SWC Comments

The State Water Contractor ("SWC") comments on the draft effects analysis for the NMFS long-term operation ("LTO") biological opinion ("BO") are provided below and in the attached table.

Performance measures

We are very concerned about potential performance measures ("PM") that Reclamation is proposing for inclusion in the LTO project description. It is our understanding that the proposed PM would limit entrainment to the actual take that occurred during the last 10 years of implementation of the 2009 BO. Rational for the PM has not been provided and is restrictive, especially considering that entrainment (salvage/loss) related to south Delta export operations has been low for years.

For example, in 2009, NMFS provided a take statement for south Delta project operations that allowed 1-2% of winter-run JPE. The actual take (loss) of winter-run over the last 10 years has been consistently less than 1% of JPE, so only a fraction of allowed take (NMFS draft effects, Table 2.5.5-24 [annual loss since 2009 has consistently been less than 1% of JPE; Table 2.5.5-25 [Annual mean loss of wild WR for the last 20 years is 1.01% of JPE].) Outside reviews of the JPE have found these method to estimate take to be protective of fish. For example, the 2014 Delta Stewardship Council's Long-Term Operations Biological Opinions Annual Science Review Report ("LOBO Report") reviewed NMFS' 2014 JPE calculation and concluded that, "Thus, even if the JPE were significantly overestimated in WY 2014, the run was not likely endangered by water export operations." Winter-run loss has been consistently low and likely not causing jeopardy.

In 1991, during a historic drought, the winter-run Chinook salmon population (escapement) was estimated at 177 individuals.[1] As hydrology improved, the population estimates (escapement) also increased, and in 2001 the population (escapement) was estimated at 8,085 individuals. In 2008, the winter-run Chinook salmon population (escapement) was estimated at 2,725 and ten years later in 2018 the populations (escapement) was estimated at 2,458 individuals. During the intervening years there were a variety of changes that occurred (i.e., operations changed, hydrology varied including another historic multi-year drought, hatchery practices were different, etc.) but the population is nevertheless approximately the same as it was ten years ago. The population has been fairly stable over the long-term.

Moreover, the LTO project description includes operations that are very similar to current operations under the 2009 BO and WINN Act which will have minimal impacts on winter-run. The main difference is a change in the San Joaquin I:E ratio, which only effects the months of April and May, a time when few, if any, winter-run are present in the Delta. Under the 2009 BO there are no export limits in fall, which is another time period where the LTO project description includes a change (change in DS fall habitat). This proposed operational change in the fall would not affect entrainment of salmonids. The proposed LTO operations would not be expected to

[1] Population (escapement) estimates were obtained from California Department of Fish and Wildlife - Fisheries Branch Anadromous Assessment – GrandTab.

result in large changes in winter-run entrainment (loss).

In regards to spring-run and steelhead, the estimated entrainment (loss) has been consistently low for decades, including the time-period prior to the 2009 BO, when exports were significantly higher (NMFS draft effects, Table 2.5.5-34 [Mean spring-run loss 0.63% of JPE over last 20 years]; Table 2.5.5-45 [mean steelhead loss 0.50% of JPE for last 20 years].) While the change in the April-May I:E ratio would affect entrainment estimates for steelhead and perhaps spring-run, the I:E ratio did not exist prior to 2009 and estimated spring-run and steelhead losses were still low. The more restrictive PM are not justified.

There are unacknowledged modeling issues that may be affecting NMFS results, including all of the technical issues related to the use of the salvage density method (described below). An example of an unacknowledged modeling issue is the CALSIM II modeled baseline, which as DWR has shown is based on OMR requirement assumptions that were selected prior to the implementation of the 2009 BO and does not match actual post-BO OMR requirements very well (assumed requirements were more constraining than actual). This modeling anomaly alone could be driving some of the estimated effects. NMFS should revisit the CALSIM II modeling results and its analytical metrics for estimating loss. Regardless, the proposed PM should not be adopted.

Salvage density method

The salvage density method is a very coarse estimate of entrainment (salvage/loss). We have significant concerns about its use for decision-making. Our concerns include: the salvage density method uses old data from the pre-BiOp time-period; it does not account for the diversion off-ramps that are part of the project description; it does not account for species distribution; it does not account for the higher abundances that existed in the earlier time period (like winter run, years 2001-2006).

There are more up-to-date methods and data available than were used in the salvage density analysis, and those data and method should be used in the NMFS effects analysis. For example, the Zeug and Cavallo (2014) should be used for making estimates of winter-run salvage/loss.

The results of the salvage density method should be reported in relation to the current take limit or JPE. The modeled increases in loss are likely still very low when considered in a population context because the actual increases are relatively small (even though the percent changes appear large).

Disclosure and acknowledgement of model error and uncertainty

NMFS should be consistent in its acknowledgement of the limitations of the modeling across all of the analyses, and in all of the analyses the error needs to be shown and explained. For example, NMFS concluded that the modeled increases in storage at Shasta were unreliable, but failed to acknowledge that the salvage density method has numerous limitations and simplifying assumptions that need to be considered when interpreting the results.

The recent changes to the Winter Run Life Cycle Model (WRLCM), particularly the use of the Newman (2003) model and its limitations, should be consistently acknowledged and explained. We also believe that NMFS should be transparent and consistent in its interpretation of the WRLCM results and how NMFS interprets the modeling results should be fully documented in the BO and/or the administrative record.

Proposed changes to SWP operations

We object to the inclusion of preferential CVP pumping into the project description and into NMFS effects analysis. There are no rules in place that would ensure that the SWP could continue to get its water supply through the CVP, particularly since the CVP facilities are already capacity constrained.

We also object to any suggestion that the SWP would agree to take on a larger share of regulatory obligations in the future to preserve Shasta storage. We have already agreed to COA amendments so Reclamation can preserve Shasta storage, and we aren't willing to increase our regulatory burden further.

Without project baseline

We are concerned about NMFS' recent statement that the without project baseline from the BA would be incorporated into its effects analysis and possibly used in its synthesis of results. We would object to any consideration of the without project baseline in the synthesis of results and conclusions. Based on the ESA and its regulations, we believe the regulatory baseline should be applied consistent with past consultations involving the SWP-CVP.

Please see our more detailed technical comments, included as a separate attachment.