FY2018 Fact Sheet

Project Title:

Near-Field Export Effects on Predation, Survival, and Entrainment on Juvenile Salmonids

Project Description:

Uncertainty remains about CVP prescreen mortality and how cumulative juvenile salmonid loss may be reduced through improving prescreen survival by decreasing distance travelled in these prescreen channels and/or increasing migration rates through these channels and the facilities. This study aims to identify the environmental drivers (i.e. export operations, migration route, prey densities, tides) influencing habitat attributes (i.e. predation mortality, flow characteristics) and their effect on salmonid migration rates, survival, and cumulative facility loss. This study will range over multiple water years to capture a series of conditions desirable for learning about a varied set of hydrodynamic conditions and operations and reducing uncertainty regarding the relationship of prescreen loss to coordinated operations of the CVP and SWP fish facilities. Recent efforts through the Collaborative Science and Adaptive Management Program's Salmon Scoping Team and NMFS Biological Opinion to identify data gaps in our understanding of salmonid survival, the south Delta and water operations, and cumulative loss suggest these data can inform improved loss models, optimize survival for salmonids near the salvage facilities, and support water reliability through enhanced coordinated operations.

Project Need

A better understanding of how exports affect survival, predation, and entrainment of juvenile salmonids is urgently needed. Recent tagging studies have demonstrated survival from the San Joaquin River through South Delta is very poor, although few fish are directly entrained into the facilities (Buchanan et al 2015, Buchanan et al 2016, SST 2016). Studies have indicated fish entrained at the CVP have better survival outcomes than fish entrained into CCF (Buchanan et al 2013, 2014, 2015, 2016). Better data on how export operations and facilities can influence mortality is needed to optimize South Delta CVP/SWP operations for water supply reliability and salmonid survival.

Project Objectives

Goals include

1. Determining how exports influence juvenile salmon predation, survival, and entrainment in the Old River corridor (for fish arriving from both the east and the north) during December through April. 2.
2. Developing an operational tool to optimize juvenile salmonid survival through the South Delta based on CVP and SWP export facility operations.

3. Validating the alternate loss equation parameters developed as part of Term and Condition 2a related to CVP prescreen loss.

Expected FY 2018 Project Cost:
$1,743,400 estimated, includes labor and supplies

Is this project for a CVP/SWP biological opinion or water right decision compliance? If so, which specific requirement?

Action IV.4.1 Tracy Fish Collection Facility (TFCF) Improvements to Reduce Pre-Screen Loss and Improve Screening Efficiency

Term and Condition 2a.

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