



UNITED STATES DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

NATIONAL MARINE FISHERIES SERVICE

Southwest Region

650 Capitol Mall, Suite 5-100

Sacramento, CA 95814-4700

JAN 26 2012

Ms. Susan Fry
Area Manager
U.S. Bureau of Reclamation
Bay-Delta Office
801 I Street, Suite 140
Sacramento, California 95814-2536

Dear Sue:

Thank you for your December 5, 2011, letter, in compliance with Term and Condition (T&C) 2.a in NOAA's National Marine Fisheries Service's (NMFS) June 4, 2009, biological opinion on the long-term operations of the Central Valley Project and State Water Project (long-term operations Opinion). Specifically, T&C 2.a (long-term operations Opinion, page 783) states that "Reclamation shall submit a final report to NMFS by December 31, 2010, summarizing the recommendations for quantifying incidental take, with the selection of a proposed technique. The technique for quantifying take shall be implemented immediately upon NMFS' concurrence."

As you know, NMFS selected and funded an independent contractor, Ocean Associates, Inc. (which in turn, subcontracted with Kier Associates) to perform the task to evaluate and recommend a technique for quantifying take. As a result of various issues, and indirectly through granting a no-cost extension to Ocean Associates, NMFS granted a six-month extension to June 30, 2011, for the U.S. Bureau of Reclamation (Reclamation) to submit a final report to NMFS. On July 9, 2011, Kier Associates submitted the final report titled, "An Alternative Technique to Quantify the Incidental Take of Listed Anadromous Fishes at the Federal and State Water Export Facilities in the San Francisco Bay-Delta Estuary" (Jahn 2011).

NMFS agrees, in general, with Reclamation's [and the California Department of Water Resources (DWR)] recommendation on the process and timeline for adapting the loss equations suggested in Jahn (2011) (hereafter referred to as "Recommendation"), with several specific suggestions and clarifications, as provided below, and as discussed in the NMFS/Reclamation meeting on December 16, 2011.

The Implementation Management Team (IMT), a subgroup of the 5-Agencies Group [comprised of representatives from NMFS, Reclamation, DWR, U.S. Fish and Wildlife Service (USFWS), and California Department of Fish and Game (CDFG)], is charged with tracking the implementation of the requirements of various documents, including the NMFS long-term operations Opinion. Therefore, the IMT should track Reclamation's and DWR's progress



towards implementing the adjustments to the loss equations, and Reclamation and DWR should provide updates to the IMT of their progress on at least a bi-monthly basis. In addition, the IMT should determine the appropriate forum (*e.g.*, an IMT subgroup, Delta Operations for Salmonids and Sturgeon Group, or Tracy Fish Facility Technical Team) in which to evaluate the current loss calculation for Chinook salmon and expanded salvage calculation for steelhead versus the alternative calculations provided in Jahn (2011). As Reclamation stated, results of the comparison will be documented in the Annual Salmonid and Green Sturgeon Incidental Take and Monitoring report prepared by DWR and Reclamation.

NMFS agrees with Reclamation's Recommendation that the proposed calculations assume that each facility entrains fish independently. NMFS, however, does not understand Reclamation's Recommendation that the proposed calculations use the medium survival rates for steelhead and Chinook salmon. Reclamation should provide its rationale to the IMT for feedback and concurrence.

Consistent with the long-term operations Opinion and reasonable and prudent alternative, next steps are: (1) Reclamation and DWR, in coordination with feedback from the IMT, will work together to develop the Recommendation that will be provided to the Independent Review Panel (IRP) in 2013 as part of the annual review of the NMFS and USFWS long-term operations Opinions. However, in order to ensure that the IMT will have adequate time to review and comment on the recommendation, Reclamation should provide the written recommendation to the IMT for review and comment by July 31, 2013; and (2) Following the issuance of the IRP report (approximately one month following the public workshop), and no later than February 28, 2014, NMFS and Reclamation will meet to discuss how best to implement the IRP's recommendation.

As recommended by Dr. Jahn (Jahn 2011, page 17), Reclamation should adjust its loss calculation for Chinook salmon to incorporate the known reductions in louver efficiency during cleaning. The adjusted loss calculations should also be adopted by CDFG and DWR for reporting. CDFG may (in addition to using the adjusted loss calculations) continue to track loss in its salvage database to provide continuity with historical sampling. Reclamation and DWR should present their progress towards the development of the Recommendation, in addition to the adjusted loss calculation for Chinook salmon, at the annual review in 2012.

Reclamation does not explicitly state which species will be addressed in the recommendation to the IRP. However, Reclamation stated that, "Reclamation has not studied survival of Central Valley steelhead at the Tracy Fish Collection Facility," and "No equation for quantifying southern DPS green sturgeon was provided in the Jahn 2011 report and no studies have been undertaken to quantify required parameters for such an equation." NMFS concludes that Reclamation's plans for submitting the Recommendations to the IRP are limited to Sacramento River winter-run and Central Valley (CV) spring-run Chinook salmon. Reclamation acknowledges that survival studies of California CV steelhead at the Tracy Fish Collection Facility will be completed in 2012 and 2013. Therefore, NMFS expects that soon after the results of the studies are available, Reclamation will initiate the development of a loss equation for steelhead.

Currently there are no parameters for calculating the loss of green sturgeon. Given the current concerns about using hatchery-raised sturgeon in field experiments, Reclamation and DWR should expeditiously design and conduct laboratory-based evaluations of louver efficiency and predation on captive juvenile green sturgeon (Northern or Southern DPS fish) to test louver efficiency, fish behavior at the louvers, and predation risk of different size classes of green sturgeon present in the Delta with known Delta predators [*e.g.*, striped bass (*Morone saxatilis*), Sacramento pikeminnows (*Ptychocheilus grandis*), catfish (Ictaluridae), black bass (*Micropterus* spp.)]. We are hopeful that laboratory-based evaluations could begin during 2012, utilizing progeny from the 2012 brood year. Preliminary study results (if available) and a fully-developed plan for completing studies regarding louver efficiency and predation risk to green sturgeon should be provided as part of the annual review in 2012. If and when a research population of disease-free green sturgeon becomes available, then field studies should be conducted in situ with tagged fish at the facilities. In addition to the louver efficiency studies, sturgeon behavior in Clifton Court Forebay should be examined to look at movements, residence time, predation, and vulnerability to entrainment into Clifton Court and thence to the louvers just as has been done with Chinook salmon and steelhead. In the interim, data from other sturgeon species may be appropriate to use until studies using white sturgeon or Southern DPS green sturgeon can be implemented. In the absence of data on salmonids and green sturgeon in the wild, NMFS considers studies using surrogates, including laboratory studies, one of the best available sources of information used to determine the potential effects of CVP/SWP operations. Until a new loss equation is developed, NMFS agrees that incidental take of green sturgeon at the fish facilities should utilize expanded salvage.

Finally, NMFS agrees that any parameters used with new or existing equations should be evaluated on a regular cycle to take into account survival improvements due to project modifications or new information from the Tracy Fish Facility Technical Report series. Additionally, Reclamation and DWR should re-evaluate the parameters whenever a substantive change is made in the facility infrastructure or operations, when environmental conditions change (*i.e.*, changes in predator population structure and abundance).

If you have any questions regarding this letter, please contact Garwin Yip, of my staff, at (916) 930-3611, or via electronic mail at garwin.yip@noaa.gov.

Sincerely,



Maria C. Rea
Supervisor, Central Valley Office

Cc: Ron Silva--Reclamation, 16650 Kelso Road, Byron, California 94514
Kathy Kelly—DWR, 1416 9th Street, Room 215-37, Sacramento, California 95814
Heidi Rooks—DWR, P.O. Box 942836, Sacramento, California 94236

