

# Topic: Storm Event OMR Flexibility

---

**Region:** Delta      **Type of Idea:** Operations

**Timeframe:** January 1 through June 15, every year

**Species and Life stage:** Delta Smelt and Chinook salmon outmigrating juveniles

## Current Requirement

*2008 USFWS Biological Opinion (2008 BiOp) – RPA Actions 1, 2, and 3*

The 2008 BiOp prescribes OMR flows in three of its Actions: Action 1 protects pre-spawning adult Delta Smelt from entrainment during the first flush; Action 2 protects pre-spawning adults from entrainment and from adverse hydrodynamic conditions; and Action 3 protects larval Delta Smelt from entrainment.

*2009 NMFS 2009 Biological Opinion (2009 BiOp) – RPA Action IV.2.3*

The 2009 BiOp RPA Action IV.2.3 is intended to reduce the vulnerability of emigrating juvenile winter-run, yearling spring-run, and CV steelhead within the lower Sacramento and San Joaquin rivers to entrainment into the channels of the South Delta and at the pumps due to the diversion of water by the export facilities in the South Delta. This action is also intended to enhance the likelihood of salmonids successfully exiting the Delta at Chipps Island by creating more suitable hydraulic conditions in the mainstem of the San Joaquin River for emigrating fish, including greater net downstream flows. This actions require CVP/SWP to reduce exports, as necessary, to limit negative flows to -2,500 to -5,000 cfs in Old and Middle Rivers, depending on the presence of salmonids, from January 1 through June 15.

## Background

The Water Infrastructure Improvements for the Nation Act, Section 4003 titled Temporary Flexibility for Storm Events, calls for maximizing water supplies for CVP and SWP contractors through an operations plan. The Secretary of the Interior and the Secretary of Commerce (collectively, “Secretaries”) shall evaluate and may authorize the CVP and SWP to operate at levels that result in OMR flows more negative than the most negative reverse flow rate prescribed by the RPA actions detailed above to capture peak flows during storm-related events, provided that the action would result in no additional adverse effects on listed species beyond the range of the effects anticipated to occur to the listed species for the duration of the smelt biological opinion (i.e. 2008 BiOp) or salmonid biological opinion (i.e. 2009 BiOp).

Further, Section 4005(b)(1) of the WIIN Act requires consistency with State law, including California Fish and Game Code section 2080.1. Section 4005(b)(3) requires the Secretaries to

notify the State regarding any changes in the manner in which the 2008 and 2009 BiOps are implemented; and that the Secretaries confirm that those changes are consistent with ESA.

## **Past Implementation**

In March 2018, Reclamation implemented a brief storm flexibility operation in accordance with WIIN Act. Currently, upon identification of precipitation within the Central Valley, Reclamation, in coordination with DWR, evaluates the storm event for eligibility under the WIIN Act Section 4003 and proposes OMR rates accordingly while assessing real-time biological conditions that would warrant not proceeding with an operations plan. The operations plan and biological reviews are used to determine if the proposed WIIN Act action would be expected result in additional adverse effects on the species, beyond the effects analyzed for the BiOps. These plans considers the factors identified in the WIIN act the may be utilized to determine additional adverse effects. The operations plans are then forwarded to the Secretaries for approval, prior to implementation of proposed OMR rates.

## **Ideas**

Criteria have been proposed on how to implement the WIIN Act in accordance with the Endangered Species Act and California Endangered Species Act, as well as other regulations. Reclamation seeks to find a process that allows for the implementation of WIIN Act Storm Flexibilities based on a defined process that reduces the need for significant staff effort and coordination at every eligible storm event. This process would formalize storm flexibility as part of the biological opinions currently regulating CVP and SWP long-term operations. Rather, the process outlines when an event is eligible or not and Reclamation may proceed based on its Operations Plan.

Pursuant to Section 4003(c)(4), a Storm Event Monitoring and Agreements describes the expanded monitoring programs and other data gathering to improve the efficiency of operations for federally listed species protections and CVP and SWP water supply to ensure no additional adverse effects on listed species beyond the range of the effects anticipated to occur to the listed species for the duration of the smelt biological opinion or salmonid biological opinion, using the best scientific and commercial data available.. The monitoring is the best scientific and commercial data available, feasible within the short timeframe permitted for real-time decision making, and sufficient for assessing the potential for additional adverse effects. A Storm Decision Tree, would identify the applicability of Section 4003 and real-time decision making to determine when Reclamation would initiate Section 4003 of the WIIN Act and prepare information for a decision.

Based on precipitation events that meet the criteria in the Decision Tree, Reclamation would undergo development of a Storm Event Operations Plan Template as described in Section 4003(2). This would be filled out to describe the current and forecasted conditions to be input into Delta Simulation Model II (DSM2) modeling. This would give Reclamation the operational information on the specific action such as number of days, cubic feet per second (cfs) of Delta

inflow and outflow, and resulting OMR flows. A template would provide for how Reclamation, upon identification of precipitation that may result in conditions where a Delta outflow index indicates a higher level of flow available for diversion, would operate in coordination with the SWP if authorized. The information gathered would be utilized in filling out the Biological Review Template. Utilizing this template Reclamation would assess the potential for additional adverse effects to federally listed species over the duration of the BOs.

In consideration of the language of the WIIN Act and the information in the appendices, the Secretaries, on a case-by-case basis, would determine whether or not the storm event may result in precipitation that allows for maximizing water supplies for CVP and SWP contractors under Section 4003. Under the Proposed Action, Reclamation would operate to the decision by the Secretaries.

## **Current Science**

Below is a list of in-season monitoring, supporting information, and modeling approaches that are used to determine if the proposed WIIN Act action would be expected result in additional adverse effects on the species, beyond the effects analyzed for the BiOps:

- Regularly updated documentation on hydrologic, physical, and biological conditions
  - WOMT (Water Operations Management Team)
  - DOSS (Delta Operations for Salmonids and Sturgeon)
  - SWG (Smelt Working Group)
  - DCT (Delta Conditions Team)
- Supporting information from:
  - Enhanced Delta Smelt Monitoring (EDSM)
  - Delta Juvenile Fish Monitoring Program (DJFMP)
  - Salmon and Sturgeon Assessment of Indicators by Life-stage (SAIL)
  - Turbidity Transects
  - Status and Trends Monitoring
- Modeling of Difference between Current and Proposed Operation Plan
  - DSM2 (Delta Simulation Model II)
  - Particle Tracking Model
  - Salvage Efficiency

## **Justification**

Section 4003(b) of the WIIN Act specifies the factors that may be considered include: 1) degree to which the Delta outflow index indicates a higher level of flow available for diversion; 2) relevant physical parameters including projected inflows, turbidity, salinities, and tidal cycles; and 3) real-time distribution of listed species. Section 4003(e) prohibits requiring a greater level of supporting detail for the analysis than feasible to provide within the short timeframe permitted for timely real-time decision making in response to changing conditions in the Delta.