

The Bay Institute *of San Francisco*

COMMENTS OF
THE BAY INSTITUTE OF SAN FRANCISCO
ON THE DECEMBER 1994 DRAFT
WATER QUALITY CONTROL PLAN
FOR THE SAN FRANCISCO BAY/
SACRAMENTO-SAN JOAQUIN DELTA ESTUARY

Submitted to the State Water Resources Control Board by:

Gary Bobker, policy analyst, The Bay Institute of San
Francisco

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These comments are divided into two sections: 1) general comments on the purpose, adequacy and context of the December 1994 Draft Water Quality Control Plan (Draft WQCP), and 2) specific comments on, and suggested revisions to, the text of the Draft WQCP.

General comments

The Bay Institute of San Francisco supports the adoption by the State Water Resources Control Board (Board) of the Draft WQCP, with appropriate revisions, as new interim water quality standards for the Bay/Delta estuary, in effect for the next three years. Adoption of the water quality and operational requirements of this plan will, for the most part, provide significant improvements in habitat protection and export controls during the critical spawning and migration period from February through June, and also make available tools which, if aggressively pursued and implemented along with other important measures, may allow for increased protection during other times of the year. As a result, we believe that these interim standards, undertaken in conjunction with other state, federal and local initiatives, will help to halt the decline and stabilize population levels of the estuary's vital fish and wildlife resources, as called for by Governor Wilson in his charge to the Board in April 1992, and allow partial recovery of some of these resources.

Our support for adoption of the Draft WQCP is tempered by three caveats, however. First, the draft WQCP's export criteria, Delta Cross-Channel Gate closure restrictions, and other operational requirements fail to provide an adequate level of direct protection for Bay/Delta fish and wildlife resources, particularly Sacramento River spring-run chinook salmon, steelhead, and other anadromous fish species with populations at severely depressed levels, outside of the February-June period. Fish populations present in the lower San Joaquin River during the 31-day spring pulse flow period, including the declining San Joaquin fall chinook salmon run, may also be exposed to increased risk of entrainment from high levels of export. Our support for adoption of the Draft WQCP, therefore, is based on the premise that operational flexibility to allow variations in the percent of Delta inflow diverted, as permitted by the plan, will be adequately exercised in order to increase protection of Bay/Delta biological resources, particularly salmonid stocks at risks, to an acceptable level during the July-January period.

Second, in order for the Draft WQCP to succeed as a "component of a comprehensive management package for the protection of the estuary's

beneficial uses," as described in the text, it must be implemented in conjunction with other important state, federal and voluntary initiatives to increase protection of Bay/Delta biological resources. These include the prompt and efficient allocation of flows to meet the fish doubling goals of PL 102-575 by the U.S. Bureau of Reclamation; accelerated and complete funding and implementation of the so-called "Category III" program by water users and other parties; and a revived effort to implement the recommendations of the San Joaquin Valley Drainage Program. Our support for the Draft WQCP is premised on the direct relationship between this plan and the other crucial initiatives, as acknowledged in the December 15, 1994, Principles of Agreement. The Board should explicitly recognize the linkage between the adequacy of this plan and the successful implementation of these other elements of a comprehensive management package.

Third, neither the Draft WQCP nor the other initiatives required as part of the comprehensive management package completely discharge the Board's obligations under state and federal law to provide full protection of the beneficial uses of the estuary's waters. These obligations include, but are not limited to:

- o The mandate of the federal Clean Water Act, and state (1968) and federal (1975) antidegradation policies, to provide full protection for beneficial uses of the estuary's waters. (Protecting beneficial uses that existed at the time of the antidegradation benchmarks is not to be understood as limiting the level of protection of beneficial uses to those conditions that existed at the time of the antidegradation benchmarks. Water quality conditions of the late 1960s and early 1970s were characterized by severe habitat alteration and by significant population declines in some estuary-dependent species, and were therefore not sufficient to ensure the full protection of beneficial uses required under the Act (for more discussion of this issue, see the March 10, 1994, letter from The Bay Institute to the U.S. Environmental Protection Agency, Region IX, contained in the Bay/Delta Proceedings record). The new requirements of the Draft WQCP would in some instances at best replicate water quality conditions of the early 1970s, and in other cases could provide significantly less protection);
- o Rigorous implementation of the Board's public trust responsibilities to the biological resources of the Bay/Delta estuary, based on an explicit recognition of public trust values to be protected and resored, a thorough analysis of environmental, social and economic factors affecting public trust values, and an exhaustive examination of water management and supply alternatives for competing demands;
- o The commitment made by the Board in the current regulatory regime for the Bay/Delta, Decision 1485, to offset the impacts of the state and federal water projects on the beneficial uses of the estuary's waters by mitigating to pre-project levels, and the Racanelli decision's subsequent charge to the Board to view this commitment globally by including the impacts of all water users;

o The commitment made by the signatories to the December 15, 1994, including the California Environmental Protection Agency, to participate in a long-term process Bay/Delta solution finding process, which is necessary in part because of the acknowledged need to achieve further environmental protection and restoration of the estuary; and

o The need, strongly advocated by the scientific and resource management communities, to provide more comprehensive protections focusing on ecosystem structure and functions (building on the approach taken in the formulation of the Suisun Bay salinity/estuarine habitat water quality objectives, and based on community-level analyses of the Bay/Delta ecosystem), in order to truly safeguard the unique estuarine environment.

Despite the failure of the Draft WQCP to provide direct operational requirements that will adequately protect Bay/Delta resources during the July-January period and the continuing obligation of the Board to provide levels of protection for beneficial uses of the estuary beyond that provided in this plan, the declining biological resources of the Bay/Delta cannot afford any further delay in obtaining those significant improvements in environmental protection which are contained in the Draft WQCP. We accordingly support adoption of the Draft WQCP as an interim plan of protection for the next three years.

It should be noted that the Draft WQCP establishes the minimum acceptable level of interim protections under current conditions of storage and withdrawal capacity in the Bay/Delta system. Any significant changes in the ability to store or transport water diverted from the estuary will necessitate review and revision of this plan.

Specific comments

Page 1, first paragraph, fourth sentence:

It is highly unlikely that variations in natural conditions by themselves would have caused the fish and wildlife uses of the estuary to have experienced the severe degradation occurring over the last century and accelerated in recent years. On the contrary, estuary-dependent biological resources of the Bay/Delta ecosystem have evolved under the highly variable conditions characteristic of estuaries in general and the Bay/Delta system in particular. Human activities, both historical and current, are implicated as the primary causal factor in the recent decline of Bay/Delta fish and wildlife species.

Page 3, second paragraph, first sentence:

Although the Draft WQCP may provide "the component of a comprehensive management package ... that involves salinity ... and water project operations," it does not fully discharge the Board's obligations to regulate salinity and water project operations in order to fully protect beneficial uses of the estuary (see discussion in general comments).

Page 4, second paragraph, second sentence:

We strongly object to the inclusion of this statement in the Draft WQCP. In fact, this plan fulfills Governor Wilson's April 1992 charge to the Board to adopt interim standards that halt the decline of the estuary's biological resources, and allow for partial recovery of some of those resources. While an important step forward, this improved interim level of protection for the next three years does not automatically translate into the attainment "of the highest water quality which is reasonable." Attainment of the highest water quality reasonable should include more thoroughgoing implementation by the Board of its public trust responsibilities to the estuary's biological resources than contemplated in this plan. Such deliberations would include an explicit recognition of public trust values to be protected, a thorough analysis of environmental, social and economic factors affecting public trust values, and an exhaustive examination of water management and supply alternatives for competing demands on the estuary's waters.

More importantly, the considerations of balancing competing demands on the estuary's waters and accounting for economic and social factors cited in the text should play no role in the adoption of water quality objectives, as opposed to the designation of beneficial uses themselves or the apportionment of responsibility for compliance during water rights proceedings. Under the federal Clean Water Act authority delegated to the Board, water quality objectives (criteria) that protect beneficial (designated) uses must be based solely on scientific, as opposed to economic, social or technological, considerations. Certainly, the Board is not constrained by existing agreement over interim water quality protections for the next three years, as embodied in the December 15, 1994, Principles of Agreement, from proceeding in the long-term, in consultation with other agencies, affected parties and the general public, to discharge its obligation under state and federal law to adopt scientifically-based protections that fully protect beneficial uses and public trust resources.

Page 4, third paragraph

The Draft WQCP provides a more coordinated and comprehensive approach to protection of the estuary's beneficial uses than currently exists, and it incorporates regulatory requirements for management from an ecosystem perspective (in particular, the Suisun Bay salinity/estuarine habitat objectives). However, it is not accurate to describe the plan as a comprehensive ecosystem approach when a number of critical parameters regarding ecosystem structure and function remain unaddressed (as in the omission of more stringent export criteria to protect anadromous fish), uncertain, or unknown.

Pages 8-9, USEPA Approval of This Plan

We do not agree with the Board's interpretation of U.S. Environmental Protection Agency (US EPA) authority. USEPA may approve state standards regarding freshwater flow under its federal Clean Water Act Section 303 authority, or promulgate its own standards in the absence of approvable state standards. The Act recognizes that reduced freshwater flow can constitute water pollution and is therefore a water quality matter. Further, the legislative history of the Act and

subsequent court interpretations demonstrate that Section 101(g) was intended to preclude US EPA from issuing or approving standards that unnecessarily impair or abrogate the state's water rights permitting authority; this section was not intended, however, to bar US EPA from issuing or approving standards that regulate water quantity or any other parameters of water quality even if allocations of water are thus affected. Section 101 (g) and other relevant sections of the Act "preserve the authority of each state to allocate water quantity as between users; they do not limit the scope of water pollution controls that may be imposed on users who have obtained, pursuant to state law, a water allocation" (PUD. No. 1 of Jefferson County v. Washington Department of Ecology; also see: National Wildlife Federation v. Gorsuch; and Riverside Irrigation District v. Andrews).

Page 12, first paragraph, second sentence:

See comment on Page 4, second paragraph, second sentence.

Page 13, 4th paragraph, and Page 17 -- Delta outflow

The Draft WQCP improperly confuses Suisun Bay salinity objectives for the February-June period with Delta outflow objectives for the July-January period. This is a glaring error which must be corrected. The water quality objectives for the February-June period are salinity-based objectives. These objectives are intended to protect estuarine habitat by replicating salinity conditions in Suisun Bay, based on the significant correlations found between those conditions and the distribution and abundance of estuary-dependent aquatic organisms at all trophic levels. Those correlations are not based on outflow-abundance relationships (which is not to suggest that such relationships do not exist, only that the objectives are not based on such relationships). Further, the consensus of estuarine scientists is generally that salinity is a more accurate and dependable measure of estuarine habitat. Permitting such objectives to be met using either salinity or flow compliance measures in no way alters the salinity-based scientific justification for these objectives.

Accordingly, the February-June requirements should be listed as, most precisely, "Suisun Bay Salinity" objectives, or, alternatively, "Estuarine Habitat" objectives, separate from the July-January objectives for Delta outflow, and expressed as salinity values which can be met through either salinity or flow compliance measures. Likewise, the language of footnote 11 should be revised to reflect this change (see comments on Footnote 11 below).

Page 17 -- Export Limits: July-January

As noted earlier, we do not believe that limiting state and federal water project exports to 65 percent of Delta inflow through the July-January period provides adequate direct protection for the wide range of anadromous fish species present in the estuary during those months. Of particular concern are those species such as Sacramento River spring, late-fall and winter run chinook salmon, steelhead and other species that migrate through the estuary during the November-January period. These species, presently listed under the federal and state Endangered Species Acts or clearly meriting such listing, have declined

to extremely low population levels (see comments of The Bay Institute et. al. at the Board's October 19, 1994 workshop; and letter of The Bay Institute et. al. to John Caffrey, October 24, 1994). Therefore, the success of the Draft WQCP relies heavily on achieving mitigation for this shortcoming through the aggressive implementation of a number of crucial factors. These include: adequate exercise of operational flexibility to allow variations in the percent of Delta inflow diverted during periods of increased risk, as permitted by the plan; a program of implementation that aims to identify those measures necessary to meet the new narrative water quality objective for chinook salmon; prompt and efficient allocation of flows by the Bureau to meet its obligation to double anadromous fish populations, as called for by PL 102-575; expeditious development of a high-priority monitoring program component designed to increase the ability to detect and track salmon migration; and other measures targeted at increasing protections for anadromous species at risk.

Page 18 -- Table 3, Footnote 11

Based on the discussion of estuarine habitat, Suisun Bay salinity and Delta outflow objectives above, the text of Footnote 11 should be separated from the July-January Delta outflow requirements and instead appended to an "Suisun Bay salinity" or "estuarine habitat" objective for the period February 1 through June 30. The language of Footnote 11 should be revised to read:

"To protect Suisun Bay salinity/estuarine habitat, the salinity at the confluence of the Sacramento and San Joaquin Rivers (Collinsville station C2) shall be 2 parts per thousand (2.64 mmhos/cm) or less, measured as either the daily or 14-day running average electrical conductivity. This requirement is also met if the minimum daily Delta outflow for this period is 7,100 cfs, calculated as a 3-day running average, subject to the following requirements below [insert starting gate language, below] ... Additional estuarine habitat objectives are contained in Table A on page 23."

A "starting gate" requirement is also needed to ensure that initial low-salinity habitat conditions are being maintained through alternative outflow measures. The following language should be inserted after the second sentence of footnote 11:

"The salinity at the confluence of the Sacramento and San Joaquin Rivers (Collinsville station C2) shall be 2 parts per thousand (2.64 mmhos/cm) or less, measured as a 14-day running average, for at least one day during the period February 1 through February 14. If the January Eight River Index is less than 650 TAF, this requirement may also be met by a minimum daily Delta 3-day average outflow of 7,100 cfs. If the January Eight River Index is between 650 TAF and 800 TAF, the CALFED operations coordination group may determine that the starting gate requirement may also be met by a minimum daily Delta 3-day average outflow of 7,100 cfs."

Adoption of this requirement fulfills the purpose of the final sentence of Part 1, Section 4, of the December 15, 1994, Principles of

Agreement. We will continue to work with agency staff and interested parties on minor refinements of this requirements.

Page 19 -- Table 3, Footnote 19

Considering the important role that will be played by the operations group in allowing variations in the percent of Delta inflow diverted and in other areas that affect Bay/Delta biological resources, the structure of this group, the process by which variations are agreed to and the nature of the dispute resolution process should be clarified before final adoption of this plan's export criteria.

Page 19 -- Table 3, Footnote 21

As noted earlier, we are concerned that fish populations present in the lower San Joaquin River during the 31-day spring pulse flow period, including the declining San Joaquin fall chinook salmon run, may also be exposed to increased risk of entrainment from the permitted export of 100 percent of Vernalis flows (see comments of The Bay Institute et. al. at the Board's October 19, 1994 workshop; and letter of The Bay Institute et. al. to John Caffrey, October 24, 1994). The success of the Draft WQCP in protecting San Joaquin River fishery resources during this period depends largely on the adequate exercise of operational flexibility to allow variations in the percent of Delta inflow diverted, as allowed by the plan, and on an effective water acquisition program by the Bureau and other parties to augment non-exportable transport flows (see comments on "Program of Implementation" below).

Page 18 -- Table 3, Footnote 23

As noted earlier, we do not believe that limiting Delta Cross Channel Gate closure to 45 days provides adequate direct protection for severely depleted populations of Sacramento River spring, late-fall and winter run chinook salmon, steelhead, and other anadromous fish species migrating through the estuary during the November-January period (see comments of The Bay Institute et. al. at the Board's October 19, 1994 workshop; and letter of The Bay Institute et. al. to John Caffrey, October 24, 1994). The success of the Draft WQCP relies, therefore, on mitigating this shortcoming through aggressive implementation of the following measures: adequate exercise of operational flexibility to allow variations in the percent of Delta inflow diverted, as permitted by the plan; a program of implementation that aims to identify those measures necessary to meet the new narrative water quality objective for chinook salmon; prompt and efficient allocation of flows by the Bureau to meet its obligation to double anadromous fish populations, as called for by PL 102-575; expeditious development of a high-priority monitoring program component designed to increase the ability to detect and track salmon migration; and other measures targeted at increasing protections for anadromous species at risk.

Page 22 -- Percent Inflow Diverted

As proposed, the formula for Percent Inflow Diverted does not account for in-Delta diversions for consumptive use. Failure to include in-Delta consumption in the values used to represent Delta inflow will

allow for much higher total depletions of Delta inflow than reflected in the permitted percentages of Delta inflow diverted, and significantly increase the risk of in-Delta mortality and entrainment for anadromous and other estuarine-dependent species. The Board should work with other agencies and interested to develop more sensitive export criteria formulae which include in-Delta withdrawals and other important factors.

Under the proposed export criteria, adequate exercise of operational flexibility by the operations coordination group may be necessary to avoid high levels of total Delta inflow depletion during peak periods of in-Delta withdrawals. Efforts to acquire Delta lands, screen diversions, change irrigation practices and other measures undertaken through the Category III program will also be crucial in reducing impacts of in-Delta withdrawals

Page 24 -- Chapter IV (Program of Implementation)

The Board should add the following sentence, or similar language, to the first paragraph of this section:

"The success of this plan in protecting beneficial uses of the estuary as part of a comprehensive management package depends on the adequate and timely implementation of the measures described in this chapter."

Page 24 -- Implementation Measures Within the SWRCB's Authority

The Board should also insert an additional subsection in Section A (Implementation Measures Within the SWRCB's Authority) of this chapter, specifically, "Implementation of Narrative Water Quality Objectives" (A.3). This section should discuss those actions the Board will take to implement the narrative water quality objectives contained in the Draft WQCP. In adopting a narrative biological criterion, the Board "should also indicate how its application is to be accomplished. The determination of text (how the narrative biological criteria are written) and measurement procedures (how the criteria will be applied) is up to the individual states in consultation with EPA" (U.S. Environmental Protection Agency, Procedures for Initiating Narrative Biological Criteria, October 1992). Such data gathering and measurement protocols provide "an appropriate interim step for the eventual development of numeric biological criteria" (ibid).

Salmon (A.3.a): The extensive hearing record before the Board clearly indicates that the numeric water quality and operational requirements of the Draft WQCP will not achieve the narrative water quality objective of doubling chinook salmon production over the 1967-91 base period (see comments of The Bay Institute et. al. at the Board's October 19, 1994 workshop; letter of The Bay Institute et. al. to John Caffrey, October 24, 1994; and the numerous exhibits presented by the U.S. Fish and Wildlife Service). Indeed, as noted above, absent appropriate use of operational flexibility the plan's operational requirements do not provide adequate direct protection in the November-January period for salmon stocks at their current levels of production. The Board should therefore commit to undertake those actions necessary to ensure that this objective is met in a timely manner, including:

- 1) timely completion of water rights hearings to adopt improved instream flow requirements for chinook salmon migration on all tributaries of the Bay/Delta estuary; and
- 2) formulation, in conjunction with other state and federal agencies and the public, of numeric water quality objectives to protect chinook salmon outmigration and ensure doubling of chinook salmon production, such as the use of a salmon smolt survival index or similar measures, for future adoption by the Board.

Language to this effect should be inserted at this point in the Draft WQCP. The Board should also emphasize the importance in helping to achieve the narrative water quality objective for salmon protection of the prompt and efficient allocation of flows to meet the fish doubling goals of PL 102-575 by the Bureau of Reclamation.

Suisun Marsh (A.3.b): The objectives for Suisun Marsh in the draft WQCP include maintenance of water quality conditions to prevent loss of habitat and biodiversity in the unmanaged brackish tidal portions of Suisun Marsh and Suisun Bay, as well as numeric objectives for the managed nontidal portions of the Marsh. A program to analyze brackish tidal marsh habitat and biodiversity requirements and identify improved water quality regulations, including numeric objectives, and other measures is urgently needed if this narrative objective is to be achieved.

It is our belief that that the development of numeric criteria and other measures that reflect changes in natural hydrology, unlike the numeric objectives for the managed non-tidal portions of the Marsh proposed in the Draft WQCP, will be of particular value in securing full protection for Suisun Marsh and Suisun Bay.

Additionally, in the past the Board has refused to adopt the SMPA deficiency standards for the managed wetlands because of concerns regarding potential adverse impacts on rare and endangered species of the Marsh. The adoption of the SMPA deficiency standards for the Western Marsh proposed in the Draft WQCP should therefore be undertaken only with the proviso that an ecological assessment of the impacts of the Draft WQCP's new requirements be conducted and completed in a timely manner.

The final paragraph of Chapter IV, B.2.n (page 38), should be detached from that section and placed under the suggested "Implementation of Narrative Water Quality Objectives" (Chapter IV, A.3.b), with the following revisions:

"In order to ensure that the narrative protections for brackish tidal marshes contained in this plan are achieved, and to assess the impacts on Suisun Marsh biological resources of the Western Marsh deficiency period standards and other requirements of this plan, the Department of Water Resources shall convene a Suisun Marsh Ecological Work Group ... This group will ... (2) assess the effects ... of the water quality objectives in this plan, including Western Marsh deficiency period standards ... (7) identify specific measures to implement the narrative objective

The following sentence, or similar language, should be added to the end of the second paragraph under "2. Recommendations to Improve Habitat Conditions":

"The ability of this plan to meet its objectives as one component of a comprehensive management package depends in large part on the success of water users and state and federal agencies in assigning priorities and securing funding for these activities by the time this plan is adopted in final form."

Page 38 -- Suisun Marsh Ecological Work Group

See comments on "Program of Implementation" (A.3.b, Suisun Marsh), above.

Page 38: -- Additional Recommendations to Improve Habitat Conditions

The December 15 principles of agreement identified provision of adequate transport for San Joaquin River fisheries during the spring pulse flow as a continuing problem. The Board should therefore include an additional recommendation:

(c) Augment transport flows with water acquisitions

The Bureau of Reclamation, other agencies and water user groups should acquire water through purchases from willing sellers to augment flows on the San Joaquin River during the 31-day pulse period in April and May, in order to help ensure adequate transport of anadromous and other estuarine-dependent species. These augmentation flows should be considered as increments above the requirements for San Joaquin River flows during the pulse period contained in this plan, and therefore not subject to the 100 percent export criterion during this period.

The exemption of augmentation flows from the 100 percent export criterion is consistent with the intent of the signatories to the December 15, 1994, Principles of Agreement.

Page 38 -- Monitoring Program

While all the details of a comprehensive monitoring and research program will take time to develop in a thorough and rational manner, it is appropriate that the Board give guidance to that effort. The Board has included a special studies element in addition to routine water quality and biological monitoring activities. We believe that two program components are critical to making special studies a meaningful element of a comprehensive monitoring and research program.

1. In the short term, priority programs to enhance monitoring of special status species are essential. The ability to enhance protection of those species which are not adequately safeguarded by the direct operational requirements of the Draft WQCP, particularly anadromous fish species migrating through the estuary during the November-January period (including spring and late fall run chinook salmon and steelhead), will rely on improvements in the ability to monitor distribution and migration of these species

by the direct operational requirements of the Draft WQCP, particularly anadromous fish species migrating through the estuary during the November-January period (including spring and late fall run chinook salmon and steelhead), will rely on improvements in the ability to monitor distribution and migration of these species through the estuary. Current monitoring efforts are not able to provide this information with any surety of success. We continue to believe, however, that more stringent export criteria and other operational requirements are more effective at protecting these special status species than primarily relying on realtime monitoring programs of unknown utility.

2. In the long term, estuarine research programs to increase understanding of the Bay/Delta ecosystem must be drastically expanded. Previous regulatory regimes and monitoring programs have focused on protection of selected fish and wildlife species, rather than preservation and restoration of natural ecosystem structure and function. Adoption of the Suisun Bay salinity/estuarine habitat objectives in the Draft WQCP, which are based on the significant correlations between salinity conditions in Suisun Bay and the distribution and abundance of aquatic organisms at all trophic levels, signals a shift to management from the more ecosystem-oriented approach. While measures targeted at selected fish and wildlife species will continue to be of great importance in assuring adequate protection of the estuary's beneficial uses, future research and monitoring efforts must pay greater attention to natural ecosystem structure and function, including species diversity and richness, productivity, nutrient cycling and other community parameters. This is especially critical because monitoring results alone are unlikely to unequivocally demonstrate the effects of a given regulatory or management regime. A more sound approach is to attempt to increase our understanding of the complex cause-effect relationships at play in the estuary, thereby increasing our ability to assess changes in those relationships, and subsequently to reformulate protective criteria based on those relationships.

We will continue to work with the Interagency Ecological Program, the San Francisco Estuary Institute and other parties to help prepare the detailed elements of a comprehensive monitoring and research program.