Anadromous Fish Program (AFP)
Federal Fiscal Year 2014 Annual/Final Progress Report

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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.

Staff attended the Salmon River AOP Meeting in Boise, Idaho on February 4, 2014. Prior to and after the meeting, we updated sections of the Salmon River AOP documents that were applicable to our projects. We also attended the LSRCP Annual Meeting in Boise, Idaho from March 4 – 6, 2014 and gave a powerpoint presentation on the Steelhead Streamside Incubation Project on March 5. 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.

Staff met with IDFG in Twin Falls, Idaho on January 16, 2014 to acquire training on uploading data into the Idaho Fish and Wildlife Information System (IFWIS). We attended the SBT/IDFG Anadromous Fish Coordination Meeting in Fort Hall, Idaho on March 13. We provided a powerpoint presentation at the Fort Hall Elementary School on April 29, 2014. Staff attended the IDFG Spawning Ground Survey Meeting in Boise, Idaho on May 1, 2014. We attended the SBT/NOAA Anadromous Fish Coordination Meeting in Fort Hall, Idaho on June 4, 2014. We also participated in the weekly Snake Basin Coordination Meetings throughout the 2014 steelhead and 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: Implement Yankee Fork Chinook Salmon Project

Operation and Maintenance Tasks:

Task 2.1 Environmental Compliance Requirements

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

As noted above, staff met with NOAA Fisheries on June 4. We talked to 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 permission to collect fish in Idaho and specifically associated with YFCSP.

We acquired IDFG Scientific Collection Permit # F-09-06-14.

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 associated with the YFCSP.

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-09-06-14.

Activity 2.1.4 Acquire a special use permit from the Salmon-Challis National Forest that address YFCSP 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 plans for the YFCSP.

The Tribes met with IDFG and determined that an MOA was not needed in 2014.

Activity 2.1.8 Submit and acquire new 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.

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 21 and removed on September 17, 2014. 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.

Pole Flat Weir was checked on a daily basis for 89 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 evaluation. Collect biological information from all trapped adult Chinook salmon (e.g., length, weight, gender, origin, tissue, scale) and identify pre-existing marks or tags.

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 Fish Hatchery 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) and collect eggs. Transfer fertilized eggs to Sawtooth (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.

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 2014 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. Once we determined there would be fish available for outplanting, we would coordinate with personnel from Sawtooth Fish Hatchery and develop our plans for each outplant. Our outplanting plans included identifying the date, time, number of staff, number of fish, transportation logistics, and release locations. The sampling requirements were communicated once and these stayed the same for every outplant event.

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 outplant and to provide future genetic analysis options. Collect phenotypic characteristics including fork length and gender.

Hatchery adult Chinook salmon were outplanted on August 5, 6, 13, and September 5, 2014. A total of 221 fish were outplanted in Yankee Fork. Each fish was identified to gender, measured, and tissue sampled.

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

A total of 171 fish were outplanted in Eightmile Creek as part of our nutrient enrichment study. An additional 50 fish were outplanted at the Elevenmile Creek bridge.

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 2014 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.

Staff hauled a tractor to Yankee Fork on March 26, 2014 and removed snow at Jordan Creek and Pond Series 1 on March 27 and 28, respectively. We set up smolt pipes and block nets one week prior to the smolt releases.

Activity 2.4.3 Assist with all aspect associated with loading smolts at Sawtooth 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 1 and Jordan Creek on April 24 and 25, respectively. The block net was checked periodically to ensure a 48 hour acclimation in Pond Series 1. A total of 192,577 fish were released.

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 the winter on February 26, 2014 then monthly from March through November 2014. The array worked great, but was down on three 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 2013 field season (October 1 – November 15, 2013) to estimate BY 2012 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.

Late season rotary screw trap operations were successful. The rotary screw trap was operated until ice flows occurred on November 15, 2013. 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 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. 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 2013.

The rotary screw trap was removed on November 15, 2013 due to winter conditions in the Yankee Fork. The trap was winterized and stored at the Clayton Satellite Facility for the remainder of the season.

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 period 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 2014.

The rotary screw trap was installed on April 5 as soon as conditions warranted.

Activity 2.6.5 Operate the rotary screw trap from April 1 – September 30, 2013 to estimate BY 12 smolt production and BY 13 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 April 5 and removed on November 4, 2014 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 2012 and 2013 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 2012 and 2013 production estimates will be developed and included in the 2013 and 2014 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 2014 Yankee Fork Salmon River Chinook Salmon Run Report.

Task 2.7 Monitor and evaluate hatchery juvenile Chinook salmon broodyear release

Activity 2.7.1 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 2.7.2 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.

Activity 2.7.3 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 2014 Yankee Fork Salmon River Chinook Salmon Run Report.

Task 2.8 Conduct creel survey of Tribal fisherman in Yankee Fork

Activity 2.8.1 Conduct statistically valid creel survey on Tribal fisherman in Yankee Fork Salmon River.

Creel surveys were conducted daily in Yankee Fork from June 28 – July 15, 2014. A total of 18 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 2.8.2 Estimate total hatchery and natural Chinook salmon harvested.

Overall, Tribal fishing efforts were low and is similar to previous years because of low escapement. Preliminary estimates indicate only six total fish were harvested by Tribal members and all fish harvested by Tribal members were natural-origin Chinook.

Task 2.9 Conduct weekly spawning ground surveys in Yankee Fork throughout all seven distinct strata.

Activity 2.9.1 Develop spawning ground survey protocol and conduct redd count training.

Three staff supervisors, including two biologists and one lead technician, attended spawning ground survey protocol and redd training in 2013. The Tribes conducted redd count training to inexperienced crew members during the first week of spawning ground surveys in 2014. 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 2.9.2 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 2014, however, intense rain events in late August caused sections in the West Fork not to be completed on a weekly basis. During mid-August, staff volunteered for a fish round-up in the South Fork Salmon River and therefore missed a spawning ground survey pass.

Activity 2.9.3 Collect spawned-out 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 2.9.4 Collect genotypic and phenotypic information from all carcasses.

Phenotypic information was collected for all observed carcasses. Genotypic information was collected for approximately 70% of observed carcasses because some highly decayed carcasses did not allow for genotypic sample collection.

Activity 2.9.5 Develop fish/redd estimate for area upstream of Pole Flat Weir.

The fish/redd estimates for 2014 are in progress. Preliminary results indicate 375 adult Chinook returned to the project area above Pole Flat Weir.

Task 2.10 Estimate total hatchery and natural adult Chinook salmon escapement to Yankee Fork

Activity 2.10.1 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 2014 field season. These estimates are in progress and will be included in the 2014 Yankee Fork Salmon River Chinook Salmon Run Report.

Activity 2.10.2 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 2014 Yankee Fork Salmon River Chinook Salmon Run Report.

Activity 2.10.3 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 2013 Statement of Work associated with Cooperative Agreement # F13AC00031.

Activity 3.1.1 Develop and submit a final 2013 Annual/Final Progress Report by December 31, 2013

The 2013 Annual/Final Progress Report was completed and submitted on December 30, 2013.

Task 3.2 Provide summary reports for applicable permits

Activity 3.2.1 Develop and submit a final 2013 Summary Report for the IDFG Scientific Collecting Permit by January 31, 2014.

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

Activity 3.2.2 Develop and submit the final 2013 Summary Report for the NOAA Fisheries ESA Section 10 – 1127 Scientific Research Permit by January 31, 2014.

The NOAA Scientific Research Permit Report was completed and submitted.

Task 3.3 Provide 2013 Yankee Fork Chinook Salmon Run Report

Activity 3.3.1 Develop and submit the draft 2013 Yankee Fork Salmon River Chinook Salmon Run Report by March 1, 2014.

The draft 2013 Yankee Fork Chinook Salmon Run Report was submitted.

Activity 3.3.2 Develop and submit the final 2013 Yankee Fork Salmon River Chinook Salmon Run Report by March 31, 2014.

The final 2013 Yankee Fork Chinook Salmon Run Report was completed and submitted.

Task 3.4 *Provide Fiscal Year 2015 Statement of Work and Budget.*

Activity 3.4.1 Develop and submit the draft FY 2015 Statement of Work and Budget by June 1, 2014.

The FY 2015 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.