

2007

Annual Operating Plan

for

Fish Production Programs

in the

Salmon River Basin

By

Idaho Department of Fish and Game
U.S. Fish and Wildlife Service
Shoshone-Bannock Tribes
Idaho Power Company
Nez Perce Tribe

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(Each section lists contact persons for additional information, coordination, or notification – contact information is listed in Section 5).

1. Steelhead:

All steelhead *Oncorhynchus mykiss* in Idaho are summer steelhead, determined by time of entry into the Columbia River. All steelhead in a broodyear spawn in the spring of that year. Idaho's steelhead enter fresh water in one year and spawn the following spring. Idaho has A and B strains of steelhead based on some life history characteristics. Generally A-strain steelhead spend one year in the ocean and return to fresh water during the summer. The B-strain steelhead commonly spend two years in the ocean before returning to fresh water in late summer or autumn.

1.1 Broodyear 2006 Steelhead

1.1.1 Hagerman National Fish Hatchery

The Hagerman NFH LSRCP goal is to provide adult returns for lower river fisheries and return 13,600 adult steelhead over Lower Granite Dam and back to the Snake River Basin. Eggs for the program are obtained from adult returns spawned at Sawtooth FH, Pahsimeroi FH, Dworshak NFH, and in times of need, Oxbow FH. The fish are reared from eyed eggs to smolts at Hagerman NFH, and transported for direct stream release at multiple sites in the Salmon River drainage.

1.1.1.1. Production status - As of January 1, 2007 Hagerman NFH has a total of 1,065,939 Sawtooth A, 186,190 Pahsimeroi A, and 198,307 Dworshak B steelhead on station (164 mm average total length, 10.1 fpp). *Bryan Kenworthy / Mark Olson*

1.1.1.2. Outside rearing - Fish are reared in three banks of raceways at a maximum density index of 0.20 and a maximum flow index of 1.20. Yankee Fork supplementation smolts will be reared separately from general production smolts. All fish are fed dry extruded floating diets which are placed into demand feeders twice weekly. A length at release standard of 180 mm to 250 mm is established under the NOAA Fisheries 1999 Biological Opinion. The BY2006 steelhead are projected for an average size of 220 mm. This will be accomplished by adjusting the hatchery constant. Sample counts are performed monthly on representative ponds and length frequencies are checked periodically during outside rearing. Oxygen and ammonia are monitored during periods of peak loading. Water temperature remains a constant 59⁰F. *Bryan Kenworthy / Mark Olson*

1.1.1.3. Monitoring and evaluation - The BY2006 Mark Plan included 1,110,000 AD, and 80,000 CWT which were completed August 2006. A total of 1,500 PIT tags are scheduled to be implanted March 22 and 23, 2007 (Table 1). *Bryan Kenworthy / Mark Olson*

Idaho Fish and Game Department (IDFG) – Coded Wire Tag and PIT (Passive Integrated Transponder) evaluations. A release of 85,000 AD/CWT BY2006 Sawtooth steelhead is planned for the Sawtooth Weir in 2007. Coded-wire tags will be used to measure adult

contribution to fisheries, as well as evaluate total adult returns by release group. The IDFG performs CWT, PIT, and smolt-to-adult return evaluations. PIT tags are used to evaluate juvenile out-migration success. No direct comparisons between groups will be made, so these tags serve largely to look at migration class success, and look for gross problems with releases. There is currently no plan to use CWT to specifically compare release groups from Hagerman National FH in 2006, since no studies involving adult returns are planned.
Tom Rogers/Chris Harrington

Approximately 300 fish at each release site will be PIT tagged (1,500 total). PIT tags are used to evaluate juvenile migration success. No direct comparisons between groups will be made, so these tags serve largely to look at migration class success, and look for gross problems with releases. *Chris Harrington*

Shoshone-Bannock Tribes (SBT)-DNA Parentage Exclusion Analysis (Denny 2006). Steelhead smolt will be maintained separate than general production fish. The SBT is conducting an experimental study on supplementation using steelhead released as smolt in the Yankee Fork. The study includes genetic DNA parental exclusion as described by Jones and Ardren (2003) to differentiate steelhead produced from smolt or eggboxes from all other steelhead produced naturally in the watershed. Each steelhead used in broodstock crosses at SFH to supply the eyed eggs (supplementation fish) will be genotyped so all progeny will later be identifiable when captured and sampled as F1 juveniles and F1 adults. Later, F2 progeny will be detected using DNA typing through grandparentage analysis of unknown matings (Letcher and King 2001). *Lytle Denny*

1.1.1.4. Juvenile fish health - Mortality and selected fish pathogens are monitored monthly until release. A pre-release exam on 60 fish each of the three populations will be performed prior to the start of distribution. Prior to release, a 60 fish sample is taken and assayed for Infectious Hematopoietic Necrosis Virus (IHNV), Infectious Pancreatic Necrosis Virus (IPNV), Viral Hemorrhagic Septicemia Virus (VHSV), *Aeromonas salmonicida*, *Yersinia ruckerii*, and Bacterial Kidney Disease (BKD). *Kathy Clemens*

1.1.1.5. Projected release - Projected releases in 2007 total: 1,441,000 smolts (1,060,000 Sawtooth A's (139,000 unmarked), 185,000 Pahsimeroi A's (all unmarked), and 196,000 Dworshak B's. Target release length is 220 mm and target release size is 4.5 fpp (Table 1). Release locations will be according to the guidelines established by the NZMS Risk Assessment. *Bryan Kenworthy / Mark Olson*

1.1.1.6. Excess production strategies - No excess production is anticipated. Current egg requests are maintained to receive only enough eggs to meet target numbers at release (+ 10%). *Bryan Kenworthy / Mark Olson*

1.1.1.7. Transportation strategies - All of the Hagerman NFH steelhead smolt releases are trucked. Hauling will begin the last week of March and conclude the second week of May. The Hatchery will follow IHOT fish transportation guidelines. Hauling typically occurs Monday through Friday. Releases at the Little Salmon River will be coordinated with

Magic Valley FH, Niagara Springs FH, and McCall FH, to minimize potential traffic and safety issues. East Fork Salmon River and Sawtooth weir releases will be coordinated with Sawtooth FH. Yankee Fork releases will be coordinated with the Shoshone Bannock Tribes (SBT). *Bryan Kenworthy / Mark Olson / Rick Lowell / Jerry Chapman / Gene McPherson / Brent Snider / Lytle Denny / Bruce McCloud*

1.1.2 Magic Valley Fish Hatchery

The Magic Valley FH LSRCP adult mitigation return goal is provide adult returns for lower river fisheries and 11,660 adult steelhead over Lower Granite Dam and back to the Snake River Basin. To attain that goal, the planned production is: 800,000 Pahsimeroi/Sawtooth A; 630,000 Dworshak B; 120,000 Upper Salmon B; and 50,000 East Fork Natural smolts. See Table 1 for release locations. Eggs for the program are obtained from adults trapped at Sawtooth FH, Pahsimeroi FH, Dworshak NFH, Squaw Creek Trap, and the East Fork Salmon River Trap. All stocks are reared to smolt size at Magic Valley FH and transported for direct stream or acclimated release at multiple sites in the Salmon River.

1.1.2.1. Production status - As of February 6, 2007, Magic Valley FH has a total of 300,062 Sawtooth A, 576,092 Pahsimeroi A, 627,574 Dworshak B, 134,657 Upper Salmon B, and 51,218 East Fork Natural steelhead on station (170.7 mm average total length, 8.5 fpp). *Rick Lowell*

1.1.2.2. Outside rearing - Fish are reared in four banks of raceways split in half with two west banks and two east banks. Yankee Fork supplementation smolts will be reared separately from general production smolts. Density typically reaches an index of 0.30 and a maximum flow index of 1.20. All fish are fed a Rangens 470 dry extruded slow sinking diet. This high protein diet is used in an attempt to reduce the incidence of soreback and to meet TMDL and NPDES limits. Fish are fed on a Five-day-on and Two-day-off schedule to control growth as need during the fall. Seven-day-a-week feeding resumes as soon as possible in the spring. A length at release target of 180 mm to 250 mm was established under the NOAA Fisheries 1999 Biological Opinion. The BY2006 steelhead are projected for an average size of 220 mm. This will be accomplished by adjusting the fish feeding rate. Sample counts are performed monthly on representative ponds, and length frequencies are calculated prior to transport. Dissolved oxygen and total gas saturation are monitored intermittently throughout the rearing cycle. Water temperature remains a constant 58⁰F. *Rick Lowell / Pat Moore*

1.1.2.3. Monitoring and evaluation - The BY2006 Mark Plan included 1,410,000 AD, and 470,000 CWT which were completed October 2006. A total of 4,400 PIT tags will be implanted during mid- March, 2007 (Table 1). *Rodney Duke*

Shoshone-Bannock Tribes (SBT)-DNA Parentage Exclusion Analysis (Denny 2006). Steelhead smolt will be maintained separate than general production fish. The SBT is conducting an experimental study on supplementation using steelhead released as smolt in the Yankee Fork. The study includes genetic DNA parental exclusion as described by Jones and Ardren (2003) to differentiate steelhead produced from smolt or eggboxes from all

other steelhead produced naturally in the watershed. Each steelhead used in broodstock crosses at SFH to supply the eyed eggs (supplementation fish) will be genotyped so all progeny will later be identifiable when captured and sampled as F1 juveniles and F1 adults. Later, F2 progeny will be detected using DNA typing through grandparentage analysis of unknown matings (Letcher and King 2001). *Lytle Denny*

1.1.2.4. Juvenile fish health - Fish health inspection and diagnostic services will be provided by personnel and facilities at the EFHL. Mortality rates will be monitored monthly via the written hatchery reports and through direct communication. Diagnostic services will be provided as needed at the request of hatchery personnel. Quarterly on-site inspections will include tests for the presence of replicating viruses, Renibacterium salmoninarum (RS), and general bacterial pathogens. A pre-liberation inspection will be done on all lots no more than 45 days prior to transportation, including an organosomatic index of fish quality. Specific pathogens tested for at pre-liberation will include IHNV, IPNV, VHSV, RS, Aeromonas salmonicida, Yersinia ruckerii, Myxobolus cerebralis, and any other pathogens that may seem prudent at the time. *Doug Burton*

1.1.2.5. Projected release - Projected release in 2006 is 1,625,000 smolts: 300,000 Sawtooth A's (80,000 unmarked), 540,000 Pahsimeroi A's (60,000 unmarked), 615,000 Dworshak B's, 120,000 Upper Salmon B's, and 50,000 East Fork Naturals (all unmarked). Target release length is 220 mm and target release size is 4.5 fpp (Table 1). *Rick Lowell/Pat Moore.*

1.1.2.6. Excess production strategies - Similar production relative to the BY2006 mark plan is anticipated. Initial BY2006 planning included a twenty percent reduction in production from the original hatchery release goal of two million smolts. Because of the recurrent poorer survival of Dworshak B stock, egg requests are more difficult to predict. However, current egg requests are estimated to receive enough eggs to meet target numbers at release (+ 10%). *Sam Sharr*

1.1.2.7. Transportation strategies - All of the Magic Valley FH steelhead smolt releases are trucked. Hauling is scheduled to begin on April 9th, and conclude the first week of May. The Hatchery will follow IHOT fish transportation guidelines and NZMS risk assessment guidelines Hauling typically occurs Monday through Friday. Releases at the Little Salmon River will be coordinated with Niagara Springs FH, McCall FH, and the Hagerman NFH to minimize potential traffic and safety issues. East Fork Salmon River and Squaw Creek Pond releases will be coordinated with Sawtooth FH. Yankee Fork, Valley Creek, and Slate Creek releases will be coordinated with the SBT via the IDFG Fisheries Bureau. *Bill Horton/Bryan Kenworthy/Rick Lowell/Jerry Chapman/Gene McPherson/Brent Snider/Lytle Denny.*

1.1.3 Niagara Springs Fish Hatchery

IPC's mitigation goal at Niagara Springs FH is to annually produce 400,000 pounds of healthy steelhead smolts. This equates to approximately 1.8 million smolts at a mean size of 4.5 fpp. Eggs for the program are obtained from adult returns spawned at Pahsimeroi FH and Oxbow FH. The fish are reared from eyed eggs and swimup fry to smolts at

Niagara Springs FH and released into the Pahsimeroi River below the Pahsimeroi FH weir, into the Snake River below Hells Canyon Dam, and into the Little Salmon River at Stinky Springs or Hazard Creek. *Jerry Chapman*

1.1.3.1. Production status - Niagara Springs FH had a total of 1,010,000 Pahsimeroi-A and 780,000 Oxbow-A steelhead on station on January 1, 2007. *Jerry Chapman*

1.1.3.2. Outside rearing - Fish are reared in three banks of raceways at a maximum density index of 0.35 lbs/ft³/in and a maximum flow index of 0.9 lbs/gpm/in. Steelhead are fed Rangen extruded dry feeds throughout the early rearing period. Feed is dispensed by hand-feeding and supplemented with Ziegler belt feeders in the indoor and outdoor nursery areas. When fingerlings reach 275 fpp, they are fed Skretting Proactive feed for 14 days to stimulate their immune systems prior to vaccination and AD-Clipping/CWT tagging. When they reach 75 fpp, all Niagara Springs FH fish are switched to Rangen's slow-sinking 470 extruded diet to allow staff to utilize two bulk tanks, a feed conveyor system, a fines separator and bridge feeders.

A length at release standard of 180 to 250 mm is established under the NOAA Fisheries 1999 Biological Opinion. The BY2006 steelhead are projected for an average size of 220 mm. This will be accomplished by holding the fish off feed and receiving eggs from later spawn dates to decrease fish size and minimize days off feed. Sample counts are performed bimonthly on representative raceways until December and then performed once per month until release. Length frequencies are checked periodically during outside rearing. Dissolved oxygen is monitored once per month as per NPDES protocol and periodically during periods of peak loading. Water temperature remains a constant 59°F. *Jerry Chapman*

1.1.3.3. Monitoring and evaluation - The BY2006 Mark Plan included 1,793,000 AD-clip only fish and 150,000 fish with both AD-clips and CWTs. AD-clipping and CWT tagging were completed during September 2006. A total of 1,200 PIT tags will need to be implanted prior to March 1, 2007. *Jerry Chapman*

1.1.3.4. Juvenile fish health - Fish health inspection and diagnostic services will be provided by personnel at the Eagle Fish Health Laboratory (EFHL). Mortality rates will be monitored and reported monthly via the written hatchery reports and through direct communication. Diagnostic services will be provided as needed at the request of hatchery personnel. Quarterly on-site inspections will include tests for the presence of replicating viruses, *Renibacterium salmoninarum* (RS) and general bacterial pathogens. A pre-liberation inspection of 60 fish from each stock (Pahsimeroi-A and Oxbow-A) including an organosomatic index of fish quality will be done on all lots no more than 45 days prior to transportation. Specific pathogens tested for at pre-liberation will include IHNV, IPNV, VHSV, RS, *Aeromonas salmonicida*, *Yersinia ruckerii*, *Myxobolus cerebralis* and any other pathogens that may seem prudent at the time. None of brood year 2006 steelhead were vaccinated against Furunculosis. *Doug Burton, Eagle Fish Health Lab*

1.1.3.5. Projected release - Projected releases in 2007 are: 830,000 Pahsimeroi-A smolts to the Pahsimeroi River; 525,000 Oxbow-A smolts to the Snake River below Hells Canyon Dam; 275,000 Oxbow-A smolts to the Little Salmon River; and 170,000 Pahsimeroi-A smolts to the Little Salmon River. Target release length is 220 mm and target release size is 4.2 fpp. *Jerry Chapman*

1.1.3.6. Excess production strategies - No excess production is anticipated. Release inventories over 10 percent of the allocation to the Pahsimeroi River and Snake River release sites will be retained at the hatchery for outplanting in approved local waters. *Jerry Chapman*

1.1.3.7. Transportation strategies - All Niagara Springs FH steelhead smolts are trucked to release sites using three IPC 5,000-gallon fish tankers. IPC will contract with Niel Ring Trucking, Inc. to haul fish to their release locations. Hauling is scheduled to begin March 19 and conclude the fourth week of April. All fish are hauled in chilled spring water with the temperature adjusted to be within 3 degrees F of the receiving water. Tankers will be loaded with approximately 5,000 lbs. of fish each, but will not exceed 5,500 lbs. Shipping will occur five days per week until all fish are stocked, with one day off in early April to complete a mid-season service on the tankers' generators. To reduce potential traffic and safety issues, releases at the Little Salmon River will be coordinated with Joel Patterson of McCall FH, staff from Magic Valley FH and Hagerman NFH, and Bruce McCloud of the NPT. Releases at the Pahsimeroi River and Snake River sites will be coordinated with the Pahsimeroi and Oxbow hatchery managers. *Jerry Chapman*

1.2 Broodyear 2007 Steelhead

1.2.1 Sawtooth Fish Hatchery

Approximately 500 pair of steelhead adults are needed to provide eyed eggs for the LSRCP mitigation program (Table 12). Eggs are eyed and shipped to Magic Valley FH or Hagerman NFH for final rearing. In addition, 500,000 eyed eggs are provided for the Shoshone-Bannock Tribes streamside incubator project. Approximately 750,000 smolts are returned to provide harvest opportunity and brood stock.

1.2.1.1. Projected adult return - The projected return is 2,128 (95% CI 652-3604). *Jon Hansen.*

1.2.1.2. Ladder operation - Ladder and trap operations will begin the last week of March and continue until early May. Steelhead volitionally swim into attraction water into a single adult holding pond. The trapped steelhead are removed from the holding pond twice a week, counted into the male/female holding ponds, or spawned if ripe. Unmarked steelhead and other species are released above the weir, hatchery fish are spawned with surplus hatchery fish outplanted, or given to the tribes, or distributed to welfare programs. *Brent Snider*

1.2.1.3. Adult fish health - Adult steelhead monitoring will be conducted during spawning by personnel from the EFHL. Brood stock inspections will collect 120 ovarian fluid and

30 tissue (kidney/spleen) samples to assay for viral replicating agents from at least 150 females. Thirty kidney/spleen (tissue) samples and 120 ovarian fluid samples will be taken for viral replicating agent screening. Sixty kidney samples will be collected for ELISA testing for *Renibacterium salmoninarum* and 20 head wedges will be collected from returning adults to examine for *Myxobolus cerebralis*. Eggs from females that are positive for serious pathogens will be culled from production. The Animal Plant Health Inspection Services (APHIS) veterinarian-in-charge will be notified of any reportable pathogen. *Doug Munson*

1.2.1.4. Adult outplanting/marking - Unmarked adults are released upstream of the hatchery weir to spawn naturally. Genetic material is collected from all unmarked steelhead. If available, 200 pairs of male and female hatchery fish are planned for release into the Yankee Fork of the Salmon River for SBT natural production. Excess hatchery adult males are opercle punched, may be taken downriver to be recycled through the fishery. *Brent Snider*

1.2.1.5. Carcass disposition - Spawned out carcasses are made available first to Tribal programs and charitable organizations. Secondly, excess, unspawned, and spawned-out fish are given to the public on a first-come-first-served basis. Due to whirling disease amplification issues, carcasses will not be used for nitrification of local waters. *Brent Snider*

1.2.1.6. Adult Monitoring and evaluation - Fish are sorted on Mondays and Thursdays. At sorting, fish are examined for gender, length measured, checked for various clips, radios, CWT, injuries, and readiness to spawn. Subsequent to sorting, ripe fish are spawned. Genetic samples are collected from all unmarked steelhead, from all steelhead for SBT programs, and from 100 pair of marked, spawned steelhead. *Brent Snider*

1.2.1.7. Spawning/egg take plans, mating protocol - Approximately 525 females (m/f ratio is variable, generally more males than females 65:35 or 60:40) will be spawned, representative of the run, which will provide enough eyed eggs to meet egg requests. Spawning protocol is random 1: 1 with two female's eggs combined prior to water hardening of eggs. Hagerman NFH will receive 1,100,000 eyed eggs; Magic Valley FH will receive 352,500 and the SBT 375,000 in combination with Pahsimeroi FH stock for a total of 1,827,500 eyed eggs. *Brent Snider*

1.2.1.8. Egg incubation - Prior to incubation; all eggs are water hardened with a 100 mg/l iodine solution for one hour. Prior to transport, eggs will receive a daily flush with iodophor. Only eyed eggs will be transferred to Hagerman NFH and Magic Valley FH. After eggs manifest a strong "eye" the eggs are sorted and enumerated mechanically. *Doug Munson*

1.2.1.9. Juvenile fish health - Does not apply. These fish are reared at Magic Valley FH and Hagerman NFH.

1.2.1.10. Communication - Coordination of eyed egg shipments among the hatcheries is discussed weekly. Weekly communication for egg delivery status is undertaken with SBT Biologists. Twice weekly run status is updated on the IDFG Webpage. Weekly summaries are provided to interested parties via e-mail. Eyed egg requests are finalized at the annual AOP meeting. *Brent Snider*

1.2.2 E.F. Salmon River

Approximately 10 pair of naturally produced adult steelhead are needed at the East Fork Trap to produce eyed eggs (Table 12) for the 50,000 smolt target for this program.

1.2.2.1. Projected adult return – No estimate available. *Brent Snider*

1.2.2.2. Ladder operation - Trapping operations coincide with Sawtooth FH trapping. Once the velocity barrier is in place, fish swim up attraction water into a holding area and are sorted daily. *Brent Snider*

1.2.2.3. Adult fish health - Adult steelhead monitoring is conducted during spawning by the EFHL. Brood stock inspections will collect ovarian fluid (120 samples) and tissue (kidney/spleen; 30 samples) samples to assay for viral replicating agents from up to 150 females. Spawning crews will collect up to 60 kidney samples for ELISA testing for *Renibacterium salmoninarum* and 20 head wedges will be collected from returning adult Steelhead to examine for *Myxobolus cerebralis*. Eggs from females that test positive for serious pathogens will be culled from production. The APHIS veterinarian-in-charge will be notified of any reportable pathogen. *Doug Munson*

1.2.2.4. Adult outplanting/marking - Target goal for East Fork Natural steelhead is to spawn 10 unmarked females with 20 unmarked males (random 1:2 spawning) as well as releasing 50% of females with a like number of males upstream of the weir for natural production. Released males may include fish used in the artificial spawning process. Trapped, spawned out females released above the velocity barrier are included in the 50% target. (Check on US v Oregon language if applicable). Released fish are opercle punched to identify possible recaptures. All unmarked steelhead trapped are tissue sampled for genetic data. *Brent Snider*

1.2.2.5. Carcass disposition - Spawned out carcasses are returned to Sawtooth FH, kept frozen, and disposed of in the local landfill. Due to whirling disease amplification issues, carcasses will not be used for nutrification of local waters. *Brent Snider*

1.2.2.6. Adult monitoring and evaluation - Similar to M&E at Sawtooth FH, except fish are checked daily and spawning occurs whenever there are ripe females and ripe males available. *Brent Snider*

1.2.2.7. Spawning/egg take plans, mating protocol - Spawning occurs when ripe fish are available. Green eggs are brought to Sawtooth FH for incubation and sent to Magic Valley FH for final incubation and rearing. (Check on US v Oregon language if applicable). *Brent Snider*

1.2.2.8. Egg incubation - Prior to incubation; all eggs will be water hardened with a 100 mg/l iodine solution for one hour. After eggs manifest a strong “eye” the eggs are sorted and enumerated mechanically. Smolts are released into the pool above the velocity barrier. *Brent Snider*

1.2.2.9. Juvenile fish health - Does not apply, rearing occurs at Magic Valley FH.

1.2.2.10. Communication - Coordination of eyed egg shipments among the hatcheries is discussed weekly. Eyed egg requests are finalized at the annual AOP meeting. Weekly communications occurs with IDFG research and IDFG Salmon Region personnel. *Brent Snider*

1.2.3 Squaw Creek

Approximately 70 pair of B-run steelhead adults are needed annually to provide eyed eggs (Table 12) for smolts to be released into Squaw Creek and Squaw Creek Pond.

1.2.3.1. Projected adult return - The forecast for adult 2-ocean steelhead returning to Squaw Creek in 2007 is 8-12 fish. *Chris Harrington*

1.2.3.2. Ladder operation - A weir and trap box will be put into place in Squaw Creek approximately 200 meters upstream of the confluence of Squaw Creek and the Salmon River. Trapping occurs from late March through early May. Heavy springtime runoff can have an effect on the weir and trap operation and must be monitored daily. *Brent Snider*

1.2.3.3 Adult fish health - Adult steelhead monitoring will be conducted during spawning by the EFHL. Brood stock inspections will collect 120 ovarian fluid and 30 tissue (kidney/spleen) samples to assay for viral replicating agents from up to 150 females. Spawning crews will collect up to 60 kidney samples for ELISA testing for *Renibacterium salmoninarum* and 20 head wedges will be collected from returning adult Steelhead to examine for *Myxobolus cerebralis*. Eggs from females that are positive for serious pathogens will be culled from production. The APHIS veterinarian-in-charge will be notified of any reportable pathogens. *Doug Munson*

1.2.3.4. Adult outplanting/marking - If the fish is a female larger than 75 cm in length or a male larger than 79 cm in length, then these fish are considered B-run steelhead. All marked B-run fish are taken to the East Fork facility for spawning. These fish receive a unique external mark to differentiate from East Fork steelhead. Fish not meeting the criteria for B-stock fish are considered A-stock fish. These fish are examined for CWT. If CWT is present, the snout is taken and the carcass brought to Sawtooth FH. If no CWT is detected, then unmarked fish are released into Squaw Creek above the weir. Marked fish not meeting the size criteria are released into the Salmon River after receiving another identifying mark. All unmarked fish are released above the Squaw Creek weir. Genetic material samples are collected from all unmarked fish and from a representative group of spawned fish. *Chris Harrington/Brent Snider*

1.2.3.5. Carcass disposition - Spawned out carcasses are made available first to charitable organizations and Tribal programs. Secondly, excess, unspawned, and spawned-out fish are given to the public on a first-come-first-served basis. Due to whirling disease amplification issues, carcasses will not be used for nitrification of local waters. *Brent Snider*

1.2.3.6. Adult monitoring and evaluation - All fish are measured, examined for gender, various clips, radios, CWT, injuries, and readiness to spawn. All steelhead trapped at Squaw Creek have a genetic sample taken. *Brent Snider*

1.2.3.7. Spawning/egg take plans, mating protocol - All B-run hatchery fish are spawned following a 1:1 random mating protocol. Eggs are incubated at Sawtooth FH and shipped as eyed eggs to Magic Valley FH for final incubation and rearing. Production depends on how many broodstock are available, (750,000 smolts release – 70 pair B-run) and backfill with Dworshak stock. *Brent Snider*

1.2.3.8. Egg incubation - Prior to incubation; all eggs will be water hardened with a 100 mg/l solution of iodine for one hour. After eggs manifest a strong “eye” the eggs are sorted and enumerated mechanically. *Brent Snider*

1.2.3.9. Juvenile fish health - NA

1.2.3.10. Communication - IDFG Research assists Sawtooth FH personnel in developing trap management plans. Egg production and shipments are coordinated between Sawtooth FH and Magic Valley FH. *Chris Harrington, Brent Snider*

1.2.4 Hagerman National Fish Hatchery

The Hagerman NFH LSRCP goal is to provide adult returns for lower river fisheries and return 13,600 adult steelhead over Lower Granite Dam and back to the Snake River Basin. Eggs for the program are obtained from adult returns spawned at Sawtooth FH, Pahsimeroi FH, Dworshak NFH, and in times of need, Oxbow FH. The fish are reared from eyed eggs to smolts at Hagerman NFH, and transported for direct stream release at multiple sites in the Salmon River drainage.

1.2.4.1 Egg incubation - Hagerman NFH will request and disinfect eyed eggs (Sawtooth A and Pahsimeroi A from Sawtooth FH and , Dworshak B from Clearwater FH) (Table 12). Eyed steelhead eggs will be shipped between 370 and 450 TUs. Shipments will occur in May and June 2007. Egg shipments and deliveries will be coordinated with Sawtooth FH, Magic Valley FH, and Clearwater FH. *Mark Olson / Brent Snider / Rick Lowell / Jerry McGehee.*

1.2.4.2. Nursery Rearing - Eyed eggs are loaded into upwelling incubators at 20,000 to 25,000 eggs per jar with a flow rate of 6 to 8 gallons per minute (gpm). Typically, the Sawtooth stock is reared in Hatchery Building 1, and the Pahsimeroi and Dworshak stocks are reared in Hatchery Building 2. Sac fry are transferred from incubators into indoor rearing tanks and feeding is initiated when 80% of the fry achieve swim-up. Feeding

typically begins 15 to 17 days post-hatch. Semi-moist salmon diets are fed at a minimum frequency of once per hour during rearing in the hatchery buildings. Flows in rearing tanks are ramped up to, and then maintained at, 60 gpm. Fish are reared inside to a maximum density index of 0.60 and a maximum flow index of 1.00. Fish are transferred at two tanks per outside raceway in late July and August at approximately 180 fpp. *Mark Olson*

1.2.4.3. Outside Rearing - The upper and middle decks are used for initial outside rearing. Once outside, fish are hand-fed the Hagerman Diet, a dry extruded floating salmon diet developed by the Abernathy Fish Technology Center. Feeding duration varies by fish and feed size from as high as six times per day, to as low as two times per day. In late September and early October, fish are split to all raceways in all three decks. Generally, the lower deck raceways are filled by hand with fish that receive no external marks. The upper and middle deck raceways are filled during adipose fin clipping and coded wire tagging. Once these splits are made, fish remain in their respective raceways until distribution. All fish are fed a dry extruded floating diet which is placed into demand feeders twice weekly. The NOAA Fisheries 180 to 250 mm length at release criteria is met by adjusting the hatchery constant. Sample counts are performed monthly on representative ponds and length frequencies are checked periodically. During February or March 2007, IDFG staff PIT tag a representative group of fish from each stock being reared. *Mark Olson*

1.2.4.4. Juvenile fish health - Juvenile fish health monitoring is conducted monthly, except when there are no fish on station, and diagnostic exams are performed as needed. The Idaho Fish Health Center performs these tasks. Pre-liberation inspections are performed at least two weeks prior to the first day of liberation. Prior to release, a 60 fish sample is taken and assayed for IHNV, IPNV, VHSV, *Aeromonas salmonicida*, *Yersinia ruckerii*, and BKD. Fish health exam forms are provided to the hatchery as well as a summary at year-end. *Kathy Clemens*

1.2.4.5. Planned juvenile marking & tagging, release sites - Numbers of fish marked, mark type, and release location are established by the annual IDFG Steelhead Mark Plan which incorporates other agreements and processes such as US vs Oregon. Generally, numbers marked break out as follows: 910,000 AD clipped Sawtooth A (of which 80,000 are CWT), 200,000 AD clipped Dworshak B, 200,000 unmarked Pahsimeroi A, and 140,000 unmarked Sawtooth A. In addition, a representative number of fish from each release site receives PIT tags (February 2008). Marking and tagging must occur in mid August 2007. Marking is coordinated with Niagara Springs FH, Magic Valley FH, and the IDFG Marking Crew. *Tom Rogers / Jerry Chapman / Rick Lowell / Rod Duke / Bryan Kenworthy / Mark Olson.*

1.2.4.6. Juvenile monitoring and evaluation - The IDFG performs CWT, PIT, and smolt-to-adult return evaluations. PIT tags are used to evaluate juvenile out-migration success. No direct comparisons between groups will be made, so these tags serve largely to look at migration class success, and look for gross problems with releases. Coded-wire tags will be used to measure adult contribution to fisheries, as well as evaluate total adult returns by release group. There is currently a tentative plan to use CWT to specifically compare

release groups from Hagerman National FH in 2007, plan development and approval pending. *Tom Rogers / Chris Harrington / Mark Olson / Bryan Kenworthy/Ray Jones*

Shoshone-Bannock Tribes (SBT)-DNA Parentage Exclusion Analysis (Denny 2006). Steelhead smolt will be maintained separate than general production fish. The SBT is conducting an experimental study on supplementation using steelhead released as smolt in the Yankee Fork. The study includes genetic DNA parental exclusion as described by Jones and Ardren (2003) to differentiate steelhead produced from smolt or eggboxes from all other steelhead produced naturally in the watershed. Each steelhead used in broodstock crosses at SFH to supply the eyed eggs (supplementation fish) will be genotyped so all progeny will later be identifiable when captured and sampled as F1 juveniles and F1 adults. Later, F2 progeny will be detected using DNA typing through grandparentage analysis of unknown matings (Letcher and King 2001). *Lytle Denny*

1.2.4.7. Communication - Hagerman NFH distributes a monthly hatchery production summary, a monthly narrative, and an annual report. These will be sent to the Contact list (Section 5). Hagerman NFH evaluates production programs through a Hatchery Evaluation Team (HET). The HET meets quarterly to plan and coordinate specific studies and program changes or adjustments. The HET will need to review and approve any requests for a particular broodyear in advance. *Bryan Kenworthy / Ray Jones / Mark Olson/ Chris Harrington*

1.2.5 Magic Valley Fish Hatchery

The Magic Valley FH LSRCP adult mitigation return goal is provide adult returns for lower river fisheries and 11,660 adult steelhead over Lower Granite Dam and back to the Snake River Basin. To attain that goal, the planned production is: 800,000 Pahsimeroi/Sawtooth A; 630,000 Dworshak B; 110,000 Upper Salmon B; and 50,000 East Fork Natural smolts. See Table 1 for release locations. Eyed eggs (Table 12) for the program are obtained from adults trapped at Sawtooth FH, Pahsimeroi FH, Dworshak NFH, Squaw Creek Trap, and the East Fork Salmon River Trap. All stocks are reared to smolt size at Magic Valley FH and transported for direct stream or acclimated release at multiple sites in the Salmon River.

1.2.5.1. Egg incubation - Magic Valley FH should request numbers similar to BY2006. As a result of a continued reduction in water flow (>25%), production numbers for BY2007 have been decreased by approximately twenty percent from the original target of two million smolts. Final egg request numbers for BY2007 will be confirmed during the IDFG anadromous meeting in January, 2007. Transfer of eggs should occur between 370 and 450 TUs. Delayed transfer of eggs is beneficial because fish will be off feed for fewer days during the final rearing period. Egg shipments and deliveries will be coordinated with Sawtooth FH and Clearwater FH. *Brent Snider/Rick Lowell/Jerry McGehee/Todd Garlie.*

1.2.5.2. Nursery Rearing - Eyed eggs are loaded into upwelling incubators at 50,000 to 65,000 eggs per jar with a flow rate of 6 to 8 gpm. All stocks are reared in the incubation building. Sac fry volitionally swim from incubators into indoor rearing tanks and feeding is initiated when approximately 100% of the fry achieve button-up. Feeding typically begins

18 to 21 days post-hatch. Rangens semi-moist starter salmon diets are fed at a minimum frequency of once per hour during rearing in the hatchery building. After feed size zero, all early rearing diets are changed to dry feed, Starting flows in rearing tanks are set at 100 gpm, and then increased up to 250 gpm prior to transfer to outside raceways. Fish are reared inside to a maximum density index of 0.60 and a maximum flow index of 1.19. Fish are transferred at approximately 30,000 fish per outside section for a total of 54 sections. Transfer to outside raceways is scheduled to begin in mid- July and completed by mid-August. Fish will range in size from 200 to 300 fpp. *Rick Lowell*

1.2.5.3. Outside Rearing - The upper decks are used for initial outside rearing. Screens are placed at the fifty foot keyway and the upper 100 foot section is divided into two rearing sections. Approximately thirty thousand fish will be placed in each section. Once outside, fish are hand-fed Rangens #2 and #3 crumble then graduate to larger sizes as growth continues. For approximately the last seven months of growth, smolts are fed Rangens 470 extruded slow sinking feed. Feeding duration varies by fish and feed size from as high as six times per day, to as low as three times per day. When fish approach density indexes of 0.30, inventory in the lower 50 feet of the A deck, they will be moved to the lower 100 feet (B section) and the inventory in the upper 50 feet will have the entire A section for the final rearing period. The NOAA Fisheries 180 to 250 mm length at release criteria is met by adjusting the hatchery constant. Sample counts are performed monthly on representative ponds and length frequencies are calculated prior to release. During March 2008, IDFG staff will PIT tag a representative group of fish from each stock being reared. *Rick Lowell*

1.2.5.4. Juvenile fish health - Fish health inspection and diagnostic services will be provided by personnel and facilities at the EFHL. Mortality rates will be monitored monthly via the written hatchery reports and through direct communication. Diagnostic services will be provided as needed at the request of hatchery personnel. Quarterly on-site inspections will include tests for the presence of replicating viruses, Renibacterium salmoninarum (RS), and general bacterial pathogens. A pre-liberation inspection will be done on all lots no more than 45 days prior to transportation, including an organosomatic index of fish quality. Specific pathogens tested for at pre-liberation will include IHNV, IPNV, VHSV, RS, Aeromonas salmonicida, Yersinia ruckerii, Myxobolus cerebralis, and any other pathogens that may seem prudent at the time. *Doug Burton*

1.2.5.5. Planned juvenile marking & tagging, release sites - Numbers of fish marked, mark type, and release location are established by the annual IDFG Steelhead Mark Plan which incorporates other agreements and processes such as US vs Oregon. Projected hatchery spring flows will continue to influence production numbers for BY2007. If spring flow trends continue to decrease, a proportional decrease in production is recommended. Other measures such as oxygen injection or aeration may be addressed to offset reduction in flows as well. As in BY2006, the following proposed numbers for the 2007 steelhead mark plan are also contingent on Hagerman NFH rearing 100,000 of the total production for Magic Valley. Generally, numbers marked break out as follows: 220,000 AD clipped Sawtooth A, 630,000 AD clipped Dworshak B, 440,000 AD clipped Pahsimeroi A, 60,000 unmarked Pahsimeroi A, 110,000 AD clipped Upper Salmon B, 50,000 CWT only East Fork Naturals and 80,000 unmarked Sawtooth A. In addition, a representative number

from each release site receives PIT tags. Adipose fin clipping is tentatively scheduled to begin in mid July and should be completed by mid August. Coded-wire-tagging usually commences in mid-October and is completed by the end of the month. Timing of marking is set up at the Salmon River Basin spring meeting. Marking is coordinated with Niagara Springs FH, Hagerman NFH, and the IDFG Marking Crew. *Sam Sharr/ Jerry Chapman / Rick Lowell / Rod Duke / Bryan Kenworthy.*

1.2.5.6. Juvenile monitoring and evaluation - The IDFG performs CWT, PIT tagging, and smolt to adult return evaluations. PIT tags are used to evaluate juvenile migration success. Direct comparisons of groups will be made between the Upper Salmon B and Dworshak B stock released into Squaw Creek Pond. The remainder of these tags serves largely to look at migration class success, and determine gross problems with releases. Coded-wire tags will be used to measure adult contribution to fisheries, as well as evaluate total adult returns by release group. *Sam Sharr / Chris Harrington*

Shoshone-Bannock Tribes (SBT)-DNA Parentage Exclusion Analysis (Denny 2006). Steelhead smolt will be maintained separate than general production fish. The SBT is conducting an experimental study on supplementation using steelhead released as smolt in the Yankee Fork. The study includes genetic DNA parental exclusion as described by Jones and Ardren (2003) to differentiate steelhead produced from smolt or eggboxes from all other steelhead produced naturally in the watershed. Each steelhead used in broodstock crosses at SFH to supply the eyed eggs (supplementation fish) will be genotyped so all progeny will later be identifiable when captured and sampled as F1 juveniles and F1 adults. Later, F2 progeny will be detected using DNA typing through grandparentage analysis of unknown matings (Letcher and King 2001). *Lytle Denny*

1.2.5.7. Communication - Magic Valley FH distributes monthly hatchery production summaries and annual reports. These will be sent to the Contact list (Section 5). Magic Valley FH evaluates production programs through a LSRCP funded hatchery evaluation biologist stationed at the Nampa Research station.

1.2.6 Shoshone Bannock Tribes Egg Box Program

The SBT developed supplementation activities aimed at improving the viability of natural steelhead populations. Steelhead supplementation may be necessary to maintain high populations to support harvest and improve abundance, productivity, special structure, and genetic diversity. Annually, one million eyed steelhead eggs (Table 12) from Sawtooth and Pahsimeroi Fish Hatcheries are transferred to remote upwellers where they are incubated on river water in to mimic natural hatch timing in the system.

1.2.6.1. Planned juvenile marking/tagging, release sites –Eggbox juveniles will not be directly marked. Eggbox juveniles destined for Yankee Fork will be indirectly marked because their parents are tissue sampled while spawning. We estimate 1.0 million eyed eggs will be outplanted in Yankee Fork, Basin Creek, Morgan Creek, Indian Creek, and Panther Creek. Approximately 375,000, 125,000, 125,000, 125,000, and 250,000 eyed eggs will be planted respectively. Approximately 139 pairs of upper Salmon Group-A

summer steelhead are necessary to achieve 583,362 green eggs or 500,000 eyed eggs to support the SBT incubation program in the upper-Salmon. In addition *Lytle Denny*

1.2.6.2. Ladder operation – Adult trapping will be conducted at Sawtooth and Pahsimeroi Fish Hatchery. See Sawtooth 1.2.1.2 and Pahsimeroi 1.2.8.2.

1.2.6.3. Adult fish health – Adult fish will be spawned at Sawtooth and Pahsimeroi Fish Hatchery. See Sawtooth 1.2.1.3 and Pahsimeroi 1.2.8.3.

1.2.6.4. Adult outplanting/marking – Adult outplanting/marking will occur at Sawtooth and Pahsimeroi Fish Hatchery. See Sawtooth 1.2.1.4 and Pahsimeroi 1.2.8.4.

1.2.6.5. Carcass disposition – Carcasses may be given out at Sawtooth and Pahsimeroi Fish Hatchery. See Sawtooth 1.2.1.5 and Pahsimeroi 1.2.8.5.

1.2.6.6. Spawning/egg take plans, release sites - Spawning and mating protocols are consistent with those at Sawtooth and Pahsimeroi FH. The SBT request 500,000 eyed eggs from Sawtooth A and 500,000 eyed eggs from Pahsimeroi A for a total of 1,000,000 eyed eggs. Egg incubators, otherwise known as upwellers, will be constructed in remote locations. *Lytle Denny*

1.2.6.7. Monitoring and evaluation – DNA tissue samples are collected from all spawned steelhead at Sawtooth FH for Yankee Fork supplementation programs. Eggs obtained from Sawtooth A hatchery stock will be placed into upwellers in Basin Creek and Yankee Fork. Eggs obtained from Pahsimeroi A hatchery stock will be placed into upwellers in Panther, Indian, and Morgan Creeks.

Upwellers will be monitored weekly to assure flow is constant throughout the system. Data will be collected for date, time, water temperature, dissolved oxygen, conductivity, pH, flow velocity, sediment accumulation, life stage, and comments. Dead eggs are enumerated after total volitional fry emigration into catch tanks. Under the SBT monitor and evaluation plan, Yankee Fork will be randomly stratified and sampled through electroshocking to collect 0+ and 1+ steelhead. Fork length and mass of each individual will be recorded. Fin tissue and scale samples are collected from steelhead juveniles to link adult parents and brood year to assess the efficiency of supplementation activities. Panther Creek, Indian Creek, and Morgan Creek will be monitored through snorkeling and/or electroshocking to document changes in density and dispersal (treatment effect). In addition, several unknown tributaries will also be monitored to compare differences in treatment and control tributaries. *Lytle Denny & Kurt Tardy*

1.2.6.8. Egg incubation - Same procedures and guidelines for Sawtooth and Pahsimeroi Fish Hatcheries through eyed egg stage (see Sawtooth 1.2.1.8 and Pahsimeroi 1.2.8.8.) However, once placed into in-stream hatch boxes or upwellers, incubation will occur on stream water in the natural environment.

1.2.6.9. Juvenile fish health – Does not apply, these fish are reared on stream water in the natural environment.

1.2.6.10. Communication - Pahsimeroi FH, Sawtooth FH, and SBT personnel will coordinate to determine a schedule to obtain and transfer eyed eggs. Results and conclusions from the streamside incubation project will be presented in an annual report.
Lytle Denny

1.2.7 Niagara Springs Fish Hatchery

IPC's mitigation goal at Niagara Springs FH is to annually produce 400,000 pounds of healthy steelhead smolts. This equates to approximately 1.8 million smolts at a mean size of 4.5 fpp. Eyed eggs (Table 12) for the program are obtained from adult returns spawned at Pahsimeroi FH and Oxbow FH. The fish are reared from eyed eggs and swimup fry to smolts at Niagara Springs FH, and released into the Pahsimeroi River below the Pahsimeroi FH weir, into the Snake River below Hells Canyon Dam, and into the Little Salmon River at Stinky Springs or Hazard Creek. *Jerry Chapman*

1.2.7.1. Egg incubation - All eggs collected at Pahsimeroi FH for IPC's mitigation program will be flown as green eggs to Oxbow FH for incubation on chilled well water to retard their rate of development. The proportion of Pahsimeroi-A eyed eggs and swimup fry requested by Niagara Springs FH will vary depending on the availability of natural spring water for incubation at Niagara Springs FH. If natural spring flows are low due to drought or local irrigation practices, Niagara Springs FH will request a total of 368,000 Pahsimeroi-A eyed eggs and 736,000 Pahsimeroi-A swimup fry from Oxbow FH. If more spring water is available, then Niagara Springs FH will request 552,000 eyed eggs and 552,000 swimup fry. In addition, Niagara Springs FH will request 440,000 Oxbow-A eyed eggs and 440,000 Oxbow-A swimup fry from Oxbow FH. Eyed eggs will be shipped to Niagara Springs FH in June (at approximately 400 TUs) and placed in upwelling incubators inside the hatchery building. Swimup fry will be received in July and August (at approximately 950 TUs) and ponded directly into the outside raceways. *Jerry Chapman*

1.2.7.2. Nursery Rearing - Upon arrival at Niagara Spring FH, eyed eggs will be disinfected with Iodine at 100-ppm for 30 minutes prior to tempering and placing in upwelling incubators. Loading densities in the incubators will range from 20,000 to 55,000 eggs, depending on water availability. Incubator flows will range between 20 to 25 gpm, depending on water availability. Incubator flows will range between 20 to 25 gpm, depending on water availability, while flows in vats will approach 50 gpm. Maximum flow indexes should not exceed 0.8 F.I., while density indexes will peak at 1.13 lbs/cuft/in. in the hatchery building even if we continue to only take ½ of total egg request as eggs and ½ as fry. (Swimup fry attain a density index of .57 when they leave the incubators for the vats.) Fry are transferred outside when they are between 1,100 and 1,300 fpp. Swimup fry will be tempered in the hauling trailer prior to ponding directly into the outside nursery raceways. Fish hatched at Niagara Springs FH from Oxbow-A eyed eggs will be transferred from indoor vats to nursery raceways 1 and 3 when they reach approximately 2,000 fpp. Oxbow-A fry will be ponded directly into nursery raceways 5 and 7 at 950 TUs. Fish hatched from Pahsimeroi-A eyed eggs and Pahsimeroi-A swimup fry will be ponded in the

remaining six nursery raceways, 9 through 19, at similar sizes and TUs, respectively. Rearing space will be increased as fish grow and their density index approaches 0.30 lbs/ft³/in.. Fry will be hand-fed Rangen's dry feed in the indoor nursery areas. Hand-feeding will occur at least once per hour and will be supplemented by Zeigler belt feeders. Once fish reach 275 fpp, their diet will switch to Skretting Proactive feed for 14 days to stimulate their immune systems prior to tagging and vaccinations. *Jerry Chapman*

1.2.7.3. Outside rearing - Fish are reared in three banks of raceways at a maximum density index of 0.35 lbs/ft³/in and a maximum flow index of 0.9 lbs/gpm/in. As densities increase in the nursery sections, screens are removed and fish are allowed to move down to the next screened raceway bank. Once the nursery area is lengthened to the 200-ft mark, AD-clipping begins and fish are evenly distributed into all raceways. Steelhead are fed Rangen dry feeds throughout the early rearing period at Niagara Springs FH. Feed is dispensed by hand-feeding and supplemented with Ziegler belt feeders in the outdoor nursery areas. When fingerlings reach 275 fpp, their diet is switched to Skretting Proactive feed for 14 days to stimulate their immune systems prior to vaccination and tagging. When they reach 75 fpp, all Niagara Springs FH fish are switched to a Rangen's slow-sinking 470 extruded diet to allow staff to utilize two bulk tanks, a feed conveyor system, a fines separator and bridge feeders.

A length at release standard of 180 to 250 mm is established under the NOAA Fisheries 1999 Biological Opinion. The BY2007 steelhead are projected for an average size of 220 mm. This will be accomplished by holding the fish off feed and receiving eggs from later spawn dates to decrease fish size and minimize days off feed. Sample counts are performed bimonthly on representative raceways until December and then performed once per month until release. Length frequencies are checked periodically during outside rearing. Dissolved oxygen is monitored once per month as per NPDES protocol and periodically during periods of peak loading. Water temperature remains a constant 59°F. *Jerry Chapman*

1.2.7.4. Juvenile fish health - Fish health inspection and diagnostic services will be provided by personnel at the Eagle Fish Health Laboratory (EFHL). Mortality rates will be monitored and reported monthly via the written hatchery reports and through direct communication. Diagnostic services will be provided as needed at the request of hatchery personnel. Quarterly on-site inspections will include tests for the presence of replicating viruses, *Renibacterium salmoninarum* (RS) and general bacterial pathogens. A minimum of 50% of the juveniles will receive a *Aeromonas salmonicida* vaccination bath at an approximate size of 2 grams/fish. A pre-liberation inspection of fish from each stock (Pahsimeroi-A and Oxbow-A) including an organosomatic index of fish quality will be done on all lots no more than 45 days prior to transportation. Specific pathogens tested for at pre-liberation will include IHNV, IPNV, VHSV, RS, *Aeromonas salmonicida*, *Yersinia ruckerii*, *Myxobolus cerebralis* and any other pathogens that may seem prudent at the time. If Furunculosis is determined to be a potential problem, fish will be vaccinated. *Jerry Chapman, Doug Burton, Eagle Fish Health Lab*

1.2.7.5. Planned juvenile marking & tagging, release sites - Numbers of fish marked, mark type, and release locations are established by the annual IDFG Steelhead Mark Plan (Table 2). Generally, numbers marked break out as follows: all BY2007 steelhead at Niagara Springs FH will be AD-clipped. A total of 30,000 coded-wire-tags (CWTs) will be implanted in Oxbow-A steelhead destined for stocking below Hells Canyon Dam and 30,000 CWTs will also be implanted into Oxbow-A fish destined for the Little Salmon River. A total of 30,000 CWTs will be implanted into Pahsimeroi-A fish destined for the Little Salmon River. Pahsimeroi-A steelhead that will be stocked back into the Pahsimeroi River will receive 60,000 CWTs. In addition, approximately 300 fish from each release site will receive PIT tags. AD-clipping and CWT tagging typically occurs the last week of September and the first two weeks of October. Marking is coordinated with Hagerman NFH, Magic Valley FH and the IDFG Marking Crew. PIT tagging typically occurs in February. Release inventories exceeding 10 percent of the allocation for the Little Salmon River drainage will be released there or retained at the hatchery for outplanting in agreed upon waters. *Jerry Chapman*

1.2.7.6. Juvenile monitoring and evaluation - The IDFG performs CWT, PIT tag and smolt-to-adult-return evaluations. PIT tags are used to evaluate juvenile migration success. No direct comparisons between groups will be made, so these tags serve largely to look at migration class success and look for gross problems with releases. CWTs will be used to measure adult contribution to fisheries, as well as evaluate total adult returns by release group. *Jerry Chapman*

1.2.7.7. Communication - Niagara Springs FH distributes monthly hatchery production summaries, monthly hatchery narratives and annual reports. These are currently not sent to the Contact list (Section 5), but are maintained at the hatchery and IDFG headquarters and are available by request. Niagara Springs FH program objectives are discussed at the Salmon River AOP, IDFG Anadromous Meetings, hatchery manager meetings and additional meetings to discuss and resolve any issues. In addition, the IPC hatchery biologist and IDFG anadromous hatcheries supervisor maintain close contact with the hatchery manager and staff for consultation as problems arise. *Jerry Chapman*

1.2.8 Pahsimeroi Fish Hatchery

IPC's mitigation goal for steelhead production at Pahsimeroi FH is to take up to 1,450,000 green eggs for distribution to Niagara Springs FH. Approximately 332 pairs of adult steelhead broodstock are needed to meet the egg take goal. Pahsimeroi FH also traps and spawns additional adult steelhead to provide eggs for the following programs (Table 12): eyed eggs for the SBT egg box program and green eggs for the LSRCP programs at Magic Valley FH and Hagerman NFH. These additional eggs require the spawning of another 442 pairs of adult steelhead to accomplish this task.

1.2.8.1. Projected adult return - Based on dam counts and check station weir count regressions the Brood Year 2006 projection is 4,119 returning adults (95% CI – 5,831, 2,407). *Jon Hansen*

1.2.8.2. Ladder operation - Trapping will begin on March 1, 2007 and proceed through mid-May or until a period when 10 days lapse and no fish are trapped (typically this lapse occurs in mid-May). The trap will be checked for new arrivals every weekday during the run. *Todd Garlie*

1.2.8.3. Adult fish health - Adult steelhead fish health monitoring is conducted during spawning by personnel at the EFHL. During broodstock inspections, EFHL personnel will collect ovarian fluid and kidney/spleen tissue samples to assay for viral replicating agents from at least 150 females (120 ovarian fluid samples and 30 kidney/spleen samples). Sixty kidney samples will be collected for ELISA testing for *Renibacterium salmoninarum* and 20 head wedges will be collected from returning adult steelhead to examine for *Myxobolus cerebralis*. Eggs from females that are positive for serious pathogens will be culled from production. The APHIS veterinarian-in-charge will be notified of detections of reportable pathogens. *Doug Munson*

1.2.8.4. Adult outplanting/markings - If predicted rack numbers are higher than 1,200 fish, adult outplants occur from the early (March) trapped fish. If the predicted run size is less than the 1,200 needed for egg production, no adult out-plants will be done until 75% of the predicted run is trapped. No adult out-plants will occur prior to March 20, at which point, they will only occur if 20% of the predicted run is trapped and the daily trap numbers are increasing. Also, there will be no adult out-plants if 40% of the predicted run does not arrive prior to April 1. The fish will be outplanted to predetermined sites and will consist of females that are ripe and males in equal proportion to the number of females. All unmarked adult fish are released upstream of the weir. Genetic samples and scale samples will be collected from all natural origin steelhead released above the weir. Surplus hatchery adults are either outplanted to predetermined locations in the main stem Salmon River for the steelhead fishery, provided to the SBT and welfare agencies for subsistence, or given to the public on spawn days. Steelhead outplanted to the mainstem Salmon River will be either opercule punched or caudal punched to identify recaptures. *Todd Garlie*

1.2.8.5. Carcass disposition - Each day during spawning operations, carcasses will be given to the SBT, the public, and to charitable organizations in accordance with IDFG policy. Current charitable organizations on file at Pahsimeroi are: American Legion, Challis Operation Helping Hands, Eastern Idaho Special Services (Idaho Falls and Salmon), and the Idaho Food Bank.

IDFG policy does not allow disposal of steelhead carcasses into the Pahsimeroi River to supplement marine derived nutrients. This is because some adult steelhead are whirling disease carriers, which may increase the density of the whirling disease causative agent. Fish that are non-edible are placed in a refrigeration unit and hauled to a rendering plant. The refrigeration unit is rented. *Todd Garlie/Doug Engemann/Paul Abbott*

1.2.8.6. Adult monitoring and evaluation - All adult steelhead with tags and marks will be retained after spawning to recover CWTs (if present) and all relevant information for input into the IDFG anadromous database. *Chris Harrington*

1.2.8.7. Spawning/egg take plans, mating protocol - Adult steelhead that are trapped and ready to spawn after March 31 will be used for primary egg production needs (i.e. Niagara Springs FH, Magic Valley FH and Hagerman National FH). A random cross section of the run will be used to maximize the genetic diversity and to maintain a wide run and spawn period.

Selecting spawners – Ripe steelhead that enter the Pahsimeroi FH trap on spawn days will be spawned first to collect eggs for production facilities. Then, previously trapped fish will be sorted and ripe fish will be spawned. Eggs from fish spawned after April 1 will be distributed to production facilities and eggs from fish spawned prior to April 1 will be distributed as surplus eggs to secondary programs based on priority and needs. In an effort to obtain eggs from adults returning later in the run for Niagara Springs FH, to meet production needs and to shift the steelhead run and spawn timing towards historical levels, all eggs collected in May will be used exclusively for Niagara Springs FH production. Furthermore, no more than 10 percent of the eggs distributed to Niagara Springs FH should come from steelhead spawned in March.

Procedures for spawning - After sorting the trap and female holding pond, males will be collected from holding in equal numbers to the ripe females. The ripe females will then be killed in groups of ten by the SI-5 stunner. Each female will be individually incised and eggs will be collected in a colander, allowing excess ovarian fluid to drain off. The drained eggs will be placed in a bucket and fertilized by one male (one X one cross). The sperm will be expressed directly into the bucket of eggs. Females with poor eggs or bloody ovarian fluid will not be used for production. Males that expel bloody or watery sperm will not be used.

Egg Take Plans - Current plans are to take 1,122,000 green eggs for Niagara Springs FH, 625,000 eyed eggs for the Shoshone-Bannock Tribal egg box program, 650,000 green eggs for Magic Valley FH and 212,000 green eggs for Hagerman NFH.

1.2.8.8. Egg incubation - Eggs that are incubated at Pahsimeroi FH for the SBT egg box program are placed directly into the incubators. Eggs that are incubated at Pahsimeroi FH for the SBT egg box program are placed directly into the incubators. Forty-eight hours after collection until eye-up, all eggs incubated at Pahsimeroi receive 1,667 ppm fifteen minute formalin treatments administered every other day. These treatments are alternated with 500 milliliter iodophor flush treatments administered on non-formalin treatment days to preempt potential soft shell disease loss. The eggs for Niagara Springs FH are shipped green to Oxbow FH for incubation to the eyed egg or swim-up fry stages of development. These eggs are placed into aqua seed tubes, then into coolers of well water. Ice is added to the coolers to temper the eggs back to 40°F during transport. Eggs collected for Magic Valley FH and Hagerman NFH are transported green to Sawtooth FH using aqua seed tubes and coolers filled with chilled well water.

Upon arrival at Sawtooth and Oxbow hatcheries, all eggs are disinfected in a 100 ppm solution of argentine for 30 minutes before being placed into standard vertical stack

incubators. Incubator trays are usually loaded at a rate of 2 females' eggs per tray (10K to 16K eggs). Eggs are treated 3 times a week with a 1,667 ppm formalin treatment beginning seventy-two hours after arrival and continuing until eye-up. Dead eggs are picked using a Jentsorter electronic picker/counter. *Todd Garlie*

1.2.8.9. Juvenile fish health – No juvenile steelhead are reared at this location. See section 1.2.7.4 for details for juvenile fish health plans at Niagara Springs FH. *Doug Munson/ Todd Garlie*

1.2.8.10. Communication - Pahsimeroi FH distributes trapping and spawning updates three times per week during the steelhead run. These data summaries are provided electronically to individuals on a distribution list. Daily steelhead trapping updates are entered on the department K-drive every weekday throughout the run. Records of adult outplants will be uploaded to the Department fish release database as they occur. SBT personnel will coordinate to determine a schedule to obtain and transfer eyed eggs. *Todd Garlie/Doug Engemann/Paul Abbott*

1.2.9 Oxbow Hatchery Fish Hatchery

Idaho Power Company's current mitigation goal for steelhead production at Oxbow FH is to trap and spawn a sufficient number of adult steelhead to allow for the production of 200,000 lbs of steelhead smolts at Niagara Springs FH. To produce the minimum 1.2 million eyed-eggs/ fry necessary to reach that goal, approximately 550 adult steelhead are trapped in the fall and held over winter. An additional 50 females or 10% of the broodstock are trapped the following spring. This provides for pre-spawning mortality, culling for disease management and manipulation of run timing. It will also provides a small surplus for use at Pahsimeroi FH and Sawtooth FH in the event that returns to their weirs do not meet production goals. Steelhead spawning occurs in the spring and the resulting eggs and swimup fry are transferred to Niagara Springs FH beginning in June.

1.2.9.1. Projected adult return - As of January 1, 2007, Oxbow FH has a total of 464 adult A-run steelhead (214 males and 250 females) on station for BY2007 production. Additional trapping is scheduled to commence in the March 2007. The 2007 steelhead run projection is not available at this time. *Kent Hills/Ralph Steiner*

1.2.9.2. Ladder operation - Fall trapping at the Hells Canyon Trap extended for 20 days between October 30 and December 13, 2006. Trapping in the spring is influenced by flow in the Snake River and the resulting releases from Hells Canyon Dam. Flows in excess of 50,000 cfs at Hells Canyon Dam require cessation of trapping because the trap is inundated. At this time, spring trapping is scheduled to begin in March 2007 and will continue into April or until the broodstock target (10% of the females) is reached. *Kent Hills/Ralph Steiner*

1.2.9.3. Adult fish health - Adult steelhead monitoring is conducted during spawning by personnel at the EFHL. During broodstock inspections, EFHL personnel will collect ovarian fluid and kidney/spleen tissue samples to assay for viral replicating agents from at least 150 females (120 ovarian fluid samples and 30 kidney/spleen samples). Sixty kidney

samples will be collected for ELISA testing for *Renibacterium salmoninarum* and 20 head wedges will be collected from returning adult steelhead to examine for *Myxobolus cerebralis*. Eggs from females that are positive for serious pathogens will be culled from production. The APHIS veterinarian-in-charge will be notified of detections of reportable pathogens. *Doug Munson*

1.2.9.4. Adult outplanting/marking – Depending on run strength, surplus adults may be trapped at Hells Canyon Trap. Surplus fish are distributed to Idaho, Oregon, and the Nez Perce Tribe. In the fall of 2006, the Nez Perce Tribe received 820 fish for subsistence/consumption. The Idaho and Oregon shares were released to supplement sport fisheries and received a left operculum punch. Idaho received 1,001 fish, which were released into the Boise River. Oregon received 636, which were released into Hells Canyon Reservoir. Additional out-plants may take place at agreed upon locations if excess fish are trapped in the spring of 2007. *Kent Hills/Ralph Steiner*

1.2.9.5. Carcass disposition - Carcasses will be placed into a garbage dumpster and picked up weekly by the local sanitation company. They will be transported to the Halfway transfer station and eventually to an approved ODEQ landfill. *Kent Hills/Ralph Steiner*

1.2.9.6. Adult monitoring and evaluation - All returning adult steelhead are scanned for CWTs and PIT tags. They are also scrutinized for other marks, tags, and injuries. *Kent Hills/Ralph Steiner*

1.2.9.7. Spawning/egg take plans, mating protocols - Spawning will occur twice each week. Eggs will be drained of ovarian fluid and fertilized with milt from two males. Females with poor egg quality or bloody ovarian fluid will not be used for production. Males that expel bloody or watery milt will not be used. Fertilized eggs from two females will then be combined for water hardening. *Kent Hills*

1.2.9.8. Egg incubation - Eggs will be incubated at regulated well water temperatures ranging from 53°F to 42°F to consolidate egg shipments to Niagara Spring FH. In addition to eggs collected at Oxbow FH, approximately 2,500,000 green eggs will be transferred from Pahsimeroi FH to Oxbow FH beginning in March. All eggs will receive a daily iodophore flush. Both Oxbow-A and Pahsimeroi-A eggs will be reared to the eyed egg or fry stage and then transferred to Niagara Springs FH or distributed as directed by the IDFG Fisheries Bureau. The 2007 egg request for Oxbow-A steelhead is for 880,000 eyed eggs and fry. This will include 440,000 eyed eggs and 440,000 swimup fry to be transferred to Niagara Springs FH. The 2007 egg request for Pahsimeroi-A steelhead is for 1,104,000 eyed eggs and fry. This will include 552,000 eyed eggs and 552,000 swimup fry to be transferred to Niagara Springs FH. Surplus eggs or fry may be transferred to Hagerman State FH or reared to the fry stage and released into Cascade Reservoir. Eyed eggs are transported in coolers and button-up fry are placed inside large screened tubes, loaded onto a tank trailer or tank truck, and transported to the rearing facility or reservoir for release. *Kent Hills/Ralph Steiner*

1.2.9.9. Juvenile fish health – Juvenile steelhead are not reared at Oxbow FH. See section 1.2.7.4 for details for juvenile fish health plans at Niagara Springs FH. *Doug Munson*

1.2.9.10. Communication - During steelhead trapping, Hells Canyon Trap data will be uploaded daily to the IDFG trap record for each day the trap is operated. Adult releases will be uploaded to the IDFG release database at least weekly. In addition, weekly trap updates will be sent to the IPC hatchery biologist. *Kent Hills/Ralph Steiner*

2. Chinook Salmon

Chinook salmon *Oncorhynchus tshawytscha* are native to the Columbia River drainage and spawn in fresh water during the summer and fall months. Idaho's Chinook enter the fresh water system the same year they spawn, usually beginning in spring of each year, spawning begins in August and continues as late as November. Spring, Summer, and Fall Chinook are designated by timing entering the Columbia River system.

2.1 Broodyear 2002 Chinook Salmon

2.1.1 Eagle Fish Hatchery

Approximately 600 eyed eggs are needed to meet adult release production goals for the Eagle Hatchery Spring Chinook salmon captive rearing program. This number represents eyed-egg collection from two Salmon River drainages (300 eyed eggs from the East Fork Salmon River and 300 eyed eggs from the West Fork Yankee Fork). Adult release goals are to release a minimum of 20 pairs of age-3 through age-5 mature Chinook salmon to each drainage annually.

2.1.1.1. Production status - NOAA Fisheries currently has 15 WFYF and 10 EFSR spring Chinook salmon in production at Manchester Research Station (saltwater rearing). Typically all remaining age-5 fish mature. *Carlin McAuley/Dan Baker*

2.1.1.2. Projected release - Approximately 15 WFYF and 10 EFSR spring Chinook salmon will mature at age-5 and be transferred to Eagle FH in May. These groups will be held at Eagle FH until they are released into natal drainages in August of 2007. Due to facility construction, mature Chinook salmon will be returned to Idaho in early July and released directly to natal streams. *Dan Baker*

2.1.1.3. Fish health - Due to the relatively low number of fish reared annually, pre-transfer fish sampling does not occur prior to transporting juveniles from Eagle FH to the NOAA Fisheries facility in Washington State. However, all fish that die in the program during the course of any rearing year are assayed for typical viral and bacterial pathogens. To date, spring Chinook salmon have remained relatively disease free for the freshwater portion of their rearing history (the Eagle FH component). Age-1 Chinook salmon are vaccinated prior to shipment to saltwater with intra-peritoneal injections of Vibrogen (Aqua Health, Ltd., Charlottown, P.E.I., Canada) to prevent *Vibrio* spp. and Renogen (Aqua Health Ltd.) to prevent BKD. *Doug Munson/Mark Peterson*

2.1.1.4. Monitoring and evaluation - All juveniles are PIT tagged to track individual fish through hatchery culture. All juveniles received a VIE mark used to visually identify stock and rearing strategy. Before maturing adults are released all Chinook salmon receive an externally visible tag (Petersen Disc tag, Floy tag, or jaw tag) to assist with post-release spawning behavior observations. *Dmitri Vidergar/Paul Kline*

2.1.1.5. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Chinook Salmon Captive Propagation Technical Oversight Committee (CSCPTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Dimitri Vidergar/Carlin McAuley*

2.2 Broodyear 2003 Chinook Salmon

2.2.1 Eagle Fish Hatchery

Approximately 600 eyed eggs are needed to meet adult release production goals for the Eagle Hatchery Spring Chinook salmon captive rearing program. This number represents eyed-egg collection from two Salmon River drainages (300 eyed eggs from the East Fork Salmon River and 300 eyed eggs from the West Fork Yankee Fork). Adult release goals are to release a minimum of 20 pairs of age-3 through age-5 mature Chinook salmon to each drainage annually.

2.2.1.1. Production status - NOAA Fisheries currently has 171 WFYF and 162 EFSR spring Chinook salmon in production at Manchester Research Station (saltwater rearing). Approximately 90% will mature at age-4. *Carlin McAuley/Dan Baker*

2.2.1.2. Projected release - Approximately 154 WFYF and 146 EFSR spring Chinook salmon will mature at age-4 and be transferred to Eagle FH in May. These groups will be held at Eagle FH until they are released into natal drainages in August of 2007. Due to facility construction, mature Chinook salmon will be returned to Idaho in early July and released directly to natal streams. *Dan Baker*

2.2.1.3. Fish health - Due to the relatively low number of fish reared annually, pre-transfer fish sampling does not occur prior to transporting juveniles from Eagle FH to the NOAA Fisheries facility in Washington State. However, all fish that die in the program during the course of any rearing year are assayed for typical viral and bacterial pathogens. To date, spring Chinook salmon have remained relatively disease free for the freshwater portion of their rearing history (the Eagle FH component). Age-1 Chinook salmon are vaccinated prior to shipment to saltwater with intra-peritoneal injections of Vibrogen (Aqua Health, Ltd., Charlottown, P.E.I., Canada) to prevent *Vibrio* spp. and Renogen (Aqua Health Ltd.) to prevent BKD. *Doug Munson/Mark Peterson*

2.2.1.4. Monitoring and evaluation - All juveniles are PIT tagged to track individual fish through hatchery culture. All juveniles received a VIE mark used to visually identify stock and rearing strategy. Before maturing adults are released all Chinook salmon receive an externally visible tag (Petersen Disc tag, Floy tag, or jaw tag) to assist with post-release spawning behavior observations. *Dmitri Vidergar/Paul Kline*

2.2.1.5. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Chinook Salmon Captive Propagation Technical Oversight Committee (CSCPTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Dmitri Vidergar/Carlin McAuley*

2.3 Broodyear 2004 Chinook Salmon

2.3.1 Eagle Fish Hatchery

Approximately 600 eyed eggs are needed to meet Adult Release production goals for the Eagle Hatchery Spring Chinook salmon captive rearing program. This number represents eyed-egg collection from two Salmon River drainages (300 eyed eggs from the East Fork Salmon River and 300 eyed eggs from the West Fork Yankee Fork). Adult release goals are to release a minimum of 20 pairs Chinook (age-3 through age-5) to each drainage annually.

2.3.1.1. Production status - NOAA Fisheries currently has 193 WFYF and 259 EFSR spring Chinook salmon in production at Manchester Research Station (saltwater rearing). Approximately 30% will mature at age-3. *Carlin McAuley/Dan Baker*

2.3.1.2. Projected release - Approximately 58 WFYF and 78 EFSR spring Chinook salmon will mature at age-3 and be transferred to Eagle FH in May. These groups will be held at Eagle FH and until they are released into natal drainages in August of 2006. Due to facility construction, mature Chinook salmon will be returned to Idaho in early July and released directly to natal streams. *Dan Baker*

2.3.1.3. Fish health - Due to the relatively low number of fish reared annually, pre-transfer fish sampling does not occur prior to transporting juveniles from Eagle FH to the NOAA Fisheries facility in Washington State. However, all fish that die in the program during the course of any rearing year are assayed for typical viral and bacterial pathogens. To date, spring Chinook salmon have remained relatively disease free for the freshwater portion of their rearing history (the Eagle FH component). Age-1 Chinook salmon are vaccinated prior to shipment to saltwater with intra-peritoneal injections of Vibrogen (Aqua Health, Ltd., Charlottown, P.E.I., Canada) to prevent *Vibrio* spp. and Renogen (Aqua Health Ltd.) to prevent BKD. *Doug Munson/Mark Peterson*

2.3.1.4. Monitoring and evaluation - All juveniles are PIT tagged to track individual fish through hatchery culture. All juveniles received a VIE mark used to visually identify stock and rearing strategy. Before maturing adults are released all Chinook salmon receive an externally visible tag (Petersen Disc tag, Floy tag, or jaw tag) to assist with post-release spawning behavior observations. *Dmitri Vidergar/Paul Kline*

2.3.1.5. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Chinook Salmon Captive Propagation Technical Oversight Committee (CSCPTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Dmitri Vidergar/Carlin McAuley*

2.4 Broodyear 2005 Chinook Salmon

2.4.1 Sawtooth Fish Hatchery

The LSRCP has a mitigation goal to provide adult returns for lower river fisheries and return 19,445 adult Chinook above Lower Granite Dam annually. Approximately, 350 females and 350 males are needed for broodstock for the Sawtooth FH spring Chinook salmon program. This number includes jacks and accounts for pre-spawning mortality. This brood level will provide 1.5 million green eggs and 1.3 million smolts at an average of 88% eyed egg-to-smolt survival to meet the adult return goal. The original design for Sawtooth FH was for 2.4 million smolts including the East Fork Satellite release.

Subsequent smolt numbers have been reduced to reflect the incidence of whirling disease found in the upper Salmon River Drainage, thus requiring the use of well water to early rear fry. This limited well water source reduced inside rearing to the current 1.3 million smolts. The East Fork production has been changed to a natural production program.

Brood Fish Health- Prespawning mortality in 2005 was recorded at 8 %, while ELISA sampling detected *Renibacterium* in 4 of 297 females (1.35%) with optical densities above 0.25. Viral replicating agents were not detected in brood fish or carcass samples.

Myxobolus cerebralis was detected in 1/20 (5%) of the fish sampled. *Doug Munson*

2.4.1.1. Production status - On February 2, 2007, there were 996,337 BY2005 spring Chinook averaging 21 fpp and 138 mm (5.45 inches) in length being reared in eight outside raceways. These fish are doing well and will meet size-at-release requirements of 16-21 fpp. *Brent Snider*

2.4.1.2. Outside rearing - Final rearing takes place in one of fourteen outside raceways. These raceways are supplied with raw, river water. The target Density Index and flow index at Release are 0.15-0.20 and 1.0 – 1.6 respectively. At release the smolts are crowded into the connected raceway tailrace then crowded from the tailrace to the Salmon River via a buried 24 inch pipeline. *Brent Snider*

2.4.1.3. Monitoring and evaluation - Standard protocol is to sample count at least monthly for growth monitoring during their rearing cycle, and approximately one week before release. Length frequencies and condition factors will be determined from a representative sample prior to release. A fin clip quality check and CWT retention check will be completed before release. IDFG research personnel will PIT 15,000 fish, early-March of 2007, and monitor PIT tag detection at dams. *Brian Leth*

2.4.1.4. Juvenile fish health - Chinook salmon reared at this facility will be inspected by EFHL personnel on a quarterly basis for *Renibacterium salmoninarum*, viral replicating agents, parasites, and bacterial pathogens such as *Aeromonas*, and *Flavobacterium psychrophilum*. The preliberation sample will consist of 20 randomly collected fish and examined for *Renibacterium salmoninarum*, *Myxobolus cerebralis*, and viral replicating agents. Goede's organosomatic index will also be performed on these fish. These samples will be taken within 45 days prior to release. Two pre-emptive feedings of erythromycin-

medicated feed were applied to juveniles with a target dose of 100 mg/kg for 28 days. Diagnostic examinations will be provided on demand by EFHL To date *Aeromonas hydrophila* and *Ichthyophthirius multifiliis* are the only pathogens detected during EFHL examinations in BY'05 spring Chinook salmon. Preliberation sampling has not been taken. *Doug Munson/ Brent Snider*

2.4.1.5. Projected release - Spring Chinook smolts will be released in mid-April of 2007. Tail screens will be removed with the fish released into the river through the tailrace pipe. Expected number at release is 990,000 at 20 fpp. *Brent Snider*

2.4.1.6. Excess production strategies - No excess projected. *Brent Snider*

2.4.1.7. Transportation strategies - Potential smolt transportation to Yankee Fork Salmon River will follow IHOT transport guidelines using contract drivers and tractors. *Brent Snider*

2.4.1.8. Communication - Monthly hatchery narrative reports are available to all requesting to be included on the distribution list. Summary run report, Annual Operation and Maintenance report and final Brood Year report available after completion and upon request. *Brent Snider*

2.4.2 McCall Fish Hatchery

Approximately, 1,300 SFSR summer Chinook are needed as broodstock for the McCall FH summer Chinook salmon program. This number includes jacks and accounts for pre-spawning mortality and egg culling for BKD concerns. This broodstock level will provide 1.8 million green eggs to support 300,000 eyed eggs for SBT in-stream incubator boxes and the ability to produce 1.0 million smolts at an average of 94% eyed egg-to-smolt survival to provide adult returns for lower river fisheries and meet the adult return goal of 8,000 above Lower Granite Dam. Additionally, the NPT rears up to 100,000 Johnson Creek Summer Chinook, to smolt, annually at the McCall FH.

Brood Fish Health- Prespawning mortality was recorded at 8%, while ELISA samples detected *Renibacterium* in 2.35% (11/425) above 0.25. Viral replicating agents and *Myxobolus cerebralis* were not detected. *Doug Munson*

2.4.2.1. Production status - As of January 3, 2007 there were 1,088,343 BY2005 reserve summer Chinook at an average size of 21.6 fpp (5.21 inches TL) being reared at McCall FH. Fish marking has been completed for adipose fin clips and coded-wire-tags. Approximately 52,000 presmolts will be PIT tagged in February 2007. *Gene McPherson/ Steve Kammeyer*

2.4.2.2 Outside rearing - Final rearing takes place in one of two outdoor rearing ponds which are partially covered to allow for natural light penetration. At time of release density and flow indices are projected as 0.22 and 1.69, respectively. These ponds are connected to a collection basin where fish will be crowded into for loading onto transport trucks for release. *Gene McPherson/ Steve Kammeyer*

2.4.2.3. Monitoring and evaluation - Prior to release, hatchery personnel will sample 300 fish from each pond to evaluate Ad-clip mark quality and to determine fish size (total length and fish per pound). Due to mixed rearing conditions no retention checks for CWT or PIT tags will be made. *Gene McPherson/Steve Kammeyer*

2.4.2.4. Juvenile fish health - Chinook salmon reared at this facility will be inspected by EFHL personnel on a quarterly basis for *R. salmoninarum*, viral replicating agents, parasites, and bacterial pathogens such as *Aeromonas*, and *Flavobacterium psychrophilum*. Diagnostic services are provided upon request. The preliberation sample will consist of 20 randomly collected fish and examined for *R. salmoninarum*, *Myxobolus cerebralis*, and viral replicating agents. Goede's organosomatic index will also be performed on these fish. The preliberation sample will be performed within 45 days of release. A field trial was initiated with this broodyear to investigate the differences of one prophylactic erythromycin medicated feed treatment as opposed to two pre-emptive applications of erythromycin medicated feed, with approximately ½ of the BY05 Chinook receiving one spring feed treatment. Erythromycin medicated feed will have a target dose of 100 mg/kg for 28 days. Diagnostic examinations will be provided on demand by EFHL. No pathogens have been detected in BY'05 summer Chinook at this facility. Preliberation sampling has not been taken. *Doug Munson/ Gene McPherson*

2.4.2.5. Projected release - In March 2007 it is projected that a release group of 1,086,600 Ad-clipped SFSR Reserve summer Chinook smolts will be available. Anticipated mark groups to be released include: 772,600 ad-clip only, 262,000 ad-clip/ CWT, and 52,000 ad-clip/ PIT. Growth projections indicate these fish will be released at an approximate size of 19.5 fpp. Release of these smolts is tentatively scheduled to occur March 19-22, 2007. *Gene McPherson/ Steve Kammeyer*

2.4.2.6. Excess production strategies - All smolts from BY2005 are scheduled to be released into the SFSR at Knox Bridge. Prior to hatching 244,977 eyed eggs (from 62 females) were culled from hatchery production. Eggs culled came from females which demonstrated elevated Low Positive ELISA optical densities of 0.145-0.249. *Gene McPherson/ Steve Kammeyer*

2.4.2.7. Transportation strategies- The McCall FH LSRCP transport truck, New McCall FH Adult transport truck, McCall FH resident 2-Ton transport truck and two resident transport trucks (from Nampa FH) will be utilized to move salmon smolts to the SFSR release site at Knox Bridge. Approximately 8,500 pounds of fish will be transported for each release and 2 release trips are scheduled to take place each day. At Knox Bridge, water from the SFSR will be pumped onto the trucks to provide tempering prior to release. Release will take place using a transfer tube stretching from the roadway to the river. Johnson Creek origin summer Chinook smolts need to be completely transported to empty the hatchery collection basin before SFSR SU transportation can begin. *Gene McPherson/ Steve Kammeyer*

2.4.2.8. Communication - Prior to initiation of transportation activities the MCFH hatchery manager will contact the Valley County Road Department to notify them of the hatcheries

hauling schedule to ensure the Warm Lake road plowing crews are aware of our presence. The MCFH hatchery manager will also contact McCall field offices of the IDFG and NPT, prior to releases, so they will be aware of the hatcheries release schedule and the operation of fish sampling screw-traps can be suspended. *Gene McPherson/Steve Kammeyer*

2.4.3 Johnson Creek

The goal of the Johnson Creek Artificial Propagation Enhancement (JCAPE) project is to reduce the demographic risk of extirpation of the ESA listed Johnson Creek summer Chinook salmon and begin its recovery through supplementation. A secondary goal is to maintain genetic diversity of the artificially propagated summer Chinook salmon population and the natural population. The intent is to increase adult returns through increased juvenile survival and improved homing in order to preserve and recover the Johnson Creek salmon population.

Supplementation (O&M) Goal: Conduct necessary operations to produce 100,000 smolts annually for release back into Johnson Creek. In order to meet this supplementation goal, up to 40 pairs of natural origin adults are needed to produce 100,000 smolts annually.

Monitoring and Evaluation (M&E) Goal: Establish baseline information on the Johnson Creek summer Chinook salmon population. Monitor and evaluate the effectiveness of supplementation to aid in the recovery of the natural population of Johnson Creek summer Chinook salmon.

2.4.3.1. Production status - As of February 1, 2007 there were 120,572 BY05 Johnson Creek origin supplementation summer Chinook at an average size of 28.6 fpp (4.78 inches TL) being reared at McCall FH. In March 2007 it is projected that a release group of 120,000 summer Chinook will be available. Growth projections indicate these fish will be released at a size of 27 fpp. *Contact John Gebhards, NPT.*

2.4.3.2. Outside rearing - The BY05 Johnson Creek fish are currently being reared in the outside collection basin at the McCall Fish Hatchery. *Contact John Gebhards, NPT.*

2.4.3.3. Juvenile monitoring and evaluation - The JCAPE project is integrated with a comprehensive M&E program that follows a detailed M&E Plan (Vogel et al. 2005). The monitoring and evaluation program quantifies 41 regionally standardized performance measures to evaluate the supplementation program. These standard performance measures help inform decisions on Abundance, Survival-Productivity, Distribution, Genetic, Life History, and Habitat. The evaluation plan utilizes comparative performance tests at multiple life stages and involves treatment vs natural experients and repeated meure desings (treatment vs reference). This program, initiated prior to the first releases of supplemented fish, has been collecting baseline life-history characteristic information, to examine survival of the wild fish in Johnson Creek and any potential effects that the supplementation program may have on the natural population.

The Johnson Creek broodyear 2005 smolts have been CWT and VIE (left eye orange) tagged. In addition, 12,098 of these fish were tagged with PIT tags. During PIT tagging in

January 2007, all smolts PIT tagged were checked for CWT and VIE tag retention. Retention rates were: fish with both CWT and VIE = 98%; CWT only = 98.54%; VIE only = 99.44%; and fish with no CWT or VIE = 0.02%. *Contact John Gebhards/Craig Rabe, NPT.*

2.4.3.4. Juvenile fish health - These fish are reared at McCall FH. The Johnson Creek fish are inspected by the Eagle Fish Health Lab on a quarterly basis for *Renibacterium salmoninarum*, viral replication agents, parasites, and bacterial pathogens. Diagnostic services are available upon request. The pre-liberation sample will consist of 20 randomly collected fish and examined for *R. salmoninarum*, *M. cerebralis*, and viral replication agents. Goede's organosomatic index will also be performed on these fish. The pre-liberation sample will be performed within 45 days of release. Juvenile salmon received two pre-emptive feedings of erythromycin medicated feed at a target dose of 100 mg/kg/day for 28 days. *Contact John Gebhards, NPT, Doug Munson, IDFG.*

2.4.3.5. Projected release - The JCAPE project will be releasing approximately 120,000 smolts back into Johnson Creek. Release of these smolts is tentatively scheduled for March 12-16, 2007. These fish will be directly released into Johnson Creek into the pool located below the Wapiti Ranch bridge. No attempts will be made to acclimate these fish at the time of release. *Contact John Gebhards, NPT.*

2.4.3.6. Excess production strategies - There are no excess fish from this broodyear. *Contact John Gebhards, NPT.*

2.4.3.7. Transportation strategies - Johnson Creek summer chinook being reared in the collection basin will be crowded to one side using a screen and then be hand-netted onto awaiting trucks by NPT fisheries personnel. The NPT will provide personnel and three or four 1-ton 4x4 trucks with 300 – 400 gallon tanks for transporting smolts to Johnson Creek near Wapiti Ranch for release. One release trip (3 to 4 trucks per trip) is planned for each day. Release of these smolts is tentatively scheduled for March 12-16, 2007. *Contact John Gebhards, NPT.*

2.4.3.8. Communication - The JCAPE project is responsible for preparing annual brood year reports that are submitted to both NOAA Fisheries and BPA. These reports are not currently sent to the contact list (Section 5), but are available upon request or through BPA's website or from the JCAPE project staff. *Contact John Gebhards, NPT.*

2.4.4 Pahsimeroi Fish Hatchery

The mitigation goal for Pahsimeroi FH is to release up to 1,000,000 Summer Chinook smolts annually into the Pahsimeroi River. Approximately 300 pair of adult Summer Chinook are required to meet this mitigation when considering prespawning mortality and culling of disease positive adults.

Brood Fish Health- Prespawning mortality was recorded at 5%, while ELISA samples detected *Renibacterium* in 12% (41/344) above 0.25. Viral replication agents were not

detected in a 60 fish sample. *Myxobolus cerebralis* was detected in 3 of 20 fish (15%) sampled. *Doug Munson*

2.4.4.1. Production status - On January 1, 2007 there were 988,475 BY2005 listed summer Chinook on station. These fish averaged 26 fpp (4.79 inches). *Todd Garlie/Doug Engemann*

2.4.4.2. Outside rearing - All BY2005 summer Chinook pre-smolts are currently in our new outdoor rearing ponds. All BY2005 summer Chinook pre-smolts were early reared at Sawtooth Fish Hatchery. *Todd Garlie/Brent Snider*

2.4.4.3. Juvenile monitoring and evaluation - All BY2005 Pahsimeroi FH summer Chinook were adipose clipped. Additionally, a sub-sample of fish received Coded Wire Tags for SAR/exploitation information. A total of 500 fish will receive PIT tags in February, 2007. *Todd Garlie/Doug Engemann/Rodney Duke*

2.4.4.4. Juvenile fish health - Chinook salmon reared at this facility are being inspected by EFHL personnel on a quarterly basis for *Renibacterium salmoninarum*, viral replicating agents, parasites, and bacterial pathogens such as *Aeromonas* and *Flavobacterium psychrophilum*. Diagnostic services were provided upon request. The pre-liberation sample will consist of 20 randomly collected fish and examined for *R. salmoninarum*, *Myxobolus cerebralis*, and viral replicating agents. Goede's organosomatic index will also be performed on these fish. The pre-liberation sample will be performed within 45 days of release. Diagnostic examinations on demand by EFHL. Due to freezer space limitations, only half of these fish received two pre-emptive feedings of erythromycin-medicated feed. Upon detection of infestation of *Ichthyophthirius multifiliis*, these salmon were treated three times per week with 170 mg/l formalin. These treatments continued until water temperatures cooled in September. BY'05 Pahsimeroi summer Chinook salmon were reared at Sawtooth Hatchery until October 2006. A 60 fish sample was taken at Sawtooth Hatchery prior to transport back to Pahsimeroi. Pathogens were not detected. *Doug Munson*

2.4.4.5. Projected release - An estimated 988,000 smolts will be released volitionally beginning April 15, 2007. The releases will be staggered to avoid overwhelming the smolt bypass structures in the Pahsimeroi River. The target size at fish release is 16-18 fpp for this brood. *Contact?-Todd Garlie/Doug Engemann*

2.4.4.6. Excess production strategies - None this brood year.

2.4.4.7. Transportation strategies - None, direct release.

2.4.4.8. Communication - Pahsimeroi Hatchery provides monthly inventory summaries to an electronic distribution list which includes IDFG fisheries bureau personnel, LSRCP personnel, and IPC fisheries personnel. *Todd Garlie/Brent Snider*

2.4.5 Rapid River Fish Hatchery

Approximately, 2,500 Chinook are needed annually for broodstock for the Rapid River FH spring Chinook salmon program. This number includes jacks and accounts for pre-spawning mortality at the 20-year average as well as average female culling required by disease management constraints and average fecundity. This brood level will provide 3.4 million green eggs and 3.0 million smolts at an average of 88% eyed egg-to-smolt survival to meet the smolt release goals. As of February 7, 2007 release sites and numbers have yet to be determined. That determination will depend upon agreement among the participants in US v Oregon.

Brood Fish Health- Prespawning mortality was recorded at 9%, while ELISA samples detected *Renibacterium* in 2.4% (29/1230) above 0.25. Viral replicating agents and *Myxobolus cerebralis* were not detected. *Doug Munson*

2.4.5.1. Production status - As of February 1, 2007 Rapid River FH has 3.0 million BY2005 spring Chinook on station (127 mm average total length, 27.4 fpp). *Ralph Steiner*

2.4.5.2. Outside rearing - Outside rearing takes place in two stages. For initial rearing, fry are moved from vertical stack incubators to eleven outside raceways. Density and flow indices were 0.35 and 1.30, respectively in mid June 2006 when the fingerlings were marked and moved to the final rearing ponds. Final rearing continues in the rearing ponds until release, which is scheduled to begin March 12 and extend to April 27, 2007. Final rearing density and flow indices are projected to average 0.19 and 2.17 respectively at the beginning of release. During release some smolts are collected using a sane and loaded onto transport trucks for release at the designated remote locations. The remaining fish will be volitionally released into Rapid River. *Ralph Steiner*

2.4.5.3. Juvenile monitoring and evaluation - The fish are sampled biweekly for weight. Samples are comprised of at least 300 fish/rearing unit. At the end of each month, 60 fish sub-samples are measured to determine average total length and condition factor. Starting the month marking was completed and continuing until release, a quality check of AD-clips is performed on the sub-samples and fish are categorized as full-clip, partial-clip, or no-clip. The Brood Year 2005 marking included 100% AD, and 109,883 CWT which were completed June 2006. In addition, 52,000 PIT-tags were implanted February 5-7, 2007 by IDFG for CSS and 53,000 PIT-tags will be implanted starting February 19, 2007 by Biomark for USACE. *Ralph Steiner*

2.4.5.4. Juvenile fish health - Chinook salmon reared at this facility are being inspected by EFHL personnel on a quarterly basis for *Renibacterium salmoninarum*, viral replicating agents, parasites, and bacterial pathogens such as *Aeromonas* and *Flavobacterium psychrophilum*. Diagnostic services were provided upon request. The pre-liberation sample will consist of 20 randomly collected fish and examined for *R. salmoninarum*, *Myxobolus cerebralis*, and viral replicating agents. Goede's organosomatic index will also be performed on these fish. The preliberation sample will be performed within 45 days of release. Two pre-emptive feedings of erythromycin-medicated feed were applied to juveniles with a target dose of 100 mg/kg for 28 days. These fish received an application of oxytetracycline-medicated feed to control mortalities caused by *R. salmoninarum*. After

the first pre-emptive treatment, BY'05 spring Chinook salmon became lethargic and hypopigmented before dying. Histopathological samples confirmed erythromycin toxicity. Mortality exceeded 30,000 juvenile Chinook salmon. *Doug Munson*

2.4.5.5. Projected release - Fish will be released at the designated release sites (currently under review). As of February 7, 2007 IDFG has proposed that 0.4 million smolts will be transported to the Snake River by IPC tanker trucks and released at the boat ramp below Hells Canyon Dam. This release is planned for the week of March 12, 2007. Transport will take place in oxygenated Rapid River water at a density of 0.5 lbs/gallon. The remaining 2.6 million smolts will be released volitionally from Rapid River FH directly into Rapid River from March 12- April 27, 2007. *Ralph Steiner*

2.4.5.6. Excess production strategies - Current inventory precludes excess production. *Ralph Steiner*

2.4.5.7. Transportation - IPC tanker trucks will transport smolts for release at the USFS boat ramp below Hells Canyon Dam. Transport will take place in oxygenated Rapid River water at a loading density of 0.5 lbs/gallon. Additional releases at agreed to locations shall be transported under the same conditions should alternate sites be designated. *Ralph Steiner*

2.4.5.8. Communication - Release groups will be reported to the IDFG Fisheries Bureau via annual Marked Release Summary and Idaho Fish and Game Fish Release Database and to the IDFG Research Bureau via the Data Entry Form for Release Database. *Ralph Steiner*

2.4.6 Oxbow Fish Hatchery - NA

2.4.7 Eagle Fish Hatchery

Approximately 600 eyed eggs are needed to meet Adult Release production goals for the Eagle Hatchery Spring Chinook salmon captive rearing program. This number represents eyed-egg collection from two Salmon River drainages (300 eyed eggs from the East Fork Salmon River and 300 eyed eggs from the West Fork Yankee Fork). Adult release goals are to release a minimum of 20 pairs Chinook (age-3 through age-5) to each drainage annually.

2.4.7.1. Production status - BY2005 Chinook juveniles are currently in culture at Eagle FH. Smolts are scheduled to be transferred to NOAA Fisheries in May, 2007, and reared to maturation on saltwater. Approximately 606 smolts (302 EFSR and 304 WFYF) are scheduled for transfer. *Dan Baker/Carlin McAuley*

2.4.7.2. Projected release - Two year old precocial males will be returned to Eagle FH and released to natal streams with maturing adult Chinook salmon. Approximately 15% of the population will mature as two year old fish. Due to facility construction, mature Chinook salmon will be returned to Idaho in early July and released directly to natal streams. Projected release in 2007 will be 45 fish to the EFSR and 45 fish to WFYF. The remaining

BY2005 production groups will be released as mature adults in 2008, 2009 and 2010. *Dan Baker/Carlin McAuley*

2.4.7.3. Fish health - Due to the relatively low number of fish reared annually, pre-transfer fish sampling does not occur prior to transporting juveniles from Eagle FH to the NOAA Fisheries facility in Washington State. However, all fish that die in the program during the course of any rearing year are assayed for typical viral and bacterial pathogens. To date, spring Chinook salmon have remained relatively disease free for the freshwater portion of their rearing history (the Eagle FH component). Age-1 Chinook salmon are vaccinated prior to shipment to saltwater with intraperitoneal injections of Vibrogen (Aqua Health, Ltd., Charlottown, P.E.I., Canada) to prevent *Vibrio* spp. and Renogen (Aqua Health Ltd.) to prevent BKD. *Doug Munson/Mark Peterson*

2.4.7.4. Monitoring and evaluation - All BY2004 fish will be reared in isolated groups based on redd designation. After PIT tagging fish from different redds will be combined, but the stocks will remain separated. *Dmitri Vidergar/Paul Kline*

2.4.7.5. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Chinook Salmon Captive Propagation Technical Oversight Committee (CSCPTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Dmitri Vidergar/Carlin McAuley*

2.5 Broodyear 2006 Chinook Salmon

2.5.1 Sawtooth Fish Hatchery

The LSRCP has a mitigation goal to provide adult returns for lower river fisheries and return 19,445 adult Chinook above Lower Granite Dam annually. Approximately, 350 females and 350 males are needed for brood stock for the Sawtooth FH spring Chinook salmon program. This number includes jacks and accounts for pre-spawning mortality. This brood level will provide 1.5 million green eggs and 1.3 million smolts at an average of 88% eyed egg-to-smolt survival to meet the adult return goal. The original design for Sawtooth FH was for 2.4 million smolts including the East Fork Satellite release. Subsequent smolt numbers have been reduced to reflect the incidence of whirling disease found in the upper Salmon River Drainage, thus requiring the use of well water to early rear fry. This limited well water source reduced inside rearing to the current 1.3 million smolts. The East Fork production has been changed to a natural production program.

Brood Fish Health- Prespawning mortality was recorded at 51% due to *Ichthyophthirius multifiliis*, while ELISA samples detected *Renibacterium* in 5.8% (3/52) above 0.25. Eggs from females with optical densities above 0.25 (highest 0.34) were not culled and will be reared as a high BKD segregation group *Myxobolus cerebralis* was not detected. IHN was detected in 15 of 150 (10%) fish sampled. *Doug Munson*

2.5.1.1. Production status - As of February 2, 2007, there are approximately 178,624 fry ponded and started on feed in six indoor vats using well water. *Brent Snider*

2.5.1.2. Outside rearing - Final rearing takes place in one of fourteen outside raceways. These raceways are supplied with raw, river water. The target Density Index and flow index at Release are 0.15-0.20 and 1.0 – 1.6 respectively. At release the smolts are crowded into the connected raceway tailrace then crowded from the tailrace to the Salmon River via a buried 24 inch pipeline. BY06 spring Chinook will utilize two outside raceways. *Brent Snider*

2.5.1.3. Juvenile monitoring and evaluation - Standard protocol is to sample count at least monthly for growth monitoring during their rearing cycle, and approximately one week before release. Length frequencies and condition factors will be determined from a representative sample prior to release. A fin clip quality check and CWT retention check will be completed before release. IDFG research personnel will be PIT tagging (15,000) during September 2007, or March of 2008, and monitor PIT tag detection at dams. *Brian Leth*

2.5.1.4. Fish health - Chinook salmon reared at this facility will be inspected by EFHL personnel on a quarterly basis for *Renibacterium salmoninarum*, viral replicating agents, parasites, and bacterial pathogens such as *Aeromonas*, and *Flavobacterium psychrophilum*. The preliberation sample will consist of 20 randomly collected fish and examined for *R. salmoninarum*, *Myxobolus cerebralis*, and viral replicating agents. Goede's organosomatic index will also be performed on these fish. This sample will be taken within 45 days of release. Two pre-emptive feedings of erythromycin-medicated feed are planned for juveniles with a target dose of 100 mg/kg for 28 days. A third pre-emptive treatment will be applied to the high BKD segregation group. Diagnostic services will be provided upon request. *Doug Munson*

2.5.1.5. Projected release - BY2006 releases are planned for April 2008. Approximately 170,000 smolts will be released below the Sawtooth FH weir. *Brent Snider*

2.5.1.6. Excess production strategies - No projected excess. *Brent Snider*

2.5.1.7. Transportation - NA

2.5.1.8. Communication - Monthly hatchery narrative reports are available to all requesting to be included on the distribution list. Summary run report, Annual Operation and Maintenance report and final Brood Year report are available after completion and upon request. *Brent Snider*

2.5.2 McCall Fish Hatchery

Approximately, 1,300 SFSR summer Chinook are needed as broodstock for the McCall FH summer Chinook salmon program. This number includes jacks and accounts for pre-spawning mortality and egg culling for BKD concerns. This broodstock level will provide 1.8 million green eggs to support 300,000 eyed eggs for SBT in-stream incubator boxes and the ability to produce 1.0 million smolts at an average of 94% eyed egg-to-smolt survival to provide adult returns for lower river fisheries and meet the adult return goal of

8,000 above Lower Granite Dam. Additionally, the NPT rears up to 100,000 Johnson Creek Summer Chinook, to smolt, annually at the McCall FH.

Brood Fish Health- Prespawning mortality was recorded at 6%, while ELISA samples detected *Renibacterium* in 2% (9/452) above 0.25. *Myxobolus cerebralis* was not detected. IHNV was detected in 3 of 90 (3.3%) fish sampled. *Doug Munson*

2.5.2.1. Production status - As of January 23, 2007 there are 1,052,867 BY2006 summer Chinook alevin and fry being reared at McCall FH (200,080 in incubator trays and 852,787 setout in indoor early rearing vats). It is projected that all fry will be setout by early February 2007. These fry are the retained progeny from spawning 282 SFSR returning summer Chinook females.

A total of 434 SFSR summer Chinook females (414-reserve, 20-supplementation) were spawned at the SFSR trap August 15 – September 5, 2006. Supplementation males and females were deemed in excess of upstream release goals and were randomly reincorporated into the reserve brood stock. Eggs from 2 of these females were immediately discarded (one based on pathology carcass examination revealing gross clinical signs consistent with BKD and the other containing excessively bloody ovarian fluid). Eggs from the remaining 432 females produced a total 1,885,963 green eggs at an average fecundity of 4,365.7 eggs per female. Average eye-up was 86.88%. Each incubation tray was loaded with the eggs from two females. Fish health protocol required the initial culling of eggs from females who returned ELISA optical densities greater than 0.250. Elevated “BKD High” optical density was detected in 9 females, but due to incubation tray loading the eggs from 18 females, or 71,541 eyed eggs, were destroyed. *Gene McPherson/ Steve Kammeyer*

2.5.2.2. Rearing - Early: At swim-up summer Chinook fry will be transferred into 12 indoor vats with screens initially placed at ½ vat length. Approximately 87,700 fry will be reared in each vat. Hourly hand feeding during the day will commence when 80% of set out fry achieve swim-up. Flows will initial be set at 80 gpm then increased to 130 gpm (maximum) when fry are well on feed. Individual vats will be extended to full length when the density index reaches 0.50 to 0.55. Approximately ½ of the fry will be marked (hand ad-clipped) into an outdoor pond by mid-June (200 – 260 fpp). At this time remaining fry will be subdivided into emptied vats to provide space for continued rearing (42,700 to 57,700 in 11 vats). Remaining fry (100 – 150 fpp) will be marked (MATS Automated Trailer) into the second outdoor pond in mid-July with individual vat densities ranging from 0.33 to 0.45 (flow indices 0.82 – 1.10).

Final: Two outdoor rearing ponds will be utilized for rearing the reserve parr to smolt. Summer Chinook in the ponds will be hand fed a dry pellet diet with a low phosphorus formulation and fortified with an EIBS vitamin pack. Sample counts will be conducted monthly to monitor growth. *Gene McPherson/ Steve Kammeyer*

2.5.2.3. Juvenile monitoring and evaluation - All SFSR summer Chinook will be ad-clipped, approximately 250,000 will be coded-wire-tagged and approximately 52,000 will

receive a PIT tag. Marking crews will hand ad-clip approximately 520,300 by mid-June into Pond 1. MATS will be used to ad clip 270,200 and ad/cwt 250,000 early July into Pond 2. PIT tags will be inserted into approximately 52,000 presmolts from Pond 1 in February 2008. Approximately two weeks prior to release a sample of 300 summer Chinook (crowded with a seine to make selection more random) from each pond will be checked by McCall FH hatchery staff to provide a baseline for mark quality, release size and fish condition. *Gene McPherson/ Steve Kammeyer*

2.5.2.4. Fish health - Chinook salmon reared at this facility are being inspected by the EFHL on a quarterly basis for *Renibacterium salmoninarum*, viral replicating agents, parasites, and bacterial pathogens. Diagnostic services were provided upon request. The pre-liberation sample will consist of 20 randomly selected fish and examined for *Renibacterium*, viral replicating agents and whirling disease *M. cerebralis*. Goede's organosomatic index will be performed as a part of this preliberation examination. The preliberation examination will be performed between 30 and 45 days prior to release. Half of the juvenile salmon will receive one pre-emptive applications of erythromycin medicated feed at a target dose of 100 mg/kg/day for 28 days, while the other half will not receive any erythromycin medicated feed. *Doug Munson*

2.5.2.5. Projected release - Projected target for release in March 2008 is 1,010,000 smolts at 19-22 fpp. *Gene McPherson/ Steve Kammeyer*

2.5.2.6. Excess production strategies - To reduce inventory to a "full hatchery capacity," 168,252 eyed eggs were culled that had been spawned from 24 females with ELISA results of 0.165-0.249 and were paired with eggs from an additional 22 females due to tray loading. *Gene McPherson/ Steve Kammeyer*

2.5.2.7. Transportation strategies - NA *Gene McPherson/ Steve Kammeyer*

2.5.2.8. Communication - Hatchery staff will maintain communication with LSRCP coordinators, IDFG Fishery Bureau Staff, IDFG Fish Health Pathologists, IDFG Fish Marking Coordinators, and NPT Fishery Staff through rearing cycle as needed. In addition, monthly production narratives will be provided to representatives from each organization. *Gene McPherson/ Steve Kammeyer*

2.5.3 Johnson Creek

See JCAPE project goals in Section 2.4.3 above.

2.5.3.1. Production status - As of February 1, 2007 there were 87,368 BY06 supplementation summer Chinook being reared or in incubation trays at McCall FH.

A total of 27 Johnson Creek returning natural females were spawned at the SFSR trap between August 12 – September 5, 2006 producing a total of 97,675 green eggs (after culling) at an average fecundity of 3,907 eggs per female. Average eye-up was 90.3% resulting in 88,201 eyed eggs. Eggs from individual females were incubated separately (1 female/tray). Fish health protocols would require the culling of eggs from females who

returned ELISA optical densities greater than 0.25. Two of the 27 females spawned were culled. One female was culled during spawning because of clinical signs of BKD and one female returned ELISA optical densities above 0.25. *Contact John Gebhards, NPT.*

2.5.3.2. Outside rearing - Early rearing: At swim-up Chinook fry will be transferred into two indoor rearing vats with screens initially placed at ½ length. Fry are initially reared in two indoor rearing tanks. Hourly hand feeding during the day will commence when 80% of set out fry achieve swim-up. Flows will initially be set at 80 gpm then increased to 130 gpm (maximum) when fry are well on feed. Individual vats will be extended to full length when the density index reaches 0.30 to 0.35. Following June reserve SFSR salmon ad fin clip marking, the Johnson Creek fish will be divided into additional vats to reduce rearing densities. All of these fish will receive a CWT in mid-July (MATS) and be moved back into the indoor vats for continued rearing. As density indices approach 0.40 Chinook parr will be subdivided into additional vats.

Final rearing: Johnson Creek Chinook parr will be moved into the outdoor collection basin as they are VIE elastomer marked in November. Chinook will be hand fed a moist pellet diet with a low phosphorus formulation and fortified with an EIBS vitamin pack (2.5 mm and 3.0 mm feed size). Sample counts will be conducted monthly to monitor growth. *Contact John Gebhards, NPT.*

2.5.3.3. Juvenile monitoring and evaluation - All Johnson Creek Chinook will be CWT tagged and VIE elastomer marked and approximately 12,000 will receive a PIT tag. MATS marking trailers will be used to complete CWT tags in July by IDFG personnel. Fishery personnel from the NPT will be responsible for VIE elastomer and PIT tagging (12,000). A baseline mark quality assessment will be conducted by NPT fishery personnel as they PIT tag the presmolts. *John Gebhards/Craig Rabe, NPT.*

2.5.3.4. Fish health - These fish will be reared at McCall FH and will follow McCall FH fish health protocols. The Eagle Fish Health Laboratory will provide diagnostic and inspection services to these fish. The pre-liberation sample will consist of 20 randomly collected fish and examined for *Renibacterium salmoninarum*, parasites, and viral replicating agents. Goede's organosomatic index will also be performed on these fish. The pre-liberation sample will be performed within 45 days of release. One pre-emptive feeding of erythromycin-medicated feed were applied to juveniles with a target dose of 100 mg/kg. *Contact John Gebhards, NPT, Doug Munson, IDFG*

2.5.3.5. Projected release - Projected release target in March 2008 is 84,000 smolts at 26 - 28 fpp. These fish will most likely be directly released into Johnson Creek into the pool located below the Wapiti Ranch bridge. No attempts will be made to acclimate these fish at the time of release. *Contact John Gebhards, NPT.*

2.5.3.6. Excess production strategies - There no excess production associated with this broodyear. *Contact John Gebhards, NPT.*

2.5.3.7. Transportation - Johnson Creek summer chinook will be transported to release site by NPT fisheries personnel. The NPT will provide personnel and three or four 1-ton 4x4 trucks with 300 – 400 gallon tanks for transporting smolts to Johnson Creek near Wapiti Ranch for release. One scheduled release trip (3 to 4 trucks per trip) is planned for each day. Release of these smolts is tentatively scheduled for March 2008. *Contact John Gebhards, NPT.*

2.5.3.8. Communication - The JCAPE project is responsible for preparing annual brood year reports that are submitted to both NOAA Fisheries and BPA. These reports are not currently sent to the contact list (Section 5), but are available upon request or through BPA's website or from the JCAPE project staff. *Contact John Gebhards, NPT.*

2.5.4 Pahsimeroi Fish Hatchery

The mitigation goal for Pahsimeroi FH is to release up to 1,000,000 Summer Chinook smolts annually into the Pahsimeroi River. Approximately 300 pair of adult Summer Chinook are required to meet this mitigation when considering prespawning mortality and culling of disease positive adults.

Brood Fish Health- Prespawning mortality was recorded at 5%, while ELISA samples detected *Renibacterium* in 0.3% (1/286) above 0.25. *Myxobolus cerebralis* was detected in 1 of 20 (5%) fish sampled. IHN was detected in 8 of 60 (13.3%) fish sampled. *Doug Munson*

2.5.4.1. Production status - On January 1, 2007 there were 1,137,900 BY2006 Pahsimeroi FH origin eyed eggs/fry on station at Sawtooth FH. All will be transferred to Pahsimeroi FH in September 2007. *Todd Garlie/Brent Snider*

2.5.4.2. Outside rearing - All BY2006 Pahsimeroi origin pre-smolts will be transferred to Pahsimeroi's secondary rearing ponds in September 2007. *Todd Garlie/ Brent Snider.*

2.5.4.3. Juvenile monitoring and evaluation - We plan 100% AD clip and 50,000 CWT of BY2006 fish. Approximately 500 will be PIT tagged in February 2008. *Rodney Duke*

2.5.4.4. Juvenile fish health - Chinook salmon reared at this facility will be inspected by EFHL personnel on a quarterly basis for *Renibacterium salmoninarum*, viral replicating agents, parasites, and bacterial pathogens such as *Aeromonas*, and *Flavobacterium psychrophilum*. Diagnostic services will be provided upon request. The preliberation sample will consist of 20 randomly collected fish and examined for *R. salmoninarum*, *Myxobolus cerebralis*, and viral replicating agents. Goede's organosomatic index will also be performed on these fish. The preliberation sample will be performed within 45 days of release. Two pre-emptive feedings of erythromycin-medicated feed will be applied to juveniles with a target dose of 100 mg/kg for 28 days. It is anticipated that there will be a pre-emptive treatment for *Icthyophthirius multifiliis* as this has been observed in the previous rearing cycle. *Doug Munson*

2.5.4.5. Projected release - These fish will be released volitionally in late March or early April 2008, to match best smolt outmigration. The releases will be staggered to avoid overwhelming the smolt bypass structures in the Pahsimeroi River. The target size at fish release is approximately 15 fpp. *Todd Garlie*

2.5.4.6. Excess production strategies - None

2.5.4.7. Transportation strategies - None-Volitional Release. *Todd Garlie*

2.5.4.8. Communication - Pahsimeroi Hatchery provides monthly inventory summaries to an electronic distribution list which includes IDFG fisheries bureau personnel, LSRCP personnel, and IPC fisheries personnel. *Todd Garlie/Brent Snider*

2.5.5 Rapid River Fish Hatchery

Approximately, 2,500 Chinook are needed annually for brood stock for the Rapid River FH spring Chinook salmon program. This number includes jacks and accounts for pre-spawning mortality at the 20-year average as well as average female culling required by disease management constraints and average fecundity. This brood level will provide 3.4 million green eggs and 3.0 million smolts at an average of 88% eyed egg-to-smolt survival to meet the smolt release goals. Release sites and numbers have yet to be determined. That determination will depend upon agreement among the participants in US v Oregon.

Brood Fish Health- Prespawning mortality was recorded at 5%, while ELISA samples detected *Renibacterium* in 2.9% (38/1294) above 0.25. *Myxobolus cerebralis* was not detected. IHNV was not detected in 90 fish sampled. *Doug Munson*

2.5.5.1. Production status - As of February 1, 2007, 2.8 million BY2006 spring Chinook salmon sac fry were being incubated in vertical stack incubators. An additional 0.5 million fry have been ponded into outside raceways. The remaining fry will be ponded during February and March 2007. *Ralph Steiner*

2.5.5.2. Outside rearing - Outside rearing takes place in two stages. For initial rearing, fry are moved from vertical stack incubators to eleven outside raceways. Density and flow indices are projected to average 0.35 and 1.30, respectively in mid June when the fingerlings will be marked and moved to the final rearing ponds. Final rearing continues in the rearing ponds until release, which will begin in mid-March and extends to late April 2008. Final rearing density and flow indices are projected to average 0.19 and 2.17 respectively at the beginning of release. During release some smolts are collected using a seine and loaded onto transport trucks for release at the designated remote locations. The remaining fish will be volitionally released into Rapid River. *Ralph Steiner*

2.5.5.3. Juvenile monitoring and evaluation - Marking will be performed in June of 2007 and include 100% AD-clips and 100,000 CWT. During marking the fingerlings will be moved from raceways to rearing ponds. All rearing units will be sampled twice/month for weight. Samples are comprised of at least 300 fish/rearing unit. At the end of each month, 60 fish sub-samples are measured to determine average total length and condition factor.

Starting the month marking is completed and continuing until release, a quality check of AD-clips will be performed on the sub-samples and fish will be categorized as full-clip, partial-clip, or no-clip. In addition, about 50,000 PIT-tags will need to be implanted during the first week of February 2008 for CSS. *Ralph Steiner*

2.5.5.4. Juvenile fish health - Chinook salmon reared at this facility will be inspected by EFHL personnel on a quarterly basis for *Renibacterium salmoninarum*, viral replicating agents, parasites, and bacterial pathogens such as *Aeromonas*, and *Flavobacterium psychrophilum*. Diagnostic services will be provided upon request. The pre-liberation sample will consist of 20 randomly collected fish and examined for *R. salmoninarum*, *Myxobolus cerebralis*, and viral replicating agents. Goede's organosomatic index will also be performed on these fish. The preliberation sample will be performed within 45 days of release. Two pre-emptive feedings of erythromycin-medicated feed were applied to juveniles with a target dose of 100 mg/kg for 28 days. *Doug Munson*

2.5.5.5. Projected release - Release of Brood Year 2006 smolts is expected to be in March and April of 2008 at the designated release sites (currently under review). It is expected that smolts will be transported to the Snake River by IPC tanker trucks and released at the boat ramp below Hells Canyon Dam. In addition, IPC tankers may transport smolts to other agreed upon sites. *Ralph Steiner*

2.5.5.6. Excess production strategies - Excess production shall be released at agreed upon release sites. *Ralph Steiner*

2.5.5.7. Transportation strategies - Transport will take place in oxygenated Rapid River water at 0.5 lbs/gallon. The remaining smolts will be released volitionally from Rapid River FH directly into Rapid River from March to April 2008. *Ralph Steiner*

2.5.5.8. Communication - Monthly Production Summaries and a Monthly Narrative Report are submitted to the IDFG Anadromous Fish Hatchery Supervisor and IPC. Release groups will be reported to the IDFG Fisheries Bureau via annual Marked Release Summary and Idaho Fish and Game Fish Release Database and to the IDFG Research Bureau via the Data Entry Form for Release Database. *Ralph Steiner*

2.5.6 Oxbow Fish Hatchery - NA

2.5.7 Eagle Fish Hatchery

No BY2006 eyed-eggs were collected in 2006. No further collections are scheduled for this project.

2.5.8 Shoshone Bannock Tribes Egg Box Program

To maintain, rehabilitate, and enhance salmon population viability, the SBT initiated an in-stream incubation program in Dollar Creek, a tributary of the South Fork Salmon River. Eyed summer chinook eggs are placed into hatch-boxes in late fall, incubated in stream water, and allowed to volitionally emigrate at approximately the same time as fry in the natural system. This supplementation activity is designed to mimic natural production to

develop a naturally spawning tributary component of the SFSR in order to increase abundance, genetic diversity, and productivity of summer chinook salmon as well as increase knowledge of fishery management and hatchery supplementation.

2.5.8.1. Production status - SBT acquired a total of 334,550 eyed eggs on September 27, October 4, and October 5, 2006 from three incubated lots (4, 5, and 6) at McCall FH. Total eyed eggs were produced from spawning 86 SFSR summer chinook. Average fecundity for all 86 females was 4,357 eggs. Percent eye average of SBT take equaled 87.90%. There were a total of 7,197 eyed eggs culled from lot four. *Lytle Denny*

2.5.8.2. Outside rearing - Eyed eggs were transferred from McCall FH to Dollar Creek on the above dates. Lot four, five, and six were placed into three separate sites within Dollar Creek. Each lot was volumetrically measured (eggs/ml) at the McCall FH prior to transport. Total eggs were proportioned per box by dividing the average hatch box value by the average eggs/ml to determine milliliters of water displaced. A total of 22 boxes were put into Dollar Creek. Site one was composed of seven boxes with 14,421 eyed eggs/box and one box of 12,226. There were seven boxes with 14,900 eyed eggs/box and one box of 16,414 at site two. Four boxes with 16,680 eyed eggs/box and two boxes of 18,563 were used at site three. After separation, eyed eggs were acclimated for thirty minutes before being placed into hatch boxes containing plastic saddles acting as substrate. Each hatch box utilizes an 1/8 inch screen on the front and back to allow adequate flow and a 1/4 inch screen on top for volitional emigration. Rebar and tie-wire were used to secure hatch boxes to the stream bottom. Eggs in Dollar Creek are incubated on stream water and hatched to closely mimic natural production. *Lytle Denny*

2.5.8.3. Monitoring and evaluation – All paired adults spawners were fin-clipped (females) and operculum punched (males) to collect genetic tissue for future monitoring and evaluation activities, specifically DNA parentage analysis (Jones and Ardren 2003). In-stream incubators are monitored monthly at approximately the same time to maintain consistency. Excess debris and foreign material are removed from the front, back, and top screens to maintain consistent flow at each box. Data is collected for date, time, water temperature, dissolved oxygen, conductivity, pH, flow velocity, sediment accumulation, life stage, and additional comments. Box sixteen at site three also contains a temperature logger which records temperature every two hours. Numbers of dead eggs are enumerated after total volitional emigration. Future evaluations include pairing Dollar Creek with two control streams to compare fish densities and dispersal (treatment effect) through snorkeling and/or electroshocking. Adult evaluation through redd counts occur annually. *Lytle Denny & Kurt Tardy*

2.5.8.4. Juvenile fish health – Does not apply, these fish are reared on stream water in the natural environment.

2.5.8.5. Projected release – Assuming we achieve 80% hatch success, approximately 267,640 fry will be released in Dollar Creek during 2007. *Lytle Denny*

2.5.8.6. Excess production strategies - N/A

2.5.8.7. Transportation strategies - Eyed eggs were transferred from McCall FH to Dollar Creek in fifty and thirty gallon coolers filled with 48°C, untreated Payette Lake water.

Lytle Denny

2.5.8.8. Communication - McCall FH and SBT personnel coordinated to determine a schedule to spawn, obtain and transfer eyed eggs. Results and conclusions from the in-stream incubation project will be presented in an annual report.

Steve Kammeyer, Lytle Denny

2.6 Broodyear 2007 Chinook Salmon

2.6.1 Sawtooth Fish Hatchery

The LSRCP has a mitigation goal to provide adult returns for lower river fisheries and return 19,445 adult Chinook above Lower Granite Dam annually. Approximately, 350 females and 350 males are needed for brood stock for the Sawtooth FH spring Chinook salmon program. This number includes jacks and accounts for pre-spawning mortality. This brood level will provide 1.5 million green eggs and 1.3 million smolts at an average of 88% eyed egg-to-smolt survival to meet the adult return goal. The original design for Sawtooth FH was for 2.4 million smolts including the East Fork Satellite release. Subsequent smolt numbers have been reduced to reflect the incidence of whirling disease found in the upper Salmon River Drainage, thus requiring the use of well water to early rear fry. This limited well water source reduced inside rearing to the current 1.3 million smolts. The East Fork production has been changed to a natural production program.

2.6.1.1. Projected adult return - Not available at this time. *Brian Leth*

2.6.1.2. Ladder operation - Depending on spring runoff conditions, ladder and trap operations will begin between mid-May and mid-June and continue through Labor Day weekend of 2007. Trapped fish are removed daily, examined for marks, gender, injuries, treated with injectable erythromycin as necessary, and either placed into one of three adult holding ponds or released directly into the Salmon River above the hatchery, depending upon what mark or gender the fish may have. All unmarked and all supplementation fish are released above the hatchery intake after gender dimorphism is apparent. Brood fish are made up of marked hatchery fish. If run size permits then adult outplants may occur downstream of hatchery in Yankee Fork Salmon river. *Brent Snider*

2.6.1.3. Adult fish health - Brood fish trapped at this facility will be examined for pathogens during routine spawning. Upon arrival at the trap, adult Chinook salmon will be injected with a 20 mg/kg intra-peritoneal injection of erythromycin to control *Renibacterium*. To reduce prespawning mortality due to *Ichthyophthirius multifiliis*, adult holding water will be treated with 167 mg/l formalin 7 days per week. All brood females will be sampled for *Renibacterium salmoninarum* by ELISA technology. Eggs from females with optical densities of 0.25 and above will be culled from production, unless egg take needs are not met. If egg take needs are not met, then eggs from fish with optical densities between 0.25 and 0.4 will be kept for production, but reared in segregation. Sixty

Chinook salmon carcasses of fish that will be released above the Sawtooth FH weir to spawn naturally may be sampled for viral replicating agents to ascertain IHNV prevalence, estimate risk of horizontal infection to Sawtooth FH production fish, and to facilitate the decision process in regards to the timing of fish production events. Brood Chinook salmon will be examined for viral replicating agents (60 fish by ovarian fluid sample and 30 fish will have kidney/spleen sample taken for viral assay). A 20 fish sample will be required to monitor *Myxobolus cerebralis* prevalence. The APHIS veterinarian-in-charge will be notified if reportable pathogens are detected. Pre-spawning mortality of adult spring Chinook salmon will be categorized by suspected cause.

Egg inventory in December will be available to EFHL so as to make predictions for erythromycin medicated feed pre-mix needs. *Doug Munson*

2.6.1.4. Adult outplanting/marking - To be determined prior to trapping in 2007. Expect that all unmarked and all ISS marked Chinook will be released above the weir. Marking of released Chinook will follow ISS Research protocols. *David Venditti/Brent Snider*

2.6.1.5. Carcass disposition: - Carcasses will be placed into totes in the back of a refrigerated freezer trailer. At the end of the season these carcasses will be taken to a rendering plant. *Brent Snider*

2.6.1.6. Adult monitoring and evaluation - Adults will be treated with formalin at least three times a week or more depending on river water temperatures and fish health. Pre-spawning mortalities will be investigated to determine the cause of death with fish health samples being sent to the Eagle Fish Health Lab. *Brent Snider*

2.6.1.7. Spawning/egg take plans, mating protocol - Production target relative to broodyear, the total number of marked fish trapped in 2007. Approximately, 350 females and 350 males are needed for broodstock for the Sawtooth FH spring Chinook salmon program. Marked hatchery fish will be spawned with marked hatchery fish across brood years where possible using the following spawning protocol; > 100 pairs then 1m : 1f random cross, 50 to 100 pair then 2m : 1f split random cross, 25 to 50 pair then 3m : 1f split random cross and < 25 pair then 4m : 1f split random cross. The split random cross includes eggs from one female being split in equal groups of one, two, three to four then each group fertilized by one male. After fertilization the eggs are recombined into a single group for incubation and water hardening. If cryopreserved sperm is needed fill out request form (Appendix A) Assistance will be provided to NPT cryopreservation program. *Brent Snider/Bill Young*

2.6.1.8. Egg incubation - Eggs will be water hardened/disinfected with a 100 mg/l solution of buffered iodine. After eggs manifest a strong "eye" the eggs are sorted and enumerated mechanically. Normally one female's eggs are incubated in a single incubation tray. *Brent Snider*

2.6.1.9. Juvenile fish health - Chinook salmon reared at this facility will be inspected by EFHL personnel on a quarterly basis for *Renibacterium salmoninarum*, viral replicating agents, parasites, and bacterial pathogens such as *Aeromonas*, and *Flavobacterium*

psychrophilum. Diagnostic services will be provided upon request. The preliberation sample will consist of 20 randomly collected fish that will be examined for *R. salmoninarum*, *Myxobolus cerebralis*, and viral replicating agents. Goede's organosomatic index will also be performed on these fish. This sample will be taken within 45 days of release. Two pre-emptive feedings of erythromycin-medicated feed were applied to juveniles with a target dose of 100 mg/kg for 28 days. The APHIS veterinarian-in-charge will be notified if reportable pathogens are detected. *Doug Munson*

2.6.1.10. Communication - Final plans will be determined when fish run projection is clear. Discussion with ISS project leaders, IDFG, and LSRCP is ongoing. Planning coordination occurs with NPT for cryopreservation program. Monthly hatchery narrative reports are available to all requesting to be included on the distribution list. Summary run report, Annual Operation and Maintenance report and final Brood Year report are available after completion and upon request. Weekly adult trapping information is available on the IDFG website. *Brent Snider*

2.6.2 McCall Fish Hatchery

Approximately, 1,300 SFSR summer Chinook are needed as broodstock for the McCall FH summer Chinook salmon program. This number includes jacks and accounts for pre-spawning mortality and egg culling for BKD concerns. This broodstock level will provide 1.8 million green eggs to support 300,000 eyed eggs for SBT in-stream incubator boxes and the ability to produce 1.0 million smolts at an average of 94% eyed egg-to-smolt survival to provide adult returns for lower river fisheries and meet the adult return goal of 8,000 above Lower Granite Dam. The NPT rears up to 100,000 Johnson Creek Summer Chinook, to smolt, annually at the McCall FH.

2.6.2.1. Projected adult return - Specific return projections are unavailable at this time. However it is likely that adult returns will be similar to or slightly less than what was experienced in the 2006 run year. If this estimate holds true, returns should exceed hatchery broodstock needs and should provide a limited surplus of reserve salmon available for both sport and tribal harvest seasons. *Sam Sharr*

2.6.2.2. Ladder operation - A new permanent bridge/ weir, with a concrete sill across the river bottom, is currently being built at the SFSR trap site. This structure should be operational by the spring of 2007 for use during the 2007 summer Chinook trapping season. The new design will eliminate the need for a large crew to work in the river to assemble the temporary weir that was previously. Otherwise no changes to ladder/ trap standard operation procedures are anticipated during the 2007 return year. The SFSR weir will be installed after high water when river flows begin to subside. Historically this occurs during the third week in June and coincides to a staff gauge of 3.8-3.9 as measured at the F.S. USGS Krassel gauging station. The new bridge/ weir design should allow for an earlier placement and hatchery personnel will monitor flows physically at the SFSR and on-line to determine an appropriate point to lower weir panels.

Upstream migration of returning salmon will be stopped by the SFSR weir allowing for adult interception in the adjoining trap. All Chinook will be processed through the trap

where they will be identified by mark type, sexed, measured, scanned for PIT tags and any definable injuries will be noted. Unmarked and identified supplementation adults will be injected with erythromycin at a rate of 10 mg/kg and operculum punched prior to being passed upstream to spawn naturally. No jacks receive an erythromycin injection. Reserve salmon intended for brood stock will also be injected with erythromycin and then placed into the holding ponds separated by sex. Excess reserve Chinook not intended for use as brood stock will not be injected with erythromycin but will be operculum punched and placed into a subdivided section of the female holding pond until the time they are either loaded onto a truck for transport downstream near Roaring Creek (during fisheries) or are dispatched for subsistence purposes.

During periods of heavy fish movement access into the trap will be blocked by means of pickets inserted at the end of the ladder once approximately 400 fish have entered the trap to prevent potential smothering. Trapping operations will continue through the end of spawning to a point when no fish have been trapped for 1 week and then water will be shut off. Depending on previous trapping results the weir may be removed at this time or left in place for an additional period.

2.6.2.3. Adult fish health - Brood fish trapped at the South Fork Trap on the SFSR will be injected by an intra-peritoneal route with a 10 mg/kg dose of erythromycin to reduce pre-spawning mortality to *Renibacterium*. All brood females will be sampled for *Renibacterium salmoninarum* by ELISA technology. Eggs from females with optical densities of 0.25 and above will be culled from production. Ovarian fluids from 60 females and kidney/spleen tissues from 30 fish will be collected for viral replicating agents examination from 90 fish, while head wedges will be collected from 20 fish for *Myxobolus cerebralis* examination. The APHIS veterinarian-in-charge will be notified of any reportable pathogen. Prespawning mortality of adult summer Chinook salmon will be categorized by suspected cause. Egg inventory will be available in December to allow EFHL to predict erythromycin medicated feed pre-mix needs. *Doug Munson*

2.6.2.4. Adult outplanting/markings - Priority use of reserve Chinook, in excess of hatchery needs, is to provide additional harvest opportunity during sport and tribal seasons. An operculum punch will be used as an identifier to designate these fish and they will not be injected with erythromycin. Fish will be transported to a site near Roaring Creek for release. A portion of the "excess" reserve adults/ jacks may be designated and dispatched for subsistence uses then provided to Tribal and charitable organizations. These fish will not be injected with erythromycin. *Gene McPherson/ Steve Kammeyer*

2.6.2.5. Carcass disposition - Pre-spawn mortalities and spawned out carcasses will be returned to the SFSR for nutrient supplement at a specified location immediately downstream from the trap water intake. These fish will have been injected with erythromycin and are not approved for subsistence uses. Prior to disposal spawning tags will be removed and the tail will be completely severed from the body to identify these fish for those conducting spawning ground surveys. All female spawning carcasses exhibiting gross internal signs consistent for BKD, as determined by fish pathologists, will be frozen then disposed of in a public landfill. *Gene McPherson/ Steve Kammeyer*

2.6.2.6. Adult monitoring and evaluation - *Contact Nampa Research.*

2.6.2.7. Spawning/egg take plans, mating protocol - Split random cross will be method employed during spawning McCall FH production salmon and a 1:1 pairing for SBT egg box production. A minimum of 297 reserve females will be spawned for MCFH needs and 88 reserve females to provide eyed eggs for SBT in-stream incubators (1,000,000 McCall FH to smolt, 300,000 SBT to eye). Spawn taking activities will take place on Tuesdays and Fridays and may potentially begin at primary sort - August 10, 2007. Daily spawning activities are limited to a maximum of 120 females per day. A kidney sample, for ELISA BKD analysis, will be collected from all females spawned. Ovarian fluid and cranial wedges, number to be determined by fish pathologists, will be collected from a portion of the spawned females for viral testing and whirling disease. All eggs collected will be linked to tracking fish identification number to an individual egg tray that will correspond to disease samples collected. If cryopreserved sperm is needed fill out request form (Appendix A) Assistance will be provided to NPT cryopreservation program. *Bill Young Gene McPherson/ Steve Kammeyer*

2.6.2.8. Egg incubation - Hatchery production eggs and eggs spawned for SBT egg boxes will be returned to McCall FH for incubation in Heath style incubators trays. Reserve eggs will be loaded into trays as two females per tray. Formalin will be added to each incubation stack to retard fungus development daily at a rate of 1,667 ppm (10-min drip). Formalin treatments will be initiated 2 days following spawning and continue until immediately prior to hatch. A light "rodding" of trays to remove sediments will begin weekly once eggs accumulate 400 TU's. At 550-600 TU's eggs will be shocked then picked/ enumerated the following day. Following enumeration eyed eggs coming from females having ELISA optical densities greater than 0.250 will be discarded. Once all eggs have been enumerated additional eggs may be culled, based on ELISA results, to reduce inventory to achieve a "full capacity" hatchery level. A secondary "picks" will be performed following complete egg hatch (1,000 – 1,050 TU's). Fry will be transferred to indoor vats for early rearing at swim-up (1,750 – 1780 TU's). *Gene McPherson/ Steve Kammeyer*

2.6.2.9. Juvenile fish health - Chinook salmon reared at this facility will be inspected by EFHL personnel on a quarterly basis for *Renibacterium salmoninarum*, viral replicating agents, parasites, and bacterial pathogens such as *Aeromonas*, and *Flavobacterium psychrophilum*. Diagnostic services will be provided upon request. The preliberation sample will consist of 20 randomly collected fish and examined for *R. salmoninarum*, *Myxobolus cerebralis*, and viral replicating agents. Goede's organosomatic index will also be performed on these fish. The pre-liberation sample will be performed within 45 days of release. A field trial will continue with this brood year to investigate the differences of one pre-emptive erythromycin medicated feed treatment as opposed to zero pre-emptive applications of erythromycin medicated feed. Brood Year 2007 SFSR SU reared at MCFH will receive one medicated feed treatment in the spring of 2008 to be completed prior to fish marking. The APHIS veterinarian-in-charge will be notified of any reportable pathogen. *Doug Munson*

2.6.2.10. Communication - As eggs are enumerated McCall FH Manager will coordinate with SBT fishery personnel to determine a schedule to transfer eyed eggs. Spawning summaries will be included in the annual run report. *Gene McPherson/ Steve Kammeyer*

2.6.3 Johnson Creek

See JCAPE project goals in Section 2.4.3 above.

2.6.3.1. Projected adult return - The pre-season run prediction for Johnson Creek is estimated to be 159 adults (76 natural origin and 84 supplementation origin). This prediction was calculated by utilizing representative PIT tags (barged or bypassed in the same ratio as unmarked fish) across life stages and independent for each origin type in conjunction with the average Johnson Creek adult run timing at Bonneville and the average Johnson Creek adult survival from Bonneville to Johnson Creek (averages from 2000 to 2006 PIT tag data). The proportion of PIT tagged adults returning to Bonneville (by origin type and lifestage) was multiplied by the actual or estimated juvenile emigration number (by origin type and lifestage) and then multiplied by the average run timing and average survival proportions of adults returning to Johnson Creek. Based on past experience, an in-season prediction is far more reliable once adult PIT tag detections begin at the Columbia and Snake River Dams.

The JCAPE ESA Section 10 permit utilizes a sliding scale approach to determine the rate at which to select brood stock for the JCAPE supplementation program. When the natural origin adult prediction is less than 100 adults, the JCAPE project consults with NOAA Fisheries on what rate to select natural origin adults for brood stock. The 2007 pre-season natural origin adult prediction is 76 fish. Based on this value, the JCAPE project will be consulting with NOAA Fisheries on what selection rate to utilize for brood stock for 2007. A similar prediction occurred in 2005 and 2006 and the JCAPE project will likely make a similar recommendation for 2007.

For 2007, the JCAPE project will propose to collect 2 out of 3 natural origin adults that return to the weir. This would result in brood stock size of 50 in an effort to maintain a minimum effective population size (N_e) of 50. If actual natural origin adult numbers exceed our prediction we would be able to outplant excess collected adults back into the natural spawning habitat prior to the start of spawning. As the trapping season progresses, we would continue to evaluate the number of natural origin adults that have returned and make adjustments to the collection rate as needed to meet the minimum brood stock size of 50 fish. *Contact John Gebhards, NPT.*

2.6.3.2. Weir operation - The Johnson Creek weir will be installed when spring water flows subside to 700 cfs or below, in late May to mid June. Fish will be processed out of the trap daily. The weir will be removed when no fish have been captured for seven consecutive days, usually in mid September. *Contact John Gebhards, NPT.*

2.6.3.3. Adult fish health - All fish (excluding jacks) trapped on Johnson Creek will be injected via an intraperitoneal route with 20 mg/kg erythromycin prior to transport to the South Fork Trap on the South Fork of the Salmon River or release back into Johnson

Creek. During spawning, all brood females will be sampled for *Renibacterium salmoninarum* by ELISA technology. Eggs from females with optical densities of 0.25 and above will be culled from production. Brood fish will also be examined for viral replicating agents and *Myxobolus cerebralis*. Eggs from parents with serious pathogens will be culled. The APHIS veterinarian-in-charge will be notified of any reportable pathogens. *Contact John Gebhards, NPT, Doug Munson, IDFG.*

2.6.3.4. Adult outplanting/marking - Adult chinook captured at Johnson Creek will either be: 1) released upstream for natural spawning; 2) selected as broodstock and transported to the SFSR (natural fish only); 3) released downstream if captured in the downstream trap; or 4) euthanized and placed into Johnson Creek for nutrient enhancement (stray AD fin clipped fish only). All fish released above the weir will be opercle tagged. Broodstock transported to the SFSR will both be opercle and floy tagged. *Contact John Gebhards, NPT.*

2.6.3.5. Carcass disposition - All trap/weir, prespawning mortalities and spawned out carcasses will be transported back to Johnson Creek by NPT fishery personnel for nutrient supplement. *Contact John Gebhards, NPT.*

2.6.3.6. Adult monitoring and evaluation - The JCAPE project is integrated with a comprehensive M&E program that follows a detailed M&E Plan (Vogel et al. 2005). The monitoring and evaluation program quantifies 41 regionally standardized performance measures to evaluate the supplementation program. These standard performance measures help inform decisions on Abundance, Survival-Productivity, Distribution, Genetic, Life History, and Habitat. The evaluation plan utilizes comparative performance tests at multiple life stages and involves treatment vs natural experients and repeated meure desings (treatment vs reference). This program, initiated prior to the first releases of supplemented fish, has been collecting baseline life-history characteristic information, to examine survival of the wild fish in Johnson Creek and any potential effects that the supplementation program may have on the natural population. *Contact John Gebhards/Craig Rabe, NPT.*

2.6.3.7. Spawning/egg take plans, mating protocol - A maximum of 40 natural origin Johnson Creek adult pairs (including jacks) may be taken for broodstock and transported to the South Fork Trap for holding. Broodstock will be marked with a numbered tyvek opercle tag and a numbered floy tag to ensure identification from SFSR broodstock. Johnson Creek broodstock are spawned on the same days as the SFSR broodstock. Spawn pairing will be one male to one female. An additional male may be used when sperm quantity or quality is questionable. Eggs from 32 females allow for high BKD culling and to maintain smolt production near 100,000.

The JCAPE project has cryopreserved semen available for use in spawning (fill out Appendix A) The use of these samples would follow the guidelines established by the NPT Cryopreservation project and with approval from NOAA Fisheries. *John Gebhards, NPT.*

2.6.3.8. Egg incubation - Johnson Creek origin eggs will be transported in individual egg bags to the McCall FH for incubation in Heath style incubators trays. Eggs will be loaded into trays at one female per tray. Incubation procedures are the same as those used for SFSR production eggs. *Contact John Gebhards, NPT.*

2.6.3.9. Juvenile fish health - These fish will be reared at McCall FH and will follow McCall FH fish health protocols. The Eagle Fish Health Laboratory will provide diagnostic and inspection services to these fish. The pre-liberation sample will consist of 20 randomly collected fish and examined for *Renibacterium salmoninarum*, parasites, and viral replicating agents. Goede's organosomatic index will also be performed on these fish. The pre-liberation sample will be performed within 45 days of release. One pre-emptive feedings of erythromycin-medicated feed were applied to juveniles with a target dose of 100 mg/kg. *Contact John Gebhards, NPT, Doug Munson, IDFG.*

2.6.3.10. Communication - The JCAPE project will provide weekly updates during the adult trapping and spawning season. These updates will be distributed via e-mail. The JCAPE project is responsible for preparing annual brood year reports that are submitted to both NOAA Fisheries and BPA. These reports are not currently sent to the contact list (Section 5), but are available upon request or through BPA's website or from the JCAPE project staff.

The JCAPE project is required to prepare and submit as a condition of ESA Section 10 permitting an Annual Operation Plan (AOP) for the JCAPE project to NOAA Fisheries. Once the AOP is approved by NOAA Fisheries, it will be available for upon request. *Contact John Gebhards, NPT.*

2.6.4 Pahsimeroi Fish Hatchery

The mitigation goal for Pahsimeroi FH is to release up to 1,000,000 Summer Chinook smolts annually into the Pahsimeroi River. Approximately 300 pair of adult Summer Chinook is required to meet this mitigation when considering prespawning mortality and culling of disease positive adults.

2.6.4.1. Projected adult return - Not developed/disseminated to hatchery personnel at this time, but assumed to be lower than 2005/2006..

2.6.4.2. Ladder operation - Projected to operate from June 10, 2007 through October 5, 2007. The trap will be checked most weekdays and usually will not be checked on weekends. Additionally, the ladder can be shut off during heavy weekend fish periods to avoid overloading the adult fish trap. *Todd Garlie*

2.6.4.3. Adult fish health - Poned salmon will be treated with 60 minute 167 ppm flow-through formalin treatments to control mycotic infections. These treatments will be administered 3 times per week beginning July 1, 2006 and ending September 15, 2006. Each fish that is to be ponded for production or released for natural spawning is to receive an intra-peritoneal injection of erythromycin at a rate of 20 mg/kg body weight for BKD management. Surplus fish killed for charitable/tribal giveaway are not injected.

Adult summer Chinook salmon will be trapped at this facility and injected with 20 mg/kg of erythromycin via an intra-peritoneal route. All brood females will be sampled for *Renibacterium salmoninarum* by ELISA technology. Eggs from females with optical densities of 0.25 and above will be culled from production. Sixty ovarian fluids samples and 30 tissue samples (kidney/spleen) will be collected from 90 females and examined for viral replicating agents. Twenty head wedges will be removed from returning adult salmon to ascertain *Myxobolus cerebralis* prevalence. The APHIS veterinarian-in-charge will be notified of any reportable pathogens detected in brood fish sampling. Pre-spawning mortality of adult summer Chinook salmon will be categorized by suspected cause. *Doug Munson*

2.6.4.4. Adult outplanting/marking – The current outplant sites for surplus summer steelhead from Pahsimeroi Fish Hatchery are Blue Mountain Meadows Pond (Challis), Kid’s Creek Pond (Salmon), and Salmon River (Watts Bridge), but assumed that all natural origin Chinook will be released above the weir for natural spawning and that ISS returning Chinook will be released in approximately equal numbers to supplement the natural origin adult spawning. *Todd Garlie/Nampa Research*

2.6.4.5. Carcass disposition - All fish held for spawning are treated with formalin and erythromycin, so all spawned carcasses are placed in a refrigerated unit and frozen. At the conclusion of the spawning season, the frozen carcasses are transported to a rendering plant. Adults and jacks in excess of spawning needs and not suitable for supplementation use will be given to tribes/charities as per direction by the IDFG’s fisheries bureau. *Todd Garlie*

2.6.4.6. Adult monitoring and evaluation - Plan not developed. *Contact?*

2.6.4.7. Spawning/egg take plans, mating protocol - The first sort and spawn should occur August 22. Spawning will occur twice per week, usually on Monday and Thursday. A spawning ratio of 1:1 will be used. Jacks will be limited to 10% of the spawning population. The spawning goal at this time is to collect approximately 1,283,000 green eggs to yield the FERC mitigation target of 1,000,000 smolts for subsequent release. If cryopreserved sperm is needed fill out request form (Appendix A) Assistance will be provided to NPT cryopreservation program. *Bill Young*
Contact?

2.6.4.8. Egg incubation - All eggs are incubated to eye-up at Pahsimeroi FH. The incubator trays were loaded at the rate of one female per tray. From 48 hours after spawning until eye-up, eggs at Pahsimeroi FH were treated three times a week with a 1,667-ppm formalin treatment to prevent fungal growth on the eggs, and three times a week with a 100-ppm argentyne treatment to prevent soft shell disease, a disease caused by a bacteria that results in increased egg mortality and pre-mature hatching. At eye up (approximately 450 temperature units [TU]), the eggs are shocked twice by dropping them into a bucket of water from a height of approximately 16 inches.

Dead eggs are picked and enumerated with a Jentsorter electronic counter/picker. Once the eggs reached the eyed stage, they were placed in coolers of water and transported to SFH for final incubation and early rearing. *Contact?*

2.6.4.9. Juvenile fish health - Chinook salmon reared at this facility will be inspected by EFHL on a quarterly basis for *Renibacterium salmoninarum*, viral replicating agents, parasites, and bacterial pathogens such as *Aeromonas*, and *Flavobacterium psychrophilum*. Diagnostic services will be provided upon request. Due to the perennial infestation of *Ichthyophthirius multifiliis*, which kills thousands of fish per year, prophylactic treatments of formalin, at a 167 mg/l will be applied three times per week to limit mortalities to this parasite during July and August. The pre-liberation sample will consist of 20 randomly collected fish and examined for *Renibacterium salmoninarum*, *Myxobolus cerebralis*, and viral replicating agents. Goede's organosomatic index will also be performed on these fish. The preliberation sample will be performed within 45 days of release. Two pre-emptive feedings of erythromycin-medicated feed were applied to juveniles with a target dose of 100 mg/kg. Egg inventory numbers will be available to EFHL in December to facilitate erythromycin medicated feed pre-mix needs. *Doug Munson*

2.6.4.10. Communication - Pahsimeroi FH distributes trapping and spawning updates three times per week during the Chinook run. These data summaries are provided electronically to a distribution list. This data can also be utilized in the development of a fishery.

2.6.5 Rapid River Fish Hatchery

Approximately, 2,500 Chinook are needed annually for brood stock for the Rapid River FH spring Chinook salmon program. This number includes jacks and accounts for pre-spawning mortality at the 20-year average as well as average female culling required by disease management constraints and average fecundity. This brood level will provide 3.4 million green eggs and 3.0 million smolts at an average of 88% eyed egg-to-smolt survival to meet the smolt release goals. Release sites and numbers have yet to be determined. That determination will depend upon agreement among the participants in US v Oregon.

2.6.5.1. Projected adult return - Adult return projections are currently under review. At this time, we expect surplus fish to be available to anglers in 2007. The number of returns to Rapid River FH will depend on harvest by sport and tribal fisheries. The sport fishery will be managed to harvest the state's share of the surplus adipose clipped adult spring Chinook returning to Rapid River FH. Real time predictions will be used to adjust the share. *Ralph Steiner*

2.6.5.2. Ladder operation - The Rapid River FH management practices related to broodstock collection for BY2007 will be based on projected numbers of returning salmon. The trapping phase will be modified to accommodate projected returns as projections are refined during migration. The adult trapping facility will be put into operation March 12, 2007. Spring Chinook are expected to arrive at the trap in May. Marked hatchery fish will be anesthetized, counted, injected with Gallimycin, and transported to the hatchery holding ponds for broodstock. Arriving spring Chinook salmon will not be sexed because dimorphism is not expressed when they arrive at the trap. All marked spring Chinook

salmon will be held for broodstock to fill Rapid River FH mitigation needs and to supply eggs to other projects. Broodstock will include a cross-section of the run. Trapping will continue through the first week of September. When trapping ceases, the adult trap will be reconfigured to allow migration around the weir. During trapping extreme conditions may occur, and the trap may be closed until trapping can resume. *Ralph Steiner.*

2.6.5.3. Adult fish health - Adult spring Chinook salmon were trapped at this facility. Upon arrival into the trap, all adult salmon received a 20 mg/kg intra-peritoneal injection of erythromycin to limit pre-spawning mortality to *Renibacterium*. All brood females were sampled for *R. salmoninarum* by ELISA technology. Eggs from females with optical densities of 0.25 and above were culled from production. The final culling ELISA optical density will be 0.25. A total of 90 fish will be sampled by a combination of 30 tissue samples (kidney/spleen) and 60 ovarian fluid samples for viral replicating agents. Eggs were water hardened/disinfected with a 100 mg/l solution of iodine. The APHIS veterinarian-in-charge was notified of any reportable pathogens detected in adult or production fish sampling. Pre-spawning mortality of adult spring Chinook salmon were categorized by suspected cause. Formalin treatments were started two weeks earlier than normal. Formalin treatments were applied at 167 mg/l for seven days a week. Egg inventory numbers will be available to EFHL to facilitate erythromycin medicated feed pre-mix orders. *Doug Munson*

2.6.5.4. Adult outplanting/marking - If broodstock needs are exceeded, fish may be removed from holding and released for supplementation. They will not be released into active fisheries. As the run progresses, the number of fish entering the trap may far exceed hatchery broodstock requirements. At that time, some hatchery fish may be transported back into the Salmon River or Little Salmon River to re-enter the fisheries, or be transported to other drainages to provide fishing opportunity or supplementation. These hatchery fish will be loaded directly from the fish trap and will not be anesthetized or injected. The decision to release hatchery fish will be made based on the number of rack returns, run size as projected by IDFG, and on the overall condition of fish trapped earlier in the run.

Ancillary species will enter the fish trap. All steelhead entering the trap will be sexed, measured, and given a right operculum punch to identify recaptures. Wild steelhead will be sampled for DNA and scales, and released into Rapid River above the weir. Hatchery steelhead will be released into the Little Salmon River about a mile above the confluence of Rapid River. Bull trout entering the trap will be measured and processed based on protocol supplied by the United States Forest Service (USFS) Rocky Mountain Research Center. Unmarked Chinook will be anesthetized counted, sexed, injected, measured, given a right operculum punch, sampled for DNA, and released above the weir. *Ralph Steiner*

2.6.5.5. Carcass disposition - The carcasses will be frozen until the end of the spawning season and then hauled to a rendering plant. *Ralph Steiner*

2.6.5.6. Adult monitoring and evaluation - The entire run will be electronically scanned for PIT-tags and scrutinized for jaw-tags, visual identification (VI) tags, radio transmitters, and

fin clips. As fish are removed from the holding ponds broodstock will be scanned PIT-tags and CWT. Snouts with a CWT will be collected, placed in a numbered plastic bag, and delivered to the marking lab after spawning. Samples will be collected from 200 individuals from the hatchery broodstock for DNA analysis. Additional samples will be taken from 30 individuals from the hatchery broodstock containing PIT-tags for know-age analysis. *Ralph Steiner*

2.6.5.7. Spawning/egg take plans, mating protocol - August 13, 2007 all adults will be collected, and sorted by sex. All ripe females will be spawned each spawn-day. Spawning will take place twice each week for each holding pond and continue through mid-September. We will employ a random cross of two males/female as recommended in IHOT guidelines. All cloudy eggs or eggs from females exhibiting gross signs of BKD will be discarded after consultation with staff from the EFHL on-site. After fertilization, the eggs will be transported to the incubation building for water hardening. Spawned female carcasses will be marked with a numbered tag, matched with an egg bucket number, and a tray number to facilitate tracking for ELISA BKD analysis. Carcasses will be measured, scanned for PIT-tags and CWT. *Ralph Steiner* If cryopreserved sperm is needed fill out request form (Appendix A) Assistance will be provided to NPT cryopreservation program. *Bill Young*

2.6.5.8. Egg incubation - Single female/tray incubation will be the standard however it may be necessary to load two females/tray and/or transfer green eggs to Oxbow FH for initial incubation to achieve a goal of 3.4 million eyed eggs. Eggs will be water hardened in iodophore for 30 minutes and placed in numbered trays facilitate tracking ELISA results. Upon receiving ELISA results, eggs will be segregated or culled based on titers >0.249 . Hatchery personnel will be in regular communication with staff from the EFHL for guidance on culling and segregation. Beginning on the fourth day of incubation, all egg lots will be treated with formalin three times each week at 1,667 ppm for 15 minutes. This will continue until each egg lot accumulates 800 TU. At eye-up (approximately 500 TU), all egg lots will be shocked and picked using a Jensorter™ model BM-4 picker/counter then returned to the cleaned incubators. A second pick will be performed at 750 TU. Hatching occurs about 800 TU. At 1,000 TU, all egg lots undergo another pick off to remove any remaining dead eggs or fry and eggshells. At 1,500 TU fry undergo a fourth pick off and swim-up fry are ponded at 1,750 TU. When the eggs have accumulated 300 TU incubator trays will be rodded weekly or more often if necessary throughout the incubation period to remove silt. *Ralph Steiner*

2.6.5.9. Fish health - Chinook salmon reared at this facility will be inspected by EFHL personnel on a quarterly basis for *Renibacterium salmoninarum*, viral replicating agents, parasites, and bacterial pathogens such as *Aeromonas*, and *Flavobacterium psychrophilum*. Diagnostic services will be provided upon request. The pre-liberation sample will consist of 20 randomly collected fish and examined for *Renibacterium salmoninarum*, *Myxobolus cerebralis*, and viral replicating agents. Goede's organosomatic index will also be performed on these fish. The pre-liberation sample will be performed within 45 days of release. Two pre-emptive feedings of erythromycin-medicated feed will be applied to juveniles with a target dose of 100 mg/kg. *Doug Munson*

2.6.5.10. Communication - Trap records will be updated on site and uploaded to the IDFG Fisheries Bureau daily and to IPC weekly. The Fisheries Release Database will be updated and uploaded at least weekly. Pit-tag files will be uploaded to PTAGIS as the run progresses. As incubation and rearing progresses, Monthly Production Summaries and a Monthly Narrative Report are submitted to the IDFG Anadromous Fish Hatchery Supervisor and IPC. Release groups will be reported to the IDFG Fisheries Bureau via annual Marked Release Summary and Idaho Fish and Game Fish Release Database and to the IDFG Research Bureau via the Data Entry Form for Release Database. *Ralph Steiner*

2.6.6 Oxbow Fish Hatchery

Adult Hatchery spring Chinook returning from Rapid River FH releases to Hells Canyon will be trapped at the Hells Canyon Fish Trap and transferred to Rapid River FH to provide broodstock necessary to achieve mitigation goals for Rapid River FH, and to provide information for analysis of run composition.

2.6.6.1. Projected adult return - Approximately, 2,500 spring Chinook are needed for broodstock for the Rapid River FH spring Chinook salmon program. Some of these fish will be trapped at the Hells Canyon Trap facility and transferred to Rapid River FH. *Kent Hills/ Ralph Steiner*

2.6.6.2. Ladder operation - The Hells Canyon Trap will operate three days/week Monday – Wednesday. Trapping for spring Chinook salmon will begin in May and proceed to into July 2007 depending on returns to Rapid River FH. The trap is operated by IPC and fish are transported to Oxbow FH for holding or distribution. Spring Chinook salmon to be held for spawning will be held at Oxbow FH for transport to Rapid River FH weekly or more often depending on water temperatures. Fish to be transported to Rapid River FH will be loaded into a 1,000-gallon tanker and transported by IPC personnel. *Kent Hills/ Ralph Steiner*

2.6.6.3. Adult fish health - Adult spring Chinook salmon to be held for broodstock will receive an intra-peritoneal injection of erythromycin at a dose of 20 mg/kg to limit pre-spawning mortality due to BKD. Once transported to Rapid River Hatchery, these fish will receive the same culture and fish health protection as Chinook returning to this facility. *Doug Munson*

2.6.6.4. Adult out planting/markings - Depending on the number of returning adults additional marked adult hatchery spring Chinook may be trapped and shared between Idaho, Oregon, and the Nez Perce Tribe. Fish released into active fisheries will receive a right operculum punch. Dispersed fish will not be anesthetized or treated with antibiotics. Unmarked Chinook salmon will be counted, sexed, measured, given a right operculum punch to identify recaptures, and released below Hells Canyon Dam. They will not be anesthetized or treated with antibiotics. *Kent Hills/ Ralph Steiner*

2.6.6.5. Carcass disposition - Carcasses will be placed into a garbage dumpster and picked up weekly by the local sanitation company. They will be transported to the Halfway transfer station and eventually to an approved DEQ landfill. *Kent Hills*

2.6.6.6. Adult monitoring and evaluation - All fish entering the trap will be electronically scanned for passive induced transponder (PIT) tags and scrutinized for jaw-tags, visual identification (VI) tags, radio transmitters, and fin clips. Each fish will receive a right operculum punch to identify Snake River returns. After being added to Rapid River FH broodstock, monitoring will be consistent with practices at Rapid River FH. *Kent Hills/Ralph Steiner*

2.6.6.7. Spawning/egg take plans, mating protocol - See Rapid River FH. *Kent Hills/Ralph Steiner*

2.6.6.8. Egg incubation - It may be necessary to transport green eggs from Rapid River FH to Oxbow FH for incubation. Eggs for transport will be placed in egg tubes and water hardened in coolers filled with 100-ppm iodophore of one hour. After one hour, iodophore will be displaced from the coolers with well water. About one gallon of ice will be added, and the coolers sealed for transport. When the green eggs arrive at Oxbow FH they will be disinfected in iodophore then placed in vertical incubation stacks at a rate of one female/tray. Green eggs will be incubated to eye-up, enumerated, picked, and returned to Rapid River FH. When they arrive at Rapid River FH they will be disinfected in iodophore and placed in vertical stack incubators. The EFHL will notify Oxbow FH with the results ELISA BKD analysis and culling will take place at Oxbow FH. *Kent Hills/Ralph Steiner*

2.6.6.9. Fish Health – Juvenile spring Chinook salmon are not reared at Oxbow Hatchery. Juveniles will be reared at Rapid River Hatchery and will receive the same fish health services as the Rapid River spring Chinook salmon. *Doug Munson*

2.6.6.10. Communication - Trapping information will be uploaded to the IDFG daily and release data will be uploaded at least weekly. Trap date will be sent to IPC weekly. *Kent Hills/Ralph Steiner*

2.6.7 Eagle Fish Hatchery

Eagle FH currently has no plans to collect eyed-eggs from the WFYF or the EFSR and will not spawn maturing adults in 2007.

2.5.7.1. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Chinook Salmon Captive Propagation Technical Oversight Committee (CSCPTOC) meets bi-monthly providing program updates to participating agencies. *Contact?*

2.6.8 Shoshone Bannock Tribes Egg Box Program

To maintain, rehabilitate, and enhance salmon population viability, the SBT initiated an in-stream incubation program in Dollar Creek, a tributary of the South Fork Salmon River. Eyed summer chinook eggs are placed into hatch-boxes in late fall, incubated in stream

water, and allowed to volitionally emigrate at approximately the same time as fry in the natural system. This supplementation activity is designed to mimic natural production to develop a naturally spawning tributary component of the SFSR in order to increase abundance, genetic diversity, and productivity of summer chinook salmon as well as increase knowledge of fishery management and hatchery supplementation.

2.6.8.1. Projected adult return – The current information on this project does not allow us to make accurate adult projections. *Lytle Denny*

2.6.8.2. Ladder operation – Same procedures and guidelines for McCall FH 2.6.2.2.

2.6.8.3. Adult fish health – Same procedures and guidelines for McCall FH 2.6.2.3.

2.6.8.4. Adult outplanting/marking – N/A

2.6.8.5. Carcass disposition – Same procedures and guidelines for McCall FH 2.6.2.5.

2.6.8.6. Monitoring and evaluation – All paired spawners will be fin-clipped (females) and operculum punched (males) to collect genetic tissue for future monitoring and evaluation activities as described by Jones and Ardren (2003). In-stream incubators will be visually checked monthly and data collected for cleanliness, water temperature, dissolved oxygen, conductivity, pH, flow velocity, sediment accumulation, and life stage for each box location. Future evaluations include pairing Dollar Creek with two control streams to compare fish densities and dispersal (treatment effect) through snorkeling and/or electroshocking. Adult evaluation through redd counts occur annually. *Lytle Denny & Kurt Tardy*

2.6.8.7. Spawning/egg take plans, mating protocol – Approximately 88 reserve and/or supplementation females, including potential for BKD culling, will be spawned and incubated at the McCall FH to produce 300,000 eyed eggs for the SBT in-stream incubation project in Dollar Creek. The in-stream program adheres to 1:1 spawning protocol. *Gene McPherson & Lytle Denny*

2.6.8.8. Egg incubation – Same procedures and guidelines for McCall FH 2.6.2.8. Once placed into in-stream hatch boxes, incubation will occur on stream water in the natural environment. *Lytle Denny*

2.6.8.9. Juvenile fish health - Health is estimated from visual observation only.

2.6.8.10. Communication - McCall FH and SBT personnel will coordinate to determine a schedule to spawn, obtain and transfer eyed eggs. Results and conclusions from the in-stream incubation project will be presented in an annual report. *Steve Kammeyer & Lytle Denny*

3. Rainbow Trout

3.1 Broodyear 2005-06 Rainbow Trout

3.1.1 Salmon River

Tucannon FH receives 70,000 Kamloops stock eyed eggs (triploid) from Hayspur FH in January. Fish are reared at Tucannon FH until transfer (approximately 52,000 fry at 75 fpp) to Lyons Ferry FH for marking (AD/LV or AD/RV – alternating yearly) and final rearing in July. Approximately 50,000 fish will be transferred to the IDFG in October (15 fpp) for release in the lower Clearwater (25,000) and lower Salmon (25,000) rivers. *Steve Rodgers/Bill Horton*

Lyons Ferry FH receives 180,000 Spokane stock eggs from the Spokane FH in December. Eggs are placed in hatching baskets, fry emerge into intermediate rearing tanks, and are transferred to outside raceways in March (~200 fpp). Fish are reared until transfer to the IDFG (160,000 at 60-80 fpp) in May and planted in inland lakes and ponds. *Steve Rodgers/Bill Horton*

Sawtooth FH: Nampa FH supplied Sawtooth FH with Trout Lodge triploid rainbow for stocking. A total of 50,125 fish were received at Sawtooth FH on four shipping days from May 24 until July 24. Based on 24 sample counts and 73 fish plants, Sawtooth FH personnel stocked a total of 50,749 fish in lakes and streams in the area. Nampa FH stocked Stanley, Pettit, Perkins and Alturas lakes in 2006. *Brent Snider*

National Marine Fisheries Service (NMFS) permit #1188 which expired on December 31, 2005, outlines resident rainbow trout releases in anadromous waters in the Salmon River drainage. Permit #1188 dictates hatchery reared rainbow trout to be released in rivers, streams, and lakes with ESA listed fish should have an average size not greater than 250mm and no individual exceeding 300mm in total length. The 250 mm size restriction would include fish planted in the Salmon River, Valley Creek, and Yankee Fork Dredge Ponds. The permit also dictates fish in the upper Salmon River cannot be stocked until after June 15 and be adipose fin clipped. Only fish with the adipose fin clip may be kept, thereby protecting wild rainbow trout. All rainbow trout received at Sawtooth FH in 2006 were adipose clipped by personnel at Nampa FH and then delivered to Sawtooth FH more than 21 days later to allow for withdrawal of MS-222 to comply with label directions. *Brent Snider*

4. Sockeye Salmon

4.1 Broodyear 2002 Sockeye Salmon

4.1.1 Eagle Fish Hatchery /Burley Creek Fish Hatchery

Note: the following information combines Eagle FH and Burley Creek FH (NOAA Fisheries) together. Approximately 400 – 500 eyed-eggs are needed to meet and maintain genetic diversity for broodstock replacement goals for the Eagle Hatchery Sockeye salmon captive broodstock program. A replicate group of eyed-eggs is transferred to Burley Creek FH (NOAA Fisheries Manchester Marine Lab in Washington State) as a spread the risk strategy. Spawn crosses made from each broodyear will also meet production goals in the Salmon River Basin. Production goals may be adjusted annually based on recommendations provided by the Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) to agency policy staff. Current production goals for the Salmon River Basin are: 50,000 eyed-eggs to Pettit Lake released in November/December; 120,000 pre-smolts released in October (85,000 Redfish Lake, 15,000 Pettit Lake and 20,000 Alturas Lake); and 300 captive reared adults released in September. Note: Production rearing (pre-smolts and smolts) is included in Sawtooth FH and Oxbow FH summaries.

4.1.1.1. Production status - Currently two BY2002 sockeye are in culture between the two facilities. This number includes zero sockeye in the captive broodstock program and two sockeye in the adult release production group. *Carlin McAuley/Dan Baker*

4.1.1.2. Projected release - NOAA Fisheries currently has two sockeye in production for adult releases into Redfish Lake. All remaining age-5 sockeye typically mature, two BY2002 are scheduled for release in September. *Dan Baker/Carlin McAuley*

4.1.1.3. Fish health - Due to the relatively low number of fish reared annually, pre-transfer fish health sampling does not occur prior to transporting juveniles from Eagle FH to Manchester or adult sockeye from Manchester back to Idaho. However, all fish that die in the program during the course of any rearing year are assayed for typical viral and bacterial pathogens. To date, sockeye salmon have remained relatively disease free. *Mark Petersen/Doug Munson*

4.1.1.4. Monitoring and evaluation - All adults released are monitored after release to determine spawning behavior information (spawn timing, spawning locations, number of redds developed, etc.). This information is collected using radio transmitters, visual observations and snorkeling over spawning areas. *Mike Peterson*

4.1.1.5. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Mike Peterson/Carlin McAuley*

4.2 Broodyear 2003 Sockeye Salmon

4.2.1 Eagle Fish Hatchery /Burley Creek Fish Hatchery

Note: the following information combines Eagle FH and Burley Creek FH (NOAA Fisheries) together. Approximately 400 – 500 eyed-eggs are needed to meet and maintain genetic diversity for broodstock replacement goals for the Eagle Hatchery Sockeye salmon captive broodstock program. A replicate group of eyed-eggs is transferred to Burley Creek FH (NOAA Fisheries Manchester Marine Lab in Washington State) as a spread the risk strategy. Spawn crosses made from each broodyear will also meet production goals in the Salmon River Basin. Production goals may be adjusted annually based on recommendations provided by the Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) to agency policy staff. Current production goals for the Salmon River Basin are: 50,000 eyed-eggs to Pettit Lake released in November/December; 100,000 pre-smolts released in October (65,000 Redfish Lake, 15,000 Pettit Lake and 20,000 Alturas Lake); 80,000 smolts released in May (40,000 Salmon River and 40,000 Redfish Lake Creek) and 300 captive reared adults released in September. Note: Production rearing (pre-smolts and smolts) is included in Sawtooth FH and Oxbow FH summaries.

4.2.1.1. Production status - Currently 92 BY2003 sockeye are in production at the two facilities. The captive broodstock program is represented by 12 fish and the adult release production group contains 80 fish. *Dan Baker/Carlin McAuley*

4.2.1.2. Projected release - All maturing fish from NOAA Fisheries adult release group (approximately 80) will be released in September, the remaining immature fish will remain in culture until mature. *Carlin McAuley/Dan Baker*

4.2.1.3. Fish health - Due to the relatively low number of fish reared annually, pre-transfer fish health sampling does not occur prior to transporting juveniles from Eagle FH to Manchester or adult sockeye from Manchester back to Idaho. However, all fish that die in the program during the course of any rearing year are assayed for typical viral and bacterial pathogens. To date, sockeye salmon have remained relatively disease free. *Doug Munson/Mark Peterson*

4.2.1.4. Monitoring and evaluation - All adults released are monitored after release to determine spawning behavior information (spawn timing, spawning locations, number of redds developed, etc.). This information is collected using radio transmitters, visual observations and snorkeling over spawning areas. *Mike Peterson*

4.2.1.5. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Mike Peterson/Carlin McAuley*

4.3 Broodyear 2004 Sockeye Salmon

4.3.1 Eagle Fish Hatchery /Burley Creek Fish Hatchery

Note: the following information combines Eagle FH and Burley Creek FH (NOAA Fisheries) together. Approximately 400 – 500 eyed-eggs are needed to meet and maintain genetic diversity for broodstock replacement goals for the Eagle Hatchery Sockeye salmon captive broodstock program. A replicate group of eyed-eggs is transferred to Burley Creek FH (NOAA Fisheries Manchester Marine Lab in Washington State) as a spread the risk strategy. Spawn crosses made from each broodyear will also meet production goals in the Salmon River Basin. Production goals may be adjusted annually based on recommendations provided by the Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) to agency policy staff. Current production goals for the Salmon River Basin are: 50,000 eyed-eggs to Pettit Lake released in November/December; 100,000 pre-smolts released in October (65,000 Redfish Lake, 15,000 Pettit Lake and 20,000 Alturas Lake); 80,000 smolts released in May (40,000 Salmon River and 40,000 Redfish Lake Creek) and 300 captive reared adults released in September. Note: Production rearing (pre-smolts and smolts) is included in Sawtooth FH and Oxbow FH summaries.

4.3.1.1. Production status - Currently 1,240 fish are in culture representing BY2004. A large portion (approximately 80%) will mature as three year olds and will be incorporated into the broodstock spawning matrix or released to Redfish Lake. The fish that do not mature as three year olds will remain in culture until maturity. The BY2004 captive broodstock group is represented by 815 fish and the adult release group is represented by 425 fish. *Dan Baker/Carlin McAuley*

4.3.1.2. Projected release - All maturing fish from NOAA Fisheries adult release group (approximately 345) will be released in September, the remaining immature fish will remain in culture until mature. *Carlin McAuley/Dan Baker*

4.3.1.3. Fish health - Due to the relatively low number of fish reared annually, pre-transfer fish health sampling does not occur prior to transporting juveniles from Eagle FH to Manchester or adult sockeye from Manchester back to Idaho. However, all fish that die in the program during the course of any rearing year are assayed for typical viral and bacterial pathogens. To date, sockeye salmon have remained relatively disease free. *Doug Munson/Mark Peterson*

4.3.1.4. Monitoring and evaluation - All adults released are monitored after release to determine spawning behavior information (spawn timing, spawning locations, number of redds developed, etc.). This information is collected using radio transmitters, visual observations and snorkeling over spawning areas. *Mike Peterson*

4.3.1.5. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Mike Peterson/Carlin McAuley*

4.4 Broodyear 2005 Sockeye Salmon

4.4.1 Eagle Fish Hatchery /Burley Creek Fish Hatchery

Note: the following information combines Eagle FH and Burley Creek FH (NOAA Fisheries) together. Approximately 800 eyed-eggs are needed to meet and maintain genetic diversity for broodstock replacement goals for the Eagle Hatchery Sockeye salmon captive brood stock program. A replicate group of eyed-eggs is transferred to Burley Creek FH (NOAA Fisheries Manchester Marine Lab in Washington State) as a spread the risk strategy. Spawn crosses made from each broodyear will also meet production goals in the Salmon River Basin. Production goals may be adjusted annually based on recommendations provided by the Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) to agency policy staff. Current production goals for the Salmon River Basin are: 50,000 eyed-eggs to Pettit Lake released in November/December; 100,000 pre-smolts released in October (65,000 Redfish Lake, 15,000 Pettit Lake and 20,000 Alturas Lake); 80,000 smolts released in May (40,000 Salmon River and 40,000 Redfish Lake Creek) and 300 captive reared adults released in September. Note: Production rearing (pre-smolts and smolts) is included in Sawtooth FH and Oxbow FH summaries.

4.4.1.1. Production status - Currently 1,525 juveniles are in culture representing BY2005. A small portion (approximately 10%) will mature as two year olds and will be incorporated into the broodstock spawning matrix. The fish that do not mature as two year olds will remain in culture until maturity. The BY2005 captive broodstock group is represented by 1,089 juveniles and the adult release group is represented by 436 juveniles. *Dan Baker/Carlin McAuley*

4.4.1.2. Projected release - Approximately 400 BY2005 sockeye salmon (captive broodstock from Eagle FH) are projected for release as smolts in May, 2007. *Dan Baker*

4.4.1.3. Fish health - Due to the relatively low number of fish reared annually, pre-transfer fish sampling does not occur prior to transporting juveniles from Eagle FH to the NOAA Fisheries facility in Washington State. However, all fish that die in the program during the course of any rearing year are assayed for typical viral and bacterial pathogens. To date, sockeye salmon have remained relatively disease free. *Doug Munson/Mark Peterson*

4.4.1.4. Monitoring and evaluation - NA

4.4.1.5. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Carlin McAuley*

4.4.2 Sawtooth Fish Hatchery

Sawtooth FH is used as a rearing station for the sockeye pre-smolt and smolt production. Eyed-eggs are transferred to Sawtooth in November and December to meet production goals. Current production goals at Sawtooth are 100,000 pre-smolts for Salmon River Basin Lakes in October and up to 40,000 smolts for Salmon River Basin released in May.

4.4.2.1. Production status - Sawtooth FH is currently rearing 47,039 juveniles in two outside raceways. These fish are scheduled to be released in May 2007 as smolts. *Brent Snider/Dan Baker*

4.4.2.2. Projected release - Approximately 46,000 smolts will be released the first week in May at the Sawtooth FH weir on the Salmon River and/or below the smolt trap on Redfish Lake Creek. *Brent Snider/Dan Baker*

4.4.2.3. Fish health - Fish that die in the program during the course of any rearing year are assayed for typical viral and bacterial pathogens. To date, sockeye salmon have remained disease free. A 60 fish sample will be tested before release for viral and bacterial pathogens. All pathology guidelines will be met before pre-smolts are released. *Doug Munson*

4.4.2.4. Monitoring and evaluation - All smolts have been ad-clipped, CWT tagged and a representative sample (2,000) will be PIT tagged before release. Survival to Lower Granite Dam will be evaluated as well as smolt to adult survival from different release strategies. *Mike Peterson*

4.4.2.5. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Mike Peterson*

4.4.3 Oxbow Fish Hatchery

Oxbow FH is operated by Oregon Department of Fish and Wildlife (ODFW). Oxbow FH was identified by SBSTOC members as a facility that could rear an additional 40,000 sockeye to the smolt stage. With modifications to the facility, the smolt production goal would be 150,000 smolts annually. Eyed-eggs are currently transferred to the facility in November/December to meet production goals. After an 18 month rearing cycle the juveniles will be transferred to Idaho and released in the Salmon River Basin.

4.4.3.1. Production status - Oxbow FH is currently rearing 54,851 juveniles in two outside raceways. These fish are scheduled to be released in May 2007 as smolts. *Dan Baker /Duane Banks*

4.4.3.2. Projected release - Approximately 54,000 smolts are scheduled for release the first week in May at the Sawtooth FH weir on the Salmon River and/or below the smolt trap on Redfish Lake Creek. *Dan Baker/Duane Banks*

4.4.3.3. Fish health - Fish that die in the program during the course of any rearing year are assayed for typical viral and bacterial pathogens. To date, sockeye salmon have remained disease free. Two, 60 fish samples will be tested during culture for viral and bacterial pathogens. All pathology guidelines will be met before juveniles are transferred back to Idaho. *Doug Munson/Tony Amandi*

4.4.3.4. Monitoring and evaluation - All smolts have been ad-clipped, CWT tagged and a representative sample (2,000) will be PIT tagged before release. Survival to Lower Granite Dam will be evaluated as well as smolt to adult survival from different release strategies. *Mike Peterson*

4.4.3.5. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Mike Peterson*

4.5 Broodyear 2006 Sockeye Salmon

4.5.1 Eagle Fish Hatchery /Burley Creek Fish Hatchery

Note: the following information combines Eagle FH and Burley Creek FH (NOAA Fisheries) together. Approximately 800 eyed-eggs are needed to meet and maintain genetic diversity for broodstock replacement goals for the Eagle Hatchery Sockeye salmon captive broodstock program. A replicate group of eyed-eggs is transferred to Burley Creek FH (NOAA Fisheries Manchester Marine Lab in Washington State) as a spread the risk strategy. Spawn crosses made from each broodyear will also meet production goals in the Salmon River Basin. Annual production goals be adjusted annually based on recommendations provided by the Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) to agency policy staff. Current production goals for the Salmon River Basin are: 50,000 eyed-eggs to Pettit Lake released in November/December; 100,000 pre-smolts released in October (65,000 Redfish Lake, 15,000 Pettit Lake and 20,000 Alturas Lake); 80,000 smolts released in May (40,000 Salmon River and 40,000 Redfish Lake Creek) and 300 captive reared adults released in September. Note: Production rearing (pre-smolts and smolts) is included in Sawtooth FH and Oxbow FH summaries.

4.5.1.1. Production status - Currently Eagle FH has 800 fry representing BY2006 captive broodstock. NOAA Fisheries has 400 fry representing BY2006 captive broodstock and 499 fry representing adult release production. *Dan Baker/Carlin McAuley*

4.5.1.2. Projected release - No BY2006 sockeye salmon are projected for release in 2007. *Dan Baker*

4.5.1.3. Fish health - Due to the relatively low number of fish reared annually, pre-transfer fish sampling does not occur prior to transporting juveniles from Eagle FH to the NOAA Fisheries facility in Washington State. However, all fish that die in the program during the course of any rearing year are assayed for typical viral and bacterial pathogens. To date, sockeye salmon have remained relatively disease free. *Doug Munson/Mark Peterson*

4.5.1.4. Monitoring and evaluation - *Mike Peterson*

4.5.1.5. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Mike Peterson/Carlin McAuley*

4.5.2 Sawtooth FH

Sawtooth FH is used as a rearing station for the sockeye pre-smolt and smolt production. Eyed-eggs are transferred to Sawtooth in November and December to meet production

goals. Current production goals at Sawtooth are 120,000 pre-smolts for Salmon River Basin Lakes in October and 50,000 smolts for Salmon River Basin released in May.

4.5.2.1. Production status - Sawtooth FH received 181,357 eyed eggs from Eagle FH and NOAA Fisheries to make up their BY2006 production group. Approximately 100,000 pre-smolts and 50,000 smolts will be produced from this group. *Brent Snider/Dan Baker*

4.5.2.2. Projected release - BY2006 production releases will include pre-smolts to Salmon River Basin Lakes. Redfish Lake will receive 60,000 pre-smolts in October, Alturas Lake will receive 20,000 pre-smolts in October and Pettit Lake will receive 20,000 pre-smolts in October. *Dan Baker*

4.5.2.3. Fish health - Fish that die in the program during the course of any rearing year are assayed for typical viral and bacterial pathogens. To date, sockeye salmon have remained disease free. A 60 fish sample will be tested before release for viral and bacterial pathogens. All pathology guidelines will be met before pre-smolts are released. *Doug Munson*

4.5.2.4. Monitoring and evaluation - All pre-smolts are ad-clipped and a representative sample will be PIT tagged before releases. Out-migration will be monitored the following spring to estimate out-migration from different release strategies. A representative sample of out-migrants will be PIT tagged and survival will be monitored downstream as smolts pass each dam. *Mike Peterson*

4.5.2.5. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Mike Peterson*

4.5.3 Oxbow FH

Oxbow FH is operated by Oregon Department of Fish and Wildlife (ODFW). Oxbow FH was identified by SBSTOC members as a facility that could rear an additional 40,000 sockeye to the smolt stage. With modifications to the facility, the smolt production goal would be 150,000 smolts annually. Eyed-eggs are currently transferred to the facility in November/December to meet production goals. After an 18 month rearing cycle the juveniles will be transferred to Idaho and released in the Salmon River Basin.

4.5.3.1. Production status - NOAA Fisheries transferred 80,042 eyed-eggs in November to meet production goals. Currently Oxbow FH has 80,000 fry in production scheduled for a 2008 smolt release. *Duane Banks/Dan Baker*

4.5.3.2. Projected release - No projected release of BY 2006 juveniles in 2007. *Dan Baker*

4.5.3.3. Fish health - Fish that die in the program during the course of any rearing year are assayed for typical viral and bacterial pathogens. To date, sockeye salmon have remained disease free. Two, 60 fish samples will be tested during culture for viral and bacterial

pathogens. All pathology guidelines will be met before juveniles are transferred back to Idaho. *Doug Munson/Tony Amandi*

4.5.3.4. Monitoring and evaluation - NA

4.5.3.5. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Mike Peterson*

4.6 Broodyear 2007 Sockeye Salmon

4.6.1 BY07 Eagle Fish Hatchery /Burley Creek Fish Hatchery

Note: the following information combines Eagle FH and Burley Creek FH (NOAA Fisheries) together. Approximately 800 – 900 eyed-eggs are needed to meet and maintain genetic diversity for broodstock replacement goals for the Eagle Hatchery Sockeye salmon captive broodstock program. A replicate group of eyed-eggs is transferred to Burley Creek FH (NOAA Fisheries Manchester Marine Lab in Washington State) as a spread the risk strategy. Spawn crosses made from each broodyear will also meet production goals in the Salmon River Basin. Annual production goals may be adjusted annually based on recommendations provided by the Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) to agency policy staff. Current production goals for the Salmon River Basin are: 50,000 eyed-eggs to Pettit Lake released in November/December; 100,000 pre-smolts released in October (65,000 Redfish Lake, 15,000 Pettit Lake and 20,000 Alturas Lake); 80,000 smolts released in May (40,000 Salmon River and 40,000 Redfish Lake Creek) and 300 captive reared adults released in September. Note: Production rearing (pre-smolts and smolts) is included in Sawtooth FH and Oxbow FH summaries.

4.6.1.1. Projected adult return - Projected anadromous adults returning in 2007 to Salmon River Basin weirs (Sawtooth FH weir and Redfish Lake Creek weir) is 50 - 100 sockeye. *Paul Kline*

4.6.1.2. Ladder operation - Fish weirs on Salmon River at Sawtooth FH and Redfish Lake Creek are monitored from mid-July through mid-September. All anadromous sockeye trapped are returned to Eagle FH for temporary holding. *Brent Snider/Dan Baker*

4.6.1.3. Adult fish health - Adults returned to Eagle FH to be incorporated into the spawning matrix are sampled for all viral and bacterial pathogens. Special precautions are taken to isolate/quarantine this group from the captive population. *Doug Munson*

4.6.1.4. Adult outplanting/marking - Returning adults will be incorporated into the spawning matrix at Eagle FH and/or released with captive reared adults to Redfish Lake. *Dan Baker/Mike Peterson*

4.6.1.5. Carcass disposition - All carcasses as a result of spawning or pre-spawn mortalities will be disposed of at the local rendering plant. *Dan Baker*

4.6.1.6. Adult monitoring and evaluation - Adults released to Redfish Lake may receive radio transmitters to monitor their activities after release. Visual observation and snorkeling over known spawning areas will also be used to evaluate spawning behavior.

Mike Peterson

4.6.1.7. Spawning/egg take plans, mating protocol - Returning anadromous adults that are not released will be incorporated into the captive broodstock spawning matrix at Eagle FH. The spawning matrix used at Eagle FH is a 1 x 3 matrix. Crosses are made based on least related individuals determined from microsatellite analysis. Every attempt is made to represent all males in the population equally. *Dan Baker*

4.6.1.8. Egg incubation - Eggs will be incubated at 8 degrees Celsius until the eyed-stage. Survival to eye will be calculated and eyed –eggs will be used in a variety of release strategies (depending on pathology results of the males and females used in the spawn crosses). *Dan Baker*

4.6.1.9. Projected releases - Pettit Lake receives about 50,000 eyed-eggs as a result of spawning operations at Eagle FH and NOAA Fisheries. *Dan Baker*

4.6.1.10. Communication - Eagle FH produces monthly updates provided to IDFG Fisheries Bureau. Stanley Basin Sockeye Technical Oversight Committee (SBSTOC) meets bi-monthly providing program updates to participating agencies. *Dan Baker/Mike Peterson/Carlin McAuley*

5. Contacts

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6. Appendices

A. Snake River Germplasm Repository Cryopreserved Semen Request Form

Snake River Germplasm Repository Committee
Bill Young
P.O. Box 1942, 125 South Mission St
McCall, ID 83638
Phone: (208) 634-5290
Fax: (208) 634-4097

Snake River Germplasm Repository Cryopreserved Semen Request Form

Name: _____ Affiliation: _____
Phone number: (____) _____ Address: _____
Date of request: _____ Date need by: _____
Species/stock requested: _____ Hatchery or wild/natural: _____
Number of individuals: _____ Number of straws needed: _____ 0.5ml _____ 5.0ml
Reason for request (clearly demonstrate need or type of hatchery program): _____

Fertilization experience using cryopreserved semen: _____

Name, address, and phone number of person samples should be delivered to: _____

Please use additional pages as necessary.
The salmon managers of the Snake River Basin are concerned with how cryopreserved samples are being used and retain the right to refuse samples for inappropriate use of the threatened salmonid species gametes. The Nez Perce Tribe can arrange to deliver and assist in the fertilization of eggs. Please call Bill Young at the McCall Field Office (address above) to coordinate transfer. The Nez Perce Tribe also may request data on the performance of the semen (percent of eggs fertilized, post-thaw sperm motility, etc.).

Signature: _____ Date: _____

7. Tables

Table 1. LSRCP, Salmon River Basin Steelhead Proposed Releases, 2007.

Fish Hatchery	Agency	Species	Stock	Brood Year	Release Location	Release Date	Program Goal	Estimated Release	# AD	# CWT	# PIT	Other Marks	Comments
Hagerman NFH	FWS	STH	Saw A	2006	Sawtooth Weir	4/9-4/27	750,000	759,000	759,000	80,000	300		Production
			Saw A	2006	Yankee Fork	4/30-5/4	140,000	139,500			300		Supplementation
			Saw A	2006	Yankee Fork	4/30-5/4	160,000	165,500	165,500				Production
			Pah A	2006	L. Salmon R. Stinky Springs	3/26-4/6	160,000	145,500			300		Supplementation
			Pah A	2006	L. Salmon R. Hazard Ck.	3/26-4/6	40,000	40,000					Supplementation
			Dwor B	2006	L. Salmon R. Stinky Springs	4/3-4/6	100,000	97,000	97,000		300		Production
			Dwor B	2006	East Fork Salmon R.	5/7-5/9	100,000	100,500	100,500		300		Production
							1,450,000	1,380,000	1,122,000	80,000	1,500		
Magic Valley FH	IDFG	STH	Dwor B	2006	L. Salmon R. Stinky Springs	4/11-4/13	215,000	210,000	210,000	60,000	300	60,000 LV	Production
			Dwor B	2006	Squaw Ck. Pond	4/9-4/10	60,000	60,000	60,000	60,000	500		Production -HES
			Dwor B	2006	Squaw Ck.	4/24-4/26	130,000	125,000	125,000		500	30,000 RV	Production - HES
			Up Sal B	2006	Squaw Ck. Pond	4/9-4/10	60,000	60,000	60,000	60,000	500		Production – HES
			Up Sal B	2006	Squaw Ck.	4/24-4/26	60,000	60,000	60,000	60,000	500		Production – HES
			E.F. Nat	2006	E.F. Salmon R. Weir	4/30	50,000	50,000	0	50,000			Supplementation
			Dwor B	2006	E.F. Salmon R. Lower river	4/23-4/26	225,000	220,000	220,000				Production
			Pah A	2006	Slate Cr.	5/1-5/3	40,000	40,000	40,000	30,000	300		Production
			Pah A	2006	Salmon R. Red Rock	4/13-4/17	130,000	130,000	130,000	30,000	300		Production
			Pah A	2006	Slate Cr.	5/1-5/3	60,000	60,000			300		Supplementation
			Pah A	2006	Salmon R. Lemhi Hole	4/19-4/23	80,000	80,000	80,000				Production
			Saw A	2006	Yankee Fork	5/1-5/3	60,000	60,000	60,000	30,000			Fall agreement
			Saw A	2006	Yankee Fork	5/1-5/3	30,000	30,000			300		Supplementation
			Pah/Saw A	2006	Salmon R. Colston Corner	4/17-4/18	140,000	140,000	140,000	30,000	300		Production
			Pah/Saw A	2006	Salmon R. Tunnel Rock	4/24-4/27	60,000	85,000	85,000				Production

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			Pah/Saw A	2005	Salmon R. McNabb Point	4/19-4/20	120,000	122,000	122,000	30,000	300		Production
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Table 1. Continued.

Fish Hatchery	Agency	Species	Stock	Brood Year	Release Location	Release Date	Program Goal	Estimated Release	# AD	# CWT	# PIT	Other Marks	Comments
			Pah A	2006	Pahsimeroi R. Trap	4/20	30,000	30,000	30,000	30,000			Production
			Saw A	2006	Valley Cr.	5/3	50,000	50,000			300		Supplementation
							1,600,000	1,610,000	1,420,000	470,000	4,400		
Sawtooth	IDFG	STH	Saw A	2006	TBD 4 sites	Apr-May	375,000						Egg box program

Table 2. Idaho Power Company Salmon River Basin Steelhead Proposed Releases (including Snake River), 2007.

Fish Hatchery	Agency	Species	Stock	Brood Year	Release Location	Release Date	Program Goal	Estimated Release	# AD	# CWT	# PIT	Other Marks	Comments
Niagara Springs	IDFG	STH	Pah A	2006	Pahsimeroi R. Trap	4-10 to 4-27	830,000	830,000	830,000	60,000	300		Production
			Oxbow A	2006	L. Salmon R. Stinky Springs	3-30 to 4/5	275,000	275,000	275,000	30,000	300		Production
			Pah A	2006	L. Salmon R. Stinky Springs	4-6 to 4-9&4-30 to 5/2	170,000	170,000	170,000	30,000	300		Production
			Oxbow A	2006	Snake River Hells Canyon	3-19 to 3/29	525,000	525,000	525,000	30,000	300		Production
							1,800,000	1800,000	1,800,000	150,000	1,200		
Pahsimeroi	IDFG	STH	Pah A	2006	TBD 4 sites	Apr-May	625,000						Egg box program

Table 3. LSCR and BPA, Salmon River Basin Spring/Summer Chinook Proposed Releases, 2007.

Fish Hatchery	Agency	Species	Stock	Brood Year	Release Location	Release Date	Program Goal	Estimated Release	# AD	# CWT	# PIT	Other Marks	Comments
McCall	IDFG	SUCH	S.F.Salmon	2005	S.F. Salmon Knox Bridge	3/19 to 3/22	1,000,000 Smolts	1,086,600 Smolts	772,600 Smolts	262,000 Smolts	52,000 Smolts		100% ad clipped
McCall	NPT	SUCH	Johnson Cr	2005	Johnson Cr Wapiti Ranch	3/12 to 3/16	100,000 Smolts	120,400 Smolts		108,400 Smolts	12,000 Smolts	100% VIE Orange Left	100% cwt/VIE No fin clips
McCall	SBT	SUCH	S.F. Salmon	2007	Dollar Cr.	October 07	300,000 Eyed	300,000 Eyed					Eyed Eggs Egg Box Program
Sawtooth	IDFG	SPCH	Upper SR	2005	Sawtooth weir	4/06	1,300,000	990,000	990,000	121,000	15,000	none	
Eagle	IDFG	SPCH	West Fork Yankee Fork SR	2002 - 2005	WFYF	July	40	272	272	0	272	Orange VIE Left eye	Supplementation
Eagle	IDFG	SPCH	East Fork Salmon R	2002 - 2005	EFSR	July	40	279	279	0	279	Green VIE Left eye	Supplementation

Table 4. Idaho Power Company, Salmon River Spring/Summer Chinook Proposed Releases (including Snake River), 2007.

Fish Hatchery	Agency	Species	Stock	Brood Year	Release Location	Release Date	Program Goal	Estimated Release	# AD	# CWT	# PIT	Other Marks	Comments
Pahsimeroi	IDFG	SUCH	Salmon River	2005	Rearing Ponds	4/15/07	1,000,000	988,000	932,600	55,400 (all ad-clipped)	500 (all ad-clipped)		CWT Group and PIT tagged group are ad-clipped also. Production
Rapid River	IDFG	SPCH	Rapid River	2005	Snake R. Hells Canyon	3/21-25/05	400,000	300,000	300,000				Production
Rapid River	IDFG	SPCH	Rapid River	2004	Little Salmon R.	3/05	200,000	200,000	200,000				Production
Rapid River	IDFG	SPCH	Rapid River	2005	Rapid River	3/21-4/22/05	2,500,000	2,700,000	2,500,000	109,883	105,000		Production

Table 5. BPA, Salmon River Redfish Lake Sockeye Proposed Releases (including Snake River), 2007.

Fish Hatchery	Agency	Species	Stock	Brood Year	Release Location	Release Date	Program Goal	Estimated Release	# AD	# CWT	# PIT	Other Marks	Comments
Burley Creek	NOAA	SO	Snake River	2002	Redfish Lake	9/07	0	2	2	0	2		Production
Burley Creek	NOAA	SO	Snake River	2003	Redfish Lake	9/07	50	80	80	0	80		Production
Burley Creek	NOAA	SO	Snake River	2004	Redfish Lake	9/07	250	345	345	0	345		Production
Oxbow	ODFW	SO	Snake River	2005	Salmon River	5/07	20,000	27,000	27,000	27,000	1,000	RV	Production
Oxbow	ODFW	SO	Snake River	2005	Redfish Lake Creek	5/07	20,000	27,000	27,000	27,000	1,000	RV	Production
Sawtooth	IDFG	SO	Snake River	2005	Salmon River	5/07	20,000	23,000	23,000	23,000	1,000		Production
Sawtooth	IDFG	SO	Snake River	2005	Redfish Lake Creek	5/07	20,000	23,000	23,000	23,000	1,000		Production
Sawtooth	IDFG	SO	Snake River	2006	Pettit Lake	10/07	15,000	15,000	15,000	0	1,000		Production
Sawtooth	IDFG	SO	Snake River	2006	Alturas Lake	10/07	20,000	20,000	20,000	0	1,000		Production
Sawtooth	IDFG	SO	Snake River	2006	Redfish Lake	10/07	85,000	65,000	65,000	0	1,000		Production
Eagle/ Burley Ck.	IDFG	SO	Snake River	2007	Pettit Lake	11/15 – 12/15/07	50,000	50,000	0	0	0		Production

Table 6. Rainbow Trout Proposed Releases, 2007

Fish Hatchery	Agency	Species	Stock	Brood Year	Release Date	Release Location	Program Goal	Estimated Release	Marks	Comments
Tucannon/ Lyons Ferry	IDFG	RBT	Kamloops	2006	Oct	Lower Clearwater R.	25,000	25,000	AD/LV/RV	Triploid
Tucannon/ Lyons Ferry	IDFG	RBT	Kamloops	2006	Oct	Lower Salmon R.	25,000	25,000	AD/LV/RV	Triploid
Lyons Ferry	IDFG	RBT	Spokane	2006	May	ID inland lakes And ponds	160,000	160,000		
Nampa/ Sawtooth	IDFG	RBT	Trout Lodge	2006	July	Sawtooth basin lakes and streams	50,000	50,000		Triploid

Table 7. LSRCP, Salmon River Basin Steelhead Actual Releases, 2006.

Fish Hatchery	Agency	Species	Stock	Brood Year	Release Location	Release Date	Program Goal	Actual Release	# AD	# CWT	# PIT	Other Marks	Comments
Hagerman NFH	FWS	STH	Saw A	2005	Sawtooth Weir	4/10-4/26	750,000	760,848	760,848	85,561	295		Production
			Saw A	2005	Yankee Fork	5/1-5/4	140,000	130,517			295		Supplementation
			Saw A	2005	Yankee Fork	5/1-5/4	100,000	107,599	107,599				Production
			Pah A	2005	L. Salmon R. Stinky Springs	3/27-4/3	160,000	161,721			300		Supplementation
			Pah A	2005	L. Salmon R. Hazard Ck.	4/3	40,000	40,871					Supplementation
			Dwor B	2005	L. Salmon R. Stinky Springs	4/5-4/7	100,000	91,915	91,915		286		Production
			Dwor B	2005	East Fork Salmon R.	4/27-4/28	100,000	100,457	100,457		297		Production
							1,390,000	1,393,929	1,060,819	85,561	1,473		
Magic Valley FH	IDFG	STH	Dwor B	2005	L. Salmon R. Stinky Springs	4/11-4/14	215,000	248,105	248,105	62,530	300		Production
			Dwor B	2005	Squaw Ck. Pond	4/10-4/11	60,000	62,457	62,457	62,457	500		Production -HES
			Dwor B	2005	Yankee Fk Guard Station.	4/24-4/26	200,000	187,051	187,051	31,424	499	CWT Also rv	Production - HES
			Up Sal B	2005	Squaw Ck. Pond	4/10-4/11	50,000	31,015	31,015	31,015	500		Production – HES
			E.F. Nat	2005	E.F. Salmon R. Weir	4/28	50,000	31,073		31,073			Supplementation
			Dwor B	2005	E.F. Salmon R. Lower river	4/21-4/25	225,000	237,711	237,711				Production
			Pah A	2005	Lemhi R.	4/17-4/18	40,000	47,008	47,008	28,706	300		Production
			Pah A	2005	Salmon R. Red Rock	4/12-4/14	130,000	102,087	102,087	23,981	298		Production
			Pah A	2005	Lemhi R.	4/17-4/18	80,000	80,655			300		Supplementation
			Pah A	2005	Salmon R. Lemhi Hole	4/17	80,000	74,534	74,534				Production
			Saw A	2005	Yankee Fork	4/26-4/27	60,000	63,525	63,525	31,761			Fall agreement
			Saw A	2005	Yankee Fork		30,000	32,075			298		Supplementation
			Pah/Saw A	2005	Salmon R. Colston Corner	4/12-4/14	140,000	110,235	110,235	30,466	300		Production
			Pah/Saw A	2005	Salmon R. Tunnel Rock	4/20-4/21	60,000	41,004	41,004				Production
			Pah/Saw A	2005	Salmon R. McNabb Point	4/19-4/20	120,000	137,098	137,098	30,970	299		Production

Table 7. Continued.

Fish Hatchery	Agency	Species	Stock	Brood Year	Release Location	Release Date	Program Goal	Actual Release	# AD	# CWT	# PIT	Other Marks	Comments
			Pah A	2005	Pahsimeroi R. Trap	4/19	30,000	31,759	31,759	31,759			Production
			Saw A	2005	Valley Cr.	4/27-4/28	30,000	30,599			300		Supplementation
							1,600,000	1,547,991	1,337,589	396,142	3,894		
Sawtooth	IDFG	STH	Saw A	2006	TBD 4 sites	Apr-May	375,000						Egg box program

Table 8. Idaho Power Company Salmon River Basin Steelhead Actual Releases (including Snake River), 2006.

Fish Hatchery	Agency	Species	Stock	Brood Year	Release Location	Release Date	Program Goal	Actual Release	# AD	# CWT	# PIT	Other Marks	Comments
Niagara Springs	IDFG	STH	Pah A	2005	Pahsimeroi R. Trap	4-7 to 4-25	830,000	828,883	828,883 (all)	64,035	298		Production
			Oxbow A	2005	Hells Canyon	3-20 to 3-30	525,000	520,476	520,476 (all)	32,254	298		Production
			Pah A	2005	L. Salmon R. Hazard Crk & Stinky Springs	4-5 to 4-7 & 4-26 to 4-27	170,000	222,419	222,419 (all)	31,340	300		Production
			Oxbow A	2005	L Salmon R. Hazard Crk	3-30 to 4/5	275,000	241,419	241,419 (all)	30,422	298		Production
							1,800,000	1,812,875	1,812,875	158,051	1,194		
Pahsimeroi	IDFG	STH	Pah A	2006	TBD 4 sites	Apr-May	625,000						Egg box program

Table 9. LSCRP and BPA, Salmon River Basin Spring/Summer Chinook Actual Releases, 2006.

Fish Hatchery	Agency	Species	Stock	Brood Year	Release Location	Release Date	Program Goal	Actual Release	# AD	# CWT	# PIT	Other Marks	Comments
McCall	IDFG	SUCH	S.F.Salmon	2004	S.F. Salmon Knox Bridge	3/20 to 3/23	1,000,000 Smolts	1,096,130 Smolts	777,079 Smolts	267,155 Smolts	51,896 Smolts		100% ad clipped
McCall	NPT	SUCH	Johnson Cr	2004	Johnson Cr Wapiti Ranch	3/13 to 3/15	100,000 Smolts	90,450 Smolts		78,394 Smolts	12,056 smolts	100% VIE (yellow left)	100% cwt/VIE No fin clips
McCall	SBT	SUCH	S.F. Salmon	2006	Dollar Cr.	9/27 to 10/05	300,000 Eyed	334,550 Eyed					Eyed Eggs Egg Box Program
Sawtooth	IDFG	SPCH	Upper SR	2004	Sawtooth weir	3/30-4-19	1,300,000	1,416,610	1,416,610	130,512	500		
Sawtooth	IDFG/SBT	SPCH	Upper SR	2004	Yankee Fork	4/19	TBD	135,934	135,934	0	695		Transported from Sawtooth to YFK in fish truck and tanker
Eagle	IDFG	SPCH	West Fork Yankee Fork SR	2001 - 2004	WFYF	7/13/06	40	179	179	0	179		Supplementation
Eagle	IDFG	SPCH	East Fork Salmon R	2001 - 2004	EFSR	7/13/06	40	141	141	0	141		Supplementation

Table 10. Idaho Power Company, Salmon River Spring/Summer Chinook Actual Releases (including Snake River), 2006.

Fish Hatchery	Agency	Species	Stock	Brood Year	Release Location	Release Date	Program Goal	Actual Release	# AD	# CWT	# PIT	Other Marks	Comments
Pahsimeroi	IDFG	SUCH	Salmon River	2004	Rearing Ponds	3/13/06-3/30/06	1,000,000	1,073,951	966,596	107,355 (all ad-clipped)	500 (all ad-clipped)		(all cwt and PIT groups ad-clipped) Production
Rapid River	IDFG	SPCH	Rapid River	2004	Snake R. Hells Canyon	3/14-17/06	300,000	400,000	100%				Production
Rapid River	IDFG	SPCH	Rapid River	2004	Little Salmon R.	3/16-18/06	200,000	200,000	100%				Production
Rapid River	IDFG	SPCH	Rapid River	2004	Rapid River	3/13-21/06	2,500,000	2,530,528	100%	110,866	96,684		Production

Table 11. BPA, Salmon River Redfish Lake Sockeye Actual Releases (including Snake River), 2006.

Fish Hatchery	Agency	Species	Stock	Brood Year	Release Location	Release Date	Program Goal	Actual Release	# AD	# CWT	# PIT	Other Marks	Comments
Burley Creek	NOAA	SO	Snake River	2002	Redfish Lake	9/08/06	50	49	49	0	49		Production
Burley Creek	NOAA	SO	Snake River	2003	Redfish Lake	9/08/06	250	391	391	0	391		Production
Burley Creek	NOAA	SO	Snake River	2004	Redfish Lake	9/08/06	0	24	24	0	24		Production
Oxbow	ODFW	SO	Snake River	2005	Redfish Lake Creek	5/09/06	40,000	46,430	46,430	46,430	1,011		Production
Sawtooth	IDFG	SO	Snake River	2004	Salmon River	5/04/06	40,000	39,622	39,622	39,622	1,011		Production
Sawtooth	IDFG	SO	Snake River	2005	Petit Lake	10/02/06	15,000	18,494	18,494	0	1,021		Production
Sawtooth	IDFG	SO	Snake River	2005	Alturas Lake	10/02/06	20,000	26,994	26,994	0	1,016		Production
Sawtooth	IDFG	SO	Snake River	2005	Redfish Lake	10/03/06	85,000	61,804	61,804	0	1,021		Production
Eagle/ Burley Cr.	IDFG	SO	Snake River	2006	Petit Lake	11/21- 12/06/06	50,000	79,908	0	0	0		Production
Eagle/ Burley Cr.	IDFG	SO	Snake River	2006	Alturas	11/28- 12/06/06	0	104,688	0	0	0		Production

Table 12. Summer Steelhead Eyed Egg or Swim Up Fry Requests.

Requesting Hatchery or Program	Source/Hatchery Stock	Current Year Request	Comments
Hagerman NFH	Sawtooth FH - A's	1,100,000	Via Sawtooth FH Via Clearwater FH
	Pahsimeroi FH - A's	215,000	
	Dworshak NFH - B's	215,000	
Magic Valley FH	Pahsimeroi FH - A's	480,000	Via Sawtooth FH
	Sawtooth FH - A's	480,000	Via Clearwater FH Via Squaw Pond Via East. Fork Salmon
	Dworshak - B's	830,000	
	Upper Salmon R. - B's	110,000	
	Sawtooth FH - E.F. Salmon R Naturals	50,000	
Niagara Springs FH	Pahsimeroi FH - A's	1,104,000	552,000 Eyed Eggs
	Via Oxbow FH		552,000 Swim Up Fry
	Oxbow FH - A's	880,000	440,000 Eyed Eggs 440,000 Swim Up Fry
Shoshone Bannock Tribe	Pahsimeroi FH - A's	500,000	Egg Box Program
	Sawtooth FH - A's	500,000	Egg Box Program

JK 11/01/06