State of California – The Resources Agency
ARNOLD SCHWARZENEGGER, Governor
DEPARTMENT OF FISH AND GAME
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Central Valley Bay-Delta Branch
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September 21, 2005

Ms. Debbie Irvin, Clerk to the Board
Executive Office
State Water Resources Control Board
1001 I Street, 14th Floor
Sacramento, California 95814

Dear Ms. Irvin:

The Department of Fish and Game (DFG,) the U.S. Fish and Wildlife Service (USFWS), and National Oceanic and Atmospheric Administration – Fishery Service (NOAA Fishery) provide these final comments to the State Water Resources Control Board (SWRCB) regarding the workshops on Delta Outflow and proposed changes to the X2 objective. In the prior comments, DFG, USFWS, and NOAA Fishery submitted comments jointly with the Department of Water Resources and U.S. Bureau of Reclamation (Project) agencies from the Water Operations Management Team (WOMT). The comments submitted herein are from DFG, USFWS and NOAA Fishery because the comments focus on the analyses on fish effects from flexing of X2 described under the gaming exercises and other fish-related issues. However, DFG, USFWS, and NOAA Fishery continue to support the prior WOMT comments and offer these comments as a clarification regarding possible effects to fish from flexing the X2 objective and the Rio Vista flow objective that were portrayed during the last workshop.

X2 Objective

In considering the results of X2 flexibility gaming presented at the workshop on August 31, 2005 and the proposal that was made to incorporate flexibility into the current Water Quality Control Plan (WQCP), the Board may wish to consider the following: The X2/fish abundance relationships that are the underpinning for the February – June X2 objective in the WQCP are all based on the location of X2 as described by the average position during multi-month periods in the winter and spring, the range of months depending on the individual species. These relationships were used to assess the effect on these species resulting from gaming, i.e. simulated operations which deviate from historical operations and change Delta outflow and the position of X2 by changing reservoir releases or export pumping. In fairness, there is no other way to apply these relationships to the analysis of gaming results. However, it should be recognized that the precise mechanisms by which X2 located further downstream results in higher abundances of various fish species have not been identified (Kimmerer 2002). Nor is it clear that it is the average condition over several months rather than an event that may occur over a shorter time span within the temporal window that drives production or survival of any of the species up or down. Jassby described the close association of the location of X2 and population size for

numerous estuarine species and stated the following in his conclusions: "Furthermore, although we have emphasized the mean values of X2 during specified periods, it may turn out that the variance and higher moments also contain valuable information about conditions for estuarine populations ("Isohaline Position as a Habitat Indicator for Estuarine Resources: San Francisco Estuary" an issue paper in "Managing Freshwater Discharge to the San Francisco Bay / Sacramento – San Joaquin Delta Estuary: the Scientific Basis for an Estuarine Standard" San Francisco Estuary Project, 1993). Consequently, it is risky to conclude that reservoir manipulations that reduce outflow at one time and increase it at other times, with little or no change in average X2 location over 3-5 months, will necessarily produce little or no change in survival/productivity or abundance of the affected species.

Outflow manipulations contemplated using X2 flexibility and described in gaming exercises tend to reduce the variation in outflow during the spring months, reducing the peaks and potentially adding to outflow at other times. This tendency is contrary to one of the main purposes of the X2 objective which is to restore some degree of the natural variability in the flow and salinity regime that occurred historically.

Rio Vista Flow Objective

Flexibility in the September – December Rio Vista flow objective was mentioned during the Board's August 31, 2005 workshop on X2. We did not support flexibility in the Rio Vista flow objective during the Board's earlier workshop on that topic because the flow objective is at the minimum flow shown to be needed for guiding upstream migrating salmon. Furthermore, the objective already includes a critically dry year relaxation. We would not approve a proposal to reduce flow below the Rio Vista flow objective even if flexibility were allowed in the WQCP. The suggestion was made at the workshop that no flexing would be proposed if salmon were present. In fact, salmon are always moving upstream past Rio Vista and are generally most numerous the months this objective applies, hence the reason for the objective in the first place.

Pelagic Organism Decline as a Priority

The suggestion appears to be that the fish agencies may be missing an opportunity to flex the X2 and other objectives in case near-term analyses and studies suggest that such flexing would be useful. However, we are confident that in the event that such studies reveal that flows and salinity can be better managed to help resurrect an apparently seriously perturbed estuary and to save species from disappearing, the Board will find the means to react in a timely manner. To the extent that flexibility is seen as a means to increase the export water supply, we do not find the argument compelling. In light of the apparent serious problems with some species in the estuary, it seems prudent now to focus on trying to avert a potential ecological disaster rather than creating additional pressure to "flex" current operations in favor of gaining a few more acre feet of water supply from the Delta. We recognize there will be an ever

increasing demand for water for consumptive use in the future. Any increment in supply that might be achieved from flexing WQCP objectives, if such flexing were approved in the future, will be all the more valuable at that time.

Sincerely,

Dr. Perry L. Herrgesell
Branch Chief
Department of Fish and Game

Mr. Michael Aceituno
Area Supervisor
NOAA Fishery

for Mr. David L. Harlow
Assistant Field Supervisor
U.S. Fish and Wildlife Service

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