

Draft CVPIA Fiscal Year 2015 Annual Work Plan, Ecosystem and Water System Operations Models, CVPIA Section 3406 (g)

Responsible Entities:

Staff Name	Agency	Role
Junaid As-Salek (MP-740)	Reclamation	Lead
Derek Hilts (BDFWO)	Service	Co-Lead
Fred Jurick	Department of Fish and Wildlife (CDFW)	State Partner
Sina Darabzand	Department of Water Resources (CDWR)	State Partner

The U.S. Bureau of Reclamation (Reclamation) and the U.S. Fish and Wildlife Service (USFWS) jointly implement the Ecosystem and Water System Operations Models Program (Program). The state partners are California Department of Water Resources and California Department of Fish and Wildlife.

This Program is authorized by and being executed in accordance with Public Law Section 3406 (g) which directs and authorizes the Secretary of the Interior to:

...“develop readily usable and broadly available models and supporting data to evaluate the ecologic and hydrologic effects of existing and alternative operations of public and private water facilities and systems in the Sacramento, San Joaquin, and Trinity River watersheds. The primary purpose of this effort shall be to support the Secretary's efforts in fulfilling the requirements of this title through improved scientific understanding concerning, but not limited to, the following:

1. A comprehensive water budget of surface and groundwater supplies, considering all sources of inflow and outflow available over extended periods;
2. Related water quality conditions and improvement alternatives, including improved temperature prediction capabilities as they relate to storage;
3. Surface-ground and stream-wetland interactions;

4. Measures needed to restore anadromous fisheries to optimum and sustainable levels in accordance with the restored carrying capacities of Central Valley rivers, streams, and riparian habitats;
5. Development and use of base flows and channel maintenance flows to protect and restore natural channel and riparian habitat values;
6. Implementation of operational regimes at State and Federal facilities to increase springtime flow releases, retain additional floodwaters, and assist in restoring both upriver and downriver riparian habitats;
7. Measures designed to reach sustainable harvest levels of resident and anadromous fish, including development and use of systems of tradeable harvest rights;
8. Opportunities to protect and restore wetland and upland habitats throughout the Central Valley;
9. Measures to enhance the firm yield of existing Central Valley Project facilities, including improved management and operations, conjunctive use opportunities, development of offstream storage, levee setbacks, and riparian restoration.”

Program Goals and Objectives for FY 2015:

The goal of the Program is to develop readily usable and broadly available models in order to:

1. evaluate ecologic and hydrologic effects of existing and alternative water management strategies;
2. improve scientific understanding of ecosystems in Sacramento, San Joaquin, Trinity watersheds; and
3. support the Interior Secretary’s efforts in fulfilling the requirements of the CVPIA.

To achieve these goals, in FY 2015, the Program will:

1. continue adaptation/development of hydrologic models at varying spatial and temporal scales to enable the evaluation of hydrologic effects of alternative water management scenarios,
2. continue development of water temperature models of various rivers and at various temporal scales to enable the evaluation of conditions pertinent to ecologic analyses,
3. coordinate with partner Agencies to plan and develop a hydrodynamic model or extend an existing model capable of modeling fish behavior, temperature, salinity and other water quality parameters,
4. support the continued development and application of the ANN Model to mimic the hydrodynamics,
5. continue to support further development of the inSALMO model,

6. update and implement Sharing of Costs Agreement for Mitigation Projects Improvements (SCAMPI) Task orders, and
7. promote professional training and public outreach.

Status of the Program:

Since 1994, this program has developed and facilitated the applications of the models mandated by the PL 3406(g). These models are being updated to incorporate the latest public laws and public demands. Simultaneously these models have been utilized for numerous large-scale water supply improvement studies as well as planning investigations associated with Reclamation's Central Valley Project Operations Criteria and Plan (OCAP), modeling of baseline conditions etc. The program has supported both Reclamation and Service staff participating in professional organizations, as well as training conducted by Reclamation and DWR. Other stakeholders have also been trained to use the developed models through funding from this program.

For more information, see the following websites:

1. http://www.usbr.gov/mp/cvpia/docs_reports/awp/2014/docs/models_all.pdf
2. https://www.usbr.gov/mp/cvpia/docs_reports/awp/2013/program%20plans%20pdf/fisheries/model_%202013_AWP_combined.pdf
3. http://www.usbr.gov/mp/cvpia/docs_reports/awp/2012/3406g%20Models.pdf