

## SOA 2009-4: 2009 Sub-yearling Chinook Survival Study

Submitted to Priest Rapids Coordinating Committee: March 11, 2009

Approved by PRCC: March 25, 2009

### Statement of Agreement (SOA)

The Priest Rapids Coordinating Committee (PRCC) agrees that survival studies for sub-yearling Chinook in the Priest Rapids Project will not be initiated in 2009, and that further investigation of appropriate study methodology is appropriate prior to initiating the required three years of sub-yearling Chinook survival studies. The PRCC agrees that prior to the 2010 summer out-migration, Grant PUD will investigate and document potential study methods that could be used for sub-yearling Chinook including radio tag, PIT tag, acoustic tag technology and use of existing biological data that documents life history for sub-yearling Chinook salmon in the Project area. Upon completion of investigation into potential study methodologies, if a valid methodology is determined, Grant PUD will conduct a sub-yearling survival study in 2010.

### Background

Sections 9.3 and 10.3 of the Priest Rapids Project Salmon and Steelhead Settlement Agreement (SSA) state that beginning in 2009, Grant PUD will conduct survival studies to obtain a project survival estimate for sub-yearling Chinook salmon (S4) that migrate downstream through the Priest Rapids Project (Project) during late spring and summer. S4 is the arithmetic 3 year average of annual survival estimates for sub-yearling Chinook, to be conducted in 2009, 2010 and 2011 (see SSA Table 2). S4 is used to assess the degree of achieving Project performance standards for migratory sub-yearling Chinook smolts. S4 would initially be used to adjust the NNI Fund if required, and to assess whether additional passage measures are needed for summer migrants. The SSA provides the opportunity for the PRCC to modify this schedule.

Acoustic tag technology currently used to provide Project survival estimates for yearling Chinook and steelhead is not directly applicable for smaller sub-yearling Chinook smolts. In 2008, Grant PUD conducted a pilot acoustic tag study to evaluate the feasibility of using a smaller HTI micro-tag (.65 gram air weight) to estimate project survival for sub-yearling Chinook (Sullivan et al. 2008). The results indicated that of the 652 acoustically-tags released in the Wanapum tailrace, 51% were detected in the Priest Rapids Dam forebay. Currently, it is unknown whether this low level of detection was due to tag failure, battery-life issues, tagging methodology, predation, life history (i.e. over-wintering of the smolts) or other issues.

By the end of 2009, it is the intent of the PRCC to assess whether study methodology used at other projects is applicable for the Priest Rapids Project. In other areas of the Columbia River Basin, radio-tag, acoustic tag, and PIT tag studies have been used to successfully conduct survival studies for sub-yearling Chinook salmon. In addition, existing scale sample data is available that could help describe use of Project reservoirs for over-wintering. Other methods and data could be useful as well.

#### Literature cited:

Sullivan, L. S., C. D. Wright, S. E. Rizer, M. A. Timko, C. A. Fitzgerald, M. L. Meagher, J. R. Skalski and R. L. Townsend. 2008. "Appendix H" in Analysis of juvenile Chinook, steelhead and sockeye salmon behavior using acoustic tags at Wanapum and Priest Rapids dams, 2008. Draft report by HTI, Seattle, WA for Public Utility District No. 2 of Grant County, Ephrata, WA