



Pacific Fishery Management Council

7700 NE Ambassador Place, Suite 101 Portland, OR 97220-1384
Phone 503-820-2280 | Toll free 866-806-7204 | Fax 503-820-2299 | www.pcouncil.org
Brad Pettinger, Chair | Merrick J. Burden, Executive Director

November 19, 2024

Mr. Tim Warner
U.S. Bureau of Reclamation
Attention Bay-Delta-Office
801 I Street, Suite 140
Sacramento, California 95814

Re: Long-Term Operation of the Central Valley Project and State Water Project

Dear Mr. Warner:

The Pacific Fishery Management Council (Council, PFMC) appreciates the opportunity to provide comments and recommendations on the U.S. Bureau of Reclamation's (BOR) Draft Environmental Impact Statement (DEIS) for the Long-Term Operation of the Central Valley Project (CVP) and State Water Project (SWP). We realize the formal comment period ended September 9, 2024. Given the timing of the relatively short comment period, Council Executive Director Merrick Burden sent correspondence on September 6, 2024, indicating our intent to provide comments.

The Council is extremely concerned about the state of Pacific salmon populations that depend on healthy streams, estuaries, and watersheds in California to complete their lifecycle. As described in prior correspondence (see below), we are concerned that current water conditions are inadequate to avoid unacceptably high egg-to-fry and juvenile mortality rates, among many other concerns.

At its April 2024 meeting, and in response to bleak projections for returning adult salmon, the Council closed all commercial and recreational ocean salmon fishing from the Oregon/California border to the U.S./Mexico border, for the second straight year. Improving freshwater conditions is critically important to restore California salmon populations to levels that would support sustainable commercial and recreational fisheries.

The Council submitted comments on the CVP in [September 2022](#), [December 2019](#), and [April 2016](#). These comment letters included several recommendations and concerns that remain relevant in the context of this proposed action.

Council Authorities

The Council is one of eight fishery management councils established by the Magnuson-Stevens Fishery Conservation and Management Act (MSA), representing a large array of stakeholders, including the sport and commercial fishing industries. The Council has fisheries management jurisdiction in Federal waters for marine and anadromous species off the U.S West Coast and manages well over 100 species under its four fishery management plans (FMPs). This includes responsibilities for protecting the marine ecosystem, habitats, and the wellbeing of coastal communities. The Council is composed of state and Federal government representatives, a Tribal representative, and appointed citizens. The MSA

includes 10 National Standards for fishery conservation and management, as well as provisions to conserve essential fish habitat (EFH), described below.

Essential Fish Habitat

The MSA requires fishery management councils to describe, identify, conserve and enhance EFH for species that are managed under a FMP. 16 U.S.C. 1853(a)(7). The MSA requires councils to comment on actions that the Council views as “likely to substantially affect the habitat, including [EFH], of an anadromous fishery resource under its authority.” 16 U.S.C. 1855(3)(B). Councils may also comment on those actions that may affect habitat, including EFH, for fisheries managed under its FMPs. 16 U.S.C. 1855(3)(A). As defined at 50 CFR § 600.10, EFH means “those waters and substrate necessary to fish for spawning, breeding, feeding or growth to maturity. For the purpose of interpreting this definition of essential fish habitat: “waters” include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include aquatic areas historically used by fish where appropriate; “substrate” includes sediment, hard bottom, structures underlying the waters, and associated biological communities; “necessary” means the habitat required to support a sustainable fishery and the managed species’ contribution to a healthy ecosystem; and “spawning, breeding, feeding, or growth to maturity” covers a species’ full life cycle.”

The Council has identified EFH throughout the Pacific Coast region for all four of its FMPs (groundfish, salmon, coastal pelagic species, and highly migratory species). Appendix A to the Council’s Pacific Coast Salmon FMP (PFMC 2014) identifies and describes EFH for Chinook salmon, coho salmon and Puget Sound pink salmon. The FMP also describes adverse impacts and conservation measures for these species.

Habitat areas of particular concern (HAPCs) are a subset of EFH with the purpose of focusing conservation efforts on localized areas within EFH. Councils may designate HAPCs, which should be based on one or more of the following four considerations (50 CFR 600.815(a)(8)):

1. The importance of the ecological function provided by the habitat.
2. The extent to which the habitat is sensitive to human-induced environmental degradation.
3. Whether, and to what extent, development activities are, or will be, stressing the habitat type.
4. The rarity of the habitat type.

The Council has designated salmon HAPCs to include complex channels and floodplain habitats, thermal refugia, spawning habitat, estuaries, and marine and estuarine submerged aquatic vegetation.

MSA Section 305 (b)(3)(B) states that each Council:

...shall comment on and make recommendations to the Secretary and any Federal or State agency concerning any such activity that, in the view of the Council, is likely to substantially affect the habitat, including essential fish habitat, of an anadromous fishery resource under its authority.

MSA Section 305 (b)(4) requires the National Marine Fisheries Service to provide conservation measures for actions that may adversely affect EFH, and requires Federal agencies to provide a detailed written response:

(A) If the Secretary receives information from a Council or Federal or State agency or determines from other sources that an action authorized, funded, or undertaken, or proposed to be authorized, funded, or undertaken, by any State or Federal agency would adversely affect

any essential fish habitat identified under this Act, the Secretary shall recommend to such agency measures that can be taken by such agency to conserve such habitat.

(B) Within 30 days after receiving a recommendation under subparagraph (A), a Federal agency shall provide a detailed response in writing to any Council commenting under paragraph (3) and the Secretary regarding the matter. The response shall include a description of measures proposed by the agency for avoiding, mitigating, or offsetting the impact of the activity on such habitat. In the case of a response that is inconsistent with the recommendations of the Secretary, the Federal agency shall explain its reasons for not following the recommendations.

We realize that this comment letter is arriving after the close of the official comment period. Nonetheless, we look forward to receiving a detailed written response to our recommendations. Further, we request that these comments be included in the National Environmental Policy Act record.

Purpose and Need

The proposed Purpose and Need includes three purpose statements:

- Meets requirements under Federal Reclamation law; other Federal laws and regulations; and State of California water rights, permits, and licenses pursuant to Section 8 of the Reclamation Act;
- Satisfies Reclamation contractual obligations and agreements; and
- Implements authorized CVP fish and wildlife project purposes and meets Federal trust responsibilities to Tribes, including those in the Central Valley Project Improvement Act.

It is not clear that all three purposes can be met under the current range of alternatives described in the DEIS. Adequate water quality and quantity are essential elements to restoring sustainable salmon fisheries, and the Council urges BOR to prioritize adherence to Federal laws and regulations, including adequate protections for fish and fish habitat, over satisfying contractual obligations and agreements in their current form. This means BOR should consider revising water delivery contractual obligations in a manner that provides adequate protections for fish and fish habitat, especially during critically dry years.

BOR should take a precautionary approach to decision making

There is a substantial amount of uncertainty in the analysis of potential effects of the Alternatives. In the absence of certainty, BOR should take a precautionary approach that prioritizes aquatic resource protections. For example, in the Effects of Alternatives in Chapter 12: Fish and Aquatic Resources, effects are described as “adverse to beneficial” for Sacramento winter-run Chinook Alternatives 2 and 3, for spring-run Chinook Alternative 4 and the No Action Alternative, and for fall-run Chinook all five Alternatives. This mixed bag of potential impacts means BOR should take a conservative, precautionary approach in decisions on minimum stream flows, temperature targets, and other water management actions, to avoid dewatering redds, stranding fish, exceeding temperatures that are lethal to salmonids, and other known impacts to Pacific salmon. BOR should strive for stabilizing flows and adopt contingency plans for in-season adjustments necessary to achieve temperature targets, to prevent dewatering redds, and to avoid flows that lead to shallow water nesting.

Voluntary agreements are not reasonably certain to occur

Voluntary agreements (VAs) with water users have not been finalized and have been in development for many years already. There is no certainty those VAs will be finalized and approved concurrent with implementation of the proposed action. Further, there is no apparent enforcement mechanism or funding to ensure compliance with the VAs. Because of this uncertainty, the VAs are not reasonably certain to occur and should not be relied on as mitigation measures in the proposed action.

Related to the VAs, the DEIS refers to the “drought toolkit” as a mitigation measure in Alternatives 1 and 4. The drought toolkit has no apparent enforcement mechanism and lacks metrics or standards for successful utilization as a mitigation measure. Instead, it appears to be primarily a communication and coordination template. While plans such as this can be beneficial in the context of a larger process, they should not be considered as a mitigation measure. The Council is concerned that CVP operations will not adequately protect instream water temperatures during drought conditions, in a manner that would avoid excessive temperature-dependent egg mortality (TDM), especially for Sacramento winter-run Chinook salmon.

Temperature management measures do not adequately protect instream salmon habitat

The proposed action does not adequately avoid temperature-related mortality especially for spring, fall, and winter-run Chinook salmon, and the DEIS includes temperature thresholds for Chinook salmon that do not reflect best available science. For example, Table L.1-1 in Appendix AB-L Attachment L.1 includes a temperature range for Sacramento River winter-run Chinook salmon Egg Incubation and Fry Emergence between 42.8 – 56.1°F. However, TDM increases rapidly at daily average temperatures above 53.5°F (Martin et al. (2016), Martin et al. (2020), Myrick and Cech (2004), SEP (2019), and EPA (2003)). The CVP management plan should ensure that water temperatures for egg incubation and fry emergence do not exceed 53.5°F. The Council supports the temperature target of 53.5°F for egg and emergence but remains concerned that temperature spikes above 53.5° would result in excessive TDM during critical periods for Chinook salmon egg development and emergence. Winter-run Chinook salmon egg TDM is in a non-linear relationship with specific temperature thresholds, and TDM rates increase very rapidly at daily average temperatures above 53.5°F (Martin et al. (2016) and Martin et al. (2020)). TDM can be expected to be above 70 percent when eggs are incubated at constant temperatures of 55°F or higher (Rosenfeld, 2021).

The Council is also concerned about incorrect assumptions of suitable temperature ranges for juvenile and adult migrating Chinook. The DEIS cites 68°F as an optimal 7-day average of daily maxima as the boundary between stressful and detrimental conditions for juvenile Chinook salmon. A 7-day average of daily maximum temperatures does not adequately protect juveniles from mortality events. The DEIS references thresholds of 37.9-68°F for adult Chinook salmon migration. The upper end of this range (greater than 64.4 – 68°F) are associated with high risk of disease outbreaks (EPA 2003), and the DEIS alternative temperature index value of 59.9°F identifies constant temperatures in this range.

Further, the DEIS does not indicate whether they represent daily averages, daily maxima, multiday averages, or multi-day averages of maximum temperatures. Again, the uncertainty associated with temperature impacts dictates that BOR should adopt precautionary management and mitigation measures.

Many of the Central Valley Chinook streams are on the 303d list for impaired water temperature for cold water spawning fish, which is a major stressor for fall-run Chinook during spawning. Management

and mitigation measures to resolve impaired water temperatures in these systems, including dams BOR operates as part of the CVP, should be addressed in the DEIS.

Conclusion and Recommendations

The Council's primary concern is that CVP operations must include water quality and quantity targets that adequately conserve salmon habitat and that avoid excessive mortality events. In particular, our September 2022 letter states "After decades of habitat loss, winter-run Chinook salmon today spawn almost entirely within only a very short stretch of the Sacramento River just below Keswick Dam, making their eggs particularly vulnerable to elevated water temperatures within that reach." That letter goes on to state that our primary recommendation is "...to update outdated targets for temperature management related to winter-run Chinook salmon egg-to-fry survival so that they reflect current management practices and the best available science on relationships between the cold-water pool Upper Sacramento water temperatures, and egg-fry survival of winter-run Chinook."

While the Council does not make a recommendation to select any particular Alternative, we note that elements of Alternative 2 and Alternative 3 represent an improvement from the current CVP operations plan. The No Action Alternative, as well as Alternatives 1 and 4 do not appear to offer the same level of habitat protections contained in Alternative 2 and 3.

We appreciate BOR's consideration of our comments and request a detailed written response to our recommendations. Please contact Kerry Griffin on Council Staff (Kerry.griffin@noaa.gov) with any questions.

Sincerely,



Brad Pettinger
Chair

KFG:ael

Cc: Council Members
Eric Oppenheimer, SWRCB
Jennifer Quan
Ryan Wulff
Cathy Marcinkevage

References

EPA 2003. U.S. Environmental Protection Agency. 2003. EPA Region 10 Guidance for Pacific Northwest State and Tribal Temperature Water Quality Standards. EPA 910-B-03-002. Region 10, Office of Water, Seattle, WA. Available at:
<https://nepis.epa.gov/Exe/ZyPDF.cgi/P1004IUI.PDF?Dockey=P1004IUI.PDF>

Martin, B.T., A. Pike, S.N. John, N. Hamda, J. Roberts, S.T. Lindley, and E.M. Danner. 2016. Phenomenological vs. biophysical models of thermal stress in aquatic eggs. *Ecological Letters* 1-10. doi: 10.1111/ele.12705.

Martin B.T., P.N. Dudley, N.S. Kashef, D.M. Stafford, W.J. Reeder, D. Tonina, A.M. Del Rio, J.S. Foott, E.M. Danner. 2020 The biophysical basis of thermal tolerance in fish eggs. *Proc. R. Soc. B* 287:20201550. <http://dx.doi.org/10.1098/rspb.2020.1550>.

Myrick, C.A., and J.J. Cech, 2004. Temperature effects on juvenile anadromous salmonids in California's Central Valley: what don't we know? *Reviews in Fish Biology and Fisheries* 14:113-123. DOI: 10.1007/s11160-004-2739-5

PFMC 2014. Appendix A of the Pacific Fishery Management Council Pacific Coast Salmon Fishery Management plan. <https://www.pccouncil.org/documents/2019/08/salmon-efh-appendix-a.pdf/>

Rosenfield, J. From Declaration of Dr. Jonathan Rosenfield, Ph.D., Case Doc. 325, pg. 20, filed December 16, 2021.

SEP 2019. Scientific Evaluation Process Workgroup. 2019. Conservation Planning Foundation for Restoring Chinook Salmon (*Oncorhynchus tshawytscha*) and *O. mykiss* in Stanislaus River. April 2019. Available at:
https://www.scienceforconservation.org/assets/downloads/SEP_Report_April_2019.pdf