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CFS:BULLETIN

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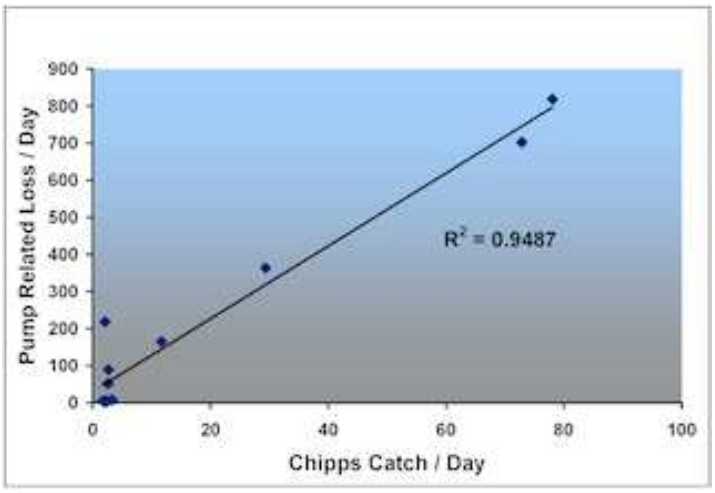
Fish Salvage: An Indicator of Abundance and Mortality



Fish salvage at the SWP and CVP pumps in California's Sacramento-San Joaquin Delta is often cited as an index of mortality rate caused by pumping (pump related loss/day). However, Cramer Fish Sciences analyzed available data and found fish salvage rate was most strongly related to the abundance of smolts surviving to enter San Francisco Bay (number of fish caught at Chipps trawl). As the graph above shows, calculated loss rises as the abundance of smolts increases [click the graph for a larger view].

These findings are detailed in a presentation by Founding Scientist Steve Cramer, available as a free PDF download:

- Translating Fish Salvage at the Delta Pumps to Abundance of Chinook Smolts

Modeling Flow and Temperature Effects on Steelhead Production

Cramer Fish Sciences has been developing an *O. mykiss* life-cycle model which incorporates recent findings regarding the relationship between steelhead and rainbow trout forms of the fish [see the project website]. A presentation [PDF] by Cramer Fish Sciences' Ian Courter describes the successful application of the model in two Pacific Northwest river basins and proposes adapting the model to evaluate flow and temperature effects on the production of ESA-listed steelhead in California's Central Valley.

Evaluating the Success of Habitat Projects:

CFS scientists gave ten presentations at the CALFED Bay-Delta Science Conference in September, including these three regarding enhancement/restoration projects [PDF]:

- The Framework for Restoration Monitoring at the Merced River Ranch by Ayesha Gray
- Improving Benthic Macroinvertebrate Production in Gravel Augmentation Areas to Benefit Juvenile Salmonid Rearing Habitat Quality by Benjamin Rook
- Restoring Ecological Processes and Improving Habitat Quality to Benefit Native Salmonids by Jesse Anderson