Anadromous Fish Program (AFP)
Federal Fiscal Year 2015 Annual/Final Progress Report

Prepared by:

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October 1, 2014 – September 30, 2015

December 30, 2015

Objective 1: Participate in LSRCP coordination and production planning

Operation and Maintenance Tasks:

Task 1.1 Participate in LSRCP program activities including, but not limited to the LSRCP Annual Meeting or Program Reviews, fish marking and tagging, fish health, harvest, production planning (e.g., Salmon River AOP), M&E planning, and ESA permitting (e.g., HGMP). Provide updates and technical recommendations to meet SBT production and harvest goals and objectives.

February 5: Lytle Denny and Ryan Blackadar attended the 2015 Salmon River AOP meeting in Boise, ID to discuss SBT research activities to be conducted in Yankee Fork and Panther Creek during the 2015 field season. The Tribes provided comments and edits to the 2015 Salmon River AOP/SOP documents.

March 10 – 12: Lytle Denny traveled to Clarkston, Washington to attend the 2015 Lower Snake River Compensation Program Annual Meeting.

In addition, program staff reviewed correspondence related to IDFG's Fish Marking Plans and annual harvest plans for salmon and steelhead returns to the Salmon River basin

Task 1.2 Participate in regional fishery management activities including, but not limited to US vs. Oregon Production Advisory Committee, US vs. Oregon Technical Advisory Committee, Snake Basin Coordination Meetings, IDFG Coordination Meetings, NOAA Fisheries Coordination meetings, USFWS Coordination Meetings, and USFS Coordination Meetings. Provide updates and technical recommendations to meet SBT production and harvest goals/objectives.

January 26 - February 6: Carlos Lopez and Justin Guardipee traveled to Shepherdstown, WV to participate in the Cold Water Fish Culture Course conducted at the National Conservation Training Center.

February 3: Lytle Denny and Ryan Blackadar met with IDFG Geneticists (Matt Campbell, Mike Ackerman, and Craig Steele) in Fort Hall to discuss genetic projects and genetic sample analysis of Chinook salmon and steelhead.

February 26: Lytle Denny had a conference call with Mari Brick and Tom Cooney (NOAA Fisheries) and Lance Hebdon (IDFG) to discuss Yankee Fork Chinook Salmon Project VSP data which can be used to the upcoming Status Assessment.

April 29: Carlos Lopez and Ryan Blackadar provided a presentation to the Salmon High School.

July 14-15: Lytle Denny, Carlos Lopez and Noah Suppah met with Upper Salmon Basin Watershed Project at Pole Flat Campground and Lytle gave a presentation on the history of Yankee Fork and how the Tribes arrived at implementing the Yankee Fork Chinook Salmon Project.

We also participated in the weekly Snake Basin Coordination Meetings throughout the 2014/15 steelhead and 2015 Chinook salmon fishing seasons. Monthly correspondence related to the US vs. Oregon TAC and PAC were reviewed and technical recommendations and updates were discussed internally as necessary.

Objective 2: Yankee Fork Chinook Salmon Project

Operation and Maintenance Tasks:

Task 2.1 Environmental Compliance Requirements

Activity 2.1.1 Submit HGMP to NOAA-Fisheries, address comments, and proceed through consultation process (contingent upon NOAA Fisheries schedule).

Staff corresponded with NOAA Fisheries about our salmon and steelhead production programs and reminded them that we already submitted HGMPs for our projects and were waiting for comments. NOAA Fisheries was unable to identify when they would review our HGMPs. NOAA Fisheries did indicate that when they are ready to move forward with the consultation process, they will likely start with spring Chinook salmon in the upper Salmon River.

Activity 2.1.2 Submit and acquire an IDFG Scientific Collection Permit for authorization to collect fish in Idaho.

We acquired IDFG Scientific Collection Permit # F-09-06-15.

Activity 2.1.3 Acquire a long-term Cooperative Agreement with the USFWS that provides ESA listed Bull Trout incidental take cover and addresses critical habitat.

The Tribes' Fish and Wildlife Department is working with each of the programs to determine our overall permitting needs. As this is currently an ongoing discussion, we acquired Bull Trout coverage through IDFG Permit # F-09-06-15.

Activity 2.1.4 Acquire a special use permit from the Salmon-Challis National Forest that address operations, including a campsite/workstation for project employees, installation and operation of a temporary picket weir, kiosk, and rotary screw trap. The permit should address installation of permanent anchors and a cable/pulley system to effectively operate the rotary screw trap during spring conditions.

USFS Special Use Permit # YFK 84 provided coverage for YFCSP activities.

Activity 2.1.5 Acquire a Stream Alteration Permit from the Idaho Department of Water Resources for temporarily modifying stream flows in Yankee Fork as a result of installed the temporary picket weir and rotary screw trap.

This permit was not necessary for program operations associated with this statement of work, but a future application will be submitted as part of the Crystal Springs Fish Hatchery – Yankee Fork Salmon River Satellite Facility.

Activity 2.1.6 *Acquire a 404 Stream Alteration Permit from the U.S. Army Corps of Engineers for utilizing sandbags in front of the temporary picket weir and for developing a fyke system to improve rotary screw trap operations during base flow periods.*

This permit was not necessary for program operations associated with this statement of work, but a future application maybe submitted as part of the Crystal Springs Fish Hatchery – Yankee Fork Salmon River Satellite Facility.

Activity 2.1.7 *Develop an MOA with IDFG and LSRCP describing the long-term project plans.*

The Tribes met with IDFG and determined that an MOA was not needed in 2015.

Activity 2.1.8 *Submit and acquire ESA Section 10 Scientific Research Permit from NOAA Fisheries for work not covered under the HGMP consultation.*

We acquired Scientific Research Permit # 1127-4R on July 30, 2014. This permit is valid through December 31, 2018.

Task 2.2 Operate and Maintain Pole Flat Weir

Activity 2.2.1 *Install a temporary Chinook salmon picket weir in Yankee Fork Salmon River in June or early July and remove weir in mid-September.*

Pole Flat Weir was installed on June 9 and removed on September 24, 2015. The weir was transported from Yankee Fork to the Tribes' satellite facility located in Clayton, Idaho for storage.

Activity 2.2.2 *Operate and maintain temporary picket weir on a daily basis. Snorkel the front and back of the weir and trapping device to ensure the device is operating properly. Clean and remove debris from the face of the weir and trapping device daily. Collect fish carcasses from weir daily and sample for biological information and mark-recapture analysis.*

Pole Flat Weir was checked on a daily basis for 108 total trapping days. Staff snorkeled the front and back of the weir and removed debris as necessary.

Activity 2.2.3 *Enumerate adult Chinook salmon and all other species trapped in the weir daily. Mark adult Chinook salmon released above the weir with a right operculum punch for genetic analyses and mark-recapture analysis.*

Collect biological information from all trapped adult Chinook salmon (e.g., length, weight, gender, origin, tissue, scale) and identify pre-existing marks or tags. Mark adult bull trout with right operculum punch and PIT tag.

Pole Flat Weir was operated on a daily basis and all trapped fish were identified, enumerated, and marked with right operculum punches consistent with mark and recapture protocols. All fish were released directly upstream of the weir after biological information was collected.

Activity 2.2.4 *Collect broodstock according to HGMP and/or MOA and transfer to East Fork Salmon River satellite facility or Sawtooth FH. If adult Chinook salmon are collected for broodstock and held at the East Fork Satellite Facility, monitor adults and coordinate with Sawtooth FH to maximize fish health.*

Pre-season planning efforts indicated that sufficient numbers of hatchery adults would be obtained at Sawtooth Fish Hatchery for the YFCSP. Therefore all adult salmon trapped in Yankee Fork were released to spawn naturally.

Activity 2.2.5 *Develop spawn schedule and spawn adult Chinook salmon at East Fork (or Sawtooth FH) and collect eggs. Transfer fertilized eggs to Sawtooth FH (if spawned at East Fork Satellite Facility) for egg incubation and final rearing.*

There were no fish to spawn since all Chinook salmon trapped in Yankee Fork were released to spawn naturally.

Task 2.3 *Hatchery adult Chinook salmon out-planting*

Activity 2.3.1 *Coordinate hatchery adult Chinook salmon outplanting activities including the numbers to be outplanted, dates of outplanting, release locations, truck logistics, and sampling requirements.*

We coordinated our hatchery adult outplanting goals and objectives for 2015 with IDFG at our SBT/IDFG Anadromous Fish Coordination Meeting. As the salmon run progressed, adult outplanting activities were discussed weekly as part of the Snake Basin Coordination Meetings. Staff was told that there would not be fish available for out planting in 2015.

Activity 2.3.2 *During each adult outplanting event, genotype each adult by sampling tissue from the left operculum and store in 95% ethanol. Operculum punch will be used to verify whether a spawned out carcass is a Sawtooth FH outplant and to provide future genetic analysis options. Collect phenotypic characteristics including fork length and gender.*

Hatchery adult Chinook salmon were not outplanted in 2015 because none were available due to broodstock shortages.

Activity 2.3.3 *Outplant hatchery adult Chinook salmon in locations in Yankee Fork following normal SBT protocols; record transfer time, release location, mortalities, and total fish outplanted.*

Hatchery adult Chinook salmon were not outplanted in 2015 because none were available due to broodstock shortages.

Task 2.4 Hatchery juvenile Chinook salmon smolt out-planting

Activity 2.4.1 *Coordinate hatchery smolt outplanting activities, including the numbers to be outplanted, dates of outplanting, release locations, and truck logistics.*

We coordinated our hatchery smolt outplanting goals and objectives for 2015 with IDFG at our SBT/IDFG Anadromous Fish Coordination Meeting. In addition, we coordinated with Sawtooth Fish Hatchery to develop a contract with Neil Ring Trucking.

Activity 2.4.2 *Snow plow smolt release sites, acquire additional pipes from East Fork and set-up and take-down smolt pipes at agreed to locations.*

Due to a lack of snow pack snow removal was unwarranted. Staff set up smolt pipes on April 15, 2015 at the Pond Series 1 semi-acclimation site. Block nets were set up one week prior to the smolt releases.

Activity 2.4.3 *Assist with all aspect associated with loading smolts at Sawtooth FH and releasing smolts in Yankee Fork. Set-up and maintain block nets at the acclimation release site for 48 hours.*

Staff helped crowd and load juvenile Chinook salmon smolts at Sawtooth Fish Hatchery. We released these fish in Pond Series on April 20. The block net was checked periodically to ensure a 48 hour acclimation in Pond Series 1.

Task 2.5 Operate and maintain the instream PIT tag array

Activity 2.5.1 *Check on the site periodically, snorkel the array panels, check for damages, and maintain infrastructure and equipment.*

Throughout the season, staff periodically checked the instream PIT tag array. We checked once during February 2015 then monthly from March through November 2015. The array worked great, but was down on two occasions. Biomark assisted us with fixing the array and optimizing PIT tag detection range.

Activity 2.5.2 *Download and manage PIT tag detection files daily; upload PIT tag detection files to PTAGIS.*

PIT tag detection files were uploaded to PTAGIS on a daily basis.

Monitoring and Evaluation Tasks:

Task 2.6 Estimate natural production at the rotary screw trap

Activity 2.6.1 Continue to operate rotary screw trap through the 2014 field season (October 1 – November 15, 2014) to estimate BY 2013 pre-smolt production. Quantify out-migrating juvenile salmonids daily and identify all fish to species. Sample at least 25 Chinook salmon daily and collect length (mm), weight (±0.01g), and tissue sample. PIT tag all juvenile Chinook salmon >70 mm fork length and bismarck brown stain fish smaller <70 mm fork length. Calibrate rotary screw trap as necessary to accurately estimate juvenile migrants using PIT tagged fish and/or bismarck brown stain fish.

The rotary screw trap was operated until November 4, 2014. When the trap was operated, juvenile fish were enumerated, biological data collected and a sub-sample was PIT tagged or brown stained. A number of season calibrations occurred to improve rotary screw trapping efficiency. These included upstream and downstream trap adjustments, left and right adjustments, and digging out underneath the trap during low flows. Depth adjustments were completed to allow the entire trap and cone to remain submerged and operated in the optimum position. Preliminary analysis indicates recapture rates for smolts and juveniles improved from previous efforts. This may indicate that in-season adjustments are increasing overall trap efficiency.

Activity 2.6.2 Remove, clean, and winterize the rotary screw trap in November 2014.

The rotary screw trap was removed on November 4, 2014 due to winter conditions in the Yankee Fork. The trap was loaded, transported, and stored at the Tribes' Clayton Satellite Facility.

Activity 2.6.3 Install permanent anchors and a cable/pulley system.

A more permanent anchor and cable/pulley system was installed in the spring of 2014. The cable/pulley system is operated by two battery powered winches. The new system dramatically improved operations in the spring of 2015 by allowing full lateral movement of the rotary screw trap in all streamflow conditions.

Activity 2.6.4 Install the rotary screw trap as soon as conditions permit in 2015.

The rotary screw trap was installed on March 25 as soon as conditions warranted.

Activity 2.6.5 Operate the rotary screw trap from April 1 – September 30, 2015 to estimate BY 13 smolt production and BY 14 fry, parr and pre-smolt production. Quantify out-migrating juvenile salmonids daily and identify all fish to species. Sample at least 25 Chinook salmon daily and collect

length (mm), weight (g), and tissue sample. PIT tag all juvenile Chinook salmon >70 mm fork length and bismarck brown stain fish smaller <70 mm fork length. Calibrate rotary screw trap as necessary to accurately estimate juvenile migrants using PIT tagged fish and/or bismarck brown stain fish.

The rotary screw trap was installed on March 25 and removed on November 10, 2015 for a total of 173 days of trapping. During this period, the screw was not operated on 41 days primarily as a result of juvenile smolt releases, extensive ice or freezing conditions, safety due to high streamflows, debris, or lack of personnel. When the trap was operated, juvenile fish were enumerated, biological data collected, and a sub-sample was tagged with PIT or brown stain. A number of in-season calibrations occurred to improve the rotary screw trap dataset. These included upstream and downstream trap adjustments, left and right trap adjustments, digging out underneath the trap during low flows for depth adjustments. The depth adjustments were complete to allow the entire trap and cone to remain submerged and operated in the optimum position. Preliminary analysis indicates recapture rates for smolts and juveniles improved from previous efforts.

Activity 2.6.6 *Estimate broodyear 2013 and 2014 production by life stage (e.g., fry, parr, pre-smolt, and smolt); estimate mean survival, mean passage date, mean length, mean weight and condition.*

Broodyear 2013 and 2014 production estimates will be developed and included in the 2015 Yankee Fork Salmon River Chinook Salmon Run Reports.

Activity 2.6.7 *Use PIT tagged juveniles to estimate mean survival, mean travel time, mean passage date from the rotary screw trap to 1) Yankee Fork instream array; 2) Lower Granite Dam; and 3) through FCRPS hydro-power system.*

Mean survival, mean travel time, and mean passage to the Yankee Fork PIT tag array, Lower Granite Dan, and other FCRPS projects will be included in the 2015 Yankee Fork Salmon River Chinook Salmon Run Report.

Task 2.7 *Conduct electrofishing to document juvenile distribution and estimate abundance, density, and overwinter survival*

Activity 2.7.1 *Conduct electrofishing at identified status and trend sample sites. Collect juvenile Chinook salmon and record biological data; PIT tag juvenile Chinook salmon > 55 mm fork length.*

Electrofishing was conducted in Eightmile Creek during the first week of August. In addition, seven sample sites were electrofished between September 22 - 30, 2015. Staff was unable to enter sections six and seven as roads were closed due to the Elevenmile Fire. Biological data was collected and fish were pit tagged in all sections.

Activity 2.7.2 Identify the number of PIT tagged juvenile Chinook salmon detected at the Yankee Fork PIT tag array and estimate overwinter survival.

Total number of pit tagged juvenile Chinook salmon detected at the Yankee Fork PIT tag array will be included in the 2015 Yankee Fork Salmon River Chinook Salmon Run Report. This data is currently archived on PTAGIS website.

Task 2.8 Monitor and evaluate hatchery juvenile Chinook salmon broodyear release

Activity 2.8.1 Count all hatchery Chinook salmon smolts caught at the rotary screw trap. Sub-sample 20 hatchery smolts per day and collect length (mm) and weight (g) information. PIT tag sub-sampled fish and release upstream for mark recapture evaluation.

Hatchery juvenile Chinook salmon were trapped at the rotary screw trap. It is worth noting that we also released a significant number of hatchery juvenile steelhead smolts and these fish were being captured too. However, due to high capture efficiency of hatchery fish (both Chinook and steelhead), we elected to pull the screw trap during this period of time to minimize mortality.

Activity 2.8.2 Estimate the number of hatchery smolts that emigrate from Yankee Fork by release group and estimate mean emigration date and mean survival by release group.

We plan to use the PIT tag array dataset to develop survival and outmigration estimates for hatchery juvenile Chinook salmon releases. This information will be included in the 2015 Yankee Fork Salmon River Chinook Salmon Run Report.

Activity 2.8.3 Using PIT tags (inserted at hatchery and/or rotary screw trap) estimate hatchery Chinook salmon smolt survival from release to: 1) rotary screw trap; 2) instream array; 3) Lower Granite Dam; and 4) through the FCRPS hydro-power system. Estimate mean passage date and mean travel time to each detection point.

We plan to use PIT tags to develop survival and outmigration estimates for hatchery juvenile Chinook salmon releases to the Yankee Fork PIT tag array, Lower Granite Dam, and other FCRPS projects. These analyses will be included in the 2015 Yankee Fork Salmon River Chinook Salmon Run Report.

Task 2.9 Conduct creel survey of Tribal fisherman in Yankee Fork

Activity 2.9.1 Conduct statistically valid creel survey on Tribal fisherman in Yankee Fork Salmon River.

Creel surveys were conducted daily in Yankee Fork from June 14 – July 11, 2015. A total of 10 passes were completed in Yankee Fork. During each survey, fishery monitors collected catch per unit effort (CPUE) data from Tribal fishermen. CPUE data included number of fishermen,

number of days fished, amount of time fished, number of fish caught, type of gear used, origin, and length of fish harvested. These surveys were completed in coordination with the Tribal Fish and Game Department and in conjunction with other daily program activities (e.g., checking screw trap and weirs).

Activity 2.9.2 Estimate total hatchery and natural Chinook salmon harvested.

Overall, Tribal fishing efforts were very low and is similar to previous years because of low adult escapement. Preliminary estimates indicate no fish were harvested by Tribal members.

Task 2.10 Conduct weekly spawning ground surveys in Yankee Fork

Activity 2.10.1 Develop spawning ground survey protocol and conduct spawning ground survey training.

The Tribes conducted redd count training for inexperienced crew members during the first week of spawning ground surveys in 2015. Redd count training was performed by pairing experienced crew members with inexperienced crew members to insure adherence to redd counting protocol established by the Shoshone-Bannock Tribes.

Activity 2.10.2 GPS, ribbon-mark, and record the location and number of Chinook salmon redds on a weekly basis.

GPS coordinates were recorded for all observed redds with portable GPS devices and documented on datasheets. Additionally, all observed redds were marked with survey flagging that included the location, unique redd ID, and number of redds observed. Overall, redd surveys were conducted on a weekly basis in 2015, however, the Elevenmile Fire kept our crews out of the upper Yankee Fork for the last pass.

Activity 2.10.3 Collect salmon carcasses for mark-recapture estimate and percent spawned.

All observed carcasses were collected and examined for mark-recapture information, including operculum punches, PIT tags and coded-wire tags. Carcasses were cut open in the midsection to verify sex and determine if females were completely spawned, partially spawned, or were pre-spawn mortalities. Additionally, GPS locations of all carcasses were recorded.

Activity 2.10.4 Collect genotypic and phenotypic information from all carcasses.

Phenotypic information was collected for all observed carcasses. Genotypic information was collected for approximately 95% of observed carcasses because some highly decayed carcasses did not allow for genotypic sample collection.

Activity 2.10.5 Develop fish/redd estimate for area upstream of Pole Flat Weir.

The fish/redd estimates for 2015 are in progress. Data has been collected for total fish and total redds in the project area above Pole Flat Weir.

Task 2.11 Estimate total hatchery and natural adult Chinook salmon escapement to Yankee Fork

Activity 2.11.1 Utilize mark-recapture data to estimate adult Chinook salmon escapement above Pole Flat weir. Estimate the natural and hatchery contributions from carcasses recovered above Pole Flat weir. If insufficient carcasses are obtained, use the hatchery and natural fraction observed at Pole Flat weir to estimate contributions by origin.

Hatchery and natural adult escapement estimates will be conducted based on weir and spawner survey data collected during the 2015 field season. These estimates are in progress and will be included in the 2015 Yankee Fork Salmon River Chinook Salmon Run Report.

Activity 2.11.2 Utilize fish/redd expansion factor to estimate the number of adult Chinook salmon escaping to the area below Pole Flat weir. Estimate the natural and hatchery contributions from carcasses recovered below Pole Flat weir. If insufficient carcasses are obtained, use the hatchery and natural fraction observed at Pole Flat weir to estimate contributions by origin.

Fish per redd estimates below Pole Flat weir are in progress and will be included in the 2015 Yankee Fork Salmon River Chinook Salmon Run Report.

Activity 2.11.3 Compare and contrast the estimated hatchery and natural adult Chinook salmon escapement estimates to the escapement estimate derived at the instream PIT tag array utilizing PIT tags.

This analysis will be included in the 2014 Yankee Fork Salmon River Chinook Salmon Run Report once escapement estimates are finalized.

Objective 3: Synthesize project results in the form of annual reports

Task 3.1 Provide Annual/Final Progress Report for Fiscal Year 2014 Statement of Work associated with Cooperative Agreement # F14AC00015.

Activity 3.1.1 Develop and submit a final 2014 Annual/Final Progress Report by December 31, 2014

The 2014 Annual/Final Progress Report was completed and provided to the LSRCP Office on December 31, 2014.

Task 3.2 Provide summary reports for applicable permits

Activity 3.2.1 *Develop and submit a final 2014 Summary Report for the IDFG Scientific Collecting Permit by January 31, 2015.*

The IDFG Scientific Collecting Permit Summary Report was completed and submitted.

Activity 3.2.2 *Develop and submit the final 2014 Summary Report for the NOAA Fisheries ESA Section 10 – 1127 Scientific Research Permit by January 31, 2015.*

The NOAA Scientific Research Permit Report was completed and submitted.

Task 3.3 *Provide 2014 Yankee Fork Chinook Salmon Run Report*

Activity 3.3.1 *Develop and submit the draft 2014 Yankee Fork Salmon River Chinook Salmon Run Report by March 1, 2015.*

The draft 2014 Yankee Fork Chinook Salmon Run Report was submitted.

Activity 3.3.2 *Develop and submit the final 2014 Yankee Fork Salmon River Chinook Salmon Run Report by May 31, 2015.*

The final 2014 Yankee Fork Chinook Salmon Run Report was completed and submitted.

Task 3.4 *Provide Fiscal Year 2016 Statement of Work and Budget.*

Activity 3.4.1 *Develop and submit the draft FY 2016 Statement of Work and Budget according to LSRCP timeline.*

The FY 2016 Statement of Work and Budget was completed and submitted.

Task 3.5 *Provide Monthly Vehicle Reports*

Activity 3.5.1 *Submit a monthly vehicle report for each vehicle at each facility by the 5th day after the end of each month; include mileage for each vehicle.*

Monthly vehicle reports were submitted.