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Delta Independent Science Board
715 P Street, 15-300
Sacramento, CA 95814

Submitted electronically to reviewadvice@deltacouncil.ca.gov

RE: Public Input Submittal to Inform the Charge to the Independent Peer Review Panel for Winter-run Chinook Salmon Annual Losses in Water Years 2024 and 2025

Dear Independent Peer Review Panelists,

On behalf of Defenders of Wildlife, we are writing to provide input to the independent panel's peer review of the State Water Project's (SWP) and Central Valley Project's (CVP) actions and decisions that led to the exceedance of the annual loss threshold of winter-run Chinook salmon. Based on our review, without additional actions, the current project operations of the SWP and CVP ("the Projects") will continue to exceed threshold limits and potentially the take limit of winter-run Chinook salmon. Given the extremely limited time for review of the charge questions and 2-page limitation, the remainder of this letter echoes the comments of our partners San Francisco Baykeeper and Friends of the River.

General observations

A) Salvage and loss of Chinook Salmon and estuarine pelagic fish is highly correlated to negative ("reverse") tidally-filtered flow in the Old and Middle River (OMR) channels of the southern Delta.[1] The rate of loss for key fish species accelerates rapidly as OMR flows become incrementally more negative.
B) Salvage at the export facilities, from which "loss" is calculated, is a very coarse indicator of impacts to native fish species. Mortality between the point of entrainment (intakes to the Project pumps) and the fish screening facilities can be up to several orders of magnitude higher than fish detected in salvage.[2] Failure to detect fish at the salvage facilities does not mean that Project water exports are not causing high rates of direct mortality for Chinook Salmon or other fish.

[1] Kimmerer, 2008, Available at: https://escholarship.org/uc/item/7v92h6fs; Grimaldo et al., 2009. Factors Affecting Fish Entrainment into Massive Water Diversions in a Tidal Freshwater Estuary: Can Fish Losses be Managed? North American Journal of Fisheries Management 29:1253–1270; USFWS 2008, Available at: http://www.fws.gov/sacramento/es/documents/swp-cvp_ops_bo_12-5_final_ocr.pdf; NMFS 2009 Biological Opinion and Conference Opinion on the Long- Term Operations of the Central Valley Project and State Water Project. June 4. Endangered Species Act Section 7 Consultation. Southwest Region.
[2] Kimmerer 2008, 2011 Available at: https://escholarship.org/uc/item/0rd2n5vb; Castillo et al. 2012 Pre-screen loss and fish facility efficiency for Delta smelt at the South Delta's State Water Project, California. San Francisco Estuary and Watershed Science 10(4):1–23.

C) Once entrainment of imperiled fish begins, total loss may increase rapidly (e.g., within a few days), before management can and/or does respond.
D) The current metric for OMR management, the OMR Index (OMRI), does not accurately reflect actual OMR flow conditions. The flow-salvage relationships for numerous fish are based on actual (tidally-filtered) OMR flow rates as measured by USGS gauges. The U.S. Fish and Wildlife Service (USFWS) and the National Marine Fisheries Service (NMFS) first used 14-day and 5-day running average OMR in their 2008/2009 CVP/SWP Biological Opinions' (BiOp) Reasonable Prudent Alternative on CVP and SWP Long-Term Operations to provide additional safeguards for listed fish species in the Delta by limiting Project export contribution to negative OMR flows. Since the 2019 BiOp, the OMRI has been used instead of OMR. However, OMRI now diverges significantly from measured OMR flow (*see* comments from both San Francisco Baykeeper and Friends of the River).
E) Water export rates and Delta inflow rates are the factors influencing OMR flow rates that are under human (i.e., CVP/SWP Project) control.
F) In 2024 and 2025, the Bureau of Reclamation failed to comply with provisions of the respective CVP long-term operations plans and BiOps governing those operations. Loss thresholds/limits were exceeded for winter-run Chinook Salmon and Central Valley Steelhead in both years, and also for Green Sturgeon in 2025. Evaluation of salvage/loss minimization measures in the BiOps (and Reclamation's implementation of those measures) must account for impacts to all Central Valley fish species listed under either the federal or state Endangered Species Act.

Recommendations

Defenders of Wildlife believe a precautionary approach to water export management for the protection of imperiled species is warranted. Once fish have been drawn into the southern Delta estuary, within the vicinity of the export pumps, increasing OMR flow rates (making them less negative) may dramatically reduce the rate of salvage and estimated loss. However, this may be due to changes in screening efficiency at lower flow rates and/or higher mortality inside or just outside of the water export infrastructure. Once an entrainment/salvage event begins, the negative effects on a target species' population may be unavoidable. Therefore, we recommend:

- Improving OMR flow monitoring such that CVP operations management reflects actual flow conditions experienced by the imperiled fish and the original OMR-loss/salvage.
- Adoption of more protective OMR flow limits, including actual OMR flows no more negative than -2,500 cfs when imperiled fish are likely to be at risk of entrainment. Flows as negative as -5,000 cfs should be permitted only when the chances of loss of imperiled fish is low.
- More timely and complete implementation of requirements identified in relevant project operational plans, biological opinions and water quality requirements.

Thank you for your time and consideration of these comments.

Sincerely,

Ashley Overhouse
Water Policy Advisor