From: Grober, Les@Waterboards <Les.Grober@waterboards.ca.gov>
Sent: Tuesday, July 29, 2014 5:12 PM
To: BDCP.comments@noaa.gov
Cc: Riddle, Diane@Waterboards; Grober, Les@Waterboards; Trgovcich, Caren@Waterboards
Subject: SWRCB Comments
Attachments: SWRCB BDCP DEIR comments.pdf

Attached is State Water Board comment letter

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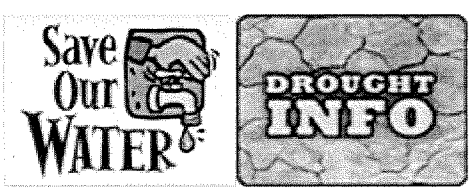

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CALIFORNIA
Water Boards

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

State Water Resources Control Board

July 29, 2014

BDCP Comments
Ryan Wulff, National Marine Fisheries Service
650 Capitol Mall, Suite 5-100
Sacramento, CA 95814
Via email to: BDCP.Comments@noaa.gov

Dear Mr. Wulff:

COMMENTS ON THE DRAFT BAY DELTA CONSERVATION PLAN, DRAFT ENVIRONMENTAL IMPACT REPORT/ENVIRONMENTAL IMPACT STATEMENT FOR THE BAY DELTA CONSERVATION PLAN AND THE IMPLEMENTING AGREEMENT FOR THE BAY DELTA CONSERVATION PLAN

The State Water Resources Control Board (State Water Board) and the Central Valley and San Francisco Bay Regional Water Quality Control Boards (Regional Water Boards) (collectively Water Boards) appreciate the opportunity to comment on the Draft Environmental Impact Report/Environmental Impact Statement (EIR/EIS) for the Bay Delta Conservation Plan (BDCP), as well as the associated BDCP and the Implementing Agreement (IA) for the BDCP. A summary of our key comments is provided following our contact information below, and our detailed comments are provided in the attached table.

The mission of the Water Boards is to preserve, enhance, and restore the quality of California's water resources, and ensure their proper allocation and efficient use for the benefit of present and future generations. The State Water Board administers water rights in California including water rights for the Department of Water Resources' (DWR) State Water Project (SWP) and the U.S. Bureau of Reclamation's (USBR) Central Valley Project (CVP). The Water Boards also have primary authority over the protection of California's water quality. The BDCP will require both water right and water quality approvals from the Water Boards. Accordingly, the Water Boards are responsible agencies for the BDCP pursuant to the California Environmental Quality Act (CEQA). Specifically, activities that may require approval by the Water Boards include, changes to the SWP's and CVP's points of diversion of water and other provisions of their water rights, water quality certifications pursuant to Clean Water Act section 401, National Pollutant Discharge Elimination System permits, and potentially other water quality approvals.

In our role as responsible agencies the Water Boards previously reviewed and provided comments on the Notices of Preparation for the BDCP EIR/EIS and on the Second Administrative Draft of the EIR/EIS and the draft BDCP, as well as other written and oral input over the course of the BDCP process. To the extent that previous comments on the Second Administrative Draft EIR/EIS have not been fully addressed, they are incorporated by reference

in this comment letter. The Water Boards will continue to work with the BDCP lead agencies to determine how to address outstanding comments.

This letter provides comments on the December 2013 Draft EIR/EIS for the BDCP. Due to the interdependent and connected nature of the EIR/EIS, the BDCP, and the IA, this comment letter also provides limited comments on those documents as well. This comment letter does not reiterate all of the previous comments from the Water Boards that may not yet have been fully addressed, particularly in regards to Water Board approval and permitting related issues and information needs that may be outside the scope of the above documents. As discussed in the Water Boards' previous comment letter, additional information may be needed to support Water Board approvals beyond what is included in the above documents. Water Board staff will continue to work with DWR and other appropriate agencies on these issues. Further, due to the enormous size of the documents, the unprecedented complexity of the BDCP, the relatively short comment period considering the size and complexity of the BDCP, and the demands on staff resources due to the drought, we have focused our analysis on Alternative 4 (the preferred project), and to a lesser extent on Alternative 8 (the alternative requested by the State Water Board to provide a broad range of operational alternatives). Within our analysis of those two alternatives we generally further restricted our review to three areas. First, we reviewed the conceptual basis for the alternatives analysis in the EIR/EIS and the consistency and validity of the implementation of the conceptual basis in both the EIR/EIS and the BDCP. Second, we reviewed the models and analytical methods used for the Delta smelt and winter-run Chinook salmon analyses in BDCP Chapter 5, Effects Analysis, and in EIR/EIS Chapter 11, Fish and Aquatic Resources. Third, we reviewed the water quality and other sections of the EIR/EIS, IA, and BDCP that fall within the regulatory authority of the Water Boards.

We appreciate the extensive effort that went into preparation of the various BDCP documents. We also appreciate that the complexities and uncertainties associated with this project, given its large geographic scope and time horizon, which make it difficult to analyze the proposed project and the various alternatives. We nonetheless have general comments in the following topic areas:

- Analytical Methods
- Consideration of Uncertainty
- BDCP Decision Tree and Adaptive Management
- Reporting of Early vs. Long Term Analyses
- Modeling of Climate Change and Reservoir Operations
- Synthesis of BDCP Effects on Covered Fish
- Use and Representation of Data

As we have discussed in previous correspondence to DWR and other lead agencies, the Water Boards have specific statutory and regulatory responsibilities that are separate and distinct from the primary focus of the BDCP on ESA related issues that must be fulfilled in order for the BDCP to proceed. To meet those requirements, the Water Boards must independently consider whether and under what conditions to issue the various approvals needed for the BDCP, regardless of the provisions of the BDCP and its proposed processes.

Water Board staff are available to continue discussions regarding the process for considering the various approvals needed from the Water Boards for the project. If you have any questions concerning this matter, please contact me at diane.riddle@waterboards.ca.gov or

(916) 341-5297. Written correspondence should be addressed as follows: State Water Resources Control Board; Division of Water Rights; Attn: Diane Riddle; P.O. Box 2000; Sacramento, CA 95812.

Sincerely,

ORIGINAL SIGNED BY

Diane Riddle
Environmental Program Manager

Summary of Comments on the BDCP EIR/EIS, BDCP, and IA

Water Board Information Needs
The BDCP will require multiple water right and water quality approvals from the Water Boards that will take a year or more to process. To the extent the EIR/EIS will be used to support these approvals pursuant to CEQA, they should be clearly described, including the proposed changes to water right requirements for DWR and USBR. While not all of the project details the Water Boards will need to consider for various approvals need to be included in the EIR/EIS, that information must be provided to the Water Boards in a timely fashion to avoid delays. The Water Boards' comments on the Second Administrative Draft EIR/EIS address many of these issues in more detail. Water Board staff encourage the BDCP proponents to identify point staff familiar with Water Board permitting issues to coordinate with Water Board staff and identify what permits are needed by when and what additional information is required.

BDCP Analytical Method
Because of the complexity of the biological and physical factors considered within the BDCP, and the changes anticipated during its 50-year planning horizon, it is difficult to produce accurate and precise quantitative data that can be used to determine the magnitude and direction of the effects of the BDCP over its entire planning period. BDCP attempts to address this issue through qualitative modeling and adaptive management. Under the adaptive management process, qualitative results are converted into semi-quantitative results by updating the current knowledge that is used in the modeling scenarios over the duration of the 50-year planning horizon.

The distinction between qualitative planning and quantitative prediction is not, however, clearly identified in the BDCP and supporting EIR/EIS. The numerous model results reported in the BDCP and the EIR/EIS comprise a suite of hypothetical futures in which specified alternative conveyance construction, water operations, and habitat restoration scenarios are compared. According to the modeling appendices of the BDCP and the EIR/EIS, the majority of the model results can only be appropriately compared qualitatively at monthly time steps. This limitation is often violated in both the BDCP and the EIR/EIS. The explicit caution that it is only appropriate to use model results for planning and scenario analyses is stated in the technical appendices for the BDCP and the EIR/EIS, and not in the BDCP effects analysis and in the EIR/EIS alternatives analysis. To address this issue, the caution should be clearly stated and appropriately adhered to throughout the analyses.

Consideration of Uncertainty
Significant negative impacts tend to be discounted and positive results tend to be inflated in the EIR/EIS and the BDCP. The assumed effectiveness of various conservation measures, for example, appear to be overly optimistic, especially with regard to the effectiveness of habitat restoration, where it is assumed that habitat restoration will be 100 percent effective. This overly optimistic assumption is frequently used to offset impacts from water operations associated with Conservation Measure (CM) 1 (the new conveyance facility) and to support a potentially over-constrained range of operations for the protection of covered species under CM1. To address this issue, it would be appropriate to assume a more realistic rate of success for conservation measures and a wider range of adaptive management provisions, such as for Delta Outflows.

BDCP Decision Tree and Adaptive Management
The general structure of the BDCP decision tree and adaptive management processes have been described in the documents but the details for how the adaptive management provisions will be implemented are not provided, and are instead proposed to be developed in the future by the Implementation Office and the Adaptive Management Team. Further, those provisions are assumed to be adequate without provisions for contingency plans or specific thresholds for actions. It is therefore difficult to determine whether the measures will have the expected results or be adequate to reasonably protect beneficial uses of water and the public trust. Further, the range for adaptive management may be overly constrained given the high degree of uncertainty regarding the effectiveness of the conservation measures.

Reporting of Early vs. Long Term Analyses
A single comparison of the BDCP effects at the Late Long Term (LLT) analysis point (Alternative 4 vs. the No Action Alternative (NAA) for example) may not accurately describe the potential effects of the BDCP on covered fish. For example, the BDCP Appendix 5C.5.2-60 concludes that the negative effect of the BDCP in the Early Long Term (ELT) on spawning weighted usable area for winter-run Chinook salmon would be rendered moot by the late long term due to climate change driven reductions in the population size of winter-run Chinook. Similarly, in the analysis of the IOS model effects on winter-run Chinook, it was determined that the model results were sensitive to water-year starting conditions, with dry starting conditions leading to lower levels of escapement for decades under the BDCP while wetter starting years would have resulted in the BDCP providing a benefit (BDCP Appendix 5.G-81, line 37). In both cases, the BDCP has significant short term negative effects on winter-run Chinook that could significantly reduce the size of its single population and render it more susceptible to extinction long before the effects of climate change could affect the population at the LLT analysis point.

Except for some analyses conducted during the development of the BDCP Effects Analysis, model results for the ELT analysis point are not reported. For the purposes of determining the impacts of the new conveyance facility, the effects of the project at the ELT point are important to understand, especially since the Water Boards will not necessarily be considering the 50 year Endangered Species Act (ESA) related approvals that the fisheries agencies will be considering. Further, to differentiate between the effects of the project and other confounding and uncertain effects like climate change, ELT results should be reported. The 50 year time frame for the LLT analyses may mask significant effects of the project. These effects are important to understand given the high degree of uncertainty with future conditions, including climate change.

CEQA and NEPA Baselines in section 4.2.1.1 of the EIR/EIS explicitly recognize the requirement for consideration of both short-term and long-term impacts of the proposed project, and include quotes from Neighbors for Smart Rail v. Exposition Metro Line Construction 10 Authority (2013) 57 Cal.4th 439 (Smart Rail):

> For example, "[e]ven when a project is intended and expected to improve conditions in the long term—20 or 30 years after an EIR is prepared—decision makers and members of the public are entitled under CEQA to know the short- and medium-term environmental costs of achieving that desirable improvement." (Ibid.) Further, "[a]n EIR stating that in 20 or 30 years the project will improve the environment, but neglecting, without justification, to provide any evaluation of the project's impacts in the meantime does not 'giv[e] due consideration to both the short-term and long-term effects' of the project ... and does not serve CEQA's

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informational purpose well." (Ibid., quoting CEQA Guidelines, § 15126.2, subd. (a).)

While the EIR/EIS states that its use of the Existing Conditions as the CEQA baseline is consistent with the Smart Rail decision, use of the differencing method of comparing the baseline as of the date of the Notice of Preparation against alternative effects more than 50-years distant, prevents any short-term analysis of the effects of the project.

Modeling of Climate Change and Reservoir Operations

While explicitly recognizing that climate change will affect the BDCP as well as the operations of the upstream reservoirs such as Shasta and Oroville, the BDCP does not provide a corresponding range of adaptive changes in reservoir operations under climate change. Not considering adaptive reservoir operations responses to climate change confounds the impacts assessment and comparison of alternatives, and may result in over or understatement of impacts that could be attributable to reservoir reoperations, including the NAA. Comparing alternatives to the NAA is one way to distinguish climate change effects from project effects. However, if climate change impacts are overstated, comparisons between a proposed alternative and the NAA may exaggerate the positive benefits of an alternative. Similarly, impacts that may be addressed by reservoir reoperations may be overstated. In addition, if an alternative is shown to have an erroneous positive or null effect then it may be excluded from necessary adaptive management and mitigation. To address these issues, sensitivity results could be provided. For example, reservoir reoperations could be included in the climate change analyses or the analyses could be presented without either climate change or water operational changes. The second option would provide a clearer distinction of project effects versus erroneous conclusions resulting from climate change assumptions.

Synthesis of BDCP Effects on Covered Fish

The EIR/EIS does not provide an explicit analytical framework for synthesizing the individual effects conclusions for each covered fish into a coherent statement describing the overall effect of BDCP on each covered fish. We recognize that given the large number of sometimes contradictory results considered for each covered fish that this is a difficult task. However, relying exclusively on professional opinion without specifying critical biological thresholds or how the various results contributed to the expert opinion provides little useful information for evaluating the adequacy of the opinion and the impacts assessment. The BDCP explicitly recognizes this approach but seems to misstate the transparency of the analysis (5.2.7.10, Page 5.2-27).

Use and Representation of Data

The BDCP effects analysis converts qualitative data to quantitative data (page 5.5-1, line 20), and then performs mathematical operations on the numerical codes for the ranked data as if the coded scores were quantitative ratio scale data. Because there is no method to determine if the intervals between ranks are constant, it is mathematically incorrect to perform addition, subtraction, multiplication, etc. on the numerically coded scores. The subsequent "transformation" of the scores back to a "qualitative scale" demonstrates that the intervals between ranks are not constant, as the very low to low rank interval is one unit while the rank interval from high to very high is seven units. These re-ranked results are then used to generate "net effect" tables (see Figure 5.5.1-5 for an example) that are the foundation of the BDCP effects analysis and, presumably, the professional judgment that forms the basis of the impact assessment conclusions in the EIR/EIS alternatives analyses.

The Delta Independent Science Board (ISB) came to a similar conclusion. The ISB also described how the improper use of qualitative data compounds the uncertainty inherent in attributing importance among multiple attributes of the covered fish and their habitat (Page B-43). The ISB also described the multiple sources of uncertainty present in both documents and recommended that "uncertainty and the many underlying assumptions be dealt with upfront, forcefully, and directly". Even with perfect data, in the execution of scenario analyses it is expected and desirable that different models produce different results, and that some may show negative impacts while others may not. This situation is described as uncertainty in both documents, and in the effects and impacts analyses is postponed as an issue for the adaptive management program to resolve. No method is provided to determine how this will be addressed when the adaptive management process must consider multiple models and conflicting results.

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Table 1

Detailed Comments and Recommendations

EIR/EIS General Comments

	Chapter/ Appendix	Page/Line # or Section	Comment
1	General	General	The EIR/EIS relies on a large number of sometimes unclearly labeled and numbered EIR/EIS appendices, the BDCP and its appendices, and primary source documents to support its methods and results. This reliance on a suite of documents produced at different times appears to have caused inconsistencies and errors in the documents and makes it difficult to verify which methods were used for analyses. Additionally, chains of references from the EIR/EIS to its appendices and then to the BDCP and its appendices sometimes lead to dead ends that provide no relevant information. These issues should be addressed.
2	General	General	The EIR/EIS and BDCP appear to assume that natural community restoration will be 100 percent successful. This is highly optimistic given the current status of the science regarding this issue. Is there an assumption of a success rate for any of the restoration projects? If so, please provide that assumption and detailed support for it. If not, a discussion of the success rate among restoration projects for each of the natural communities is appropriate for providing the reader an understanding of the potential for restoration to be successful and reduce impacts.
3	General	General	There is no explicit analytical framework for synthesizing the individual effects conclusions for each covered fish into a statement describing the overall effect of BDCP on each covered fish making it difficult to confirm the validity of the impacts determinations. The presentation of the conclusions is arranged by tunnel construction related impacts and by conservation measure. A series of individual life stage analyses specific to each covered fish is nested within the construction/conservation measure organization. Nested within each life stage analysis are multiple analyses that are supported using different model runs. Interpretations of each model result and effect

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			conclusions follow the results. A summary table then lists the conclusion for each of the life stages. However, there is no explicit synthesis and explanation to support the overall CEQA and NEPA conclusions of the effect of BDCP on a particular covered fish. There is generally only a statement that all impacts considered in total were deemed to be a significant impact or a less than significant impact. This approach is described in the BDCP Effects analysis 5.2.7.10, Page 5.2-27, Line 36 as: "The net effects analysis assumes that **there is no overarching analytical framework** [emphasis added] that integrates all effects and derives a quantitative estimate of the overall effect of the BDCP. Instead, the BDCP effects analysis is designed to provide a transparent, systematic, and comprehensive process for combining results from quantitative and qualitative analyses. This process is described below. **The conclusions represent qualitative judgments** [emphasis added] of the effects of the BDCP that are grounded in the detailed quantitative and qualitative analyses in the appendices."
4	General	General	The use of model results sometimes appears to deviate from the stated limitations for their use (Section 4.3 Overview of Tools, Analytical Methods, and Applications, page 4-13) (See also EIR/EIS Appendix 5A-C5): "The models were used to compare and contrast the effects among various operating scenarios. The models incorporated a set of base assumptions; the assumptions were then modified to reflect the operations associated with each of the alternatives. The output of the models is used to show the comparative difference in the conditions among the different alternative scenarios. The model output does not predict absolute conditions in the future; rather, the output is intended to show what type of changes would occur. This type of model is described as comparative rather than predictive. Because of the comparative nature of these models, these results are best interpreted using various statistical measures such as long-term and year-type averages and probability of exceedance. Additionally, results from one model cannot be quantitatively compared to results from another model; therefore, comparisons between alternatives must be based on results that are derived from a consistent modeling approach." If the appropriate use of model results is as stated then the use of those results should be limited to the evaluation of relatively coarse metrics for purposes of ranking and

			selecting alternative scenarios. However, in the EIR/EIS the coarse scale results were incorporated into models with daily to hourly time steps to generate predictive results such as daily temperature thresholds. The appropriateness of these numerical comparisons should be clearly explained.
5	General	General	When multiple models are run to analyze the same impact, such as water temperature below Keswick, it is expected that the models will produce different results and that some may show negative impacts while others may not. This uncertainty in the analysis is proposed to be addressed through the adaptive management plan. However, the adaptive management plan is not fully developed and as such it is difficult to determine whether it will be adequate to address potential impacts as proposed.
6	General	General	For the purposes of informing potential changes to water rights and water quality approvals needed for construction of the project in the near term, the EIR/EIS should include an analysis of all of the ELT operational and construction related effects of the project. The LLT analysis point represents the end of the term of the requested take permits and while relevant for producing an estimate of take during the period of the permits may not adequately inform the Water Board's decision making processes.
7	General	General	There are 9 flow requirements and 6 of those have potential Real Time Operations (RTO) restrictions (BDCP Chapter 3.4.1.4.3): • OMR flows RTO • HORB RTO • Delta outflow/X2 • North Delta bypass flow RTO • E:I • Sac River at Rio Vista flow • DCC RTO • Suisun Marsh Salinity Gates • Fremont Weir RTO There are several factors that could be considered in the RTO process including: • Covered fish species risks • Actions to avoid adverse effects on covered fish • Allocations in year of action or future years

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			• End of water year storage • San Luis Reservoir low point • Delivery schedules for any SWP or CVP contractor • Actions that could be implemented throughout the year to recover any water supplies reduced by actions taken by the RTO team. • Obligations to meet the SWRCB water quality standards • Will take into account upstream operational constraints such as coldwater pool management, instream flow, and temperature requirements. As of the date of the Public Drafts of the BDCP and EIR/EIS no agreement had been reached concerning how RTOs will affect the BDCP flow related requirements. These requirements are relied upon in the EIR/EIS to reduce impacts to less than significant levels. However, it is unclear whether the RTOs will be adequate until they have been fully developed and reviewed, especially given that the considerations for RTOs may have mutually exclusive purposes.
8	General	General	The tables in EIR/EIS Appendix 5A, Section C should be clarified. The data in the tables is arranged in the format required to plot cumulative frequencies of monthly data but the implied cell by cell analysis of the data as presented in the tables appears to be in conflict with the appropriate use of the data described in EIR/EIS Appendix 5A.4.6, page A31. In contrast, the associated figures all present cumulative frequencies of long-term monthly data. This issue also appears elsewhere, including EIR/EIS Appendix 11C, page 11C-218, Table 1, Mean Monthly Flows (cfs) for Model Scenarios in the Sacramento River at Keswick. A table that appears to illustrates the appropriate use of the data is shown on page 11C-220, Table 2, Differences (Percent Differences) between pairs of Model Scenarios in the Sacramento River at Keswick, Year-Round which shows differences between alternatives across the long-term data and across water-year data.
9	General	General	As indicated in several comment letters on the BDCP environmental review process, for the Water Boards to consider any water quality and water rights applications or petitions for the BDCP, environmental documentation prepared for the project must disclose the significant effects of the proposed project and identify a