

2014
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, 2014

TABLE OF CONTENTS

CLEARWATER BASIN ANNUAL OPERATING PLAN (AOP) 2014

1. STEELHEAD

1.1. Brood Year 2013 Steelhead

1.1.1. DNFH

1.1.2. CFH

1.2. Brood Year 2014 Steelhead

1.2.1. DNFH

1.2.2. KNFH

1.2.3. CFH

2. SPRING CHINOOK SALMON

2.1. Brood Year 2012 Spring Chinook

2.1.1. DNFH

2.1.2. KNFH

2.1.3. CFH

2.1.4. NPTHC

2.2. Brood Year 2013 Spring Chinook

2.2.1. DNFH

2.2.2. KNFH

2.2.3. CFH

2.2.4. NPTHC

2.3. Brood Year 2014 Spring Chinook

2.3.1. DNFH

2.3.2. KNFH

2.3.3. CFH

2.3.4. NPTHC

3. Brood Year 2012 Summer Chinook

3.1.1. CFH

3.2. Brood Year 2013 Summer Chinook

3.2.1. CFH

3.3. Brood Year 2014 Summer Chinook

3.3.1. CFH

4. COHO

4.1. Brood Year 2012 Coho

4.1.1. DNFH

4.2. Brood Year 2013 Coho

4.2.1. DNFH

4.2.2. Eagle Creek NFH

[4.2.3. Cascade Fish Hatchery](#)

[4.3. Brood Year 2014 Coho](#)

[4.3.1. KNFH](#)

[4.3.2. DNFH](#)

[4.3.3. Lapwai Creek](#)

[5. FALL CHINOOK SALMON](#)

[5.1. Brood Year 2012 Fall Chinook](#)

[5.1.1. FCAP – Big Canyon Facility](#)

[5.2. Brood Year 2013 Fall Chinook](#)

[5.2.1. FCAP – Big Canyon Facility](#)

[5.2.2. NPTHC](#)

[5.3. Brood Year 2014 Fall Chinook](#)

[5.3.1. Lower Granite Dam Adult collection](#)

[5.3.2. NPTHC](#)

[6. RAINBOW TROUT](#)

[6.1. Dworshak Reservoir Mitigation](#)

[6.2. Clearwater Basin](#)

[7. PACIFIC LAMPREY](#)

[7.1. NPTHC](#)

[8. CONTACTS](#)

[Appendix 1. Parental Based Tagging](#)

[Appendix 2. 2014 Snake River Kelt Reconditioning Project Summary](#)

[Appendix 3. Release Table Meeting Wrap-up Notes](#)

[Appendix 4. Clearwater “PRE” Annual Operating Plan Meeting](#)

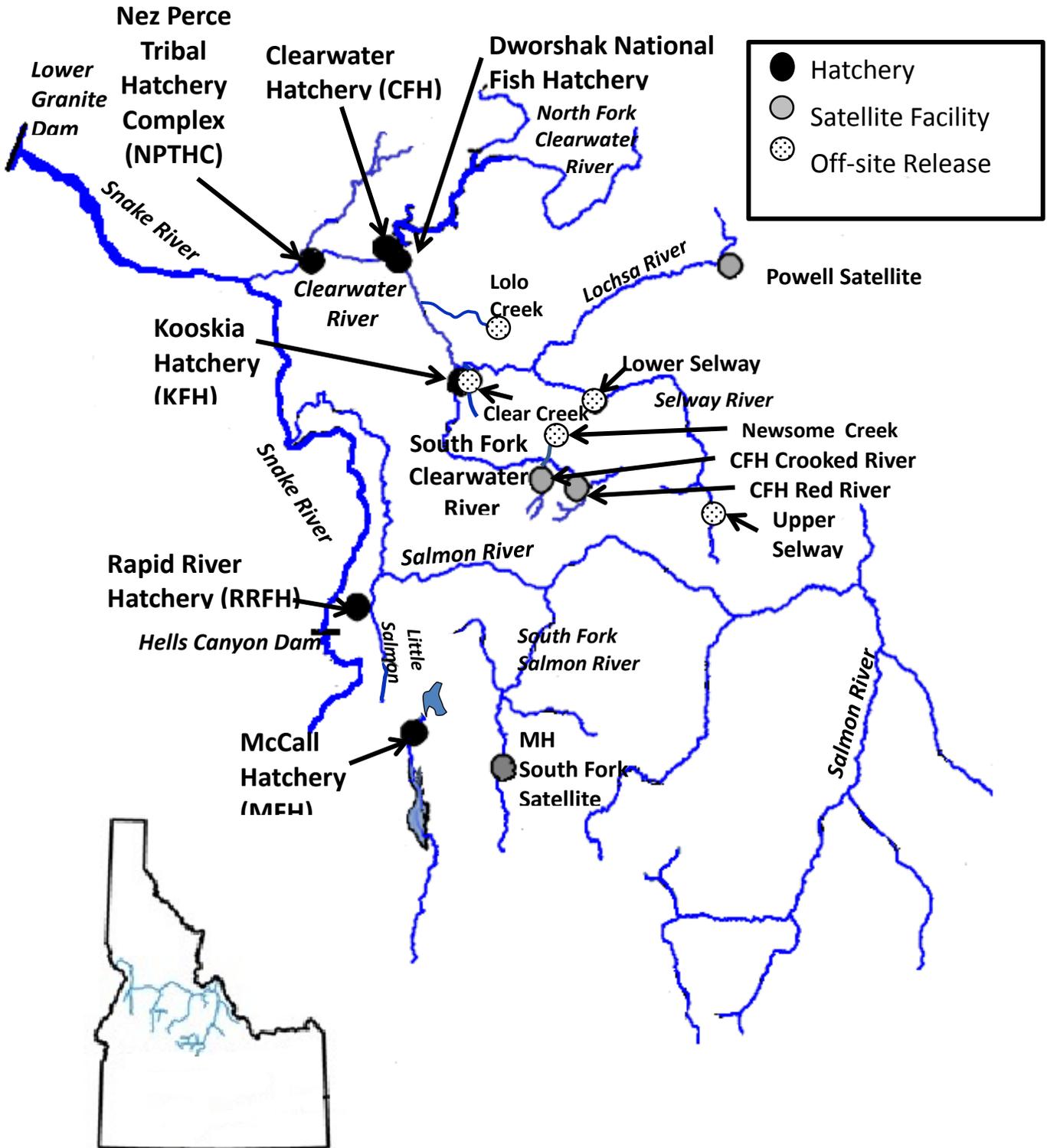


Figure 1. Map of hatchery rearing facilities, hatchery adult trapping facilities, and juvenile release sites associated with hatchery Spring Chinook production in the Clearwater Sub-basin in 2014.

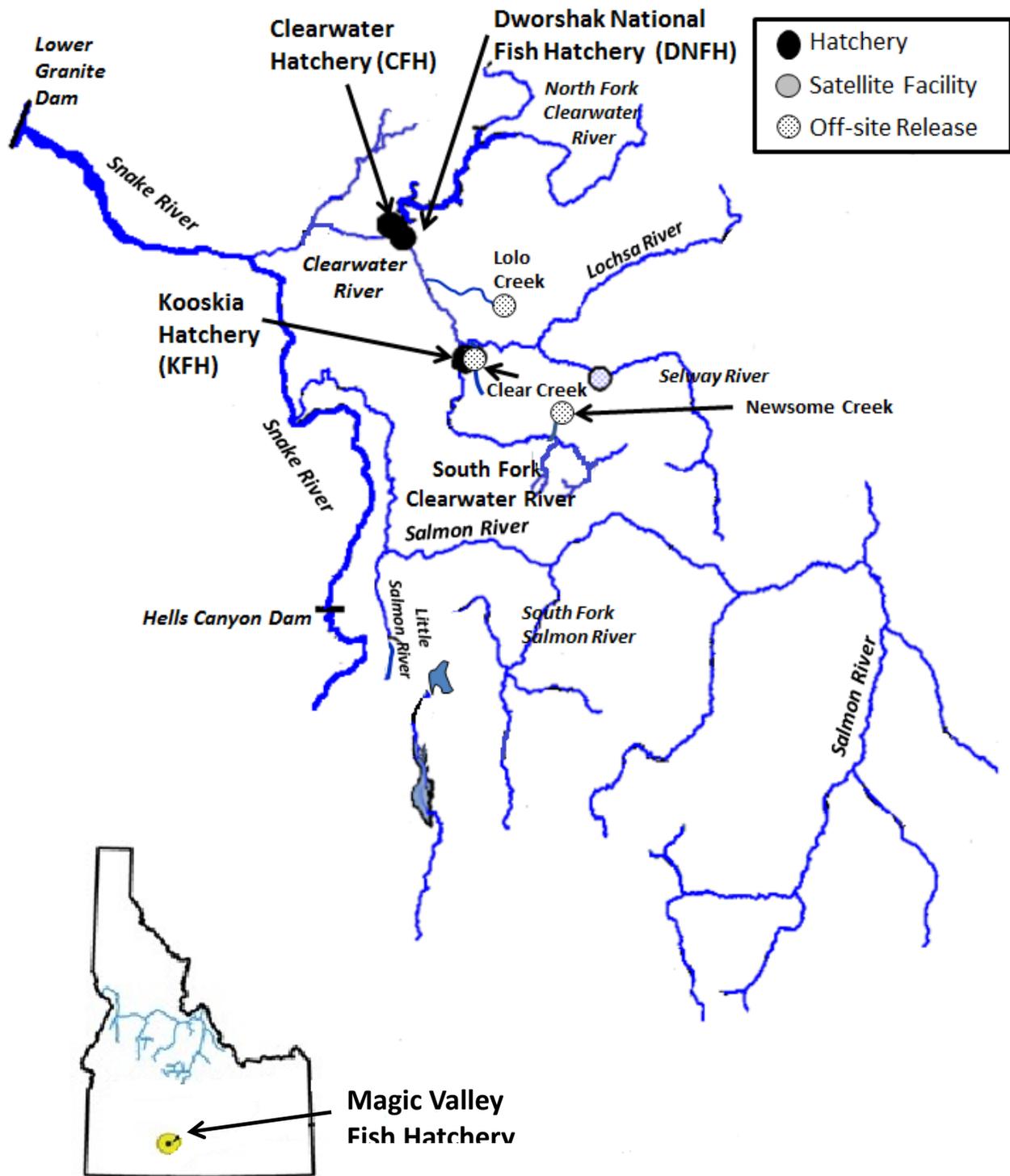


Figure 2. Map of hatchery rearing facilities, hatchery adult trapping facilities, and juvenile release sites associated with hatchery steelhead production in the Clearwater Sub-basin in 2014.

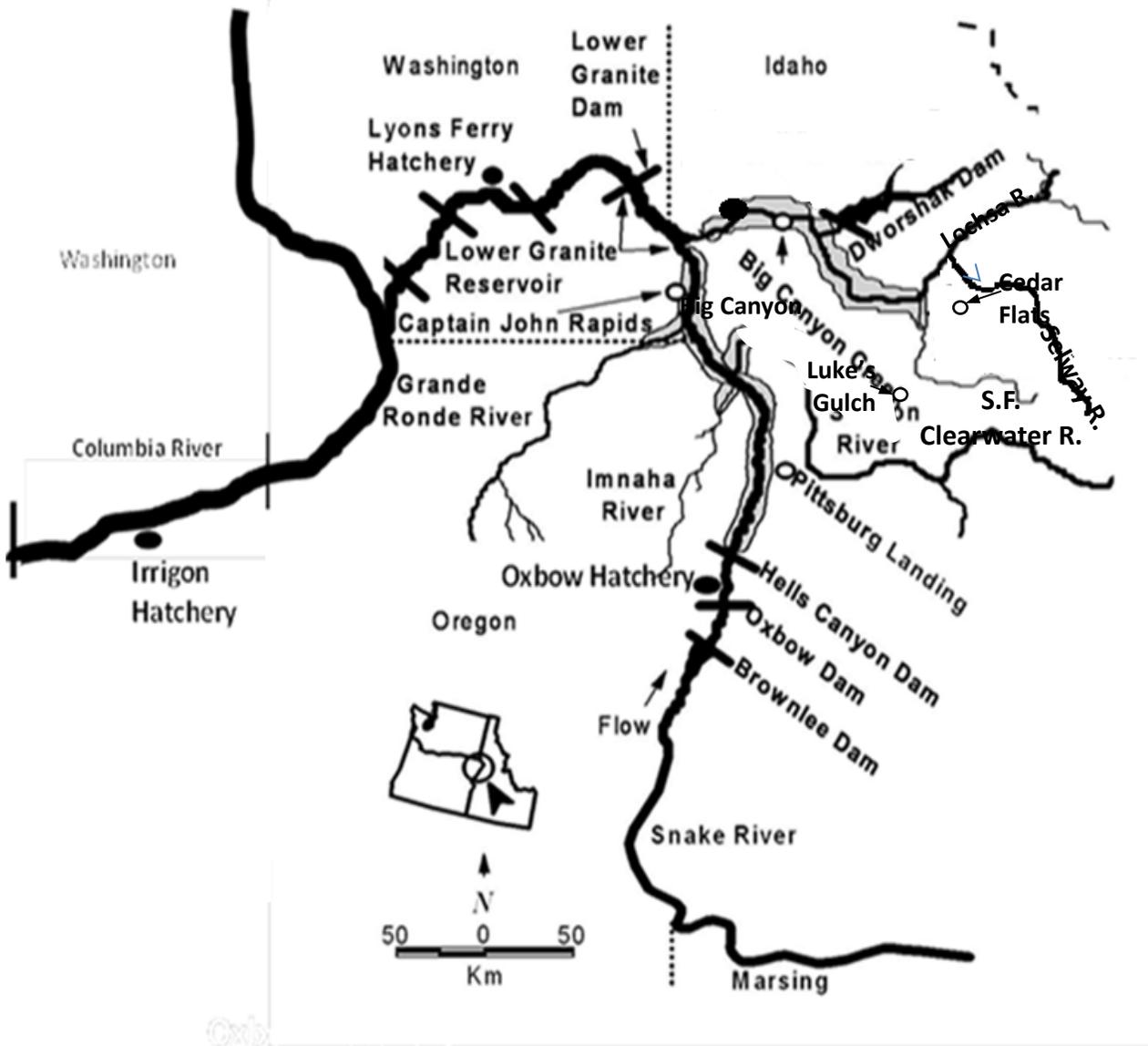


Figure 3. Map of hatchery rearing facilities, hatchery adult trapping facilities, and juvenile release sites associated with hatchery Fall Chinook production in the Clearwater Sub-basin in 2014.

CLEARWATER BASIN ANNUAL OPERATING PLAN (AOP) 2014**Final 04_07_14_13:30**

(Each section lists a contact for additional information, coordination, or notification – contact information is listed in Section 8, pg. 46)

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.

In addition to harvest mitigation portion (approximately 18% at current production levels) the combined steelhead production from steelhead from Dworshak and Clearwater Fish Hatcheries 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 up to 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 2013 Steelhead**1.1.1. DNFH**

*DNFH collects broodstock to meet B-Run Steelhead production goals for its own program, the CFH and the Magic Valley Hatchery (**Table 2**). Approximately 1,000-1,200 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) the prevalence of IHNV in adults and culling rate variability based on the level of IHNV, 3) overall egg quality, 4) preserving the run-timing from August through April, and 5) 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 agreement of releasing un-clipped fish is to offset*

reductions in down-river fisheries. The principle is that the returning unclipped adult steelhead will escape the sport fishery therefore return at a higher rate to tributaries, to hopefully spawn, thereby increasing natural production.

- 1.1.1.1. Production status – As of January 1, 2014 there were a total of 2.23 million steelhead on station, averaging 150 to 173 mm total length, depending on take, 10.2 fpp. BY 13 STT were reared in 50 Burrows Ponds and two Mixed Cells. Sample counts are performed monthly on representative ponds. *Nate Wiese / Jeremy Sommer*
Projected release – We plan to release smolts April 14th – 22nd, 2014. DNFH expects to release 1.2 million steelhead on-site and 900K off-site. All unclipped steelhead (248K) will be released in Lolo Creek at El Dorado site April 18th – 22nd depending on snow conditions using ACOE trucks. NPTHC will coordinate snow removal efforts to the Lolo Creek site. If snow conditions do not permit release from April 18th – 22nd into El Dorado Creek, 140K unclipped smolts will instead be released at that time into the South Fork Clearwater River at the Meadow Creek pullout. The pullout location will be used because the hauling trucks are too large to maneuver in the Meadow Creek release site. If 140K fish are released at Meadow Creek, the remaining 60K will be released the week of April 28th via NPTHC trucks. Average total length at release is estimated at 200 mm (5.8 fpp) (**Table 1**). *Jeremy Sommer/Nate Wiese/ Mark Drobish*
- 1.1.1.2. Fish health status – IHNV occurred at the 20.5% rate in the BY 2013 adults. Gas bubbles were seen in the gills of juvenile fish during late summer. IHNV was detected in system 3 in early Sept at low mortality levels and in system 1, burrows pond 1 with very low mortality levels in Oct. 2013. No reuse was used during BY 13 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 – Eight CWT groups ranging from 20K to 25K each were tagged for system contribution and early return groups during marking operations in June and July 14. Thirty days post tagging 500 fish from each CWT-tagged pond were checked for tag retention (ex. BY13 = 85% to 97%). Thirty-two thousand five hundred PIT tags were inserted in January 2014; 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.ptocentral.org). Arrays are located on SF Clearwater (Site Codes SC1 and SC2) and Lolo Creek (LC1 and LC2). **McLain Johnson**

- 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 BY13 steelhead to be released in the spring of 2014 is 825,000. This includes 259,875 AD-clip, zero AD/CWT, 147,805 No-clip/CWT and 197,320 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**).

Tony Folsom

- 1.1.2.2. Fish health status – Brood Year 2013 For Egg Disease Certification, all females are sampled (individually) for viral replicating agents. Initial incubation of eggs for CFH occurs at DNFH. Eggs from any females that test positive are destroyed, and only eggs from females that test negative for IHNV are taken to CFH. Juvenile rearing inspections are performed quarterly by Eagle Fish Health Lab. No prophylactic treatments are used during steelhead rearing. Diagnostics on demand. Pre-liberation samples performed on 60 fish sample prior to release. Viral pathogens have not been detected in these fish. **Doug Munson**

- 1.1.2.3. M&E - The fish are sampled monthly between the 25th and 28th of the month. During months of rapid growth, fish are sampled biweekly. Pound counts are taken to track fish growth and monitor if growth is following the annual growth projections. Length frequencies are taken 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.

1.1.2.5. 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, up to 50 radio transmitters will be inserted 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. *McLain Johnson*

1.2. Brood Year 2014 Steelhead

1.2.1. DNFH

1.2.1.1. Projected adult return – Based on estimated return rates, the predicted steelhead return to DNFH rack in 2013-2014 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 (2013) with collections by month (October: 186 adults; November: 160 adults; December: 27 adults) for collection of early-return steelhead. Collection targets are generally 300 in October, 150 in November, and 150 in December. Fewer broodstock were collected this period due to concerns of limited broodstock. All excess SST (676 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 2014 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. *Nate Wiese/Tom Tighe*

- 1.2.1.3. Adult fish health – 79 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 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. In addition to samples taken during spawning, adults will also be 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 10/15/2013 and for about every 2 weeks thereafter, 30 adults were sampled for IHNV. All samples were taken non-lethally by gill and mucus collection due to the low steelhead run this year. Positive detections to date include 6.7% positive for IHNV from samples collected on 11/12/13. Samples have not been taken since December 13, 2013 but will resume again in February, 2014 as new fish are trapped. *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 – This year the food bank will be utilized when possible. Some carcasses will be provided to school groups for fish dissections. There have been no research groups to utilize the carcasses YTD. Regarding any fish not utilized by the public through the food bank, we will return these carcasses to the Clearwater River. Any fish that have been exposed to hormone treatments (SGnRHa) will be disposed at the transfer station. In the spring, spawning efforts are with fresh fish collected via the DNFH ladder, with the exception of some males that have been held over from previous collections, to better achieve the 1:1 male-female spawning ratio. *Nate Wiese / Mark Drobish*
- 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 ~2.70 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 ~840,000 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. Broodstock collection is minimized to the extent possible.

DNFH is cooperating with CRITFC and the Nez Perce Tribe (NPT) in a Kelt Reconditioning Project. NPT staff will air-spawn 160 females for the Kelt project. Air-spawned fish are to be reconditioned and retained until the spring of 2014. However, depending upon survival, a portion 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. A portion of the surviving air-spawned fish will be euthanized to assess egg quality of reconditioned kelts. The remaining portion 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. Hence, brood requirements for this takes are 80 females rather than 60 females. Also, kelt broodstock is collected as close to spawning as possible so that kelts are in the best condition possible. For 2014, SF Clearwater steelhead broodstock may be incorporated into the reconditioning program if the local broodstock production goal is met and additional fish are available. Between 5 and 15 reconditioned kelts have matured and will be air-spawned in 2014. 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. *Nate Wiese/Tom Tighe/Scott Everett/Brett Bowersox*

- 1.2.1.9. Incubation: DNFH will incubate eggs from approximately 610 steelhead females for its program, 150 fall-return adults and 460 from winter and spring returns. After eye-up and enumeration, approximately 2.7 million eyed eggs will go into the DNFH program. DNFH will incubate up to 1.2 million green eggs for CFH and 572,000 eyed eggs for Magic Valley Hatchery. Eyed eggs in excess of program needs will 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. *Nate Wiese/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 2014. *Nate Wiese/ Tom Tighe*
Outside Rearing: Approximately 2.4 million steelhead will be moved from nursery tanks to outside burrows ponds from the end of May until September 1, 2014. Fifty 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 150K 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. This will be the fifth year of utilizing System I for extending the reservoir water usage to better manage against IHNV by delaying exposure to river water. Current plans are to utilize reservoir water in a single pass mode (no reuse). As density and flow levels increase in System I, the steelhead will be moved into Systems II 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. *Nate Wiese / Tom Tighe*

- 1.2.1.10. Juvenile Fish health - Upon ponding, juveniles will be monitored for any disease problems including viral and bacterial pathogens, and parasites. 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 BY14 steelhead at DNFH are found in **Table 3**. The number of BY14 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 2014. *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. 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**

- 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 LGR transferred steelhead (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 culled and 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. **Scott Everett**
- Dr. James Nagler from the University of Idaho requested eggs from 2 females and milt from 3 males for to examine fertilization success. This request is for March of 2013. **Ray Jones**
- DNFH has had requests from approximately 8 schools for Trout in the Classroom projects. These schools have requested a total of 1,950 eggs for these projects. **Nate Wiese/Ray Jones/Jeremy Sommer**

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 and Nate Wiese for the USFWS.
- Gary Byrne and Chris Sullivan for the IDFG.
- Becky Johnson, Jay Hesse, Mike Tuell, and Kent Hills for the NPT.
- Steve Yundt 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 2014 for BY14 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 this year due to possible low 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/markings - 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 – BY14 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 be 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. *Tony Folsom*
- 1.2.3.2. SF Clearwater Broodstock - In the spring of 2014 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 goal

- of 100 pairs of adults for spawning.
 - 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.
 - DNFH will hold the eggs to eye up and culling for diseased eggs. They will then be shipped to CFH 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**). *Tony Folsom*
- 1.2.3.3. Fish health – Each female spawned at DNFH (eggs to be reared at CFH) will have ovarian fluid sample taken and shipped to Eagle Fish Health Lab, and tested for viral replicating agents; 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 each quarter and diagnostic examination on demand by Eagle Fish Health Lab. Pre-liberation inspections will also be performed on a 60 fish sample within 30 to 45 days of liberation. No prophylactic treatments are planned at this time. *Doug Munson*
- 1.2.3.4. 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 facilities total 4,656 adult Chinook salmon, specifically, 1544 for DNFH, 622 for KNFH, 2092 for CFH and 490 for NPTHC. Additional details are listed in the pertinent sections below.

*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 2012 Spring Chinook

2.1.1. DNFH

2.1.1.1. Production status - On January 1, 2014, there were approximately 2,318,000 BY12 spring Chinook averaging 34 fpp and 117 mm total length on station. At present, these fish are on schedule to meet the size-at-release requirements of 20 fish per pound. DNFH is rearing an additional 890,000 spring Chinook smolts in 10 Burrows Ponds under a temporary Real Estate Agreement from the ACOE. Of these smolts, 2.04 million will be released onsite and 276,000 will be released at Meadow Creek. CFH plans to truck Meadow Creek smolts starting March 27th, 2014. **Casey Mitchell/Nate Wiese/Brad George**

2.1.1.2. Projected release – In late March or early April 2014, approximately

1,430,000 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. The 609,000 on-site spring Chinook in Burrows Ponds will remain until mid-April until after steelhead releases. This delay is an attempt to reduce injury from water velocities in the Clearwater River release pipe. *Casey Mitchell/Nate Wiese /Ray Jones/ Nate Wiese*

- 2.1.1.3. Fish health – 7.5% of the adult SCS sampled were positive for IHNV. In May and June BY12 SCS fry had swollen, pale, and hyperplastic gills. Histology revealed gill changes consistent with high stress levels. Bacterial Gill Disease was diagnosed and treated with Chloramine-T and salt baths. During diagnostic exams, Bacterial Kidney Disease (*Renibacterium salmoninarum*) was detected, *Flavobacterium psychrophilum* (Bacterial Cold Water Disease) was detected in low levels, and low levels of the parasites *Epistylis* and *Epitheliocystis* were detected on the skin. SCS smolts presumably from the prior broodyear were found in the headboxes and occasionally in the ponds of the SCS raceways. These fish were tested and found positive for BKD. They were also tested for genetics in order to determine their origin by Matt Campbell. These results are pending. In September, excess SCS juveniles in Dworshak system 3 burrows ponds were detected positive for IHN (Infectious Hematopoietic Necrosis) virus. This was found in one 5-fish pool sample from burrows pond 55 tested by cell culture and real time PCR (Polymerase Chain Reaction). 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. Thirty days post tagging 1000 marked fish from a single coded-wire tag group were checked for tag retention (BY12 = 99%).

BY12 release numbers were increased by modifying raceway densities from 35,000 to 45,000 smolts per raceway. Corresponding to density increases, the flows to A-bank raceways have increased by 33% to 750 gallons per minute (gpm). B-bank raceway flows have been increased by utilizing re-use from A-bank to 750 gpm of re-use and 500 gpm of make-up water (1250 gpm total) Concurrently, a density study is underway to compare 45,000 to 65,000 smolts per raceway. The 65,000 smolts per raceway experiment is being conducted in six raceways. *Carrie Bretz / Ray Jones*

- 2.1.1.5. Research Requests – 52,000 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). *Ray Jones*

2.1.2. KNFH

- 2.1.2.1. Production status - There are 629,000 KNFH stock spring Chinook fry at KNFH weighing 23,125 lbs., 4.96 inches or 126 mm long, at 27.2 fish/lb. (fpp). The Burrows ponds were put on Clear Creek water October 1,2013. Chinook will be split from Burrow's ponds into raceways in February, 2014 if densities warrant. **Kent Hills**
- 2.1.2.2. Projected release - KNFH will direct release an estimated total of 629,000 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 – 14.3% of adult SCS sampled were positive for IHNV. BY12 SCS have done well to date. Formalin treatments for *Ichthyophthirius* were given during August and Sept. 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 (BY11 = 97 %). 12,000 Chinook will be PIT tagged for the 2014 release for juvenile and adult monitoring. Most of these PIT tags (12,000) 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 BY12 spring Chinook smolts are for 2,593,000 at an expected 16 fish per pound (162,063 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. 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). **Tony Folsom/Brad George**
- Fish health -

- Brood Year 2012 Powell Spring Chinook Broodstock: IHNV was detected in 8/90 (8.9%) (sampled individually) of ovarian fluids and kidney/spleen tissues. ELISA sampling detected 75 Highs (13.8%) of the 540 females spawned (elevated ELISA values due to ABTS reagent). Eggs from females with high ELISA values were culled from the CFH Chinook salmon program. Pre-spawning mortality was at 2.4%. *Myxobolus cerebralis* was not detected in the 20 fish sampled.
- Brood Year 2012 Powell Juveniles: Steatitis was present but did not cause increased morbidity or mortality. Bacterial Kidney Disease was detected in these fish after they were transferred to DNFH. All Powell stock raceways were treated with Erythromycin (28 days, 100mg/kg/day) target dose. Rearing inspections – Quarterly inspections are performed by Eagle Fish Health Lab. Pre-liberation inspections – These inspections are performed by Eagle Fish Health Lab within 30 to 45 days of release. (60 fish samples viral replicating agents, *Renibacterium salmoninarum*, Furunculosis, and WD).
- Brood Year 2012 S. F. Clearwater Spring Chinook Broodstock: IHNV was detected in 19/90 (21.1%). These detections were reported to the APHIS veterinarian-in-charge. ELISA sampling detected 53 Highs (13.5%) of the 393 females sampled (old ABTS reagents elevated ELISA values). Eggs from females with high ELISA values were culled from the CFH Chinook program. Pre-spawning mortality was at 7.1%.
- Brood Year 2012 S. F. Clearwater Spring Chinook Juveniles: Steatitis was present but did not cause increased morbidity or mortality. Bacterial Kidney Disease was detected in these fish after they were transferred to DNFH. All South Fork Clearwater stock raceways were treated with Erythromycin (28 days, 100mg/kg/day) target dose. Burrows Pond 54 had epizootic levels of BKD and received one treatment of Aquaflor (10 days, 15mg/kg/day) target dose. All South Fork stock stock raceways including BP 54 were treated with Erythromycin (28 days, 100mg/kg/day) target dose. Rearing inspections – Quarterly inspections are performed by Eagle Fish Health Lab. Pre-liberation inspections – These inspections are performed by Eagle Fish Health Lab within 30 to 45 days of release. (60 fish samples viral replicating agents, *Renibacterium salmoninarum*, Furunculosis, and WD). **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 2014, 56,100 Chinook salmon will be PIT tagged to evaluate juvenile timing and survival from release to Lower Granite Dam for each release group and to

estimate an adult escapement back to Lower Granite Dam from each of the five major smolt release groups as well as to provide a tool for in-season harvest management (**Table 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*

2.1.4. NPTHC

- 2.1.4.1. Production status - As of January 1, 2014, there were 269,185 BY12 spring Chinook averaging 31.7 fpp on station at NPTHC. These fish were transferred from CFH in September 2013, 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 2014, 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, 2014.

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 2013 Spring Chinook

2.2.1. DNFH

- 2.2.1.1. Production status –As of January 15, 2014, there were approximately 2.06

million DNFH stock eggs/sac-fry incubating at DNFH. In the spring of 2014, SCS fry at DNFH will be transferred directly from the egg trays into the B-bank of outside raceways. The A-bank has vacuum de-gassing capabilities to cope with the higher gas levels observed in April and May, however, these raceways will be undergoing epoxy coating during our ponding/first feed window. We have completed 50% of the degassing project at main aeration which will lower nitrogen levels in B-bank. Dworshak is also continuing the Selway parr program of 300,000 parr. It is DNFH's intent to increase Chinook production since adult return goals are not met with current production levels.

DNFH will continue conducting 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 2014. Juveniles in excess of the study design will remain unclipped and will be released as part of the Selway parr program in September 2014.

The 300,000 Selway parr program will be released in September 2014 once the fish have reached approximately 100 fpp. These parr will be transported by Mike Key with NPT transport trucks. *Angela Feldmann/ Nate Wiese /Mark Drobish*

- 2.2.1.2. Fish health status – Adult IHNV prevalence was 35.7%. Eggs from thirteen females were recommended to be culled due to ELISA O.D. levels above the 0.250 cut off level. BY13 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, 2014 for contribution monitoring (**Table 5**). Tagging plans also include 52,000 PIT tags for the Comparative Survival Study (CSS). The CSS is looking at adult survival of transported vs. non-transported and upriver vs. downriver releases. *Carrie Bretz*

2.2.2. KNFH

- 2.2.2.1. Production status - KNFH stock BY13 spring Chinook were spawned at DNFH. After fertilizing and disinfection, the eggs were placed into heath trays and incubated at DNFH. At eye-up the eggs were shocked and enumerated. This was done so that excess eyed eggs could be shipped to CFH because of a short fall in adult returns. At eye-up eggs were taken from a total of 223 females spawned with a total of 195 males. This produced an estimated total of 780,500 green eggs. Eggs were placed on chilled well water (approximately 38F). Eggs were all hatched out by mid-December. *Kent Hills*
- 2.2.2.2. Fish health status - Adult IHNV prevalence was 66.7%. Eggs from 14 females were recommended to be culled due to ELISA O.D. values above

the 0.250 cut off level. BY13 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, 2013 for contribution (**Table 5**) and 15,000 KNFH smolts will receive PIT tags in January, 2014. 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, 2013. *Carrie Bretz*

2.2.3. CFH

- 2.2.3.1. Production status – The proposed number of CFH fish to be allocated from brood year 2013 is 2.135 million smolts, 200k-220k pre-smolts for NPTHC. Beginning with BY12 the 300k parr eggs were supplied from Powell broodstock and are being reared at DNFH. Then with BY13 the 300k parr eggs were supplied from DNFH broodstock and subsequently reared at DNFH. *Malia Gallagher*
- 2.2.3.2. Estimated numbers/planned marking & tagging - All production Chinook are Ad clipped. Planned releases of BY13 Chinook are for 2,135,000 full term smolts 16 fish per pound, 200K presmolts to be transferred to NPTHC in Sept 2014. The NPT will transfer the Clearwater stock fish to NPTHC site during September 2014. Prior to marking NPT will provide wire for 100% CWT and 33% AD clips. 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. All production Chinook are Ad clipped. NPT contact for transport is Steve Rodgers (**Table 5**). *Malia Gallagher*
- 2.2.3.3. Fish health status –
- Brood Year 2013 Powell Spring Chinook Broodstock: IHNV was detected in 16/60 of ovarian fluids and 30 fish sampled with kidney/spleen tissues. ELISA sampling detected 30 High (7.2%) out of 414 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 0/60 of ovarian fluids 0/30 of the kidney/spleen tissue samples. ELISA sampling detected 95 Highs (20.6%), out of the 461 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 138/469 of ovarian fluids. ELISA sampling detected 2 Highs (0.4%) out of 469 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 51/176 of ovarian fluids. ELISA sampling detected 2 Highs (1.1%) out of 176 females sampled. Eggs from females with positive IHNV and with high ELISA values were culled from the CFH 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 2015, approximately 56,100 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**).

Genetic samples are also 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 January 1, 2014 there are 766,123 BY13 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 Clearwater stock BY 2013 spring Chinook from CFH to NPTHC during early September 2014 (section 2.2.3.2). Fish will be reared in the NATURES “S” channels or linear raceways until late-March or early-April 2015 and released at approximately 20 fpp *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 held at NPTHC until late August or early September and then transferred to Yoosa/Camp AF for acclimation and final rearing.

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.

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, 2014. 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, 2014. 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 2014. 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 – 35.4% of the fish sampled were positive for IHNV. Eggs from 8 females were culled to bring all eggs to the status of being from females all under the ELISA O.D. value of .250. As of December 31, 2012 all BY2012 production fry are hatched and incubating at NPTHC. *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 2014 Spring Chinook

Spring Chinook coordination will begin sometime in the spring of 2014, 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

Approximately 1,608 Chinook adults are needed for broodstock for the DNFH spring Chinook salmon program. This number accounts for pre-spawning mortality but does not include jacks (goal for jacks is less than 5% contribution to production annually). This brood level will provide 2.7 million green eggs and 1.47 million smolts released to meet current US v Oregon production goals. This brood level also provides 300,000 Selway parr and 200,000 sub-smolts for transfer to NPTHC. Smolts in excess of 1.05 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 2014 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 maximized to ensure broodstock collection. The co-managers plan to trap as many spring Chinook as possible to ensure that broodstock needs are met at all Clearwater facilities. As such, DNFH will continue trapping beyond its 1,450 fish brood needs at the direction of the co-managers. *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 due to low adult returns. *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 as was done in 2013. *Nate Wiese/Mark Drobish/Jeremy Sommer*
- 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). *Carrie Bretz/Chris Sullivan*
- 2.3.1.6. Spawning plans – DNFH will spawn 725 females for its programs and 300-400 females for KNFH's program. 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. *Nate Wiese/Jeremy Sommer*
- 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. *Nate Wiese / Jeremy Sommer*

2.3.2. KNFH

A total of 798 broodstock spring Chinook are trapped at KNFH annually. Approximately 600 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 198 broodstock are also collected to provide for the IDFG release of 235,000 smolts in Clear Creek.

- 2.3.2.1. Projected adult returns – Based on 2014 tribal and sport harvest data, rack returns, and ocean conditions during emigration; the 2014 forecasted return for KNFH spring Chinook to the Clearwater River is 4,283 fish (**Table 6a**) and IDFG estimates another 791 adults returning from the 2011 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 2014. 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. *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 spring Chinook BY 14 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 – BY14 KNFH stock (780k) eggs will be incubated at KNFH. The new egg incubation recirculation system will be utilized. BY 2014 eggs will be incubated on chilled well water approximately 38-40F. Normally eggs all hatch out 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 *Ceratomyxa 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***
- 2.3.2.8. Communication – FWS puts out weekly spawning reports and weekly return reports, and annual spawning and adult return reports are also produced.

2.3.3. CFH

Approximately 2,092 Chinook are needed for broodstock for the CFH spring Chinook salmon program. This number includes 338 for Powell, 926 for the SF program, 198 for the Clear Creek program, 338 for the Selway smolt program, and also accounts for pre-spawning mortality. Current hatchery production goal is 2.135 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 6,873 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 1,053 females (483 Powell, 470 Red River, 100 Clear Creek) and 1,053 males (483 Powell, 470 Red River, 100 Clear Creek) 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 out-plants will be implemented at locations and levels given in **Table 7a**. ***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. Jack Chinook may go to subsistence programs directly. Please see **Tables 7a** and **7b** for out-planting priority streams and marks. **Tony Folsom**
- 2.3.3.4. Spawning plans – Spawning ratios of 1:1 will be used unless the brood stock population is less than 100 females. If the spawning population is less than 100 females, then eggs from each female will be split into two equal groups. A different male will fertilize each group. One cup of well water will be added to each bucket and set aside for 30 seconds to one minute. The two buckets will be poured together and continued through the spawning process. When brood stock population is 50 to 25 females, the eggs from each female will be split into three equal groups and each group fertilized by a different male. One cup of well water will be added to each bucket and set aside for 30 seconds to one minute; then all three buckets will be poured together. When brood stock population is 25 females or less, the eggs from each female will be divided into four equal groups, each fertilized by a separate male. The process will be completed as previously mentioned to finish the spawning process. During the entire spawning year, at 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 disposed. **Tony Folsom**
- 2.3.3.5. 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). **Chris Sullivan**
- 2.3.3.6. Juvenile production – Original design memorandum shows a production goal may be as high as 1.5 million Chinook smolts reared at the main facility, and 1.5 million fall release pre-smolts reared at the three satellite facilities. BY14 production targets will be approximately 2.135 million. FTS, 200k Pre-smolts transferred to NPTHC in September 2015. . **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, ISP, 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 30 – 45 days prior to release at satellites (60 fish sample). **Doug Munson**

2.3.4. NPTHC

In 2014, approximately 490 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 3%, and an eyed egg to release mortality of 15%, with a 10% cushion. 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 2014 to collect spring Chinook adults as a broodstock source for the Meadow Creek program and a backup brood source 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 2014, 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 September 17th, or until zero fish are trapped for 7 consecutive days. One weir will be operated on Lolo Creek, an upper weir (RKM 51) and a lower weir (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 2014, the Lolo Creek weirs will be operated as follows (**Appendix 3**):

1. All adipose fin clipped adults will be retained and transported to NPTHC by NPTHC drivers for use in broodstock.
2. Release all adipose fin intact/CWT only adults above the weir.
3. Release all natural (no clips or wire) fish above the weir.

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 September 17th, or until zero fish are trapped for 7 consecutive days. 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 2014, the Newsome Creek weir will be operated as follows (**Appendix 3**):

1. All adipose fin clipped adults will be retained and transported to Red River Facility by IDFG drivers for use as broodstock for their program.
2. Release all adipose fin intact/CWT only adults above the weir.
3. Release all natural (no clips or wire) fish above the weir. *Aaron Penney/ Carl East*

- 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 2012 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 long-term broodstock goal of 600 was calculated for the CFH program. 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 begin to return from this program's releases. In the future, when broodstock collections at the Crooked River Weir allow this program to become self sufficient, broodstock will no longer be collected at the SF Salmon River by McCall Hatchery. Approximately 65 females and 65 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. Estimated numbers/ planned marking & tagging – Summer Chinook rearing numbers will increase slowly. Year One, (BY 2009) we increased our production numbers using Option 1, 200K from Increased Chinook Rearing Plan. At the end of Year One we evaluated how well all stages of production adjusted to the increased 200K. All stages of production adjusted well to the 200K increase but we are going to remain at Option #1 until following items including program infrastructure and budget adjustments are in place prior to proceeding to Option 2: 1) Rearing cost; 2) Personnel adjustments to cover project workload {see Increased Chinook Plan}; 3) Infrastructure to accommodate workload, staff housing, 2 pond adult facility, vat space for early rearing, safety modifications to Red River adult weir. Implementation of program parameters are essential to assure safe aquaculture procedures are in place to provide disease free/ stress free environment for rearing of Summer Chinook. **Tony Folsom**
- 3.1.1.2. Projected Release – In March of 2014 the projected release will be

approximately 487,000 full term smolts and although previous releases of Summer Chinook in the Clearwater River have taken place directly from Crooked River, starting in 2014 these fish will be released from the Powell trapping facility on Walton Creek just above the Lochsa River. **Tony Folsom**

- 3.1.1.3. Fish Health - 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. Juveniles will be inspected on a quarterly basis with additional diagnostics on demand. Pre-liberation samples prior to release at satellites (60 fish sampled for *Renibacterium salmoninarum*, viral replicating agents, and *Myxobolus cerebralis*). **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. Fish will be 100% CWT with no ad clip. Seven weeks after marking and prior to release, 100 fish are sampled to determine CWT retention. In February 2014, 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**

3.2. Brood Year 2013 Summer Chinook

3.2.1. CFH

- 3.2.1.1. Trapping – Summer Chinook were trapped at the South Fork of the Salmon trap operated by McCall Fish Hatchery. Summer Chinook were also trapped at the Lower Crooked River trap site. **Malia Gallagher**
- 3.2.1.2. Spawning – Spawning occurred at the South Fork of the Salmon trap. One or two CFH staff traveled there and assisted with spawning and disease sampling procedures. They packaged 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 unless the brood stock population is less than 100 females. If the spawning population is less than 100 females, then eggs from each female will be split into two equal groups. A different male will fertilize each group. One cup of well water will be added to each bucket and set aside for 30 seconds to one minute. The two buckets will be poured together and continued through the spawning process. When brood stock population is 50 to 25 females, the eggs from each female will be split into three equal groups and each group fertilized by a different male. One cup of well water will be added to each

bucket and set aside for 30 seconds to one minute; then all three buckets will be poured together. When brood stock population is 25 females or less, the eggs from each female will be divided into four equal groups, each fertilized by a separate male. The process will be completed as previously mentioned to finish the spawning process. During the entire spawning year, at 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. *Malia Gallagher*

- 3.2.1.3. 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*
- 3.2.1.4. Juvenile Production – Summer Chinook rearing numbers will increase slowly. Year One, (BY 2009) we increased our production numbers using Option 1 200K from Increased Chinook rearing plan. At the end of Year One we evaluated how well all stages of production adjusted to the increased 200K. All stages of production adjusted well to Option #1. Beginning with BY12 we moved to Option #2, the Selway parr production was moved to DNFH thus freeing up early and final rearing space to raise an additional 200k summer Chinook totaling 400k FTS. Rearing will be limited to Option 2 of 400k FTS until all program recommendation are in place prior to proceeding to Option 3 and an increase to 600k FTS. Implementation of program parameters are essential to assure safe aquaculture procedures are in place to provide disease free/ stress free environment for rearing of Summer Chinook. The following items are program infrastructure and budget adjustments to be in place prior to proceeding to Option 3.: 1) Rearing cost.; 2) Personnel adjustments to cover project workload {see Increased Chinook Plan}; 3) Infrastructure to accommodate workload, staff housing, 2 pond adult facility, vat space for early rearing, safety modifications to Red River adult weir. If no problems arose we would recommend advancing to Option 3. If we did experience aquaculture problems or infrastructure / personnel adjustments were not in place we would recommend repeating Year Two until we were able to address any problems that arose to reduce risk of fish loss or quality of fish health. *Malia Gallagher*
- 3.2.1.5. 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. Ninety 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 INHV 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 for *Renibacterium salmoninarum*, viral replicating agents, and *Myxobolus cerebralis*). **Doug Munson**

- 3.2.1.6. **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. 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 5). **Chris Sullivan**

3.3. Brood Year 2014 Summer Chinook

The CFH summer Chinook release goal is 400,000 smolts in 2016 from BY2014 spawning. Based on that release goal, the broodstock goal for this program in 2014 is 257 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.

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. 1-ocean, 2-ocean and 3-ocean fish are destined to return to Crooked River trap in 2014. As agreed to by the co-managers (**Appendix 3**), the minimum release goal in 2016 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 400,000 release target. **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 unless the brood stock population is less than 100 females. If the spawning population is less than 100 females, then eggs from each female will be split into two equal groups. A different male will fertilize each group. One cup of well water will be added to each bucket and set aside for 30 seconds to one minute. The two buckets will be poured together and continued through the spawning process. When brood stock population is 50 to 25 females, the eggs from each female will be split into three equal groups and each group fertilized by a different male. One cup of well water will be added to each bucket and set aside for 30 seconds to one minute; then all three buckets will be poured together. When brood stock

population is 25 females or less, the eggs from each female will be divided into four equal groups, each fertilized by a separate male. The process will be completed as previously mentioned to finish the spawning process. During the entire spawning year, at 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. **Tony Folsom**

- 3.3.1.3. 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**
- 3.3.1.4. Juvenile Production – Summer Chinook rearing numbers for BY14 are 400K FTS. **Tony Folsom**
- 3.3.1.5. Fish Health – All females from the SF Salmon River will be sampled for viral replicating agents. 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 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 Eagle Creek NFH and DNFH and KNFH. The long-term adult return goal is 14,000 to the Clearwater River subbasin. The broodstock collection goal is 1,200 adults (50% females) returning 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 2012 Coho

4.1.1. DNFH

- 4.1.1.1. Production status – There were 328,885 fish on hand (12,298 pounds, 26.82 fpp) at DNFH as of January 1st, 2014. **Mike Bisbee**
- 4.1.1.2. Projected transfer date/acclimation period at KNFH – Smolts will be transferred to KNFH Mid-February, early March, 2014 for final acclimation. **Mike Bisbee**
- 4.1.1.3. Numbers/dates/marks & tags – 61,016 fingerling Coho were marked with a CWT (no AD clip) on July 31, 2013. 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 will be 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, 2014 for final acclimation and direct release. **Mike Bisbee**
- 4.1.2.2. Projected direct release – March, 2014, smolts will be released from KNFH. A projected 500,000 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. Brood Year 2013 Coho

4.2.1. DNFH

- 4.2.1.1. Production status – Coho recognized at Lower Granite Dam totaled 2,096 adults and 358 jacks in 2013. A total of 1,536 Coho salmon broodstock were collected consisting of 571 females and 908 males. Broodstock collections occurred at Lapwai Creek weir – 326 fish, at DNFH – 707 fish, KNFH – 498 fish, and NPTHC – 5 fish. Fish excess to broodstock needs was 62. Fish released above the weir in Lapwai Creek were 38 Coho and 40 Fall Chinook Salmon (FCS). There were 164 jacks and 3 males out-planted into the North Fork Clearwater River. A total of 490 females were spawned with 445 males. 18 females were culled; eggs from 472 Clearwater stock females were enumerated using a Van Gaalen egg sorter; percent eye-up was 83.12% and enumerated eggs totaled 1,411,891. As of January 23, 2013, there were 424,156 BY13 Live Eggs in five stacks in A-Bank at DNFH. *Mike Bisbee*
- 4.2.1.2. Projected production – We anticipate Clearwater River Stock production will be 400,000 reared at DNFH through spring 2015. *Mike Bisbee*
- 4.2.1.3. Egg transfer to KNFH – January 2014 a total of 80,000 eyed eggs from returning Clearwater River adult Coho were transferred from DNFH to KNFH. These eggs will be reared to Parr stage and released summer 2014. *Mike Bisbee*

4.2.2. Eagle Creek NFH

- 4.2.2.1. Egg transfer to Eagle Creek NFH
January 2014 a total of 666,617 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 2015. *Mike Bisbee*
- 4.2.2.2. Projected production – We anticipate Clearwater River Stock production will be 550,000 reared through spring 2015. *Mike Bisbee*
- 4.2.2.3. Fish health – Every adult female was sampled individually for BKD with ELISA; values above the cutoff (.25) values resulted in one female's eggs culled. Approximately 7.7% of the adults sampled were positive for IHNV. An additional 60 tissue samples were taken for virus, bacteria, *M. cerebralis* and *C. shasta*. Juvenile fish will be sampled monthly and prior to liberation. We suggest treating with Florfenicol prior to transfer to KNFH if Bacterial Coldwater Disease is present and causing mortality, to help guard against post-transport, stress induced mortality from Bacterial Coldwater. Disease history for this brood year of fish is completed at Lower Columbia River Fish Health Center. All fish are certified disease free for pathogens tested at that point in time. *Marilyn Blair*
- 4.2.2.4. Projected release – Clearwater stock smolts reared at Eagle Creek NFH will be released into Clear and Lapwai Creeks in mid-March 2015.

Approximately 550,000 (275,000 each stream) will be acclimated or direct stream released. *Mike Bisbee*

- 4.2.2.5. M&E – Current plans are to CWT 60,000 pre-smolts in July, 2014. CWT recovery helps determine smolt-to-adult survival, and adult return timing is based on adult counts at Lower Granite Dam and ladder counts at DNFH and KNFH. 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 February 2014 (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, Lyons Ferry Hatchery (LFH), NPTHC. *Mike Bisbee*

4.2.3. Cascade Fish Hatchery

- 4.2.3.1. Projected production – We anticipate Columbia River Stock production will be 200,000 reared through spring 2015. Release location and possible make type is to be determined. *Mike Bisbee*

4.3. Brood Year 2014 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 1,200 adults are necessary to meet broodstock goals.

4.3.1. KNFH

- 4.3.1.1. Weir/Trap operation – Weir operations will start October 1, 2014 to trap adult Coho at KNFH. *Mike Bisbee.*
- 4.3.1.2. 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 incidentally trapped at the KNFH weir will be transported to the S.F. Clearwater and released by the NPT. *Mike Bisbee*
- 4.3.1.3. Adult out-planting – Once Coho broodstock goals are met, surplus Coho will be passed above the weir. *Mike Bisbee*
- 4.3.1.4. Coho spawning – All Coho spawning will take place at DNFH. The broodstock goal is to collect and spawn 550 females to provide eggs for

both the DNFH and the Eagle Creek programs. Eggs for the DNFH group will be incubated and early reared at DNFH. Eggs for the Eagle Creek group will be incubated at DNFH to eye-up stage and transferred to Eagle Creek NFH in December for final rearing. *Mike Bisbee*

- 4.3.1.5. 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*
- 4.3.1.6. Fish Health – The Idaho Fish Health Center will collect the following samples from the returning adult Coho salmon 60 head wedges, 60 spleens, 150 Ovarian Fluid, 100% kidneys for BKD testing by ELISA, and a small amount of intestine samples. Bacteriology will be performed from viral sampling (spleens). 100% sampling will be conducted on ovarian fluid from females whose eggs are destined for Eagle Creek. These samples will be two-pooled. *Marilyn Blair*
- 4.3.1.7. Adult carcasses – All adult Coho carcasses will be out planted into Lapwai, Sweetwater, and Mission Creeks following spawning for nutrient enhancement. *Mike Bisbee*
- 4.3.1.8. Juvenile M&E
 - Smolt-to-adult survival based on weir monitoring in Clear Creek.

4.3.2. DNFH

- 4.3.2.1. Ladder operation – The DNFH ladder will be operated during the fall of 2014 to trap early return steelhead. Adult Coho trapped during this time will be counted and put in 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*
- 4.3.2.2. Adult transfers – All spawning will take place at DNFH. *Mike Bisbee*
- 4.3.2.3. Adult out-planting – Coho adults surplus to broodstock needs will be out-planted to Lapwai, Sweetwater, and Mission Creeks or back into the Clearwater. *Mike Bisbee*
- 4.3.2.4. 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*
- 4.3.2.5. 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, NPTH. *Mike Bisbee*

4.3.3. Lapwai Creek

- 4.3.3.1. Weir operation – A picket weir will be installed and become operable starting October 1, 2014 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*

- 4.3.3.2. Adult transfers – Adult steelhead trapped during operation of the Lapwai Creek Coho weir will be passed above the weir. Adult fall Chinook salmon trapped during operation of the weir will be passed above the weir. ***Mike Bisbee***
- 4.3.3.3. 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***
- 4.3.3.4. 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 LSRCF 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 2012 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 LSRCF 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 6-8, 2013. **Mike Key**
- 5.1.1.2. Projected release – Target release will be 150,000 yearlings at 10 fpp on April 17, 2013 (**Table 10**). Fish are 70,000 CWT and ad clipped and 80,000 CWT-only (**Table 11**). 3,000 will be PIT tagged (see M&E section below). **Mike Key**
- 5.1.1.3. Fish health – Import permit sampling was conducted on Feb. 6, 2013. A 60 fish sample will be 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/marketing 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**

- 5.1.1.6. Radio Telemetry – Between 200-500 adult fall Chinook will be radio tagged at Lower Granite Dam during August and September. 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.
McLain Johnson

5.2. Brood Year 2013 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 May 2-3, 2013. *Mike Key*
- 5.2.1.2. Projected release – Target release is 500,000 sub-yearlings at 75-50 fpp on May 23, 2013 (**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 will be done in April. A 60 fish sample will be collected and assayed prior to release from each site.
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/marketing 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 January 1, 2014, there are 1,547,131 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, 2014. 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 2014, a release of 430,000 sub-yearlings at 80 fpp (9.1 g) into the Clearwater River is scheduled for early May, 2014 (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 11, 2014.

Lukes Gulch: A release of 270,000 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 11, 2014. **Aaron Penney/ Carl East**

5.2.2.3. Fish health – Kidney samples were assayed by ELISA on all spawned females; eggs from 11 females were culled due to the culling down to the ELISA OD level of .200. 150 ovarian fluid samples, 60 tissues samples and 60 cranial samples were taken for assay. IHNV was found in 2.4 % 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**

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 2014 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 70° F (22.2° 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 2014 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*

5.3.2. 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 2014 at NPTHC, AQUIS 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 21st, 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 (sGnRH α) 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 2014 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 of 2013, NPT Fisheries began a new phase of operations by actively trapping adult lamprey at Bonneville, The Dalles, and John Day dams and transporting them to Nez Perce Tribal Hatchery. In June/July 2013, 238 lamprey were collected at Bonneville Dam, and during July/August 54 lamprey were obtained from John Day Dam, and in August an additional 9 came from traps at The Dalles Dam. A total of 301 lamprey were collected from the trapping efforts, and all were injected with oxytetracycline by NPT staff as a prophylaxis against furunculosis. Unfortunately, the majority of these were lost in September when individual lamprey climbed up inflow pipes and blocked water flow to two of three tanks, resulting in complete mortality in those tanks. After holding the remaining 51 adults through the winter months, NPT plans to outplant them during April/May 2014 in Lolo Creek and Newsome Creek and the South Fork Salmon River in Idaho, Asotin Creek in Washington, and the Willowa River in Oregon, to spawn naturally. Genetic samples are collected by NPT staff for later analysis. *Tod Sween*

8. CONTACTS

Agency	Name	JobTitle	BusinessPhone	EmailAddress
ACOE	Ann Setter	Lead Fishery Biologist	(509) 527-7125	ann.l.setter@usace.army.mil
ACOE	Greg Parker	Dworshak Dam Operations Project Manager	(208) 476-1251	greg.a.parker@usace.army.mil
ACOE	Ken Fone	Fishery Biologist	(208) 527-7140	kenneth.r.fone@usace.army.mil
IDFG	Brad George	Clearwater Hatchery	(208) 476-3331	brad.george@idfg.idaho.gov
IDF&G	Brett Bowersox	Fisheries Staff Biologist	(208) 799-5010	brett.bowersox@idfg.idaho.gov
IDF&G	Brian Leth	Fisheries Biologist	(208) 465-8404	brian.leth@idfg.idaho.gov
IDF&G	Carl Stiefel	Fisheries Regional Biologist	(208) 465-8404	carl.stiefel@idfg.idaho.gov
IDF&G	Chris Shockman	Clearwater Fish Hatchery	(208) 476-3331	chris.shockman@idfg.idaho.gov
IDF&G	Chris Sullivan	Hatchery Chinook Evaluation Biologist	(208) 465-8404	Chris.sullivan@idfg.idaho.gov
IDF&G	Chuck Warren	Fisheries Biologist - Steelhead	(208) 465-8405	chuck.warren@idfg.idaho.gov
IDF&G	David Burbank	Anadromous Fisheries Pathologist	(208) 939-2413	david.burbank@idfg.idaho.gov
IDF&G	Don Whitney	Clearwater Region Harvest Biologist	(208) 799-5010	donald.whitney@idfg.idaho.gov
IDF&G	Doug Munson	Anadromous Fisheries Pathologist	(208) 939-2413	doug.munson@idfg.idaho.gov
IDF&G	Gary Byrne	Production - Boise	(208) 287-2778	gary.byrne@idfg.idaho.gov
IDF&G	Jeff Heindel	Production - Boise	(208) 287-2712	jeff.heindel@idfg.idaho.gov
IDF&G	Jerry McGehee	Clearwater Hatchery Complex Manager	(208) 476-3331	jmcgehee@idfg.idaho.gov
IDF&G	Joe DuPont	Clearwater Region Fishery Manager	(208) 799-5010	jdupont@idfg.idaho.gov
IDF&G	Malia Gallagher	Clearwater Hatchery Manager	(208) 476-3331	malia.gallagher@idfg.idaho.gov
IDF&G	Matt Corsi	Regional Fishery Biologist	(208) 799-5010	matthew.corsi@idfg.idaho.gov
IDF&G	Pete Hassemer	Anadromous Fish Manager	(208) 287-2781	pete.hassemer@idfg.idaho.gov
IDF&G	Phil Mamer	Fisheries Pathologist Supervisor	(208) 939-2413	phil.mamer@idfg.idaho.gov
IDF&G	Sam Sharr	Anadromous Fisheries Coordinator	(208) 334-3791	ssharr@idfg.idaho.gov
IDF&G	Scott Putnam	SMP/ISS Screw Trap monitor	(208) 799-3475	scott.putnam@idfg.idaho.gov
IDF&G	Tony Folsom	Clearwater Hatchery Manager	(208) 476-3331	anthony.folsom@idfg.idaho.gov
IPC	Stuart Rosenberger	Hatchery M&E Biologist	(208) 388-6121	srosenberger@idahopower.com
LSRCP	Steve Yundt	LSRCP Research Program Coordinator	(208) 378-5227	steve_yundt@fws.gov
NPT	Aaron Penney	NPTHC Manager	(208) 621-3502	aaronp@nezperce.org
NPT	Becky Johnson	DFRM Production Director	(208) 621-4629	beckyj@nezperce.org
NPT	Bill Arnsberg	NPTH FCS Evaluation Project Leader	(208) 621-3578	billa@nezperce.org
NPT	Bruce McLeod	DFRM Production Hatchery Coordinator	(208) 621-4628	brucem@nezperce.org
NPT	Carl East	NPTHC Production Monitoring Biologist	(208) 621-3503	carle@nezperce.org
NPT	Casey Mitchell	DNFH Fishery Biologist	(208) 476-4591	caseym@nezperce.org
NPT	Dave Johnson	DFRM Manager	(208) 621-3736	davej@nezperce.org
NPT	Dave Statler	DFRM Resident Fish Director	(208) 621-3575	daves@nezperce.org
NPT	Jason Vogel	DFRM Research Deputy Director	(208) 621-3602	jasonv@nezperce.org
NPT	Jay Hesse	DFRM Research Director	(208) 621-3552	javh@nezperce.org
NPT	Jeremy Sommer	DNFH Bio Production	(208) 476-3366	Jeremy_Sommer@fws.gov
NPT	Joe Oatman	DFRM Deputy Program Manager	(208) 621-3730	joeo@nezperce.org
NPT	Justin Bretz	NPTH Spring Chinook Biologist	(208) 621-3579	justinb@nezperce.org
NPT	Kent Hills	Kooskia Hatchery Manager - SRBA Coordinator	(208) 926-4272	kenth@nezperce.org
NPT	McLain Johnson	B-run Steelhead Evaluation Project Leader	(208) 621-3572	mclainj@nezperce.org
NPT	Mike Bisbee	Coho Restoration Project Leader	(208) 621-4637	Michaelb@nezperce.org
NPT	Mike Key	FCAP Project Leader	(208) 621-4633	mikek@nezperce.org
NPT	Mike Tuell	SRBA Coordinator	(208) 476-4591	miket@nezperce.org
NPT	Scott Everett	Steelhead Kelt Project Leader	(208) 621-4635	scotte@nezperce.org
NPT	Scott Kellar	NPTH Fall Chinook Biologist	(208) 621-3574	scottk@nezperce.org

2014 Clearwater AOP

Agency	Name	JobTitle	BusinessPhone	EmailAddress
NPT	Sherman Sprague	NPTH SCS Evaluation Project Leader	(208) 621-3585	shermans@nezperce.org
NPT	Steve Rodgers	Dworshak Fisheries Complex Manager	(208) 476-2227	steven_rodgers@fws.gov
NPT	Tod Sween	Trout Ponds Project Leader	(208) 621-3582	tods@nezperce.org
NPT	Tui Moliga	Coho Evaluation Biologist	(208) 790-6744	tuim@nezperce.org
USFWS	Andy Goodwin	Fish Health Program Manager	(503) 231-6784	andrew_goodwin@fws.gov
USFWS	Angela Feldmann	Fish Biologist/Information & Education Specialist	(208) 476-4591	ngela_feldmann@fws.gov
USFWS	Carrie Bretz	DNFH Evaluation Biologist	(208) 476-7242	Carrie_Bretz@fws.gov
USFWS	Chris Peery	DNFH Evaluation Biologist	(208) 476-7225	chris_peery@fws.gov
USFWS	Corie Samson	IFHC Pathologist	(208) 476-2279	corie_samson@fws.gov
USFWS	Jill Olson	Fish Biologist	(208) 476-2238	Jill_Olson@fws.gov
USFWS	Laura Sprague	IFHC Wild Fish Health Survey Program Coordinator	(208) 476-9500	Laura_Sprague@fws.gov
USFWS	Marilyn Blair	IFHC Project Leader	(208) 476-7341	Marilyn_J_Blair@fws.gov
USFWS	Mark Drobish	DNFH Manager	(208) 476-4591	mark_drobish@fws.gov
USFWS	Mike Faler	IFRO Project Leader	(208) 476-2240	michael_faler@fws.gov
USFWS	Nate Wiese	DNFH Assistant Hatchery Manager	(208) 476-3315	Nathan_Wiese@fws.gov
USFWS	Ray Jones	DNFH Evaluation Biologist	(208) 476-2239	ray_jones@fws.gov
USFWS	Rich Johnson	Fisheries Supervisor	(503) 231-6835	rich_r_johnson@fws.gov
USFWS	Rick Cordes	IFHC Pathologist	(208) 476-2274	rick_cordes@fws.gov
USFWS	Tom Tighe	Fish Biologist	(208) 476-2269	Tom_Tighe@fws.gov

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 all ethanol vials 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 into 2 ml tubes with 100% non-denatured ethanol (blue cap tubes = males, red cap tubes = females), and store in a cool location. Store only one sample per sample tube. The ethanol-filled tubes and color-coded caps are provide by EFGL.
4. Label individual sample tubes with field number. Provide an excel data sheet with individual sample tube number, sex identification, and any other available data (length, field ID, pit tag ID, etc.).

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.

2014 Operations and Research

Dworshak is cooperating with CRITFC and the NPT in a Kelt Reconditioning Project. NPT staff will air spawn 160 females for the Kelt program. These fish will be retained until the spring of 2014. 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. 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

Clearwater Basin Reporting Meeting – 12/11/2013
UPDATES NEEDED by TUESDAY NEXT WEEK!!!!
Steelhead

1. 2013 Releases
 - a. Need to standardize PIT tag reporting – for AOP 2014 – Sam Sharr
 - b. Dworshak – numbers correct
 - i. Release size 7.1 fpp compared to 5.8 target
 - c. Clearwater Hatchery – numbers correct
 - i. 58 trips releases
 - ii. 957K released at 7.4 fpp compared to 4.5 fpp target
2. 2012-13 Adult returns and distribution
 - a. Dworshak NFH
 - i. Joe Dupont asked if Dworshak can utilize 3-ocean more frequently
 - b. Kooskia
 - c. Clearwater Hatchery
 - d. Kelts
3. Eggs/juveniles on station
 - a. Dworshak NFH –approximately 2.1 M smolts (2.1 M goal)
 - i. Steve Rodgers and Nate Wiese will contact COE about hauling 200K to Lolo Creek
 - b. Clearwater NFH – on track for 843K smolt release

Spring Chinook Salmon

1. 2013 Releases
 - a. Dworshak – numbers are accurate
 - i. 350K over release target for Density Study
 - ii. Size at release of 22 fpp compared to 20 fpp target
 - b. Kooskia Hatchery – accurate numbers
 - c. Clearwater Hatchery
 - i. On target at 2.5 M
 - ii. Size at release of 20 fpp was smaller than 16 fpp target
 - d. NPTHC – on target
2. 2013 Adult returns and distribution – Group considered this a “tight” brood collection for the Clearwater basin
 - a. Dworshak NFH
 - i. Angler effort yielded 554 total fish and approximately 363 adults
 - b. Kooskia Hatchery
 - i. On target
 - c. Clearwater Hatchery – accurate numbers

- d. NPTHC – accurate numbers
 - e. Table 6c. – Table needs to include Sport and Tribal hooking mortality – Jason Vogel and Sam Sharr
 - f. Table 6. Need updates from Chris Sullivan – Sam Sharr
 - g. Carl East will send out a new Table 6d for distributions to reflect jacks versus adults
 - i. Dworshak will provide an estimate of jacks and adult for Kooskia and Dworshak – Nate Wiese/Kent Hills/Angela Feldmann
3. Eggs/juveniles on station
- a. Dworshak NFH
 - i. 2.1 M eyed eggs
 - 1. On target for 300K Selway Parr release and 1.47M smolt release
 - ii. 2.4 M smolts
 - b. Kooskia
 - i. 700K eyed eggs
 - 1. On target for 600K smolt release
 - c. Clearwater
 - i. 3.29 M eyed eggs
 - 1. On target for 2.5M smolt release and 200K NPTHC transfer
 - d. NPTHC
 - i. 670K eyed eggs
 - 1. On target for 625K release of pre-smolt and parr
 - e. BKD culling for the basin in 2013 – Doug Munson/Guppy Blair
 - i. Every Chinook female is sampled for BKD as a risk management tool
 - 1. Piece of Kidney is ran through an ELISA test
 - 2. Culling fish below 0.25 has reduced the amount of BKD in the basin
 - 3. We have stopped injecting with Erythromycin – Doug Munson
 - 4. You can't disinfect for BKD – only treat with antibiotics or cull high level females
 - ii. BKD culling to make program has been used at 0.25 to 0.6 if needed – Doug Munson
 - iii. Over 0.6 optical density – high risk of outbreak every two to three years
 - iv. Between 0.25 to 0.6 – no recalled outbreak with antibiotic use – Doug Munson
 - v. This year – about 2% of the SCS females at Dworshak and Kooskia were above 0.25
 - vi. Kooskia used 23,000 eggs above 0.25
 - vii. There are areas in the Columbia both higher or lower than 0.25 for BKD culling
 - viii. Co-managers should discuss before going above 0.25 - language should

- be put into the AOP– Sam Sharr
- ix. Expand BKD language in AOP to include space for rearing, time needed, etc. expand BKD culling between 0.25 to 0.6 : Doug Munson/Malia Gallagher/Jerry McGehee
 - x. Expand Fish Health sections to include this language – Doug Munson/Guppy Blair
 - 1. Event of low numbers below Clearwater program goals - Doug Munson/Guppy Blair/Jerry McGehee
 - a. Segregate rear BKD levels from 0.25 to 0.6
 - b. Antibiotic treatment will be considered
 - c. Requires approval from co-managers
 - d. Guppy will Discuss with Pacific Region FWS Fish Health specialists to
 - xi. Set priorities for short broodstock years – Sam Sharr/Joe Dupont
 - 1. Set priorities for places that can trap adults
 - a. Dworshak
 - b. Kooskia
 - c. NPTHC
 - 2. Spread rearing fish at multiple facilities and consolidate release sites to areas conducive to trapping
 - xii. Continued coordination
 - xiii. Do not cull eggs for capacity without communication in advance with co-managers – Jerry McGehee and Steve Rodgers
 - 1. What about culling eggs to capacity – Doug Munson
 - a. Culling lower than 0.25 BKD eggs to meet hatchery program
 - b. Any culling lower than 0.25 BKD should be coordinated through the co-managers - Sam Sharr/Becky Johnson

Coho Salmon – Becky Johnson and Carl East

- 1. 2013 Releases
 - a. Dworshak/Kooskia NFH
 - i. Release numbers accurate
 - b. Transfers
- 2. 2013 Adult Returns
 - a. Dworshak NFH/Kooskia Hatchery
 - b. Weirs and traps
 - c. Adult outplants
- 3. Eggs/juveniles on station
 - a. Dworshak NFH
 - i. Eagle Creek took an excess 1.2 M eggs

- ii. More discussions to follow down river – Becky Johnson
- b. Kooskia Hatchery

Fall Chinook Salmon

- 1. 2013 Releases
 - a. NPTHC facilities
 - i. 200K excess fish released onsite due to higher survival and fecundity rates
 - b. FCAP facilities
- 2. 2013 Adult returns
 - NPTHC
 - i. 492 Dworshak fish trapped and return to river, no jack or female/male break-out – Chris Peery
 - 1. Current database program does not work well skipping between species – Chris Peery
 - 2. New database will address this problem – Carl East
 - ii. 62 fish from Dworshak to NPTHC
 - iii. Selected for larger fish once brood numbers were sufficient
 - iv. Some Lower Granite Dam Jills were spawned because these fish would have been sacrificed anyhow
 - 1. M&E staff separate fish to select for larger brood stock
 - v. 2,958 FCS Redds in Clearwater sub-basin – about 1,000 redds more than last year – Sherman Sprague
 - vi. Spawning peaks from Oct 31 to Mid-November
 - vii. Pictures of FCS spawning by NPTHC – Carl East will email
 - viii. Aaron Penney has video of the FCS spawning
 - b. LGRs
- 3. Eggs/Juveniles on station
 - a. NPTHC
 - i. Spawned 425 females
 - ii. 1.6 M green eggs – enumeration is not finished yet
 - iii. Should be on track for 1.4 M release
 - iv. No consideration for other release location – Mclain Johnson and Carl East
 - b. LFH for FCAP facilities
 - i. Should make full release this year – Becky Johnson

Rainbow Trout

- 1. 2013 Stocking
 - a. Dworshak NFH
 - i. 1,000 fish for Tunnel Pond release
 - b. Clearwater Hatchery
 - i. All numbers are accurate

- ii. Total program goal for ACOE mitigation is 50,000 trout split between Elk Creek – 20,000 and Deer Creek – 30,000
- iii. Mann Lake is a DJ/License funding program with Diploid trout production – Joe Dupont
- iv. Joe Dupont and Malia Gallagher will confirm LSRCP goals from Lyons Ferry
- v. Tunnel Ponds were stocked using IDFG trucks – Stocking Agency changed to reflect agency that hauled fish
- vi. \$1.70/fish was price per fish paid for purchasing Troutlodge 9-11 catchables by Dworshak for Kids Fishing Day – Tod Sween/Mark Drobish

Lamprey

- 1. 2013 Releases
 - a. Held 192 fish
 - b. 7 release locations
 - c. Isolation site for lamprey installed at NPTHC for disease control
- 2. 2013-14 Trapping
 - a. Trapped fish at Bonneville and John Day Dam
- 3. Lampreys on station
 - a. Adults went into the supply plumbing and blocked the water flow
 - i. Lost two full tanks of fish
 - ii. Currently have 51 fish from this cycle
 - iii. Genetic Analysis from CRIFTC in Hagerman
 - 1. Moving adults past passage barriers into spawning habitat
 - 2. This effort has produced juveniles – its working!!!
 - 3. Screw-trapped juveniles have been tracked back to adult outplants
 - iv. Lolo creek – anecdotal observations of amoecetes in gold panning dredgings – Aaron Penney

Facility Updates

- 1. Clearwater FH
 - a. Repair to pipeline to restore primary water pipeline
 - i. Knight Construction did a great job
 - b. South Fork Clearwater trapping site
 - i. Meadow Creek release site may be too high in the basin
 - c. Red River weir modification
 - i. Safety issue to be addressed
 - 1. Inspected by Al Williams from US Fish and Wildlife Service
 - 2. Installation causes a significant safety issue
 - 3. High water events are especially dangerous
 - ii. Significant number of fish may be moved away from Red River
 - iii. Technical and policy staff should meet with LSRCP to discuss options – Jerry McGehee, Joe Dupont, Sam Sharr, Becky Johnson

- iv. \$500-\$1M safety project – very rough estimate
- v. Minimal number of fish pass beyond weir before installation – Jerry McGehee
- vi. May be a year or two before installation
- vii. Similar issue in the Imnaha
 - 1. NOAA criteria for screening has changed
 - 2. Imnaha weir did not pass the NOAA screening requirements
- viii. Red River weir is generally installed immediately after ice-out before high-water
 - 1. June and July are the peak of trapping
 - 2. June to July can be the low-water periods
- d. Traveling Bridge Electrical Upgrade

Dworshak NFH

- 1. Bridge Demo
 - a. First three weeks of January
- 2. Facility Rehab
- 3. NPDES Compliance
- 4. Other Updates
 - a. Rearing space is available in the future
 - i. Logisitics are agreements with COE, FWS, NPT, etc.
 - ii. Keep Dworshak in mind for the future
 - b. Dworshak would like to pursue combination of RedHouse Steelhead releases at Clearwater and Dworshak
 - c. What size at release do we want to target for COE RBT program?
 - i. John Cassenelli research is suggesting 12” fish have better return to creel than 9” fish

Kooskia Hatchery

- 1. Habitat/Fishing access
 - a. Circular tanks for Coho acclimation (2)
 - i. In-house project
 - ii. NPTHC may want to send staff to Kooskia to help with tank installation
 - iii. 4 – 30 foot recirculating tanks (\$200K)
 - b. OB Weir upgrades
 - c. Gabions in front of weir
- 2. Other Updates

NPTHC Facilities

- 1. Yoosa/Camp AF intake and other challenges
 - a. Not enough water available for two ponds through V-notch weirs
 - b. Head tank overflowed during storm event
 - c. Fish were able to swim out (about 5,000 fish loss)

- d. Intake Structure at Yoosa Creek
 - i. Water was able to go around the intake structure
 - ii. Problem has been getting worse over time
 - iii. Bentonite and other sealers have not been successful
- 2. Newsome Creek AF pond supply modification
 - a. Some fungus issues after hauling
 - b. Loading with fish pumps seem to reduce this problem
 - c. Removed slotted manifold to prevent clogging issues and increase water flows
- 3. North Lapwai Valley AF intake mod
 - a. Cut hole in concrete wall to provide additional water into the intake structure
 - b. In-house project
 - c. 2-Coho re-circ tanks at this site
- 4. Lamprey Tanks/buildings
 - a. Lost flow due to lamprey plugging the intake
 - b. Transferred lamprey back to M&E tanks that are attached to the alarm system
- 5. Other Updates
 - a. Lolo Creek Weir
 - i. Shut down Lolo creek weir
 - ii. HGMP process needs to go through before Lolo creek weir is pursued
 - iii. This could take a significant amount of time – postponed

Hatchery Metrics Updates

- 1. Dworshak, Clearwater, NPTHC are using a similar template
- 2. Section of the AOP – Malia Gallagher to demo at AOP
 - a. Meeting with NPTHC, Dworshak, Clearwater in next two weeks
 - i. Jerry McGehee, Steve Rodgers, Aaron Penney, Carl East, Jeremy Sommer, Nate Wiese
 - ii. 3-5 years – left to each Hatchery manager to decide

Pre-AOP Meeting

- 1. January 6, 2014 – 8:30 am – Clearwater Hatchery

Appendix 4. Clearwater “PRE” Annual Operating Plan Meeting

January 6th, 2013

General Items

1. Map. Sam Sharr got the map together at the front of the document. Sam is going work on the formatting for the final document. Becky Johnson will work with Sam to possibly include all release sites throughout the Clearwater for all species. Aaron Penney will send Sam a map of where NPT’s fall Chinook release locations to Sam.

2. Sam Sharr has proposed cleaning up the language of release and mitigation goals in the AOP document. The group has agreed that Steve Yundt, Becky Johnson, and Sam Sharr will develop overarching program goals in a few concise sentences; these will then be sent to program manager to fill in specific program goals. This progressive language will assist in keeping program goals clear and consistent.

Steelhead

1. Brood Year 2013

a. No changes for Dworshak or Clearwater

2. Brood Year 2014

a. Tom T. at Dworshak has displayed a new transparent method of egg take via the egg take calculator in association with the estimated egg needs. The egg take plan has been updated to include “eyed eggs” to research/other programs (e.g. trout in the classroom). There is some confusion in regards to the predicted cull between the egg take plan and the calculator. Tom and staff will work with Nate to improve the transparency and development of the culling numbers; however this is inaugural effort in a step in the right direction for the AOP meeting in February.

b. Doug Munson has mentioned that there will be no culling for IHN. After 15 years of tracking, it is believed that fry transport is the main source of IHN outbreaks. With being careful and flushing (e.g. the California flush) we may be able to continue no culling (granted there are no further outbreaks).

c. There will be a meeting prior to the final AOP that includes all parties that develop and use the egg calculator, including all interested parties. There will be an announcement for this meeting, and the focus will be the developing metrics for this process (Steve will lead be leading the effort for getting the meeting together).

d. Excess eggs. The group agrees that there should be a prioritized list that

identifies what happens with excess eggs. Sam Sharr and Becky Johnson will initiate a meeting (that includes the FRO) that formulates a plan and procedure for this list to bring to the AOP meeting in February.

e. Scott Everett will be working with Becky Johnson and Jason Vogel to develop an action plan to use steelhead captured at Clear Creek weir for egg collection and air spawning (Jason Vogel is the lead). This will be shared at the AOP. Jeff Heindel mentioned to be careful from the viral standpoint.

f. Spawn timing. The desire is to develop dates of spawning that account for brood needs, minimizing mortality, meeting production goals, and protection for both the early and regular spawn timing. Currently, the first spawn is set for the 1st week of January. The question is whether we are front loading the spawn and pushing the return time earlier, which preliminary data suggests. Action item, we need to present further analyses that includes more data at the AOP (Chris Perry will lead this). This is a large topic that incorporates many aspects of the operating plan management. Becky Johnson will work with Nate Weise to more clearly outline the process of when fish are collected, spawners are selected, separation of spawners, how fish are recycled, etc. We will start with a good description of the current process, and move towards furthering these discussions.

g. PIT Tagging Plan. Reductions in overall PIT Tags in the subbasin. Brian Leth and Chris Peery have worked together with collaborators to make tagging parsimonious tagging groups between Dworshak and Clearwater.

h. Lolo release. The COE will be hauling the Lolo steelhead, but they are requesting help from NPT (like last year). Aaron Penney is the contact for NPT's hauling contribution.

i. Air spawning. In the event that brood needs are on track, or looking long, if we decide to air spawn that decision will be made by the group. In the event that fish are air spawned, the group will be approached about what to do with the fish after air spawning (e.g. released into the river or given to food bank).

j. Release swap. Proposed in 2012 by IDFG, basically exchanging a Red House release for the Lolo Release. This swap would reduce the number of release sites from Dworshak, and assist in keeping PBT groups separated. Becky Johnson, Joe DuPont, and Kent Hills are not in favor of this "putting all our eggs in one basket". No one has come to the defense

of this decision, but Sam Sharr will revisit for 2015 with his constituents.

Spring Chinook Salmon

1. Brood Year 2012

a. Dworshak. Good to go.

i. Surplus will be hauled by IDFG at Dworshak, Clear Creek and Meadow Creek. IDFG (Sam Sharr and Joe DuPont) will be meeting next week to discuss the strategy behind where these releases and coordinate with other collaborators to make a plan/agreement by late January (prior to AOP). These initial meetings will help dictate the future of potential surplus fish release locations.

b. Clearwater. Good to go.

i. Have 400,000 summers that management needs to decide release location (see summer Chinook below).

c. NPTHC. Good to go.

d. Kooskia. Good to go.

2. Brood Year 2013

a. Dworshak. Good to go.

b. Clearwater. Good to go.

i. Have 600,000 summers that management needs to decide release locations and strategy (see summer Chinook below).

ii. Group is impressed with the new paragraph about fish health (good job Guppy and Doug!).

c. NPTHC. Good to go.

d. Kooskia. Good to go.

i. Kent Hills will insert a section into the AOP plan that describes the release plans for the coming year. There are currently two release groups, and potentially a third if more fish show up from surplus.

3. Brood Year 2014

a. Dworshak. Good to go.

1. Casey Mitchell reports 2.0 million eyed eggs.

b. Clearwater. Good to go.

i. Red River safety issues are moving forward. Jerry McGehee has

addressed safety issues and the group has determined it is unnecessary to insert that into the AOP in February.

- c. NPTHC. Good to go.
- d. Kooskia. Good to go.

Summer Chinook

1. Brood Year 2012

a. IDFG (led by Joe DuPont) will be presenting an updated management strategy for summer chinook (400,000 smolts). NPT will also meet internally, and then IDFG and NPT will meet to develop a management strategy proposal (Sam Sharr and Becky Johnson will coordinate). Potentially leaving some unclipped (for brood) and others clipped for non-tribal and tribal harvest. NPTHC, Crooked River, and Powell are potential release locations. Marks will be need to be determined. IDFG and NPT will present a more detailed proposal/agreement at AOP.

2. Brood Year 2013

- a. see BY 2013 comment, release will amount to 600,000 for BY 2013

3. Brood Year 2014

- a. nothing to report here.

Coho Salmon

1. Brood Year 2012.

- a. good to go.

2. Brood Year 2013

- a. good to go.

b. Becky Johnson has suggested an internal meeting amongst NPT about increasing rearing density at Kooskia (back to previous density levels). Kent Hills will be leading that discussion and inserting language into the document.

c. With increased brood collection downriver (Cascade Hatchery) and a reallocation of Umatilla hatchery space, the Clearwater River will be receiving additional smolts in 2015 (approximately 200,000 to 300,000 smolts). Additional coordination (between IDFG and NPT) will occur at AOP to decide a planning session for future management (Mike Bisbee and Becky Johnson).

3. Brood Year 2014

- a. Good to go.

Fall Chinook Salmon

1. Brood Year 2012

a. Good to go.

2. Brood Year 2013

a. Good to go.

b. NPT will be hosting an internal AOP meeting in mid-January and reserves the right to make some small changes to the releases and brood collection. For example, NPT will be installing a picket weir at the mouth of the SF Clearwater for local brood collection (Jason Vogel and Bill Arnsberg are the contacts). Aaron Penney will be inserting some language into the document to cover a basic transport plan if/when the weir goes into place. Bill Arnsberg will insert language into document about timeline for inserting weir.

3. Brood Year 2014

a. Good to go.

b. See comment in BY 2013 about internal tribal AOP meeting and weir install.

Rainbow Trout

1. Release Year 2014

a. Joe DuPont has proposed increasing fish release size from 9” to 12”, and there is potential to shift 2014 releases slightly. Joe will be the contact for further development and will have additional updates at AOP meeting. Malia Gallagher will be working with Joe to update the tables.

Pacific Lamprey

1. Release Year 2014

a. Good to go.

b. If there are changes, Tod Sween will be updating the language and tables.

Contact List

1. Names, numbers, contacts, and agencies are being updated. Steve Rodgers will be providing Nate Weise with additions.

2013 Run Forecasting

1. Jason will be leading an effort to increase collaboration of our forecasting efforts between NPT, FRO and IDFG. Jason will be the contact and will be the person to talk to at AOP.

2014 Clearwater AOP Meeting

January 28, 2014

Agenda Items:

1. Hatchery Metrics Spreadsheets – tabled until later in the meeting when Jason V. and Becky J.
2. Steelhead Spawn Timing
3. Tables First
 - a. Remove colors in final version of table – Sam Sharr/Steve Rodgers
 - b. Steelhead
 - i. Where are PIT tags from Lolo Release?
 1. Chris Peery – CSS program tags from Clearwater – Carl to update immediately to 5200 HEV and 2800 CSS
 - ii. Table 2
 1. Keep extra early fish for Take 3 spawning
 2. Formulas are not in the spawn timing table
 - iii. Brood stock metrics table - Dworshak
 1. Do not include mortality events that you can't overcome by taking additional broodstock – Sam Sharr
 - a. Cap that mortality event at what you can actually overcome by increasing production
 - b. Dworshak should address IHN mortality from BY2009
 2. 10% cushion is used as a fudge factor for other years – Jason Vogel
 - a. AOP group decided last year that 10% is acceptable based on U.S. v Oregon group
 - b. You don't need to go back to U.S. v Oregon if you are within + or – 10%
 - c. 10% may not be reasonable – Sam Sharr
 - d. Include confidence intervals? – Chris Sullivan got volunteered by Sam Sharr for this assignment J
 - e. Provide a narrative for the buffer logic –
 - f. Quantify the buffer and provide explanation –Dworshak, Clearwater, Rapid River

- g. 10 % is written into the ESA agreements – Becky Johnson
 - h. From egg inventories to marking we could be 5-10% off of inventories – a buffer could help make up for this potential shortfall
 - i. 10% additional eggs to ensure we don't fall short
 - j. Buffering the bad years is important (5-10% change may not be noticeable by anglers, but a 40-50% change surely is) – Joe Dupont/Sam Sharr
 - k. Another facility could be off-set a problem year by the other hatchery if we were all shooting for a 10% buffer – Gary Byrne
 - l. We shouldn't necessarily throw out additional data – this points against the cushion theory – Ann Setter/ Steve Rodgers
 - m. This table provides the opportunity to compare the facility's
 - n. Dworshak needs to meet mitigation goals - Ann Setter
 - i. Are there other things squeezing the amount of broodstock available – harvest, ocean conditions, etc.
 - ii. Broodstock are considered the first priority – Jason Vogel
 - o. We would like to put one of these tables into the 2014 AOP document
3. Should we have discretion on using the 5-year average
- a. Should the hatchery manager describe the meta-data used – Gary Byrne
 - i. Years greater than 10% off the average should be addressed by the AOP group - Gary Byrne
 - ii. Meta data should be available upon further request of the hatchery – Steve Rodgers
 - iii. Explanation of data used should be explained by the Hatchery manager
4. Table needs to be fixed to better explain the skewed sex ratio – we should have a column of adults needed versus trapped adults – Nate Wiese
- iv. Broodstock Metrics Table – Clearwater
- 1. Meta-data is entered into the beginning
 - 2. 5-year average is used

3. Cushion or buffer is also used
4. Having the meta-data by stock separated makes it easier to look at each
5. Have one table per species
 - v. All the data is the same between the two metric calculators
1. Both versions will be sent out to the Hatcheries after corrections
2. Survey Monkey – Steve Rodgers will set this up to make a decision
4. Table 3
 - a. Hauling of Lolo Creek steelhead
 - i. COE will haul the Lolo Creek release – Ann Setter / Greg Parker
1. Costs will be associated with release hauling
 - ii. COE trailers will be transferred to Dworshak Dam Project in the future – Ann Setter/ Greg Parker
 - iii. NPTHC to help with plowing of Lolo Creek release site (\$4000-\$5000 bill for contract plowing)
 - iv. NPTHC will help with contingency plan in case road is not passible
1. Contingency
 - a. 140K to Meadow creek via COE trucks
 - b. 60K to Lolo creek via NPTHC trucks
 - c. Clearwater
 - i. Update PIT numbers
 - ii. Update marking date – Chris Sullivan/Malia Gallagher
5. Table 4
 - a. Question on when to release
 - i. Release Kooskia on March 1st
 - ii. Haul Dworshak fish the week of March 10th
 - iii. Release fish when the natural fish go out – Jason Vogel

- iv. Dworshak fish will be held at Kooskia for 2 weeks for acclimation
 - v. Release based on flow - peak of hydrograph is ideal for release
 - vi. Take Dworshak Clear Creek group up the week of March 10th
 - vii. Chinook peak first then steelhead peak second – Ann Setter
1. This may be a predation issue
- viii. Clearwater will do a pre-release exam to Kooskia and provide to the Idaho Fish Health Center – Malia Gallagher and Guppy Blair
- b. Clearwater
- i. Release dates need to be updated
- c. Swap Clearwater North Fork release with Dworshak Clear Creek release
- i. All Powell from Clearwater go to Clear Creek
 - ii. 259K from Dworshak to Clear Creek will go into the North Fork
- d. Can NPTHC haul the Dworshak Meadow creek SCS? - Nate Wiese/Aaron Penney/Becky Johnson - NO
- e. Clearwater will haul Meadow Creek SCS the week of March 10th – Malia Gallagher / Nate Wiese
6. Table 5
- a. Kooskia – 12,300 PIT tags – Chris Sullivan
 - b. Selway Parr program (300K) swapped from Clearwater to Dworshak – Nate Wiese/Malia Gallagher
7. Google Docs
- a. FWS and IDFG have access
 - b. Send an email to Malia to link to Google docs (malia.gallagher@idfg.idaho.gov)
 - c. NPT does not have access yet
 - i. Table Edits go to Carl East (carle@nezperce.org)
 - ii. Document edits go to Nate Wiese (nathan_wiese@fws.gov)
8. Do we need to clip summer Chinook to create a fishery? – Joe Dupont

- a. Could fish above our release goals also not be clipped? – Malia Gallagher
 - b. We could get higher SAR's without clipping those fish
 - c. Are we comfortable harvesting unclipped fish
 - d. How many fish do we need for brood then send the fishery number to the policy folks to decide on clipped versus unclipped fisheries – Becky Johnson/Sam Sharr/Joe Dupont
 - e. 200,000 smolts was the goal for the summer Chinook from localized broodstock
 - i. Future goal is 600,000 smolt release from localized summer Chinook broodstock
1. We need about 205 females (based on the fancy brood stock metric sheet) to meet this release – Nate Wiese/ Malia Gallagher
- f. 193 summer Chinook over LGR for the South Fork
 - i. 130 converted to the South Fork based on PIT tags
 - g. Sometime in the next month a decision will be made on how many fish need to be ad clipped – Sam Sharr
 - i. 300,000 ad clipped an CWT may be a minimum – Sam Sharr
 - h. Size will be used to distinguish spring Chinook from summer Chinook this year
 - i. Could possibly use real-time snout analysis to distinguish fish – Chris Sullivan
 - i. Malia will capture this discussion for the AOP
 - j. Becky Johnson and Sam Sharr will convene a sub-group for this issue
9. Table 6
- a. Table 6a and 6b are updated – Chris Peery and Chris Sullivan
 - b. Table 6b for NPTH
 - i. Use surrogate population for SAR estimates – Jason Vogel
 - c. Table 6c
 - i. Jason Vogel will update
10. Broodstock
- a. 400,000 additional SCS smolts at Clearwater in the Adult Holding ponds

- i. Where does this brood come from? – Gary Byrne
- ii. Please update table 6b for this request – 260 broodstock needed – Malia will update for this program

11. Extra SCS production at Dworshak – Joe Dupont

- a. Must be run through the NPDES red-face test – Ann Setter
- b. Labor problem for NPDES cleaning issues
- c. Probably not reasonable for extra Chinook at Dworshak this year – Steve Yundt and Becky Johnson

12. Selway Parr program

- a. These eggs will come from Powell via Clearwater Fish Hatchery

13. Chris Starr visit to look at technology for using more raceways at Magic Valley FH

- a. Where would eggs come from? – Gary Byrne
- b. We probably don't have eggs available from Clearwater – Sam Sharr
- c. Could excess eggs go to Magic Valley?
 - i. They need to be tested individually by Idaho Fish Health Center – Guppy Blair
 - ii. 32 raceways at Magic Valley – rearing at 100,000 fish per raceway

14. Table 7

- a. No Changes

15. Table 8 and 9 – Mike Bisbee

- a. Coho – Change program goal to 300,000
- b. Move 80,000 eggs to Kooskia to rear to parr and release in Lolo creek
- c. Dworshak cwt is 60K instead of 100K
- d. 200,000 Cascade stock Coho for release in 2015 as ad clipped with 50K CWT – Becky Johnson

16. Table 10

- a. Jay Hesse to update PIT tag numbers

- b. Increase Luke Gulch by 70,000 from the North Lapwai Valley group – space is available there – Aaron Penney
- c. South Fork Weir
 - i. 50 FCS redds in the South Fork
 - ii. Weir for capture of FCS
- 1. Coho
- 2. Summer Chinook
 - iii. 300 yards from Kooskia Hatchery – Sherman Sprague
 - iv. NPT does scoping on land
- 1. Currently has picket weir
- 2. Expected installation October 1 through December
- 3. Test in 2015
- 4. Floating weir is proposed
 - v. Why have the weir so low in the river – Joe Dupont
- 1. Most redds are within 8 miles of the mouth of the South Fork
 - d. CWT the fish to Luke Gulch - Mike Tuell
 - e. Discussion to continue on clipping numbers – Becky Johnson and Joe Dupont
 - i. Becky Johnson – continue to keep current clipping ratio
- 17. It is 12:50 and everyone is ready to go home!
- 18. AOP Written document
 - a. Sam will send new map to Nate Wiese
 - b. Steelhead
 - i. Sam will send additional information about the adult return goals for DNFH
 - ii. 1987 Bill Miller Dworshak report
 - iii. Adult mitigation target is 20,000 to the Clearwater (practicality is return over LGR)

1. If we are not meeting that, we need to adjust smolt release goals to meet that target – Ann Setter
2. That is the legal mitigation
3. The adult migration is around 20,000 fish on a good year
 - a. Develop annual adult return table - Chris Peery
 - i. Include associated smolt releases
 - ii. Break out by release site
 - iii. Are we moving smolts to places where the SAR's are not as conducive to adult returns – Ann Setter
 - iv. South Fork Survival may be higher – Joe Dupont
4. At one time 2.1 Million smolts may have made the 20,000 adult return – it may not anymore
 - c. Brood Year 2013 Steelhead
 - i. CFH
1. Chris Sullivan and Chuck Warren for updates of M&E
 - d. Brood Year 2014 Steelhead
 - i. Spawn/Run timing of BY2015 steelhead trapping
1. Meeting to discuss spawn timing of Steelhead
 - a. Chris Peery will organize a separate meeting by April 1 – Jason Vogel, Becky Johnson, Chris Peery, Nate Wiese, Joe Dupont
 - b. Groups should come to the table with some idea of what we want to accomplish – Sam Sharr
 - i. Spawn timing has gotten earlier over time
1. Genetic or Environmental
2. Are the hatchery steelhead diverging from the natural steelhead?
3. These fish are being used for South Fork supplementation
 - ii. 3-ocean steelhead
1. Can we spawn 3-ocean males with as many females as possible – Joe Dupont

2. Review of this proposal should happen through the genetics shop – Joe Dupont and Chuck Warren to follow this up
3. Maintain the integrity of age-comp rather than shoot for higher SAR's – Ann Setter
 - a. May warrant further discussion
 - iii. Is Clearwater going to trap additional SF broodstock for Dworshak? - Malia Gallagher
1. At least 100 pairs
2. Discussion originated last Fall because of constrained fishery
 - a. Additional production could be used at Dworshak, but is constrained by 336,000 group sizes
 - b. Locally adapted brood is an effort guided by the Hatchery Review Team process for Clearwater hatchery
 - c. If Dworshak is short on eggs Dworshak will help collect South Fork fish with IDFG to cover a shortfall – add to Dworshak section – Nate Wiese
 - d. South Fork fish is a priority for Clearwater first
3. Should we consider moving towards a localized brood in the future without a shortage?
 - a. This is a discussion for future – Jason Vogel
 - b. NMFS review may address this
4. Can we capture extra brood from Kooskia Fish Hatchery
 - e. Kooskia Hatchery
 - f. Spring Chinook Salmon BY2012
 - i. Sam Sharr will provide updates to the beginning sections
 - ii. Dworshak
1. Should study go into the M&E section? – Steve Rodgers
2. Move study language to M&E section – Nate Wiese
 - iii. Kooskia
1. New release changes – Kent will make these updates

iv. Clearwater

1. Doug Munson's sections need to be updated

v. NPTHC

1. No Changes

g. Spring Chinook Salmon BY2013

i. Dworshak - No changes

ii. Kooskia – No changes

iii. Clearwater –

1. Doug Munson section needs to be updated

iv. NPTHC

1. No Changes

h. Spring Chinook Salmon BY2014

i. Dworshak –

1. Change 1.47 million smolt released to meet US v Oregon contradicts the produced specifically for 9,135 adults – Will be addressed by - Sam Sharr and Becky Johnson

a. 70,000 pounds was the original design memorandum for Chinook at Dworshak – Steve Yundt

b. We may be liable if we don't continue to produce 1.47 million – Steve Yundt

2. Dworshak proposed to rear the 200 sub-smolts for transfer to NPTHC that are currently reared by Clearwater Hatchery in BY2014 – Nate Wiese / Malia Gallagher / Aaron Penney / Steve Rodgers / Becky Johnson / Sam Sharr

3. NPTHC will provide eggs to Dworshak for this program – Aaron Penney

a. Carl East, Aaron Penney, Malia Gallagher, Steve Rodgers will work out the detail

4. This may or may not create space at Clearwater Fish Hatchery

5. Clearwater will take a close look at the production loading sheets – to determine benefit

a. Benefits include:

i. Decreasing early rearing density

- ii. Increasing incubation space
- 6. Dworshak would early rear these in the 30 raceways
- 7. Transfer to NPTHC at 75-90 fpp in mid-September from Dworshak
- 8. Taking fish at the Dworshak Trap removes fish from an important fishery – Joe Dupont / Sam Sharr
 - ii. Symposium to review NPTHC this Fall – Becky Johnson
 - iii. Kooskia
- 1. No Changes
 - iv. Clearwater
- 1. Brood for future Clear Creek releases
 - a. Where do these come from? – Joe Dupont
 - b. 2014 and 2015 will be from Powell
 - c. Brood collection past 2015 will need to be determined
 - i. Sam Sharr, Joe Dupont
 - v. NPTHC
- 1. Increased brood need for 200K transfer to Dworshak
 - i. Summer Chinook BY2012
 - i. Review goal for Summer Chinook – Sam Sharr and Brian Leth
 - ii. M&E and Fish Health Changes – Chris Sullivan and Doug Munson
 - j. Summer Chinook BY2013
 - i. Doug Munson update to fish health
 - k. Summer Chinook BY2014
 - i. No Updates
 - l. Coho BY2012
 - m. Coho BY2013
 - i. Maintain 400,000 coho at Dworshak

- ii. Utilize 5 ponds at Dworshak
 - iii. Work on Real Estate agreement for these fish – Ann Setter / Mike Bisbee
1. NPDES needs to be maintained
 2. CMA acknowledged the Coho program
 3. Joint responsibility for NPDES management
 4. Incremental program – Ann Setter
 - a. Pay for water, etc.
 - iv. Notice of Intent needs to be filed
 - v. Early rearing – Nate Wiese / Mike Bisbee
 - vi. Cost sharing of staff, etc – Nate Wiese / Mike Bisbee
 - vii. Currently it would be inappropriate to pursue additional Coho at Dworshak – Ann Setter
1. Pursue Real Estate agreement before pursuing additional Coho at Dworshak
 2. Make the request for what you would like to accomplish
 - n. Coho BY2014
 - o. Fall Chinook
 - i. FCAP section needs to be updated
 - ii. NPTHC
1. No updates
 - p. Rainbow Trout
 - i. Updates Needed – Joe Dupont / Becky Johnson
 - ii. Releasing RBT in other places other than the North Fork Drainage – no approval from the COE commander – Ann Setter
 - iii. Tunnel Pond fish – this needs to be changed – Joe Dupont and Becky Johnson
1. Interpretation in the COE is that this Rainbow program is designated for the North Fork Drainage

- iv. Reservoir Sport Fishery may be a discussion point in the future – Ann Setter
- 1. Mitigation was for stream fisheries because of Dam construction
- 2. May need to have more discussion
- 3. Kokanee pilot study may run out of authority in a year and half
 - a. This may be part of sport mitigation
 - b. Lamprey
 - i. Good year for lamprey trapping
 - ii. 51 to outplant this spring – Tod Sween
 - iii. Conference later this spring to coordinate this work
 - iv. NPTHC and lamprey program coordinate emergency checks
 - v. Progeny are being tracked back to adult outplant efforts from genetic work down in Hagerman
 - vi. Night time counts have been in the hundreds over the dams, much more than just the daytime counts– Ann Setter
 - vii. We have abundant habitat in this basin but passage is the biggest issue
 - viii. “Asotin” is Nez Perce for “lamprey”

19. Edits need to be in by February 21, 2014

To Carl East, Nate Wiese, or Google Cloud!

Good Luck!