



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Sacramento Area Office
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January 26, 2005

In Reply Refer To:
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Arthur G. Baggett, Jr.
Chair, State Water Resources Control Board
P.O. Box 100
Sacramento, California 95812

Dear Mr. Baggett:

This letter provides comments from the National Marine Fisheries Service (NOAA Fisheries) concerning periodic review of the 1995 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary. This letter addresses potential amendments to the Export Limit and Rio Vista River Flow Objectives in the Water Quality Objectives for Fish and Wildlife Beneficial Uses. For detailed information concerning NOAA Fisheries authorities and jurisdiction related to the periodic review, we refer you to previous exhibits submitted by NOAA Fisheries during the periodic review (NOAA EXH-1, 2, and 14).

Export Limit Objective

NOAA Fisheries finds the Export Limit Objective an important tool for the protection of fish such as Federally listed Sacramento River winter-run Chinook salmon (*Oncorhynchus tshawytscha*), Central Valley spring-run Chinook salmon (*O. tshawytscha*), and Central Valley steelhead (*O. mykiss*), as well as other native fish such as sturgeon. The scientific evidence for this position includes past research used in previous Bay-Delta hearings identifying exports as one of the limiting factors for these fish (California Department of Fish and Game 1992, Kjeslon *et al.* 1981, Kjeslon *et al.* 1990). Since the development of the 1995 Water Quality Control Plan, a significant number of studies have been completed supporting prior work regarding the effects of exports on salmonids. Brandes and McLain (2001) analyzed juvenile salmon survival data between 1980 and 1997 and found higher salvage of tagged juvenile salmonids when exports were increased. The U.S. Fish and Wildlife Service (1995) reviewed the results of juvenile salmon survival studies and also concluded that exports were a limiting factor. Vogel (2004) tracked juvenile Chinook salmon in the San Joaquin Delta using radio-telemetry and indicated that improvements in juvenile salmon survival likely were attributed to favorable tides, reduced exports, and increased San Joaquin River flows. Additional work regarding the effects of exports on native fish populations include: Meng *et al.* (1994); Meng and Moyle (1995); Meng and Matern (2001); Arthur *et al.* (1996); and Bennett and Moyle (1996). This research indicates that exports are



potentially a factor affecting the viability of salmon and steelhead populations. NOAA Fisheries is coordinating exhibit submittals with the Department of Interior, and digital copies of these documents will be submitted to the Board for your reference.

We have the following recommendations regarding amendments to the Export Limit Objective:

- Fisheries agencies have utilized the flexibility option of the export/inflow ratio afforded by the 1995 Water Quality Control Plan to obtain water for the CALFED Bay-Delta Program's Environmental Water Account (EWA). Though we agree some flexibility in the export rate can potentially be beneficial to salmonids, it also became apparent that changes in pumping operations for acquiring additional water for EWA may have impacted other species of fish. Testimony provided by California Department of Fish and Game on January 18, 2005 elaborated on the scientific uncertainties and potential effects of the increased exports on Delta dependant fish such as Delta smelt. NOAA Fisheries does not feel additional flexibility is necessary at this time, as the Fisheries agencies are still assessing the costs and benefits of the current Export Limit Objective and how it is applied. In addition, there are mechanisms currently in place to address these implementation needs (such as the Water Operations Management Team).
- Affording the ability of operations to utilize either the 14-day or 3-day average when calculating exports under footnote 23 could increase exports, causing additional impacts to listed fish. NOAA Fisheries does not support changing footnote 23 of the Export Limit Objective, as this change has the potential to affect juvenile salmonids in the Delta by potentially increasing export levels which have been shown to affect salmon as indicated previously in this letter.
- NOAA Fisheries does not agree that in-Delta storage releases are functionally equivalent to Delta inflow. Modeling studies used for the NOAA Fisheries biological opinion for the Delta Wetlands project (NOAA Fisheries 2000, Jones & Stokes Associates, Inc. 1996) simulated the effects of Delta Wetland operations on Delta hydrology. The diversion and storage of water from in-Delta storage reservoirs was found to negatively impact flow variables important to juvenile salmon, such as Delta outflow, QWEST, and flows in Middle and Old rivers. In addition, the in-Delta release of such water is not comparable to mainstem river inflow as this water would be moving towards the Federal and State pumps, drawing juvenile salmon South rather than towards the San Francisco Bay (West). NOAA Fisheries does not recommend using in-Delta storage releases as a surrogate for Delta inflow as a water quality objective for Fish and Wildlife Beneficial Uses.

Rio Vista Flow Objective

NOAA Fisheries believes the Rio Vista flow objectives are important for the protection of migrating adult Chinook salmon and steelhead, as well as emigrating juvenile winter-run, spring-run and late fall-run Chinook salmon. The original intent of the Sacramento

and San Joaquin River Flow Objectives were to “provide attraction and transport flows and suitable habitat for various life stages of aquatic organisms, including Delta smelt and Chinook salmon” (1995 Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary). Studies such as Hallock *et al.* (1970) found migrating adult salmonids require sufficient flow to provide olfactory and other orientation cues used to locate their native streams to spawn. Studies completed since the issuance of the 1995 Water Quality Control Plan lead NOAA Fisheries to continue to believe Rio Vista Flow is an important mechanism for maintaining and recovering salmonids. Brown and Ford (2002) and Brown (2000) found that flow has the potential to increase the range and use of a river system by migratory species. Brown and Ford (2000) also indicate that the natural flow regime is one of the most important factors in maintaining California fish communities. Feyrer and Healey (2003), and Feyrer (2004), found strong correlations among river flows in the southern Delta and native fish populations. As river flows declined, native fish populations increased (Feyrer (2004). In addition, Federal and State recovery efforts recommend increasing outflows to improve in-Delta habitat quality and provide transport flows for rearing and migrating juvenile salmon, as well as migration cues for returning adult salmon (California Department of Fish and Game 1998, U.S. Fish and Wildlife Service 1995).

Because the Rio Vista flow objective on the Sacramento River is intended to be a minimum flow standard necessary for salmon migration cues, and because the objective is commonly met when other objectives are met (such as Delta outflow), NOAA Fisheries does not recommend changes at this time.

We appreciate the opportunity to provide the Board with comments related to the 1995 Water Quality Control Plan revisions and look forward to future workshops and topics. If you have any questions regarding this correspondence or if NOAA Fisheries can provide further assistance, please contact Mr. Jeff McLain in our Sacramento Area Office, 650 Capitol Mall, Suite 8-300, Sacramento, CA 95814. Mr. McLain may be reached by telephone at (916) 930-5648, or by Fax at (916) 930-3629.

Sincerely,



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