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David Mooney
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Subject: Comments on the Reinitiation of Consultation on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project Draft Environmental Impact Statement

Dear Mr. Mooney:

The California Department of Fish and Wildlife (CDFW) received an e-mail notification from the U.S. Bureau of Reclamation (Reclamation) announcing the availability of the Draft Environmental Impact Statement (Draft EIS) for the Reinitiation of Consultation on the Coordinated Long-Term Operation of the Central Valley Project and State Water Project (Project). CDFW has previously submitted comments to Reclamation on July 13, 2018 in response to the draft Effects Analysis prepared in July 2018 as a part of an earlier phase of Project development.

Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife.

CDFW ROLE

CDFW is California's **Trustee Agency** for fish and wildlife resources, and holds those resources in trust by statute for all the people of the State. (Fish & G. Code, §§ 711.7, subd. (a) & 1802; Pub. Resources Code, § 21070; Cal. Code Regs., tit. 14 § 15386, subd. (a).) CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species. (*Id.*, § 1802.) For the purposes of the National Environmental Policy Act, Reclamation is required to seek comments on an EIS's adequacy or the merits of alternatives from state agencies such as CDFW that are authorized to develop and enforce environmental standards. (40 C.F.R., § 1503.1(a); see also 16 U.S.C., §662(a), requiring, for a project controlling or modifying a stream or body of water, consultation with the head of the relevant state agency administering wildlife resources, and full consideration of the reports of such state agency, with a view toward the conservation of wildlife resources and prevention of loss and damage to such resources.)

PROJECT DESCRIPTION SUMMARY

Federal Lead Agency: U. S. Bureau of Reclamation

Objective: On August 2, 2016 Reclamation and DWR jointly requested the Reinitiation of Consultation on the Coordinated Long-Term Operation (ROC on LTO) of the Central Valley Project (CVP) and the SWP. The U. S. Fish and Wildlife Service (USFWS) accepted the reinitiation request on August 3, 2016, and the National Marine Fisheries Service (NMFS) accepted the reinitiation request on August 17, 2016. The objective of the Project is to analyze potential modifications to the continued long-term operation of the CVP, for its authorized purposes, in a coordinated manner with the SWP, for its authorized purposes. According to the EIS, it evaluates alternatives to maximize water supply deliveries and optimize marketable power generation consistent with applicable laws, contractual obligations, and agreements and to augment operational flexibility by addressing the status of listed species.

Primary Project activities include the facilities and operations of the CVP and SWP. The CVP consists of 20 dams and reservoirs that together can store nearly 12 million acre-feet (MAF) of water. Reclamation holds over 270 contracts and agreements for water supplies that depend upon CVP operations. Through operation of the CVP, Reclamation delivers water in 29 of California's 58 counties. On average, the CVP generates approximately 4.5 million megawatt hours of electricity annually.

The SWP's main facilities are Oroville Dam, the Harvey O. Banks Pumping Plant (Banks Pumping Plant), and San Luis Reservoir. These facilities are operated and connected by a network of canals, aqueducts, and other facilities of the SWP to deliver on average 2.6 MAF of contracted water supplies annually. DWR holds contracts with 29 public agencies in the Feather River Area, North Bay Area, South Bay Area, San Joaquin Valley, Central Coast, and Southern California for water supplies from the SWP. DWR pumps water at the Banks Pumping Plant in the Delta for delivery to the remaining 24 public water agencies in the SWP service areas south of the Delta.

Location: The study area (Figure 1) encompasses the following reservoirs, rivers, and land between levees and areas that receive water from the CVP and SWP:

- Trinity Reservoir and the Trinity River downstream of Lewiston Reservoir;
- Sacramento River from Shasta Lake downstream to and including the Delta;
- Clear Creek from Whiskeytown Reservoir to its confluence with the Sacramento River;
- Feather River from the Federal Energy Regulatory Commission (FERC) boundary downstream to its confluence with the Sacramento River;
- American River from Folsom Reservoir downstream to its confluence with the Sacramento River;
- Stanislaus River from New Melones Reservoir to its confluence with the San Joaquin River;
- San Joaquin River from Friant Dam downstream to and including the Delta;
- San Francisco Bay and Suisun Marsh;

- Nearshore Pacific Ocean on the coast from Point Conception to Cape Falcon in Oregon; and
- Areas that receive water from the CVP or SWP.

Figure 1: Project study area.

Timeframe: The Project describes ongoing and long-term operations of the CVP and SWP through 2030.

The EIS evaluates a No Action Alternative and four Project Alternatives. Alternative 1 is identified as the Preferred Alternative, and is referenced as either Alternative 1 or the Project Description in these comments.

COMMENTS AND RECOMMENDATIONS

CDFW offers the following comments and recommendations to assist Reclamation in adequately identifying and/or mitigating the Project's significant direct and indirect impacts on fish and wildlife (biological) resources and identifying alternatives that would avoid or minimize adverse impacts.

These comments focus on impacts of proposed operations of CVP facilities in the Upper Sacramento River (Section 3.4.1), the American River Division (Section 3.4.4), the Bay-Delta, which includes operational criteria also applicable to SWP facilities (Section 3.4.5),

and the Stanislaus River (Section 3.4.6) on listed species and species of special concern that would be considered as a part of an EIS.

Section 5.9.1.7.7 – Longfin smelt

The Environmental Consequences section of the Draft EIS acknowledges that reduced winter-spring Delta outflow and increased entrainment risk associated with Alternative 1 may impact longfin smelt. Although the document notes a link between winter-spring outflow and longfin smelt abundance, no minimization or mitigation measures are proposed to avoid or minimize such adverse environmental impacts. We suggest conducting a more thorough quantitative analysis, using published outflow-abundance relationships, to quantify potential impacts to longfin smelt as a result of Alternative 1. If this analysis demonstrates adverse impacts to longfin smelt we suggest adding an alternative or mitigation measure in the form of increased Delta outflow during the January – June time period to minimize impacts. (See 40 C.F.R. §§1502.14, subd. (f); 1502.16, subd. (h).)

Section 5.9.1.7.3 – Central Valley Fall-Run Chinook Salmon

The Environmental Consequences section of the Draft EIS acknowledges potential impacts to fall-run Chinook as a result of increased entrainment risk associated with increased exports during the migration window for juvenile Sacramento River and San Joaquin River origin fall-run Chinook under Alternative 1. The document notes that increased flows in the Sacramento River under Alternative 1 may offset the impacts associated with increased entrainment risk of Sacramento River origin fall-run but does not provide a quantitative supporting analysis. We suggest conducting a quantitative analysis of impacts to fall-run Chinook as a result of Alternative 1 and adding appropriate minimization or mitigation measures to avoid or minimize adverse impacts in addition to the SWP/CVP south Delta salvage process

Section 3.4.1.1- Upper Sacramento River, Seasonal Operations

The Project Description describes the following seasonal operations at Keswick:

“For spring base flows under wetter hydrology, during the March through May time period, downstream demands are minimal and are generally met through unstored accretions to the system. Under these conditions, Reclamation aims to reduce Keswick flows during the fall-winter period. Operations during this period help build storage in those types of years”.

Please note, it is likely that reduced Keswick flows during this time period would result in impacts to incubating fall- and spring-run Chinook salmon eggs and embryos due to increased water temperatures near redds, lowered velocities resulting in lower dissolved oxygen, and de-watering of redds resulting in suffocation of eggs and stranding of emergent alevins/fry. Additionally, reduced Keswick flows are likely to reduce spawning and rearing habitat for late-fall-run Chinook salmon and Central Valley steelhead in the mainstem Sacramento River downstream of Keswick.

Section 3.4.1.2 – Upper Sacramento River, Spring Pulse Flows

The Project Description states:

"Under Alternative 1, Reclamation would release spring pulse flows to help Spring-Run Chinook Salmon juvenile out-migration when the projected total May 1 Shasta Reservoir storage indicates a likelihood of sufficient coldwater to support summer coldwater pool management. Reclamation would evaluate the projected May 1 Shasta Reservoir storage at the time of the February forecast to determine whether a spring pulse would be allowed in March and would evaluate the projected May 1 Shasta Reservoir storage at the time of the March forecast to determine whether a spring pulse would be allowed in April."

The majority of spring-run Chinook salmon juveniles present in the Sacramento River during March are in the fry and parr stages and are rearing, not actively out-migrating. In order to provide the most benefit to out-migrating spring-run Chinook salmon juveniles, CDFW recommends Reclamation and the Upper Sacramento River scheduling team use available data to time spring pulse flows with the peak out-migration period. Additionally, a pulse flow action in drier years may provide the greatest benefit to out-migrating spring-run Chinook salmon juveniles.

Section 3.4.1.3 – Upper Sacramento River, Cold Water Pool Management

The Project Description states:

"Temperature management would end on October 31 or when the monitoring working group determines, based on real-time monitoring, that 95% of winter-run Chinook eggs have hatched and alevin have emerged, whichever is earlier."

Ending temperature management prior to the emergence of all winter-run Chinook salmon is not protective of this State and federally listed endangered species. Additionally, this measure is not protective of State and federally threatened spring-run Chinook salmon, as their eggs will not have hatched and embryos will not have emerged before October 31. Thus, allowing increased temperatures as of October 31, or earlier, depending on when 95% of winter-run Chinook salmon have hatched and emerged, could result in substantial mortality of spring-run Chinook salmon eggs and embryos.

Section 3.4.1.4 – Upper Sacramento River, Fall and Winter Refill and Redd Maintenance

The Project Description states:

"Under Alternative 1, Reclamation would rebuild storage and coldwater pool for the subsequent year. Maintaining releases to keep late spawning Winter-Run Chinook Salmon redds underwater may drawdown storage necessary for temperature management in a subsequent year. Reclamation would minimize effects with a risk analysis of the remaining Winter-Run Chinook Salmon redds, the probability of sufficient coldwater in a subsequent

year, and a conservative distribution and timing of subsequent Winter-Run Chinook Salmon redds."

Maintaining releases to keep late spawning winter-run Chinook salmon redds under water is critical to minimizing take and maintaining life-history diversity. Estimating hydrologic conditions for the following water year in the fall is problematic. Water year types are defined by DWR's forecast of the volume of unimpaired inflow. The forecast is published in Bulletin 120 the second week of February, March, April, and May. Therefore, an estimation of hydrologic conditions should not be made until at least the end of January. Finally, we suggest including end of September Shasta storage levels in the risk-analysis of maintaining Keswick releases to keep winter-run Chinook salmon redds under water.

Section 3.4.1.5 – Upper Sacramento River, Additional Operations Components

The Project Description references rice decomposition smoothing as a component that could "increase water deliveries and protect listed fish." Please revise this component to include the specific timeframes when this component would be implemented. Based on CDFW monitoring data, 75% of fall-run Chinook salmon redds are constructed by October 31. One hundred percent of Sacramento River spring-run Chinook salmon spawn prior to October 31 and their eggs have not hatched and alevins do not emerge prior to October 31. As a result, the benefits of this component for listed species and species of special concern depend on the timing of implementation.

Section 3.4.1.7 – Upper Sacramento River, Intervention Components

Alternative 1 proposes to increase production of hatchery winter-run Chinook salmon in Tier 4 coldwater pool management years. Please note that Lindley et al (2007) describes increased extinction risk of a species as hatchery influence increases, even when hatchery source populations are from the same Evolutionary Significant Unit and diversity group and best management practices are followed.

Alternative 1 proposes to implement a downstream trap and haul strategy in Tier 4 coldwater pool management years to benefit juvenile Chinook salmon and steelhead. However, trap and haul is known to cause stress and increased mortality in juvenile Chinook salmon and steelhead.

Section 3.4.4.5 – American River Division, Intervention Components

The Project Description states:

"Alternative 1 would include improvements to Nimbus Fish Hatchery to improve management. Reclamation would complete a Hatchery Genetics Management Plan for Steelhead and a Hatchery Management Plan for Fall-run Chinook Salmon as part of Nimbus Fish Hatchery management. Reclamation would work with CDFW and NMFS to establish clear goals, appropriate time horizons, and reasonable cost estimates for this effort."

Draft Hatchery Genetics Management Plans (HGMPs) have been developed for steelhead and fall-run Chinook salmon at Nimbus Hatchery. Both plans are outdated and incomplete. We recommend Reclamation work closely with NMFS and CDFW to provide appropriate funding to ensure development of final HGMPs that are adequate and contain the most current information.

Section 3.4.5.1 Delta Cross Channel

The Project Description proposes to operate the Delta Cross Channel (DCC) gates similar to current operations from October 1 through November 30, however the response time to close the DCC gates following fish triggers (based on the Knights Landing Catch Index or Sacramento Catch Index) has increased from 24 to 48 hours. Open DCC gates during this time period can cause migration delays for adult green sturgeon, and route juvenile winter-run Chinook salmon, steelhead, and green sturgeon into the interior Delta, increasing transit times to the western Delta and increasing entrainment risk.

From December 1 to January 31, the Project Description would consider opening the DCC gates for up to 5 days for up to two events. Under current operations, the gates are closed during this time period except for very limited time periods for experiments approved by NMFS and water quality compliance. Opening DCC gates during the December 1 to January 31 time period can cause migration delays for adult winter- and spring-run Chinook salmon and green sturgeon, and route juvenile winter- and spring-run Chinook salmon, steelhead, and green sturgeon into the interior Delta, increasing transit times to the western Delta and entrainment risk. CDFW recommends reevaluating these proposed changes to DCC gate operations during both time periods to minimize impacts to, and potential take of, adult and juvenile salmonids and sturgeon.

Section 3.4.5.6.1 – Bay-Delta, Onset of Old and Middle River (OMR) Management

It is essential to clearly articulate membership in all real-time operations groups and decision-making authorities to understand the context for operations decision making under Alternative 1. We suggest assigning final decision-making authority to the agencies responsible for issuing take authorization under the federal and state endangered species acts, USFWS, NMFS and CDFW to ensure the minimization of species impacts attributed to the measure is realized. In our comments below we note portions of the Draft EIS where the decision-making process and associated criteria are unclear.

Section 3.4.5.6.2 – Bay-Delta, Additional Real-Time OMR Restrictions and Performance Objectives

<u>Turbidity Bridge Avoidance</u>: This measure is described as a means to reduce the impacts of SWP/CVP activities on Delta smelt. We suggest refining the wording of the “Turbidity Bridge Avoidance” criteria to more clearly explain key steps in the decision-making process and remove qualitative triggers and off-ramps such as a “damaging level of entrainment.” Such changes are necessary for an accurate analysis of Project impacts and an understanding of the extent to which this criteria will be implemented to minimize

impacts. For example, please describe the process Reclamation and DWR would use to "determine that real-time OMR restrictions were not required to avoid damaging levels of entrainment." What real-time monitoring programs would be analyzed? How would monitoring results be incorporated into an effects analysis? What is the number of fish, or proportion of the estimated population size, that would be considered a "damaging level of entrainment"?

Single-Year Salvage Threshold: The EIS describes the single-year salvage threshold based on annual loss as a criteria to reduce Project impacts to winter-run Chinook salmon and wild steelhead. Please revise the wording in this section to provide additional specificity and quantifiable thresholds to facilitate decision making in real-time. When revising this section please consider the following questions and suggestions:

- To facilitate implementation of the Project Description we suggest adding a clear definition of "loss", as well as the formula used to calculate the single-year loss threshold, that would be used during real-time operations.
- We suggest including quantifiable loss thresholds for each species listed. As the criteria is written in the Draft EIS, it is not clear whether the wild winter-run Chinook salmon threshold is intended to be linked to the annual population size (e.g. 1.18% of the JPE using length at date criteria), or is a static threshold based on 90% of the 2010-2018 maximum loss of 3924 fish. The measure's effectiveness in minimizing impacts would differ depending on the threshold identified, with the former being a more effective approach. Please include the proposed loss thresholds for each species/run as absolute numbers or percentages of population size, in a table.
- The proposed single-year salvage thresholds do not include Delta smelt, spring-run Chinook salmon, or hatchery steelhead, all of which are also impacted by the Project. We suggest including a loss threshold for Delta smelt and spring-run Chinook salmon in addition to winter-run and steelhead. For example, a Delta smelt loss threshold could be calculated each year using the average of the Fall Mid-Water Trawl (FMWT) index in the preceding three years. Establishing a loss threshold based on recent years FMWT indices would ensure that the threshold reflects changes in Delta smelt abundance in the recent past.
- Please provide additional details describing the intent of proposed "risk assessments" and potential criteria that would be used as the decision-tool for each assessment. If it is not possible to add objective decision-making criteria to the description of risk assessments at this time, we suggest requiring CDFW, NMFS and USFWS approval before implementing an off-ramp from OMR restrictions triggered by the loss threshold.
- Please provide the equation that will be used to calculate the cumulative loss threshold and a number establishing the cumulative loss threshold based on data from 2010-2018.
- Salvage triggers, such as those required in Action IV.3 of the 2009 NMFS Biological Opinion, in addition to the annual loss thresholds, should be considered as a means to minimize take of listed species in real-time based on observations of fish in the SWP/CVP salvage facilities. If salvage triggers are used to implement short term reductions in operations, they can effectively minimize entrainment by temporarily

altering the hydrology of the south Delta, enabling fish to migrate through the central and south Delta out of the zone of influence of the facilities.

Section 3.4.5.6.3 – Bay-Delta, Storm-Related OMR Flexibility

We suggest revising this section to establish quantifiable criteria that would be used as on-ramps and off-ramps for storm operations. As currently drafted, the Project Description does not allow for a meaningful evaluation of potential impacts to species from storm operations because it is unclear under what scenarios storm operations would be pursued, how long they might last, and the extent to which storm operations would influence entrainment risk and OMR flows. When revising this section please consider the following questions and suggestions:

- We suggest providing operational limits in terms of OMR flows, not exports at the SWP and CVP south Delta facilities. For example, limiting storm operations to an OMR of -6000 cfs on a 5-day running average for the duration of a storm event would provide a clearer link between proposed operations and potential impacts to listed species and species of special concern as a result of entrainment.
- We suggest including limits on the duration of storm operations based on observations of storm events in the recent past. Please use an analysis of prior water years to establish a maximum number of days per storm event when OMR flows would be allowed to exceed -5000 cfs.
- Please add quantifiable on-ramps based on observed changes in hydrology. For example, changes in flows at Freeport could be an appropriate indicator of changes in hydrology at the beginning of a storm event.
- Please provide a description of operations after an additional OMR restriction (ex. turbidity and loss thresholds) triggers an off-ramp from storm operations. We suggest revising the text to clearly explain that an off-ramp from storm operations would result in an increase in OMR flows as required by each “Additional Real-Time OMR Restriction”. For example, a 50% wild winter run Chinook annual loss trigger would result in an OMR flow limit no more negative than -3500 cfs. Please also see our comments on individual “Additional Real-Time OMR Restrictions.”

Section 3.4.5.8 – Bay-Delta, Delta Smelt Summer-Fall Habitat

We suggest revising this portion of the Project Description to provide additional specificity regarding decision making processes, operational off-ramps, and biological goals and criteria. When revising this section please consider the following questions and suggestions:

- It is unclear whether the proposed summer-fall action allows for flexibility in real-time in response to changes in temperature or other conditions that weren’t anticipated during annual planning, to manage conditions and ensure that overarching biological goals will be met.
- Please provide a justification for the proposed salinity limit of 6 ppt at Belden’s Landing. We suggest analyzing the potential benefits associated with lower salinity

limits at Belden's Landing, such as 3 or 4 ppt, or shifting the salinity compliance point downstream of Belden's Landing. Lower limits or a downstream compliance point are likely to provide additional benefits to Delta smelt by improving habitat quality in Grizzly Bay.

- We suggest adding quantifiable criteria for Delta smelt summer and fall habitat that would be used to select actions each year and gauge success over the long term.
- Please remove vague caveats on proposed goals such as, "to the extent practicable." These make it difficult to assess the limitations on the measure, and consequently its effectiveness in minimizing Project impacts.
- We suggest establishing a baseline for modeling comparisons that is representative of full implementation of Action 4 as written in the 2008 USFWS Biological Opinion. To our knowledge, 2011 is the only wet year after 2008 when an average X2 at 74 km was achieved in September and October.
- Please explain how the benefits provided by planned Delta smelt restoration projects, including Tule Red, would be affected as a result of the Project.
- We suggest eliminating the off-ramps listed on page 3-37 of the Draft EIS. As written, they could undermine the effectiveness of this measure in wet, above normal, and below normal years. For example:
    - It is unclear what conditions would be deemed "sufficient habitat acreages in Suisun Marsh, Grizzly Bay, and other adjacent areas"
    - The second off-ramp could be useful on a longer timeframe as a part of an adaptive management process, but it is not appropriate for real time decision-making.
    - The third off-ramp relies too heavily on survey data to accurately predict absence of a very rare species. Additionally, the meaning of "other factors that would limit the benefits of the action" is not clear.

Section 3.4.6.1 – Stanislaus River, Seasonal Operations

The Project Description proposes to operate New Melones Reservoir according to a Stepped Release Plan (SRP) as described in Table 3.4-6. The SRP would use the San Joaquin 60-20-20 Index rather than the currently used New Melones Index to determine water year type. This would result in a shift in the distribution of water year types in the proposed project versus current operations and downgrading the two highest flow schedules as compared to requirements established in the 2009 NMFS Biological Opinion. Specifically, water years currently classified as above normal and below normal would be classified as wet and above normal years, respectively, under the Project Description, resulting in reduced flows. These changes in the flow schedules are likely to impact San Joaquin spring-run Chinook salmon and steelhead, resulting in reduced reproductive success during spawning, reduced survival during embryo incubation, and reduced survival and growth of juveniles and emigrating smolt. Changes in flows may also restrict the window of successful outmigration of San Joaquin spring-run Chinook salmon, potentially reducing the diversity of outmigration timing strategies within the population.

Temperature and dissolved oxygen management is critical for the success of steelhead and rainbow trout on the Stanislaus River. The Project Description does not propose to

manage coldwater releases from New Melones Reservoir to meet temperature criteria currently required by the 2009 NMFS Biological Opinion. Without specific temperature criteria, steelhead will be subject to warmer water temperatures unsuitable for egg through smolt stages and potentially as adults. Increased water temperatures will reduce habitat quality and quantity and create competition between juveniles for rearing habitat. Additionally, the Project Description proposes to shift the existing State Water Resources Control Board Water Right Decision 1422 (D-1422) dissolved oxygen compliance point from Ripon to Orange Blossom. As a result of this change dissolved oxygen will be lower in nearly 30 river miles (between river miles 19 and 46) on the Stanislaus River under Alternative 1 than the No Action Alternative. This decrease in dissolved oxygen will result in levels that are suboptimal for rainbow trout and steelhead, reducing their available summer rearing habitat (as well as spring-run Chinook salmon) substantially on the Stanislaus River.

Appendix D, Section D1.2.6.5.1 – Delta Smelt Conservation Hatchery

The Project Description proposes to operate a conservation hatchery for Delta smelt to supplement the declining wild population with genetically equivalent hatchery-origin individuals. Currently, a refuge Delta smelt population is maintained at the UC Davis Fish Culture and Conservation Laboratory (FCCL), with a portion of this population held at the Livingstone National Fishery Hatchery. The captive breeding program at FCCL follows an intensive genetic management plan designed to maintain genetic diversity and minimize kinship among captive fish. Since FCCL production capacity is currently too restrictive for a successful supplementation program, the project aims to construct a full-scale facility dedicated to Delta smelt propagation by 2030. A Hatchery Genetic Management Plan will be developed from the current FCCL genetic management model to further minimize hatchery domestication complications.

CDFW has the following concerns regarding the proposal to construct a conservation hatchery:

- **Recent evidence for potential adaptation to hatchery conditions:** The FCCL's genetic management plan is rigorous and designed to minimize hatchery domestication. However, Finger et al. (2018) showed that the relative reproductive success of pair crosses between two cultured parents is higher than that of pair crosses between a wild and a cultured parent. This relative reproductive success of pair crosses with two cultured parents has increased since the inception of the genetic management plan, indicating a potential increase in domestication of the refuge population over time.
- **The genetic management plan at FCCL relies on supplementation of wild individuals every year to maintain genetic diversity:** The EIS states that approximately 100 wild Delta smelt are captured every year to supplement the current refuge population at FCCL. Given recent declines in the wild population size, it has been increasingly difficult to capture 100 wild individuals. The Project Description aims to complete construction of the Conservation Hatchery in 2030. The EIS should include an analysis that evaluates the consequences of capturing

insufficient numbers of wild Delta smelt for long term hatchery production to support a supplementation program.

- **Fitness of hatchery fish in the wild is unknown:** IEP-MAST (2015) has hypothesized that the limited habitat availability in the Delta has contributed to the recent decline in Delta smelt population sizes. The EIS should include and analysis of the habitat suitability for Delta smelt released back into the Delta. The effects of potential hatchery domestication should also be considered in this analysis (Finger et al. 2018).

CONCLUSION

CDFW appreciates the opportunity to comment on the Draft EIS to assist Reclamation in identifying and mitigating Project impacts on biological resources. Due to the issues presented in this letter, CDFW is concerned that the Draft EIS does not adequately identify or mitigate the Project's significant impacts on biological resources.

Questions regarding this letter or further coordination should be directed to Brooke Jacobs, Environmental Program Manager at 916-445-5313 or Brooke.Jacobs@wildlife.ca.gov.

Sincerely,

Joshua Grover
Water Branch Chief

References

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