

To: Ron Ott, DEFT

From: Peter B. Rhoads, J. W. Buell

Subject: Suggested revisions to October 1, 1998 DEFT Evaluation of a revised Through-Delta Scenario

Please make the following changes in the DEFT Report (suggestions for alterations are in "quotations"; suggestions for additions are in **bold**; suggestions for removal are in ~~strikeout~~):

Page iii, first sentence and 4 enumerated items below, beginning "The were four primary conceptual features DEFT wanted...": Rephrase this new text addition as follows:

There were four primary conceptual features associated with the early implementation in the through-Delta scenario. All members of the DEFT supported the first two of these features:

1. **Improved survival... Clifton Court Forebay.**
2. **Abilities to close off...lower estuary.**

The second two features were supported by a majority of the DEFT:

3. **Further reductions in Spring exports to protect San Joaquin salmon and Delta smelt.**
4. **Increased winter-spring outflow or X2 to improve fish migration cues and estuary habitat.**

Regarding 3. above, a minority of the DEFT was not convinced that further reductions of exports in all Springs was needed to protect San Joaquin salmon and Delta smelt. A minority of the DEFT believes that there are windows of time during the Spring of some years in which further reductions are not needed to protect the subject species. Moreover, during some of these windows, additional water could be exported without harming San Joaquin salmon and Delta smelt.

Regarding 4. above, a minority of the DEFT did not support the need to increase Winter-Spring outflows or X2 in all years. The minority supports additional research, testing and experimentation to identify the causal mechanisms associated with outflow and X2, but does not believe that the data are compelling for increases in all years.

Page iii, please reword item "4" to read:

4. **Increased winter-spring outflow or X2 to improve fish migration cues and estuary habitat. (A minority of the DEFT does not believe that migration cues are improved by outflow, except extreme, unregulated outflow, or by a downstream shift in the location of X2. The minority feels that migration cues, especially for salmon, may be significantly impaired by a downstream shift in the average location of X2, as shown in the scientific literature and suggested by CWT recapture data.)**

Page iii, last sentence and following five bullets: Rephrase to read:

“DEFT also recommends...in Stage 1:”

- **Closure of the Delta Cross Channel from November through June except as needed to protect interior Delta water quality.**
- **Flexible operations allowing changes in inflow, conveyance pathways and export levels from present standards, in combination with an Environmental Water Account that would allow banking of water saved.**

A majority of the DEFT also recommends the following specific operational actions for evaluation in Stage 1:

- **Lower export-to-inflow ratios from late Fall through Spring and higher summer ratios than prescribed in the 1995 Water Quality Control Plan. (A minority of the DEFT believes that export to inflow ratios are a poor tool to protect fish and should be replaced by more protective and less restrictive real-time operating criteria. Furthermore, E/I ratios during some Fall through Spring windows in some years could be increased without harm to fish, while some windows of time during the early summer of some years would warrant decreasing E/I ratios during some years for fish protection.)**
- **VAMP Program expanded from 30-61 days of export limitation including all of April and May. (A minority of the DEFT believes that the VAMP is an experiment which has not yet been conducted and from which conclusions can not yet be drawn. See later discussion of goals.)**
- **February to June X2 location per 1962 level of development rather than prescribed in the 1995 Water Quality Control Plan. (A minority of the DEFT did not support the need to increase Winter-Spring outflows or X2 in all years. The minority supports additional aggressive research, testing and experimentation to identify the causal mechanisms for individual factors for which X2 is a surrogate and address these directly rather than indirectly through blanket X2 constraints. The minority does not believe that the data are sufficiently compelling for further increases in X2 constraints.)**

Page "1" (following Page iii, but preceding Page iv), for consistency, please reword the two "Harvest Actions":

Expand tagging and recovery programs (including very large constant fractional marking of hatchery production), and accelerate CWT tag recovery data analysis and development of DNA microsatellite markers for the following purposes:

- 1. To evaluate the feasibility of further structuring ocean fisheries to avoid impacts on weak stocks.**
- 2. To evaluate the feasibility of selective harvest of hatchery stocks, thereby protecting naturally reproducing stocks, including those which are listed or may be listed under ESA.**

Page "1" (following Page iii, but preceding Page iv), under "Habitat Actions", please reword item "2":

- 2. Create large areas of shallow tidal wetland habitat in the vicinity of Suisun Bay, Sherman Lake and Big Break, and elsewhere.**

Page "1" (following Page iii, but preceding Page iv), under "Habitat Actions", please reword item "4":

- 4. Restore and rehabilitate...along the North and South Forks of the Mokelumne River, including dead-end sloughs of the Eastern Delta, and reduce toxic inputs into these areas, to bolster migration and rearing of salmon from the Mokelumne and Cosumnes rivers.**

Page v, second paragraph, line 6, change "...attributed to reduce exports..." to "...attributed to reduced exports..."

Page v, second paragraph, fourth sentence, change to read: "...exposure to the screen at the **experimental** Hood diversion (Sacramento fish), or ~~detrimental flow conditions~~ **false attraction** resulting from outflow of..."

Page v, second paragraph, sixth sentence, change "...harvest-management actions, that are..." to "...harvest-management actions, which are..."

Page 3, Harvest Management Team: Identify with asterisks those contributors who were not on DEFT.

Page 4, paragraph 2 line 3, change the word "some" to "substantial".

Page 4, paragraph 3 and following. We have read the comments of Chadwick and his recommendations for changes in the text. Chadwick takes exception with the last sentence in this paragraph. Although we were present when the arguments were made, and the fact remains that these analyses were not performed, we do not wish to inflame and suggest that this sentence may be removed, if it is found to be offensive. With regard to the general comment that this paragraph

presents a "one-sided discussion", we point out that the *entire remainder of this report* is devoted to the majority point of view. To imply, as Chadwick does, that counterpoint belongs in this paragraph, is to invite counterpoint throughout the entire report. This would clearly not be a productive course of action. The minority perspective must be allowed to stand as it does here as a (hopefully) clear expression of exception to some of the approaches taken by the majority, and the rest of the report can stand on its own merit. It is apparent that the majority feels that average condition parameters are a "fundamentally" better reflection of estuarine ecology than real-time ("real-tide") hydrodynamics in a tidally driven estuary (a position with which we strongly disagree) and that position is made clear throughout the bulk of this document. The majority has not been given short shrift here. As for subsequent comments by Chadwick relating to the minority, he has no standing to represent the minority point of view, and we believe that our positions, as modified per this memorandum, need to remain as stated.

Page 5, paragraph 1 ("1a"), add to the end: "(...habitat conditions **with careful consideration to the interactions among these parameters.**)"

Page 5, paragraph 2 ("1b"), last sentence, change to read: "(...and their modes of action, **for which X2 is an intended surrogate**, and address them directly.)"

Page 5, paragraph 3 ("1c"), change the "Minority Hypothesis" to read:

The opening of Clifton Court Forebay gates is one of the most powerful influences of the Water Projects on the hydrodynamics of the south delta. Although details of the operation of the gates vary according to delta inflow, tidal conditions and pumping levels, the influence of this event is generally propagated outward, with effects diminishing with distance. Both modeling and UVM data indicate that the effects of gate openings are often felt as relatively small changes in peak ebb velocities in conveyance channels at distances greater than a few miles from the gates, although different modes of operation can produce different effects. Therefore, the most effective means to promote production...

Page 6, Paragraph 2 ("2b"), add to the end, "(...and will accelerate recovery of these stocks, **obviating any perceived need to prevent juvenile Sacramento River salmon from entering the delta.**)"

Page 6, paragraph 3 ("3a"), add to the end, "(...will significantly reduce the likelihood of population losses. **This practice will avoid the need for any net reduction in exports.**)"

Page 7, paragraph 1 ("3b"), add to the end, "(...would be a superior method to afford protection for these species **and would eliminate the perceived need to further constrain exports, possibly leading to a relaxation of existing constraints.**)"

Page 7, paragraph 4 ("5a"), change the "Minority Hypothesis" to read, "(...improved habitat in the central and south Delta, **with emphasis on the central Delta**, to not only...)"

Page 7, paragraph 5 ("5b"), we do not object to this paragraph, but we do not understand the

difference between it and "5a". If there is no difference, this paragraph is redundant.

Page 8, paragraph 1 ("5c"), change the end: "...in the ~~migrating migration~~ corridor."

Page 8, paragraph 5 ("7a"), change to read: "Review **and recommend appropriate changes in ocean harvest management to fisheries managers.**"

Page 8, paragraph 6 ("7b"), change to read: "Review **and recommend to fisheries managers possible** fishing regulatory actions..."

Page 10, second bullet, change the end to read: "(...may be positively related to fish transport and survival; **presently subject to debate for some species, especially salmon.**)"

Page 10, third bullet, change the end to read: "(...may also be related to foodweb productivity; **presently subject to debate.**)"

Page 10, next to last bullet:

Rephrase the parenthetical statement to read:

(Majority view: Exports and the export ratios have been shown to be directly related to fish abundance, distribution and losses at the south Delta pumping plants. Minority view: At times and for some species, exports may be a significant source of mortality. The importance of such mortality to populations of various fishes is subject to debate and should be the subject of rigorous scientific inquiry. The minority believes that export induced mortality is a minor source of mortality for most fish populations at most times.)

Page 10, last bullet:

Rephrase the parenthetical statement to read:

(Majority view: Delta outflow has been shown to be directly related to abundance of key fish and fish prey. Minority view: Delta outflow is related to the distribution and local abundances, and possibly total abundances, of some key fish and fish prey under some conditions. The mechanisms underpinning these relationships are not known.)

Recent e-mail traffic notwithstanding, we believe that the "Minority Hypotheses" in the "Objectives" section should remain in the final document, with no substantive changes except those requested here.