

# WORK STATEMENT 87-127

## BPA CY 2014

PROJECT TITLE: Monitoring of Downstream Salmon and Steelhead at Federal Hydroelectric Facilities.

Agency: Pacific States Marine Fisheries Commission  
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The Dalles, OR 97058  
(541) 296-8989

Program Manager: Steve Williams

Project Leader: Rick D. Martinson

Monitoring Sites: John Day and Bonneville Dams.

### 1. Performance Requirements

**Introduction:** In 2014, the Pacific States Marine Fisheries Commission proposes to monitor and index the downstream migration and condition of juvenile salmonids at two locations on the Columbia River, John Day and Bonneville Dams.

At John Day Dam, 24/7 Index sampling will occur in the juvenile monitoring facility from April 1 to September 15. Detailed condition data will be collected on a subsample of the index sample. Sample size and frequency will be reduced if high temperature sampling protocols are implemented. An earlier start up date is possible if needed to accommodate research activities. All fish passing through the system will be interrogated for PIT tags. Samples are processed one or two times per day.

At Bonneville Dam, 24/7 Index sampling will occur at the Hamilton Island Juvenile Monitoring Facility (JMF) from fish passing through the second powerhouse bypass system. Detailed condition data will be collected on a subsample of the index sample. Sample size and frequency will be reduced if high temperature sampling protocols are implemented. Samples are processed one to two times daily from March through October.

### SCOPE

This project is part of a larger Smolt Monitoring Program coordinated by the Fish Passage Center and mandated by the National Marine Fisheries Service Biological Opinion and the Northwest Power and Conservation Councils' Fish and Wildlife Program. The program provides the fish passage managers with data used in flow and spill management designed to optimize out-migration conditions for juvenile salmon. The data are also used to gauge the migration timing and magnitude and to calculate survival and travel time estimates. Additionally, the real time fish condition data is used to gauge the condition of the bypass system and alert biologists to problems as well as gauge the general condition of the run at large. That data could be correlated to special operations upstream, unusually heavy avian predation, or any number of other possibilities. At Bonneville Dam, this project, and PSMFC personnel working under a separate contract are tasked with monitoring fish passage and holding conditions once fish exit the conveyance pipe coming from the powerhouse. This crucial task insures safe passage and holding of fish as they pass through, or are collected in, the juvenile monitoring facility. The program also contributes to the compilation of historic or continual regional databases that characterize species-specific salmon migration patterns, incidental species abundance, and fish condition changes. Monitoring of the PIT tag equipment at these sites adds to the regional PIT tag database and forms the basis for evaluation of much of the research that occurs in the basin.

### METHODS

#### John Day Dam

This facility uses a 3 way rotational gate to collect 2 to 6 subsamples per hour and direct them into the sample tank. Samples are collected 24 hours per day, seven days per week. Sample rate is adjusted to capture about 500 fish per day in the spring and 250 fish per day in the fall. Fish are held until 0700 when they are processed. Additional processing may occur around midday, depending on conditions and fish numbers. Non-sampled fish go directly to the river via a bypass flume. All fish are interrogated for a PIT tag. Detailed condition data is collected on a subsample of the index sample. The 3-way gate is also used to collect research fish using the Separation by Code (SbyC) system. Research fish can be diverted to one of two holding tanks in the lab using the two-way rotating gate that is located on the SbyC flume downstream of the 3-way gate.

### **Bonneville Dam**

#### **Hamilton Island Juvenile Monitoring Facility (JMF)**

The JMF, which samples fish from the second powerhouse, will be the primary sampling site at Bonneville. Fish Passage Indices will be calculated from timed samples which are collected with a 2-way rotating gate. Two to six subsamples are collected per hour, 24 hours per day and processed at 0700 hours. Additional processing may occur around midday, depending on conditions and fish numbers. Sample rates are adjusted to collect about 500 fish per day in the spring and 250 fish per day in the fall. Detailed condition data will be collected on a subsample of the index sample. The facility uses a 3-way rotating gate to collect research fish with the SbyC system. Smolt monitoring personnel will monitor the separator bars, all passage routes, and holding areas at the facility during the day shift, in addition to sampling. Separator monitors, under a separate contract, will monitor passage and holding conditions during the swing and grave yard shifts.

#### **Reporting Requirements**

Weekly reports will be generated and distributed to interested parties.

### **OBJECTIVES and TASKS**

#### **Objective 1. Plan for Smolt Monitoring activities at John Day and Bonneville Dams.**

- Task 1. Estimate staffing and supply needs for John Day and Bonneville based on the FPC outline at the time of the request, usually in September.
- Task 2. Write a draft work statement and calculate a draft budget for those activities and submit to FPC and PSMFC.
- Task 3. Request Authorization from the CoE to conduct SMP activities at the Dams.
- Task 4. Determine recruitment, hiring, and training schedules
- Task 5. Edit job announcements, position descriptions, and performance evaluation forms.
- Task 6. In conjunction with PSMFC HR Department, initiate recruitment by distributing job announcements to a variety of locations.
- Task 7. Review applications, conduct interviews, check references, and make job offers.
- Task 8. Purchase needed supplies and materials, upgrade computers and software as needed.
- Task 9. Review and edit material in the Standard Operating Procedures manual.
- Task 10. Review, update and modify data gathering, storage, and analysis software and programs as needed. Includes updating of documentation.
- Task 11. Communicate with researchers and coordinate collection schedules, training, staffing, fish holding, water supply, and other logistical issues.
- Task 12. Communicate with Corps staff and coordinate facility repairs, improvements, and maintenance work.
- Task 13. Evaluate IT needs, conduct or arrange for tune ups, upgrades, replacements and repairs.
- Task 14. Set up computer stations and test PC's and peripherals.
- Task 15. Update and test all spreadsheets used for data storage.
- Task 16. Orient new employees referencing the PSMFC Personnel Handbook, CoE policies and procedures and on site tours.

- Task 17. Conduct extensive training in system operation, species and mark identification, data collection and recording, fish handling, anesthetization, safety, first aid, CPR, harassment, emergency response and others as needed.
- Task 18. Schedule and attend annual CoE safety orientation.

**Objective 2. Implement plans and start sampling at John Day (JDA) April – Sept 15, and at the Hamilton Island Juvenile Monitoring Facility (JMF) March – October.**

- Task 1. Determine work schedules and review with staff.
- Task 2. Sample fish daily (unless in high temperature reduced sampling mode) throughout the monitoring season at John Day and Bonneville.
- Task 3. Collect species, condition, and external mark detail from all sampled fish.
- Task 4. Evaluate each fish of the sample for descaling.
- Task 5. Collect hourly averages for river flow, powerhouse, and spill and calculate a 24-hour average.
- Task 6. Count and identify all incidental species caught in the samples.
- Task 7. Tally, review, enter into computer and transmit all data to FPC daily.
- Task 8. Conduct Quality Control tests to insure consistency between coworkers.
- Task 9. Coordinate and assist with research activities as appropriate.
- Task 10. Clean and maintain work areas.
- Task 11. Coordinate with researchers and adjust sample rates to get needed research fish.
- Task 12. On day shift, monitor separator bars, passage and holding areas, record fallbacks at separator bars and transfer data to spreadsheet.

**Objective 3. Conduct microscopic exams looking for symptoms of Gas Bubble Trauma (GBT) at the Hamilton Island Juvenile Facility, Bonneville Dam April through August.**

- Task 1. Complete the USGS training program prior to season start up.
- Task 2. Set up workstation in the JMF.
- Task 3. Collect samples and conduct exams twice per week- according to the FPC-GBT program protocols, April thru August.
- Task 4. Record on data sheets, enter into spreadsheets and transmit data.
- Task 5. Record all species ID, condition, external mark, and incidental catch data.

**Objective 4. Monitor and report on sampling and related activities throughout the season.**

- Task 1. Monitor fish abundance and adjust sample rate to keep sample numbers near target.
- Task 2. Enter all data into spreadsheets for storage and summary.
- Task 3. Write a weekly report and distribute to interested parties.
- Task 4. Monitor bypass system condition using fish condition as an indicator and notify appropriate CoE staff if system related problems arise.
- Task 5. Investigate non-system related increases in mortality, utilizing regional pathologist if needed.
- Task 6. Update the web page with photographs and other pertinent information.
- Task 7. Participate in project related design, fabrication, and modification meetings.
- Task 8. Validate data using validation files sent from FPC.

**Objective 5. Monitor bypass system performance by monitoring fish condition at the JMF**

- Task 1. Sample up to 100 of each predominate species from the daily index sample.
- Task 2. Collect detailed condition data using the touch screen system.
- Task 3. Alternate between Chinook/coho and steelhead/sockeye (200 total fish/day), in the spring and switch to fall chinook only when able in the fall.

**Objective 6. Evaluate season, prepare in house site reports, and pursue employee development.**

- Task 1. Conduct employee performance evaluations.

- Task 2. Evaluate procedures, data sheets, materials, and make modifications as needed.
- Task 3. Conduct thorough data validation to insure site data matches FPC data.
- Task 4. Prepare site reports for John Day and Bonneville summarizing site details not covered in the FPC annual report, including; in house procedures; including anesthetizing details, water temperature profile, sampling missed due to high temps, fallback summary, separator bar coverage, research activities and other site specific details.
- Task 5. Pursue employee development through pertinent training, meetings, professional society conference attendance, and cross training (e.g. fishway and turbine dewaterings), etc.
- Task 6. Evaluate procedures and work environment for compliance with CoE and OSHA safety guidelines. Take corrective action as needed.
- Task 7. Participate in fishway dewaterings and fish salvage operations as De facto representative of the Agencies and Tribes.
- Task 8. Calculate and prepare ESA allocation spreadsheet and submit to FPC.

## 2. Place of Performance

**Main Office** Pacific States Marine Fisheries Commission  
 2325 River Road, Suite 4  
 The Dalles, Oregon 97058  
 (541) 296-8989  
 Fax (541) 296-8717

**John Day Dam** Pacific States Marine Fisheries Commission  
 Smolt Monitoring Facility  
 P.O. Box 854  
 Rufus, Oregon 97050  
 (541) 506-7863 or 506-7864  
 Fax (541) 506-7865

**Bonneville Dam** Pacific States Marine Fisheries Commission  
 Smolt Monitoring Facility  
 39722 State Route 14 or P.O. Box 154  
 North Bonneville, Washington 98639  
 (509)-427-2725 Fax (509)-427-3676

## 3. Personnel Involved

### Management

Program Manager	Day	PB-14	Russell Porter
Project Leader	Day	PB-12	Rick Martinson
<b>John Day Dam</b>			
Biologist	Day	PB-7-9	Greg Kovalchuk
Biological Technician	Day	PB-4-6	vacant

### Bonneville Dam Smolt Monitoring Crew

Biologist	Day	PB-7-9	Dean Ballinger
Assistant Biologist	Day	PB 5-7	Bruce Mills
Biological Technician	Day	PB 3-5	John Barton

