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State of California
Department of Fish and Game

M e m o r a n d u m

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To: Anne Short
State Water Resources Control Board
Division of Water Rights
P.O. Box 2000
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From: Carl Wilcox, Chief
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Department of Fish and Game

Subject: Comments on the Notice of Preparation and Scoping Meeting for Environmental Documentation for the Update and Implementation of the Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary: Southern Delta Salinity and San Joaquin River Flows

The Department of Fish and Game (Department) appreciates the opportunity to provide suggestions for the above referenced notice. The Department's comments are focused on the San Joaquin River (SJR) flows portion of the notice.

We offer the following suggestions based on our working knowledge of SJR and Bay-Delta issues. While we recommend several options or alternatives for the State Water Resources Control Board (State Water Board) to consider, the Department has not yet established which alternatives are preferred and suggests the State Water Board consider a wide range of alternatives. To be most understandable to interested parties, we suggest that the State Water Board staff provide written descriptions, analysis of the pros and cons of each alternative, and an assessment of the environmental impacts of the selected or preferred alternative.

1. Beneficial uses: The State Water Board should consider at least two alternatives regarding the beneficial uses to be protected by the Bay-Delta Plan as follows:

   A. Maintain existing list of beneficial uses.
   B. Add new beneficial uses such as riparian habitat and floodplain habitat.

   The Department will likely provide data and information to support adding these new beneficial use categories.

2. Flow Water Quality Objectives and the Factors Influencing SJR Flows: In developing specific flow recommendations, the State Water Board staff should consider splitting the flow water quality objectives issue into several sub-issues illustrative of the factors that influence the complex relationship between river flow and migration, spawning, and other fish and wildlife beneficial uses. For example, the State Water Board staff could evaluate the individual and the combined influence of the following factors:

    A. Spring Flow Duration (Number of Days): The State Water Board could consider alternatives that include the currently allowed flow period (31 days), plus other options including 45 days, 60 days, 90 days, even 120 days (e.g., really wet years), and mimicking the natural hydrograph.
    B. Spring Flow Time Window: The State Water Board could consider alternatives that include the more typical starting date (April 15) and ending dates (May 15), plus other options including earlier dates (e.g., March 15 to April 14) and later dates (e.g. May 16 to July 15). Consideration should also be given on how improved spring inflow would affect overall Delta water quality (e.g., the X2 relationship).
    C. Fall Attraction Pulse Flow Time and Duration Window: The State Water Board staff should look at the relevance of fall attraction pulse flow upon adult fall-run Chinook salmon migration into the SJR and east-side tributaries; both adult and juvenile population dynamics should be evaluated.
    D. Water Year Type: The State Water Board could consider alternatives that: do not rely on the year type in setting flows; use the existing Bay-Delta Plan's San Joaquin Valley Water Year Hydrologic Classification (San Joaquin Valley Index 60-20-20) to scale flows; or consider other innovative approaches that might better protect fisheries resources.
    E. Flow Magnitude (e.g., flow rate) and Multiple Species Protection: The State Water Board should consider alternative flow rates and/or quantities that focus on protection of fall run Chinook salmon, steelhead, species in the Delta including Delta smelt and longfin smelt, or consider flows that will protect a number of species (including green sturgeon and lamprey). The effects on species should be considered for spring flows, fall flows, pulse flows, SJR watershed hydrology, and other factors.
    F. Influence of Head of Old River Barrier (HORB): The State Water Board should consider at least two alternatives: HORB in and HORB out. The influence of these options should be evaluated with respect to the impacts on migrating salmon smolts and other species.
    G. Influence of Other External Factors on SJR Flows: This set of alternatives should consider if the flow-related water quality objectives should be dependent upon or independent from other factors including

but not limited to: SJR (Friant) restoration, influence of ocean conditions on species of concern, factors related to water temperature not already addressed in other sub-issues, the SJR dissolved oxygen Total Maximum Daily Load (TMDL), the SJR salinity TMDL and salinity water quality objectives development, wetland issues not already addressed, and other stock density dependent factors.

H. SJR East-side Tributary Flow: The State Water Board staff should consider the dependency of east-side tributary outflow and linkage to Delta ecosystem integrity. This assessment should, at a minimum, include how spring magnitude, duration and frequency, in the SJR east-side tributaries influences juvenile anadromous fish production in these tributaries, fish migration into the South Delta, and migration of these fish through the South Delta.

I. Modeling: The State Water Board staff should consider available approaches for linking the many factors (many are identified above in the sub-issues) with fish abundance. The State Water Board should at least consider options that include use of DFG Salmon Escapement Model Version 1.5 (presented to the State Water Board on September 17, 2008), DFG Salmon Escapement Model Version 2.0 (which would require waiting until revisions are complete), and other tools that might be available. The State Water Board should not use the results or recommendations previously provided using Version 1.0 of the model as Version 1.0 has since been superseded by Version 1.5 referenced above.

When considering the baseline (i.e., current standards as contained in D-1641) or alternatives analysis (e.g., standards other than those contained in D-1641), the State Water Board should use specific definable and measurable metrics to evaluate impact potential (such as fall-run Chinook salmon smolt survival rate or juvenile fall-run Chinook salmon production abundance etc.). Based on the assessment of each of these factors, the State Water Board staff should be able to develop scientifically defensible flow recommendations for the San Joaquin River. The Department will be providing data and information in the coming weeks to support the State Water Board's assessment of SJR flow water quality objectives.

3. Program of Implementation for SJR Flows: The State Water Board staff should consider a range of feasible alternatives for implementing flow-related water quality objectives for the San Joaquin River. These alternatives should consider at least:

   A. Implementation of objectives by water right holders

B. Implementation of objectives using existing study based design (i.e., the existing Vernalis Adaptive Management Program (VAMP)).
C. Use of another approach for implementing flow objectives that builds on the successes of VAMP (such as managing flow in the SJR basin to hit flow targets at Vernalis) and avoids VAMP's limitations (e.g., so far the VAMP has not produced its intended study results). Any study based design should be flexible enough to seek and incorporate a change in flows and/or study design (i.e., allow for adaptive management) as necessary to apply emerging information.

4. Comment on "Potential Environmental Effects": While it may be implicit in the list of potential environmental effects in the notice (Page 10), the State Water Board staff should explicitly evaluate the environmental effects of any new flow water quality objectives on riparian habitat and floodplain habitat. This evaluation of potential environmental effects should include an assessment of longer term climate change impacts on the hydrology of the system, to the riparian corridor, and on the ecological services provided by the SJR. Otherwise, the Department supports the list presented in the notice.

The Department is committed to providing additional data and information to help the State Water Board evaluate and select alternatives that provide the optimal combination of protection for SJR and Delta fish species and appreciates the State Water Board's effort to consider our comments for topics to be addressed in the review of the Bay Delta Plan. We look forward to our continued collaboration. Should you have any questions or require clarification regarding our comments, please contact me at (916) 445-1231.

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