



## United States Department of the Interior



### FISH AND WILDLIFE SERVICE

California and Nevada Region  
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In reply refer to:  
81420-2008-F-1481-5

#### Memorandum

**To:** Operation Manager, Bureau of Reclamation, Central Valley Operations Office  
Sacramento, California

**From:** Regional Director, Fish and Wildlife Service, Region 8, Sacramento, California

**Subject:** Formal Endangered Species Act Consultation on the Proposed Coordinated Operations of the Central Valley Project (CVP) and State Water Project (SWP)

This is in response to the Bureau of Reclamation's (Reclamation) May 16, 2008, request for formal consultation with the Fish and Wildlife Service (Service) on the coordinated operations of the CVP and SWP in California. Reclamation is the lead Federal agency and the California Department of Water Resources (DWR) is the Applicant for this consultation. Your revised biological assessment was received in our office on August 20, 2008. This document represents the Service's biological opinion on the effects of the subject action to the threatened delta smelt (*Hypomesus transpacificus*) and its designated critical habitat. This response is provided in accordance with the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 *et seq.*) (Act).

Reclamation also requested consultation on the effects of the proposed action on the endangered riparian brush rabbit (*Sylvilagus bachmani riparius*), endangered riparian woodrat (*Neotoma fuscipes riparia*), endangered salt marsh harvest mouse (*Reithrodontomys raviventris*), endangered California clapper rail (*Rallus longirostris obsoletus*), threatened giant garter snake (*Thamnophis gigas*), threatened California red-legged frog (*Rana aurora draytonii*), threatened valley elderberry longhorn beetle (*Desmocerus californicus dimorphus*), endangered soft bird's-beak (*Cordylanthus mollis ssp. Mollis*), and the endangered Suisun thistle (*Cirsium hydrophilum var. hydrophilum*). Reclamation determined that the proposed continued operations of the CVP and SWP are not likely to adversely affect these listed species. The Service concurs with Reclamation's determination that the coordinated operations of the CVP and SWP are not likely to adversely affect these species.

The Service conducted a comprehensive peer review of this biological opinion. We formed an Internal Peer Review Team (IPRT), which consisted of individuals from throughout the Service who are experts in the development of complex biological opinions under the ESA. The IPRT reviewed the biological opinion and provided substantive input and comments. Additionally, the Service assembled a team of delta smelt experts from within the Service, California Department

of Fish and Game, Environmental Protection Agency, Reclamation and other academics to provide scientific and technical expertise into the review of the biological assessment and the development of the biological opinion. The Service also contracted with PBS&J, an environmental consulting firm, who formed an independent review team consisting of experts on aquatic ecology and fishery biology to conduct a concurrent review of the draft Effects Section of the biological opinion at the same that we provided the Effects Section to Reclamation and DWR for their review. The Service received the results of the independent review of the draft Effects Section on October 23, 2008; DWR and Reclamation provided the results of their review on October 24, 2008. The Service modified the Effects Section of the biological opinion, as appropriate, based on the comments received from the IPRT, the independent review team, Reclamation and DWR. The Service also contracted with PBS&J to conduct an independent review of the draft Actions (Final shown in Attachment B), as well as a review of DWR's proposed actions. The Service simultaneously provided the draft Actions to Reclamation and DWR for their review. The Service received Reclamation's and DWR's comments on the draft Actions on November 5, 2008. The Service received the results of the independent review of both the Service's and DWR's draft Actions on November 19, 2008. The Service's actions were then modified to respond to comments from the independent review team and in consideration of comments received from DWR. A draft biological opinion was provided to Reclamation on November 21, 2008. Comments were received back from Reclamation and DWR on December 2, 2008. The Service has incorporated all comments and edits, as appropriate, into this biological opinion.

This biological opinion is based on information provided in Reclamation's biological assessment dated August 20, 2008, associated appendices, and input from the various internal and external review processes that the Service has utilized in this consultation, described immediately above. A complete administrative record is on file at the Sacramento Fish and Wildlife Office (SFWO).

## Consultation History

- July 30, 2004      The Service issued a biological opinion addressing *Formal and Early Section 7 Endangered Species Consultation on the Coordinated Operations of the Central Valley Project and State Water Project and the Operations Criteria and Plan to Address Potential Critical Habitat Issues* (Service file # 1-1-04-F-0140).
- February 15, 2005      The Department of the Interior is sued on the July 30, 2004 biological opinion.
- February 16, 2005      The Service issued its *Reinitiation of Formal and Early Section 7 Endangered Species Consultation on the Coordinated Operations of the Central Valley Project and State Water Project and the Operational Criteria and Plan to Address Potential Critical Habitat Issues* (Service file # 1-1-05-F-0055).
- May 20, 2005      The Department of the Interior is sued on the February 16, 2005 biological opinion.
- February 2006 through September 2008      Staff from the California Department of Fish and Game (DFG), DWR, National Marine Fisheries Service (NMFS), Reclamation, and the Service (OCAP Working Team) met monthly to bi-weekly to discuss the development of the biological assessment.
- July 6, 2006      Reclamation requested informal consultation on coordinated operations of the CVP and SWP and their effects to delta smelt.
- May 25, 2007      Judge Wanger issued a summary judgment that invalidated the 2005 biological opinion and ordered a new biological opinion be developed by September 15, 2008.
- May 31, 2007      The Service provided Reclamation with guidance and recommendations concerning the project description used in the 2004 biological opinion.
- August 20, 2007      The Service provided a memorandum to Reclamation containing a species list for the proposed action and clarification of the formal consultation timeline.
- October 29, 2007      The Service received an electronic version of the draft project description for the biological assessment (Chapter 2) dated August 2007.
- December 4, 2007      DFG, NMFS, and the Service received a draft project description dated December 4, 2007.

- December 6, 2007 DFG, NMFS, and the Service provided Reclamation with joint preliminary guidance and recommendations for part of the draft project description of CVP operations received on December 4, 2007.
- December 14, 2007 Judge Wanger issued an interim order to direct actions at the export facilities to protect delta smelt until a new biological opinion is completed.
- December 20, 2007 DFG, NMFS, and the Service provided Reclamation with joint preliminary guidance and recommendations for parts of the draft project description of SWP operations received on December 4, 2007.
- January 17, 2008 DFG, NMFS, and the Service provided Reclamation with joint preliminary guidance and recommendations for the remaining portion of the draft project description received on December 4, 2007.
- January 21, 2008 The Service sent to Reclamation an electronic version of the entire draft project description with guidance and recommendations developed jointly by DFG, NMFS, and the Service.
- January 22, 2008 Reclamation provided DFG, NMFS and the Service with an electronic version of the description of operations of the Suisun Marsh Salinity Control Gates (SMSCG) dated August 2007.
- January 23, 2008 DFG, NMFS, and the Service provided DWR with joint preliminary guidance and recommendations on the December 4, 2007, draft project description.
- March 4, 2008 The Service provided DWR with joint DFG and Service guidance and recommendations for the August 2007 version of the proposed Suisun Marsh Salinity Control Gate (SMSCG) operations description.
- March 6, 2008 DWR provided the Service with an updated description of proposed operations of the SMSCG.
- March 10, 2008 The Service received a draft description and effects analysis of aquatic weed management in Clifton Court Forebay.
- March 24, 2008 DFG, NMFS, and the Service provided Reclamation with guidance and recommendations on the aquatic weed management section of the biological assessment.
- April 21, 2008 Reclamation provided the Service with a revised draft project description for the biological assessment.

April 28 through May 2, 2008	Reclamation conducted an external technical review of their draft biological assessment.
May 2008 through December 2008	Numerous meeting between the Service, Reclamation, DWR, DFG and NMFS on the development of the biological assessment and the biological opinion.
May 8, 2008	The fisheries agencies provided Reclamation and DWR with guidance and recommendations on the draft project description dated April 21, 2008.
May 16, 2008	The Service received a letter from Reclamation dated May 16, 2008, requesting formal consultation on the proposed action. A biological assessment also dated May 16, 2008, was enclosed with the letter.
May 17, 2008	Reclamation provided the Service with a number of revisions and addenda to the May 16, 2008 biological assessment.
May 28, 2008	Reclamation and DWR provided the Service with additional revisions to the May 16, 2008 biological assessment.
May 29, 2008	The Service sent a memo to Reclamation stating that with the revisions provided on May 28, 2008, the Service had received enough information to start the 30-day review period.
June 27, 2008	The Service provided Reclamation with a memo requesting additional information.
July 2, 2008	The Service received a memorandum from Reclamation informing the Service that Reclamation is committed to providing a response to the Services' June 27, 2008, request for additional information by early August, 2008.
August 11, 2008	The Service received Reclamation's August 8, 2008, letter transmitting the revised biological assessment.
August 20, 2008	The Service received the revised biological assessment on electronically from Reclamation.
August 29, 2008	Judge Wanger extended the completion date for the coordination of the CVP and SWP biological opinion to December 15, 2008.
September 25, 2008	The Service received a letter dated September 24, 2008 from the San Luis & Delta-Mendota Water Authority and the State Water Contractors, which provided comments on the biological assessment.
October 17, 2008	The Service received DWR's October 16, 2008 draft conservation actions.

October 17 through 24, 2008	Review of the draft Effects section of the biological opinion by the Service’s Internal Peer Review Team (IPRT).
October 17 through 24, 2008	Independent Review of the draft Effects section of the biological opinion conducted by PBS&J.
October 23, 2008	The Service received a letter dated October 20, 2008 from the San Luis & Delta-Mendota Water Authority and the State Water Contractors, which provided comments on fall X2.
October 24, 2008	The Service received comments from Reclamation and DWR on the draft Effects section.
October 24 through November 19, 2008	Review of entire preliminary draft biological opinion by IPRT.
October 24 through November 19, 2008	Independent Review of the Service’s draft conservation actions and DWR’s draft conservation actions conducted by PBS&J. The Service’s draft actions were also submitted to Reclamation.
November 21, 2008	The Service transmitted the draft biological opinion to Reclamation.
November 24, 2008	The Service received a letter dated November 19, 2008 from the San Luis & Delta-Mendota Water Authority and the State Water Contractors, which provided comments on the Effects section and the review conducted by PBS&J.
December 2, 2008	The Service received comments from Reclamation and DWR on the draft biological opinion.

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# Project Description

The proposed action is the continued long-term operation of the CVP and SWP. The proposed action includes the operation of the temporary barriers project in the South Delta and the 500 cubic feet per second (cfs) increase in SWP Delta export limit from July through September. In addition to current day operations, several other actions are included in this consultation. These actions are: (1) an intertie between the California Aqueduct (CA) and the Delta-Mendota Canal (DMC), (2) Freeport Regional Water Project (FRWP), (3) the operation of permanent gates that will replace the temporary barriers in the South Delta, (4) changes in the operation of the Red Bluff Diversion Dam (RBDD), and (5) Alternative Intake Project for the Contra Costa Water District (CCWD). A detailed summary of all operational components and associated modeling assumptions are included in the biological assessment in Chapter 9.

## Joint Points of Diversion

SWRCB D-1641 granted Reclamation and DWR the ability to use/exchange each Project's diversion capacity capabilities to enhance the beneficial uses of both Projects. The SWRCB conditioned the use of Joint Point of Diversion (JPOD) capabilities based on a staged implementation and conditional requirements for each stage of implementation. The stages of JPOD in SWRCB D-1641 are:

- Stage 1 – for water service to Cross Valley Canal contractors, Tracy Veterans Cemetery and Musco Olive, and to recover export reductions taken to benefit fish.
- Stage 2 – for any purpose authorized under the current project water right permits.
- Stage 3 – for any purpose authorized up to the physical capacity of the diversion facilities. Stage 3 is not part of the project description.

Each stage of JPOD has regulatory terms and conditions which must be satisfied in order to implement JPOD.

All stages require a response plan to ensure water levels in the southern Delta will not be lowered to the injury of local riparian water users (Water Level Response Plan). All stages require a response plan to ensure the water quality in the southern and Central Delta will not be significantly degraded through operations of the JPOD to the injury of water users in the southern and Central Delta.

All JPOD diversion under excess conditions in the Delta is junior to Contra Costa Water District (CCWD) water right permits for the Los Vaqueros Project, and must have an X2 (the two parts per thousand (ppt) isohaline location in kilometers from the Golden Gate Bridge) located west of certain compliance locations consistent with the 1993 Los Vaqueros biological opinion for delta smelt.

Stage 2 has an additional requirement to complete an operations plan that will protect fish and wildlife and other legal users of water. This is commonly known as the Fisheries Response Plan. A Fisheries Response Plan was approved by the SWRCB in February 2007, but since it relied on the 2004 and 2005 biological opinions, the Fisheries Response Plan will need to be revised and re-submitted to the SWRCB at a future date.

Stage 3 has an additional requirement to protect water levels in the southern Delta under the operational conditions of Phase II of the South Delta Improvements Program, along with an updated companion Fisheries Response Plan.

Reclamation and DWR intend to apply all response plan criteria consistently for JPOD uses as well as water transfer uses.

In general, JPOD capabilities will be used to accomplish four basic CVP-SWP objectives:

- When wintertime excess pumping capacity becomes available during Delta excess conditions and total CVP-SWP San Luis storage is not projected to fill before the spring pulse flow period, the project with the deficit in San Luis storage may elect to use JPOD



capabilities. Concurrently, under the CALFED Record of Decision (ROD), JPOD may be used to create additional water supplies for the Environmental Water Account (EWA) or reduce debt for previous EWA actions.

- When summertime pumping capacity is available at Banks Pumping Plant and CVP reservoir conditions can support additional releases, the CVP may elect to use JPOD capabilities to enhance annual CVP south of Delta water supplies.
- When summertime pumping capacity is available at Banks or Jones Pumping Plant to facilitate water transfers, JPOD may be used to further facilitate the water transfer.
- During certain coordinated CVP-SWP operation scenarios for fishery entrainment management, JPOD may be used to shift CVP-SWP exports to the facility with the least fishery entrainment impact while minimizing export at the facility with the most fishery entrainment impact.

### **Revised WQCP (2006)**

The SWRCB undertook a proceeding under its water quality authority to amend the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) adopted in 1978 and amended in 1991 and in 1995. Prior to commencing this proceeding, the SWRCB conducted a series of workshops in 2004 and 2005 to receive information on specific topics addressed in the Bay-Delta Plan.

The SWRCB adopted a revised Bay-Delta Plan on December 13, 2006. There were no changes to the Beneficial Uses from the 1995 Plan to the 2006 Plan, nor were any new water quality objectives adopted in the 2006 Plan. A number of changes were made simply for readability. Consistency changes were also made to assure that sections of the 2006 Plan reflected the current physical condition or current regulation. The SWRCB continues to hold workshops and receive information regarding Pelagic Organism Decline (POD), Climate Change, and San Joaquin salinity and flows, and will coordinate updates of the Bay-Delta Plan with on-going development of the comprehensive Salinity Management Plan.

## **Real Time Decision-Making to Assist Fishery Management**

### **Introduction**

Real time decision-making to assist fishery management is a process that promotes flexible decision making that can be adjusted in the face of uncertainties as outcomes from management actions and other events become better understood. For the proposed action high uncertainty exists for how to best manage water operations while protecting listed species. Sources of uncertainty relative to the proposed action include:

- Hydrologic conditions
- Ocean conditions
- Listed species biology