



WATERSHED HEADQUARTERS

January 6, 1997

CalFed Bay-Delta Program  
ATTN: Mr. Dick Daniel  
1416 Ninth Street  
Suite 1155  
Sacramento, CA 95814

Subject: Comments on CALFED Implementation Objectives and Targets

Dear Mr. Daniel:

This letter contains the East Bay Municipal Utility District's comments on the November 15, 1996 "CalFed Bay-Delta Program Ecosystem Restoration Program Plan Implementation Objectives and Targets". EBMUD staff have reviewed that document, and I have attended the November 1996 and January 3, 1997 technical workshops on the objectives and targets. EBMUD appreciates the opportunity to provide comments on the objectives and targets.

General Comments:

The Ecosystem Restoration Program needs to integrate conveyance options for a long term Bay Delta solution. The current CALFED process to establish implementation objectives and targets for a stand alone Ecosystem Restoration Program will make it difficult to formulate a comprehensive long term Bay Delta solution. All programs within CALFED should be thoroughly integrated and developed simultaneously, including the development of Habitat Conservation Plans in order to meet the challenges of restoring the ecosystem health while meeting water supply objectives. Without a comprehensive program, it will be difficult to establish baseline conditions for new projects and to measure success of restoring ecosystem health under a reconfigured Delta conveyance system. In addition, if a separate Ecosystem Restoration Program is used to identify projects for funding, these projects might become modified when the final Delta conveyance option is selected. This will add costs to the program since additional analysis and funding will be required. These are some of the reasons why the implementation goals and targets need to be consistent with the multipurpose objectives of the overall Bay Delta program.

It is also apparent that a number of the implementation objectives and targets are not consistent with the goals and objectives contained in a number of important river management plans. For example, multi-agency management plans being developed for both the Mokelumne and American Rivers include a set of specific flow schedules based upon extensive modeling, real time monitoring and technical evaluation ("modified Lower Mokelumne River Management Plan" for the FERC Principles of Agreement for the lower Mokelumne River, and Sacramento Water Forum F Pattern Flows for the lower American River). The CALFED implementation objectives and targets should be consistent with the specific objectives contained in these two

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multi-agency and inter-disciplinary river management plans or an explanation should be provided as to the instream impacts and water supply impacts of any inconsistencies.

Public Education and information should be added as key components to the CALFED Restoration Program. This is a unique opportunity to educate the public on the value of a healthy ecosystem and that a balanced approach can be developed that achieves biodiversity while protecting human consumption water needs. In developing implementation objectives and targets, it will be critically important that reasonably balanced goals are selected that will lead to an integrated restoration program.

Specific Comments:

Page 1 of 3 in Table 8. Hydrograph. The implementation objective and target to shift flows seasonally to better represent natural seasonal flow patterns should be eliminated. EBMUD has conducted an extensive monitoring program to determine the relationship between anadromous fish attraction and fall, winter, and spring pulse flows. For fall upstream migration, a consistent pattern does not exist supporting fall pulse flow attraction of salmon into the river. Pulse flows are more correlated with significant precipitation events and even that correlation is clouded by other variables. As EBMUD noted during the public workshop, it would create a substantial negative impact to attract salmon into the rivers prematurely before river temperatures are suitable which only takes place in mid to late November depending on the ambient weather conditions and the onset of the natural cooling cycle. Prior to this time elevated water temperatures over 13.5°C create impacts to eggs held within female salmon and to eggs deposited in redds. In addition, the attraction of large numbers of fall chinook salmon into the lower American River has created unnecessary public concern when the salmon encounter a ladder which is closed because water temperatures are unsuitable for fish culture. For salmon fry outmigration, late winter pulse flows have been problematical in causing fry to leave the river system before they are ready and forcing them to rear in less suitable habitat downstream where they will be more vulnerable to predation. For salmon smolt outmigration, studies on both the lower American and Mokelumne Rivers have shown that salmon smolts do not respond to pulse flows and instead leave when they are physiologically ready. In the lower Mokelumne River, spring pulse flows have the added detrimental effect of attracting striped bass predators to the base of Woodbridge Dam where they congregate to feed on juvenile salmonids which become disoriented after they are spilled over the top or through the spill bays of the dam. Because of these problems, it is strongly recommended that the reference to any pulse flows be eliminated from your targets.

Page 1 of 3 in Table 8. Hydrograph. The restoration of some semblance of the natural hydrograph by increasing base flows has questionable benefits since many, if not most, of the existing stocks of chinook salmon did not evolve under a natural hydrograph. To restore the historical run timing of anadromous fish stocks in the Central Valley below regulated rivers is an unrealistic goal and one that would place additional demands on existing limited water supplies and the need to maintain a coldwater pool for sustaining river ecosystems during critical periods.

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In addition, Corps of Engineer's flood control requirements further reduce the flexibility of river operators by requiring the evacuation of valuable storage before it can be used to provide a tangible benefit to aquatic resources.

Page 1 of 3 in Table 8. Natural hydraulic regime. Under targets, there is no mention of the flooding of Delta islands or breaching of levees as a realistic and cost effective way to create historic hydraulic conditions. Since the Delta is already highly modified, it is more realistic to have a goal that would increase the residence times of freshwater in the Delta than to have a more historic hydraulic regime.

Page 2 of 3. Geomorphology. Under restoration of the natural floodplain configurations, the reconfiguration of natural floodplains should not be restricted to just the margin of the Delta as listed under targets, but should be expanded to include the interior of the Delta where a natural floodplain could be created by flooding an island or breaching an interior levee.

Page 1 of 2. Table 9. Stream meander migration. Restoration of natural meander processes to more closely approximate historic conditions in major tributaries needs to be qualified with language such as that used in other sections of the report that references required levels of flood protection. In addition, the time frame for historic conditions needs to be identified.

Page 1 of 2. Table 9. Gravel transport and cleansing. Increasing the rate of gravel transport in rivers by restoring a more historic hydrograph pattern will not be desirable since a historic hydrograph below a mainstem dam will potentially reduce or eliminate spawning if it occurs early and it will create substantial scour of salmon redds when it occurs after spawning and during incubation. Attached is a December 1996 and January 1997 natural hydrograph for the Mokelumne River above Pardee Dam at Mokelumne Hill. As you can see, the natural hydrograph shows a peak flow of 5,000 cfs on December 22nd and a peak flow of 41,000 cfs on January 2nd. If these flows had been released below Camanche Dam, significantly reduced spawning success and greatly increased mortality would have occurred to the salmon eggs developing in 929 salmon redds constructed in the lower Mokelumne River (4,000,000 eggs).

Page 1 of 2. Table 9. Water Temperature. The establishment of desirable water temperatures during summer and fall base flow periods and during the spring low flow period in tributaries and mainstem rivers (and in mainstem rivers below major storage reservoirs from late spring through early fall) should not be identified as a target or implementation objective without first running a verified water supply model to determine appropriate levels of carryover storage to meet primary water supply and water quality needs. Such an analyses has already been performed for the lower Mokelumne River (FERC Principles of Agreement) and lower American Rivers (Water Forum F Pattern flows). CALFED staff are strongly encouraged to review these model results and develop implementation objectives and targets that are both reasonable and consistent with these flow patterns. EBMUD would be happy to provide these model results.

Page 4 of 8. Dams, reservoirs, and other manmade structures. The target to reduce habitat and

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opportunities for predators around instream structures will be compromised by the proposed CALFED target to provide spring pulse flows which do attract substantial numbers of predators to the base of dams.

Page 5 of 8. Water management. Management of flows to improve habitat conditions for all life stages of important fish species must be done in conjunction with a water supply and water quality plan to insure adequate levels of reservoir carryover storage for consumptive and non-consumptive beneficial uses and to provide a coldwater pool needed to provide water of a suitable temperature in the late summer and fall. The flow patterns provided in the lower Mokelumne River (FERC Principles of Agreement) and the lower American River (Water Forum F Pattern Flows) balance fishery needs with water supply and water quality needs, carryover storage requirements and storage limitations based on flood space reservations.

Page 5 of 8. Water management. The implementation objective to reduce extreme daily or seasonal flow fluctuations below mainstem reservoirs is desirable and clearly shows why the CALFED objective to restore a semblance of a more natural hydrograph needs to be dropped as a program objective.

Page 8 of 8. Artificial production of fish. The language under targets should be changed to avoid giving a totally negative connotation to hatchery programs. In an essay by Martin *et al* (1992) published in Fisheries (Vol 17, No. 1) by the American Fisheries Society, the authors point out that the debate over the compatibility of hatchery and wild stocks may have been taken too far to the point that "[fisheries professionals seem to be forming into often inflexible, polarized factions...]" the authors further state that "[such polarization can severely hamper development and implementation of effective restoration strategies.]" They caution that public confidence in the fisheries profession might be eroded and the question would be asked: "[if these professionals caused the problem, can they be trusted to solve it?]"

EBMUD strongly recommends replacing the language under targets and instead state the clear benefits of fish culture as a management tool which includes the development of improved genetic strains of fish to be more disease resistant (whirling disease) and as a tool that can be managed to supplement and build in-river escapement and ocean harvest levels to meet Bay Delta Ecosystem Restoration and CVPIA doubling goals.

Page 1 of 9. Table 12. Species or species group. For Sacramento and San Joaquin fall run chinook, the target of maintaining a long-term average cohort replacement rate of greater or equal to 1 needs to be deleted. Natural populations are cyclic in nature and populations will follow these cyclical trends which are often driven by ocean conditions. In addition, you stated during the November public workshop that habitat carrying capacity needs to be factored into any restoration goal. I would agree that habitat, as a limiting factor, can and should be targeted and dealt with effectively within the CALFED process with the proviso that carrying capacity as it may relate to increasing harvest without impacting a population is a separate issue.

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Thank you for providing the opportunity to comment on your preliminary working draft document. EBMUD strongly recommends that you make these changes to the CALFED goals and targets in order to utilize the available science and to advance on-going cooperative efforts to develop integrated ecosystem management plans. Please contact me at (510) 287-2021 if you have any questions or comments.

Very truly yours,

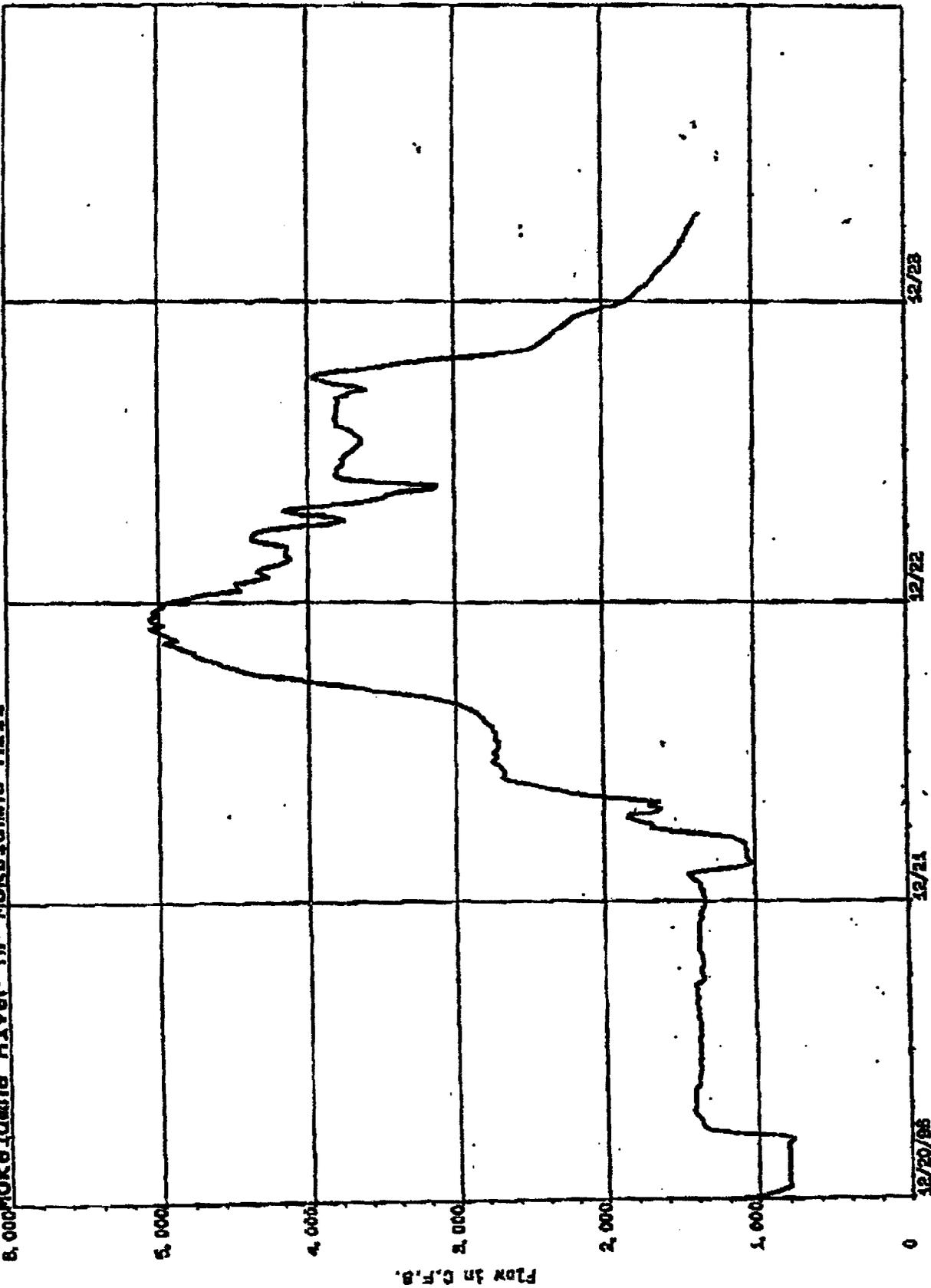


Joe Miyamoto  
Manager of Fisheries and Wildlife Services

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#1 DECEMBER 1996

8,000 Mokejurne River nr Mokejurne Hall



Flow in C.F.S.

