Coordinating and Integrating Agency Science For Bay-Delta Planning and Management

Summary: *Many State and Federal agencies fund, carry out, coordinate, and integrate scientific activities in the Bay-Delta. Together, these scientific activities provide much of the scientific foundation for the OCAP Biological Opinions, the Bay-Delta Conservation Plan, the Delta Plan, and many other planning, management, and regulatory purposes in the Bay-Delta.*

Interagency Ecological Program (IEP) - Six Federal and three State agencies have joined in the IEP to coordinate and integrate their scientific activities in the Bay-Delta. Founded in 1970, the mission of the IEP is, in collaboration with others, to provide ecological information and scientific leadership for use in management of the San Francisco Estuary. The IEP currently includes nearly 150 individual monitoring and research projects carried out by collaborative teams of agency, academic, and private scientists with a total annual budget of $39.1 million. Working closely with the Delta Science Program, the IEP also provides a forum for coordinating other studies funded by the IEP agencies and by others and for synthesizing and communicating results. IEP projects fall into three large program categories:

IEP Core Program – Bay-Delta monitoring that provides key long-term and real-time data sets used in many studies, status and trends assessments, daily water project operations, and for regulatory purposes. Most of this monitoring is required by State Water Right Permits or Federal Biological Opinions for the coordinated operation of the State and Federal Water Projects (OCAP). 2011 program: 30 projects, $16.8 million. http://www.water.ca.gov/iep/activities/monitoring.cfm Contact: Kelly Souza, ksouza@dfg.ca.gov .

IEP Pelagic Organism Decline (POD) Program – An integrated set of studies to investigate the causes of the steep decline of two native and two non-native pelagic fish species in the Bay-Delta. The POD program is currently broadening its scope to include other species and biological communities in the Bay-Delta. 2011 program: 34 active projects, $4.5 million. http://www.science.calwater.ca.gov/pod/pod_index.html
Contact: Anke Mueller-Solger, amueller@deltacouncil.ca.gov .

IEP Coordinated Studies Program – coordinated short-term studies and some monitoring funded as part of other (non-IEP) programs and/or by entities that are not IEP member agencies. This includes selected Federal Task Force studies, studies required by the Central Valley Project Improvement Act (CVPIA, http://www.usbr.gov/mp/cvpia/index.html), and studies funded by the Delta Science Program (http://www.deltacouncil.ca.gov/science-program) and the CALFED Ecosystem Restoration Program (see below). 2011 program: 80 active projects, $17.8 million. http://www.water.ca.gov/iep/activities/research.cfm
Contact: Erwin Van Nieuwenhuyse, evannieuwenhuyse@usbr.gov .

Ecosystem Restoration Program (ERP) and Anadromous Fish Restoration Program (AFRP) - The ERP is a CALFED program component designed to restore the ecological health of the Bay-Delta ecosystem. It is implemented by DFG, NOAA Fisheries, and US FWS and is integrated with the AFRP. The AFRP is a Federal CVPIA program with the goal of "doubling" the natural production of anadromous fishes in Central Valley rivers and streams over 1967-1991 levels. The ERP and AFRP provide funding for monitoring and research to track and increase the scientific understanding of ecological processes and species responses to conservation and habitat restoration in the Bay-Delta and its watershed. In 2011, the ERP will award grants for Bay-Delta research and restoration of up to $20 million. 32 projects have been proposed. 2011 ERP Program: 75 ongoing projects amounting to $180 million plus $20 million for approved proposed projects for a total of $200 million, with roughly $35 million for monitoring and research. http://www.dfg.ca.gov/ERP/. Contact: Scott Cantrell, SCANTREL@dfg.ca.gov. 2011 AFRP Program: 3 ongoing and 13 proposed projects relevant to the Bay-Delta, $1.4 million. http://www.fws.gov/stockton/afrp/. Contact: Ramon Martin, Ramon_Martin@fws.gov .

NMFS Southwest Fisheries Science Center (SWFSC) - The Fisheries Ecology Division (FED) of the SWFSC provides science products and information to support the NMFS Southwest Regional Office's responsibilities under the ESA. Relevant to OCAP, FED has developed bioenergetics models coupled to a high-resolution river temperature model for forecasting effects of Shasta Dam operations on Chinook salmon. FED also has three new projects to support the BDCP biological opinion: 1) a life cycle model that predicts the population effects of many BDCP actions and elements; 2) a field study of predation around large screened water diversions and 3) a genetic tagging program to better understand the influence of hatchery production on salmon populations. FED has also been monitoring the survival of late-fall Chinook during their migration from the upper Sacramento River to the Pacific Ocean for the past 5 years, and is leading an interdisciplinary study of the dynamics of California Chinook salmon that will provide managers with a tool to understand how habitat restoration, hatchery reform, and changes in harvest and water management might alter the mean and variance of fishery catches and escapement to natural areas. Total budget for these projects is roughly $1.5M per year from external sources (NASA, CA Ocean Protection Council, USBR) with a roughly 50% match from NMFS. http://swfsc.noaa.gov/default1.aspx?Division=FED&ID=554&ParentMenuId=54 Contact: Steve Lindley, Steve.Lindley@noaa.gov.

State and Regional Water Boards The State and nine Regional Water Boards are responsible for developing and enforcing water right and water quality standards in the State of California. This is accomplished through a combination of Basin Plan amendments and water right and water discharge permits. To assess compliance, permits require special studies and self monitoring reports. For example, the State Water Board mandated that agencies which take water from the Delta coordinate, fund, and administer the Interagency Ecological Program. The Regional Water Boards also conduct and fund applied research for development of Total Maximum Daily Load (TMDL) control programs. Recently adopted TMDLs for the Delta and Central Valley include mercury and pesticides (http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/index.shtml). The Water Boards also conduct a Surface Water Ambient Monitoring Program (SWAMP) to determine overall water quality throughout the State and to characterize problem sites and reference conditions (http://www.waterboards.ca.gov/centralvalley/water_issues/swamp/index.shtml). SWAMP is funded at about $8 million per year. Contact: Chris Foe, cfoe@waterboards.ca.gov.