

Implementing the 2008 FCRPS Biological Opinion using Emerging Scientific Tools and Restoration Strategies

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Restoration and protection actions in the Columbia River estuary are an important component of the 2008 Biological Opinion of Federal Columbia River Power System Operations (2008 BiOp). To implement these actions in a much more strategic and expedient approach, the Action Agencies have increased funding for project implementation and expanded the type of projects implemented. Applied research and monitoring is being re-focused and existing data is being synthesized to help guide restoration efforts. Existing and emerging restoration/preservation tools are being tested and evaluated to provide coordination and implementation entities such as the Estuary Partnership, Columbia Land Trust, CREST, watershed councils, and conservation districts the guidance they need to build projects that meet goals in the 2008 BiOp, the Estuary Recovery Plan Module, and watershed-scale plans.

The Columbia River Estuarine Ecosystem Classification (ECY) is an emerging restoration tool that will improve monitoring efforts and help guide restoration actions in the estuary. ECY is being developed by Bonneville Power Administration through the University of Washington, US Geological Survey, and the Estuary Partnership. When completed, ECY will provide an ecosystem classification that uses geology, topography, bathymetry, and land cover to categorize the unique features of the estuary, and particularly those determined to be important habitats of juvenile salmonids. The ECY is a hierarchical classification that partitions the estuary into different ecosystem classes at six levels, where Levels 3-5 (Hydrogeomorphic Reach, Ecosystem Complex, Geomorphic Catena) are most applicable to our 2008 BiOp planning needs.

Currently there is a demonstration project in one of the eight hydrogeomorphic reaches to examine relationships among ECY classes and emerging salmonid genetics data from the Northwest Fisheries Science Center. Researchers are conducting a peer-reviewed analysis to use the genetics information about the 13 Evolutionarily Significant Units (ESUs) in the Columbia River basin to make inferences about the types of estuarine habitats used uniquely by the ESUs and different life history types among them. Based on these inferences, ecological principles and rules will be proposed to help focus the types and locations of the most effective restoration/preservation actions. Estuary restoration implementers in the region will provide practical on-the-ground knowledge to identify for implementation priority project sites that best fit the principles/rules objectives. In combination with all the other restoration/preservation actions taking place in the estuary, these strategic actions are designed to knit together a more connected, productive mosaic of juvenile salmon habitats that specifically meets ESU recovery needs.