



September 29, 2015

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Via e-mail

RE: Comments on *Draft Environmental Impact Statement for Coordinated Long Term Operation of the Central Valley Project and State Water Project*

Dear Mr. Nelson:

The California Sportfishing Protection Alliance (CSPA) and the California Water Impact Network (CWIN) respectfully submit comments on the U.S. Bureau of Reclamation's (Reclamation or BOR) *Draft Environmental Impact Statement (DEIS) for Coordinated Long Term Operation of the Central Valley Project (CVP) and State Water Project (SWP)*.

We attach and incorporate into these comments Attachment A, titled *Complaint: Against SWRCB, USBR and DWR for Violations of Bay-Delta Plan, D-1641 Bay-Delta Plan Requirements, Clean Water Act, Endangered Species Act, Public Trust Doctrine and California Constitution*, and Attachment B, titled *COMPLAINT; Against the SWRCB and USBR for Violations of Central Valley Basin Plan, WR Order 90-05, Clean Water Act, Endangered Species Act, Public Trust Doctrine and California Constitution*. We also incorporate by reference the comments of AquAlliance on this DEIS.

I. Overview

The Executive Summary of the DEIS describes part of the background of the DEIS in this way:

The Appellate Court confirmed the District Court ruling that Reclamation must conduct a NEPA review to determine whether the acceptance and implementation of the RPA actions cause a significant effect to the human environment.¹

Chapter 2 of the DEIS further describes the background of the DEIS, stating in part:

As described in Chapter 1, Introduction, the U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) concluded in their 2008 and 2009 Biological Opinions (BOs), respectively, that coordinated long-term operation of the CVP and SWP, as described in the 2008 Reclamation Biological Assessment, jeopardizes the continued existences of listed species and adversely modifies critical habitat. To remedy this, USFWS and NMFS provided Reasonable and Prudent Alternatives (RPAs) in their BOs.

The U.S. Court of Appeals for the Ninth Circuit confirmed the U.S. District Court for the Eastern District of California ruling that Reclamation must conduct a NEPA review to determine whether the RPA actions cause a significant impact on the human environment. Potential modifications to the coordinated operation of the CVP and SWP analyzed in the EIS process should be consistent with the intended purpose of the action, be within the scope of Reclamation's legal authority and jurisdiction, be economically and technologically feasible, and avoid the likelihood of jeopardizing listed species or resulting in the destruction or adverse modification of critical habitat in compliance with the requirements of Section 7(a)(2) of the Endangered Species Act.²

The remand thus set up the requirement for a NEPA analysis of whether implementation of the RPA's would cause a significant impact on the human environment. However, since the Ninth Circuit also upheld the RPA's as necessary under the Endangered Species Act to protect listed species and their critical habitats, simply eliminating part of an RPA is not an option unless equally protective or more protective measures are substituted (and analyzed). Thus, while the "Alternative Basis of Comparison" helps to demonstrate the relative effects (largely related to socioeconomic and water supply issues) of implementing the RPA's, it cannot stand as a viable alternative under NEPA on its own, because NMFS and USFWS have stated in their BiOps, and the Ninth District Court of Appeals has upheld them, that without the RPA's the operation of the SWP and the CVP jeopardize listed species and/or adversely affect their critical habitat.

An RPA is a measure required under the Endangered Species Act to limit the effects of a federal action so that the action does not cause jeopardy or adversely affect critical habitat. The DEIS does not recommend a preferred alternative.³ Thus it appears that BOR may incorporate in its Record of Decision any combination of the elements analyzed in any of the DEIS's NEPA alternatives. This highly unusual approach under NEPA makes it very difficult to comment on the DEIS. It is particularly difficult to provide comments that address whether effects of ultimate modifications to any of the RPA's taken under the Action will cause jeopardy or adversely affect critical habitat.

¹ DEIS, p. ES-6.

² DEIS, p. 2-2.

³ See DEIS, p. 1-9.

Below, we maintain that some elements that are analyzed under project alternatives would, on their face, cause jeopardy or adversely affect critical habitat. We also argue that in aggregate baseline conditions (the No Action Alternative) are already doing so. However, an additional round of analysis by BOR in a recirculated DEIS or in an FEIS will be needed in order to evaluate whether the any modifications to RPA's that BOR ultimately proposes, considered in aggregate, comply with the requirements of the ESA. No such analysis is present in the DEIS.

In any case, the DEIS does not specify significant impacts or specific mitigations for such impacts insofar as the DEIS concerns reduced water supply that might be attributable to the RPA's.⁴ Instead, the DEIS assumes that urban water supplies will be met by paying relatively nominal increased costs and that increased use of groundwater will replace agricultural supplies lost because of the implementation of the RPA's.⁵

In short, there is no compelling argument in the DEIS that the RPA's in whole or part are not "economically or technologically feasible."

Nonetheless, the DEIS describes several alternatives that could be substituted for the parts of the RPA's. The apparent assumption is that actions proposed under these alternatives, including elimination of certain elements of the RPA's and substitution of alternative elements, would meet the requirements of the ESA and would have added benefits that might make them preferable.

Alternative 1 would eliminate RPA actions that would not otherwise occur without the RPA's, and revert to operations and flow requirements that existed prior to issuance of the BiOps. However, it would retain non-operational RPA requirements that have already been implemented or are in the process of being implemented.

Alternative 2 would eliminate a series of physical measures included in the RPA's, including fish passage at CVP dams, temperature improvements at CVP dams on the American River, actions to reduce entrainment at CVP and SWP export facilities, and others.⁶

Alternative 3 would eliminate RPA actions that would not otherwise occur without the RPA's. It would weaken Old and Middle River (OMR) export restrictions from the present restrictions in the BiOps, implement a suite of actions on the Stanislaus River that substantially reduce flow requirements, and eliminate the use of Stanislaus River flow releases to meet D-1641 water quality and pulse flow requirements. It would establish a "predator control

⁴ See e.g. DEIS p. 19-57: average annual increased cost of M&I water supplies to Southern California is \$34 Million. See also p. 19-49: average increased regional loss of San Joaquin Valley revenue in Dry and Critical Dry years is \$34.4 Million.

⁵ In what appears to be an incomplete analysis, the DEIS also does not analyze whether reduced levels of groundwater, particularly on the west side of the San Joaquin Valley, are attributable to the Action and must be mitigated. See DEIS pp. 7-140 and 7-141. We would argue that the impacts arise not from the Action (the RPA's), but from excessive cultivation without a reliable water supply, a baseline condition. However, the DEIS does not state the basis for which it declines to consider whether groundwater impacts to the San Joaquin Valley are attributable to the action or whether they are potentially significant.

⁶ See DEIS p. 3-32.

program,” trap and haul a portion of salmonid outmigrants in the San Joaquin River from March through June, and reduce ocean harvest of salmon.

Alternative 4 would eliminate RPA actions that would not otherwise occur without the RPA’s. It would limit development in floodplains, replace levee riprap with vegetation, establish a “predator control program,” trap and haul a portion of salmonid outmigrants in the San Joaquin River from March through June, and reduce ocean harvest of salmon.

Alternative 5 would implement the RPA’s and additionally require positive OMR flows in April and May. It would also require April and May pulse flows from the Stanislaus River, whose volume would be determined by water year type and the location of X2.⁷

II. The DEIS fails to present a reasonable range of alternatives.

A. None of the alternatives analyzed in the DEIS, including the No Action Alternative, are sufficient to avoid jeopardy to Delta smelt and listed salmonids or to protect other public trust fishery resources consistent with applicable law.

1. The DEIS and RPAs ignore the recent condition of pelagic and salmonid species.

Since 1967, the California Department of Fish and Wildlife’s (DFW) Fall Midwater Trawl abundance indices for striped bass, Delta smelt, longfin smelt, American shad, splittail and threadfin shad have declined by 99.7, 97.8, 99.9, 91.9, 98.5 and 97.8 percent, respectively.⁸ Abundance indices of these species have continued to decline despite the existence of RPA’s.

For example, between 2008 and 2014, DFW’s 2014 Fall Midwater Trawl abundance index of Delta smelt declined by 60.7 percent, and the 2014 index was the lowest in in the forty-eight year history of the trawl. The 2015 20mm Survey Delta smelt abundance index declined 89.7 percent since 2008 and was the lowest in the twenty-one year history of the survey.⁹ The 2015 Spring Kodiak Trawl abundance index for Delta smelt declined 42.7 percent since 2008 and was the lowest in the thirteen-year history of the trawl.¹⁰ The 2015 Summer Towntnet Delta smelt abundance index was 0.0 (100 percent decline), the lowest in the fifty-six year history of the survey.¹¹ Survey results for Delta smelt led U.C. Davis fisheries professor Peter Moyle to warn state officials to prepare for the extinction of Delta smelt.¹²

⁷ See DEIS Table 3.5, p. 3-42.

⁸ <http://www.dfg.ca.gov/delta/projects.asp?ProjectID=FMWT>

⁹ See Bibliography: <https://www.wildlife.ca.gov/Conservation/Delta/20mm-Survey>.

¹⁰ See Bibliography: <https://www.wildlife.ca.gov/Conservation/Delta/Spring-Kodiak-Trawl>.

¹¹ See Bibliography: <https://www.wildlife.ca.gov/Conservation/Delta/Towntnet-Survey>.

¹² <http://www.capradio.org/44478>,
<http://californiawaterblog.com/2015/03/18/prepare-for-extinction-of-delta-smelt/>,
<http://news.nationalgeographic.com/2015/04/150403-smelt-california-bay-delta-extinction-endangered-species-drought-fish/>.

Other species may be in equal or worse shape. The 2014 Fall Midwater Trawl abundance index of longfin smelt declined by 88.5 percent since 2008.¹³

The USFWS Anadromous Fisheries Restoration Program (AFRP) documents that, since 1967, in-river natural production of Sacramento winter-run Chinook salmon and spring-run Chinook salmon have declined by 98.2 and 99.3 percent, respectively, and are only at 5.5 and 1.2 percent, respectively, of doubling levels mandated by the Central Valley Project Improvement Act, California Water Code and California Fish & Game Code.¹⁴

The 2013 brood years of Sacramento River winter-run, spring-run and fall-run Chinook salmon were seriously impacted by excessive temperatures in the Sacramento River below Keswick Reservoir. In 2014, lethal temperatures below Keswick led to the loss of 95% of winter-run, 98% of fall-run and virtually all of the spring-run 2014 year classes.¹⁵ Daily average and daily maximum temperatures during critical spawning, incubation and alevin life stages at the Above-Clear-Creek-Compliance-Point during May, June and July 2015 significantly exceeded temperatures of the corresponding months of 2014.¹⁶ The loss of a third brood year would likely jeopardize the continued existence of these species.

The DEIS ignores the continuing decline of pelagic and salmonid species following construction of the SWP and the accelerating decline in recent years despite the BOs. This continuing decline of fisheries jeopardizes the existence of species already on the brink of extinction. The failure to acknowledge and analyze the continuing decline of fisheries and impending extinction of one or more species, despite the RPAs, renders the DEIS deficient as a NEPA document.

2. The DEIS and RPAs fail to account for the SWRCB's pattern and practice of serially weakening fish and wildlife and water quality standards, with the concurrence of USFWS and NMFS.

The State Water Resource Control Board's (SWRCB) San Francisco/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan) and the Central Valley Regional Water Quality Control Board's (Regional Board) Water Quality Control Plan for the Sacramento River and San Joaquin River Basins (Basin Plan) are issued pursuant to requirements of the federal Water Pollution

¹³ The USFWS has found that longfin smelt, as a candidate species, warrants protection under the Endangered Species Act but the Service is precluded from adding the species at the present time because of a lack of resources and the extensive list of other species warranting listing. http://www.fws.gov/sfbaydelta/species/longfin_smelt.cfm

¹⁴ See <http://www.fws.gov/lodi/afrrp/>.

¹⁵ State Water Resource Control Board, *Order Conditionally Approving a Petition for Temporary Urgency Changes in License and Permit Terms and Conditions Requiring Compliance with Delta Water Quality Objectives in Response to Drought Conditions*, 3 July 2015, pp. 15,16:

http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/tucp/2015/tucp_order070315.pdf

And

NRDC, TBI, *Drought Operations Will Cause Additional Unreasonable Impacts on Fish and Wildlife in 2015*, 20 May 2015, slide 2:

http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/workshops/nrdc_tbi_pres.pdf.

¹⁶ http://cdec.water.ca.gov/cgi-progs/staMeta?station_id=ccr, and

CSPA, presentation before the State Water Resource Control Board 25 June 2015 Workshop, slides 4-7:

http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/workshops/062415cspa_pres.pdf

Control Act (Clean Water Act). The SWRCB's D-1641 and Water Rights Orders 90-05, 91-01, 91-03 and 92-02 implement the Bay-Delta Plan and Basin Plan as terms and conditions in Reclamation's CVP. The BO's and RPA's are predicated on compliance with Delta water quality and flow criteria and Sacramento River temperature criteria contained in the SWRCB's D-1641 and WR Orders.

However, the SWRCB has succumbed to a pattern and practice of waiving (i.e., weakening) water quality, flow and temperature criteria whenever requested. Over the last two years, the SWRCB has weakened water quality, flow and/or temperature criteria some 35 times.¹⁷ In 2014, the SWRCB reduced regulatory Delta outflow by 43% and increased Delta exports by 18%. In 2015, the SWRCB reduced regulatory outflow by 78% in order to increase exports by 32%. These changes shifted more than one million acre-feet of water from fisheries protection to agricultural and urban use.¹⁸

D-1641 Table 1, 2 and 3 water quality standards have been routinely exceeded. For example, salinity standards protecting south Delta agricultural beneficial uses have been exceeded thousands of days since 2006, and there were over 400 exceedances at Vernalis, Brandt Bridge, Old River Near Middle River, and Old River Near Tracy in calendar year 2015 alone. Delta outflow standards protecting fish and wildlife and agriculture, Vernalis flow standards protecting salmon and steelhead, and Collinsville salinity standards protecting Delta smelt habitat were exceeded numerous times in 2015, as were the Emmaton, Threemile Slough and Jersey Point salinity standards protecting agricultural beneficial uses. The narrative salmon protection doubling standard has been violated every day since D-1641 became operative.

This pattern and practice of weakening critical Delta flow and water quality standards has replicated itself over decades. For example, between 1988 and 1991, Bay-Delta standards were violated 246 times. The SWRCB's refusal to enforce Bay-Delta water quality and flow standards is more fully described in Attachment A titled *Complaint: Against SWRCB, USBR and DWR for Violations of Bay-Delta Plan, D-1641 Bay-Delta Plan Requirements, Clean Water Act, Endangered Species Act, Public Trust Doctrine and California Constitution* and incorporated into these comments.

As previously noted and described more fully in Attachment B titled *COMPLAINT: Against the SWRCB and USBR for Violations of Central Valley Basin Plan, WR Order 90-05, Clean Water Act, Endangered Species Act, Public Trust Doctrine and California Constitution*, the Regional Board established temperature criteria in the Sacramento River, pursuant to the CWA, and the SWRCB implemented the temperature criteria in Reclamation's permits and licenses in WR Order 90-05. In doing so, the SWRCB implemented temperature criteria based on average daily temperatures without determining whether average daily temperatures were protective of aquatic life. As discussed at length in pages 19-23 of Attachment B, a 56°F daily

¹⁷ Pubic Policy Institute of California, *What if California's Drought Continues?* August 2015, page 7: http://www.ppic.org/content/pubs/report/R_815EHR.pdf and the Technical Appendix at page 6: http://www.ppic.org/content/pubs/other/815EHR_appendix.pdf

¹⁸ SWRCB, staff presentation at the 20 May 2015 public workshop on drought activities in the Bay-Delta: http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/workshops/swrcb_staff_pres_session1b.pdf

average temperature criterion is not protective of Chinook salmon spawning, egg incubation and fry emergence.¹⁹

Additionally, the SWRCB exempted almost 43% of identified fish spawning habitat from temperature requirements. The SWRCB then ignored the Basin Plan's Controllable Factors Policy and its own admonition to Reclamation that water necessary to meet water quality criteria was not available for delivery. When the National Marine Fisheries Service (NMFS) listed winter-run Chinook salmon as threatened under the ESA, the SWRCB inexplicably relocated the temperature compliance point further upstream to Bend Bridge, eliminating another 15 miles of spawning habitat.

Over the next 23 years, the SWRCB participated in back-room temperature management group meetings that recommended ever-changing temperature compliance points for winter-run Chinook salmon, based upon the quantities of water BOR had remaining in storage after deliveries to its water contractors. The SWRCB subsequently approved the recommendations of the temperature management group of which it is a participating member. These approvals generally relocated temperature compliance points further and further upstream, often eliminating as much as 90% or more of spawning habitat protected by the Basin Plan. For example, Clear Creek has been the designated temperature compliance point over the last two years, which has compressed spawning into the upper 10 miles of the Sacramento River downstream of Keswick Reservoir and led to superimposition of redds and conflict with other species.

Despite these yearly concessions, BOR has violated temperature criteria in nearly every year. In 2015, the SWRCB approved Reclamation's request to increase the temperature compliance requirement from a daily average of 56°F to 58°F. This despite the fact that the NMFS pointed out that an increase to 58°F would result in adverse impacts to incubating winter-run eggs and alevin in redds and that 58°F was identified in the scientific literature as lethal to incubating salmon eggs and emerging fry. In the subsequent concurrence letter, NMFS noted that "these conditions could have been largely prevented through upgrades in monitoring and modeling and *reduced Keswick releases in April and May*" but concurred because "the plan provides a *reasonable possibility* that there will be *some juvenile winter-run survival* this year."²⁰ However, this is an unacceptable and illegal standard of compliance with the BO and ESA.

Drought cannot be employed as an excuse for ignoring or weakening promulgated water quality standards. Drought is normal in California's Mediterranean climate. According to DWR, there have been 10 multi-year drought sequences of large-scale extent in the last 100 years, spanning 41 years. Below normal years occur more than half the time. Agencies cannot

¹⁹ The U.S. Environmental Protection Agency, the states of Washington, Oregon and Idaho, both North Coast and Central Valley Regional Water Quality Control Boards, NMFS, DFW, the Pacific Fishery Management Council and the majority of the scientific literature have either adopted or recommended more restrictive temperature criteria based upon a daily maximum and/or a seven-day mean of daily maximums.

²⁰ NMFS, *Contingency Plan for Water Year 2015 Pursuant to Reasonable and Prudent Alternative Action I.2.3.C of the 2009 Coordinated Long-term Operation of the Central Valley Project and State Water Project Biological Opinion, Including a Revised Sacramento River Water Temperature Management Plan*, p. 9. Emphasis added.

be surprised, be unprepared for, or claim emergency exemptions for something that occurs more than 40% of the time.

However, Reclamation and DWR have continued to maximize water deliveries in the initial years of drought sequences and failed to maintain sufficient carryover storage to protect fisheries, water quality and public trust resources. The pattern and practice of delivering near normal water supplies in the early years of drought, depleting carryover storage and then relying on the SWRCB to weaken water quality standards has been extensively discussed and documented in previous CSPA presentations, protests, objections and complaints before the SWRCB.²¹ As Reclamation is aware, CSPA and CWIN have filed a lawsuit in federal court regarding Reclamation's failure to comply with the Clean Water Act and filed a lawsuit in state court against the SWRCB's de facto weakening of CWA water quality standards. We incorporate by reference the allegations contained in those amended complaints into these comments.²²

The continuing exceedances of water quality and flow criteria jeopardize the continued existence of species. Yet the DEIS fails to acknowledge, discuss or analyze the pattern and practice of serially weakening legally promulgated water quality and flow standards established to protect fish and water quality. It further fails to incorporate the serial failure to comply with water quality and flow standards in its modeling and assessment of the project's ability to deliver water and evaluation of alternatives. Consequently, the DEIS is deficient as a NEPA document.

3. The RPAs have failed to protect fisheries and other public trust resources.

The continuing decline of fisheries, degraded water quality, and serial exceedance of water quality and flow criteria are both a track record and report card of the RPA's. Their existence and implementation has failed to protect fisheries and has brought several species to the brink of extinction. Any weakening or elimination of the RPA's would only exacerbate an already unacceptable situation.

The DEIS must candidly acknowledge, discuss and analyze the failure of the RPA's to protect fisheries, water quality and public trust resources. Failure to do so would render the DEIS deficient as a NEPA document.

4. The DEIS makes no showing that Alternatives 1-4 are as protective as D-1641 with the RPA's.

The DEIS makes no showing that any of the alternatives, including the No Action alternative, meets the purpose and need of the proposed action, including most specifically the need to conform to the requirements of the ESA and to other applicable law that protects public

²¹ See CSPA workshop presentations, protests and objections of Temporary Urgency Change Petitions and complaints over the last two years at the SWRCB's State Water Project and Central Valley Project Temporary Urgency Change Petition website,

http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/tucp/index.shtml

²² <http://calsport.org/news/>

trust resources. It also makes no showing that any of the elements proposed in the alternatives will productive positive benefits for fisheries and other public trust resources.

a. Alternative 1

Alternative 1 would eliminate the RPA’s except those elements that would otherwise be implemented pursuant to voluntary actions or other regulatory requirements.

i. Fall pulse flows

Alternative 1 would eliminate fall attraction pulse flows in the Stanislaus River for fall-run Chinook, a proven, effective and cost-efficient measure to stimulate upstream migration and reduce straying. While consultants for irrigation districts on the Stanislaus have discerned no correlation between fall pulse flows and upstream migration in that river, pulse flows on the Mokelumne have been extremely effective in reducing straying and have shown clear correlation to upstream migration. (Figures 1 and 2).

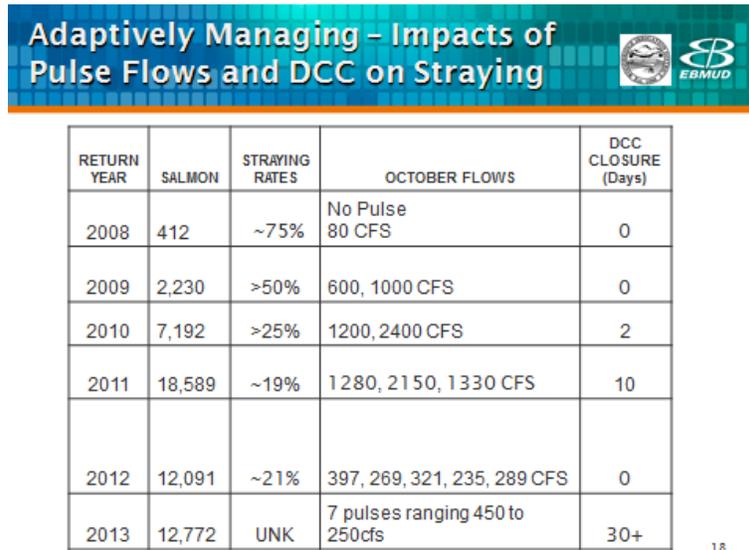


Figure 1: Effects of pulse flows on straying rates and adult migration in the Mokelumne River 2008-2013.²³

²³ East Bay Municipal Utility District staff presentation to MokeWISE stakeholder group, April, 2014.

Chinook Salmon Passage and Flow Below WIDD

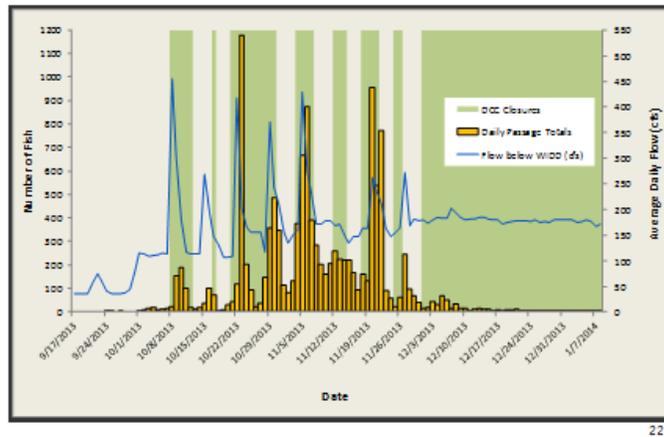


Figure 2: Relation of 2013 pulse flows and upstream migration of Mokelumne fall-run Chinook past Woodbridge Dam.²⁴

More specific to the San Joaquin tributaries including the Stanislaus, Carl Mesick of the U.S. Fish and Wildlife Service found in 2001: “migration rates of adult salmon are substantially higher when Vernalis flows exceed about 3,000 cfs and total exports are less than 100% of Vernalis flows.”²⁵

The Bureau of Reclamation, recognizing the value and importance of fall pulse flows, ordered them for the Stanislaus in 2014 even in the face of severe drought conditions, and appears prepared to do so again in even worse storage conditions in 2015.

ii. Spring flows and pulse flows

Alternative 1 would also reduce spring flows in the Stanislaus River and eliminate spring pulse flows in the San Joaquin River sourced in the Stanislaus. High spring flows and pulse flows in the San Joaquin River at Vernalis are clearly and strongly correlated to successful outmigration of juvenile salmon.

The California Department of Fish and Game (now Department of Fish and Wildlife,) identified spring pulses in the San Joaquin River needed to double salmon in the San Joaquin river system in Exhibit 3 of its submittals in the State Water Resources Control Board’s 2010 Delta Flow Criteria proceeding (Figure 3).

²⁴ Id.

²⁵ Carl Mesick, *The Effects of San Joaquin River Flows and Delta Export Rates During October on the Number of Adult San Joaquin Chinook Salmon that Stray*, 2001, Fish Bulletin 179: Volume Two, p. 159.

Table 10 South Delta (Vernalis) Flows Needed to Double Smolt Production at Chipps Island (by Water Year Type)

Flow Type	Water Year Type				
	Critical	Dry	Below Normal	Above Normal	Wet
Base (cfs)	1,500	2,125	2,258	4,339	6,315
Pulse (cfs)	5,500	4,875	6,242	5,661	8,685
Pulse Duration	31	40	50	60	70
Total Flow (cfs)	7,000	7,000	8,500	10,000	15,000
Acre-Foot Total	614,885	778,772	1,035,573	1,474,111	2,370,768

Figure 3: DFW recommendations for spring pulse flows at Vernalis²⁶

Swanson et al made similar findings and recommendations in the submittal of the Bay Institute (“*Delta Inflows*,” Exhibit TBI-3) to the Delta Flow Criteria proceeding, showing a positive correlation between spring flows and salmon abundance and between a declining rate of escapement and spring flows at Vernalis of less than 5000 cfs.²⁷ Numerous documents by Carl Mesick (U.S. Fish and Wildlife Service and on behalf of CSPA) similarly stress the importance of high spring flows in various tributaries of the San Joaquin.²⁸

Staff of the State Water Resources Control Board, in its 2010 *Delta Flow Criteria Report*, concluded:

Following are the San Joaquin River inflow criteria based on analysis of the species specific flow criteria and other measures:

- 1) San Joaquin River at Vernalis: 60% of 14-day average unimpaired flow from February through June
- 2) San Joaquin River at Vernalis: 10 day minimum pulse of 3,600 cfs in late October

... San Joaquin River inflow criterion 1 and 2 are Category A criteria because they are supported by sufficiently robust scientific information.²⁹

²⁶ California Department of Fish and Game, *Flows Needed in the Delta to Restore Anadromous Salmonid Passage from the San Joaquin River at Vernalis to Chipps Island*, 2010, p. 35.

http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/exhibits/dfg/dfg_exh3.pdf

²⁷ Swanson et al., *Exhibit TBI-3: Delta Inflows, SWRCB Public Trust Flow Criteria Proceedings, February 16, 2010*, p. 16, p. 23.

http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/exhibits/bay_inst/tbi_exh3.pdf

²⁸ See, for example, Carl Mesick, 2009, *The High Risk of Extinction for the Natural Fall-Run Chinook Salmon Population in the Lower Tuolumne River due to Insufficient Instream Flow Releases*

http://www.waterboards.ca.gov/waterrights/water_issues/programs/bay_delta/deltaflow/docs/exhibits/cspa/cspa_exh14.pdf

Carl Mesick, 2010, *The High Risk of Extinction for the Natural Fall-Run Chinook Salmon Population in the Lower Merced River due to Insufficient Instream Flow Releases*.

<http://calsport.org/doc-library/pdfs/57.pdf>

²⁹ State Water Resources Control Board, *Development of Flow Criteria for the Sacramento-San Joaquin Delta Ecosystem; Prepared Pursuant to the Sacramento-San Joaquin Delta Reform Act of 2009*, August 3, 2010, p. 119.

The *Delta Flow Criteria Report* further summarized existing information:

Available scientific information indicates that average March through June flows of 5,000 cfs on the San Joaquin River at Vernalis represent a flow threshold at which survival of juveniles and subsequent adult abundance is substantially improved for fall-run Chinook salmon and that average flows of 10,000 cfs during this period may provide conditions necessary to achieve doubling of San Joaquin basin fall-run. Both the AFRP and DFG flow recommendations to achieve doubling also seem to support these general levels of flow, though the time periods are somewhat different (AFRP is for February through May and DFG is for March 15 through June 15).³⁰

State Water Board staff also emphasized: “it is important to preserve the general attributes of the natural hydrograph to which the various salmon runs adapted to over time, including variations in flows and continuity of flows.”³¹

The flow regime for the Stanislaus River required in NMFS’s RPA’s contains a significant degree of weekly and monthly variability, although less variability than the percent-of-unimpaired approach recommended by State Water Board staff would require. Alternative 1 would revert the Stanislaus to significantly lower spring flows than RPA flows, with far less variability. Alternative 1 would reduce March-June flows in the Stanislaus River by up to 52.9% in all years and by 59.6% in Dry and Critical Dry years.³² Overall, this flow reduction would substantially reduce the frequency and duration of floodplain inundation

iii. Restrictions on reverse flows in Old and Middle rivers (OMR)

Alternative 1 would eliminate OMR protections in the RPA’s, allowing greater exports at state and federal facilities in the south Delta. The DEIS claims that this would increase exports up to about 1 million acre-feet per year.³³

The RPA’s require limits on net negative tidal flows in Old and Middle Rivers in the South Delta to protect listed winter-run and spring-run Chinook salmon, steelhead, and Delta smelt. Old and Middle River net flows are closely related to total south Delta exports. The OMR limits are not restrictive to higher exports when San Joaquin River Delta inflows are high and provide more positive net OMR. OMR limits allow restrictions on exports when Sacramento River Delta inflows are high and San Joaquin River flows are low. Without OMR limits, exports have been very high (pre-2009) when Sacramento River flows were high. High OMR reverse flows and exports can draw salmon and smelt into the central and south Delta in the winter-spring period during high Sacramento River flows.³⁴ Under the RPA’s, the presence

³⁰ Id.

³¹ Id., p. 120

³² DEIS, p. 5-239.

³³ DEIS, p. 5-253. See Section IV of these comments below for discussion of why this figure may be overstated.

³⁴ The Delta Cross Channel is closed during most of the winter-spring period, and under such conditions Sacramento River flows contribute minimally to lower San Joaquin River and OMR flows. San Joaquin salmon and steelhead smolts that enter the Delta via Georgiana and Threemile sloughs, and smelt living in or moving into the central Delta are at risk to south Delta exports during the winter-spring period. Their presence in the central Delta or export

of listed species can trigger OMR restrictions to -5000 cfs or less negative. Whichever BO RPA is the most restrictive governs operations at any given time. The RPA's prescribe an elaborate review process and triggering criteria for a Smelt Working Group (SWG³⁵) and Delta Salmon and Steelhead Group (DOSS³⁶) to make operations recommendations to Water Operations Management Team (WOMT), which may or may not adopt recommendations.

Old and Middle River (OMR) flow management (Actions IV.2 and IV.3) is prescribed for the period January 1 to June 15 in the NMFS BO RPA. The RPA describes the purpose of these requirements as follows: "Control the net negative flows toward the export pumps in Old and Middle rivers to reduce the likelihood that fish will be diverted from the San Joaquin or Sacramento River into the southern or central Delta. ... Curtail exports when protected fish are observed near the export facilities to reduce mortality from entrainment and salvage."³⁷

The USFWS's BO prescribes similar measures to protect smelt:

The objective of Component 1 is to reduce entrainment of pre-spawning adult delta smelt during December to March by controlling OMR flows during vulnerable periods.³⁸

... The objective [of Component 2] is to improve flow conditions in the Central and South Delta so that larval and juvenile delta smelt can successfully rear in the Central Delta and move downstream when appropriate.³⁹

The RPA's provide essential protection in the winter-spring period by limiting exports and reducing losses of salmon, steelhead, sturgeon, and smelt that would otherwise be drawn to the south Delta export pumps under the D-1641 65% export/inflow limit in December-January and 35% export/inflow limit February-June. The restrictions reduce entrainment of listed species into the central and south Delta in both dry and wet years, especially in December-January period. Even in drought years like winter-spring 2014-2015, OMR restrictions in winter reduced potential exports. Lack of prescriptions for December under the NMFS RPA did allow high negative OMR flows and exports. However, concerns for adult smelt led to voluntary reductions in exports and OMR negative flows in mid-December 2014 that subsequently were maintained through the winter.

Prior to the RPA's OMR restrictions, salmon and smelt protections were generally limited to "take limits" in the form of salvage counts, and water quality standards that included export limits, Delta outflow requirements, and agricultural salinity standards in state water quality standards (D-1641). When these standards proved ineffective in protecting the listed salmon and smelt⁴⁰, the new biological opinions were issued, which added the OMR restrictions as well as other non-flow actions to preserve the species.

salvage can trigger OMR restrictions that otherwise would not occur under the regular D-1641 export/inflow restrictions.

³⁵ http://www.fws.gov/sfbaydelta/cvp-swp/smelt_working_group.cfm

³⁶ http://www.westcoast.fisheries.noaa.gov/central_valley/water_operations/doss.html

³⁷ NMFS OCAP BO, p. 630.

³⁸ FWS OCAP BO, p. 280.

³⁹ Id., p. 282.

⁴⁰ Take limits proved irrelevant as populations dropped to new low levels.

In recent drought years, the OMR restrictions in the RPA's have been more important than ever because D-1641 water quality standards have been weakened by the State Water Board, with the consent of NMFS and USFWS.

A better level of protection than the RPA's would be a combination of stricter OMR restrictions and substantially improved Delta outflow and salinity standards that further limit risks to salmon and smelt.

iv. Non-flow measures that Alternative 1 would eliminate

Alternative 2 is specifically constructed to evaluate elimination of the major non-flow measures of the RPA's. These measures would also be eliminated by Alternative 1. For purposes of document organization, we analyze the consequences of eliminating the major non-flow measures of the RPA's in analyzing Alternative 2.⁴¹

b. Alternative 2

Alternative 2 would eliminate the major non-flow elements of the RPA's except those elements that would otherwise be implemented pursuant to voluntary actions or other regulatory requirements, and also eliminate floodplain inundation flows on the Stanislaus River.

That said, it is extremely difficult to discern exactly which actions from the RPA's Alternative 2 (or overlapping actions from Alternative 1) would eliminate and which ones would remain. The DEIS should have listed the eliminated and retained actions specifically. The DEIS should also have described how any actions could be eliminated and still meet protection requirements of the ESA and other legal requirements to protect public trust resources. Absent this, the lack of clarity does not support the requirement that NEPA analysis support informed decision-making.

As we understand it, Alternative 2 would eliminate the following actions from the NMFS and USFWS RPS's:

- 2009 NMFS BO RPA Action I.2.5, Winter-Run Passage and Re-Introduction Program at Shasta Dam.
- 2009 NMFS BO RPA Action II.3, Structural Improvements for Temperature Management on the American River.
- 2009 NMFS BO RPA Action II.5, Fish Passage at Nimbus and Folsom Dams.
- 2009 NMFS BO RPA Action II.6, Implement Actions to Reduce Genetic Effects of Nimbus and Trinity River Fish Hatchery Operations.

⁴¹ NMFS modified the RPA in 2011. See http://www.westcoast.fisheries.noaa.gov/publications/Central_Valley/Water%20Operations/Operations.%20Criteria%20and%20Plan/040711_ocap_opinion_2011_amendments.pdf

- 2009 NMFS BO RPA Action III.2.1, Increase and Improve Quality of Spawning Habitat with Addition of Gravel.
- 2009 NMFS BO RPA Action III.2.2, Conduct Floodplain Restoration and Inundation Flows in Winter or Spring to Inundate Steelhead Juvenile Rearing Habitat on Stanislaus River.
- 2009 NMFS BO RPA Action III.2.3, Restore Freshwater Migratory Habitat for Juvenile Steelhead on Stanislaus River.
- 2009 NMFS BO RPA Action III.2.4, Fish Passage at New Melones, Tulloch, and Goodwin Dams.
- 2009 NMFS BO RPA Action IV.4, Tracy Fish Collection Facility Improvements to Reduce Pre-Screen Loss and Improve Screening Efficiency.
- 2009 NMFS BO RPA Action IV.4.2 Skinner Fish Collection Facility Improvements to Reduce Pre-Screen Loss and Improve Screening Efficiency.
- 2009 NMFS BO RPA Action IV.4.3 Tracy Fish Collection Facility and the Skinner Fish Collection Facility Actions to Improve Salvage Monitoring, Reporting and Release Survival Rates.⁴²

The DEIS makes no effort to describe how these RPA actions could be eliminated and still conform to the ESA. It does not address the rationales for these measures provided in the NMFS RPA's. It does not address the removal of fish passage actions at Shasta, Nimbus-Folsom, and Goodwin-Tulloch-New Melones dams in the context of the 2014 NMFS Recovery Plan.⁴³

In a "Public Stakeholder Seminar" on September 24, 2015 convened by Reclamation, Reclamation and representatives of state and federal agencies reaffirmed the link between the need for passage past Shasta and the recent poor survival of winter-run downstream of Lake Shasta.⁴⁴ However, the DEIS does not discuss this linkage.

Equally, it is likely that a substantial portion of the cohort of fall-run Chinook will be lost in 2015 on the American River due to high water temperatures. It is also likely that substantial mortality of juvenile steelhead and resident *O. mykiss* in the American and Stanislaus rivers will occur due to high water temperatures. Yet Alternative 2 makes no effort to place fish passage past dams on these rivers in the context of mortality of listed and non-listed salmonids confined in these rivers to the valley floor.

The "salvage rates" of listed and non-listed species at the Skinner and Tracy "Fish Collection Facilities" is notorious, as is the inefficiency of these facilities. Between 2000 and

⁴² DEIS, p. 3-32.

⁴³ National Marine Fisheries Service, 2014, *Final Recovery Plan for the Evolutionarily Significant Units of Sacramento River Winter-run Chinook Salmon and Central Valley Spring-run Chinook Salmon and the Distinct Population Segment of California Central Valley Steelhead*. Available at: http://www.westcoast.fisheries.noaa.gov/publications/recovery_planning/salmon_steelhead/domains/california_central_valley/final_recovery_plan_07-11-2014.pdf

⁴⁴ Presentation to be posted at http://www.usbr.gov/mp/BayDeltaOffice/Documents/Shasta_Fish_Passage/

2011, more than 130 million fish were salvaged at the CVP and SWP water export facilities in the South Delta.⁴⁵ Actual losses are far higher. Recent estimates indicated the 5-10 times more fish are lost than salvaged, largely due to the high predation losses in and around water export facilities.⁴⁶ The fish screens are unable to physically screen eggs and larval life states of fish from diversion pumps.⁴⁷ The present South Delta fish screens are based on 1950's technology. Only about 11-18% of salmon and steelhead entrained at Clifton Court Forebay survive.⁴⁸ Losses to pelagic species such as Delta smelt are much higher.

The California "Water Fix" would add points of diversion to the south Delta export facilities, but the existing infrastructure would be used about half the time. However the "Water Fix" includes no plans to upgrade the existing south Delta fish screens. The NMFS BO extensively documents the inadequacy of the existing screens, and describes the facilities at Tracy as follows:

... 45 percent of the time, the appropriate velocities in the primary channel and the corresponding bypass ratio are not being met and fish are presumed to pass through the louvers into the main collection channel behind the fish screen leading to the pumps. The lack of compliance with the bypass ratios during all facility operations alters the true efficiency of louver salvage used in the expansion calculations and therefore underestimates loss at the TFCF.⁴⁹

Since the BO's were issued, there have been no physical improvements to the fish salvage facilities at the state and federal export facilities. Yet in spite of the known loss of millions of fish annually at these facilities, Alternative 2 blithely proposes to forego improvements to this infrastructure.

In short, Alternative 2 is effectively a throwaway alternative with no justification in fact or law, without even a perfunctory let alone substantial rationale in the DEIS.

c. Alternative 3

Alternative 3 is focused on weakening Stanislaus River flow requirements and OMR requirements. It would dramatically lower flow requirements for the Stanislaus River, particularly in the spring and particularly in drier water years, allowing greater diversions, and would exempt (without legal explanation) the Stanislaus River from responsibility for complying with various aspects of D-1641, including Vernalis flow and pulse flow requirements and Delta water quality standards.⁵⁰ It would move the compliance point for the D-1422 dissolved oxygen requirement (also without legal explanation) from Ripon upstream to Orange Blossom Bridge. It

⁴⁵ DFW annual salvage reports for the SWP and CVP fish facilities, 2000-2011.

⁴⁶ Larry Walker Associates, 2010, *A Review of Delta Fish Population Losses from Pumping Operations in the Sacramento-San Joaquin River Delta*, p. 2. <http://www.srcsd.com/pdf/dd/fishlosses.pdf>

⁴⁷ DWR, 2011, *Delta Risk Management Strategy, final Phase 2 Report, Section 15, Building Block 3.3: Install Fish Screens*, pp 15-18.

⁴⁸ *Id.*

⁴⁹ NMFS OCAP BO, pp. 341-342. See also following pages through p. 350 for description of other facility deficiencies and associated mortality.

⁵⁰ For proposed Stanislaus River flows and changes to D-1641 and D-1422, see DEIS, p. 3-36.

would implement a “predator control program” in the Stanislaus River and the Delta. It would tie OMR requirements to turbidity levels, to location of X2, and to the proximity of Delta smelt to Old and Middle rivers, thus at times allowing greater levels of export. It would attempt to mitigate for the potential of additional entrainment of San Joaquin watershed salmonids under the new conditions by implementing a trap and haul program of San Joaquin River salmonids; it would seek to capture 10%-20% of outmigrating juvenile salmonids at the head of Old River, place them in barges, and release them at Chipps Island. Like the No Action Alternative, it would restore 10,000 acres of tidally influenced wetlands. It would also reduce opportunities for commercial and sport ocean harvest of salmon by placing the burden of proof on fisheries managers to limit ocean harvest based on “consistency with Viable Salmonid Population Standards, including harvest management to show that abundance, productivity, and diversity (age-composition) are not appreciably reduced.”⁵¹

As discussed in Section II(A)(4)(a)(ii) of these comments above, the best available science suggests that greater flows are needed in the Stanislaus River, not lower flows. The DEIS attempts to justify flow requirements for the Stanislaus based on Weighted Usable Area for spawning and egg viability. Neither of these factors would be appreciably changed by Alternative 3 compared to the No Action Alternative, in significant part because the most critical flow reductions under Alternative 3 would take place at times of year when spawning and egg incubation were not occurring, at least in the case of fall-run Chinook.

To the degree that water temperatures under Alternative 3 would not change appreciably compared to the No Action Alternative, this is likely attributable to the fact that some of the water presently used for instream flow, particularly in spring, would be devoted to storage or simply held longer in storage. Temperature increases downstream of Goodwin Dam stemming from decrease in flow would be partially offset by lower release temperatures and increased releases for irrigation from New Melones to Goodwin and Tulloch dams; the latter would tend to create lower release temperatures from Goodwin Dam into the lower Stanislaus.

This apparent wash in impacts to water temperature would occur at the expense of floodplain inundation, juvenile rearing habitat for salmonids, and flow variability that the State Water Board and numerous others have identified as key life stages and limiting factors in juvenile salmon survival. See section II(A)(4)(a)(ii) above. The DEIS does not respond to the analysis in the RPA that supports measures that provide these elements, and the DEIS does not evaluate impacts according to these metrics.

The DEIS notes about predation reduction measures that no one has shown that predation reduction measures could have an appreciable population level effect on the success of juvenile salmonid outmigrants from the Stanislaus and lower San Joaquin rivers.⁵² We agree.

There is no showing that capture and transport of 10%-20% of San Joaquin River salmonid outmigrant will make a population level difference for fall-run Chinook or for steelhead. Though the program is likely worth at least a stand-alone pilot effort, and a similar

⁵¹ DEIS, p. 3-37.

⁵² “It remains uncertain, however, if predator management actions under would benefit fall-run Chinook Salmon.” DEIS, p. 3-78. See also DEIS, p. 9-275.

effort has been initiated by East Bay Municipal Utility District on the Mokelumne,⁵³ the DEIS provides no quantification that shows that trap and haul of downstream migrants will mitigate for the Alternative's proposed reduction in Stanislaus River flow and/or the weakening of OMR standards. There is no quantification in the DEIS of current (No Action) and projected (Alternative 3) survival of outmigrating salmonids between head of Old River and Chipps Island. Nor is there any analysis in the DEIS of existing or desired levels of juvenile salmonid survival between Oakdale and Caswell and between Caswell and head of Old River. It is likely that the relative effect of trap and haul between head of Old River and Chipps Island is limited in the face of very poor survival between spawning grounds in the Stanislaus and the head of Old River, which would likely become worse under Alternative 3.

Alternative 3's proposed changes in OMR flows based on real time monitoring of Delta smelt are likely infeasible because Delta smelt abundance has dropped so low that they are virtually undetectable. See Section II(A)(1) above.

The analysis in Chapter 19 of economic impacts related to loss of commercial and salmon fishing opportunities that would occur with the enactment of the limitations on salmon fishing proposed in Alternative 3 (and 4) is perfunctory. There should be more analysis based on several scenarios of reduced salmon seasons in various locations, and analysis of secondary impacts on coastal communities. In the limiting case, the placement on harvesters or salmon of the burden to demonstrate no impact to listed species could eliminate harvest of salmon altogether. The DEIS should have analyzed the economic impact of the effective closure of salmon fishing in waters where California-born salmon are present.

d. Alternative 4

Alternative 4 contains many of the elements contained in Alternative 3. Like Alternative 3, Alternative 4 would substitute non-flow measures ostensibly to make up for flow reductions. However, the flow measures are different; Alternative 4 would simply eliminate the RPA flows for the Stanislaus River. D-1641 and D-1422 flow and water quality requirements would remain in place. The proposed change in OMR flow requirements in Alternative 3 is not repeated in Alternative 4.

Alternative 4 would add a series of actions relating to levees and floodplains. "Under Alternative 4, trees and shrubs would be planted along the levees; and vegetation, woody material, and root re-enforcement material would be installed on the levees instead of riprap for erosion protection."⁵⁴ In addition, Alternative 4 would limit development in Central Valley floodplains through a set of administrative and planning requirements. However, the DEIS makes no showing that these requirements would "protect salmonids and Delta smelt," and in particular would not devote a drop of additional water to activate these floodplains or transform them with more frequency or duration into anything other than officially unoccupied terrestrial habitat. On the contrary, the increment of floodplain inundation along the Stanislaus River and

⁵³ East Bay MUD's trap and haul of juvenile salmon outmigrants in the Mokelumne River was initiated in the Critically Dry year 2015. In submittals and presentations to the State Water Board in 2015 drought workshops, the present commenters supported a similar effort in Sacramento River tributaries as an interim drought measure.

⁵⁴ DEIS, p. 3-39.

the lower San Joaquin under the existing RPA's would be reduced by the flow reductions proposed under Alternative 4.

5. The DEIS makes no showing that the OMR flows and the Stanislaus pulse flows proposed in Alternative 5 are sufficient to protect either smelt or salmonids.

Unlike Alternatives 3 and 4, whose development and definition the DEIS attributes in substantial part to irrigation districts on the Stanislaus River and the inaptly named "Coalition for a Sustainable Delta," the DEIS does not describe the derivation of Alternative 5. Alternative 5 proposes increases in Stanislaus River flows and Vernalis River pulse flows, and additionally proposes a requirement for long-term average positive OMR flows in April and May of all water year types. The Vernalis pulse flow requirements would vary depending on the location of X2; however, the DEIS provides no rationale for reducing pulse flow magnitudes based on X2 location. Except where the RPA's conflict with these measures under Alternative 5, the RPA's would otherwise be left in place (same as the No Action Alternative).

The analysis in Chapter 9 of the fisheries impacts of this alternative that was apparently designed to be beneficial to fisheries does not indicate appreciable benefit. Whether this is an artifact of modeling or the result of specific design of the alternative, the apparent lack of benefit calls into question the details of the alternative and the basis for its definition.

The present commenters, as well as the Bay Institute and the State Water Board in its *Delta Flow Criteria Report*, have made numerous recommendations that would substantially improve survival of listed and non-listed species in the Sacramento and San Joaquin rivers, their tributaries, and the Delta. The DEIS apparently made no review of these recommendations or any effort to synthesize specific recommendations or proposals that would comprehensively protect and recover listed species and other fishery resources. The organizing principle of Alternative 5 appears to be inclusion of two elements of historic recommendations at a level that would have relatively small impact on water supply. While the measures proposed in Alternative 5 might make small incremental improvements in the condition of fisheries, the DEIS makes no showing that Alternative 5 is a serious "environmental" option or that its implementation would make a substantial difference in the condition of fisheries affected by the CVP and SWP.

B. The Alternatives in the DEIS are not sufficiently distinct and are not legally or factually defensible.

As described in sections 1-3 above, D-1641 and the RPA's from the USFWS and NMFS BO's (the No Action Alternative) have not protected listed species or critical habitat from the effects of project operations. Delta smelt have gone almost undetected in 2015 in the extensive sampling performed in the Delta. 95% of the 2014 cohort of winter-run Chinook did not survive to Red Bluff, and water temperature targets for the Sacramento River were again exceeded throughout the summer of 2015. Other species have exhibited precipitous declines.

Alternatives 1-4 would substantially weaken the already inadequate existing RPA's. The DEIS makes no argument for how the elements analyzed in Alternatives 1-4 would individually or in aggregate improve existing conditions or protect listed species and other public trust resources. Alternative 5 would make a token, weak incremental improvement that even analysis in the DEIS suggests would do little to improve conditions affected by operation of the state and federal projects.

As discussed above, the No Action Alternative is not accurately characterized as a baseline condition that does not avoid jeopardy to listed species. Each of the other Alternatives presented in the DEIS also shares a common flaw: it would not avoid jeopardy of listed species. The DEIS must be recirculated with a range of alternatives that would achieve the project purpose of conforming to the ESA and other applicable law. A recirculated DEIS must provide the analysis that demonstrates conformance with the ESA, that shows the relative benefits of measures proposed, and that allows reasoned analysis of the best alternative or set of measures to protect fisheries and other public trust resources.

III. The stated "Purpose[s] of the Action" are in conflict.

The DEIS states the Purpose of the Action as follows:

The purpose of the action considered in this Environmental Impact Statement (EIS) is to continue the operation of the Central Valley Project (CVP), in coordination with operation of the State Water Project (SWP), for the authorized purposes, in a manner that:

- Is similar to historical operational parameters with certain modifications
- Is consistent with Federal Reclamation law; other Federal laws and regulations; Federal permits and licenses; and State of California water rights, permits, and licenses
- Enables the Bureau of Reclamation (Reclamation) and the California Department of Water Resources (DWR) to satisfy their contractual obligations to the fullest extent possible.⁵⁵

The stated purpose of satisfying contractual obligations to the "fullest extent possible" conflicts with the ESA's requirements to protect listed species and their critical habitat. It routinely jeopardizes listed species because it recklessly prioritizes deliveries to contractors over carryover storage and seeks to constantly skate on the edge of compliance with OMR constraints, making minimal protections the target level of protection. It creates systemic demand to push exports to their maximum legal limit in any given year, even when prudent operation of the system would look to following years and thus operate with a substantial margin of safety. We provide an example below.

RPA Action Suite 1.2 in the NMFS BO requires a series of actions in managing Shasta Reservoir, including operations of Shasta to maintain suitable temperatures in the Sacramento River downstream of Shasta Reservoir to protect winter-run and spring-run Chinook, re-

⁵⁵ See DEIS, p. 2-1.

establishing winter-run Chinook in Battle Creek, and reintroducing winter-run Chinook in rivers upstream of Shasta Reservoir.⁵⁶ While re-introduction actions in Battle Creek and upstream of Shasta are clearly not included in the Second Basis of Comparison and Alternatives 1-4, it is unclear whether the operational management of Shasta required in the RPA is included in the Second Basis of Comparison and in these Alternatives.⁵⁷

The RPA for Shasta operations requires: “Reclamation should operate in any year in which storage falls below 1.9 MAF EOS as potentially the first year of a drought sequence.”⁵⁸ In discussing such circumstances, the RPA provides the following rationale:

Notification to the State Water Resources Control Board (SWRCB) is essential. Sacramento Settlement Contract withdrawal volumes from the Sacramento River can be quite substantial during these months. The court has recently concluded that Reclamation does not have discretion to curtail the Sacramento Settlement contractors to meet Federal ESA requirements. Therefore, NMFS is limited in developing an RPA that minimizes take to acceptable levels in these circumstances. Consequently, other actions are necessary to avoid jeopardy to the species, including fish passage at Shasta Dam in the long term.⁵⁹

Thus the RPA punts protection of winter-run to such time as a reintroduction program that achieves fish passage past Shasta Reservoir can be achieved. Passage past Shasta is clearly needed to achieve recovery of winter-run. However, immediate action is required to protect the species downstream of Shasta.

If Reclamation has no discretion to reduce deliveries to Sacramento River Settlement Contractors, then NMFS must otherwise limit discretionary actions by Reclamation to protect winter-run and spring-run and their critical habitat. Sacramento Settlement Contractors are entitled to a minimum of about 1.2 million acre-feet per year. In the face of such demands, the 1.9 million acre-feet end of September storage threshold in Shasta is too low to be protective of winter-run and spring-run, as the mass mortality of winter-run in 2014 (and likely 2015) has demonstrably proven. Thus, NMFS must modify its carryover storage thresholds and further limit discretionary exports and other discretionary deliveries from Shasta in order to protect Shasta storage and the Shasta cold water pool. The RPA cannot improperly defer to the “(n)otification to the State Water Resources Control Board” in the hope that the State Board will order reductions in deliveries to Sacramento Settlement Contractors. Indeed, despite repeated requests to the State Board in 2014 and 2015 by the present commenters and others including the Bay Institute and National Resources Defense Council, the State Board declined to limit deliveries to the Sacramento Settlement Contractors, even in the face of the loss of 95% of the 2014 cohort of Sacramento winter-run Chinook, as discussed in Section II(A)(1) of these comments, above.

⁵⁶ See NMFS BO, p. 590 ff.

⁵⁷ As noted above in these comments, the lack of clarity about which elements of the RPA’s are and are not included in the Alternatives analyzed in the DEIS is a serious flaw that must be corrected.

⁵⁸ NMFS BO, p. 597.

⁵⁹ Id., p. 600.

The Central Valley Project Improvement Act (CVPIA) made protection of fishery and other environmental resources an equal purpose of the Central Valley Project in relation to provision of water supply and other developmental purposes.⁶⁰ The DEIS's stated purpose of satisfying contractual obligations to the "fullest extent possible" also conflicts with this mandate.

A recirculated DEIS should restate the purpose of the Proposed Action so that it is consistent with the ESA and the CVPIA, as well as with the Clean Water Act and the public trust doctrine.

IV. Modeling in the DEIS does not accurately depict actual operation in multiple dry year sequences.

CalSim II assumes full compliance with the water quality and flow standards set forth in D-1641. However, in recent dry year sequences including 2007-2009 and 2012-2013, BOR and DWR have often not met some of these standards, with the tacit or de facto approval of the State Water Board. In addition, in 2014 and 2015, BOR and DWR undertook, at their own discretion, a series of temporary urgency change petitions (TUCP's) to weaken D-1641 water quality and flow standards on a large scale.

CalSim II also assumes that deliveries to the San Joaquin Exchange Contractors will always be met from sources north of Delta. However, in 2014 and 2015, such deliveries, to the extent they were made, were made from Millerton Reservoir on the San Joaquin River.

These modeling artifacts tend to overstate the impacts to CVP and SWP water supply, since water that is modeled as lost e.g. for salinity control is often in reality never released, because the standards are either not met or are explicitly weakened. The amount of water "conserved" because of TUCPs for the CVP and SWP was estimated by DWR to be 450,000 acre-feet in 2014⁶¹ and 793,000 acre-feet in 2015.⁶² In these circumstances, CalSim II also tends to under-report cumulative reservoir levels in CVP and SWP reservoirs with the possible exception of Millerton. Finally, CalSim II likely underestimates the impacts to fish, particularly pelagic species, because under weakened standards or conditions of non-compliance with standards, the low salinity zone in the Delta is entrained into the central Delta because of increased salinity and reduced outflow, and Delta hydrodynamics are more heavily influenced by exports. Along with the low salinity zone, Delta smelt in particular are, in such circumstances, more likely drawn into the central Delta, as are outmigrating salmon from the Sacramento River system.

Much of the socioeconomic impact analysis in Chapter 19 of the DEIS places special focus on Dry and Critical Dry years. Traditionally, water purveyors have emphasized economic impacts in dry year sequences in advocating for changes in standards or temporary weakening or

⁶⁰ U.S.C. Title XXXIV, Sections 3402 and 3406.

⁶¹ See

http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/tucp/accounting_reports/docs/dwr2014nov_droughtacct.pdf

⁶² See

http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/tucp/docs/dwr2015aug_droughtacct.pdf

waiving of standards, and it is on such dry year sequences that the balance of impacts turns. To the degree that the economic analysis presented in the DEIS relies on CalSim II, the economic impacts may thus be overstated, and in particular they may be overstated in regard to the time periods that generate the greatest controversy.

V. **Conclusion**

BOR should recirculate the DEIS with a proposed Action and alternatives that will allow operation of the SWP and CVP to comply with the ESA and other applicable law. The recirculated DEIS should also address the additional issues raised in these comments.

Thank you for the opportunity to comment on the *Draft Environmental Impact Statement for Coordinated Long Term Operation of the Central Valley Project and State Water Project*.

Respectfully submitted,

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Attachment A: Complaint: Against SWRCB, USBR and DWR for Violations of Bay-Delta Plan, D-1641 Bay-Delta Plan Requirements, Clean Water Act, Endangered Species Act, Public Trust Doctrine and California Constitution

Attachment B: COMPLAINT; Against the SWRCB and USBR for Violations of Central Valley Basin Plan, WR Order 90-05, Clean Water Act, Endangered Species Act, Public Trust Doctrine and California Constitution