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An Integrated System for Storing, Analyzing, and Reporting Juvenile Chinook Salmon Data Collected with Rotary Screw Traps

Abstract : The U.S. Fish and Wildlife Service's Comprehensive Assessment and Monitoring Program (CAMP), Pacific States Marine Fisheries Commission, and Western EcoSystems Technology, Inc. are developing an integrated system for storing, analyzing, and reporting RST data. This system, once completed, is expected to: (1) assist with data entry in the field and in the office; (2) consolidate existing RST data from different Central Valley watersheds into one comprehensive database that accommodates the various ways data were collected; (3) identify, document, and to the extent practicable, compensate for operational or field conditions that affect RST data analyses, e.g. days when a RST did not operate in an optimal fashion; (4) produce statistically robust production estimates for different juvenile life stages at different temporal scales (daily, monthly, etc.); (5) generate estimates of precision that can be used to determine if statistically significant changes in the production of juvenile salmon from a watershed occurred over time; and (6) produce metadata and documentation describing the processes and procedures necessary to complete items 1 to 5.

After the development of the system is complete, RST data from several locations within the Central Valley will be imported into the system. The system will provide several benefits, including: (1) a completely documented high-quality database for data storage; (2) the development of more robust, consistently summarized data that can be used to evaluate the effects associated with restoration activities; (3) the ability to integrate RST data from multiple locations in a synergistic manner to answer important questions e.g., to what degree are changes in the production of juvenile and adult salmon inter-related; and (4) savings in time and effort because the RST system will automate many of the processes needed to analyze and summarize RST data.

Statement of Relevance: At the present time, there is no mechanism for storing, analyzing, or retrieving Central Valley juvenile Chinook salmon data in a timely, consistent manner. The CAMP's RST system will resolve these issues, and provide data to assess population trends and make inferences about the biological response to habitat restoration activities.