15 steelhead to receive a CWT is tentatively set at 180,000. FWS is not planning to administer an LV fin clip to CWT steelhead in 2015. ***Chris Peery***

1.2.1.12. Juvenile M&E - FWS will CWT 180,000 steelhead total from the two systems and early return progeny. Additional steelhead will receive PIT tags; 1,500 for SMP, 11,400 for CSS, and 20,000 for DNFH evaluation. ***Carrie Bretz / Chris Peery***

1.2.1.13. Kelt M&E - An additional 150 steelhead kelts will be collected at Lower Granite Dam (LGR) and transferred to DNFH. For 2015, kelts from tributaries of the Lochsa and SF Clearwater rivers will also be collected and transferred to DNFH. Fish will be reared in conjunction with the air-spawned steelhead (section 1.2.1.8). These fish will be on-station from March through October. Surviving LGR transferred kelts will be tagged and returned to the Snake River below LGR. ***Scott Everett***

1.2.1.14. Research Requests –

- Matthew Campbell, IDFG requested fin clip samples from all adult steelhead spawned at DNFH (for all programs). He is heading up the parentage-based genetic tagging program for IDFG. 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. ***Chris Peery / Ray Jones /Jeremy Sommer***

- The NPT, CRITFC, and University of Idaho are continuing their research on steelhead kelt reconditioning. Experiments involving treatments to reduce mortality and improve growth and rematuration, as well as sampling fish to measure physiological responses during reconditioning will be conducted on air-spawned steelhead, as well as kelts transferred from LGR and Clearwater River tributaries (see sections 1.2.1.8 and **Appendix 2**). ***Scott Everett***
- Idaho Department of Fish and Game requested about 5 gallons of steelhead eggs from DNFH to be used in capturing sturgeon for research purposes. DNFH will provide green steelhead eggs in the course of steelhead spawning. IDFG will disinfect these eggs by "freeze/thaw" method. Eggs will be picked up at the end of each spawning week by IDFG. ***Don Whitney/Ray Jones***
- The Nez Perce Tribe, CRITFC and the University of Idaho request 100 eggs per air-spawned female to evaluate reproductive success in reconditioned kelts. This will require a small amount of milt from two to three males to sufficiently fertilize the eggs. ***Scott Everett***
- DNFH has had requests from approximately 20 schools for Trout in the Classroom projects. These schools have requested a total of 2,200 eggs for these projects. They have also requested 130 carcasses for student dissection. ***Ray Jones/Jill Olson***
- Eagle fish health lab (IDFG) requested to take gill, fin, and kidney/spleen samples during one spawning event. These samples will be part of an ongoing nonlethal sampling study evaluating the ability to isolate virus using cell culture. ***David Burbank***

1.2.1.15. Hatchery Evaluation Team – Future Research requests will be vetted through the DNFH Evaluation Team utilizing the *Guidelines for Conducting Research and Evaluation Projects at DNFH.* The co-managers have requested formal input on the Hatchery Evaluation Team (HET) and will receive these requests for review. The team is comprised of:

- Ray Jones, Marilyn Blair, and Mark Drobish for the USFWS.
- Gary Byrne and Chris Sullivan for the IDFG.
- Becky Johnson, Jay Hesse, Bill Young, Jason Vogel, Mike Tuell, and Kent Hills for the NPT.
- Steve Yundt and Rod Engle for LSRCP.

1.2.1.16. Communication FWS puts out weekly spawning reports and weekly return reports, and annual spawning and adult return reports are also produced.

1.2.2. KNFH

1.2.2.1. Weir/trap operation - The adult trap will be opened early to mid-March 2015 for BY15 steelhead adult collection. The proposed operation is to close the trap 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 on May 15-16. The trap start and end times may be adjusted as needed depended on adult returns to the basin. During this dewatered period we would 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 informed. ***Chris Peery***

1.2.2.2. Adult handling/out-planting/marking - All natural (unmarked) fish will be loaded onto a small transport truck and taken nine miles up Clear Creek to the second bridge and released. CWT steelhead will be sacrificed for tag recovery. Adult hatchery steelhead (not taken for CWT) for out-planting will be loaded into NPT truck at time of sorting; if a large truck is needed, we will contact NPT Mike Key for spring out-plants. If trap numbers are low, we will use a 400 gallon tank in a one ton truck for out-plants. Out-planted steelhead will be given a right operculum 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. ***Carrie Bretz / Chris Peery***

1.2.2.3. M&E - Returning adults are measured and examined for gender, various clips, tags, and marks then sorted for spawning or holding. CWT steelhead will be sacrificed for tag recovery. No steelhead evaluation is planned at KNFH at this time. ***Carrie Bretz / Chris Peery***

1.2.3. CFH

1.2.3.1. CFH – BY15 smolt release has been set at 843K including 333K for tribal supplementation **Table 3**. 1,206,000 green eggs are requested for CFH. **Table 2**. All spawning will occur at DNFH. Our expected first spawn date for CFH egg collection is March 11. 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 DNFH. All eggs from positive IHNV parentage will kept for Broodstock. At DNFH, the eggs will be shocked and then transferred to CFH 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 100 fish per pound. Each vat is loaded with approximately 45k swim-up fry. ***Malia Gallagher/ Tony Folsom***

1.2.3.2. SF Clearwater Broodstock - In the spring of 2015 managers will continue to create a locally adapted steelhead broodstock in the South Fork Clearwater River by assessing the feasibility of collecting, spawning, and rearing the progeny from B-Run steelhead returning to the South Fork of the Clearwater River. PIT tags will be used to evaluate the relative

performance of progeny from fish returning to the South Fork Clearwater River and DNFH.

Project Objectives

- Clearwater Regional staff will coordinate with anglers to collect a minimum goal of 100 pairs of adults for spawning. Adults not used for broodstock will be made available to NPT for radio tagging (see section 1.2.3.3).
- CFH staff will operate transport trucks (two 1-ton transport trucks and an adult hauling tanker) to transport adults to DNFH.
- Adult holding and spawning will occur at DNFH per protocol mentioned in 1.2.3.1. This will include coordination with IDFG staff for spawning, disease sampling, and testing of samples.
- Eggs will be shipped to CFH green for rearing.
- DNFH will help collect SF adults to cover shortfall of Dworshak brood if necessary
- CFH will rear at minimum, 420,000 FTS in six raceways for out-planting to Meadow Creek on the SF Clearwater River.
- Pending availability of adult pairs in the fishery, CFH staff will implement a strategy to increase production of SF origin smolts by whole raceway groups. If adults are available, the entire Meadow Creek release (501,000 FTS) would consist of SF origin smolts.
- Approximately 12,000 juveniles from each group (SF stock, DNFH stock) will be PIT tagged to evaluate SARs. Juveniles produced will maintain current marking strategy (Table 3). Managers have decided that these fish will be released at Meadow Creek beginning spring of 2012 (**Table 1**). ***Malia Gallagher/Tony Folsom***

1.2.3.3. Steelhead Adult Distribution – Radio telemetry – The Nez Perce Tribe will be inserting radio transmitters into adult steelhead on SF Clearwater to determine distribution throughout the drainage. Working closely with co-managers (IDFG) local broodstock collection (see section 1.1.2.3) to collect adult steelhead, 45 radio transmitters will be inserted 37 NOR steelhead and 8 CWT only HOR steelhead in late – February and early – March. Further, Nez Perce Tribe is working with tribal anglers who will assist in capturing adult steelhead for radio tracking and broodstock collection using traditional fishing methods. ***Peter Cleary***

1.2.3.4. Fish health – All females spawned at DNFH for CFH will have an ovarian fluid sample taken and tested for viral replicating agents. All samples will be shipped to Eagle Fish Health Lab for testing; culling for INHV will not occur. Eggs will be culled from females that are positive for other viral replicating agents such as IPN, VHS and ISA. Juvenile rearing inspections will be performed quarterly and diagnostic examinations as needed by Eagle Fish Health Lab. Pre-liberation inspections will be performed on a 60 fish sample within 30 to 45 days of liberation. No prophylactic treatments are planned at this time. ***David Burbank***

1.2.3.5. Planned juvenile marking & tagging, release sites – Marking plans for BY14 steelhead from CFH are found in **Table 3**. As fish are moved outside, they receive ad-clips and CWT's. Fish will remain there until they

are full smolt size and age, at a maximum of 4.5 to 6.0 fish per pound. Raceways are loaded with approximately 50,000 -70,000 fish. In February, approximately 18,100 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 which will be used to estimate SARs. This tagging is also a cooperative effort between CSS and LSRCP. PIT tags will be distributed across release groups in proportion to the release group size. ***Chuck Warren***

2. SPRING CHINOOK SALMON

The total combined annual mitigation goal for adult Chinook salmon returns to the project area above Lower Granite Dam from DNFH, CFH, KNFH and NPTHC is 111,526 spring Chinook salmon (45,675, 59,575, 5,200 and 1,176 respectively). Original escapement goals to the project area above Lower Granite Dam assumed a harvest rate of about 80% on adult hatchery origin Chinook salmon from the Clearwater River in ocean and Columbia River fisheries downstream of the project area.

In addition to harvest mitigation portion (approximately 18.5% at 2014 production levels) the combined Chinook salmon hatchery DNFH, CFH, KNFH and NPTHC is intended to supplement natural spawning in portions of the Clearwater drainage. Fish intended for supplementation are released with adipose fins intact and are not intended to contribute to mark-selective fisheries. Collaboratively managed hatchery production and supplementation efforts associated with this program are consistent with the intent and protocols of the 2008-2017 US vs. Oregon Management Agreement.

Broodstock needs for all programs total 5,058 adult Chinook salmon, specifically,1,556 for DNFH, 572 for KNFH, 2,066 for CFH 548 for NPTHC, and 316 for the production at Lyons Ferry. Additional details are listed in the pertinent sections below and the Broodstock Calculator (Table 12).

Broodstock collection is a cooperative effort and brood for the programs listed above are collected at several locations throughout the basin. The preferred numbers of brood to be collected at each facility are as follows: 1,988 at Dworshak, 1,080 at Kooskia, 1,548 at Clearwater Hatchery satellite facilities, and 442 at NPTH (Table 12).

All Spring Chinook broodstock are screened for Bacterial Kidney Disease (BKD) using ELISA techniques. Generally, eggs from females with optical densities (OD) over 0.25 are culled. In the event of low adult returns with anticipated egg numbers below program goals or policy requests, hatcheries may consider rearing Chinook eggs from females with ELISA optical densities between 0.25 and 0.60 that would normally be culled. The number of these higher-ELISA progeny to be raised will be limited by the availability of sufficient rearing space to maintain low density indices and biosecurity (segregation and other measures) appropriate for rearing fish from high-titer brood. The fish will be closely monitored for BKD and antibiotic treatments used if warranted. This decision to raise fish from high ELISA-titer brood will be made prior to spawning each year. ***Marilyn Blair/Doug Munson/Jerry McGehee***

2.1. Brood Year 2013 Spring Chinook

2.1.1. DNFH

2.1.1.1. Production status - On January 1, 2015, there were approximately 1,553,749 BY13 spring Chinook averaging 27 fpp and 127 mm total length on station. At present, these fish will slightly exceed the size-at-

release requirements of 20 fish per pound. ***Angela Feldmann/Adam Izbicki/Ray Jones***

2.1.1.2. Projected release – In late March or early April 2015, approximately 1,548,650 spring Chinook will be forced released from raceways. (**Table 4**). Chinook will be released on two consecutive evenings from A and B banks with a number of environmental factors considered: flows, turbidity, and an increasing hydrograph to maximize survival during release and outmigration. ***Angela Feldmann / Adam Izbicki / Ray Jones***

2.1.1.3. Fish health – 35.7% of the adult SCS sampled were positive for IHNV. In late fall juvenile SCS in system 3 burrows ponds had low levels of the parasite *Costia* (*Ichthyobodo*) and low levels of gas bubble disease in gills. In July, SCS juveniles in Dworshak raceway B25 were detected positive for IHN (Infectious Hematopoietic Necrosis) virus. 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. ***Marilyn Blair.***

2.1.1.4. M&E - Approximately 120,000 DNFH stock were marked with CWT for system contribution monitoring. Five hundred marked fish from a single coded-wire tag group will be checked for tag retention (BY13 = 99%) pre-release. A rearing density study is underway in the B-Bank raceways to compare 45,000 to 65,000 smolts per raceway on adult returns using parental based tagging. ***Angela Feldmann/Carrie Bretz / Ray Jones/John Hook.*** Concurrently, a flow evaluation study is being conducted to compare the influence of low flow (750 gpm in A-Bank) and high flow (1250 gpm in B-Bank) on adult returns using parental based tagging. ***Angela Feldmann/Ray Jones/John Hook/Brad Buechel***

2.1.1.5. Research Requests – Forty-two thousand DNFH spring Chinook salmon are PIT tagged by the FWS Columbia River Fisheries Program Office (Vancouver) for DNFH's contribution to the Comparative Survival Study (CSS). ***Angela Feldmann/Ray Jones / Carrie Bretz.*** 1,500 spring chinook salmon smolts have been requested by the ACOE to evaluate survival associated with modifications being made to improve smolt passage at Ice Harbor Dam. ***Ray Jones/Angela Feldmann***

2.1.2. KNFH

2.1.2.1. Production status - There are 650,000 KNFH stock spring Chinook fry at KNFH weighing 26,000 lbs., 4.96 inches or 126 mm long, at 25 fish/lb. (fpp). The Burrows ponds were put on Clear Creek water October 1, 2014. Chinook will be split from Burrow's ponds to raceways in February, 2015 if densities warrant. ***Kent Hills***

2.1.2.2. Projected release - KNFH will direct release an estimated total of 650,000 Spring Chinook at 18-25 fpp in early March (**Table 4**). All burrows ponds will be released to make room for an added 600,000 smolts that will be transported by the CFH to KNFH for a two week acclimation and subsequent release into Clear Creek. This is an effort to decrease the high stray rate to DNFH of the adults and enhance fishing opportunities above

the North Fork. The remaining fish will be released the last week in March. ***Kent Hills***

2.1.2.3. Fish health – 65.8% of adult SCS sampled were positive for IHNV. BY13 SCS have done well to date. Monthly monitoring samples for BKD are currently being taken. A sample of 60 fish will be taken and assayed for virus and bacteria prior to release. ***Marilyn Blair***

2.1.2.4. M&E – Approximately 100,000 KNFH stock are marked with CWT for system contribution monitoring. Prior to release 500 marked fish from each mark group (tag code) are checked for tag retention (BY13 = 97 %). Eight thousand Chinook will be PIT tagged for the 2015 release for juvenile and adult monitoring. Most of these PIT tags (8,000) will be requested to be handled in a monitoring mode at the dams with 1,000 in the default return to river mode. ***Carrie Bretz***

2.1.3. CFH

2.1.3.1. Production status/transfer date/projected release – Planned releases of BY13 spring Chinook smolts are for 2,144,000 at an expected 16 fish per pound (162,500 pounds of fish). The final release number is determined by subtracting monthly fish loss from the inventory at the time of Ad clipping. Red River acclimation pond will be watered up by the third week of March. Fish will be transported to Red River and KNFH facilities and placed in the acclimation ponds during the last week of March to first week of April, release adjustment will be made depending on ice conditions. At Red River non-acclimated smolts will be released directly from the pond daily at sunset. IDFG Anadromous Hatchery M&E Biologist Brian Leth recommended that we hold smolts in ponds as long as the Hatchery Manager was comfortable for the fish to be safe and then release the same day. All production Chinook are Ad clipped. During the last week of March the NPT will transport approximately 400,000 smolts to the Selway River for release near the mouth of Meadow Creek. Selway transport should be coordinated with Aaron Penney and Clear Creek release coordinated with Kent Hills (Table 4). ***Malia Gallagher/Tony Folsom***

Fish health -

- Brood Year 2013 Powell Spring Chinook Broodstock: IHNV was detected in 3/100 (3%). ELISA sampling detected 3 High (2.6%) out of 114 fish sampled. Eggs from the females with high ELISA values were culled from the CFH Chinook salmon program.
- Brood Year 2013 S. F. Clearwater Spring Chinook Broodstock:
- IHNV was detected in 48/500 (9.6%). ELISA sampling detected 17 Highs (3.4%), out of the 505 females sampled. Eggs from females with high ELISA values were culled from the CFH Chinook salmon program.
- Brood Year 2013 DNFH Stock to Backfill CFH Programs: IHNV was detected in 84/110 (76.4%) of ovarian fluids. ELISA sampling detected 0 Highs out of 110 females sampled. Eggs from females positive for IHNV and with high ELISA values were culled from the CFH program.

- Brood Year 2013 Clear Creek Stock for Clearwater Program:
  IHNV was detected in 35/38 (92.1%) of ovarian fluids. ELISA sampling detected 0 Highs out of 38 females sampled. Eggs from females with positive IHNV and with high ELISA values were culled from the CFH program. ***Doug Munson***

2.1.3.2. 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 three times during the final rearing cycle; during marking as fish are moved outside, at the end of October, and two weeks prior to out-planting. Seven weeks after marking and just prior to release 300 fish are sampled to quality check Ad clips and CWT retention. In February of 2015, 44,000 spring 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 four major smolt release groups as well as to provide a tool for in-season harvest management (**Table 4**). Similar to the steelhead PIT tagging, this is a cooperative effort with the CSS study to evaluate transport and in-river SARs so PIT tags are separated by code with the majority of the tags representing the run-at-large and a smaller portion being default returned to the river during outmigration. PIT tags are representatively distributed across release groups. In-ladder PIT tag arrays will be operated in the Red River and Crooked River traps, enabling researchers to estimate corrected PIT tag ratios in returning adult Chinook salmon returning to those two facilities. ***Chris Sullivan***

For BY13 smolts being reared at CFH for release from NPTHC in 2015, NPTHC M&E staff will coordinate with IDFG for CWT and ad-clipping to occur at CFH. These fish will be 100% CWT'd, and approximately one-third will also be adipose fin clipped. ***Aaron Penney/Carl East***

2.1.4. NPTHC

2.1.4.1. Production status - As of December 1, 2014, there were 194,202 BY13 spring Chinook averaging 26 fpp on station at NPTHC. These fish were transferred from CFH in September 2014, where they were spawned and early reared prior to transfer. Target size at release is 20 fpp. Mortalities have been normal to date.
Projected release – Prior to transfer and per the U.S. vs. Oregon Management Agreement, two-thirds of these fish were CWT'd only and the other one-third were CWT'd and adipose fin clipped. Tagging and clipping occurs at CFH by IDFG during early rearing. Tags are provided by the NPT.

*For 2015, a release of approximately 200,000 fish at 20 fpp (22.7 g) is planned **(Table 5)**. The smolts will be released directly from the S channels into the Clearwater River volitionally from April 1 – 11, with the*

remainder forced out on April 11, 2015.

One week prior to release, NPTHC staff will take lengths and weights on up to 250 fish. ***Aaron Penney***

2.1.4.2. Fish health – To date, no fish health issues have been discovered within this production group. A pre-release fish health exam consisting of sixty fish is conducted by the IFHC at least three weeks prior to release. Bacteriology, virology and parasitic assays will be performed. Fish may be released early or with a shortened or no volitional release period if fish health, stream conditions or other environmental factors warrant an immediate release. In the event of an early release, the pre-release fish health exam will be completed as soon as possible. ***Marilyn Blair***

2.1.4.3. M&E – These fish are 100% CWT'd, and 60K are also AD clipped. Up to 600 fish will be PIT tagged by NPTHC M&E staff prior to release for SURPH survival to LGR. ***Aaron Penney*** / ***Carl East***

2.2. Brood Year 2014 Spring Chinook

2.2.1. DNFH

2.2.1.1. Production status –As of January 1, 2015, there were approximately 2.47 million DNFH stock eggs/sac-fry incubating at DNFH. In the spring of 2015, SCS fry at DNFH will be transferred directly from the egg trays into the A-bank of the outside raceways. Dworshak is also continuing the Selway parr program of 300,000 parr and 200,000 pre smolt transfer to NPTH. In addition there was an excess of 185,000 fish due to an error on the broodstock calculator. Co-managers have agreed for this one time occurrence to transfer those fish as pre-smolt to NPTH to be raised to smolt and released into Lolo Creek. ***Casey Mitchell***.

DNFH will be completing the third year of on-station rearing of a 3-year density study involving 1.47 million spring Chinook in the raceways to determine optimal densities to maximize adult returns. The resulting smolts will be direct released into the North Fork Clearwater. This study will utilize Parental Based Tagging to evaluate adult returns. Raceways will be ponded with either 45,000 or 65,000 juveniles (100 fpp) at marking in August 2015. Juveniles in excess of the study design will remain unclipped and will be released as part of the Selway parr program in September 2015. ***Casey Mitchell/Ray Jones***

The 300,000 Selway parr program will be released in September 2015 once the fish have reached approximately 100 fpp. These parr will be transported by Mike Key with NPT transport trucks. The 200,000 pre smolt transfer to NPTH will occur in September 2015. ***Casey Mitchell/Adam Izbicki***

2.2.1.2. Fish health status – Adult IHNV prevalence was 61.9%. Eggs from forty-one females were recommended to be culled due to ELISA O.D. levels above the 0.250 cut off level. BY14 has experienced no fish health problems to date. These fish will be monitored monthly and 60 fish will

be sampled prior to release. ***Marilyn Blair***

2.2.1.3. *M&E* - Approximately 120,000 DNFH stock will be CWT in August, 2015 for contribution monitoring (**Table 5**). Tagging plans also include 42,000 PIT tags for the Comparative Survival Study (CSS). The CSS is looking at adult survival of transported vs. non-transported and upriver vs. downriver releases. ***Carrie Bretz /Ray Jones***

2.2.2. *KNFH*

2.2.2.1. Production status - KNFH BY 14 spring Chinook stock were spawned at DNFH. Excess eggs were collected due to shortages in adult stock in the South Fork Salmon. Eggs were taken from a total of 276 females spawned with a total of 184 males. This produced an estimated total of 1,028,796 green eggs. After fertilizing and disinfection, the eggs were placed into heath trays and incubated at DNFH. At eye-up the eggs were shocked and enumerated. Eyed eggs from 33 females a total of 128,628 were out planted into O'Hara Creek on the Selway River. A total of 243 females with an average fecundity of 3,877 were transported to Kooskia for a total egg count of 900,168. Eggs were placed on chilled well water (approximately 38°F). Eggs were all hatched out by mid-December. ***Kent Hills***

2.2.2.2. Fish health status - Adult IHNV prevalence was 82.8%. Eggs from 15 females were recommended to be culled due to ELISA O.D. values above the 0.250 cut off level. BY14 has experienced no fish health problems to date. These fish will be monitored monthly and 60 fish will be sampled prior to release. ***Marilyn Blair***

2.2.2.3. M&E - Genetic samples are also collected from all spawned adults to develop the Parentage Based Tagging (PBT) baseline (see Appendix 1 for detail). Adult monitoring for the ISS will continue, as will monitoring of the KNFH weir. Current plans are to CWT approximately 100,000 in August, 2015 for contribution (**Table 5**) and 8,000 KNFH smolts will receive PIT tags in January, 2016. At least 50,000 Chinook will not be AD clipped as per the US v Oregon agreement, all others will be AD clipped in July-August, 2015. ***Carrie Bretz***

2.2.3. CFH

2.2.3.1. Production status – The proposed number of CFH fish to be allocated from brood year 2014 is 2.835 million smolts. Starting in BY14 DNFH will take over the pre- smolt and parr program perviously done at CFH. ***Malia Gallagher/Tony Folsom***

2.2.3.2. Estimated numbers/planned marking & tagging - All production Chinook are Ad clipped. Planned releases of BY14 Chinook are for 2,835,000 full term smolts 16 fish per pound. Red River acclimation pond will be watered up and screens put in place by the third week of March each year. Fish will be transported to Red River and KNFH facility and placed in the acclimation ponds during the last week of March to first week of April. Release adjustment will be made depending on ice conditions. At Red River non-acclimated smolts will be released directly from the ponds daily

at sunset. Brian Leth recommended that we hold smolts in ponds as long as the Hatchery Manager was comfortable for the fish to be safe and then release the same day. (**Table 5**). ***Malia Gallagher/Tony Folsom***
Two new smolt groups have been designated from BY2014 production. There was a shortage of Summer Chinook smolts due to the brood loss at the SFSR, and the empty rearing space from that shortage will be filled with 300k spring Chinook to be released at Mill Creek on the SFCW. In addition, there are 400k smolts that will be reared in the adult holding ponds at Clearwater Hatchery and will be released into the NF Clearwater.

2.2.3.3. Fish health status –

- Brood Year 2014 Powell Spring Chinook Broodstock: IHNV was detected in 0/90 (0%). ELISA sampling detected 26 High (7.5%) out of 347 fish sampled. Eggs from the females with high ELISA values were culled from the CFH Chinook salmon program.
- Brood Year 2014 S. F. Clearwater Spring Chinook Broodstock: IHNV was detected in 0/90 (0%). ELISA sampling detected 35 Highs (5.5%), out of the 633 females sampled. Eggs from females with high ELISA values were culled from the CFH Chinook salmon program.
- Eggs- Disease Sampling: When the females are spawned, kidney samples are collected from all females; ovarian samples are collected from 60 and kidney/spleen tissues from at least 30 females (viral replicating agent analysis) as well as head wedges from 20 fish for whirling 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
- Juvenile diagnostics on demand.
- Juvenile quarterly inspections. Preliberations prior to release at Satellites (60 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 three times during the final rearing cycle; during marking as fish are moved outside, at the end of October, and two weeks prior to out-planting. Seven weeks after marking and just prior to release 300 fish are sampled to quality check Ad clips and CWT retention. In February or March 2016, approximately 44,000 spring Chinook salmon (pending CSS funding) 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 four major smolt release groups as well as to provide a tool for in-season fisheries management **(Table 5)**. Tagging plans for the two new smolt groups (Mill Creek and NF Clearwater have not been determined, and M&E staff will

work to develop these plans prior to marking/tagging operations. Genetic samples were collected from all spawned adults to develop the Parentage Based Tagging (PBT) baseline (see Appendix 1 for detail). ***Chris Sullivan***

2.2.4. NPTHC

2.2.4.1. Production status – As of December 1, 2014 there are 682,413 BY14 sac-fry on hand at NPTHC to meet production goals listed in **Table 5**:

- 150,000 pre-smolts (acclimated) into Yoosa/Camp/Lolo Creek in October.
- 75,000 pre-smolts (acclimated) into Newsome Creek in October.
- 400,000 parr (direct stream) into Meadow Creek (Selway) in June or early July.

NPTHC will release the 400,000 in late June or early July by truck directly into Meadow Creek at Slims Camp.

The NPT will transfer 200,00 Clearwater stock BY 2014 spring Chinook from DNFH to NPTHC during early September 2015 (section 2.2.3.2). In addition NPTHC will recieve approximatley 175,000 BY 2014 stock from DNFH that were excess to production, due to an entry error in the broodstock calculator. Co-managers have agreed to this one-time rearing of these fish to smolt. The 200,000 onstatio fish ill be reared one of the NATURES "S" channels or linear raceways, and the 175,000 excess DNFH Fish will be reared in the 2nd S-channel until late-March or early-April 2016 and released at approximately 20 fpp. The 175,000 excess DNFG fish will be 100% adclipped (CWT, PIT marking still under discussion) and will be direct released as smolts into Lolo Creek in the spring of 2016. ***Aaron Penney/ Carl East***

2.2.4.2. Estimated numbers/planned marking & tagging – PBT samples are taken from all adults used as broodstock, for use in determining origin of returning fish in future years. Fish destined for release from acclimation facilities (Yoosa/Camp Creek and Newsome Creek programs) will also be 100% marked (CWT) at approximately 160 fish per pound (2.52 g) at either NPTHC or Sweetwater Springs. Meadow Creek parr releases will not be CWT'd, since no returning adults are trapped and carcass recoveries are minimal.

The Newsome Creek fish will be transferred to Sweetwater Springs in early spring to reduce densities at NPTHC. They are then transferred to the Newsome Creek AF in late August or early September for acclimation and final rearing.

Lolo Creek fish will be transferred to Sweetwater Springs in early spring to and then transferred to Yoosa/Camp AF for acclimation and final rearing.

Acclimation facility operations/release –

- Yoosa/Camp – Transfer of the fish will occur in late August or early September (when stream temperatures cool). Prior to release, 6,000 fish will be tagged with a PIT tag. Volitional release will begin on approximately October 1, with all fish forced out by October 15, 2015. Target size at release is 34 fish per pound (13.3 g) **(Table 4)**.
- Newsome Creek – Transfer of fish will occur in late August or early September (when water temperatures cool. Prior to release, 3,000 fish will receive a PIT tag. Volitional release will begin on approximately October 1, with all remaining fish forced out by October 15, 2015. Target size at release is 29 fish per pound (15.6 g) **(Table 4)**.
- Meadow Creek – Up to 400,000 parr will be direct stream released into Meadow Creek in 2015. Prior to release, 5,000 fish reared at NPTHC will receive a PIT tag. Fish will be transported and direct stream released into Meadow Creek at "Slims Camp". Target size at release is 117 fish per pound (3.9 grams) **(Table 4)**. ***Aaron Penney / Carl East***

2.2.4.4. Fish health status – 14.4% of the fish sampled were positive for IHNV. Eggs from 10 females were culled to bring all eggs to the status of being from females all under the ELISA O.D. value of .250. ***Marilyn Blair***

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 and just prior to release. Estimate PIT tag retention rates and delayed mortality within 7 - 10 days of tagging.
- PIT survival studies- Estimate smolt survival rates and migration timing **(Table 5)**.
- Downstream migration – Operate rotary screw traps within Lolo and Newsome creeks to monitor movement, timing, condition factors, and population estimates. ***Sherman Sprague***

2.2.4.6. Remote PIT Tag Array Monitoring and Evaluations - Information can be seen in section 1.1.1.4.

2.2.4.7. Communication - NPTHC produces monthly production and pathology reports, an annual operation plan and an annual operation report. Fish Research produces weekly weir reports, final weir summary report, spawning ground summary reports, and SURPH survival summary reports. ***Aaron Penney***

2.3. Brood Year 2015 Spring Chinook

Spring Chinook coordination will begin in the spring of 2015, generally in advance of trapping season. Weekly conference calls scheduled for Tuesdays and standardized report tables keep all parties updated, informed, and coordinated on in-season run development, harvest estimates, broodstock collection, priorities for excess broodstock, out-planting plans, etc.

2.3.1. DNFH

The BY2015 brood needs from DNFH is 1,988 spring Chinook salmon. These fish will contribute to programs at Dworshak, Clearwater, and Nez Perce Tribal hatcheries. The brood number accounts for pre-spawning mortality and includes jacks (goal for jacks is less than 5% contribution to production annually). This brood level will provide 3.5 million green eggs and 1.35 million smolts released to meet current US v Oregon production goals. This brood level also provides 300,000 Selway parr, 180,000 additional for LSRCP spring Chinook production in DNFH raceways, 200,000 sub-smolts for transfer to NPTHC, and 400,000 smolts that will be produced at Clearwater Hatchery. Smolts in excess of 1.35 million are produced specifically toward meeting the LSRCP adult return goal of 9,135 adults to the river above Lower Granite Dam.

2.3.1.1. Projected adult returns - Based on tribal harvest, sport harvest data, rack returns, and ocean conditions during emigration; the forecasted return for 2015 DNFH spring Chinook return to the Clearwater River will cover broodstock needs **(Table 6a)**. ***Chris Peery***

2.3.1.2. Ladder operation – Ladder Operation will be optimized to ensure adequate broodstock collection. The co-managers plan to trap as many spring Chinook as necessary to ensure that broodstock needs are met at all Clearwater facilities. As such, DNFH will trap beyond its 1,372 adult broodstock needs at the direction of the co-managers. ***Adam Izbicki/Ray Jones***

2.3.1.3. Adult out-planting / distribution plans – **Table 7a** lists the prearranged streams to receive adult spring Chinook salmon. No outplanting is planned from DNFH, but contingencies are in place if the co-managers direct outplanting to occur. ***Adam Izbicki/Ray Jones***

2.3.1.4. Carcass disposition – Chinook carcasses will be used by research groups if possible. As an alternative to the landfill, carcasses will be disposed back into the Clearwater River at the Greer Bridge to allow nutrient recycling. Any erythromycin injected females would be disposed of at the local landfill. Since adult Chinook salmon are collected throughout the summer and then spawned in August/September, they receive multiple formalin treatments and therefore will not be offered for human consumption via the Food Bank. The exception to this would be if there is a surplus of Jacks in the return and the Nez Perce Tribe doesn't wish to utilize them for subsistence and the AOP partners support distribution to the Food Bank. ***Mark Drobish/Adam Izbicki.***

2.3.1.5. Adult M&E – Returning adults are measured and examined for gender, various clips and tags, and marks then sorted for spawning or holding. Coded wire tags will be collected. Genetic samples are also collected from all spawned adults to develop the Parentage Based Tagging (PBT) baseline (see Appendix 1 for detail). This year, the BY2012 1-Ocean adults will provide the first adult returns for the rearing density evaluation study. Genetic samples will need to be collected from all the ad-clipped 1-Ocean adults during initial inventory. Delaying the sampling until spawning does not insure that all 1-Ocean adults are sampled since all are

not included in the broodstock. Discussions are being held with Matt Campbell at the IDFG Genetics Lab on possible ways to sub-sample. ***Carrie Bretz/Chris Sullivan/Ray Jones/Matt Campbell/ Adam Izbicki***

2.3.1.6. Spawning plans – DNFH will spawn 994 females for its programs and 540 females for KNFH's programs. The number of eggs collected is based on historical adult survival, eye-up percentage, disease rates and smolt survival rates to meet smolt release targets. Broodstock collection is minimized to the extent possible. Eyed eggs in surplus of basin production needs are culled based on disease sampling and by eye-up percentages. ***Adam Izbicki/Ray Jones***

2.3.1.7. Egg Incubation – All eggs taken for KNFH will be incubated at DNFH until eye-up, and then they will be shocked, enumerated and shipped to KNFH for final incubation. DNFH stock eggs will be incubated at DNFH. ***Kent Hills***

2.3.1.8. Fish health – Every adult female will be sampled individually for BKD with ELISA. Up to 150 ovarian fluid samples will be sampled for viruses. An additional 60 tissue samples will be taken for virus, bacteria, *Myxobolus cerebralis and C. Shasta*. Generally, all eggs from high and medium ELISA level females will be culled above the .250 ELISA O.D. cut off level. ***Marilyn Blair***

2.3.1.9. Communication – FWS puts out weekly spawning reports and weekly return reports, and annual spawning and adult return reports are also produced. ***Adam Izbicki/Ray Jones***

2.3.2. KNFH

A total of 1,080 spring Chinook are needed from KNFH for BY2015 production. Approximately 572 Chinook are needed for broodstock for the KNFH spring Chinook salmon mitigation program. This number includes jacks and accounts for pre-spawning mortality. This brood level produces 600,000 smolts for the KNFH program at an average 80% eyed egg-to-smolt survival. An additional 192 broodstock are also collected to provide for the IDFG release of 235,000 smolts in Clear Creek. An additional 316 broodstock are collected to provide Lyons Ferry Hatchery with 350,000 smolts for release into Clear Creek.

2.3.2.1. Projected adult returns – Based on 2015 tribal and sport harvest data, rack returns, and ocean conditions during emigration; the 2015 forecasted return for KNFH spring Chinook to the Clearwater River is 2,330 fish **(Table 6a)** and IDFG estimates another 2,133 adults returning from the 2013 release of 235k smolts into Clear Creek. Given this prediction it's likely that KNFH will meet broodstock needs. Additionally, given the agreement for backfilling KNFH broodstock, IDFG and the NPT will likely open sport and tribal fisheries in the Middle Fork Clearwater River area in the spring of 2015. This will be updated in-season as dam counts of PIT tagged adults update the estimates. ***Kent Hills***

2.3.2.2. Trap operation – Trap will be opened for Chinook collection around the 15th of May until warm water temperatures dictate its closure. With the completion of the adult portion of the ISS study in 2012, there is no

restriction on releasing adults above the weir specific to the ISS study protocol. Returning adults collected for broodstock will be transported to DNFH for holding until spawning. Formalin treatment of adult brood stock from Kooskia will be started immediately at DNFH. ***Carrie Bretz***

2.3.2.3. Adult out-planting / distribution plans – **Table 7a** lists the prearranged streams to receive adult spring Chinook salmon. Chinook loaded for adult out-planting will be loaded directly into NPT trucks at KNFH. Out-planting will be coordinated between Mike Key (NPT) and Carrie Bretz (FWS). All adults out-planted from KNFH will receive two right opercula v-notches as shown in **Table 7b**. Tribal use of un-anesthetized jacks for the elder program will need to be coordinated prior to adult sorting (NPT contact Nancy McAllaster, 208-621-2126).

2.3.2.4. Adult M&E – Returning adults are measured and examined for gender, various clips, tags, and marks then designated as broodstock or natural release. Coded wire tags will be recovered. With the completion of the adult portion of the ISS study in 2012, the restriction on releasing adults above the weir specific to the ISS study protocol is no longer in place. Genetic samples are also collected from all spawned adults to develop the Parentage Based Tagging (PBT) baseline (see Appendix 1 for detail). ***Chris Sullivan/Carrie Bretz***

2.3.2.5. Spawning plans – KNFH BY 15 spring Chinook adult broodstock will be kept at DNFH. Spawning normally occurs the third week of August. Eggs collected that are in the low range of the ELISA values will be kept and the medium to high eggs are discarded. Jacks will be utilized for ~10% of the spawners. ***Kent Hills***

2.3.2.6. Egg incubation – KNFH BY15 stock (800k) eggs will be incubated at DNFH until eyed, shocked and enumerated. Then they will be transported to the KNFH for final incubation. At spawning, eggs from 150 females will be fertilized and placed into individual tubes for immediate transport to KNFH. These eggs will be incubated until eye-up, shocked and enumerated, placed in coolers and transported to Lyons Ferry Hatchery for final incubation and rearing. The egg incubation recirculation system will be utilized. BY 2015 eggs will be incubated on chilled well water approximately 38-40°F. Normally eggs all hatch by mid-December and are transferred to tanks in mid-March. ***Kent Hills***

2.3.2.7. Fish Health – Every adult female will be sampled individually for BKD with ELISA. Up to 150 ovarian fluid samples will be sampled for viruses. An additional 60 tissue samples will be taken for virus, bacteria, *Myxobolus cerebralis and Ceratonova shasta.* Generally, all eggs from females above the .250 ELISA O.D. cut off level will be culled. For eggs being transferred to Lyons Ferry, in addition to the above sampling all eggs from females above the .199 ELISA O.D. cut off level will be culled. ***Marilyn Blair***

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.

2.3.2.9. Approved Research - Research on the incidence of IHN in adult spring

Chinook returning to Kooskia NFH was approved for continuation in 2015. A total of 100 adults will be sampled throughout the run and will be non-lethally sampled and PIT tagged at the time of trapping. PIT tagged adults would be resampled both lethally and non-lethally at the time of spawning. ***Marilyn Blair/Ray Jones***

2.3.3. CFH

Total brood needs at CFH for BY2015 production is approximately 2,066 Chinook. Brood that will be collected at CFH satellite facilities includes 326 for Powell, 896 for the SF program, 326 for the Selway program, and 326 for the NF Clearwater program. Additional brood for CFH programs will be collected at other facilities and includes the following: 192 will be collected at Kooskia for CFH's 235k smolt release into Clear Creek, and 326 will be collected at Dworshak for CFH's 400k smolt release into the NF Clearwater. Current hatchery production goal is 2.535 million smolts. Adult return goal for the program is 12,000 adult Chinook over Lower Granite Dam.

2.3.3.1. Projected adults returns – IDFG pre-season forecast of spring Chinook returning from CFH releases is 6,194 for 2 and 3 ocean fish **(Table 6b)**. 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 50% of the harvestable share of adult spring Chinook. Real time predictions will be used to adjust the share. ***Sam Sharr***

2.3.3.2. Trapping operations at satellite facilities – Spring Chinook will be trapped at the Crooked River, Powell and Red River weirs. The Crooked River weir and trap will be installed for steelhead trapping in March and will remain in operation throughout Chinook trapping season. The Red River weir will be installed but will not be operated for steelhead trapping. The Red River weir will be operated for Chinook trapping season in May. Powell trap will be installed in late May or early June. Trapping operations will continue until after September 1 and five consecutive days of zero fish are trapped. Proposed adult needs will be approximately 1,033 females (326 Powell, 448 Red River, 96 Clear Creek, and 163 Dworshak) and 1,033 males (326 Powell, 448 Red River, 96 Clear Creek and 163 Dworshak) for CFH allocations. If CFH Manager predicts elevated pre-spawning 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 C&S, food bank and out-plants will be implemented at locations and levels given in **Table 7a**. ***Malia Gallagher*/*Tony Folsom***

2.3.3.3. Adult out-planting / distribution plans – The out-planting 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 7a**, further consultation will occur. The general procedure for providing fish for subsistence will be first to tribal programs, then to charitable

organizations. Please see **Tables 7a** and 7**b** for out-planting priority streams and marks. ***Malia Gallagher/Tony Folsom***

2.3.3.4. Spawning plans – Spawning ratios of 1:1 will be used unless the broodstock population is less than 100 females. During the entire spawning year, at most 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 NPTHC. 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 appropriately out planted. ***Malia Gallagher*/*Tony Folsom***

2.3.3.5. Adult M&E – Genetic samples are collected from all spawned adults to develop the Parentage Based Tagging (PBT) baseline (see Appendix 1 for detail). ***Chris Sullivan***

2.3.3.6. Juvenile production – BY15 production targets will be approximately 2.535 million. ***Malia Gallagher*/*Tony Folsom***

2.3.3.7. Fish Health - All females will be tested by ELISA for Bacterial Kidney Disease (BKD). Generally, all eggs from females that are identified at a level of 0.25 OD or higher will be culled. Ninety fish will be examined for viral replicating agents. If eggs are to be removed to another hatchery, all females involved with producing those eggs will be examined for viral replicating agents (no culling for IHNV, but cull for IPN, VHS, ISA, atc…). 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 30 – 45 days prior to release at satellites (60 fish sample). ***Doug Munson***

2.3.3.8.

2.3.4. NPTHC

In 2015***,*** *approximately 442 spring Chinook salmon adults are needed for broodstock for the NPTHC spring Chinook program. This number does not include jacks (goal for jacks is less than 5% contribution to production annually). This number accounts for pre-spawn holding mortality estimated at 8% (NPTHC trapped fish only), BKD culling estimated at 4%, and an eyed egg to release mortality of 15%. These percentages are based on the most recent five-year average for each performance measure. This brood level will provide for a target release of 75,000 pre-smolts from Newsome Creek (South Fork Clearwater River) acclimation facility, 150,000 pre-smolts from Yoosa/Camp (Lolo Creek) acclimation facility, and 400,000 parr into Meadow Creek (Selway River).*

2.3.4.1. Trapping operations at NPTHC – The adult ladder and trap at NPTHC will be operated in 2015 to collect spring Chinook adults as a broodstock

source for the Meadow Creek program and for the Lolo and Newsome programs. Trapping operations will begin mid-April and continue through July 31st or until broodstock needs are met.

Broodstock selection will be based on existing fin clips, marks, or tags. In general, NPTHC trapped fish will be first used to meet existing US v Oregon mandated production, then be utilized to backfill at other Clearwater Subbasin facilities to meet their US v Oregon mandated production, then as a last option be utilized for production above US v Oregon levels, pending co-manager approval (**Appendix 3**). For 2015, the NPTHC trap will be operated as follows:

1. Retain all adipose fin clipped adults.
2. Retain all adipose fin intact/CWT only adults.
3. Release all natural (no clips or wire) fish back into the Clearwater River at the Lenore boat launch.

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 DNFH may also be used for broodstock. Up to 400 adults (200 females and 200 males) may be collected at these facilities if necessary to help NPTHC meet full production, if they are available. Preferably these fish would be spawned at IDFG and USFWS facilities and eggs transported to NPTHC for incubation and rearing. Alternatively, surplus adult SCS trapped at NPTHC may be available for use by other Clearwater Basin hatcheries in the event they are short of broodstock.

2.3.4.2. Trapping operations at Lolo Creek – Trapping operations on Lolo Creek usually begins at the end of May, after peak flows are reached. Trapping will continue through mid September. A weir will be operated on Lolo Creek (RKM 21). In an effort to encourage natural production in Lolo Creek, during low return years, broodstock collection will have a very low priority. In high return years, localized broodstock may be collected, at which time pass/keep ratios will be developed. The adult weirs will also be used for escapement, estimating sex composition, age structure, return timing and genetic tissue sampling. When retained, trapped fish will be transported by NPTHC staff from the weir sites to NPTHC for holding and sexual maturation.

For 2015, the Lolo Creek weir will be operated in a monitoring mode. All fish will be passed.

Trapping operations at Newsome Creek - Trapping operations on Newsome Creek usually begins at the end of May, after peak flows are reached. Trapping will continue through mid September. The weir on Newsome Creek is located at RKM 0.1, just upstream from its confluence with the S.F. Clearwater River. In an effort to encourage natural

production in Newsome Creek, during low return years, broodstock collection will have a very low priority. In high return years, localized broodstock may be collected, at which time pass/keep ratios will be developed. The adult weir will also be used for escapement, estimating sex composition, age structure, return timing and genetic tissue sampling. When retained, trapped fish will be transported by NPTHC staff from the weir to NPTHC for holding and sexual maturation.

For 2015, the Newsome Creek weir will be operated in a monitoring mode. All fish will be passed.

2.3.4.3. Adult out-planting plans – Only adults and jacks that have not been inoculated may be out-planted. Fish that have been inoculated and are utilized for spawning will be buried on site at NPTHC. Please see **Table 7a** and **7b**. ***Aaron Penney/ Carl East***

2.3.4.4. Spawning plans – The first sort and spawn will occur as early as July 31st. Spawning will occur on Tuesday of each week at NPTHC, through the end of August. A spawning ratio of 1:1 will be used. Jacks will be limited to five percent of the male contribution. Spawning will continue until the egg take goal is achieved or all females are spawned. ***Aaron Penney/ Carl East***

2.3.4.5. Adult M&E – Genetic samples are also collected from all spawned adults to develop the Parentage Based Tagging (PBT) baseline (see **Appendix 1** for detail).

2.3.4.6. Juvenile production – The current NPTHC production goals are 625,000 parr/pre-smolts. Distribution of juvenile production is 400,000 parr (Meadow Creek tributary of Selway River), 150,000 pre-smolts (Lolo Creek), and 75,000 pre-smolts (Newsome Creek).

2.3.4.7. Juvenile production destined for remote - sites will be held in production room tanks, raceways or NATURES "S" channels at NPTHC, and also in tanks at the Sweetwater facility. They are transferred to the acclimation facilities when conditions permit (end of August to the second week of September). PBT tagging (by taking genetics from all broodstock) is conducted on all SCS within NPTHC. Production (except Meadow Creek) will also be 100% marked with a CWT and sub-release groups will be PIT tagged. ***Aaron Penney/ Carl East***

2.3.4.8. Fish Health – All females will be tested by ELISA for Bacterial Kidney Disease (BKD). Generally, 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 60 fish sample (head wedge) will be taken for *Myxobolus cerebralis* analysis. Juveniles will be examined when diagnostics are necessary. Pre-liberation samples prior to release (60 fish sample). ***Marilyn Blair***

2.3.4.9. Communication – A monthly NPTHC narrative and fish health report will be completed and submitted to BPA/COTR, NPT Research and Production divisions, IDFG/CFH and all other interested parties. NPTHC also produces an annual operation plan and annual operation report for

BPA and the co-managers. ***Aaron Penney***

3. Brood Year 2013 Summer Chinook

An expected long-term contribution of 5,000-10,000 adults towards the overall Lower Snake River Compensation Plan goal is projected. A broodstock goal of 426 was calculated for the CFH program's 600k smolt release. Broodstock needs for summer Chinook will increase incrementally as the program builds to the full program of 600k to 1.0 million full term smolts. The maximum program limit will be determined as the rearing parameters are incrementally (200k fish segments) tested by CFH staff. Additional details are listed in the pertinent sections below. The egg source will be the South Fork of the Salmon River trap operated by McCall Fish Hatchery, and beginning in 2013, the Crooked River Weir as adults began to contribute to this program's releases. In the Spring of 2014, all Summer smolts were released at Powell and this will continue for BY 13 releases in 2015. In the future, if broodstock collections at the Powell Weir allow this program to become self sufficient, broodstock will no longer be collected at the SF Salmon River by McCall Hatchery. Approximately 71 females and 71 males will be required for each 200k full term smolt allotment for the incremental increase to 600k to 1.0 million fish. This number includes jacks and accounts for pre-spawning mortality. This brood level will provide 288k green eggs for each increase of 200k smolts at an average of 72% eyed egg-to-smolt survival to meet the adult return goal.

All Summer Chinook broodstock are screened for Bacterial Kidney Disease (BKD) using ELISA techniques. Generally, eggs from females with optical densities (OD) over 0.25 are culled. In the event of low adult returns with anticipated egg numbers below program goals or policy requests, hatcheries may consider rearing Chinook eggs from females with ELISA optical densities between 0.25 and 0.60 that would normally be culled. The number of these higher-ELISA progeny to be raised will be limited by the availability of sufficient rearing space to maintain low density indices and biosecurity (segregation and other measures) appropriate for rearing fish from high-titer brood. The fish will be closely monitored for BKD and antibiotic treatments used if warranted. This decision to raise fish from high ELISA-titer brood will be made prior to spawning each year. ***Marilyn Blair/Doug Munson/Jerry McGehee***

3.1.1. CFH

3.1.1.1. Production status/transfer date/projected release – Planned release if BY13 Summer Chinook smolts are for 528,00 at an expected 16 fpp (33,000 pounds of fish). The final release number is determined by subtracting montly fish loss from the inventory at the time of AD clipping/tagging. Fish will be transported to Powell acclimation pond during last week of March. Release adjustment will be made depending on ice conditions. IDFG Anadromous Hatchery M&E Biologist Brian Leth recommended that the smolts as long as the Hatchery Managers was comfortable for the fish to be safe and then released the same day. ***Malia Gallagher/Tony Folsom***

3.1.1.2. Projected Release – In March of 2015 the projected release will be approximately 528,000 full term smolts will be released from the Powell trapping facility on Walton Creek just above the Lochsa River. ***Malia***

Gallagher*/*Tony Folsom

3.1.1.3. Fish Health -
Broodyear 2013 Summer Chinook: All females were tested by ELISA for Bacterial Kidney Disease (BKD). All eggs from females that were identified at a level of 0.25 OD or higher were culled. All females whose eggs were destined for the CFH program were sampled for viral replicating agents. There were 0/136 (0%) detections. Females returning to the Crooked River Trap were also sampled for viral replicating agents and there were 2/7 (28.6%) detections. Juveniles will be inspected on a quarterly basis with additional diagnostics on demand sampling. Pathogens were not detected during routine inspection . Pre-liberation samples prior to release at satellites (60 fish sampled for *Renibacterium salmoninarum,* viral replicating agents, and *Myxobolus cerebralis*). Pathogens were not detected during preliberation sampling of 60 fish. ***Doug Munson***

3.1.1.4. M&E – The fish are pound counted 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 three times during the final rearing cycle; during marking as fish are moved outside, at the end of October and two weeks prior to out-planting. Half of the summer Chinook will be 100% CWT with no ad clip and half will be ad clipped. Seven weeks after marking and prior to release, 100 fish are sampled to determine CWT retention. In February 2015, approximately 25,500 summer Chinook salmon will be PIT tagged to evaluate juvenile timing and survival from release to Lower Granite Dam and to estimate an adult escapement back to Lower Granite Dam as well as to provide a tool for in-season fisheries management (Table 4). ***Chris Sullivan***

3.2. Brood Year 2014 Summer Chinook

3.2.1. CFH

3.2.1.1. Trapping – Due to the catastrophic brood loss at the SFSR trap this year, no eggs were available for the summer Chinook program at Clearwater Hatchery. Summer Chinook were trapped at the Lower Crooked River trap site and also an effort was taking to transport stray Summer Chinook from DNFH to CFH. These efforts will produce an estimated 210,000 smolts from BY2014 ***Malia Gallagher/Tony Folsom***

3.2.1.2. Spawning – Adults trapped at Crooked River were transported to CFH to be spawned. Spawning ratios of 1:1 were used unless the brood stock population is less than 100 females. During the entire spawning year, at most five to ten percent of the jacks were be used during the spawning process. An effort was 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 occured between August 5 and 10. All females were sorted twice per week, and all ripe females were spawned each time. Spawning continued until all females are spawned. ***Malia Gallagher/Tony Folsom***

3.2.1.3. Adult M&E – Genetic samples were collected from all spawned adults to develop the Parentage Based Tagging (PBT) baseline (see Appendix 1 for detail). ***Chris Sullivan***

3.2.1.4. 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. Viral replicating agents were detected in 1/56 (1.78%) females sampled. When eggs are to be moved to another hatchery, all females involved with producing those eggs will be examined for viral replicating agents (no culling for INHV will occur, but culling will occur for IPN, VHS, ISA, etc…). A 20 fish sample (head wedge) were taken for *Myxobolus cerebralis* analysis. Juveniles are be inspected on a quarterly basis. Diagnostics on demand. Pre-liberation samples prior to release at satellites (60 fish sample for *Renibacterium salmoninarum,* viral replicating agents, and *Myxobolus cerebralis*). ***Doug Munson***

3.2.1.5. M&E – The fish are pound counted 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 three times during the final rearing cycle; during marking as fish are moved outside, at the end of October and two weeks prior to out planting. Fish will be 100% CWT with no ad clip due to the smolt shortage caused by the brood losses at the SF Salmon River. Seven weeks after marking and prior to release, 100 fish are sampled to determine CWT retention. In February 2016, approximately 25,500 summer Chinook salmon will be PIT tagged to evaluate juvenile timing and survival from release to Lower Granite Dam and to estimate an adult escapement back to Lower Granite Dam as well as to provide a tool for in-season fisheries management (Table 5). ***Chris Sullivan***

3.3. Brood Year 2015 Summer Chinook

The CFH summer Chinook release goal is 600,000 smolts in 2017 from BY2015 spawning. Based on that release goal, the broodstock goal for this program in 2015 is 426 fish. Broodstock for this program will come from adults trapped at the Crooked River Weir and backfilled by adults trapped on the SF Salmon River by McCall Hatchery staff. Jacks will be returning to the Powell Weir site in 2015 but will not be used for Broodstock.

3.3.1. CFH

3.3.1.1. Summer Chinook will be trapped at the South Fork of the Salmon River trap operated by McCall Fish Hatchery. 2-ocean and 3-ocean fish are destined to return to Crooked River trap in 2015 and 1-ocean fish are destine for Powell trap. As agreed to by the co-managers (**Appendix 3**), the minimum release goal in 2017 is 200,000 fish from adults trapped at

both locations. After all fisheries are closed on the SF Salmon River, additional fish will be trapped on the SF Salmon for this program up to the 600,000 release target. ***Malia Gallagher*/*Tony Folsom***

3.3.1.2. Spawning – Spawning will occur at the South Fork of the Salmon trap. One or two CFH staff will travel there and assist with spawning and disease sampling procedures. They will package the green eggs for direct transport to the CFH. Adults trapped at Crooked River will be transported to CFH to be spawned. Spawning ratios of 1:1 will be used. During the entire spawning year, at most 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 5th and 10th. 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. ***Malia Gallagher*/*Tony Folsom***

3.3.1.3. Adult M&E – Genetic samples will be collected from all spawned adults to develop the Parentage Based Tagging (PBT) baseline (see Appendix 1 for detail). ***Chris Sullivan***

3.3.1.4. Juvenile Production – Summer Chinook rearing numbers for BY15 are 600K FTS. ***Malia Gallagher/Tony Folsom***

3.3.1.5. Fish Health – All females will be tested by ELISA for Bacterial Kidney Disease (BKD). Generally, all eggs from females that are identified at a level of 0.25 OD or higher will be culled. Up to 90 fish will be examined for viral replicating agents. If eggs are to be moved to another hatchery, all females involved with producing those eggs will be examined for viral replicating agents (no culling for IHNV will occur, but culling will occur for IPN, VHS, ISA, etc…). 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 (60 fish sample *Renibacterium salmoninarum*, viral replicating agents, and *Myxobolus cerebralis*). ***Doug Munson***

4. COHO

A Coho reintroduction program was initiated by the Nez Perce Tribe in 1995. Fish production for this program comes from DNFH, KNFH, Eagle Creek NFH and Cascade FH. The long-term

adult return goal is 14,000 to the Clearwater River subbasin. The broodstock collection goal is 2,000 adults (50% females) returning to the Clearwater River. Smolt release goals have ranged as high as 1.1 million, with the last 5 years at 830,000 smolts annually. Currently, production releases goals are 550,000 smolts reared out-of-basin from Eagle Creek NFH - 275,000 smolts in Lapwai Creek and 275,000 smolts in Clear Creek. Release goal for smolts reared at DNFH and released into Clear Creek is 400,000 smolts annually being acclimated at KNFH prior to release.

4.1. Brood Year 2013 Coho

4.1.1. DNFH

4.1.1.1. Production status – There were 363,548 fish on hand (11,604 pounds, 31.43 fpp) at DNFH as of January 1st, 2015. Mike Bisbee

4.1.1.2. Projected transfer date/acclimation period at KNFH – Smolts will be transferred to KNFH Mid-February, early March, 2015 for final acclimation. *Mike Bisbee*

4.1.1.3. Numbers/dates/marks & tags – 205,315 fingerling Coho were marked with a CWT (no AD clip) staring August 18, 2014 and finishing August 21, 2014. Prior to release from KNFH, 5,000 coho will be PIT tagged. PIT tags will be provided by the FWS through Mitchell Act funding. (Table 8) *Mike Bisbee*

4.1.1.4. Fish health – These fish had problems with gas bubble disease during the summer months. Fish are sampled monthly and prior to liberation; a 60 fish sample was taken and assayed for virus, bacteria, and parasites. *Marilyn Blair*

4.1.1.5. Juvenile M&E – marks used are PIT tags and CWT. These marks are intended to provide the following information;

- 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 on ladder counts at DNFH and KNFH. *Mike Bisbee*

4.1.2. Transfers from Eagle Creek NFH

4.1.2.1. Projected transfer – Smolts reared at Eagle Creek NFH will be transferred to KNFH mid-March, 2015 for final acclimation and direct release. *Mike Bisbee*

4.1.2.2. Projected direct release – March, 2015, smolts will be released from KNFH. A projected 550,000 smolts will also be transported from Eagle Creek NFH to Clear Creeks (250k) for acclimation and Lapwai (250k) for direct release. *Mike Bisbee*

4.1.2.3. Numbers/dates/marks & tags – Coho were marked – 60,000 CWT only. 30,000 for release into Clear Creek and 30,000 for release into Lapwai Creek. Prior to transfer from Eagle Creek 10,000 fish were PIT tagged – for release into Clear and Lapwai Creeks. PIT tags were be provided by FWS through Mitchell Act funding (Table 8). *Mike Bisbee*

4.1.2.4. Fish health – Disease history for this brood year of fish is completed at

Lower Columbia River Fish Health Center. All fish were certified disease free for pathogens tested at that point in time. *Marilyn Blair*

4.2. Transfers from Cascade FH

4.2.1.1. Projected transfer – Tanner Creek stock smolts reared at Cascade FH will be transferred in mid-March 2015. *Mike Bisbee*

4.2.1.2. Projected direct release – A projected 200,000 smolts will be transported from Cascade FH to Lapwai Creek for direct release. The long term plan for this production is reintroduction/restoration of coho in Northeast Oregon/Wallowa River. The interim production plan is to release these extra coho in the Clearwater River Basin until an agreement can be reached with Oregon Department of Fish and Wildlife. *Mike Bisbee*

4.2.1.3. Numbers/dates/marks & tags – Coho were 100% AD-clipped and 60,000 CWT/AD clip. (Table 8). *Mike Bisbee*

4.2.1.4. Fish health – *Marilyn Blair*

4.3. Brood Year 2014 Coho

4.3.1. DNFH

4.3.1.1. Production status – Coho recognized at Lower Granite Dam totaled 18,098 adults and 553 jacks in 2014. A total of 7,388 Coho salmon broodstock were collected consisting of 3,045 females, 4,186 males, 155 Jacks and 2 unknown. Broodstock collections occurred at Lapwai Creek weir – 1,611 fish, at DNFH – 1,380 fish and at KNFH – 4,397 fish. A total of 887 females were spawned with 754 males. 47 females were culled; eggs from the 887 Clearwater stock females were enumerated using a Van Gaalen egg sorter; percent eye-up was 82.47% and enumerated eggs totaled 2,418,947. As of January 7, 2015, there are 727,315 BY14 live eggs in eight stacks in A-Bank at DNFH. *Mike Bisbee*

4.3.1.2. Projected production – We anticipate Clearwater River Stock production will be 500,000 reared at DNFH through spring 2015. *Mike Bisbee*

4.3.2. Eagle Creek NFH

4.3.2.1. Egg transfer to Eagle Creek NFH
December 2014 a total of 724,360 eyed eggs from returning Clearwater River adult Coho were transferred from DNFH to Eagle Creek NFH. These eggs will be reared to smolt stage and transported back to the Clearwater Basin for release in 2016. *Mike Bisbee*

4.3.2.2. Projected production – We anticipate Clearwater River Stock production will be 550,000 reared through spring 2015. *Mike Bisbee*

4.3.2.3. Fish health –*Marilyn Blair*

4.3.2.4. Projected release – Clearwater stock smolts reared at Eagle Creek NFH will be released into Clear and Lapwai Creeks in mid-March 2016. Approximately 550,000 (275,000 each stream) will be acclimated or direct stream released. *Mike Bisbee*

4.3.2.5. M&E – Current plans are to CWT 60,000 pre-smolts in July, 2015. CWT recovery helps determine smolt-to-adult survival, and adult return timing is based on adult counts at Lower Granite Dam and trap counts at DNFH, KNFH and Lapwai creek weir. Marking of fish will occur at Eagle Creek NFH with 30,000 CWT only mark per each release group (Lapwai Creek and Clear Creek). If FWS, through Mitchell Act, is able to provide PIT tags, then the Eagle Creek NFH release groups will be marked with 5,000 PIT tags each for a total of 10,000 PIT tags, tagged in January 2016 (Table 9). These marks estimate the following; Juvenile survival to Lower Granite Dam based on PIT tag detection. Adult return timing based on PIT tags and counts at Lower Granite Dam. Smolt-to-adult survival based on PIT tags and the number of juveniles released and adult returns over Lower Granite Dam. Adults will be accounted for by redd surveys in Clear Creek – may be limited Broodstock counts at DNFH and KNFH NFH, Lapwai Creek. *Mike Bisbee*

4.3.3. Cascade Fish Hatchery

4.3.3.1. Egg transfer to Cascade FH
December 2014 a total of 543,227 eyed eggs from returning Clearwater River adult Coho were transferred from DNFH to Cascade FH. These eggs will be reared to smolt stage and transported back. *Mike Bisbee*

4.3.3.2. Projected production – We anticipate Clearwater River Stock production will be 400,000 reared through spring 2015. *Mike Bisbee*

4.3.3.3. Fish health –*Marilyn Blair*

4.3.3.4. Projected release – Clearwater stock smolts reared at Cascade FH will be released in mid-March 2016. The long term plan for this production is reintroduction/restoration of coho in Northeast Oregon/Wallowa River. The interim production plan is to release these extra coho in the Clearwater River Basin until an agreement can be reached with Oregon Department of Fish and Wildlife. *Mike Bisbee*

4.3.3.5. M&E – Current plans are to 100% ad –clip and 60,000 ad-clip/CWT pre-smolts in July, 2015. *Mike Bisbee*

4.4. Brood Year 2015 Coho

A primary program objective is to develop a local Clearwater River Coho stock. To accomplish this, adult Coho returning to the Clearwater River of the Snake River basin are the priority for use as broodstock. Fish may be collected at DNFH, KNFH, Lapwai Creek, LFH, and/or NPTHC; however, of these locations, fish collected at KNFH, DNFH and Lapwai Creek will be prioritized for broodstock. Approximately 2,000 adults are necessary to meet broodstock goals.

4.4.1. KNFH

4.4.1.1. Weir/Trap operation – Weir operations will start October 1, 2015 to trap

adult Coho at KNFH. *Mike Bisbee*.

4.4.1.2. Adult transfers – Depending on adult return projection and estimated broodstock collection adult Coho trapped at KNFH weir or other sites will be transported to DNFH for holding and spawning. Adult hatchery steelhead or fall Chinook incidentally trapped at the KNFH weir will be transported to the S.F. Clearwater and released by the NPT. *Mike Bisbee*

4.4.1.3. Adult out-planting – Once Coho broodstock goals are met; surplus Coho will be passed above the weir. *Mike Bisbee*

4.4.1.4. Adult M&E – Genetic samples will be collected from all spawned adults to develop the Parentage Based Tagging (PBT) baseline (see Appendix 1 for detail). *Chris Sullivan*

4.4.1.5. Juvenile M&E–Smolt-to-adult survival based on weir monitoring in Clear Creek and Lapwai Creek. *Mike Bisbee*

4.4.2. DNFH

4.4.2.1. Ladder operation – The DNFH ladder will be operated during the fall of 2015 to trap early return steelhead. Adult Coho trapped during this time will be counted and either out planted or put into Holding Ponds for broodstock. Depending on the projected return, the NPT may request that the ladder be operated several additional times to collect Coho broodstock as needed to meet production goals. *Mike Bisbee*

4.4.2.2. Coho spawning – All Coho spawning will take place at DNFH. The broodstock goal is to collect and spawn 950 females to provide eggs for DNFH, Eagle Creek and Cascade programs. Eggs for the DNFH group will be incubated and early reared at DNFH. Eggs for the Eagle Creek and Cascade groups will be incubated at DNFH to eye-up stage and transferred to Eagle Creek NFH and Cascade FH in December for final rearing. *Mike Bisbee*

4.4.2.3. Fish Health – The Idaho Fish Health Center will collect the following samples from the returning adult Coho salmon 60 head wedges, 60 kidney/spleens, 150 ovarian fluids, 100% kidneys for BKD testing by ELISA, and up to 60 intestine samples. Bacteriology will be performed from viral sampling (kidney/spleens). 100% sampling will be conducted on ovarian fluid from females whose eggs are destined for Eagle Creek and Cascade Hatcheries in Oregon. These samples will be two-pooled. *Marilyn Blair*

4.4.2.4. Adult carcasses – All adult Coho carcasses will be donated to the local food bank. Once the quality of the fish is to poor for the food bank all carcasses will be out planted into Lapwai, Sweetwater, Potlatch, Mission Creeks and Main stem Clearwater River following spawning for nutrient enhancement. *Mike Bisbee*

4.4.2.5. Adult out-planting – Coho adults surplus to broodstock needs will be out-planted to Lolo, Eldorado, Orofino, Lapwai, Sweetwater, Mission Creeks and South fork Clearwater River or back into the Clearwater. *Mike Bisbee*

4.4.2.6. Eagle Creek NFH –When Clearwater broodstock can provide eggs for the Eagle Creek smolt program, these eggs will be incubated at DNFH to eye-up stage and then transferred to Eagle Creek NFH in late December/early January for final rearing. *Mike Bisbee*

4.4.2.7. Cascade FH –When Clearwater broodstock can provide eggs for the Cascade smolt program, these eggs will be incubated at DNFH to eye-up stage and then transferred to Eagle Creek NFH in late December/early January for final rearing. *Mike Bisbee*

4.4.2.8. Juvenile M&E – To be determined. 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 DNFH and KNFH, Lapwai Creek, LFH, NPTHC. *Mike Bisbee*

4.4.3. Lapwai Creek

4.4.3.1. Weir operation – A picket weir will be installed and become operable starting October 1, 2015 to trap Coho broodstock below the train bridge and upstream from the mouth of Lapwai Creek. Pass/keep ratios will be adjusted on a weekly basis dependent on the projected return and actual captures. The adult weir will also be used for escapement, estimating sex composition, age structure and return timing. *Mike Bisbee*

4.4.3.2. Adult transfers – Fall Chinook salmon trapped during operation of the Lapwai Creek Coho weir will be placed downstream of the weir. *Mike Bisbee*

4.4.3.3. Juvenile M&E – Smolt-to-adult survival based on weir monitoring in Lapwai Creek. Redd surveys in Lapwai Creek. 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 DNFH and KNFH, Lapwai Creek, LFH, NPTHC. *Mike Bisbee*

4.4.3.4. Communication – Clearwater Coho Project Leader produces monthly reports for coordination between hatchery management and staff communication. Semi-annual and annual reports are a contract requirement to the CRITFC and NOAA funding entities. *Mike Bisbee*

5. FALL CHINOOK SALMON

The fall Chinook production program is a complex and highly integrated artificial program for Snake River fall Chinook implemented through the LSRCP program, the IPC Hells Canyon Settlement Agreement, and the Columbia Basin Fish and Wildlife Program. The basic intent of the program is to assist with the recovery of Endangered Species Act (ESA)-listed Snake River fall Chinook, mitigating for impacts of the mainstem hydrosystem dams, and returning abundance of salmon to historic levels. Both short and long-term adult return goals for this program are identified in the Snake River Fall Chinook Management Plan. Snake River fall Chinook production is mandated in the 2008-2017 U.S. vs. Oregon Management Agreement (Table 9). Fall Chinook salmon production in the Clearwater River occurs through two programs – the Fall Chinook Acclimation Project (FCAP) and NPTHC. Beginning with the 2012 trapping season, activities for FCAP are covered under

ESA Section 10 Permit No. 16607, and Permit No. 16615 for NPTHC.

5.1. Brood Year 2013 Fall Chinook

5.1.1. FCAP – 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 LFH. Big Canyon facility is operated by the Nez Perce Tribe as part of FCAP funded by BPA. The facility has capacity to acclimate 150,000 yearlings and 500,000 sub-yearlings. 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

5.1.1.1. Production status – Approximately 155,000 yearlings are being reared at LFH for transfer to the Big Canyon acclimation facility on March 4-6, 2015. ***Mike Key***

5.1.1.2. Projected release – Target release will be 150,000 yearlings at 10 fpp on April 10, 2015 **(Table 10)**. Fish are 70,000 CWT and ad clipped and 80,000 CWT-only **(Table 11)**. 1,000 will be PIT tagged (see M&E section below). ***Mike Key***

5.1.1.3. Fish health – Import permit sampling was conducted end of Jan. A 60 fish sample was collected and assayed prior to release from each site. ***Marilyn Blair***

5.1.1.4. M&E – Yearling release groups will be sampled for length and weight at time of release. A subsample of approximately 600 fish is collected as the fish are being released. We sample 500 fish from each raceway at LFH for coded wire tag and adipose fin clip retention 21 days after tagging/marking is completed. We will PIT tag 1,000 yearlings to estimate survival, migration rate and timing through the FCRPS. PIT tagging will occur at LFH. All mortalities at Big Canyon will be scanned for PIT tags. Aerial redd counts and adult spawned carcass sampling in the Clearwater subbasin will be conducted by NPTHC M&E personnel. Coded wire tags will provide SAR data. ***Bill Arnsberg***

5.1.1.5. Communication – O&M and M&E quarterly and annual reports to BPA. ***Bill Arnsberg***

5.2. Brood Year 2014 Fall Chinook

5.2.1. FCAP – Big Canyon Facility

5.2.1.1. Production status – Approximately 500,000 sub-yearlings are being reared at LFH for transfer to the Big Canyon acclimation facility on April 29-30, 2015. ***Mike Key***

5.2.1.2. Projected release – Target release is 500,000 sub-yearlings at 75-50 fpp on May 20, 2015 (**Table 10)**. A group of 100,000 fish are CWT / ad-clipped and 100,000 CWT-only for evaluation – the remaining fish are unmarked. 2,000 will be PIT tagged (**Table 11**). ***Mike Key***

5.2.1.3. Fish health - Import permit sampling was completed in April for the sub-

yearling program. ***Marilyn Blair***

5.2.1.4. Juvenile M&E – Sub-yearling release groups will be sampled for length and weight at time of release. A subsample of approximately 1,000 fish is collected as they are being released. We sample 500 fish from each raceway at LFH for coded wire tag and adipose fin clip retention 21 days after tagging/marking is completed. We will PIT tag 2,000 sub-yearlings to estimate survival, migration rate and timing through the FCRPS. All mortalities at Big Canyon will be scanned for PIT tags. Aerial redd counts and adult spawned carcass sampling in the Clearwater subbasin will be conducted by NPTHC M&E personnel. Coded wire tags will provide SAR data. ***Bill Arnsberg***

5.2.1.5. Communication - O&M and M&E quarterly and annual reports to BPA. ***Bill Arnsberg***

5.2.2. NPTHC

Nez Perce Tribal Hatchery Complex (NPTHC) is authorized to produce 1.4 million sub-yearling fall Chinook juveniles annually. Target releases are 500,000 acclimated on station into the Clearwater River, 500,000 acclimated and released from North Lapwai Valley facility into the Clearwater River, 200,000 acclimated and released from Lukes Gulch facility into the South Fork Clearwater River, and 200,000 acclimated and released from Cedar Flats facility into the Selway River.

5.2.2.1. Production status – As of December 1, 2014, there are 1,626,606 fall Chinook eggs/fry on hand at NPTHC.

5.2.2.2. Projected release – 1.4 million sub-yearlings.

NPTHC: A release of 500,000 sub-yearlings into the Clearwater River at 50 fpp (9.1 g) is planned (Table 10). As identified in the U.S. vs. Oregon Management Agreement, 200,000 fish will be marked with a CWT, and 100,000 fish will be marked with a CWT and an adipose fin clip (AD) (Table 11). The remainder of this release (200,000) will be unmarked and untagged. Fish are marked and tagged by NPTHC M&E employees during transfer to two earthen ponds from the production tanks or from two raceways, after reaching a target mark size of 160 fpp. 2,000 fish are PIT tagged for standard outmigration monitoring. Prior to release, a minimum 60 fish sample is collected for a pre-release health inspection. Bacteriology, virology and parasitic assays are performed. A volitional release begins in early June, unless river water temperatures warrant an earlier release. At the start of the scheduled volitional release, hatchery employees take lengths and weights on a minimum of 500 fish (250 from each pond). Scheduled final release date from NPTHC is June 9, 2015. Hatchery or river conditions may warrant a shortened or no volitional release period.

North Lapwai Valley: This facility was designed for and the program specifies a release of 500,000 sub-yearlings into the Clearwater River via Lapwai Creek by the end of May. However, warming water temperatures and decreasing flows in the creek in May have always warranted an earlier release to avoid high mortalities and disease outbreaks. Employees living at the facility monitor both water temperatures and dissolved oxygen (DO)

levels daily, and fish are released when water temperatures reach 63 F (17.2 C) and/or DO levels drop significantly. The release goal has been modified to accommodate this rearing challenge. For 2015, a release of 430,000 sub-yearlings at 80 fpp (9.1 g) into the Clearwater River is scheduled for early May, 2015 (Table 10). However, if flow, temperature and DO conditions allow, fish will be reared as long as possible toward meeting the original goal of release at the end of May at 50 fpp.
Fish slated for final acclimation and release from North Lapwai Valley AF will be marked at NLV during transfer there from NPTHC. Per the U.S. vs. Oregon Management Agreement, this group will be comprised of 200,000 CWT only fish, 100,000 AD and CWT fish, and 200,000 unmarked and untagged fish (Table 11). 2,000 fish will be PIT tagged for outmigration monitoring. Prior to release, a minimum 60 fish sample is collected for a pre-release health inspection. Bacteriology, virology and parasitic assays will be performed. Hatchery staff will take lengths and weights on a minimum of 500 fish.
Cedar Flats: A release of 200,000 sub-yearlings into the Selway River at 50 fpp (9.1 grams) is planned (Table 10). Transfer of the fish occurs in mid-April to early May. Per the U.S. vs. Oregon Management Agreement, they will be 100% CWT'd, and half the release group will also have an AD clip (Table 11). 2,000 fish are PIT tagged for standard outmigration monitoring. Prior to release, a minimum 60 fish sample is collected for a pre-release health inspection. Bacteriology, virology and parasitic assays are performed. NPTHC staff will take lengths and weights on a minimum of 500 fish just before release. Scheduled final release date from Cedar Flats AF is June 10, 2015.
Lukes Gulch: A release of 200,000 sub-yearlings into the S. F. Clearwater River at 50 fpp (9.1 g) is planned (Table 10). Transfer of the fish occurs in mid-April to early May. Per the U.S. vs. Oregon Management Agreement, they will be 100% CWT'd, and half the release group will also have an AD clip (Table 11). 2,000 fish are PIT tagged for standard out migration monitoring. Prior to release, a minimum 60 fish sample is collected for a pre-release health inspection. Bacteriology, virology and parasitic assays are performed. NPTHC staff will take lengths and weights on a minimum of 500 fish just before release. Scheduled final release date from Lukes Gulch AF is June 10, 2015. ***Aaron Penney/ Carl East***

5.2.2.3. Fish health – Kidney samples were assayed by ELISA on all spawned females; eggs from 6 females were culled due to the cut off ELISA OD level of .250. 150 ovarian fluid samples, 60 tissues samples and 60 cranial samples were taken for assay. IHNV was found in 20.6 % of samples tested to date. Sixty fish sample will be collected and assayed prior to release. ***Marilyn Blair***

5.2.2.4. M&E

Scan all fish for CWT. Initial tag retention and tagging mortality estimated. Estimate final CWT retention rates 21 days or more after tagging. PIT survival studies- PIT tag 3,000 of each release group for

survival estimates, growth rates, and migration timing.
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 NPTHC and fish hauled from Lower Granite Dam 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/Bill Young***
Communication – NPTHC produces monthly production and pathology reports, and an annual operation plan and annual operation report for BPA and the co-managers. M&E produces quarterly and annual reports to BPA. ***Aaron Penney***

5.3. Brood Year 2015 Fall Chinook

5.3.1. Lower Granite Dam Adult collection

Snake River Fall Chinook adults will be collected at Lower Granite Dam (LWG) and transported to NPTHC, in accordance with the U.S. vs. Oregon Management Agreement. Additionally, adult fall Chinook may be trapped at the fish ladder at NPTHC. Trapping ratios between the two locations are determined annually by the co-managers. Activities involving *trapping and collection of adult FCS for broodstock are covered under ESA Section 10 Permit No. 16615 for NPTHC, and No. 16607 for LFH, which provides fish for the FCAP program.*

Lower Granite Dam – Adult FCS will be collected at LGR beginning the last week in August or when water temperatures are below 70º F (22.2º C). Trapping at LGR will continue throughout the run and is anticipated to end by late November or early December. FCS are collected in the trap as a sub-sample of the returning run. The sub-sample rate for 2015 has not been set, and once agreed to may change mid-season based on actual captures. In an effort to minimize use of one-salt males in the broodstock, co-managers use historical age-class data from previous years CWT recoveries and run predictions to determine a "jack" cutoff length in advance of the trapping season. This cutoff is typically 75 cm. Any fish smaller than this cutoff length is not transported to NPTHC. Fish transported to NPTHC are usually placed in the north holding pond, but may also be placed in the south holding pond if densities become a concern. Every effort is made to ensure mixing of fish between the two trapping locations (LGR and the NPTHC trap) is avoided, and NPTHC swim-ins are marked with a right operculum V-notch to differentiate them from the LGR fish. WDFW and NPTHC have cooperatively developed a transportation schedule for adults trapped at LGR. The goal of NPTHC is to receive 30% of the females trapped and LFH to receive 70%. This schedule will be modified as needed to ensure equitable distribution of fish between the two programs. A portion of known LFH origin and unknown origin hatchery FCS will be transported from LGR to NPTHC for holding and spawning. ***Aaron Penney/ Carl East***

5.3.1.1. Radio Telemetry – A total of 235 adult fall Chinook will be radio tagged at Lower Granite Dam from August December. Carried out by co-

managers (NPT and WDFW), this study will evaluate site fidelity of hatchery releases throughout the mainstem Snake River and throughout the Clearwater River basin. Project is based out of Orofino and incorporates mobile tracking (via truck and boat) and fixed site receivers. ***Peter Cleary***

5.3.2. NPTHC

5.3.2.1. There will be weekly in-season updates on LGR adult hauled numbers and an assessment of actual FCS adults counted at LGR with updated run forecasts to determine if and when the adult ladder and trap may be operated at NPTHC to meet full production. Trapping at NPTHC typically occurs in September – November when necessary.

In an effort to minimize use of one-salt males in the broodstock, co-managers use historical age-class data from previous years CWT recoveries and run predictions to determine a "jack" cutoff length in advance of the trapping season. This cutoff is typically 75 cm. Fish smaller than this cutoff length are not kept, instead they are returned to the river or used for subsistence.

Beginning in 2013 at NPTHC, AQUI-S will be used to anesthetize FCS adults during broodstock collection, pending approval under an INAD through the USFWS. Use of this product will allow for greater accuracy in data collection (when compared to live handling of fish) during processing of trapped fish. It will also allow for immediate return to the river of unwanted fish if so desired, since no withdrawal period is required.

Volunteers to NPTHC are typically held in the south adult holding raceway. The ladder will be closed when broodstock needs are met. Retained fish are marked with a right operculum V-notch to differentiate them from LGR trapped fish. Additionally, all adults will receive formalin treatments three times per week to control fungus and decrease pre-spawning mortality. NPTHC intends to trap only enough adults to meet program goals from both LGR and the NPTHC ladder.

In the event production exceeds 110% of the program goals, surplus fry will be distributed amongst the FCS production releases as a first option. PBT integrity will be considered in determining how surpluses are distributed. Alternatively, they may be outplanted into the lower Clearwater River or utilized in some other way, pending co-manager approval.

Out-planting – Adults excess to broodstock and not needed for coded-wire tag recovery or tribal subsistence may be outplanted to supplement natural production. Proposed outplants and any fish research requests will be

considered and reviewed by the co-managers. No inoculated or injected fish will be outplanted. Instead they will be buried on site at NPTHC.

Spawning plans – Spawning at NPTHC will occur every Tuesday beginning on October 20th, and continue until program egg-take goals are met. Spawning may also occur on Wednesdays to avoid extremely long days during larger egg takes. Hatchery staff will ensure M&E employees are aware if Wednesday spawning is necessary.

Out-of-Snake River Basin adults, identified as "strays" by CWT or PIT tag may be culled or transferred to lower river hatcheries to meet production goals. However, to meet NPTHC production, strays may be retained at a rate not to exceed 5%. Mating will be a 1 x 1 cross (1 female: 1 male). Natural Snake River fish will be incorporated into the broodstock at a target rate of up to 30%, provided that this number does not exceed 20% of the natural origin population.

In mid-November, Gonadotropin Releasing Hormone (sGnRHa) may be used on remaining un-spawned LGR females to facilitate maturation. Adults from LGR that have CWT's and are excess to broodstock needs will be sacrificed to recover the wire for run-reconstruction purposes.

Adults from LGR without wire will have scale samples taken before they are released into Clearwater Basin streams. Fish held at NPTHC will have been treated with formalin so if a fishery is occurring in the Clearwater Basin, these fish may be out-planted into closed waters, and/or marked differentially for easy identification by anglers. However, no inoculated or injected fish will be out-planted. Any action of this type will be coordinated with the NPT Fish and Wildlife Commission and the comanagers. These fish may also be spawned to backfill for LFH if necessary. Adults and jacks trapped at NPTHC in excess to broodstock needs may be returned to the river to spawn naturally, if they have not been injected or inoculated.

Every adult female will be sampled individually for BKD using enzyme-linked immunosorbant assay (ELISA). Up to 150 ovarian fluid samples (3 fish pools) will be sampled for viruses. An additional 60 tissue samples will be taken for bacteria assays, and sampled for Myxobolus cerebralis. Samples will be collected by NPTHC staff and delivered to IFHC.

Whenever possible, eggs from early spawned females will be used for the Luke's Gulch AF and Cedar Flats AF programs, to support an early returning run to the S.F. Clearwater and Selway Rivers. However, the Clearwater River direct release from NPTHC is the highest priority in the event of an egg shortage, and that goal will always be met before either the Luke's Gulch or Cedar Flats acclimated programs. The intent of the fall Chinook program is to take eggs across the entire run, and build

release groups represented by multiple takes whenever possible. Chinook salmon carcasses may be returned to free-flowing reaches of the Clearwater River for nutrient enhancement, if they have not been injected or inoculated. ***Aaron Penney/ Carl East***

5.3.2.2. Adult M&E – Genetic samples are also collected from all spawned adults to develop the Parentage Based Tagging (PBT) baseline (see Appendix 1 for detail). ***Chris Sullivan***

5.3.2.3. Egg Incubation – Fertilized eggs will be water hardened for 30 minutes in 100 parts per million Iodophore and placed in heath trays for incubation. At between 550 and 620 temperature units (TU's) eyed eggs will be shocked; machine sorted the following day and transferred back into Heath trays to hatch. The eggs from females with a high BKD ELISA value may be culled. At swim-up, the fish will be transferred to production room tanks at ~1,600 fpp (0.30 grams). ***Aaron Penney/ Carl East***

5.3.2.4. 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 NPTHC and fish hauled from Lower Granite Dam 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***

5.3.2.5. 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 virus, bacteria and *Myxobolus cerebralis.* Brood fish health samples will be taken by NPT staff and delivered to Idaho Fish Health Center personnel for analysis. Eggs from fish with a high BKD titer over the .250 ELISA O.D. value will be culled. ***Marilyn Blair***

5.3.2.6. Communication – NPTHC produces monthly production and pathology reports, and both an annual operation plan and annual operation report for BPA and the co-managers. Fish Research produces quarterly and annual reports to BPA.

6. RAINBOW TROUT

4.1. Dworshak Reservoir Mitigation

The initial mitigation responsibility for Dworshak Dam Project was to provide 100,000 pounds of rainbow trout annually to be stocked into Dworshak Reservoir. This mitigation has evolved over the years to approximately 18,000 pounds of rainbow trout or 50,000 catchables. Since 1997, Hagerman NFH has raised rainbows for stocking into Southern Idaho reservoirs and IDFG reciprocates by stocking Dworshak Reservoir. Based on creel information provided by IDFG, return to creel of rainbow trout outplants in Dworshak Reservoir have been very low. Therefore, the release location of the majority of these fish have been changed to lowland lakes or reservoirs in the North Fork Clearwater drainage. At this time, the only agreed release locations for COE mitigation rainbow trout are within

the North Fork Clearwater Drainage. ***Joe DuPont/Tod Sween/Ann Setter/Ken Fone***

4.2. Clearwater Basin

Until 2009, IDFG annually stocked approximately 50,000 (3,300 lbs) of Kamloops rainbow trout from LFH into the Clearwater River system. In 2010, IDFG and NPT agreed to a new allocation and release locations for these fish. In 2014, 1,650 lbs. (1 fish/lb) will be released into Tunnel Pond and 1,650 lbs. (3 fish/lb) will be released into Mann Lake. Changes to these releases can be made with approval from both the NPT and IDFG. The NPT will transport the fish destined for Tunnel Pond and IDFG will transport the Mann Lake fish. This program will be evaluated for 5 years to determine if it's meeting the needs of the public in mitigating for lost fisheries.

Spokane rainbows (160,000) from LFH 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. ***Joe Dupont / Becky Johnson***

The CFH regional rainbow program redistributes approximately 100,000 IDFG reared trout. There are 25+ plant sites, requiring 100+ trips, and stocking occurs from April to October. In 2015 CFH is scheduled to release approximately 117,500 catchable rainbow trout. ***Joe Dupont***

7. PACIFIC LAMPREY

The purpose of this stop gap effort by NPT Fisheries is to avoid local extirpation in the Snake River Basin and maintain a population of ammocoetes that serve as a source of pheromone attractants drawing adults upstream to spawn in the abundant habitat in this region, thereby continuing a presence in the Snake River Basin until upstream adult and downstream juvenile passage problems are identified and corrected, and healthy, harvestable populations are restored. The Nez Perce Tribe believes it is imperative to restore this important component of the ecosystem and retain cultural values.

7.1. NPTHC

During the summer 2014, NPT Fisheries again conducted trapping operations for adult lamprey at Bonneville, The Dalles, and John Day dams and transported them to Nez Perce Tribal Hatchery. From June 18 to July 2, 2014, a total of 254 lamprey were collected at Bonneville Dam, and from July 9 to August 6 an additional 84 lamprey were obtained from John Day Dam, and from July 23 to August 6 an additional 45 lamprey were collected from traps at The Dalles Dam. A total of 383 lamprey were collected from these trapping efforts, and all were injected with oxytetracycline by NPT staff as a measure against furunculosis. After holding these adults through the winter months, NPT plans to outplant them during April/May 2015 in Lolo Creek, Newsome Creek, Orofino Creek, Big Canyon Creek, and the South Fork Salmon River in Idaho, Asotin Creek in Washington, and the Wallowa River in Oregon, to spawn naturally. Genetic samples are collected by NPT staff for analysis by CRITFC in the lab at Hagerman NFH. A highlight of this year's efforts was the construction of a designated lamprey-

only steel building at NPTH to house “eel” operations. ***Tod Sween***

8. CONTACTS

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Appendix 1. Parental Based Tagging

A novel approach for mass marking hatchery broodstock is parentage-based tagging. Parentage-based tagging (PBT) 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.

The exceptional advantage PBT has over mechanical tagging technologies is increased sample size. By genotyping all parental broodstock, every juvenile is "tagged" thereby vastly increasing the chances of encountering a tagged fish. The key to this technology ultimately working is the ability to sample all (100%) of the hatchery broodstock.

Eagle Fish Genetics Lab provides Whatman sheets (3mm chromatography paper) for sample preservation and sampling equipment to the spawning facilities, but relies largely on existing hatchery or other program personnel to take fin tissue samples, record sex and record spawn/sample date. General sampling guidelines for hatchery staff include:

- Obtaining tissue samples (fin clips) from every adult hatchery steelhead and Chinook salmon that contributes to spawning in the Snake River basin (~6000 adult hatchery steelhead and ~10,500 adult hatchery Chinook salmon).
- Ensuring that all samples come from fresh, "live" tissue and that each sample is properly preserved until DNA extraction and free of contamination.
- Ensuring that every sample is properly labeled and inventoried.
- Ensuring that data/information from every fish sampled is recorded and tied to a field/hatchery sample number (sample/spawn date, take #, hatchery, sex, length, cross information, etc.) and that field/hatchery sample number is tied to a unique genetic (Progeny) number.

A specific sampling protocol includes:

1. Use forceps and scissors or a scalpel, remove a small amount of tissue:
    a. fin tissue – about the size of your little finger nail (any fin will work, just make sure that it is free of fungus and that you are sampling "live" tissue
2. Carefully wipe clean instruments with a Kimwipe or paper towel and rinse the instrument in ethanol or clean water between each sample.
3. Place tissue onto pre-labeled Whatman sheets and store in dry space out of sunlight until they can be shipped to the Eagle Genetics Lab.

If possible, record every individual cross by genetic sample number, sex and date.

Appendix 2. 2014 Snake River Kelt Reconditioning Project Summary

Background and Goals

As a strategy to improve survival of ESA-listed steelhead stocks in the Columbia Basin, NOAA Fisheries has identified actions to improve the productivity and abundance of steelhead Kelts in two Reasonable and Prudent Alternatives (RPAs) in the 2008 FCRPS Biological Opinion (BiOp). RPA #33 covers operations to benefit upper and middle Columbia River Stocks, and RPA #42 covers operations to benefit Snake River B-run Steelhead. RPA #42 includes implementation of Kelt reconditioning in the Snake River Basin, with the goal of improving the productivity of ESA-listed wild interior basin B-run steelhead, and research as necessary to accomplish this goal. NOAA's analysis indicates that a combination of Kelt reconditioning and other actions could increase the number of returning Snake River B-run steelhead spawners to Lower Granite Dam by about 6%, and that a Kelt reconditioning program in the Snake Basin may be critical to achieving this goal (Supplemental Comprehensive Analysis Steelhead Kelt Appendix- Bellerud et al. 2007). In practice, the goal of the program is to increase returns of wild adult female Snake River B-run steelhead to Lower Granite Dam by 180 fish (baseline 3000 adult females estimated in Bellerud et al. 2007).

An experimental-scale kelt reconditioning project is being conducted at Dworshak by the Nez Perce Tribe (NPT) and the Columbia River Inter-Tribal Fish Commission (CRITFC), in collaboration with the University of Idaho and USFWS. This project includes both implementation and research components. The implementation component of the project involves collection, reconditioning, and release of wild B-run female steelhead kelts to achieve the goal of RPA #42. The research component of the project involves air spawning and reconditioning of DNFH ladder returning hatchery-origin fish for use as an experimental model. These fish provide a unique and important research tool to address critical uncertainties and maximize the success of Kelt reconditioning programs throughout the Columbia Basin.

2015 Operations and Research

Dworshak is cooperating with CRITFC and the NPT in a Kelt Reconditioning Project. NPT staff will air spawn 169 females for the kelt program. These fish will be retained until the spring of 2015. A portion of the surviving mature fish will be air-spawned or euthanized to assess egg quality of reconditioned kelts. The remaining portion will be tagged and returned to the Clearwater River.

An additional 150 steelhead Kelts will be collected at Lower Granite Dam (LGR) and transferred to DNFH. For 2015, kelts from tributaries of the Lochsa and SF Clearwater rivers will also be collected and transferred to DNFH. Fish will be reared in conjunction with the air-spawned steelhead (section 1.2.1.8). These fish will be on-station from March through October. Surviving LGR transferred Kelts will be tagged and returned to the Snake River below LGR.

NPT/CRITFC/UI are continuing their research on steelhead Kelt reconditioning. Experiments involving treatments to reduce mortality and improve growth and rematuration, as well as sampling fish to measure physiological responses during reconditioning will be conducted on air-

spawned steelhead, as well as LGR transferred steelhead. The release strategy for individual fish may be selected based on maturation status as determined by blood hormone levels.

Appendix 3. Release Table Meeting Wrap-up Notes

2014 Final AOP Meeting Notes

- All Tables reflecting marks need to be updated. AD/CWT and AD numbers in the tables need to incorporate PIT numbers in the total of these groups instead of them being accounted for separately. (Steelhead, Chinook, Coho Tables)
- Kelt program needs to change the Fish Creek disposition
- Check with Brett Bowersox on Lower Crooked Steelhead numbers for CFH
- Dworshak is going to check the number of fish trapped in accordance with the number of fish spawned to account for recaptures. Table 2a is to stay the same because to represents unique fish trapped, but Table 2a1 may need a new column to account for fish trapped but not used. Possibly combined Tables 2a1 and 2b so that the totals add up.
- Does the Outplant numbers in Table 2b need to include recaptures or not?
- Table 6c still need updates from Nez Perce for harvest
- Chris Sullivan will include hooking mortality in the sport harvest for Table 6c
- Remove Table 6b1 until PBT data is current for the appropriate year.
- Table 8a and 8b still need updates for Coho
- CWT codes to be included in Tables? All Tables or at lease Table 10
- Add projected Fish/Pound to pre-release Tables and possibly Brood calculator
- Develop a list for a Brood calculator work group to make improvements in functionality. People to possibly be included: Jeremy, Carl, Angela, Tom, Ralph, Mark, Kent, Malia, Tony. Please advise any others that should be included. Need to assign a lead person to get ball rolling on meetings for this committee.

Important Dates

- Dec. 19th - Final edits for 2014 Final Release Tables
- Jan. 2nd - Final edits for 2015 Pre-AOP meeting
- Jan. 5th - Planning meeting in Lewiston
- Jan. 6th - 2015 Pre-AOP meeting at CFH
- Feb. 3rd - Final 2015 AOP Meeting for Final edits before submission

Appendix 4. Clearwater "PRE" Annual Operating Plan Meeting

2015 Pre-AOP Planning Discussion (1/5/2015)

Attendees: Jason Vogel, Becky Johnson, Brian Leth, Joe Dupont, Sam Sharr, Jeff Heindel, Chris Sullivan, Chris Peery, Steve Rogers, Gary Byrne, Tony Folsom, Malia Gallagher, Jerry McGehee, Chuck Warren, Bill Young, Aaron Penny

BY2015 Brood/Production/Release

Steve R. started the discussion and identified the need to prioritize the production at Dworshak because of limitations with incubation space. There are options to get around the incubation space (double tray loading, putting groups of eggs in upwellers, etc.). Clearwater Hatchery (Tony Folsom) stated that there may be additional incubation space at Clearwater Hatchery if needed.

Lyons Ferry = 350k potential production. Eggs could be incubated to eyed-stage at Clearwater Hatchery and then transferred. These fish may be very different from Chinook reared in the Clearwater, so it is desirable to have a representative group of PIT tags in this group of fish for the first few years. Clear Creek was the chosen release site because of high SAR, availability to harvest returning adults in fisheries, and high conversion rates from LGD to the rack. There are concerns about acclimation of smolts, because we are already bumping up against space/time constraints with the release of the current smolt groups.

The intent for the Lyons Ferry program is for spring Chinook production, but in the event that brood is unavailable and there are excess summer eggs, those could be used in place of the springers pending co-manager approval.

Dworshak Density Study = could increase b-bank raceway density across all raceways to increase production by 180k (9 additional raceways at 65k for a total of 15 raceways at 65k). Or could increase A-bank raceways since they are single use water (better quality) and would result in additional 300k smolts. Steve and Chris P thought that the safer option would be to increase densities in B-bank. B-bank water has its own source plus some re-use water from the A-bank. These fish would be released onsite into the NF Clearwater.

Clearwater Hatchery = 400k new smolts will be reared in the adult ponds + ~100k additional smolts if densities are increased to the small-scale experimental levels currently being monitored. Incubation space is not limited, but early rearing space is very limited. Release site will be NF Clearwater for the 400k. Adult returns could be evaluated via PBT in the broodstock by comparing the proportion of fish from this release that is detected in the brood vs the proportion of the total smolts released into the NF Clearwater that is comprised of this group to see if the proportions are similar. It is not an ideal evaluation method and PIT tags were suggested as a better alternative if available.

NPTH = 100 – 150k additional smolt rearing potential, these additional fish would be

incorporated into their current release sites.

NOTE: These additional smolt production goals should be incorporated into the 2015 AOP Brood Calculator Table as separate line items for each facility (see below).

Adult collection locations for the increased/new production in BY2015:
Lyons Ferry (350k): Kooskia
Dworshak (180k): Dworshak
Clearwater (400k): Dworshak
NPTH (100-150k): Dworshak
*All facilities will collect brood to fulfill the aggregate needs of the Clearwater basin if there are shortfalls at individual facilities

BY2014 Marking/Release

There are 750k "extra" Spring Chinook at Clearwater Hatchery from BY2014 (350k springers used to backfill the vacant summer Chinook rearing space, and an additional 400k that will be reared in the adult holding ponds).

For the 350k springers that backfilled the summer Chinook raceways, Dupont suggested a desire to try a lower release site in the SF Clearwater to evaluate if there is better survival from a release site that is lower in the system and potentially create another tribal fishery in an additional tributary. Mill Creek was proposed and supported by the group. There was concern over access due to snow for the smolt releases, but the group suggested that plowing contracts could be arranged. Tagging discussion ensued, and because this is potentially a one-time release, PIT tags are desirable to evaluate smolt survival and adult returns.

The NF Clearwater was the suggested release location for the 400k smolts that will be reared in the adult holding ponds. This accomplishes two things: 1) ability to collect broodstock and 2) providing sport and tribal fisheries. The fish could be released at the NF Clearwater boat ramp or piped directly from Clearwater Hatchery, and would be collected at Dworshak hatchery. Adult returns will be evaluated using PBT (adult broodstock sampling at Dworshak).

Some additional tagging discussions will continue in the coming months related to these groups……

Coho BY2013 – Cascade Hatchery release location

There are acclimation constraints (space and time with Chinook smolt releases) at Kooskia so that is not a desirable release location. The SFCW is preferred *if an adult trapping site can be established*. If no trapping site is going to be available on the SFCW, other sites need to be considered because of the need to collect returning adults.

Additional topic for future discussion:

Desire to have M&E Prioritization Meeting

Appendix 5. Lyon's Ferry Production Meeting Notes

Discussion of Lyon's Ferry Spring Chinook Production for Release in the Clearwater Basin (1/15/2014)

Participants: Malia Gallagher, Tony Folsom, Rod Engle, Mark Drobish, Kent Hills, Ace Trump, Sam Sharr, Chris Sullivan, Jerry McGehee (sorry if I missed anyone)

Production target is 350,000 spring Chinook smolts. Brood calculator shows eggs from 136 females will be needed (Malia, Kent, Mark and Ace---PLEASE CHECK SURVIVAL PARAMETERS IN THE BROOD CALCULATOR TO VERIFY THE INFORMATION USED IS CORRECT!)
Additional question: Is the 10% buffer used to manage Clearwater Basin production applicable here?

Incubation:
-Eyed-eggs from 2-4 egg takes (2 preferred) for this group of smolts

-9 or 10 egg stacks will be needed for incubation of eggs from 136 females

Transfer of eyed eggs to Lyon's Ferry
-Egg transport will occur in November. Eggs will be kept on chilled water until transport. Kent Hills and staff from Dworshak volunteered to shock, enumerate and haul eggs to Lyon's Ferry

Rearing at Lyon's Ferry
-Lyon's Ferry currently raises smolts to 12.0 fpp at release, but will do their best to accommodate our request for smolts in the 16-18 fpp range at release

-Plan is to move these fish to a "lake" at for final rearing sometime in April. At that point fish will be in the 75 fpp range (too small to PIT tag)

-Marking/tagging will be determined by the co-managers in the near future after discussions with LSRCP

-If PIT tags will be put in these fish, collecting them from the lake will be difficult. Cast netting or moving some smolts to a release bay for collection and tagging are options

Transport and release of smolts
-Smolt hauling will occur during the second week of March

-Logistics of hauling smolts back to Kooskia needs to be determined. Trucks from multiple facilities are already in use during that time of year. It was suggested to use 0.8-1.0 pounds of fish/gallon of water as a guideline for determining hauling logistics. Jerry McGehee said there were 5 trucks available at Clearwater but that would delay hauling of other smolts. McCall trucks are usually not available until early April after their smolts are released around the end of March. If 11 trucks are available, Jerry estimated that it would take 2-3 full days of hauling to get the smolts to Kooskia and 4.5 days if 5 trucks are used

-Because these fish are being reared out-of-basin, it may be desirable to prioritize their acclimation at Kooskia over Clearwater Hatchery's releases at Kooskia to give the best possible chance of low stray rates for returning adults. This topic needs to be discussed further.