**Northwestern Division – U.S. Army Corps of Engineers**
**ANADROMOUS FISH EVALUATION PROGRAM**
**FY-2012 Detailed Statement of Work**

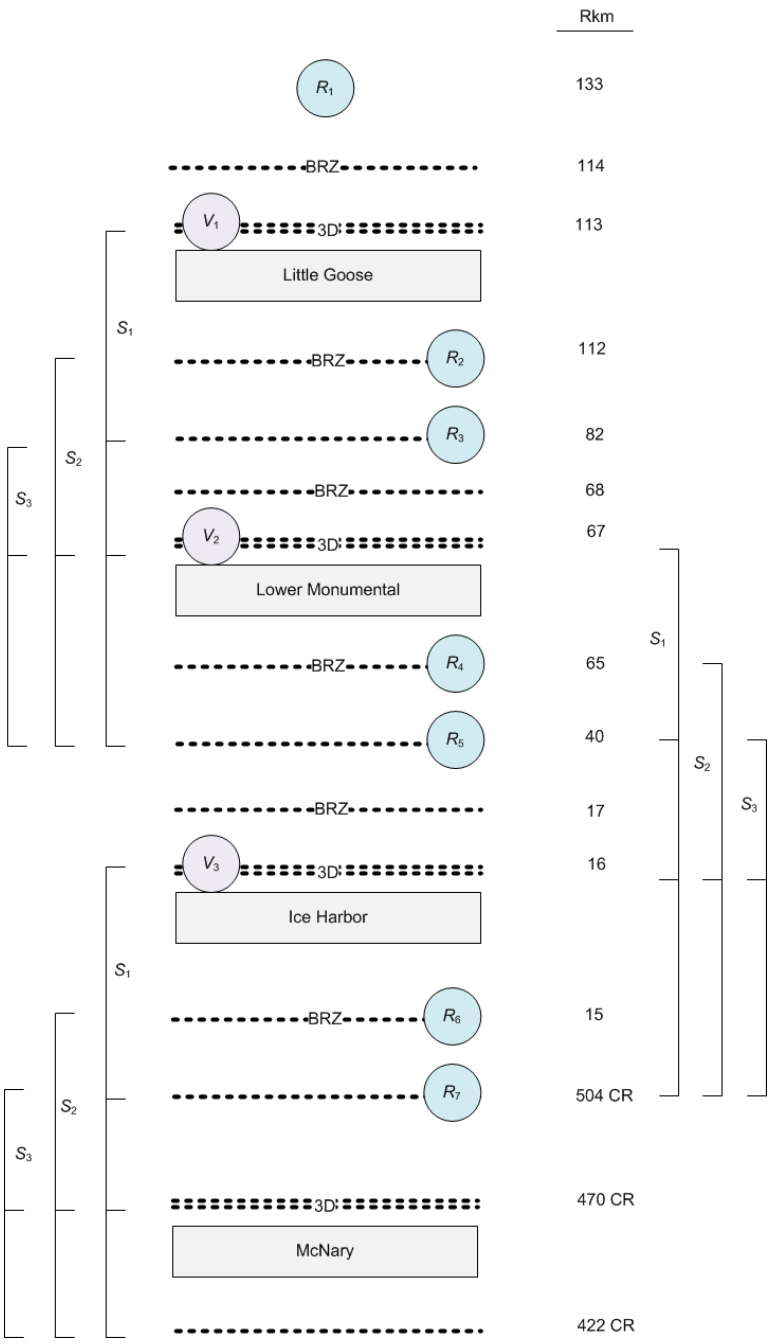
**Title:** Combination of the developed project specific Implementation Plans (IPs) using acoustic telemetry methodology for estimating survival and passage metrics at Little Goose, Lower Monumental, and Ice Harbor dams.

**AFEP Study Code:** SPE-W-12-1, SPE-W-12-2, SPE-W-12-3

**Purpose:** The purpose of this work is an implementation effort to develop a detailed stepwise experimental approach for testing compliance at Walla Walla District hydroelectric projects with Biological Opinion juvenile survival performance measures.

**General Plan for Testing in FY12:**

The Mulitdam Performance Study (MPS) will be conducted to determine the survival and passage metrics for the BiOp and Fish Accord assessments in the lower Snake River in 2012. The MPS will use JSATS technology and will focus on yearling Chinook salmon and steelhead in the spring and subyearling Chinook salmon in the summer at Little Goose, Lower Monumental, and Ice Harbor dams using the virtual-paired release study design (Skalski 2009) which was used successfully in the lower Columbia River in 2010 and 2011. The fish will be collected and tagged at Lower Monumental Dam and transported to seven different release sites (Figure 1). Autonomous receiver arrays will be deployed at 10 locations and cabled receivers will be deployed on each of the three dams to estimate survival rates for BiOp performance testing and to estimate metrics such as Spill Passage Efficiency that are identified in the Fish Accords. Total sample sizes have not yet been determined, but are expected to be in the 30,000 to 35,000 range for the entire study. The planning efforts to date have been focused on treating each individual dam as an independent unit. The integrated plan of study for the MPS is due from Battelle to the Walla Walla District on December 15, 2011.




$$\hat{S}_{\text{Dam}} = \frac{\hat{S}_1 \cdot \hat{S}_3}{\hat{S}_2}$$

Figure 1. Proposed study design for the 2012 Multidam Performance Study on the lower Snake River. Release sites ($R_x$) are denoted by blue circles. Virtual releases ($V_x$) will be formed on 3D cabled receiver arrays on the upstream face of each of the three lower Snake River dams. Autonomous receiver arrays will be deployed at eight locations within the lower Snake River and 2 locations within the Columbia River.