United States Department of the Interior

FISH AND WILDLIFE SERVICE
San Francisco Bay-Delta Fish and Wildlife Office
650 Capitol Mall, Suite 8-300
Sacramento, California 95814

In reply refer to:
81420-2008-F-1481-10

APR 08 2014

MEMORANDUM

To: Central Valley Office Operations Manager, Bureau of Reclamation Mid-Pacific Region, Central Valley Office

From: Field Supervisor, U.S. Fish and Wildlife Service, Bay Delta Fish and Wildlife Office, Sacramento, California Mike Chotkowski

Subject: Reinitiation of Endangered Species Act Consultation on the Coordinated Operations of the Central Valley Project and the State Water Project

This memo is in response to your April 8, 2014, memo requesting reinitiation of the December 15, 2008, Biological Opinion (2008 BiOp) on the Coordinated Operation of the Central Valley Project (CVP) and State Water Project (SWP) (Projects) to include the drought responses under the proposed *CVP and SWP Drought Operations Plan and Operational Forecast April 1, 2014 through November 15, 2014* (Plan). Specifically, Reclamation requests concurrence that the drought response actions proposed by Reclamation and the California Department of Water Resources (DWR) in the Plan will result in no additional adverse effects to delta smelt or its critical habitat for the remainder of water year (WY) 2014 and the beginning of WY 2015 beyond those analyzed in the 2008 BiOp. The 2008 BiOp included a provision for the Bureau of Reclamation (Reclamation) to reinitiate consultation if the WY is classified as dry or critically dry for a second consecutive (or more) year(s). This response is in accordance with section 7 of the Endangered Species Act of 1973, as amended (16 U.S.C. 1531 et seq.) (Act).

The following sources of information were used to develop this response: (1) your January 29, 2014, memo to the U.S. Fish and Wildlife Service (Service) with attached supporting information, including the January 29, 2014, Petition for Temporary Urgency Change (TUC Petition); (2) the January 31, 2014, State Water Resources Control Board (SWRCB) TUC Petition Order; (3) the February 7, 2014, revised SWRCB TUC Petition Order; (4) the January 17, 2014, Governor's Proclamation of a State of Emergency; (5) your February 27, 2014, memo to the Service with attached supporting documents; (6) the February 28, 2014, modified SWRCB TUC Petition Order; (7) your March 14, 2014, memo to the Service with the interim Plan and attached supporting documents; (8) your April 8, 2014, memo to the Service with the Plan and attached supporting documents and (9) other information available to the Service.

On January 29, 2014, Reclamation and the DWR submitted a Temporary Urgency Change Petition Regarding Delta Water Quality (TUC Petition), requesting the SWRCB to temporarily modify requirements of water rights decision D-1641 for 180 days, with specific requests for

February related to the Delta outflow and Delta Cross Channel (DCC) standards described in D-1641, Table 3. In response to the TUC Petition, the SWRCB issued an Order on January 31, 2014. Approval of the TUC Petition by the SWRCB has enabled changes in operations that will provide minimum human health and safety supplies and conserve water for later protections of instream uses and water quality. On January 31, 2014, Reclamation requested reinitiation and concurrence from the Service that there would be no additional adverse effects on delta smelt or its critical habitat from the drought response actions proposed by Reclamation and DWR for the month of February than those previously analyzed in the 2008 BiOp. The Service issued a concurrence that the proposed modifications will have no additional adverse effects on delta smelt or its critical habitat on January 31, 2014.

On February 7, 2014, the SWRCB issued a revised TUC Petition Order that provided for increased exports (limited to natural or abandoned flow) during such times when D-1641 requirements were met. On February 27, 2014 Reclamation requested the extension of the February actions related to Delta outflow and DCC gate operations through March 31, 2014, be considered as part of the amended project description for drought response actions and requested concurrence that extension will result in no additional adverse effects on delta smelt or its critical habitat for the month of March beyond those previously analyzed in the 2008 BiOp. The Service issued a concurrence that the proposed modifications will have no additional adverse effects on delta smelt or its critical habitat on February 28, 2014.

Reclamation reinitiated consultation on March 14, 2014, to temporarily modify the 2008 BiOp's Reasonable and Prudent Alternative (RPA) regarding Old and Middle River (OMR) flows and additional changes to the TUC Petition Order regarding Delta outflow per D-1641 standards. The Service issued the amendment to the 2008 BiOp on the proposed modifications on March 14, 2014.

The Plan addresses a range of drought responses for the remainder of WY 2014 and the beginning of WY 2015. The following describes the proposed Delta drought response measures:

Proposed Delta Operations April-May 2014

A. National Marine Fisheries Service (NMFS) Biological Opinion (BiOp) Provisions

1. NMFS RPA Action IV.2.1 will be implemented with the following modification:

   Before the approximately 31-day Stanislaus River pulse flow (to be initiated between April 7-15, 2014), Action IV.2.1 would be modified to allow for increased export pumping to capture abandoned or natural flows in the Delta, up to OMR limits, as provided in the NMFS BiOp (Action IV.2.3) and Service 2008 BiOp (Action 3). Action IV.2.1 will be implemented during the 31-day pulse flow period. Action IV.2.1 will likely be implemented following the Stanislaus River pulse flow, through May 31. However, in the unlikely event that there is abandoned or natural flows in the Delta during the latter half of May; exports would increase to capture those flows.

2. Schedule the Stanislaus River pulse flow release in coordination with releases from other San Joaquin River tributaries for 31 days, to begin sometime between April 7 and April 15. The exact timing and duration will be developed through the Stanislaus Operations Group (SOG) in coordination with the (Water Operations Management Team) WOMT and (Real Time Drought Operations Management Team) RTDOT processes. Reclamation and DWR will maintain a San Joaquin River inflow-to-export ratio of 1:1 (with a minimum combined export of 1,500 cubic feet per second (cfs)), for the duration of the pulse.

3. All OMR flow related actions, including those based on the NMFS salmonid density triggers, remain in place. The OMR Index Demonstration Project as specified in the NMFS concurrence letter continues.

4. Modification of DCC gate operations (NMFS RPA Action IV.1.2): If the Projects determine that the DCC gates must open to provide for salinity management in the Delta, the Projects will provide at least a 5-day notice to the fish and wildlife agencies so that enhanced monitoring can begin. The Projects will implement enhanced monitoring and triggers to open and close the gates, as needed for protection of listed species.

B. Service 2008 BiOp Provisions

No additional modifications, beyond March 31, to the Service's 2008 BiOp RPA actions are currently proposed under the Plan. All OMR flow related actions, including Serivce determinations based on entrainment risk, remain in place[1]. The OMR Index Demonstration Project as specified in the Service's concurrence letter continues.

C. D-1641 Provisions

Reclamation and DWR may request further modifications of requirements contained in D-1641. Below is a description of those anticipated requests. These requests would be subject to approval by the SWRCB's Executive Director and potentially the SWRCB members. D-1641 provisions #1 and #2 (below) are intended to be an extension of existing TUC Order provisions 1(a) and 1(b), which terminate on March 31, 2014. D-1641 provisions #3 and #4 are considered within existing D-1641 flexibility and within the process of implementation defined therein. D-1641 provision #5 (below) will be defined through coordination with the NMFS BiOps provision #2 (above).

1. The minimum Delta Outflow levels specified in Table 3 are modified as follows:

   The minimum monthly Net Delta Outflow Index (NDOI) described in Figure 3 of D-1641 during the months of April and May shall be no less than 3,000 average (mean) cfs.

1 The CDFW 2081 permit criteria associated with longfin smelt remain in place.

2. The maximum Export Limits included in Table 3 of D-1641 are modified as follows:

   During April and May when footnote 10 of D-1641 is not being met, or the DCC gates are open during a period inconsistent with footnote 23 of D-1641, the combined maximum SWP and CVP export rate for SWP and CVP contractors at the Harvey O. Banks and C.W. "Bill" Jones pumping plants will be no greater than 1,500 cfs on a 3-day running average. When precipitation and runoff events occur that allow the DCC to be closed and footnote 10 of D-1641 is being met [3-day average Delta Outflow of 7,100 cfs or electrical conductivity of 2.64 millimhos per centimeter on a daily or 14-day running average at the confluence of the Sacramento and the San Joaquin rivers (Collinsville station C2) if applicable[2]], but any additional Delta Outflow requirements contained in Table 4 of D-1641 are not being met, then exports of natural and abandoned flows are permitted up to D-1641 Export Limits contained in Table 3 and under the existing Biological Opinions (with implementation modifications or limits, as specified in BiOps section, above).

3. Continue to vary the averaging period of the Delta Export/Import (E/I) ratio pursuant to Footnotes 18, 19, and 20 of D-1641 as was approved in the March TUC Order. Operate to a 35 percent E/I ratio with a 3-day averaging period on the rising limb of a Delta inflow hydrograph, and operate to a 14-day averaging period on the falling limb of the Delta inflow hydrograph.

4. Implement combined export limitations as specified in Table 3, Footnotes 17 and 18 of D-1641. The timing and duration of this action is to be coincident with a coordinated pulse flow on the San Joaquin River system as described under NMFS BiOps #1 and #2 of up to but not to exceed 31 days.

5. D-1641 (5) Vernalis base flow and pulse flow are modified as follows:

   - April 1 to the start of the pulse flow period – maintain Vernalis flow at or above 700 cfs (3-day running average);
   - For the 31-day pulse flow period, create a 16-day pulse averaging 3,300 cfs at Vernalis with flows averaging 1,500 cfs at Vernalis for the remainder of the 31 days. The start date and flow schedule for the overall pulse flow volume of water may be modified (with concurrence with the fishery agencies);
   - From the end of the pulse flow period through May 31– maintain an average flow of 500 cfs for the period.

6. The compliance location for the D-1641 Agricultural Western Delta Salinity Standard at Emmaton (14-day running average of 2.78 millimhos per centimeter through August 15) is moved to Three Mile Slough on the Sacramento River.

---

2 The Standard does not apply in May if the best available estimate of the Sacramento River Index for the water year is less than 8.1 MAF at the 90% exceedence level.

Proposed Delta Operations June-November 15, 2014

D. Emergency Drought Barriers

If hydrologic conditions continue to be forecasted at a level of dryness similar to what is expressed in the March 90 percent forecast, emergency drought barriers would be constructed on West False River, Steamboat Slough, and Sutter Slough during May. The West False River barrier would be constructed first, with construction beginning approximately May 7. The Sutter and Steamboat slough barriers would be constructed second, with in-water construction starting no earlier than May 22. The barriers would be constructed primarily with rock fill. Four 48-inch culverts will be operable at the barriers in Sutter and Steamboat sloughs to allow fish passage and downstream flow when needed to improve water quality and stage. A boat portage facility will be operated at the Steamboat Slough barrier to allow boats less than 22 feet long to cross the barrier. Water quality and stage will be continuously monitored upstream and downstream of the barriers. The barriers will also be monitored for their effects on migrating adult and juvenile salmon and sturgeon and their designated critical habitats, as well as effects on delta smelt distribution and habitat and longfin smelt habitat. Initiation of barrier removal will begin no later than October 15, 2014, with the complete removal of the Sutter and Steamboat slough barriers by November 1, and complete removal of the West False River barrier by November 15.

The State and Federal agencies will employ a contingency approach to salinity barrier construction, which would allow a decision to be made as late as the end of April concerning the construction of the barriers. Should runoff projections and water quality conditions warrant, installation of the salinity barriers could be delayed or halted. Construction and operation of the culverts in the barriers will be achieved through DWR's application for a Clean Water Act section 404 U.S. permit with the Army Corps of Engineers (Corps), and accompanying section 7 consultation between the NMFS, Service and Corps, and applicable permits from California Department of Fish and Wildlife (CDFW).

The proposed modifications to CVP and SWP operations with the salinity barriers in place related to Delta outflow and water quality are addressed as part of the Plan. With the salinity barriers in place, it is estimated that a minimum monthly Delta outflow of 2,000 cfs, would be sufficient to maintain water quality for in-Delta uses and Project diversions, thereby conserving upstream storage that would have been necessary under a higher outflow requirement. However, this range of projected Delta outflow with barrier operation is estimated to be insufficient to meet the D-1641 Agricultural Western Delta Salinity Standard at Emmaton for critical year types (14-day running average of 2.78 millimhos per centimeter through August 15). Additional upstream releases would needed to be expended in order to meet the Emmaton standard. In fact, due to the hydrodynamic changes associated with the operation of the proposed salinity barriers, slightly higher upstream releases would need to be expended to meet the Emmaton standard than if the barriers were not installed at all. Therefore, one of the primary objectives of barrier operation (conservation of upstream

storage), can only be achieved if barrier implementation is carried out in concert with modifications of various Delta salinity D-1641 requirements (see below).

E. NMFS BiOp Provisions

1. Modification of DCC gate operations (NMFS RPA Action IV.1.2): If the Projects determine that the DCC gates must open to provide for salinity management in the Delta, the Projects will provide at least a 5 day notice to the fish and wildlife agencies so that enhanced monitoring can begin. The Projects will implement enhanced monitoring and triggers to open and close the gates, as needed for protection of listed species.

F. Service BiOp Provisions

No modifications to the Service's 2008 BiOp RPA actions are currently proposed during June through November 15.

G. D-1641 Provisions

Reclamation and DWR may request further modifications of requirements contained in D-1641. Below is a description of those anticipated requests. These requests would be subject to approval by the State Water Board's Executive Director. The Plan describes provisions without the barriers in place but the current proposal that is considered for section 7 purposes is with barriers in place and will not be discussed further.

1. The minimum monthly Net Delta Outflow Index (NDOI) described in Figure 3 of D-1641 during the months of June through October shall be no less than 2,000 mean cfs.

2. During the month of June, continue to vary the averaging period of the Delta E/I ratio pursuant to Footnotes 18, 19, and 20 of D-1641 as was approved in the March TUC Order. Operate to a 35 percent E/I ratio with a 3-day averaging period on the rising limb of a Delta inflow hydrograph when storm runoff is occurring, and operate to a 14-day averaging period on the falling limb of the Delta inflow hydrograph.

3. Void the critical year D-1641 Agricultural Western Delta Salinity Standard at Emmaton (14-day running average of 2.78 millimhos per centimeter through August 15).

4. The number of required days for 150 mg/l Cl at Contra Costa Canal Intake shall be 56 days.

5. The mean monthly Rio Vista flow standard in September, October, and November shall be no less than 2,000 cfs.

Emergency Fisheries Monitoring, Technology Improvement, and Science Plan

The State and Federal agencies commit to developing, and implementing as appropriate, a multi-objective emergency fisheries monitoring, technology improvement, and science plan to minimize, and to the extent possible, measure effects to listed species and improve understanding of biological effects associated with water operations during drought conditions. Drought year effects to be studied include, but are not necessarily limited to, effects associated with DCC gate and export facility operations, emergency drought barrier influence on smelt and associated habitat, and upstream flows and temperature management for anadromous fishes. This plan will:

1. Identify near-term extraordinary fish (salmonid, steelhead, sturgeon, and smelt) monitoring necessary to support and inform water operations during 2014 drought conditions;
2. Identify a winter-run Chinook contingency plan that includes: a) infrastructure needs at Livingston Stone National Fish Hatchery, b) increased monitoring of redds and temperature impacts, and c) rescue and relocation to more suitable habitats including Battle Creek;
3. Identify monitoring and studies to document the environmental effects of the drought, including: a) the effects of the proposed temporary salinity barriers and associated CVP/SWP operation on smelt habitat throughout the timeframe that the barriers are in place and b) the effect of the barriers on migrating salmon, steelhead, sturgeon, delta smelt, and longfin smelt and their habitats; and
4. Identify opportunities for longer-term anadromous fish monitoring to improve operations decision-making during drought as well as other year types.

This draft plan will be completed collaboratively by the Service, NMFS, CDFW, DWR, and Reclamation. It is expected that specific "action plans" for items 1, 2, and 3 above, because they are time sensitive due to drought operations, will be developed by April 15th so that implementation, as appropriate, can begin. Action plans for longer-term actions, such as item 4, will be developed by October 1, 2014, through a collaborative process led by NMFS and DFW in coordination with the other agencies. This process will include stakeholder input and scientific-peer review. The newly formed Interagency Ecological Program (IEP) Salmon Management, Analysis, and Synthesis Team (MAST) and the South Delta Salmonid Research Collaborative subgroup of the Collaborative Science and Adaptive Management Program (CSAMP) will be engaged prior to final decisions being made specific to long-term anadromous fish monitoring. Additionally, the CSAMP could, as appropriate, be engaged if long-term smelt monitoring efforts are undertaken and to address smelt issues that arise during implementation of the plan. Effects to delta smelt as a result of implementation of the science plan will be addressed under existing authorizations separate from the 2008 BiOp or a new section 7 consultation. Planning and implementation of the Emergency Fisheries Monitoring, Technology Improvement, and Science Plan are critical components in assisting in the understanding the biological effects to listed fishes associated with water operations during drought conditions.

To date this WY, the Service has determined that no changes in operations are necessary to protect adult or juvenile delta smelt under Components 1 or 2 of the 2008 BiOp RPA due to low risks of entrainment resulting from mostly low reverse OMR flows, consistently low turbidity in

the south and central Delta, favorable distribution of adult delta smelt outside of the south and central Delta, and the lack of observed salvage of adult delta smelt at the Projects' fish salvage facilities. These conditions can be attributed to extreme natural hydrologic drought conditions resulting in low Delta inflow and limited Project exports.

We understand the critical need for drought-related actions to continue through the coming months and have concluded that there is sufficient information provided to analyze effects to delta smelt for the months of April and May, 2014. Although the proposed departure from D-1641 was not anticipated in the Project Description of the BiOp, or the modeling in the biological assessment, the proposed relaxations, based on the provisions provided in the TUC Order, as amended, and existing hydrologic and biological conditions for the months of April and May appear to be within the range of effects previously analyzed in the 2008 BiOp. The Service, therefore, concurs with Reclamation's determination that the proposed modifications for April and May will have no additional adverse effects on delta smelt or its critical habitat.

The Service cannot, however, concur at this time with Reclamation's determination that the proposed Plan will have no additional adverse effects on delta smelt or its critical habitat for the remainder of the project time period, June 1 through November 15, 2014. Although the Plan calls for water operations that are consistent with the Service's RPA, the effects analysis provided by Reclamation does not contain sufficient information to adequately assess the effects of the Projects' operations with the Emergency Drought Barriers in place. In order to adequately assess the effects of the June-November drought-related actions, we request that Reclamation provide the following information in the delta smelt effects analysis associated with the Plan: (1) an updated effects analysis that incorporates updated forecasting and modeling as described in the Plan; (2) a thorough interpretation of the hydrodynamic effects and water quality effects on delta smelt and its critical habitat; and (3) updated Project operations based on D-1641 modifications as proposed in the Plan and how those changes may effect delta smelt and/or its critical habitat. This may not be an exhaustive list of additional information needs. We are committed to continuing to coordinate with Reclamation and DWR to ensure that all additional information necessary to complete reinitiation of drought-related actions for June through November can be developed as efficiently as possible.

We look forward to continued close coordination with you and your staff throughout this extremely challenging water year.

Please address any questions or concerns regarding this response to Mike Chotkowski, Field Supervisor, or Kim S. Turner, Assistant Field Supervisor at (916) 930-5603. Please refer to Service file number 81420-2008-F-1481-10 in any future correspondence regarding this project.