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September 29, 2015

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Dear Ms. Olson:

COMMENTS ON THE DRAFT ENVIRONMENTAL IMPACT STATEMENT FOR THE COORDINATED LONG-TERM OPERATION OF THE CENTRAL VALLEY PROJECT AND STATE WATER PROJECT

The California Department of Fish and Wildlife (Department) appreciates the opportunity to review the Draft Environmental Impact Statement for the Coordinated Long-term Operation of the Central Valley Project and State Water Project (DEIS) as prepared by the U.S. Bureau of Reclamation (Reclamation). The Department's comments are submitted pursuant to our authority as a trustee agency for fish and wildlife resources with jurisdiction over the conservation, protection, and management of fish and wildlife and the habitats on which they depend within the State of California.

The Department implements the California Endangered Species Act (CESA), and in that role has issued several authorizations to the Department of Water Resources (DWR) for operations of the State Water Project (SWP) in the Delta. Pursuant to Fish and Game Code, section 2080.1, DWR requested and the Department issued consistency determinations on the U.S. Fish and Wildlife Service (FWS) 2008 Biological Opinion (BiOp) for Delta smelt and the National Marine Fisheries Service 2009 *Biological Opinion and Conference Opinion on the Long-term Operations of the Central Valley Project and the State Water Project* for Sacramento winter-run and Central Valley spring-run Chinook salmon, and other federally listed species.¹ The consistency determinations provide that no further authorization is necessary under CESA for DWR to take the state-listed species identified in, and in accordance with, the incidental take statements that are a part of the BiOps. The consistency determinations state that DWR would need to obtain a new consistency determination should the project described in the BiOps, or any conditions of the BiOps, including the Reasonable and Prudent Alternatives (RPAs), change.

¹ The SWP is currently authorized under an October 14, 2011 consistency determination for the FWS BiOp, No. 2080-2011-022-00, and an April 26, 2012 consistency determination for the NMFS BiOp, No. 2080-2012-005-00.

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In addition, pursuant to Fish and Game Code, section 2081, subdivision (b), in 2009 the Department issued DWR Incidental Take Permit (ITP) No. 2081-2009-001-03, authorizing take of CESA listed longfin smelt incidental to SWP Delta operations. Condition 4 of the ITP states that the ITP may require an amendment if there is any modification to the FWS BiOp.

Therefore, DWR's existing CESA authorizations would no longer be valid if Reclamation were to adopt any DEIS alternative that deviates from the No Action Alternative² (NAA). The Department's issuance of new or amended authorizations would require that the modified project meets CESA's standards, which include that all impacts of the authorized taking must be minimized and fully mitigated, and the project cannot jeopardize the continued existence of the species.

The Department recognizes and commends the considerable time and effort the preparers put into developing the DEIS as evidenced by the extensive information and modeling results contained within the document. Due to the large size of the document and time constraints, the Department technical staff focused review on Chapter 3: Description of Alternatives, Chapter 4: Approach to Environmental Analyses, Chapter 5: Surface Water Resources and Water Supplies, Chapter 6: Surface Water Quality, Chapter 9: Fisheries and Aquatic Resources, and related appendices.

Based on the Department's limited review, our comments focus on the following general areas: policies, procedures, and regulations, environmental impact and effects analysis, dry year scenarios, and modeling. These general areas of concern inhibited the DEIS' ability to provide accurate and thorough review of project impacts and prevented meaningful comparisons between project alternatives. Please find more detailed comments below.

Policies, Procedures, and Regulations:

Trap and haul

Alternatives 3 and 4 of the DEIS contain trap and haul programs that would capture fishes that are listed under CESA and federal Endangered Species Act (ESA) in areas of the eastern Delta, and barge those fishes to release sites in the San Francisco Bay. The document lacks a clear description of the trap and haul procedures, as well as clear analyses of the potential effects of these actions on the target listed species and non-target species, most importantly at the population level.

² The NAA is described as the coordinated long-term operation of the CVP and SWP under the current management direction and intensity, including full implementation of the RPAs set forth in the modified FWS and NMFS BiOps.

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There are limited studies available on the potential benefits to barging and there is much uncertainty on the effects to growth, survival, and stray rates of fish in addition to the mortality associated with handling and releasing these fish. Furthermore, trapping and barging listed species does not contribute to the Department's goal of providing improved habitat conditions for volitional passage. Trap and haul programs and barging are not part of the Department's routine operations and are only implemented under emergency conditions, such as drought, whereby natural, extreme conditions are likely to greatly reduce survival. Any translocation of fish would likely require state-level environmental review and permitting from the Department and would likely require Department staffing and resources for operations.

Fishing regulations, ocean harvest, and predator control programs

Alternatives 3 and 4 of the DEIS contain actions to change fishing regulations, ocean harvest, and implement predator control programs to reduce pressures on listed species. The Department has several concerns with the alternatives that contain these types of actions. First, the DEIS alternatives do not provide a clear description of the proposed control programs and regulatory changes, nor do they provide clear analyses of the potential effects of these actions on the target predators, non-target species, and the population level effects on listed species. Secondly, any fishing regulation proposal would require review and approval from the California Fish and Game Commission and potentially the Pacific Fisheries Management Council before implementation by the Department. Any alternatives that rely on regulatory changes outside of the authority of the project proponents to implement are uncertain to occur. Additionally, the effectiveness of predator control programs is highly uncertain and the population level effects on target predators are unknown. A key aspect of the Department's mission is to manage the state's fish and wildlife species for their use and enjoyment by the public; the analysis of any predator control program or changes in fishing regulations would need to clearly demonstrate that key recreational and commercial fisheries would remain viable.

As described at the Predation Workshop in 2013, there is significant uncertainty regarding the extent of predation pressures on Central Valley salmonids. Although there have been numerous studies on predation, the results are often conflicting, the population level effects are indeterminate, and the tagging technology is still insufficient to answer crucial remaining questions. Given this information, the Department acknowledges that predation is currently a challenge for some of the state's listed species. The Predation Workshop panel emphasized the effects of habitat conditions and ecosystem processes such as flow, temperature, water quality, and aquatic invasive species on predation rates and subsequent survival of listed species. These conditions also result in physiological stress and directly affect the condition of native fishes.

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The DEIS alternatives that suggest actions to implement predator control programs fail to acknowledge that predation can provide a key ecological function in an ecosystem and that only excessive predatory pressure should be addressed through management actions. The DEIS does not provide a sufficient analysis of the effects of the habitat variables on predation rates and native fish condition and does not sufficiently analyze the effects of alternative operations on these biotic and abiotic variables that drive predator populations and ultimately listed species population abundances. Reducing predator populations through control programs or changes in fishing regulations does not address the underlying issue of poor environmental conditions driven in part by operations.

Environmental Impacts and Effects Analysis:

In general the Department found that the lack of specific detail related to alternatives and how their component actions would be implemented made it difficult to assess the environmental consequences, and the lack of discussion of reasonably foreseeable future actions made it correspondingly difficult to evaluate the cumulative effects analysis sections.

The Department is concerned that the NAA alternative does not adequately describe or analyze implementation of the RPAs. The DEIS assumes that RPAs will be implemented and that they will be beneficial, but does not provide specific discussion or analysis of the ways in which the full suite of RPAs would address adverse impacts of CVP and SWP operations.

Similarly, the DEIS states that its cumulative impacts analysis includes the projects identified under the reasonably foreseeable future projects in Chapter 3.5, however the analysis in Chapters 4 and 5-22 provides little in the way of detail to explain how these projects were incorporated into or informed the analysis of each alternative.

Longfin smelt

The effects analysis for Longfin smelt would benefit from analyses of changes to entrainment and/or entrainment related effects between scenarios. For example, Longfin smelt adults and larvae are particularly susceptible to entrainment into the south Delta during the December through February period. The DEIS does not address this issue, which is particularly concerning for alternatives which do not operate to the BiOps. The Department suggests conducting an analysis using a particle tracking model, such as DSM2, to estimate differences in entrainment between the NAA and the five alternatives.

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The Department recommends using the methods found in the effects analysis of the California Department of Fish and Wildlife's 2009 Longfin smelt ITP for the SWP as a framework for an analysis to be included in the DEIS.³

Salmonids

Many of the flow and temperature effects on different life stages when compared between the NAA and Second Basis of Comparison (SBC) seem contradictory; based on our concerns with the modeling discussed further below, we suspect that many of the discrepancies are likely caused by uncertainties associated with the models which do not adjust results based on water operation actions that would be taken to meet requirements of the RPAs under the NAA. The Department recognizes the challenges of presenting alternatives in the context of changing conditions brought on by climate change, drought, and other conditions. However, it is imperative that the DEIS makes a meaningful and consistent effort to conduct these analyses to truly understand the impacts of the alternatives; this is especially true for the NAA since the NAA represents full implementation of the BiOps with the RPAs, many of which were targeted at addressing project operations under a changing climate.

For example, at page 9-126 through 9-127, the DEIS explains that the NAA will have difficulties in meeting temperature requirements due to climate change, increased demand by 2030 and less water being diverted from the Trinity River. The DEIS goes on to describe a variety of measures under the RPAs that are meant to compensate for these effects. However, in the analysis that follows, comparing the NAA to the SBC, the DEIS concluded that temperature-related egg mortality was significantly higher under the NAA than under the SBC. Additionally, the DEIS concludes that temperature- and flow-related fry mortality, as well as temperature-related juvenile mortality was higher under the NAA when compared to the SBC. SALMOD also showed juvenile production would be the same under the NAA and SBC, which is contradictory to the expected outcome associated with RPA implementation. Furthermore, escapement and entrainment under the NAA were found to be similar to the SBC, despite reduced export rates.

³ CDFW's Effects Analysis for the Longfin smelt ITP is available at <http://www.dfg.ca.gov/delta/data/longfinsmelt/documents/LongfinSmeltIncidentalTakePermitNo.2081-2009-001-03.asp>.

The BiOp RPAs were developed specifically to improve growth, survival, and general viability through changes in management of flows and temperature that reduce stressors on targeted life stages of listed fishes; therefore, it is unclear how future conditions without implementation of the RPAs (i.e., under the SBC) would have similar or higher benefits than future conditions with full implementation of the RPAs (i.e., the NAA). These results need further explanation and the modeling inputs need to be verified to account for all BiOp RPAs; if results seem contradictory, please provide clear rationale for the discrepancies within the discussion of the model results themselves, as well as in the summary of impacts. (See page 9-164.)

Additionally, Section 9.4.1.5 briefly discusses fish passage and the impacts that dams have on access to available habitat and colder headwaters. This section cites Alternatives 3 and 4 as containing trap and haul activities that address these impacts, however those trap and haul activities do not target fish passage as it relates to dams and access to colder headwaters.

Sturgeon

The analysis in Chapter 9 for sturgeon focuses specifically on the effects of changes in upstream temperature without consideration of the primary environmental driver underlying sturgeon population dynamics, namely the magnitude of winter-spring river flows. We recommend that the DEIS include a flow analysis that demonstrates how operations under each alternative affect mean monthly and seasonal flows at key riverine and Delta locations. This analysis should also display how the alternatives affect the frequency at which flows exceed certain thresholds necessary to produce strong year-classes. The Department is willing to assist in developing these analyses.

White sturgeon

The white sturgeon life history account lacks sufficient detail on the importance of specific environmental attributes to sustaining the population, as well as how project facilities and operations contribute to incremental changes in those attributes. Section 9B.4.3 states that the white sturgeon populations are relatively stable. However, recent survey information clearly indicates that the white sturgeon population is actually in a state of severe decline, in large part due to the infrequency of high flow years associated with good production. This section should make clear the fact that existing reservoirs reduce the frequency and magnitude of these population-sustaining winter-spring high flow events, which has had both incremental and cumulative effects on white sturgeon. Section 9B.4.4 also lacks accurate population trend information vital to interpreting the differences in incremental effects between alternatives. In addition, Section 9B.4.3.3 does not address the outflow-related project operation impacts on overbite clam distribution and abundance.

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Lastly, the DEIS overstates the importance of the San Joaquin River drainage on production and distracts from the essential point that spawning and rearing in the Sacramento River system sustains the population.

Dry Year Scenarios:

The DEIS inconsistently evaluates drought scenarios and their potential to exacerbate the impacts of alternatives on species. Chapter 6 briefly mentions potential changes in selenium concentrations and the effect on sturgeon during drought years. However, Chapter 9 instead simply states that the “abundance and habitat conditions for Delta smelt and other fish species in the Delta under the No Action Alternative in 2030 are difficult to predict” and that “currently low levels of relative abundance do not bode well for the Delta smelt or other fish species in the Delta in 2030.” The DEIS should include a complete and consistent analysis of the ways in which drought would affect the impacts of the various alternatives on all species, especially given the recent dry years and the impact they have had on Delta smelt, winter-run Chinook Salmon, and other species, as well as the altered project operations implemented with the goal of balancing water supply with ensuring water quality standards and environmental protections. Much information has been learned and could be used to develop and evaluate drought scenarios consistently through the alternatives.

Modeling:

Calibration, validation, time steps, and uncertainty

The models used in the DEIS analyses have vastly different temporal resolutions; as a result, linkage of these models requires aggregation/disaggregation of data which could cause significant errors in the modeling results. In addition, models with inappropriate time steps were used to draw conclusions about project effects on fisheries resources. For example, CalSim II uses a monthly averaging to analyze the effects of flow and water temperature on anadromous fish species, which fails to account for the needed daily or even hourly effects of these variables on critical life stages. Furthermore, the modeling does not account for compounding impacts on successive life stages within and between years; given that anadromous fishes are a multi-year species, the failure to account for additive impacts prevents sufficient determination of population level impacts.

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In addition, many of the models used in the DEIS were not accompanied by sensitivity analyses, calibration results, or disclosure of all uncertainties, thereby further inhibiting our ability to determine effects directly attributable to the proposed actions versus modeling errors.

The Department appreciates the continued opportunity to work with you and your staff in developing the DEIS. Should you have any questions or need additional information, please contact Chad Dibble at (916) 445-1202 or by email at chad.dibble@wildlife.ca.gov.

Sincerely,



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