

Development of an Ogee-based PIT-tag Detection System for Spillbays

Sandra Downing, NOAA Fisheries Service

In order to improve survival of salmonids migrating through the federally operated hydroelectric dams within the Columbia River Basin, the fish managers increased spilling to bypass more fish via the dam spillways than through the collection and monitoring facilities. As part of this effort, the Corps also installed removable and temporary spillway weirs (RSWs and TSWs). The result is that significantly less data are being collected from the migrants that are tagged with passive integrated transponders (PIT) because the collection and monitoring facilities have PIT-tag interrogation equipment while the spillways do not. Currently, we do not have any juvenile migration information for 25-35% of the returning tagged adults. Therefore, developing a PIT-tag detection system for spillbays could provide significantly more detection of tagged spring and summer migrants. These additional detections could also potentially provide information on surface passage use, fish behavior, and survival for various ESUs.

In May 2008, NOAA Fisheries issued a contract to Destron Fearing to help develop a PIT-tag detection system for spillways. As part of this contract, we investigated developing antennas that attached to the spillway gates. Then in 2009, we started to focus on developing an ogee-based system where multiple antennas would be installed within trenches spanning the width of the spillbay. The core group working on this includes NOAA Fisheries, the Corps, Destron Fearing, and PSMFC. The presentation will provide details on the system design, the pros and cons of an ogee-based system, and how we plan on testing the system once it is installed at Ice Harbor Dam in 2012 or at another dam in 2013.