

High Q Interrogation - Bonneville PH2 Corner Collector/ New PIT Tags
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Passive Integrated Transponder (PIT) reader systems that conform to the International Standards Organization (ISO) have been installed in juvenile facilities at many dams on the Columbia and Snake Rivers. In addition, there is currently detection at Bonneville, McNary, Ice Harbor, Priest Rapids, and Granite Dam fish ladders that provide researchers information on adult fish returns. The use of the PIT tag system has become an integral tool for researchers in evaluating transportation studies, travel times, and survival of endangered anadromous fish stocks in the river systems.

The ACOE-Portland has designed a chute utilizing the ice and trash sluiceway at Bonneville Power House Two (Hi-Q) that will effectively pass the out migrating juvenile fish. In order to maintain the integrity of the PIT Tag data, a PIT tag detection system will need to be placed in the structure. Emphasis was placed on developing a system without the placement of antennas in the flow. The purpose of this project is to develop and evaluate innovative solutions for reader, antenna, and PIT Tags for the prototype installation of a PIT Tag System at the Bonneville Dam Hi-Q site. Development of the Hi-Q system development is in three phases: Proof of Concept/ Feasibility Investigation & Prototype Build and Performance Analysis (2003-2004), Field Test Prototype and Evaluation (2004-2005), and On-site Implementation (2005).

In order to maximize the performance of the Pit Tag System for the Hi-Q application, Digital Angel investigated alternative PIT tag materials and designs. As a result of this study and the collision analysis of larger tags with the standard 12mm done by Joe Zydlewski of USFW, Digital Angel will be producing tags in a variety of sizes to enhance the detection capabilities of systems in small streams and larger stocks.