Supplementation, Monitoring, and Evaluation Program (SMEP)
Federal Fiscal Year 2019 Annual/Final Progress Report

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The Lower Snake River Compensation Plan (LSRCP) began with congressional authorization in 1976 and was designed to mitigate for the loss of steelhead and Chinook Salmon resulting from the construction of the hydroelectric dams on the lower Snake River. LSRCP involves numerous cooperating agencies with the Shoshone-Bannock Tribes' involvement beginning in 2003.

The Shoshone-Bannock Tribes (SBT) work with LSRCP and other cooperating agencies to achieve the following goals:

(1) Increase harvest opportunity for Chinook Salmon and steelhead via traditional methods for tribal members in the Snake River basin,
(2) Assist LSRCP in attaining project area adult Chinook Salmon and steelhead return goals,
(3) Work with LSRCP to further the tenets of the Tribes' Snake River Policy.

Specifically, the Shoshone-Bannock Tribes' Supplementation, Monitoring, and Evaluation Program works on the following deliverables to move towards the above goals:

(1) Participate in LSRCP coordination and production planning,
(2) Implement the Yankee Fork Chinook Salmon Project,
(3) Implement the Yankee Fork Steelhead Project,
(4) Implement Steamside Incubator Steelhead Project,
(5) Implement South Fork Chinook Salmon Egg Box Project, and
(6) Synthesize project results in the form of annual reports.

Objective 1: Participate in LSRCP coordination and production planning

Participation in LSRCP coordination and production planning is critical to a well-functioning multi-agency management strategy that meets the needs of all co-managers and advances our understanding and implementation of hatchery and supplementation reforms. Coordination occurs at many levels in many forums and includes the annual operations of the hatchery system, environmental compliance issues, harvest totals, and monitoring and evaluation planning.

In Fiscal Year 2019, the Shoshone-Bannock Tribes' SMEP participated in the following LSRCP and regional coordination activities.

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, FINS database use and ESA permitting (e.g., HGMP). Provide updates and technical recommendations to meet SBT production and harvest goals and objectives.

- October 26, 2018 – L. Denny and J. Ebel attended a coordination meeting with NOAA-Fisheries and BPA staff regarding reinitiating consultation of the Biological Opinion to include electrofishing take for the South Fork Chinook Salmon Eggbox Project.
- November 6, 2018 – L. Denny and J. Ebel met with R. Thompson, BIA and D. Stone about the South Fork Chinook Salmon Eggbox Project Biological Opinion addendum.

- November 8, 2018 – L. Denny and J. Ebel participated in a phone meeting with Emi Kondo, NOAA-Fisheries to review the Environmental Assessment for Snake River Basin Hatcheries.
- November 13, 2018 – L. Denny and J. Ebel submitted comments on the Snake River Hatcheries Program Environmental Assessment.
- November 30, 2018: L. Denny and J. Ebel attended an LSRCP Monitoring and Evaluation meeting in Boise, Idaho.
- January 10, 2019 – L. Denny and J. Ebel attended the 2018 Annual Mark-Tag Coordination Meeting.
- January 24, 2019 – All program staff attended FINS training meeting with Jorge Gonzalez via Go-To-Meeting.
- February 12, 2019 – L. Denny and J. Ebel attended the Salmon River AOP/SOP Meeting.
- February 28, 2019 – L. Denny participated in a meeting with NOAA-Fisheries regarding Biological Opinion Reporting.
- April 22-25, 2019 – L. Denny traveled to Lewiston, Idaho to attend the Lower Snake River Compensation Program's Annual Meeting, NOAA-Fisheries Steelhead Workgroup Meeting, and LSRCP Managers Meeting.
- May 14, 2019 – L. Denny and J. Ebel held a phone meeting with Rod Engle, LSRCP regarding production planning.
- June 18, 2019 – L. Denny had a phone meeting with Julie Collins, LSRCP Manager to discuss transitioning the East Fork Naturals Program to the SBT Cooperative Agreement.
- July 11, 2019 – J. Ebel attended a LSRCP steelhead reporting meeting in La Grande, Oregon.
- July 19, 2019 – L. Denny and J. Ebel met with the LSRCP and IDFG in Boise, Idaho to discuss transitioning the East Fork Naturals Project to the SBT.
- July 25, 2019 – J. Ebel attended at a meeting in Boise, ID regarding ESA status reviews for Chinook salmon, steelhead, and sockeye.
- September 4-5, 2019 – J. Ebel traveled to Boise, Idaho to participate in the Idaho Salmon and Steelhead Days.
- September 30, 2019 – J. Ebel had a call with M. Robertson, LSRCP regarding exceeding take during South Fork Salmon River electrofishing

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, FINS technical meetings and trainings and USFS Coordination Meetings. Provide updates and technical recommendations to meet SBT production and harvest goals/objectives.

- October 8, 2018 – L. Denny was interviewed for a Bureau of Reclamation video about dredge mining and fish restoration in the Yankee Fork Salmon River.
- November 2018 – J. Ebel submitted comments on the CRSO EIS Affected Environment section portion and Snake Basin Hatchery Programs Environmental Assessment.

- November 2018 – J. Ebel participated in the development of the Snake Basin Steelhead Run Reconstruction Report (See Stark et al. 2018 – IDFG report).
- November 27-28, 2018 – J. Ebel attended co-manager meetings on life cycle models and PIT array prioritization in Boise, Idaho.
- November 29, 2018 – L. Denny and J. Ebel met with IDFG in Boise, Idaho regarding steelhead age validation study.
- December 19, 2018 – J. Ebel, C. Lopez, and R. Ariwite participated in the Yankee Fork Strategic Planning meeting in Fort Hall, Idaho.
- January 23, 2019 – L. Denny participated in a *US v Oregon* Production Advisory Committee Meeting.
- February 6, 2019 – L. Denny and J. Ebel attended a Yankee Fork production coordination meeting with IDFG in Jerome, Idaho.
- February 14, 2019 – L. Denny and J. Jackson attended a seminar at Idaho State University, "Climate Change in Alaska's Salmon Forest".
- February 27, 2019 – L. Denny and J. Ebel participated in the Snake Basin Coordination Meeting.
- February 27, 2019 – L. Denny participated in the *US v Oregon* Production Advisory Committee Meeting.
- March 5-7, 2019: J. Ebel, J. Jackson, C. Lopez, and R. Ariwite traveled to Boise, Idaho to attend a PIT array workshop and participate in the Idaho Chapter of the American Fisheries Society annual meeting.
- March 5, 2019 – L. Denny participated in the RIOG meeting.
- March 6, 2019 – L. Denny and J. Ebel participated in the Snake Basin Coordination Meeting.
- March 13, 2019 – L. Denny and J. Ebel attended a Fish and Wildlife update meeting with the Fort Hall Business Council.
- March 13, 2019 – J. Ebel participated in the Snake Basin Coordination Meeting.
- March 20, 2019 – J. Ebel participated in the Snake Basin Coordination Meeting.
- March 25, 2019 – J. Ebel and L. Denny participated in a Sawtooth-Springfield Chinook Evaluation meeting.
- March 27, 2019 – L. Denny participated in the Snake Basin Coordination Meeting.
- April 2-4, 2019 – L. Denny traveled to Boise, Idaho to attend the spatial stream network models workshop.
- April 11, 2019 – J. Ebel attended the Minshall Lecture by Dr. John Sabo at Idaho State University.
- April 11, 2019 – J. Ebel participated in the Snake Basin Coordination Meeting.
- April 17, 2019 – J. Ebel participated in the Snake Basin Coordination Meeting.
- April 24, 2019 – L. Denny and J. Ebel participated in a conference call with IDFG to discuss acute mortality of the sentinel Springfield-reared smolts and coordinate a second release of 1,000 fish to evaluate the efficacy of acclimation at Sawtooth at reducing acute mortality.
- April 25, 2019 – L. Denny and J. Ebel participated in conference call with IDFG to coordinate the release of the remaining Springfield and Sawtooth smolts into the Yankee Fork.
- May 7, 2019 – J. Ebel participated in the Snake Basin Coordination Meeting.

- May 14, 2019 – L. Denny and J. Ebel participated in the Snake Basin Coordination Meeting.
- May 17, 2019 – J. Ebel participated in CRSO Cooperating Agency Coordination meeting and the CRSO Biweekly Update meeting with Leady agencies and Cooperating Agencies.
- May 22, 2019 – L. Denny and J. Ebel participated in the Snake Basin Coordination Meeting.
- May 31, 2019 – J. Ebel participated in CRSO Cooperating Agency Coordination meeting and the CRSO Biweekly Update meeting with Leady agencies and Cooperating Agencies.
- May 31, 2019 – L. Denny and J. Jackson attended the Yankee Fork Interdisciplinary Team Meeting.
- June 4, 2019 – L. Denny and J. Ebel remotely attended the 2019 Snake River Sockeye Program Review.
- June 4, 2019 – J. Ebel participated in the Snake Basin Coordination Meeting.
- June 11, 2019 – J. Ebel participated in the Snake Basin Coordination Meeting.
- June 18, 2019 – J. Ebel participated in the Snake Basin Coordination Meeting.
- June 25, 2019 – L. Denny participated in the Snake Basin Coordination Meeting.
- June 26, 2019 – L. Denny participated in the *US v Oregon* Production Advisory Committee Meeting.
- June 28, 2019 – L. Denny and J. Ebel remotely attended the Governor's Salmon Workgroup Meeting.
- July 2, 2019 – L. Denny participated in the Snake Basin Coordination Meeting.
- July 9, 2019 – L. Denny and J. Ebel participated in the Snake Basin Coordination Meeting.
- July 16, 2019 – L. Denny and J. Ebel participated in the Snake Basin Coordination Meeting.
- July 23, 2019 – L. Denny and J. Ebel participated in the Snake Basin Coordination Meeting.
- July 24, 2019 – L. Denny and C. Colter participated in a conference call with Lance Hebdon, IDFG to discuss the Tribes' perspective regarding habitat restoration in preparation for the next Idaho Governors Salmon Workgroup meeting.
- July 24, 2019 – L. Denny participated in the *US v Oregon* Production Advisory Committee Meeting.
- July 30, 2019 – L. Denny participated in the Snake Basin Coordination Meeting.
- July 31-August 7, 2019 – L. Denny traveled to Stanley, Idaho to participate in the 2019 River Newe Pow-wow: STrEAM Ecology.
- August 14, 2019 – L. Denny participated in the Snake Basin Coordination Meeting.
- August 21, 2019 – L. Denny participated in a staff-to-staff meeting with the Salmon Challis National Forest.
- August 21, 2019 – J. Ebel participated in the Snake Basin Coordination Meeting.
- August 28, 2019 – L. Denny participated in the *US v Oregon* Production Advisory Committee Meeting.
- August 28, 2019 – J. Ebel participated in the Snake Basin Coordination Meeting.

- August 30, 2019 – L. Denny participated in a Fish and Wildlife Department update meeting with the Fort Hall Business Council.
- September 4, 2019 – L. Denny participated in the Snake Basin Coordination Meeting.
- September 11, 2019 – L. Denny participated in the Snake Basin Coordination Meeting.

Objective 2: Yankee Fork Chinook Salmon Project

The overarching goal of the Yankee Fork Chinook Salmon Project is to return 2,000 adult Chinook Salmon to help meet Tribal harvest needs in the Snake River basin. The project involves releasing hatchery smolts and adults and monitoring and evaluating the performance of these two production initiatives. Below we outline our progress on specific tasks within these two production objectives.

Task 2.1 Environmental Compliance Requirements

Activity 2.1.1 Assist in the development of a coordinated monitoring, research, and evaluation plan, including development of a smolt release study.

Completed – The SBT developed a coordinated monitoring, research, and evaluation plan to determine stress physiology, acute mortality, and long-term survival of Chinook Salmon reared under different water chemistries and released in the Yankee Fork Salmon River. This report was provided to the LSRCP in November 2019.

Activity 2.1.2 Work with LSRCP staff to acquire necessary permits to implement the project including permits to install new anchors for the Yankee Fork rotary screw trap.

Partially Completed – The SMEP worked with LSRCP, BPA, and NOAA-Fisheries to ensure the Yankee Fork Chinook Salmon Project activities were covered under the Biological Opinions issued in December 2017. The SMEP collaborated with the U.S. Forest Service to acquire a special-use permit for project activities that are outside of the scope of the Crystal Springs Fish Hatchery proposal, but the U.S. Forest Service would not entertain any new application until the current application is resolved.

Activity 2.1.3 Assist with Environmental Impact Statement and NEPA process regarding the construction of the Yankee Fork Salmon River Satellite Facility.

Completed - The SBT and BPA agreed to put the EIS on hold until the issue surrounding rearing anadromous fish in hard water at Crystal Springs Fish Hatchery could be resolved. Therefore, the SMEP developed the study to address this issue and conducted the experiment.

Task 2.2 Operate and Maintain Yankee Fork Trap

Activity 2.2.1 Install Yankee Fork weir and trap in June and remove in mid-September.

Completed – The SMEP installed Pole Flat weir on June 25, 2019 and removed the weir on September 19, 2019. We trapped 13 natural-origin Chinook Salmon, 3 hatchery-origin Chinook Salmon, and 9 bull trout.

Activity 2.2.2 Operate and maintain weirs/traps on a daily basis. Clean and remove debris, collect carcasses, and identify incidental take. Provide summary take reporting to Mark Robertson-LSRCP.

Completed – Pole Flat weir was operated on a daily basis. A bull trout take report will be provided to Mark Robertson, LSRCP in March of 2020. A summary report to Chinook Salmon will be provide to NOAA-Fisheries.

Activity 2.2.4 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 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. Collect similar data for other species and mark adult bull trout with right operculum punch and PIT tag.

Completed – The SMEP trapped and released 13 natural-origin Chinook Salmon, 3 hatchery-origin Chinook Salmon, and 9 adult bull trout.

Activity 2.2.5 Collect broodstock from Yankee Fork trap according to ESA permit and transfer to Sawtooth Fish Hatchery for adult holding.

Not Completed – The SMEP did not collect any Chinook Salmon for broodstock from Yankee Fork this year due to the low returns. All adult Chinook Salmon were released above Pole Flat weir for natural spawning.

Task 2.3 Hatchery adult and carcasses outplants

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

Not completed – The SMEP coordinated weekly with IDFG through the Snake Basin Coordination Meetings but insufficient returns to Sawtooth Fish Hatchery precluded live adult releases in the Yankee Fork.

Activity 2.3.2 During each live adult outplanting event, sample tissue from the left operculum of each fish 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.

Not completed – The SMEP coordinated weekly with IDFG through the Snake Basin Coordination Meetings but insufficient returns to Sawtooth Fish Hatchery precluded live adult releases in the Yankee Fork.

Activity 2.3.3 Outplant live hatchery adult Chinook salmon in agreed to locations; record transfer time, release location, mortalities, and total fish outplanted.

Not completed – The SMEP coordinated weekly with IDFG through the Snake Basin Coordination Meetings but insufficient returns to Sawtooth Fish Hatchery precluded live adult releases in the Yankee Fork.

Activity 2.3.4 Coordinate carcass outplanting activities including the numbers to be outplanted, dates of outplanting, release locations, truck logistics, and sampling requirements.

Completed – The SMEP coordinated weekly with IDFG and outplanted all of their adult Chinook Salmon carcasses throughout the Yankee Fork Salmon River.

Activity 2.3.5 During each carcass outplanting event, collect phenotypic characteristics including fork length, weight, and gender and remove the caudal fin.

Completed – The SMEP has reached agreement with IDFG whereby Sawtooth Fish Hatchery personnel completes this activity at Sawtooth Fish Hatchery during spawning.

Activity 2.3.6 Outplant salmon carcasses in agreed to locations; record transfer time, release location, and total carcasses outplanted.

Completed – The SMEP coordinated weekly with IDFG and outplanted all of their adult Chinook Salmon carcasses throughout the Yankee Fork Salmon River.

Task 2.4 Hatchery juvenile Chinook salmon smolt releases

Activity 2.4.1 Coordinate hatchery outplanting activities with IDFG, including the numbers to be outplanted, numbers to be marked, release dates, release locations, and truck logistics.

Completed – The SMEP coordinated with IDFG to outplant parr and smolts in the Yankee Fork Salmon River in October 2018 and April 2019. In total, we released 10,000 parr on October 03, 2018 and 1,600 smolts into live wells for acute mortality and stress physiology assessments on April 23, 2019, and approximately 180,000 smolts on April 25-26, 2019.

Activity 2.4.2 Prepare release sites; set-up and take down pipes.

Completed

Activity 2.4.3 Assist with all aspects associated with loading at Sawtooth and Springfield to release juveniles in Yankee Fork.

Completed – The SMEP has reached agreement with IDFG whereby Sawtooth Fish Hatchery and Springfield Fish Hatchery personnel completes the loading activities and the SMEP assists with the release activities.

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.

Completed – The SMEP contracted Biomark and they replaced the PIT array decking on April 16 and July 25, 2019.

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

Completed – Daily PIT tag detection files were uploaded to PTAGIS.

Task 2.6 Estimate natural production at the rotary screw trap

Activity 2.6.1 Continue to operate rotary screw trap through the 2018 field season (October 1 – November 15, 2018) to estimate BY 2017 pre-smolt production. Quantify out-migrating juvenile salmonids daily and identify all fish to species. Sample juvenile 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. PIT tag bull trout and other species, as necessary. Calibrate rotary screw trap to accurately estimate juvenile migrants using PIT tagged fish and/or bismarck brown stain fish.

Completed – The rotary screw trap was operated on a daily basis from March 27 – November 14, 2018.

Activity 2.6.2 Remove, clean, and winterize the rotary screw trap in November 2018.

Completed – The rotary screw trap was removed on November 15, 2018.

Activity 2.6.3 Install the rotary screw trap as soon as conditions permit in 2019.

Completed – The rotary screw trap was installed on March 31, 2019.

Activity 2.6.4 Operate the rotary screw trap from April 1 – September 30, 2019 to estimate BY 17 smolt production and BY 18 fry, parr and pre-smolt production. Quantify out-migrating juvenile salmonids daily and identify all fish to species. Sample juvenile 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. PIT tag bull trout and other species, as necessary. Calibrate rotary screw trap to accurately estimate juvenile migrants using PIT tagged fish and/or bismarck brown stain fish.

Completed – The rotary screw trap was operated on a daily basis from April 1 – September 30, 2019. Trap operations continued past September 30, but this work is associated with the FY 2020 Cooperative Agreement.

Activity 2.6.5 Install permanent anchors and a cable/pulley system in 2019.

Not completed – The SMEP collaborated with the U.S. Forest Service to acquire a special-use permit for project activities that are outside of the scope of the Crystal Springs Fish Hatchery proposal, but the U.S. Forest Service would not entertain any new application until the current application is resolved.

Activity 2.6.6 Estimate broodyear 2017 and 2018 production by life stage (e.g., fry, parr, pre-smolt, and smolt); estimate mean survival, mean passage date, mean length, mean weight and condition.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

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.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Task 2.7 Monitor and evaluate hatchery juvenile Chinook salmon broodyear release

Activity 2.7.1 Determine acute mortality of juvenile Chinook salmon released from Springfield and Sawtooth Fish Hatchery.

Completed – All of the necessary data was collected during the performance period and reported in a special technical report provided to the LSRCP in November 2019.

Activity 2.7.2 Use PIT tags to estimate hatchery Chinook salmon outmigration survival by group from release to: 1) Yankee Fork array and 2) Lower Granite Dam. Estimate mean passage date and mean travel time to each detection point by group.

Completed – All of the necessary data was collected during the performance period and reported in a special technical report provided to the LSRCP in November 2019.

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.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Activity 2.8.2 Estimate total hatchery and natural Chinook salmon harvested.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Task 2.9 Conduct weekly spawning ground surveys in Yankee Fork

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

Completed –SMEP employees attended the Spawning Ground Survey Training at the Sawtooth Fish Hatchery on August 7, 2019.

Activity 2.9.2 GPS, ribbon-mark, and record the location and number of Chinook salmon redds on a weekly basis.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Activity 2.9.3 Collect spawned-out carcasses for mark-recapture estimate and percent spawned.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Activity 2.9.4 Collect genotypic and phenotypic information from all carcasses.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

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

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

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

Activity 2.10.1 Use 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.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Activity 2.10.2 Use 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.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Activity 2.10.3 Estimate adult Chinook salmon escapement to the Yankee Fork array using PIT tagging efforts at Lower Granite Dam; coordinate estimates with ISEMP.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Activity 2.10.4 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.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Objective 3: Yankee Fork Steelhead Project

The primary goal of the Yankee Fork Steelhead Project is to provide fishing opportunities in the upper Salmon River for B-run steelhead for tribal members and sportsman. The project shifted from Sawtooth A-run stock to Upper Salmon River B-run stock in 2012 and contributes to the LSRCP mandate to return 25,000 steelhead to the project area upstream from Lower Granite Dam.

Task 3.1 Program Planning and Environmental Compliance Requirements

Activity 3.1.1 Assist in the development of a coordinated monitoring, research, and evaluation plan, including development of a smolt release study.

Partially Completed – The SMEP drafted a Monitoring, Research, and Evaluation Plan for the Yankee Fork Steelhead Project.

Activity 3.1.2 Work with LSRCP staff to acquire necessary permits to implement the project.

Completed

Activity 3.1.3 Assist with Environmental Impact Statement and NEPA process regarding the construction of the Yankee Fork Salmon River Satellite Facility.

Completed - The SBT and BPA agreed to put the EIS on hold until the issue surrounding rearing anadromous fish in hard water at Crystal Springs Fish Hatchery could be resolved. Therefore, the SMEP developed the study to address this issue and conducted the experiment.

Task 3.2 Hatchery juvenile steelhead outplanting

Activity 3.2.1 Coordinate hatchery smolt outplanting activities, including the dates of outplanting, release locations, and truck logistics.

Completed – The SMEP coordinated extensively with IDFG to release both steelhead and Chinook Salmon into the Yankee Fork Salmon River. Steelhead were released directly into the Yankee Fork Salmon River on April 2-3, 5, 8-12. There were no releases into the ponds in

2019 due to the Chinook evaluations and risks associated with confounding these evaluations.

Activity 3.2.2 Prepare smolt release sites; snow removal, pipe installation, and pipe removal.

Completed – In 2019, the steelhead were released directly into Yankee Fork Salmon River over the side of the 3rd Bridge. As a result, we did not need to prepare the sites with snow removal or pipe installation.

Activity 3.2.3 Help unload smolts at desired release locations.

Completed – SMEP staff helped release steelhead smolts on April 2-3, 5, 8-12.

Activity 3.2.4 Install, operate, and maintain steelhead streamside incubators.

Completed – Four streamside incubators were installed adjacent to Cearley Creek on May 2, 2019.

Activity 3.2.5 Obtain steelhead eggs and outplant in incubators.

Completed - We received Dworshak B-run eyed-eggs from Clearwater Fish Hatchery on May 3, 2019; these eggs were outplanted into streamside incubators the same day. A total of 501,362 eggs outplanted within them.

Activity 3.2.6 Monitor hatching rates, development process, and water flow through the incubators until all steelhead fry volitionally leave the incubators.

Completed – SMEP staff monitored streamside incubators on a daily basis from May 4 – July 7, 2019.

Task 3.3 Conduct creel survey of Tribal fisherman in Yankee Fork

Activity 3.3.1 Conduct statistically valid creel survey on Tribal fisherman in the Salmon River above East Fork Salmon River and below Sawtooth weir including Yankee Fork, but excluding Valley Creek.

Completed - Harvest monitoring occurred every weekend from April 12 – May 1, 2019 on the East Fork of the Salmon, Yankee Fork, and the main Salmon from Sawtooth Fish Hatchery to East Fork road. No effort was recorded on the weekends but multiple tribal employees gathered effort from tribal members during weekdays on multiple occasions.

Activity 3.3.2 Estimate total hatchery and natural steelhead harvested.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Activity 3.3.3 Participate in the Annual Kids Steelhead fishing trip to the Yankee Fork; estimate harvest.

Not completed – The Shoshone-Bannock kids fishing trip was cancelled due to inadequate returns of summer steelhead to the upper Salmon River.

Task 3.4 Operate and Maintain Pond Series 1 and 3 Weirs

Activity 3.4.1 Install a temporary picket weir near the outlet of Pond Series 1 and 3 and operate until the steelhead runs ceases.

Completed – The SMEP installed and operated Pond Series 3 trap from March 27 – April 29, 2019. Due to the high level of beaver activity in Pond Series 1 and low adult forecast of steelhead expected to return to Yankee Fork, the SMEP decided to use tangle-nets in Pond Series 1.

Activity 3.4.2 Operate and maintain temporary picket weir on a daily basis. Ensure the trapping device is operating properly by cleaning and removing debris and ensuring pickets are secured the streambed interface. Collect fish carcasses from weir daily and sample for biological information and mark-recapture analysis.

Completed – SMEP staff operated and maintained the Pond Series 3 weir on a daily basis; one steelhead was trapped. In addition, the SMEP employees monitored Pond Series 1, but no steelhead were observed so no tangle-net efforts were initiated.

Activity 3.4.3 Enumerate adult steelhead and all other species trapped in the weir daily. Mark steelhead released above the weir with a right operculum punch for genetic analyses and mark-recapture analysis. Collect biological information from all trapped steelhead (e.g., length, weight, gender, origin, tissue, scale) and identify pre-existing marks or tags.

Completed – One steelhead was trapped at the Pond Series 3 trap. Biological information was collected and the fish was released upstream for natural spawning.

Activity 3.4.4 Collect broodstock according to HGMP and/or MOA and transfer to Sawtooth Fish Hatchery for holding and incubation and Pahsimeroi Fish Hatchery for rearing.

Completed –The single steelhead that was trapped at Pond Series 3 trap was not collected for broodstock since it was a male and it was the last week of spawning at Sawtooth Fish Hatchery.

Activity 3.4.5 Assist Sawtooth Fish Hatchery with developing spawn schedule and spawning. Transfer fertilized eggs to Magic Valley for egg incubation and final rearing.

Not completed – The SMEP did not retain any adult steelhead for the USRB program, therefore, we did not need to spawn any fish.

Task 3.5 Monitor and evaluate hatchery releases

Activity 3.5.1 Use PIT tags to estimate hatchery steelhead smolt survival from release to: 1) Yankee Fork array and 2) Lower Granite Dam. Estimate mean passage date and mean travel time to each detection point.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Task 3.6 Estimate total hatchery and natural adult steelhead escapement to Yankee Fork.

Activity 3.6.1 Estimate the number of hatchery (by release group) and natural adults that return to the Yankee Fork PIT array.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Activity 3.6.2 Record the number of hatchery (by release group) and natural adults that are trapped at the picket weir.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Task 3.7 Estimate migrant O. mykiss production at the rotary screw trap

Activity 3.7.1 Continue to operate rotary screw trap through the 2018 field season (October 1 – November 15, 2018) to estimate juvenile production. Quantify out-migrating juvenile salmonids daily and identify all fish to species. Sample at least juvenile steelhead daily and collect length (mm), weight (±0.01g), and tissue sample. PIT tag all juvenile steelhead >70 mm fork length and bismarck brown stain fish smaller <70 mm fork length. PIT tag bull trout and other species, as

necessary. Calibrate rotary screw trap to accurately estimate juvenile migrants using PIT tagged fish and/or bismarck brown stain fish.

Completed – The rotary screw trap was operated on a daily basis from March 27 – November 14, 2018.

Activity 3.7.2 Remove, clean, and winterize the rotary screw trap in November 2018.

Completed – The rotary screw trap was removed on November 15, 2018.

Activity 3.7.3 Install the rotary screw trap as soon as conditions permit in 2019.

Completed – The rotary screw trap was installed on March 31, 2019.

Activity 3.7.4 Operate the rotary screw trap from April 1 – September 30, 2019 to estimate juvenile. Quantify out-migrating juvenile salmonids daily and identify all fish to species. Sample at least 25 steelhead daily and collect length (mm), weight (g), and scale sample. Scale samples will be sent to IDF&G for aging. PIT tag all juvenile steelhead >70 mm fork length and bismarck brown stain fish smaller <70 mm fork length. PIT tag bull trout and other species, as necessary. Calibrate rotary screw trap to accurately estimate juvenile migrants using PIT tagged fish and/or bismarck brown stain fish.

Completed – The rotary screw trap was operated on a daily basis from April 1 – September 30, 2019. Trap operations continued past September 30, but this work is associated with the FY 2020 Cooperative Agreement.

Activity 3.7.5 Estimate production by outmigration year

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Activity 3.7.6 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 for each outmigration.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Objective 4: Steelhead Streamside Incubator Project

Task 4.1 Program Planning and Environmental Compliance Requirements:

Activity 4.1.1 Work with LSRCP staff to acquire necessary permits.

Completed

Task 4.2 Operations and Maintenance Tasks:

Activity 4.2.1 Coordinate with IDFG to obtain eggs from Pahsimeroi Hatchery (USRB)

Completed – The SMEP coordinated with IDFG on a weekly basis through the Snake Basin Coordination Meetings to acquire Dworshak B-run eyed-eggs from the Clearwater River. The dismal return of USRB adults to the Yankee Fork Salmon River and Pahsimeroi River, precluded the SMEP from using USRB eggs for this project.

Activity 4.2.2 Install streamside incubators in Yankee Fork Salmon River tributaries

Completed – Four streamside incubators were installed adjacent to Cearley Creek on May 2, 2019.

Activity 4.2.3. Outplant URSB eggs in Yankee Fork tributaries

Completed - We received Dworshak B-run eyed-eggs from Clearwater Fish Hatchery on May 3, 2019; these eggs were outplanted into streamside incubators the same day. A total of 501,362 eggs outplanted within them.

Activity 4.2.4 Monitor incubators to ensure proper flow rates, temperatures, and debris levels.

Completed – SMEP staff monitored streamside incubators on a daily basis from May 4 – July 7, 2019.

Activity 4.2.5 Uninstall, clean, and disinfect incubators

Completed – SMEP removed streamside incubators on July 7, 2019. The incubators were cleaned, disinfected, and stored at the Clayton Facility.

Task 4.3 Provide hatch success

Activity 4.3.1 Evaluate hatch success by counting egg mortalities in each incubator.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Activity 4.3.2 Estimate fry to smolt survival using assumptions from other studies

Completed –These metrics will be reported in the technical annual report produced during the next performance period.

Task 4.4 Estimate adult returns originating from streamside incubators

Activity 4.3.3 Estimate returns from past years' incubator efficacy at returning adults using IDF&G's Tagging and PBT database for the Lower Granite Dam adult ladder.

Completed –These metrics will be reported in the technical annual report produced during the next performance period.

Objective 5: South Fork Chinook Salmon Eggbox Project

Task 5.1 Program planning and compliance requirements

Activity 5.1.1 Administer BIA funding for construction of incubators in collaboration with Shoshone-Bannock Jr./ Sr. High School

Completed – The SMEP developed an intergovernmental agreement between the SBT and Shoshone-Bannock Jr./Sr. High School to construct incubators.

Activity 5.1.2 Work with LSRCP staff to acquire necessary permits.

Completed - SMEP worked with LSRCP and NOAA-Fisheries to ensure the South Fork Chinook Salmon Eggbox Project activities were covered under the Biological Opinions. The SMEP submitted an addendum to the permit to address some gaps in coverage.

Activity 5.1.3 Work with NMFS to allocate take for monitoring efforts

Completed – The SBT, through the BIA, reinitiated ESA consultation and the Biological Opinion was amended to include the take for monitoring, researching, and evaluating project activities associated with the South Fork Chinook Salmon Eggbox Project.

Task 5.2 Outplant eggs in Curtis and Cabin Creeks

Activity 5.2.1 Coordinate with IDF&G to obtain 300,000 eyed Chinook eggs from McCall Fish Hatchery

Completed – The SMEP coordinated with IDFG to obtain BY 2018 eyed-eggs from McCall Fish Hatchery.

Activity 5.2.2 Outplant eggs in Curtis Creek and Cabin Creek

Completed –BY 2018 eyed-eggs were outplanted into 10 eggboxes and 10 artificial redds on September 25-26, 2018. Each eggbox was places adjacent to an artificial redd to compare the performance of the two supplementation strategies.

Activity 5.2.3 Retrieve in-stream incubators.

Completed – SMEP staff removed 7 eggboxes from Curtis and Cabin creeks during May 7-8, 2019.

Activity 5.2.4 Clean and disinfect in-stream incubators

Completed – All the eggboxes were too damaged to be repaired and were discarded.

Task 5.3 Evaluate incubator efficacy

Activity 5.3.1 Evaluate relative hatch success. Use hatch success to estimate number of fry released. Compile data from other studies to estimate smolt production.

Completed – All of the necessary data was collected during the performance period. These metrics will be reported in the technical annual report produced during the next performance period.

Activity 5.3.2 Obtain juvenile density estimates at three 100 m segments in each stream. Extrapolate to number of smolts using assumptions about parr to smolt survival

Completed – Electrofishing surveys were completed on September 24-26, 2019. These metrics will be reported in the technical annual report produced during the next performance period.

Objective 6: Synthesize project results in the form of annual reports

Task 6.1 Provide Annual/Final Progress Report for Fiscal Year 2018 Statement of Work.

Activity 6.1.1 Develop and submit a final 2018 Annual/Final Progress Report by December 31, 2018.

Completed – The Final 2018 Annual/Final Progress Report was submitted on December 28, 2018.

Task 6.2 Provide summary reports for applicable permits

Activity 6.2.1 Develop and submit a final 2018 Summary Report for the IDFG Scientific Collecting Permit by January 31, 2019.

Not Completed – The SMEP did not submit for a scientific collecting permit from IDFG because our project activities for bull trout take are covered under biological opinion 01EIFW00-2017-F-1079. A report was provided to Mark Robertson, LSRCP on February 28, 2019.

Activity 6.2.2 Develop and submit the final 2018 Summary Report for the NOAA Fisheries ESA Section 10 – 1127 Scientific Research Permit by January 31, 2019.

Completed – The SMEP reported anadromous fish take according to Biological Opinions# WCR-2017-7286, WCR-2017-7319, and WCR-2017-7042.

Activity 6.2.3 Coordinate with LSRCP (Mark Robertson) on an ESA related reporting or permit development for LSRCP funded salmon or steelhead program activities, including monitoring and evaluation activities.

Completed – The SMEP provided our bull trout take report to Mark Robertson, LSRCP on February 28, 2019.

Task 6.3 Provide 2018 Yankee Fork Chinook Salmon and Steelhead Run Report

Activity 6.3.1 Complete quality review and reformatting of Yankee Fork Chinook and steelhead data years 2008-2016.

Completed – All the data bases were reformatted for the 10 year report.

Activity 6.3.2 Develop and submit the draft multiyear Yankee Fork Salmon River Chinook Salmon and Steelhead Run Report by February 28, 2019, this report will include 2008-2018.

Not Completed – A draft report was provided to the LSRCP in November 30, 2019.

Activity 6.3.3 Develop and submit the final Yankee Fork Salmon River Chinook Salmon and Steelhead Run Report 2008-2018 by March 31, 2019.

Not Completed – A final report will be provided to the LSRCP on December 31, 2019.

Task 6.5 Provide Fiscal Year 2020 Statement of Work and Budget.

Activity 6.5.1 Develop and submit the draft FY 2020 Statement of Work and Budget according to LSRCP timeline.

Completed – The draft FY 2020 Statement of Work and Budget was submitted to the LSRCP on July 2, 2019. An amended Statement of Work and Budget was submitted on October 11, 2019.

Task 6.6 Participation and Use of FINS Database

Activity 6.6.1 Attend FINS introduction/training session by PFMFC staff and other FINS group participants (location to be determined) and provide input on implementation of SBT data on LSRCP program into FINS.

Completed - All program staff attended FINS training meeting with Jorge Gonzalez via Go-To-Meeting on January 24, 2019.

Activity 6.6.1 Start transitioning SBT data collections into FINS that are LSRCP funded program activities.

Completed – The SMEP entered applicable data into FINS.