

Sawtooth Fish Hatchery Operation and Maintenance Annual Report



October 1, 2008 to September 30, 2009

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INTRODUCTION

Sawtooth Fish Hatchery (SFH) has been operating since 1985 as part of the Lower Snake River Compensation Plan. The mitigation goal is for 19,445 adult spring Chinook salmon *Oncorhynchus tshawytscha* above Lower Granite Dam. The production goal was revised in 2009 to 1,700,000 spring Chinook salmon smolts. In addition, Sawtooth collects up to 2,500,000 steelhead *O. mykiss* eggs that are shipped to Hagerman National Fish Hatchery and Magic Valley Fish Hatchery. A satellite fish station on the East Fork of the Salmon River provides additional trapping, holding, and spawning facilities for adult spring chinook salmon and steelhead. Steelhead from the Upper Salmon River B- program are held and spawned at East Fork Salmon River facility.

CHINOOK SALMON

Sawtooth Spring Chinook BY09

The Spring Chinook Salmon, *Oncorhynchus tshawytscha*, weir at Sawtooth Fish Hatchery (SFH) on the Main Salmon River was installed on June 24, 2009 and remained in operation until October 16, 2009. During its operation, the weir diverted all upstream migration of fish through the trap at the facility, trapping a total of 4,003 adult Chinook salmon. Of the 4,003 adult Chinook trapped, 3,556 were hatchery-produced marked fish (380 jacks, 1,348 adult males, 1,828 females) and 447 were unmarked (77 jacks, 208 adult males, 162 females). A trapping summary is provided in Table 1. Hatchery-origin marked fish are defined as fish with either an adipose fin-clip only (AD), adipose clip/Coded Wire Tag (AD/CWT), or CWT only. Unmarked fish are defined as fish with no external markings or CWT. All unmarked Chinook were released above the hatchery weir for volitional spawning. Marked Chinook were ponded at SFH according to broodstock needs or excess, with a total of 1,067 Chinook held for broodstock (50 jack, 495 males, and 522 females) and 2,489 held as excess. There were 5 Trap mortalities of marked fish (1 male, 4 females). Of the 2,489 excess fish, a total of 709 Chinook were recycled down river to Torreys Hole and Watt's Bridge. Of the 2,491 excess fish, a total of 1,517 Chinook (750 adult males, 767 females) given to the Shoshone-Bannock Tribe for a supplementation program. Of the 750 males, 115 males were spawned and recorded in the SFH brood stock before being provided to the Shoshone-Bannock Tribe for the supplementation program. Transferred fish were either taken directly from the trap, or from the excess holding pond then transferred by IDFG and Shoshone-Bannock Tribes personnel to the Yankee Fork Salmon River. Of the 709 Chinook recycled 149 were recaptured at the SFH weir and given to food banks or the Shoshone-Bannock Tribe. Excess fish were also provided to food banks and charitable organizations as follows:

| | |
|------------------------------------|----------------------|
| Shoshone-Bannock Tribes Food Bank | 15 adults |
| Middleton Food Bank | 100 jacks |
| <u>Lowman/Idaho City Food Bank</u> | <u>198 jacks</u> |
| Total Distributed To Food Banks | 298 jacks, 15 adults |

The remaining 151 excess fish were frozen and shipped to a rendering facility. Fish disposition data is summarized in Table 1.

SFH staff spawned a total of 518 females with 523 males. Spawn crosses resulted in 2,429,273 green eggs being collected with an eye up rate of 94%, producing 2,282,484 eyed eggs, with an average of 4,958 eggs per female. During holding, SFH had 2 females die prior to spawning activities, resulting in 0.01% pre-spawn mortality. Of the 1,067 fish held for spawning, there were 2 females Killed Not Used (KNU) because they were spawned out and 13 males KNU.

In 2009, the velocity barrier on the East Fork of the Salmon River (EFSR) was put into operation on June 12 by the Captive Chinook Research Technical Team, with trapping operations continuing through September 26. This was the fourth consecutive year of operation of the East Fork trap since previous trapping operations ceased in 1998. A total of 202 Chinook were trapped in 2009, 191 of which were natural (unmarked) fish, eleven marked fish and 22 recaptured Chinook. Of the eleven trapped marked fish 5 of 11 were adipose clipped Chinook with a left opercle punched for SHF recycled Chinook program. All fish trapped at the facility were released above the weir for volitional spawning except the marked fish which were released back into the main Salmon River. (Josh Gable, IDFG Fishery Technician, personnel communication)

BY08

The BY08 Sawtooth spring Chinook salmon number 1,870,692 pre-smolts at 31 fpp and 120 mm fork length. This group of fish will over-winter in ten large outside raceways. Seven, three day 167 ppm formalin treatments were also administered due to external mycosis in 2009. These fish were exposed to poor river water quality conditions during the first marking attempt. In July and August a 28-day medicated feeding was administered. Final marking occurred in September, 2009.

BY07

Brood year 2007 Chinook smolts were released in the afternoon on April 17, 2009. Releases totaled 274,644 smolts and fish size averaged 15.1 fish per pound and 6.1 inches in length at release. All fish were released at the SFH weir. Fish rearing is summarized in Table 2 and fish marking and releases are summarized in Table 3.

Pahsimeroi Summer Chinook

Pahsimeroi Summer Chinook were not reared at Sawtooth FH in 2009.

STEELHEAD

Sawtooth Hatchery Returns

The Sawtooth Fish Hatchery weir was installed on March 18, 2009 for the Upper Salmon River Summer Steelhead (*Oncorhynchus mykiss*) run. The adult Steelhead trap operated from March 19, to May 7. During that time a total of 3,313 adult “A- run” steelhead were trapped. Of these fish, 3,279 (1787 males / 1,492 females) were marked hatchery-origin fish and 34 (20 males / 14 females) were unmarked fish of natural origin or unclipped hatchery fish.

The 34 unmarked steelhead that were trapped were released upstream of the hatchery weir after a genetic sample, scale sample, and fork length and gender data were collected. A total of 1,117 marked steelhead were used for broodstock egg collection in 2009; 558 females were spawn-crossed with 559 males. The spawned carcasses, as well as fish that were killed and not used for spawning (KNU), were distributed to the public on a first-come first-served basis (total of 1,234). A total of 1,877 surplus marked steelhead were provided to tribal food bank programs and other charitable organizations. The remaining 285 steelhead carcasses (either pond mortalities or those that were unfit to be distributed for consumption) were kept frozen on station and were sent to a rendering plant after the 2009 Chinook season. Fish disposition data is provided in Table 4.

Sawtooth Hatchery Spawning

Sawtooth Fish Hatchery spawning operations for 2009 occurred from April 2 to May 4. A total of 559 male steelhead were spawn-crossed with 558 female steelhead over 10 spawning days. Two females’ eggs were culled before enumeration due to eye-up near zero percent; therefore, only 556 females were used in calculating percent eye-up and average fecundity. A total of 2,932,308 green eggs were collected, with a mean fecundity of 5,274 eggs per female. Total green egg take yielded 2,466,626 eyed-eggs for a percent survival to the eyed-egg stage of development average of 82.3 percent (Table 7). Genetic samples were taken from 100 percent of broodstock fish.

Eyed-egg transfers to Hagerman National Fish Hatchery (HNFH) totaled 1,487,230 eyed-eggs for Salmon River smolt releases, including 481,900 genotyped eyed-eggs for the Shoshone-Bannock Tribes’ DNA Parentage Exclusion Analysis Program that began in 2005. These genotyped eggs will be reared to smolts at HNFH and released into the Yankee Fork of the Salmon River. Another total of 520,177 genotyped eyed-eggs were provided for the Shoshone-Bannock Tribes’ Egg Box Program. These eggs are placed in streamside incubators (upwellers) on river water to mimic natural hatch timing in the Yankee Fork. In both of these programs, genotyped eggs from Sawtooth stock can be differentiated as F1 juveniles and F1 adults from naturally produced steelhead. Magic Valley Fish Hatchery received a total of 141,000 eyed-eggs for smolt releases into the Salmon River. A total of 170,553 surplus eyed-

eggs were shipped to Hagerman State Fish Hatchery for resident fish management purposes. The Sawtooth-stock eyed-egg transfer totaled 2,318,960 (Table 8).

East Fork Salmon River Returns

In 2009, the velocity barrier on the East Fork of the Salmon River (EFSR) was in operation from March 20 through May 12. In continuing with the East Fork Natural Steelhead Program that began in 2001, the program goal for the 2009 season was to proceed in building and maintaining a locally-adapted broodstock in the EFSR. To create this locally-adapted broodstock, production targets were set to collect 220,000 green eggs to produce 170,000 non-adipose-fin-clipped smolts to be released into the system above the weir, while still allowing for natural spawning above the weir. The long term goal is to manage this program in a way that allows local adaptation to determine target production levels. In accordance with this goal, collection targets were set at 45 females and 45 males, taken randomly from across the run, representing the entire range of size, age, and run-timing. Natural-Origin steelhead (designated as N-O by lack of tag present and unmarked or undamaged fins) were to be favored and incorporated over Hatchery-Origin steelhead (designated as H-O by presence of a Coded Wire Tag or obviously frayed fins from hatchery rearing) if given the choice, to achieve the collection target of 45 fish of each sex. Non-East Fork adults (ad-clipped hatchery strays) were not to be spawned or released above the weir.

A total of 132 adult steelhead were trapped for the East Fork Natural Steelhead Program, 115 were hatchery-origin (72 males/43 females) and 17 were natural-origin steelhead (8 males/ 9 females; Table 5). One adipose fin-clipped male was trapped; this fish was killed and not used for spawning, and was also not included in the trapping totals.

East Fork Spawning

A total of 70 East Fork males (63 H-O / 7 N-O) and 42 East Fork females (38 H-O / 4 N-O) were used for natural-production spawn crosses in 2009 (Table 5). Of the 63 H-O males used for spawning, 12 males were used twice; 3 of the 7 N-O males were used twice. Two H-O males were killed and not used because they did not produce quality milt. Two females (one H-O, one N-O) were killed and not used for spawning because they were still green. Three partially spawned-out H-O female steelhead were released above the weir, accompanied by three H-O males. An additional 4 N-O and 1 H-O female steelhead were released above the weir on the last spawn day because they were still green. Three H-O and 1 N-O males were released along with these females. Spawning operations occurred from April 10 through May 12 (10 spawn dates). Spawning activities from 42 East Fork female steelhead yielded a total of 212,572 green eggs for a mean fecundity of 5,061 eggs per female. A total of 167,775 eyed-eggs were obtained from natural-production crosses, for a percent survival to the eyed-stage of development average of 78.9 percent (Table 7). All 167,775 eyed-eggs

produced from EFSR natural crosses were transferred to Hagerman National Fish Hatchery for final incubation and rearing (Table 8).

Squaw Creek Returns

On March 24, 2009, a picket weir and trap were installed on Squaw Creek, 200 meters upstream of the confluence of the Salmon River to trap adult Upper Salmon B-Run (USB) steelhead. The first fish of the season was trapped on April 7; the last fish was trapped on April 19. The trap was out of operation on March 27 due to ice. On April 20, Squaw Creek blew out and weir pickets were pulled. Water level was monitored for five days and the trap and weir were completely removed on April 24. A total of 34 steelhead were trapped: 10 marked USB males, 15 marked USB females, 4 undersized ad-clipped males without coded wire tags (CWT's), one undersized ad-clipped female without a CWT, and one undersized ad-clipped female with a CWT. There were also 2 unmarked female and 1 unmarked male steelhead that were released above the picket weir (Table 6). The 23 USB broodstock adults were transferred to the East Fork trapping facility for pre-spawn holding. The 4 undersized hatchery males and the undersized female that did not have CWT's were released back into the mainstem of the Salmon River, above the mouth of Squaw Creek. The undersized female with a CWT was killed and her snout was collected for tag reading.

The Angler Contribution Program that began in 2008 was implemented again in 2009. Nampa Research staff, Salmon Regional Office staff and SFH staff cooperated to educate and encourage anglers fishing at the mouth of Squaw Creek to contribute any B-Run fish caught to the hatchery broodstock program. On March 25, two live boxes were placed in the Salmon River for anglers to place their fish in. From April 11 to April 15 a total of six fish tubes were placed near the live boxes and at the mouth of Squaw Creek for anglers to place fish in. IDFG staff monitored the live boxes and fish tubes and removed any fish that did not meet the target criteria for the Upper Salmon B-Run program as well as transferred angled fish that did meet the criteria to the East Fork spawning facility to be incorporated into the broodstock. Between March 29 and April 20, a total of 24 USB steelhead were caught and transferred to the East Fork spawning facility (14 males / 10 females) and held for spawning (Table 7). One ad-clipped male angled on April 1 died the next day. Of the 14 males angled, 10 were of B-run size and had CWT's, three were of size and did not have CWT's, and one was undersized and did have a CWT--real-time tag reading determined that this was a B-Run target fish to be included in the broodstock. All ten angled females were used for spawning.

Squaw Creek Spawning

A total of 25 marked USB females and 22 marked USB males were used in hatchery-production spawn crosses in 2009. Of the 25 females spawned, 15 were trapped fish and 10 were angled; of the 22 males spawned, 9 were trapped fish and 13

were angled. Spawning operations occurred from April 10 through April 21 (4 spawn dates). All spawning was conducted at the East Fork Salmon River trap/spawn facility, with spawning activities from the 25 females yielding a total of 182,602 green eggs for a mean fecundity of 7,304 eggs per female. A total of 121,035 eyed-eggs were obtained from hatchery-production crosses, for a percent survival to the eyed-stage of development of 66.3 percent (Table 7). One undersized male was spawned after determining that it was a B-Run target fish. All other fish spawned were of size. Two males (one trapped and one angled) died before they could be spawned. To achieve spawn-crosses of two males per female, multiple males were spawned multiple times. Two males were used once, 14 males were used twice, and 6 males were used three times. All 121,035 eyed-eggs produced from Upper Salmon B-Run hatchery crosses were transferred to the Magic Valley Steelhead Hatchery for final incubation and rearing (Table 8).

Pahsimeroi Stock Steelhead Egg Incubation

In past years, Sawtooth Fish Hatchery incubated a portion of the Pahsimeroi Fish Hatchery egg take for LSRCP Steelhead Programs. No Pahsimeroi FH steelhead eggs were incubated at Sawtooth Fish Hatchery in 2009.

Sawtooth Fish Hatchery Egg Shipments

In 2009, a total of 2,607,770 eyed steelhead eggs were shipped from Sawtooth Fish Hatchery to various hatcheries or off-site locations for continued rearing. A summary of egg shipments, by stock, is provided in Table 8.

Steelhead Smolt Acclimation At Sawtooth Hatchery

Due to increased production levels and a corresponding lack of available raceway space, no steelhead smolts were acclimated at Sawtooth FH in 2009.

SOCKEYE SALMON

BY 2009

The Sawtooth FH crew monitored an adult sockeye salmon *O. nerka* weir on Redfish Lake Creek in the summer and fall of 2009. The Redfish Lake Creek adult trap was in operation from July 8 through October 21. The Sawtooth FH weir and trap were operated for chinook and sockeye as well from June 24 to October 16. Through September 30 a total of 809 fish were trapped, 246 at the SFH weir and 563 at the Redfish Lake Creek trap. The adult sockeye were daily transferred to Eagle Fish Hatchery for hatchery spawning purposes.

BY 2008

Eagle Fish Hatchery (IDFG) and Burley Fish Hatchery (NOAA) shipped an estimated total of 195,543 eyed eggs to Sawtooth Fish Hatchery. A total of 159,687 fish were marked September 15-17. This is a difference of 35,856 fish after egg pickoff and fry mortalities while at Sawtooth Fish Hatchery. This summary is based on the marking inventory and mortality records.

The eggs arrived in three separate shipments between November 25, and December 10, 2008. The eggs arrived with 628 to 842 FTU's. Ponding began on February 7 and ended March 17 with an average of 1806 FTU's at ponding. Eggs were hand picked every week from eyed egg to ponding. A total of 1,807 dead eggs were removed before ponding. A total of 193,736 swim up fry were ponded. Total eyed egg to ponding survival was 99.1%. All lots of swim up fry were ponded into one of four 92ft³ green fiberglass tanks. Initial water flows were set at 20 gallons per minute. Mortality was recorded daily from ponding to release. A total of 34,183 fish were lost to mortality for a 17.6% loss through September 30, 2009.

All fry were started on Bio-Oregon's BioDiet Starter Crum #0 feed. Feed size was increased in accordance with Bio-Oregon's recommendations through three sizes of BioDiet Starter crumbles to BioVita Fry 1.2 mm pellets through mid-October. Feed size was increased gradually through three phases of mixing of larger/smaller feed: mixing proportions ranged from 20% larger feed to 80% smaller feed initially, then to 50% / 50%, and then to 80% / 20% larger to smaller. This technique was utilized to assure smaller fish would receive adequate amounts of feed, and that fish would adapt to larger feed sizes gradually to prevent feed waste. The total amount fed at Sawtooth FH for the October pre-smolt release group (59,538 pre-smolts) of BY 2008 Sockeye was 1,034 pounds with a 1.45 conversion.

On April 14, 2009 target rearing densities were approached and the fry were transferred from the four green tanks into two cement vats with water flows near 50 gpm specific pathogen free well water. By September 1, the fish were thinned into nine vats, with water flows at 75 gpm for each vat.

Ad clipping and Coded Wire Tagging (CWT) marking began September 15. The Mass Automated Tagging System (MATS) with its automated marking machines marked most of the fish with no significant mortality due to marking. The pre-smolt release groups were 100% ad-clipped only (no CWTs) while the Sawtooth Hatchery Overwinter group was left unclipped and 100% Coded Wire Tagged. Passive Integrated Transponders (PIT tags) were injected by Sockeye Research into 1,000 fish from each of the three pre-smolt release groups (Redfish, Alturas, and Pettit Lakes) on September 28 and 29.

BY 08 Sockeye October 7, 2009 Pre-Smolt Releases

Ad-clip

Ad-PIT

Total

| | | | |
|----------------|--------|-------|--------|
| Redfish | 33,566 | 995 | 34,561 |
| Alturas | 8,983 | 999 | 9,982 |
| Pettit | 13,987 | 1,000 | 14,987 |
| Totals | 56,536 | 2,994 | 59,530 |

Sockeye pre-smolts released into Redfish, Alturas and Pettit Lakes were loaded into two 300 gallon tank trucks and transported to each lake. Fish were then placed into a 120 gallon tank on the sockeye work boat and released into the pelagic zones of the lakes. At the time of pre-smolt release on October 7, 2009 the fish averaged 70 fish per pound and 3.72 inches in total length.

The remaining 100,015 CWT-only marked fish (Sawtooth Overwinter Group) were moved outside in a 300 gallon tank truck to small raceways 3, 4, 5, and 6 on October 13. The fish were 53 fish per pound and 4.2 inches total length. The river was 44⁰ F and clear, and vat water was 49⁰ F.

BY 2007 Sawtooth Overwinter Group

Fin clip checks and CWT retention checks were also done by Sawtooth Fish Hatchery personnel. Of the 300 fish checked, 299 adipose fins were clipped and no CWT was detected in 11 fish for a retention rate of 96%.

Passive Integrated Transponders were injected into 52,580 fish March 31-April 3, 2009. There were 25 PIT mortalities detected.

A total of 99,374 fish were released on May 7, 2009 averaging 31 FPP and 4.49 inches in length and a condition factor of 3685x10⁻⁷. All of the fish were AD/CWT including 52,276 PIT. The fish were fed a total of 4,130 pounds of food (including 255 pounds of Bio Oregon 2.5mm transfer) with a 1.31 conversion.

Fish were transferred into two Eagle FH distribution tanks and 1 Sawtooth Fish Hatchery tank. Fish were trucked to the Salmon River and released just below the hatchery intake. River water temperature on May 7, 2009 was 48.9 at the time of release.

RAINBOW TROUT

Sawtooth FH personnel were involved in stocking triploid catchable rainbow trout *O. mykiss* that were reared at Nampa Fish Hatchery and transferred to Sawtooth for redistribution. This project was funded by IDFG dollars (license-funded) with cooperation from the United States Fish and Wildlife Service-Lower Snake River Compensation Plan. Through this program, Sawtooth FH stocked 48,374 catchable-sized rainbow trout in 2009 (Table 9). This is a very popular program among area visitors and businesses.

MOUNTAIN LAKE STOCKING

SFH personnel continued high mountain lake stocking of westslope cutthroat trout by fixed wing aircraft in the Salmon Region. On September 11, 17, and September 23, Sawtooth Flying Service using a Cessna 185 flew five flights to complete stocking of lakes in rotation "B". Seventy two lakes were stocked in rotation "B" for a total of 28,850 fry. Another 14 lakes located in Region 4 were stocked with 10,400 fry. Excess fry totaling 12,500 were stocked into Yellowbelly Lake by Sawtooth Flying Service.

Approximately 49,246 Westslope cutthroat eggs from Washoe FH were received on July 2, 2009. Unfortunately, 31,500 eggs died. A second group of 40,000 eggs from Westslope Trout Co. were received July 27, 2009. Size of the fish at stocking was between 3 and 5 fish per gram or about 1,900 per pound. Cost of the six flights was \$4,343.50.

Sawtooth Fish Hatchery in conjunction with Cabinet Gorge Fish Hatchery and Eagle Fish Hatchery planted 19,044 cutthroat trout at 43.8 fpp and four inches in length into Yellow Belly Lake. The fish were reared at Cabinet Gorge FH and transferred to three 300 gallon distribution trucks from Eagle FH and Sawtooth FH.

HATCHERY IMPROVEMENTS

There were many improvements made to the hatchery and corresponding infrastructure as follows: Several small areas around the hatchery had asphalt applied. Beetle killed trees were removed from the grounds. SFH personnel placed verbenone pouches on lodgepole pine trees to prevent beetle kill. Seedling lodgepole trees and shrubs were planted on the hatchery grounds. Steel pilings were vibrated into the ground at the intake with large boulders placed to prevent further erosion from high water flows. The disturbed ground was leveled and reseeded. McMillen Engineering also excavated gravel from the intake area. The Conex boxes were painted a light brown matching the hatchery building. Rays Heating and Plumbing replaced the dorm showers. Acid storage cabinets were installed in the hatchery feed room and at the East Fork Trap for storage of 1.75% Iodine which contains Phosphoric acid. ABC Seamless Company replaced damaged siding on well house # 6&7, hatchery building and the dorm. New dorm windows were installed replacing original windows. McMillen Engineering expanded the trap workup area and removed and replaced the security fence. A new ADA accessible visitor viewing platform was installed. A new hydraulic pump was installed in the trolley. Drum pallets for formalin barrels were put in place in the vat room and the intake room. Fuel absorbent spill booms were assembled and stored in the intake building and the intake room of the hatchery building. Overhead Door Co. installed new garage doors in the shop and spawn shed. Simplex-Grinnell reprogrammed the alarm panel and cleaned fire sensors. The annual service was performed on the snow blower, front end loader and generator.

PERSONNEL

Hatchery personnel were involved in several projects during the 2007/2008 reporting period and include: helping IDFG Fisheries Research personnel with Idaho Supplementation Studies (ISS), redd count monitoring on tributaries to the Salmon River, conducting educational presentations, conducting a Free Fishing Day clinic, providing spawning assistance to other IDFG hatchery programs, assisting in IDFG research projects. Brent Snider, Mel Hughes and Chris Jeszke attended the annual anadromous fish meeting and the annual LSRCP meeting. Brent attended management training seminars and database training. Mel attended Supervisory training in Boise, and resident fish management meeting in Jerome. Danielle Dorsch and Chris Jeszke are the Fish Culturists. Phil Stone is the Utility Craftsman.

Table 1. Sawtooth FH Spring Chinook salmon trapped, spawned, and fish disposition - 2009.

Total Fish Trapped: 3,994 Run Timing: 6/24/09 to 10/16/09 Peak of Return: 7/8/09

| | | |
|------------------------------------|------------------------------------|-----------------------------------|
| 380 Marked Jacks | 77 Unmarked Jacks | 457 Total Jacks |
| 1,348 Marked Males | 208 Unmarked Males | 1,556 Total Males |
| <u>1,828</u> <u>Marked Females</u> | <u>162</u> <u>Unmarked Females</u> | <u>1,990</u> <u>Total Females</u> |
| 3,556 Marked Salmon | 447 Unmarked Salmon | 4,003 Total Salmon |

| Fish Disposition: | Jacks | Males | Females | Jills | Totals |
|----------------------|-------|-------|---------|-------|--------|
| Pond Mortality | 0 | 17 | 29 | 0 | 46 |
| Prespawn Mortality | 0 | 9 | 2 | 0 | 11 |
| Spawned | 14 | 509 | 518 | 0 | 1,041 |
| Killed: Not used * | 0 | 13 | 2 | 0 | 15 |
| Released above weir | 77 | 208 | 162 | 0 | 447 |
| Trap Mortalities | 0 | 1 | 4 | 0 | 5 |
| Excess to Food Banks | 298 | 15 | 0 | 0 | 306 |
| Excess recycle | 0 | 304 | 405 | 0 | 709 |
| Excess Yankee Fork** | 75 | 675 | 767 | 0 | 1,517 |

* Note: The Carcasses from spawning and pre-spawning mortalities were sampled for disease information, frozen, and later distributed to a rendering plant along with some fish that were killed and not used. ** Fish transferred for Shoshone-Bannock Tribes Yankee Fork Supplementation Program includes spawned males used once.

| Males Spawned | Females Spawned | Green Eggs | Eyed Eggs | % Eye |
|----------------------|--------------------|---------------|--------------|----------|
| 523 (includes jacks) | 518 | 2,429,273* | 2,282,484 | 94.0 |

*A total of 518 females were spawned, 28 females eggs were culled due to high ELISA scores not included in summary.

Table 2. Rearing record for spring chinook salmon at Sawtooth FH, BY07.

| | |
|----------------------------------|-------------|
| Starting green inventory | 376,639 |
| Resulting eyed eggs | 310,258 |
| Survival to eye-up | 82.4% |
| Eggs culled-High ELISA values | 3,168 |
| Fry ponded | 300,712 |
| Survival to ponding | 96.9% |
| Smolts released | 274,644 |
| Survival from ponding to release | 91.3% |
| Survival from green to release | 72.9% |
| Weight of smolts produced | 19,206 lbs. |
| Number fish per pound (smolts) | 15.1 |
| Pounds of feed fed | 19,912 lbs. |
| Conversion rate | 0.84 |
| Feed cost/1000 smolts* | \$ 120.44 |

*(feed cost *only* - excludes labor & overhead)

Table 3. Sawtooth spring chinook smolt distribution, April 17, 2009.

| Mark | Number Released | Location |
|---------|-----------------|--------------------|
| *AD/CWT | 103,986 | SFH Weir (4/17/08) |
| **AD | 170,658 | SFH Weir (4/17/08) |

* Includes 7,063 PIT tags. ** Includes 11,608 PIT tags
No. / lb Average 15.1

Table 4. SFH steelhead trapped, spawned and fish disposition, 2009.

| Fish Disposition | Run Timing | Peak of Return |
|------------------------------------|--------------------|------------------------------|
| | 3/19/09 to 5/07/09 | 4/02/09 to 4/26/09 |
| Fish Trapped | 3,313 | (1,807 males, 1,506 females) |
| Fish Released | 34 | (20 males, 14 females) |
| Fish Spawned | 1,117 | (559 males, 558 females) |
| Pre-spawn Mortality | 0 | |
| Killed, Not Used (rendering plant) | 285 | |
| Charitable/Tribal Distribution | 1,877 | |
| Fish Recycled Through Fishery | <u>0</u> | |
| | 3,313 | (3,279 marked, 34 unmarked) |

Table 5. East Fork (EF) Natural steelhead trapped, spawned, and fish disposition, 2009.

| Fish Disposition | Run Timing 3/20/09 to 5/12/09 | Peak of Return 4/17/09 |
|-------------------------|---|----------------------------------|
| Fish Trapped: | 132 (80 males, 52 females) | |
| Fish Released: | 15 (7 males, 8 females) | |
| Fish Spawned | 112 (63 males, 42 females) | |
| Pre-spawn Mortality | 1 | |
| Killed, not used | 4 (2 males, 2 females) | |

Table 6. Squaw Creek "B-run" steelhead trapped, spawned and fish disposition, 2009.

| Fish Disposition | Run Timing 4/7/09 to 4/19/09 | Peak of Return 4/10/09 |
|-------------------------|---|----------------------------------|
| Fish Trapped | 34 (15 males, 19 females) | |
| Fish Released* | 6 (4 males, 2 females) | |
| Fish Spawned** | 45 (20 males: 20 used 2+ times, 25 females) | |
| Pre-spawn Mortality | 0 | |
| Killed, Not Used | 6 | |

* Fish released above weir were "A-run size. **Includes marked males that were under B-sized, but by real time, CWT reading indicated that fish were of "B" origin.

Table 7. Steelhead spawning record, 2009.

| Spawning Station | Males Spawned | Females Spawned | Green Eggs | Eyed Eggs | % Eye |
|-------------------------|----------------------|------------------------|-------------------|------------------|--------------|
| Sawtooth | 559 | 558 | 2,932,308 | 2,466,626 | 82.3 |
| East Fork | 70 | 42 | 212,572 | 167,775 | 78.9 |
| Squaw Cr. "B" | 22 | 25 | 182,602 | 121,035 | 66.3 |

Table 8. 2009 Sawtooth FH Steelhead Egg Shipments.

| HATCHERY or OFF-SITE LOCATION | NUMBER SHIPPED | STOCK |
|--|------------------|--------------------|
| Shoshone-Bannock Streamside Incubators | 520,177 | Sawtooth |
| Hagerman National Fish Hatchery | 1,005,330 | Sawtooth |
| Hagerman State Fish Hatchery | 170,553 | Sawtooth |
| Magic Valley Fish Hatchery | 141,000 | Sawtooth |
| Hagerman National FH | 167,775 | East Fork |
| Magic Valley Fish Hatchery | 121,035 | Squaw Creek |
| HNFH SBT YFK smolts | 481,900 | Sawtooth |
| Total Eggs Shipped | 2,318,960 | Sawtooth |
| Total Eggs Shipped | 167,775 | East Fork |
| | 121,035 | Squaw Creek |
| Total Eggs Shipped | 2,607,770 | All Stocks |

Table 9. Planting sites and numbers of catchable triploid rainbow trout stocked in the Stanley Basin by Sawtooth FH, 2009.

| Site | Number |
|---------------------------|---------------|
| Sawtooth Kids Pond | 1,600 |
| Stanley Lake | 2,674 |
| Little Bayhorse Lake | 2,000 |
| Kelly Creek Pond | 900 |
| Salmon River Section # 5 | 1,500 |
| Salmon River Section #6 | 15,700 |
| Salmon River Section #7 | 5,500 |
| Salmon River Section #8 | 8,500 |
| Squaw Creek Pond | 1,200 |
| Yankee Fork Dredge Ponds | 4,000 |
| Valley Creek | 4,500 |
| Blue Mountain Meadow Pond | 300 |
| Totals | 48,374 |

