North/Central Delta Salmon Out-migration Study Fact Sheet

November 2008

A Regional Study

In 1989 the Sacramento River winter run of Chinook salmon were placed on the endangered species list by California. In 1992 NOAA Fisheries listed the salmon as endangered. The goal of this experiment, November 2008 through February 2009, is to better understand route selection and survival of the juveniles of this salmon species as they out-migrate through the Sacramento/San Joaquin Delta towards the ocean. Analysis from the study data will provide management tools capable of predicting impacts on salmon out-migrants considering operations of existing facilities in the delta, such as the Delta Cross Channel, and proposed conveyance alternatives, such as the Through Delta Facility. This field experiment is inherently interdisciplinary, involving the use of emerging technologies in fisheries science and hydrodynamic measurement within bends and junctions to discover the mechanisms that control route selection.

The salmon investigation is composed of two main elements:

1) Acquire a regional database, of out-migration movement, flows, and salinity, leading to a statistical analysis of route selection behaviors and reach specific survival rates, and
2) At the Sacramento River junctions of Georgiana Slough and the DCC acquire the salmon and hydrodynamic data in a 3-dimensional array to develop a modeling tool(s) estimating localized juvenile salmon behavior response to project induced junction hydrodynamics.

To conduct the experiment and analysis work the study will require:

- 48,000 person-hours
- Acoustic tagging and tracking of up to 6,000 juvenile salmon
- Four fish releases with different DCC gate operation scenarios
- 10 miles of cables
- 48 single-port hydrophone receiver units (see map, reverse side)
- 4 multi-port hydrophone receiver units (see map, reverse side)
- Fully autonomous boats fitted with Acoustic Doppler Current Profilers
- High frequency radar system to map the surface currents at junctions

For more information please contact:

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Map of Delta Monitoring Regions