



# RESPONSE TO COMMENTS

## APPENDIX 2

to

### Water Quality Control Plan for the San Francisco Bay / Sacramento-San Joaquin Delta Estuary

95-1WR

MAY 1995

STATE WATER RESOURCES CONTROL BOARD  
CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY



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## LIST OF ABBREVIATIONS

cfs	cubic feet per second
F	Fahrenheit
MAF	million acre-feet
mmhos/cm	millimhos per centimeter
mS/cm	milliSiemens per centimeter
TAF	thousand acre-feet
POC	particulate organic carbon

## LIST OF ACRONYMS

BCDC	San Francisco Bay Conservation and Development Commission
CCWD	Contra Costa Water District
CDWA	Central Delta Water Agency
CEQA	California Environmental Quality Act
CUWA	California Urban Water Agencies
CVP	Central Valley Project
CVPIA	Central Valley Project Improvement Act
DFG	Department of Fish and Game
DWR	Department of Water Resources
EIR	Environmental Impact Report
ESA	Endangered Species Act
ETAW	evapotranspiration of applied water
FED	Federal Ecosystem Directorate
FERC	Federal Energy Regulatory Commission
IEP	Interagency Ecological Program
MWD	Metropolitan Water District
NEPA	National Environmental Policy Act
NID	Nevada Irrigation District
NMFS	National Marine Fisheries Service
PG&E	Pacific Gas and Electric
RWQCB	Regional Water Quality Control Board
SDWA	South Delta Water Agency
SJTA	San Joaquin Tributary Agencies
SJVDP	San Joaquin Valley Drainage Program
SMPA	Suisun Marsh Preservation Agreement
SRCD	Suisun Resource Conservation District
SWP	State Water Project
SWRCB	State Water Resources Control Board
USBR	U. S. Bureau of Reclamation
USEPA	U. S. Environmental Protection Agency
USFWS	U. S. Fish and Wildlife Service

**LIST OF AGENCIES OR INDIVIDUALS SUBMITTING COMMENTS  
ON THE DRAFT PLAN**

<b>Agency or Individual Name</b>	<b>Identifier</b>	<b>Date</b>
Bay Fishermen's Coalition	BFC-1	transcript
Bartkiewicz, Kronick, and Shanahan	BART-1	10 Mar 95
Bay Institute of San Francisco	BISF-1	22 Feb 95
Bay Institute of San Francisco	BISF-2	7 Mar 95
Bay Institute of San Francisco	BISF-3	10 Mar 95
California Waterfowl Association	CWA-1	3 Mar 95
Central Delta Water Agency	CDWA-1	23 Feb 95
City of Stockton	STOC-1	23 Feb 95
Club Fed	CFED-1	23 Feb 95
Contra Costa Water District	CCWD-1	10 Feb 95
Delta Protection Commission	DPC-1	17 Mar 95
Delta Tributary Agencies Committee	DTAC-1	23 Feb 95
Delta Wetlands	DELTAWET-1	23 Feb 95
Delta Wetlands	DELTAWET-2	27 Feb 95
Department of Water Resources	DWR-1	23 Feb 95
Department of Water Resources	DWR-2	10 Mar 95
Gallery, Daniel F.	GALLERY-1	8 Mar 95
Interagency Ecological Program	IEP-1	transcript
Joint California Water Users	JCWU-1	23 Feb 95
Joint California Water Users	JCWU-2	10 Mar 95
League of Women Voters of California	LWV-1	8 Mar 95
Mountain Counties Water Resources Association	MCWRA-1	23 Feb 95
Natural Heritage Institute	NHI-1	23 Feb 95
Natural Heritage Institute	NHI-2	3 Mar 95
Nevada Irrigation District	NID-1	21 Feb 95
Nevada Irrigation District	NID-2	7 Mar 95
New Hogan Lake Conservancy	NHLC-1	28 Feb 95
Northern California Power Agency	NCPA-1	10 Mar 95
Northern California Water Association	NCWA-1	23 Feb 95
Pacific Coast Federation of Fisherman Association	PCFFA-1	23 Feb 95
Porgans, Patrick J.	PORGANS-1	23 Feb 95
Porgans, Patrick J.	PORGANS-2	7 Mar 95
San Francisco Bay Conservation & Development Commission	BCDC-1	23 Feb 95
San Francisco Estuary Institute	SFEI-1	23 Feb 95
San Francisco Public Utilities Commission	SFPUC-1	23 Feb 95
San Francisco Public Utilities Commission	SFPUC-2	9 Mar 95
San Joaquin County	SJC-1	23 Feb 95
San Joaquin Tributary Agencies	SJTA-1	23 Feb 95
San Joaquin Tributary Agencies	SJTA-2	10 Mar 95
Santa Clara Valley Water District	SCVWD-1	23 Feb 95
Save The American River Association	SARA-1	6 Mar 95
Smiland & Khachigian	WWD AREA1-1	23 Feb 95
Smiland & Khachigian	WWD AREA1-2	10 Mar 95
South Delta Water Agency	SDWA-1	23 Feb 95
South Delta Water Agency	SDWA-2	9 Mar 95
State Water Contractors	SWC-1	23 Feb 95
State Water Resources Control Board	SWRCB-1	28 Feb 95
Stockton East Water District	SEWD-1	23 Feb 95
Stockton East Water District	SEWD-2	10 Mar 95
Suisun Resource Conservation District	SRCD-1	3 Mar 95
U. S. Bureau of Reclamation	USBR-1	10 Mar 95
Western Area Power Administration	WAPA-1	3 Mar 95
Williams, John G.	WILLIAMS-1	25 Jan 95
Woodbridge Irrigation District	WID-1	23 Feb 95

**RESPONSE TO COMMENTS**  
**on the**  
**Water Quality Control Plan for the**  
**San Francisco Bay/Sacramento-San Joaquin Delta Estuary**

**PREFACE**

This report responds to comments received on the draft Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (draft plan) and the draft Environmental Report, appendix to the draft plan, (draft environmental report). The draft plan was released for public comment on December 15, 1994, and the draft environmental report was released on January 23, 1995. A public hearing was held on February 23, 1995 to receive comments and recommendations regarding the draft plan. The hearing record was closed on March 10, 1995. Comments were received by 41 parties.

This report is divided into three parts. Part I responds to comments on the draft plan; Part II responds to comments on the draft environmental report; Part III responds to miscellaneous comments. Within the first two parts, the comments are organized in the same order as the chapters and sections in the draft plan and the draft report. Chapter and section headings in this document correspond to the respective headings in the draft plan and the draft report. Section headings are not included if no comments were received on that section. If a comment applies to both the draft plan and the draft report, the comment appears in Part I.

## PART I. COMMENTS ON THE DRAFT PLAN

### CHAPTER I. INTRODUCTION

Comment: [Page 1, para. 1] 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. (BISF-1)

Response: The first paragraph of the draft plan has been clarified to highlight current and historical human activities as the primary factor in the degradation of fish and wildlife uses.

Comment: [Page 1, para. 3, last sentence] The Department of Water Resources (DWR) believes that the following statement on the first page of the draft plan must be an erratum: "Full implementation of this plan by the State Water Resources Control Board (SWRCB) will occur through the adoption of a water rights decision". The program of implementation in the draft plan properly identifies implementation through waste discharge permits and through recommended actions by other agencies, in addition to water rights actions. (DWR-1)

Response: The statement has been corrected in the plan.

#### A. Purpose and Scope

Comment: The following comments concern development of long-term standards.

1. Although the draft plan may provide "the component of a comprehensive management package...that regulates salinity...and water project operations," it does not fully discharge the SWRCB's obligations to regulate salinity and water project operations in order to fully protect beneficial uses of the Estuary. (BISF-1)
2. The plan does not provide the long-term standards needed to fully protect Delta-dependent species and to restore the Estuary. (LWV-1)
3. Under the Principles for Agreement, the plan is intended to provide interim protection to the public trust values of the Estuary, pending the outcome of a planning process for long-term Delta solutions. The interim arrangement is intended to remain in place for only three years. The long-term planning process is expected to yield longer-term standards and other measures that would provide a higher level of protection. The plan should recognize the interim nature of the agreement and the commitment to

promulgation of long-term standards fully protective of Delta dependent species. Whereas the interim protections are predicated on the current facilities and physical configuration of the Delta, the long-term protections will presumably reflect more optimal facilities and water management institutions. (NHI-1)

Response: The plan discusses the fact that the Principles for Agreement extends for only three years and the agreement provides for development of a long-term solution to the fish and wildlife, water supply reliability, flood control, and water quality problems in the Estuary. The SWRCB agrees that the objectives in the plan are predicated on existing facilities, and the plan will be updated, if necessary, to protect beneficial uses or if the conditions under which the plan was developed change. There is a commitment in the plan to review the plan every three years to ensure that it continues to adequately protect beneficial uses.

Comment: The plan should acknowledge that the flow, water quality, and operational measures contained therein are not intended to preclude the implementation of other supplementary flow, water quality, and operational measures for the Bay-Delta over the interim period through other measures. Other actions that will provide environmental improvements beyond the plan and the Principles for Agreement include: (1) the anadromous fish doubling plan under the Central Valley Project Improvement Act (CVPIA), and other flow related enhancements; (2) environmental water purchases under the CVPIA and other authorities; and (3) measures taken by regulatory and management agencies to avoid the need to list spring-run salmon or other species as threatened or endangered. (NHI-1)

Response: A statement has been added to section A of Chapter I of the plan to clarify that this plan, in conjunction with RWQCB plans, other SWRCB plans and policies, and programs under the jurisdiction of other agencies, such as the CVPIA, provides a coordinated and comprehensive approach to Delta protection. The importance of the CVPIA efforts to implement measures to achieve its anadromous fish doubling objective is emphasized in section B.2 of Chapter IV.

Comment: [Page 3, para. 2, 1st sentence] In order for the draft plan 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, such as the CVPIA, the recommendations to other agencies in the draft plan, and the San Joaquin Valley Drainage Program (SJVDP). The SWRCB should explicitly recognize the linkage between the adequacy of this plan and the successful implementation of these other elements of a comprehensive management package. (BISF-1, LWW-1)

Response: The plan emphasizes the importance of the other initiatives in Chapter I and Chapter IV.

Comment: [Page 4, 1st full para.] We strongly object to the following statement in the draft plan: "Consistent with the intent of the State Legislature, as expressed in Water Code section 13000, in the Porter-Cologne Water Quality Control Act, these objectives and recommendations are intended to attain the goal of the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible."

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. More importantly, the consideration 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 SWRCB, water quality objectives that protect beneficial uses must be based solely on scientific, as opposed to economic, social, or technological, considerations. (BISF-1)

Response: The SWRCB will adopt the draft plan only if it believes that the plan is consistent with State and federal law. The statement is an expression of that belief, and has not been amended.

Federal law requires consideration of economic factors when designating beneficial uses; State law requires consideration of economic factors when setting water quality objectives. The plan must accommodate both approaches. Also, the U. S. Environmental Protection Agency (USEPA) has approved the State water quality program as meeting the requirements of federal law.

As discussed elsewhere in these responses, the SWRCB does not believe that flow requirements or operational restrictions are subject to the federal requirements that water quality objectives must be based solely on scientific considerations. In any event, as described in Chapter III of the plan, the available evidence indicates that higher flows and lower exports provide greater protection for the bulk of estuarine resources up to the limit of unimpaired conditions. There is no definable threshold, short of elimination of human influences throughout the watershed, above which aquatic resources are protected and below which they are not protected. Therefore, the objectives must be based on a subjective determination of the reasonable needs of all of the consumptive and nonconsumptive demands on the waters of the Estuary.

Comment: [Page 4] The SWRCB should insert in the final version of the draft plan and in the adoption resolution protective language substantially similar to language recommended by the commenter. The purpose of the recommended language is to provide assurance that the plan does not modify existing water rights, so that claims regarding water right impacts may be filed after the water rights proceeding rather than filing them upon adoption of this plan. (WWD AREA1-2)

Response: A paragraph similar to the recommended paragraph, with changes to provide further explanation and to conform the language to that used in this proceeding, has been added to the plan.

Comment: The following comments concern the characterization of the plan as an ecosystem approach.

1. Although the draft plan endorses the concept of an ecosystem approach, it does not maximize the opportunities it has created to achieve this. Such an approach would be aimed at developing an understanding of the complete estuarine ecosystem and the place freshwater flows play in its functioning. It should establish goals and objectives, and develop a research program intended to address future management goals. An inevitable result of an ecosystem approach would be to place a greater emphasis on the restoration of riparian and estuarine wetland habitats instead of its present role in the draft plan as just one of 13 elements. (BCDC-1)
2. The draft plan 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. 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, uncertain, or unknown. (BISF-1)
3. We believe that the proposed plan is not ecosystem management, but rather water management in the hopes of protecting two species on the federal Endangered Species Act (ESA) list. (SARA-1)

Response: The plan was crafted to address multiple factors affecting fish and wildlife and to provide benefits to multiple species; hence, it is referred to as a comprehensive ecosystem approach. The SWRCB believes that, regardless of the level of detail incorporated into the plan, it would always be possible to develop a more complete understanding of the Estuary, but this plan is a reasonable step at this time.

The restoration of riparian and estuarine wetland habitats is critically important. However, the SWRCB believes that all of the recommendations are important, and it has elected not to prioritize the recommendations.

### **C. Legal Authority**

Comment: [Page 6] With respect to beneficial uses, the plan should refer only to establishment, and not to designation of beneficial uses. (DWR-1)

Response: This change has been made.

Comment: The following comments concern legal authority to adopt the objectives.

1. The SWRCB does not have authority to adopt all of the proposed objectives as water quality objectives under the Porter-Cologne Act. The 1991 Water Quality Control Plan for Salinity for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (1991 Bay-Delta Plan) recognized that flow requirements cannot be adopted as water quality objectives. (JCWU-1, DWR-1, WWD AREA1-2)
2. A list of diverse legal authorities should be included instead of the current discussion. (JCWU-1)
3. The plan should be based on the full range of the SWRCB's water management authorities under California law, including but not limited to the public trust doctrine and the reasonable use doctrine. (NHI-1)
4. The SWRCB cannot rely on Water Code sections 1242.5, 1243.5, 1257, and 1258 to support the inclusion of flow and operational provisions in a water quality control plan. There exists no statutory authority for a "Coordinated Estuarine Protection Plan" -- as proposed by the Joint California Water Users in their Feb. 22, 1995 comment -- that would rely on "multiple legal authorities", including water right statutes, to establish flow and operational objectives for the Delta. (WWD AREA1-2)

Response: Modifications are included in the plan to list the laws whose purposes will be supported by the objectives in the plan and to more fully explain the authority under which the SWRCB will adopt the plan including the objectives therein. The plan, when implemented, will carry out the requirements of the public trust doctrine, the reasonable use doctrine, and other laws as well as meeting the Porter-Cologne Act. The plan does not rely on laws other than the Porter-Cologne Act as authority for the SWRCB to adopt flow and operational objectives. For the reasons stated in the plan, flow and operational requirements can be adopted as water quality objectives under the Porter-Cologne Act, but the USEPA has no authority to replace these objectives with federal water quality standards for flow and operations. The 1978 Water Quality Control Plan for the Sacramento-San Joaquin Delta and Suisun Marsh (1978 Delta Plan) adopted flow and operational requirements as water quality objectives, and the 1991 Bay-Delta Plan did not amend or repeal them. The 1991 Bay-Delta Plan pointed out that the SWRCB had the option of revising the flow and operational objectives adopted in 1978 at a later time. (See the 1991 Bay-Delta Plan, footnote 1, page 1-2.)

One of the commenters in this group takes language from a response to a comment on the 1991 Bay-Delta Plan to support the view that the SWRCB cannot adopt flow requirements as water quality objectives, but the quoted language is only part of the response and is out of context. The response addressed a comment saying that the SWRCB was obliged to include flow objectives in the 1991 Bay-Delta Plan.

Comment: Because the draft plan would set flow and diversion mandates, it would effectively adjudicate and result in the impairment of water rights without any of the due process and other procedural protections contained in the water right statutes and regulations. The proceeding on the plan does not comply with 23 Cal. Code Regulations section 764, which allows a combined hearing on water quality and water rights if the SWRCB uses the water rights procedures. (WWD AREA1-2)

Response: The plan establishes new objectives and amends existing objectives; these changes will not be implemented until after a water right proceeding has been conducted and a water right decision issued. The plan does not determine which water right holders will have responsibility for meeting the objectives, nor does it mandate any new compliance at this time. Since the SWRCB has not combined the proceeding on water quality with the future water right proceeding, section 764 does not apply.

Comment: The SWRCB should maintain a distinction between water quality and water rights planning to preserve state primacy over the management and allocation of the State's water resources. The SWRCB should ensure that the federal government cannot assert a claim of jurisdiction over water allocation issues. (JCWU-1, DWR-1)

Response: The plan does not allocate quantities of water and it does not prescribe a water allocation scheme. Further explanation has been added in the plan regarding the limits of USEPA authority with respect to water allocation issues. While the State may regulate water uses to implement water quality protections, the Clean Water Act does not give the USEPA authority to interfere with state water allocations.

Comment: The plan should emphasize that its adoption complies with the California Environmental Quality Act (CEQA), even though it includes provisions regarding flow and project operations. (JCWU-1, DWR-1)

Response: A discussion has been added regarding CEQA compliance in accordance with the comment.

Comment: [Page 7] Footnote 3 should not say that criteria under the federal Clean Water Act are the equivalent of objectives under State law. (DWR-1)

Response: A change that further explains the relationship between criteria and objectives has been made.

Comment: [Page 7] The plan cites Water Code section 13050(g)-(h) as authority to adopt water quality objectives for flow but the commenter does not believe the Legislature intended this result. The commenter claims the SWRCB is unable to give any specific cites to bolster this reasoning. (SDWA-2, WWD AREA1-2)

Response: A citation to the legislative history of this section has been added to the plan.

Comment: Normally, the plan would set only water quality standards, and then it would be the responsibility of the DWR as the regulator of water rights to decide what amounts of water (i.e., flows) are necessary, what are the priority of the demands, and what the junior rights must give. (SDWA-2)

Response: The SWRCB, not the DWR, regulates water rights. (See Stats. 1967, Chapter 284; Wat. Code §174.) As provided in section 174, the Legislature combined the water quality and water right functions of State government in the SWRCB.

Comment: By setting flow standards and excluding the South Delta Water Agency (SDWA) from the process, the SWRCB has prevented those who will pay for the flows from arguing and presenting evidence as to what those flows should be. Only one public hearing, on February 23, 1995, was held. (SDWA-2)

Response: The SWRCB held a series of six public workshops from April through October, 1994 to seek comments and recommendations regarding the content of a new water quality control plan for the Bay-Delta Estuary. Additionally, SWRCB staff held several public workshops. The SDWA participated in these workshops. The draft plan is supported by the information obtained in connection with those workshops. The SDWA also attended the hearing on February 23, 1995 and provided comments. The plan puts no specific burden on members of the SDWA, and it carries out the intent of the Racanelli decision to set water quality objectives first without regard to water rights.

Comment: [Page 8, para. 3] The SWRCB received the following comments regarding the USEPA's approval of the plan.

1. The SWRCB should present the plan to the USEPA for approval under several specific provisions (sections 208, 303, and 319) of the federal Clean Water Act, instead of presenting it for approval without specifying the sections under which the USEPA may approve it. The discussion in Chapter I.C.5. of the Plan should be replaced with text proposed in the comment. (JCWU-1, DWR-1)
2. The plan incorrectly interprets the USEPA's authority. The USEPA may approve state standards for freshwater flow under Clean Water Act section 303 or may promulgate its own standards in the absence of approvable state standards. Reduced freshwater flow can constitute water pollution and is, therefore, a water quality matter. Clean Water Act section 101(g) does not bar the USEPA from issuing or approving standards which regulate water quantity or any other parameters of water quality even if water allocations are affected. (BISF-1)
3. The USEPA has authority to approve water quality standards pertaining to flow and water project operations. (NHI-1)

Response: The purpose of the first comment is to help insulate the plan from too broad a review and assertion of jurisdiction by the USEPA over the water supply that will be affected by implementation of the plan. Much of the language recommended by the commenter has been incorporated into section I.C.5 of the plan, along with the original language; some recommended language is not incorporated because it is less defensible and less decisive than the original language. The SWRCB also recognizes that the Supreme Court, in PUD No. 1 of Jefferson County v. Washington Dep't of Ecology (1994) 114 S.Ct. 1900, rejected arguments based on Clean Water Act section 101(g) that water quantities could not be regulated under Clean Water Act section 401. The Supreme Court's interpretation allows states to regulate water users to prevent adverse effects on water quality, but does not allow the USEPA to interfere with the states' water allocation authority. The Supreme Court did not consider whether the USEPA could promulgate standards for water quantities in PUD No.1; the state, not USEPA, had adopted the standards.

Section 303(e) requires each state to have a continuing planning process which, among other things, incorporates all elements of any applicable plans under section 208 and includes adequate implementation for revised or new water quality standards. With these provisions, approval under section 303(e) would include approval of the elements of a plan under section 208 or 319, without the need for a separate plan. No need exists to submit the plan specifically under sections 208 or 319.

## **CHAPTER II. BENEFICIAL USES**

Comment: The beneficial use definitions in the draft plan are slightly different than those currently recommended for adoption in Basin Plans. We recommend that all SWRCB and RWQCB plans and policies use consistent beneficial use designations. (SWRCB-1)

Response: The recommended beneficial use definitions have been incorporated into the plan. The changes are not substantive.

Comment: The beneficial uses of the waters of the Bay-Delta Estuary should be expanded to include hydroelectric power generation. (NCPA-1)

Response: The addition of hydroelectric power generation as a beneficial use is inappropriate because there are no existing or planned hydroelectric power generation facilities within the boundaries of the Bay-Delta Estuary.

## **CHAPTER III. WATER QUALITY OBJECTIVES**

Comment: [Page 12, para. 1] The draft plan admittedly does not guarantee the reasonable protection of the Estuary's fish and wildlife beneficial uses. Instead the draft plan will "protect fish and wildlife beneficial uses at a level which stabilizes or enhances the conditions of aquatic resources". However, when it comes to other uses the draft plan will "ensure the

reasonable protection of municipal, industrial and agricultural beneficial uses".  
(PORGANS-1)

Response: The SWRCB believes that the plan provides reasonable protection for all beneficial uses. The language in the plan has been clarified to state that belief.

### **B. Water Quality Objectives for Agricultural Beneficial Uses**

Comment: The agricultural standards in the central Delta are restricted to the period from April 1 to August 15. Although most irrigation occurs during this period, water is diverted from the channels on to lands in the central Delta for critical agricultural uses in every month of the year. The water quality needs for irrigation and leaching after August 15 and before April 1 are usually met by water quality standards designed to protect other uses; however, explicit recognition of the water quality needs of agriculture on a year-round regimen should eventually be reflected in agricultural water quality standards for every month. (CDWA-1)

Response: The only standards being reviewed during this review period are the fish and wildlife standards. The SWRCB will consider reviewing the agricultural standards during the next Bay-Delta Plan review.

### **C. Water Quality Objectives for Fish and Wildlife Beneficial Uses**

Comment: The following comments express the concern that the water quality objectives for fish and wildlife provide inadequate protection.

1. We do not believe that the objectives in the draft plan for the July-January period provide adequate direct protection for the wide range of anadromous fish species present in the Estuary. Therefore, the success of the plan relies 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 in the plan; a program of implementation that aims to identify those measures necessary to meet the new narrative objective for chinook salmon; prompt allocation of flows by the U. S. Bureau of Reclamation (USBR) to meet its obligation to double anadromous fish populations, as called for by the CVPIA; and expeditious development of a high priority monitoring component. (BISF-1)
2. It appears that salmon protection is still inadequate. (BCDC-1)
3. Both the draft plan and the Principles for Agreement fail to provide adequate protection for species under stress but not yet listed (e.g., spring-run salmon, Sacramento splittail, and longfin smelt). Operational flexibility and adaptive management are important elements in the agreement that could be used to further protect these species. (LWV-1)

4. The fall-run chinook salmon on the San Joaquin River is the biggest loser. It is important to protect these stocks during average and wetter years as a buffer against severe losses when conditions are less favorable. The run may continue as a remnant run unless there is a concerted effort to have a greater and positive flow (2,000-5,000 cubic feet per second (cfs)) from the San Joaquin River and tributaries. Spring-run and late fall-run also lose out. There must be greater protection from the impacts of diversion from November through April. (SARA-1)
5. Applying public trust principles to managing water and biological resources requires that all salmon runs be provided with greater protection through greater outflows and other measures. (SARA-1)
6. One of the most important issues for potential refinement of the Principles for Agreement is the need for protection of spring-run chinook salmon. The spring-run received short shrift in the agreement and in the draft plan as well. The only measure likely to directly benefit outmigrating spring-run in the November through January period is the provision for up to 45 days of Delta Cross Channel closure. Delta Cross Channel gate closure may provide significant benefit to outmigrating spring-run smolts in the fall months. We are urging the coalition of stakeholders to concur in allowing the operations group to allow additional days of closure to benefit the salmon. (NHI-1)

Response: The SWRCB believes that the full package of protection offered by the plan is reasonable. The SWRCB will review the plan every three years to ensure that the protection provided by the plan is reasonable. Monitoring required by the plan will provide the information necessary to conduct the triennial review.

The plan includes the operational flexibility and monitoring program identified by the commenters. The SWRCB also supports prompt allocation of flows by the USBR to meet its obligations under the CVPIA.

The approach identified in the plan to implement the narrative salmon objective is to promptly implement the numerical standards and recommendations in the plan. The monitoring program will then establish whether additional measures are necessary to ensure achievement of the objective.

Comment: [Page 12, last para.] One of the most significant differences between this draft plan and the 1978 Delta Plan is that the current plan expresses no ultimate goals for restoring the Estuary. Instead the draft plan states that "there are no clearly defined threshold conditions which can be used to set objectives for flows and project operations..." This statement is to be contrasted with Water Right Decision 1485 (D-1485) which sets as objectives mitigation of pre-project conditions for Suisun Marsh and restoration of specific historic population levels for striped bass and salmon. If these prior, quantifiable objectives

have been abandoned, there should be explicit acknowledgement that this is so and the reasons given.

For any long-term plan to be effective, there has to be some statement as to what are optimum, acceptable and unacceptable levels of a resource by which management actions are measured. This can be as general as "doubling anadromous fish populations" or as specific as the striped bass index in D-1485. For the draft plan to simply state that "a continuum of protection exists" both places an unfair burden on estuarine scientists to establish such targets and can pit non-economic, unquantified, environmental beneficial uses against economic, quantifiable beneficial uses such as irrigation diversions.

Fortunately, there is an opportunity to address this critical problem. We recommend that an important task under the special studies program contained in the plan be devoted to characterizing thresholds, historic conditions, and optimal levels of key species. (BCDC-1)

Response: The plan contains goal statements for fish and wildlife. The plan states that a reasonable level of protection is provided that will stabilize or enhance the condition of aquatic resources. The plan also contains two narrative water quality objectives for salmon production and protection of Suisun Marsh. The narrative salmon objective requires a doubling of natural production of chinook salmon, and the Suisun Marsh objective requires water quality conditions sufficient to support a natural gradient in species composition and wildlife habitat throughout all elevations of the tidal marshes. With respect to long-term goals for restoration of the Estuary, the SWRCB believes that the goals will be developed through the long-term, multi-agency planning process established under the Framework Agreement.

The SWRCB will not recommend that the special studies program be devoted to the activities requested by the commenter. As stated in the plan, the SWRCB believes that there are no threshold conditions which can be used to set objectives and that a subjective determination of the reasonable needs of all the demands must be made.

The approach taken in this plan regarding goals is similar to the approach in D-1485. D-1485 contains the following statement.

"While the standards in this decision approach without-project levels of protection for striped bass, there are many other species, such as white catfish, shad and salmon, which would not be protected to this level. To provide full mitigation of project impacts on all fishery species now would require the virtual shutting down of the project export pumps. The level of protection provided under this decision is nonetheless a reasonable level of protection until final determinations are made concerning a cross-Delta transfer facility or other means to mitigate project impacts."

Lastly, it is important to note that the Racanelli Decision found that the use of without-project conditions to set water quality objectives was inappropriate. The court

determined that objectives should provide reasonable protection of beneficial uses, considering all demands made on the water.

Comment: [Page 12, last para.] The draft plan acknowledges that "there are no clearly defined threshold conditions which can be used to set objectives for flow and project operations....Therefore, these objectives must be set based upon a subjective determination of the reasonable needs of all of the....demands on the waters of the Estuary." This means that the SWRCB cannot justify how it arrived at its flow objectives. However, there do exist such objective parameters. Under water rights hearings (not under water quality hearings), the SWRCB should decide what are the priorities of fish and wildlife needs, what level are those needs, and what junior rights must give way. By doing what it has done, the SWRCB has avoided a public discussion of how and how much priority fish flows have. (SDWA-2)

Response: The SWRCB had a public discussion of the appropriate magnitude of flow objectives. However, the SWRCB is not prioritizing the objectives in these proceedings. If during the water rights proceeding it is determined that all of the objectives cannot be reasonably achieved, the SWRCB will consider prioritizing conflicting objectives.

Comment: The SWRCB should consider adopting a biological resource objective similar to the following objective adopted by the Bay-Delta Oversight Committee. (PCFFA-1)

"Preserve, restore or, where those are not possible, simulate an ecosystem that provides for the integrity of biological resources as defined by composition, structure, and function."

Response: This biological resource objective summarizes the overall goal of all of the elements of the plan, but it is too broad a statement to adopt as a water quality objective.

### **Dissolved Oxygen Objective**

Comment: The Central Valley RWQCB recently reissued a permit to the City of Stockton for its wastewater discharge. This permit imposes new and more stringent dissolved oxygen-related effluent limitations and requires immediate compliance. In order to comply with these requirements, the City of Stockton must build new wastewater treatment facilities, which will take ten years to construct. The City of Stockton believes this requirement places an unreasonable burden on the Stockton Metropolitan Region, but more importantly, the City and its wastewater users face ten years of potential violations of State and federal law during the period of time required to design and construct the facilities necessary to meet the new requirements. The City of Stockton requests the addition of a footnote accompanying the water quality objective for dissolved oxygen. The footnote reads as follows: (STOC-1)

"If it is infeasible for a waste discharger to meet this objective immediately, a time extension or schedule of compliance may be granted, but this objective must be met no later than September 1, 2005."

Response: The footnote has been incorporated into the plan. The City of Stockton is responsible for part of the dissolved oxygen problem on the San Joaquin River, but other factors contribute to the problem. The City of Stockton needs time to design and construct facilities. The proposed footnote provides the Central Valley RWQCB with the legal authority to provide a schedule of compliance for the City of Stockton in its permit, if appropriate.

### **Salmon Protection Narrative Objective**

Comment: The record before the SWRCB indicates that the objectives in the plan will not achieve the objective of doubling salmon production. The SWRCB should emphasize the importance in helping to achieve the narrative objective of prompt allocation of flows to meet the fish goals of the CVPIA. In addition, the plan should commit the SWRCB to undertake those measures necessary to achieve the objective in a timely manner including: (1) timely completion of the water rights hearing to adopt instream flow requirements for salmon migration on all tributaries; and (2) formulation of numeric objectives to protect salmon outmigration, such as a salmon smolt survival index. (BISF-1)

Response: The record before the SWRCB does not contain a quantitative analysis of whether the numeric objectives will achieve the narrative objective of doubling salmon production. The draft plan has been modified to discuss implementation of the narrative objective (see section B.2 of Chapter IV), and the recommendations of the commenter are included in the discussion.

It should be noted, however, that modeling work done by the San Joaquin Tributary Agencies (SJTA) and submitted to the SWRCB at its October 19 workshop [*SJTA, 1994. Presentation of the SJTA to the SWRCB, October 19, 1994, on San Joaquin River Salmon and Striped Bass Issues*] indicated that the joint water users proposal at that time for flows and exports, including construction of a barrier at the head of Old River, would more than triple salmon escapement on the San Joaquin River over modeled historical escapement from 1982 to 1991. The plan is similar to the joint water users proposal, but it includes a recommendation to evaluate the effect of the Old River barrier instead of a requirement to construct it.

Comment: We have several concerns with the narrative salmon objective. First, it is unclear. Are the standards intended to achieve doubling or will there be some additional, but unspecified independent requirements? Second, the goal is unrealistic. Water alone, almost certainly, cannot double; other factors must be considered. Third, if this objective is intended to lead to new, greater flow requirements, then the proposed objective would be unreasonable. Fourth, while the Principles for Agreement include a general statement regarding doubling, it does not have to be included in the plan. Fifth, if it remains in the plan, the USEPA may include it in its Bay-Delta standards. If the narrative objective must remain in the plan, it should be included as a general goal that may be achieved by the standards and the recommendations. (BART-1)

Response: The narrative objective is clear, but the program of implementation of the objective in the draft plan is not sufficiently clear. The final plan contains a description of the program of implementation in section B.2 of Chapter IV. As discussed in that section, it is uncertain whether implementation of the numeric objectives alone will achieve the doubling objective. Implementation of the recommended actions should also increase salmon populations. If the measures in the plan do not achieve the objective, the SWRCB may consider additional measures during a subsequent review of the plan.

The narrative objective is included in the plan because the SWRCB believes that it is an appropriate and reasonable objective, consistent with State and federal law, not because it is included in the Principles for Agreement as a general statement.

The SWRCB does not believe that the USEPA has the authority to implement a narrative salmon objective to the extent that implementation requires flow or operational measures.

### San Joaquin River Salinity Objectives

Comment: The standard included in the draft plan for San Joaquin River salinity is inconsistent with the standard endorsed in the Principles for Agreement for San Joaquin River salinity. The Joint Agencies have had further discussions with the operations group regarding this matter and have reached a consensus on its appropriate resolution. To reflect that consensus, the Joint Agencies recommend that the standard be amended so that it does not apply in critically dry years. (JCWU-2) (Support for this change was also expressed by CFED-1, BISF-1, USBR-1, DWR-1, NHI-1, LWV-1)

Response: The change has been made in the plan.

Comment: It is inappropriate to set standards to improve the habitat for an exotic species that is a known threat to the native chinook salmon. There is no reference to the lack of spawning habitat as a reason for the decline in striped bass, however the SWRCB proposes a salinity objective to protect striped bass spawning habitat in the lower San Joaquin River. There is no reason to adopt a striped bass water quality standard. We believe that: (1) there is no real scientific evidence that a salinity barrier to migration exists; (2) even if such a barrier did exist, it would not affect the production of striped bass, because as broadcast spawners, they are not spawning habitat limited; and (3) if striped bass did spawn farther upstream, the eggs and larvae would be susceptible to increased entrainment at the State and federal pumping facilities. (SJTA-2)

Response: The salinity standard is part of a range of measures to protect a wide range of aquatic resources in the entire Bay-Delta ecosystem. With adequate protective measures for prey species, protection for the predator species should not be of concern.

The purpose of the salinity standard in the spring is to improve habitat conditions in the lower San Joaquin River for spawning striped bass and other warm water fish such as the

Sacramento splittail. The California Department of Fish and Game (DFG) has recommended adoption of the objective to ensure adequate striped bass spawning habitat.

The salinity objective extends from Prisoners Point to Jersey Point. This reach encompasses the historical spawning range for striped bass. The SWRCB has been encouraged in the past to extend the objective to Vernalis, but the SWRCB is not adopting this recommendation because this section of the San Joaquin River is not a significant part of the historical spawning range, and if striped bass did spawn farther upstream, the eggs and larvae would be susceptible to increased entrainment at the State and federal pumping facilities, as noted by the commenter.

### Suisun Marsh Salinity Objectives

Comment: The following changes should be made to the Suisun Marsh salinity objectives. (DWR-2) (This comment was submitted by the DWR; however, it was titled "Joint Recommendations on Suisun Marsh Objectives Presented in the SWRCB's Draft Water Quality Control Plan", and it was signed by the USBR, DWR, DFG, and Suisun Resource Conservation District (SRCD). Support for this recommendation was also expressed by JCWU-2 and CWA-1)

1. The Van Sickle Island objective should be removed because other objectives control salinity near the island. We will seek the confirmation of the consensus parties that removing the Van Sickle station conforms with the Principles for Agreement. Our recommendation is conditioned on obtaining that confirmation.
2. Implement the Suisun Marsh Preservation Agreement (SMPA) standards in the western Suisun Marsh. The November standard should be 16.5 milliSiemens per centimeter (mS/cm) for normal and deficiency years, and the December standard should be 15.5 mS/cm for normal years and 15.6 mS/cm for deficiency years.
3. The effective date for objectives for stations S-35 and S-97 should be set to October 1, 1997.

Response: The last two recommendations are incorporated into the plan. The first recommendation is not incorporated. Confirmation of the recommendation was not received.

Comment: The SRCD Board of Directors is concerned about the modification to the effective dates for compliance at stations S-35 and S-97 in the Suisun Marsh. These stations effective dates for compliance have been changed many times. There should be a precise time frame to come into compliance this year and any extensions of this time should have a provision for mitigation. Mitigation should be made to the landowners in the area that have to manage their property with the poorer water quality. (SRCD-1, CWA-1)

Response: The compliance date for stations S-35 and S-97 is October 1, 1997. This date was recommended by SRCD, DFG, DWR, and USBR, as noted in the previous comment. The parties responsible for meeting this objective will be determined during the water rights proceeding. Mitigation may be required by the responsible parties through a water rights proceeding if they fail to comply with the terms of their water right permits.

Comment: In prior proceedings we have emphasized the importance of maintaining the goals and standards for protecting the wetlands of Suisun Marsh. The draft plan now allows for higher salinities in the western marsh in drier years. In addition, the draft plan provides only narrative, not numerical, standards for protection of brackish tidal marsh. We have consistently advocated the need for salinity standards to prevent the continued encroachment of salt marsh into Suisun Bay. Since 1981, the San Francisco Bay Conservation and Development Commission (BCDC) has been involved in reviewing the planning and implementation of the Suisun Marsh protection facilities and has consistently raised questions about the ability of the Suisun Marsh Salinity Control Gates to improve salinity in the western marsh and urged that Delta outflow be used to reduce salinities instead. (BCDC-1)

Response: The DFG, SRCD, DWR, and DFG recommended that the deficiency objectives be adopted for the western marsh. These deficiency objectives provide better water quality than existing conditions in the marsh, as described in the environmental report; therefore, the objectives will not allow encroachment of salt marsh into Suisun Bay. With respect to the narrative objective, the SWRCB does not believe that there is sufficient information to adopt numerical objectives for the tidal marshes at this time, but work on this issue will continue through the Suisun Marsh Ecological Work Group, as recommended in the plan.

The SWRCB does not believe that it is reasonable to require compliance with western marsh salinity standards through regulated Delta outflow. Low salinity conditions in these areas can be achieved only at enormous expense of water.

Comment: The adoption of the SMPA deficiency standards for the western marsh should be undertaken with the proviso that an ecological assessment of the impacts of the plan's new requirements be conducted and completed in a timely manner. (BISF-1)

Response: The program of implementation of the plan includes a recommendation that a Suisun Marsh Ecological Work Group be formed, and one of its recommended activities is to assess the effects of the water quality objectives on Suisun Bay and Suisun Marsh .

Comment: The objectives in the draft plan for Suisun Marsh include a narrative objective for the brackish tidal marsh. A program to analyze brackish tidal marsh habitat and biodiversity requirements and identify improved water quality regulations, including numeric objectives, is urgently needed if this narrative objective is to be achieved. (BISF-1)

Response: The program of implementation of the plan includes a recommendation that a Suisun Marsh Ecological Work Group be formed, and this task has been added to its recommended activities.

### Delta Outflow Objectives

Comment: The draft plan does not provide sufficient guidance as to the manner in which Delta outflow requirements will be applied operationally during the months of February and March. The Joint Agencies have met with representatives from various State and federal agencies including SWRCB staff to address this issue, and we believe that a substantial consensus has been reached on an appropriate and practical resolution of the matter. To reflect that consensus, the Joint Agencies propose that footnote 11 of page 18 of the draft plan be replaced with the following footnote. (JCWU-2) (Support for this change was also expressed in CFED-1, BISF-1, USBR-1, DWR-1, NHI-1, LWV-1)

"The minimum daily outflow shall be 7,100 cfs for this period, calculated as a 3-day running average. This requirement is also met if either the daily average or 14-day running average electrical conductivity at the confluence of the Sacramento and the San Joaquin rivers is less than or equal to 2.64 millimhos per centimeter (mmhos/cm) (Collinsville, station C2). If the best available estimate of the Eight River Index is more than 900 thousand acre-feet (900 TAF) in January, the daily average or 14-day running average electrical conductivity at station C2 shall be less than or equal to 2.64 mmhos/cm for at least one day between February 1 and February 14; however, if the Eight River Index is between 650 TAF and 900 TAF in January, the operations group established under the December 15, 1994 Principles Agreement shall decide whether this requirement will apply, with any disputes resolved by the CALFED policy group. If the best available estimate of the Eight River Index for February is less than 500 TAF in February, the standard may be further relaxed in March upon the recommendation of the operations group, with any disputes resolved by the CALFED policy group. The standard does not apply in May and June if the best available estimate of the May Sacramento River Index for the water year is less than 8.1 million acre-feet (MAF) at the 90 percent exceedence level. Under this circumstance, a minimum 14-day running average flow of 4,000 cfs is required in May and June. Additional Delta outflow objectives are contained in Table A on page 23."

Response: The footnote is incorporated into the plan with minor editing changes.

Comment: The draft plan improperly confuses Suisun Bay salinity objectives for the February-June period with Delta outflow objectives for the July-January period. The water quality objectives for the February through June period are salinity-based objectives. These objectives are intended to protect estuarine habitat by replicating salinity conditions in Suisun Bay, based on significant correlations found between those conditions and abundance of Estuary-dependent aquatic organisms at all trophic levels. Further, the consensus of

estuarine scientists is generally that salinity is a more accurate and dependable measure of estuarine habitat. 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. (BISF-1)

Response: In the Bay-Delta Estuary, the salinity gradient is established by the interaction of fresh water outflow with incoming saline tides. Delta outflow is a determinant of and the only practical way to regulate the salinity gradient. Therefore, the SWRCB believes that the February-June standard is appropriately characterized as an outflow standard.

The scientific justification for expressing the standard as an outflow requirement is at least as strong as the justification for expressing it as a salinity standard. This justification is described in Chapter VI of the environmental report. Since 1980, as part of the Interagency Ecological Program (IEP), the DFG has undertaken a study to investigate the relationship between Delta outflow and the abundance and distribution of fish and invertebrates. The abundance of 70 species of fish, shrimp, and crabs have been analyzed. Over two-thirds of the species considered to be estuarine, anadromous, or fresh water were significantly more abundant in wet years. Significant positive relationships were found for several species. The participants in a series of San Francisco Estuary Project workshops subsequently developed similar significant positive relationships between the X2 isohaline position and the abundance of the same aquatic resources. The fact that similar significant relationships can be derived between the abundance of aquatic resources and either Delta outflow or an isohaline position is expected because Delta outflow and isohaline positions are highly correlated. The mechanism that causes the relationship between the abundance of some aquatic resources and either outflow or salinity is unknown.

Comment: The X2 isohaline objective should be met by flows from both the San Joaquin Basin (25 percent) and the Sacramento Basin (75 percent) as if the flows were unimpaired. For biological, ecological, and hydrological reasons, there is greater equity in this 25/75 percent contribution than having the Sacramento River alone provide these flows. (SARA-1)

Response: Balancing the outflow requirements between the two major river systems entering the Delta based on unimpaired conditions is a sound concept. However, the San Joaquin system is more heavily allocated than the Sacramento system. Therefore, a hydrologic balance as proposed would result in larger impacts in the San Joaquin Basin. The SWRCB believes that the X2 isohaline objective, as formulated, provides reasonable protection for the Estuary, and the February through June San Joaquin River flow requirements protect aquatic resources in the lower San Joaquin River.

Comment: Steelhead have freshwater habitat requirements that are not being met in most of the rivers of the Central Valley. Steelhead smolts need greater outflow during November, December, and January as they pass through the Delta. (SARA-1)

Response: Average monthly State Water Project (SWP) fish salvage data, for the years 1980-1991, indicate that most steelhead are salvaged in the late winter and early spring, with the peak occurring in March and April (Steve Ford, DWR, pers. comm., April 1995). The plan provides for significantly greater outflow in the February through June period than was required under D-1485.

Comment: How are the Delta outflow and export percentages computed? Computing Delta inflow, export, Delta consumption, Delta outflow, and associated record keeping must be standardized. (SARA-1)

Response: The footnotes to Table 3 in the plan specify how to calculate Delta inflow, Delta outflow, Delta consumption, and percent of Delta inflow diverted.

Comment: [Page 18] The reference in footnote 11 of Table 3 in the draft plan is confusing. The footnote refers to the "maximum daily or 14-day running average" electrical conductivity at the confluence of the Sacramento and San Joaquin rivers. The reference should be substituted with the phrase "daily average or 14-day running average". (JCWU-1)

Response: The footnote has been clarified as requested by the commenter.

### River Flows

Comment: The actions, measures, or streamflows necessary at Vernalis to protect water quality, beneficial uses, and renewable resources of the lower San Joaquin River and the southern Delta have not been established. (SARA-1)

Response: The draft plan includes year-round EC objectives at several locations in the southern Delta to protect agricultural beneficial uses. Protection for aquatic resources is provided by year-round export restrictions, flow requirements at Vernalis in February through June and October, a dissolved oxygen objective from September through November, an EC objective for striped bass spawning, and a narrative objective for salmon protection.

Comment: At the February 23, 1994 hearing, the SDWA made a request for a change to the plan. The change would have clarified that the Vernalis flow objectives would not be implemented to the degree they would prevent meeting the salinity standards and other superior in-stream uses. Apparently the SWRCB has concluded that not one issue raised by the San Joaquin River system appropriators and riparians at the February 23, 1995 hearing was valid and hence required any change in the plan. (SDWA-2)

Response: The SDWA's assertion that the SWRCB does not contemplate making any changes is unfounded and wrong. The final plan contains numerous changes made in response to comments from the parties. The referenced change requested by SDWA was not included because it would have the effects of (1) nullifying the Vernalis flow objective under some conditions, and (2) establishing a water right priority between the fish flows and

claimed downstream water rights. The Vernalis flow objective is important for fishery protection, and nullifying it could leave this beneficial use unprotected. Further, the proposed change should be considered in a water rights proceeding that assigns responsibility for the implementation of the objectives, not in the plan. The SWRCB believes it would not be appropriate to establish water right priorities in the water quality control plan.

Comment: The draft plan includes increased San Joaquin River flows at Vernalis in February through June. The outmigration of smolts takes place primarily in April and May (with small fractions occasionally outmigrating in March or June). There is no biological justification of the increased flows in February through June with the exception of the April-May pulse flows to move smolts through the Bay-Delta and promote the production of chinook salmon. The SJTA objects to the proposed flows because there is no scientific justification for these flows. These flow standards were never presented at any public forum and the parties have had no opportunity to review and comment on them. The flows are based on recommendations of the U. S. Fish and Wildlife Service (USFWS) for the benefit of Delta smelt rather than flows necessary for the protection of chinook salmon. Inflow requirements at times when San Joaquin River salmon are not present are not beneficial to San Joaquin River salmon.

The draft plan identifies two purposes for the San Joaquin River flow standards: (1) to move smolts past the pumps and (2) to move the smolts from the upstream areas. The first purpose must be mitigated by the projects and the second purpose is being addressed in other forums and should not be included in this plan. The proposed flows often significantly exceed those experienced under pre-project periods of fishery abundance, and they do not serve any habitat or biological purpose so much as they attempt to separate public trust resources from the pumps.

The draft environmental report states that spring flow requirements in the San Joaquin River outside the salmon outmigration period are meant to benefit various estuarine species by improving salinity conditions in the central and southern Delta, and by providing transport flows out of the central Delta. We object to these conclusions because Delta pumping obviously has adverse effects on salinity and on flow conditions in the central and southern Delta. However, the draft plan does not impose any direct limits on spring export, except during the salmon outmigration. The plan does limit the ratio of export to total Delta inflow, but since total inflow is driven primarily by Sacramento flow and releases from upstream projects in the Sacramento River Basin, this has little relevance to conditions in the southern Delta. (SJTA-1)

Response: The draft plan states in Chapter III that "Sacramento and San Joaquin river flow objectives are included to provide attraction and transport flows for the upstream and downstream migrations of various life stages of anadromous fishes". A more detailed description of the need for these flows is provided in section A.4 of Chapter VIII in the environmental report. The environmental report states that the purpose of the standards is to improve survival of salmon smolts emigrating down the San Joaquin River and to improve

habitat conditions in the south and central Delta. The outmigration of salmon occurs over a time period greater than just the one month of the pulse flow, but the one month period was determined to be reasonable. The DFG has shown that increased flows on the San Joaquin River during the spring months are highly correlated with increased numbers of adult spawners returning two and a half years later. USFWS tagging studies have shown that smolt survival increases with increased flows and reduced exports. The draft environmental report also notes that the flow objectives coincide with the spawning season of a number of estuarine species such as Delta smelt, Sacramento splittail and striped bass, and the objectives will improve salinity conditions for spawning in the central Delta and provide transport flows out of the central Delta to Suisun Bay where higher quality habitat is available. The references used to develop this section of the environmental report are cited in the text.

The decline in San Joaquin River fall-run chinook salmon is not simply due to exports. Reduced outflow from the San Joaquin River basin has contributed to the degradation of the aquatic habitat in the Estuary, independent of export impacts.

The need to adopt objectives for higher flows on the San Joaquin River was discussed in several public forums, including the SWRCB's proceedings leading to release of draft Water Right Decision 1630 (D-1630), and the workshops for the draft plan held in 1994.

Total inflow is composed of inflow from the Sacramento, San Joaquin, and eastside rivers, precipitation, and runoff. The San Joaquin and eastside rivers play a very important role in the water quality and flow conditions in the central and southern Delta.

Allocation of responsibility to meet the plan requirements will be established during the water rights proceeding.

**Comment:** In the program of implementation of the draft plan, the SWRCB recommends that a study be conducted to determine the effects of pulse flows on fish eggs and larvae. Does this mean that the October pulse flow of 28 TAF is not supported by any current study? (SDWA-2)

**Response:** The SWRCB recommends an experimental study program on the effects of pulse flows on planktonic fish eggs and larvae in the Delta during the April through June period when the egg and larval stages are present [section C.11 of Chapter IV]. The experiments would involve flows from both the Sacramento and San Joaquin rivers. There is some uncertainty as to the magnitude and duration of the flow necessary to move the eggs and larvae downstream and provide benefits to the various species. Therefore, instead of requiring a pulse flow, the SWRCB recommends experiments that would be designed to evaluate the effects of the pulse flow on the fish eggs and larvae.

In contrast, the proposed October pulse flow objective of 28 TAF at Vernalis is to originate from the San Joaquin basin only. The purpose of the pulse flow is to provide multiple benefits to the fall-run chinook salmon migrating upstream to spawn. The benefits of additional flow in October would include: (1) improved water quality in the lower San Joaquin River (higher dissolved oxygen and lower water temperatures) and tributaries (lower water temperatures), and (2) passage flows and cues to the salmon from the various tributaries, so that they can find and return to the river in which they were reared.

Comment: The fish and wildlife objectives include a flow requirement of 1,000 cfs during October as measured at Vernalis, with a pulse flow of 28 TAF to "bring flows up to a monthly average of 2,000 cfs". What this is supposed to mean is unclear. We assume this pulse flow applies only to October and does not apply to the months of July through January. However, this issue should be clarified. (SDWA-2)

Response: The 28 TAF requirement applies only to October. The flow objective for October is a minimum monthly average flow of 1,000 cfs plus a 28 TAF pulse. The pulse is limited either to 28 TAF or to the amount necessary to provide a monthly average flow of 2,000 cfs, whichever is less. The 28 TAF pulse is not required in a critical year following a critical year. The objective has been clarified in the plan.

Comment: The plan should recognize that there are uncertainties in determining the appropriate hydrologic forecast on the San Joaquin River based on available data, and it should, therefore, require only best estimates for making that determination. The plan should also recognize the need to review the classification based on additional data in the future and revise it as necessary in the next triennial review process. (JCWU-2) (Support for this change was also expressed in CFED-1, DWR-1, NHI-1, LWV-1)

Response: The footnote in Table 3 of the plan is amended to require that the water year classification be established using the best estimate of the 60-20-20 San Joaquin Valley water year hydrologic classification at the 75% exceedence level. No change has been made to the footnote to recognize the need to review the classification during the next triennial review because the SWRCB intends to review all of the objectives at that time and there is no need to single out this objective.

Comment: If the SWRCB does not require contribution from San Francisco to meet the Bay-Delta standards, then the SWRCB should use inflow into Don Pedro to determine the Tuolumne River portion of San Joaquin Valley Water Year Index. Total inflow into Millerton Lake is used to calculate the San Joaquin Valley Water Year Index, yet there is no indication that the San Joaquin River is expected to contribute to the Vernalis flow requirements. If there are no contributions from the upper San Joaquin River, then the value for the unimpaired inflow into Millerton Lake should be set at zero. (SDWA-2)

Response: Allocation of responsibility among the water right holders in the watershed will be the subject of a water rights proceeding scheduled to commence following adoption of the

plan. At that time, the SWRCB will consider amending the San Joaquin Valley water year index if the allocation methodology is inconsistent with the index.

Comment: The SJTA and the San Joaquin River Flow Coordinator should make decisions regarding the timing and duration of pulse flows rather than the operations group established by the Framework Agreement. Monitoring needs to be conducted to verify the need for and effectiveness of the fall pulse flow. (SJTA-2)

Response: At present, the SWRCB believes that the operations group is the most appropriate group to evaluate information regarding the pulse flows. The SJTA and San Joaquin River Flow Coordinator should provide input to the operations group.

Monitoring will be needed to assess the effectiveness of the timing, duration and amount of all of the flow requirements, including the pulse flow in the fall. The plan calls for a monitoring and special studies program which will provide more information on the factors affecting salmon in the Delta, as well as feedback on the effectiveness of the objectives. At the end of three years, the objectives in the plan will be reviewed and modified, if appropriate.

Comment: The plan fails to carry out Water Code section 13241, which requires that the objectives will ensure reasonable protection of beneficial uses. The flow objective at Vernalis could cost as much as 1.3 MAF from February through June of each year. This is unreasonable because the USBR will meet it immediately from New Melones Reservoir, before the plan is implemented through water right permit changes. (SDWA-2)

Response: The commenter essentially is saying that the USBR's actions in advance of the SWRCB issuing a water right decision are unreasonable, not the SWRCB's adoption of the plan. The plan contemplates that the responsibility for meeting this objective will be evaluated by the SWRCB during the water rights phase. Under the circumstances envisioned in the plan, this objective provides reasonable protection to the beneficial uses.

The maximum water supply cost cited by the commenter is based on the assumption of no natural flow in the San Joaquin River from February through June. The actual water supply costs are much lower because natural flow is present. The water supply impacts are discussed in Chapter VII of the environmental report.

### Export Limits

Comment: The Bay-Delta and the public trust will continue to suffer until export restrictions are increased. (SARA-1)

Response: Exports are likely to have an adverse effect on aquatic resources. However, the SWRCB believes that elimination of exports is unreasonable and the full package of protection provided to aquatic resources by the draft plan is appropriate.

Comment: The draft plan allows an export pumping rate of 1,500 cfs or 100 percent of the San Joaquin River flow at Vernalis from April 15 to May 15, whichever is greater. As a practical matter and a matter of public trust, diverters should not be allowed to divert 100 percent of any river at any time. (SARA-1)

Response: The flow on the San Joaquin River at Vernalis is used to establish the maximum allowable export rate from April 15 through May 15, but the exported water does not all originate from the San Joaquin River. Additional sources include the eastside rivers, the Sacramento River, and local sources such as precipitation and agricultural drainage. This export rate is an improvement over historical conditions when exports often exceeded 100 percent of San Joaquin River flow from April 15 through May 15.

At other times of the year, especially between July and January when the export objective is 65 percent of Delta inflow, the exports are far in excess of the flow on the San Joaquin River at Vernalis and include substantial amounts of Sacramento River water. If exports are restricted to the flow at Vernalis, the water supply impact would be millions of acre-feet per year.

Comment: The draft plan discards the QWEST standard and substitutes a less restrictive percent inflow diverted standard even though "no definitive studies or analyses were completed to support these export/inflow restrictions". (PORGANS-1)

Response: There are no definitive studies and little analysis to support the QWEST standard. Also, the QWEST standard is not always more restrictive than the percent inflow diverted standard.

Some of the proposed standards were developed without definitive data to support the specific standard, because no such data were available. The standards in some cases are based on the professional judgement of scientists and engineers familiar with the Delta. The QWEST standard and the percent inflow diverted standard are actually quite similar. Both types of standards tie export pumping to the available water supply in the Delta. They are based on the concepts that: (1) export pumping negatively affects the aquatic habitat; (2) some control of export pumping is appropriate; and (3) restrictions on export pumping should be linked to the quantity of water entering the Delta.

Comment: The export restriction of 35 percent of inflow may be reasonable, but it must be followed by a cap on the amount that can be pumped at any time. (SARA-1)

Response: Limits on export pumping are provided through a combination of diversion works capacity, water right permit terms, and U.S. Army Corps of Engineers permit terms, as discussed in section A of Chapter VII in the environmental report.

Comment: The 35 percent of inflow diverted standard in February through June should be extended to include November, December and January. The 65 percent limit is too high.

Declines of aquatic resources have occurred even though levels lower than 65 percent were exported in the past. A 50 percent level may be reasonable, but even this level should be capped at a flow or amount that can be pumped at any time. (SARA-1)

Response: The SWRCB acknowledges in the plan that lower exports provide greater protection for the bulk of estuarine resources, up to the limit of unimpaired conditions. The export percentages are based on a subjective determination of the reasonable needs of all of the consumptive and nonconsumptive demands on the waters of the Estuary. The fact that aquatic resources declined in the past even though the percent inflow diverted from July through January was less than 65 percent does not establish a cause and effect relationship. The objectives reduce exports and increase outflow in February through June, especially in dry periods. February through June is the most important period for many of the aquatic resources in the Estuary.

Comment: 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 will significantly increase the risk of in-Delta mortality and entrainment for anadromous and other estuarine-dependent species. The SWRCB should work with agencies and interested parties to develop more sensitive export criteria formulae which include in-Delta withdrawals and other important factors. (BISF-1, SARA-1)

Response: Percent inflow diverted is defined in the plan as exports from the Tracy Pumping Plant and diversions at Clifton Court Forebay divided by the total inflow. The actual inflow diverted would include other in-Delta diversions minus in-Delta return flows and precipitation. The environmental analysis is based on the defined quantity; therefore, the risk of in-Delta mortality and entrainment due to the objectives was incorporated into the analysis. The SWRCB agrees that ongoing analysis of the objectives is appropriate, and the SWRCB will work with all agencies to further refine the export criteria.

Comment: The Contra Costa Water District (CCWD) should not be considered an exporter in the draft plan. We recommend that the following footnote be added to the definition of Delta exports. (CCWD-1)

"The term Delta Exports is used only to calculate the Delta Outflow Index. It is not intended to distinguish among the listed diversions with respect to eligibility for protection under the area of origin provisions of the California Water Code."

Response: The equation for Delta exports in Footnotes 8 and 18 for Table 3 of the draft plan describes the calculation of the Net Delta Outflow Index. Delta exports in this context are not intended to establish eligibility for area of origin protection. The recommended footnote has been added to clarify this intent.

Comment: The export limits in the plan are not intended to impede water transfers, but to allow transfers where doing so would not affect attainment of the plan's overall requirements. To clarify this point, the Joint Agencies propose that the following language be added to the end of the current text in this section. (JCWU-1, JCWU-2)

"Export limits in this plan are not intended to impede voluntary water transfers that involve the movement of water through the Delta but do not otherwise affect attainment of requirements for the protection of fish and wildlife beneficial uses. When considering petitions to approve such transfers in the future, the SWRCB therefore expects that a finding of no unreasonable impact on fish or other instream uses within the Delta would be appropriate if all objectives for the protection of fish and wildlife beneficial uses are being met during implementation of the transfer."

Response: The environmental analysis considered the effect of transfers only during the July through October period. Therefore, it would not be appropriate to conclude, based on the environmental analysis, that transfers at other times of the year are acceptable. The proposed language is not incorporated into the plan, but the SWRCB will delineate its position of transfers when specific requests are received.

Comment: The objectives in the plan should be recognized to encompass all exports from the Delta through the CVP/SWP pumping facilities, including CVP and SWP contract water, water transfers, and water from in-Delta storage projects like Delta Wetlands. (DELTAWET-1)

Response: The analysis of the plan's effects on project operations and the environment considered only CVP and SWP contract water at existing demands and water transfers, up to the limit of the objectives, from July through October. Additional analysis may be necessary for transfers outside the period analyzed.

Comment: We are concerned about the potential impact the plan may have on the ability to deliver water supplies to wetlands south of the Delta. The CVPIA requires the Secretary of the Interior to deliver a base supply of 250 TAF to such wetlands. The export limits in the draft plan significantly reduce the period during which the CVP can make diversions from the Delta. These restrictions will force the projects to rely on the fall and winter months to move most of the water south. These are the same months during which the water supplies for the refuges and the wildlife management areas must be delivered. As a result, there is a major question as to whether sufficient pumping and conveyance capacity exists to deliver the water available in a given year during such a narrow time frame. The final plan should address this issue, and if necessary, include language that will safeguard these critical wetland water supplies. (CWA-1)

Response: There is sufficient pumping and conveyance capacity within the existing objectives to accommodate water deliveries for wetlands. The water supply analysis indicates that there are only ten months (all of them in January) over the 71 years of modeled

hydrology in the July through January period when the projects will be operating to, or very close to, the export limit of 65 percent of Delta inflow. This analysis included the water deliveries for wetlands. Therefore, even though wetland deliveries may be reduced in very critically dry years, the SWRCB believes that no special accommodation for wetland deliveries is necessary.

Comment: The export objective allows the State and federal water projects to increase their exports to the San Joaquin Valley and Southern California when upstream non-project water users have to give up water for the Delta. This will happen when the SWRCB reallocates responsibility for meeting the objectives and requires other water right holders in the system to contribute water to the Delta. (PORGANS-1)

Response: Allocation of responsibility to meet the objectives will be established during the water rights proceeding.

Comment: Populations of Delta smelt, longfin smelt, splittail, striped bass and others in the central Delta could lose out through entrainment and other losses during the massive pumping in July through January. What is the ratio of direct losses at the pumps to the indirect losses of 1:10, 1:15, or 1:20? (SARA-1)

Response: There is no single ratio to describe the direct or indirect losses at the pumps. The calculation of losses associated with the entrainment of fish to the CVP and SWP export facilities is based on several methods. These account for the different sizes of fish, the different species, and the different levels of information available about the two export facilities over their period of operation. Information is primarily available for striped bass and chinook salmon. Additional experiments have been conducted in the last couple of years to improve the estimates, especially for winter-run chinook salmon.

There are two sources of losses at the SWP before the fish are counted at the salvage facility. The first occurs in the Forebay, and the second is associated with the fish screens. Pre-screening losses for striped bass range from 70-94 percent (average of 82 percent) and for chinook salmon range from 63-86 percent (average of 75 percent). Pre-screening losses at the CVP are approximately 15 percent for striped bass and chinook salmon. Losses at the trashracks and headworks are assumed to be 15 percent. After the fish have been collected, they can die either from handling or in the trucking operation. Further losses probably occur after the fish are returned to the Delta, due to stress and predation, but are not accounted for in this process because adequate information is not available for this purpose.

Additional information on this topic is available from the DFG or in the following two documents: (1) DFG. 1987. *Estimates of fish entrainment losses associated with the SWP and federal CVP facilities in the south Delta. DFG Bay-Delta Project. DFG Exhibit 17. 31 pp. plus appendices.* (2) DFG. 1992. *Revised and updated estimates of fish entrainment losses associated with the SWP and federal CVP facilities in the south Delta. DFG Bay-Delta Division. WRINT-DFG-Exhibit 1. 7 pp. plus appendices.*

## Delta Cross Channel Gates Closure

Comment: We are concerned about the erratum to footnote 24 for Table 3 of the draft plan. This footnote now differs from the criterion as expressed in the Principles for Agreement. In the principles, the criterion states, "During the period May 21 through June 15, the Delta Cross Channel may be rotated closed four days and open three days, including the weekend." The footnote to Table 3 of the draft plan was originally consistent with that language, but has since been modified to say, "For the May 21-June 15 period, close the Delta Cross Channel gates for four consecutive days each week, excluding weekends." The wording in the Principles was intended to allow the USBR to retain discretion in the operation of the Cross Channel because a fixed, mandated cycle of operation may adversely affect objectives for salinity control. Furthermore, we are concerned that closure of the gates at that time of year may under some circumstances affect the distribution of Delta smelt. As such, we strongly support retaining discretion in determining gate operations and recommend the following text be added to footnote 24 of Table 3 of the draft plan: "This requirement may be modified by the CALFED operations group." (USBR-1)

Response: The footnote was amended in the erratum because the word "may" made the operation of the gate discretionary and as such was not a water quality objective. The SWRCB supports operational flexibility where appropriate. The footnote has been amended in the plan to state: "For the May 21-June 15 period, close the Delta Cross Channel gates for a total of 14 days. The timing of the gate closure shall be based on the need for the protection of fish and will be determined by the operations group established under the Framework Agreement."

## **CHAPTER IV. PROGRAM OF IMPLEMENTATION**

Comment: The following sentence, or similar language, should be added to the first paragraph of this chapter. (BISF-1)

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.

Response: The recommended language is added.

### **A. Implementation Measures Within the SWRCB's Authority**

Comment: It is difficult for water right holders other than the CVP and the SWP to comment on the proposed standards until the water right holders know how the SWRCB proposes to implement the standards and the water right holders are then able to evaluate the resulting environmental impacts upon their own areas. Therefore, the SWRCB must prepare an environmental analysis before allocating impacts, and it must preserve the opportunity for

water right holders to address the standards after the impact of these standards upon their water rights is known to them. (WID-1)

Response: The SWRCB will prepare appropriate environmental documentation before it allocates responsibility for implementing the objectives. The SWRCB will periodically review the objectives pursuant to Water Code section 13240 and may revise them after the water right phase.

Comment: The SWRCB should insert an additional subsection dealing with implementation of the narrative water quality objectives in this section of the plan. The subsection should discuss the actions the SWRCB will take to implement the narrative objectives. (BISF-1)

Response: This section of the plan has been reorganized. Separate subsections have been added to discuss implementation of the narrative objectives.

Comment: [Page 24; also page 1] The SWRCB received the following comments regarding the USBR's implementation of the plan in advance of a water right decision.

1. The draft plan should not be implemented prior to both its adoption and the adoption of an appropriate water right decision if such implementation would require the USBR to take the vested water rights of Westlands Water District's Area I or would give the USBR discretion to take such rights. The commenter suggests that the SWRCB should, in the plan, order the USBR to operate its project in deference to Area I's rights. (WWD AREA1-1)
2. Under the draft plan, there will be no water available to contractors out of New Melones Reservoir. The USBR should not be allowed to make New Melones responsible for meeting flow requirements, even as an interim solution while the water rights phase proceeds. The place of use for New Melones water is limited to the counties of Stanislaus, Calaveras, Tuolumne, and San Joaquin. By allowing the USBR to meet the flow objectives, which will in turn cause the USBR to violate the Vernalis salinity standard in Water Right Decision 1422, the SWRCB will violate Water Code section 12232, which forbids the SWRCB from causing further significant degradation of the water quality in the San Joaquin River. (SEWD-1, SEWD-2, SDWA-2)
3. The draft plan states that the USBR shall provide the flows on the San Joaquin River to meet the objectives "in accordance with the biological opinion for Delta smelt". It is unclear what this is supposed to mean. The opinion is not cited or provided, but it in fact requires much lower flows than the plan. What is the USBR actually going to do and what does the SWRCB expect it to do? (SDWA-2)
4. The draft plan indicates that the USBR shall provide for the San Joaquin River flow requirements in accordance with the biological opinion for Delta smelt during the next

three years. This sentence, which purports to assign an obligation for meeting the water quality objective, is inappropriate in a water quality control plan. (SEWD-1)

5. The plan should contain no inference regarding the distribution of water supply impacts to anyone other than the CVP and the SWP. The flow objectives in the plan will be reevaluated after three years. Therefore, the impacts discussed in the draft environmental report should be limited to those areas dependent upon flows provided from New Melones Reservoir, which will meet the flows pursuant to the plan and the biological opinion. (SJTA-2)

Response: The plan does not require the USBR to meet the flow objectives during the interim period before the water rights phase is completed. The language in the plan has been clarified. The USBR is required to meet its current water right permits until they are amended.

The SWRCB, however, cannot prevent the USBR from varying its operations within the constraints of its water right permits. Although the place of use for consumptive uses of water from New Melones in the USBR's permits is limited to the four county area, the use of water in the Delta for flow and water quality purposes at Vernalis is not prohibited. The limitation of consumptive uses to the four county area prevents the USBR from selling New Melones water for consumptive uses outside these counties, but it does not preclude the USBR from releasing the water for flow and water quality purposes downstream at Vernalis. Nothing in the USBR's water right permits requires the USBR to contract with a particular water user within these counties.

Some of the above commenters suggested that the SWRCB order the USBR in the plan to refrain from implementing the plan before a water right decision is issued. The proceedings on the plan are not an appropriate forum for the SWRCB to enforce the USBR's water right permits; this is a matter for a water rights proceeding. Further, some if not all of the USBR's current actions apparently are necessary to meet requirements of the federal ESA. The SWRCB cannot order the USBR to violate its obligations under the ESA.

At the time the draft plan was released, the SWRCB staff assumed that the USFWS would soon release a Delta smelt biological opinion that would contain the same San Joaquin flow requirements as contained in the Principles for Agreement and the draft plan. The new biological opinion was released on March 6, 1995, and it does contain the same flow requirements. The commenter correctly notes that the biological opinion in effect on the date of release of the draft plan requires lower flows on the San Joaquin River than the objectives in the draft plan.

Comment: [Page 25] Section A of Chapter IV of the draft plan describes the implementation of objectives through future water rights actions. In doing so, it identifies various water quality objectives as water supply-related, including the south Delta agricultural salinity objectives and a San Joaquin River dissolved oxygen objective. The

SWRCB's intention to meet these objectives by means other than flow alone should be clarified in the plan. A statement, therefore, should be added to this section and to Tables 2 and 3 of the plan to recognize that the objectives are water supply-related only "where it is reasonable and in the public interest to meet the objective with flow". (JCWU-1, SFPUC-1)

Response: Chapter IV has been reorganized in the plan, and implementation of the south Delta agricultural salinity objectives and the dissolved oxygen objective are now under a section titled "Implementation Measures Requiring SWRCB Water Quality and Water Rights Authority and Multi-Agency Cooperation". This reorganization clearly defines the SWRCB's intention to meet these objectives by means other than flow alone. The statement that these objectives are water supply-related only where it is reasonable and in the public interest to meet the objective with flow is not added because the SWRCB believes that all of its actions are reasonable and in the public interest. There is no need to single out particular objectives for this statement.

Comment: [Page 25] The following comments concern implementation of the south Delta salinity objectives.

1. The program of implementation for the south Delta agricultural salinity standards states that flows in the San Joaquin River at Vernalis are expected to contribute to achieving the salinity objectives in the south Delta. Use of water to dilute the pollution of others is not a listed beneficial use of San Joaquin River water. We believe that the SWRCB and the Central Valley RWQCB must enforce the San Joaquin River water salinity standards by requiring those discharging saline water into the river to cease all such discharges. Salinity problems on the San Joaquin River are the responsibility of those discharging water in excess of salinity standards into the river. The program of implementation should describe the steps that must be taken to reduce the salt load entering the river rather than relying on additional fresh water flows to dilute such salts. The only real solution to the San Joaquin Valley salinity problem is to export salt from the valley through an isolated channel.

Identifying additional releases from other reservoirs for salinity control as may be required through ongoing and future Federal Energy Regulatory Commission (FERC) proceedings is inappropriate. The USBR New Melones project is obligated as a condition of its water rights permit, to meet certain salinity standards in the southern Delta. It is inappropriate to suggest that upstream water users contribute flows to meet the permit conditions of a junior water appropriator. The only appropriate way to meet the salinity objectives is to reduce, eliminate, or mitigate the salt discharges to the San Joaquin River. Since much of the salt entering the San Joaquin River originates in the CVP service area, it appears that burden to solve the salinity problem also belongs on the CVP. (SJTA-1)

2. The SWRCB continues to fail to address the salinity problems on the San Joaquin River. Rather than taking affirmative steps such as limiting when and what levels of

salt may be discharged into the river (which is exactly what the RWQCB and SWRCB are constituted to accomplish), the SWRCB simply makes recommendations and expects the problem to be addressed. Such noncommittal language clearly fails to satisfy the obligations to specify what actions are necessary and when these actions will occur as required by Water Code Section 13242. (SDWA-2)

3. The draft environmental report infers at page IX-1 that "salty return flows" in the San Joaquin River have a right to be there and that diversions of fresh water have frustrated that right. We recommend that such inference be removed. Saline return flows should be controlled at their sources, and the use of fresh water releases to mitigate their effects should be avoided. The fresh water release requirements for the San Joaquin River should not be premised upon the dilution requirements of drainage flows. (SFPUC-2)
4. The draft plan states: "Implementation of the objectives will be accomplished through the release of adequate flows to the San Joaquin River and control of saline agricultural drainage to the San Joaquin River and its tributaries." Despite this statement, the SWRCB has done nothing to contribute to the control of saline agricultural drainage to the San Joaquin River and its tributaries. In fact, the SWRCB recently approved the San Joaquin River Basin Plan proposed by the Central Valley RWQCB which failed to establish water quality standards for salinity in the San Joaquin River. (SEWD-1)

Response: Flow objectives have been established for the protection of aquatic habitat in the San Joaquin River. The plan notes that these flow objectives will, incidentally, reduce the salt concentration in the south Delta. In the same vein, the plan notes that ongoing FERC proceedings may result in additional releases from upstream reservoirs to protect fish and wildlife in the tributaries, and these flows will reach the Delta, resulting in decreased salt concentrations. The USBR is presently responsible for providing salinity control at Vernalis, and the SWRCB does not intend to suggest that upstream water users should contribute flows to mitigate for the actions of other water users. Water users are responsible for mitigating the effects of their own diversions.

The use of water to dilute the pollution of others is not a listed beneficial use of water, but the concept of discharging waste at levels within the assimilative capacity of a receiving water is well established. At present, the only reasonable approach to dealing with the salinity problems in the San Joaquin River is through a combination of dilution with fresh water releases, in-Basin management measures, and limited discharges to the San Joaquin River. The SWRCB and the Central Valley RWQCB are working to achieve the best water quality reasonable through these measures. In the 1991 Bay-Delta Plan, the SWRCB directed the Central Valley RWQCB to reduce the salt load at Vernalis by ten percent. The RWQCB responded by requiring drainage operation plans from the areas on the westside of the San Joaquin River with the worst drainage problems. The drainage operation plans focus on water conservation to reduce salt and trace metal loadings to the river. The SWRCB

realizes, however, that all of these measures are unlikely to fully protect the beneficial uses of the San Joaquin River. The only option that will fully protect beneficial uses is the construction of an isolated facility to export salts from the basin. The SWRCB believes that the USBR should fulfill its obligation to provide drainage by commencing a reevaluation of this project. This recommendation has been incorporated into the plan.

In Chapter IX of the environmental report, the statement is made that releases from New Melones help compensate for diversions of freshwater that have left mostly salty return flows in the San Joaquin River. This statement describes part of the interim strategy to deal with this drainage problem; it does not infer that the return flows have a right to be in the river.

Comment: [Page 25] It is not clear that dissolved oxygen problems can be significantly improved by changes in San Joaquin River flows. Testimony presented by the Central Valley Project Water Association concluded that: (1) dissolved oxygen concentrations in the San Joaquin River near Stockton are strongly influenced by local factors that reduce dissolved oxygen regardless of relatively high dissolved oxygen concentration upstream; (2) dissolved oxygen concentrations are strongly influenced by temperature and only weakly influenced by flow; and (3) the temporary barrier installed by the DWR in Old River to influence dissolved oxygen at Stockton had no specific effect on dissolved oxygen (Exhibit #202 from the CVPWA in the 1991 Bay-Delta Plan record ). Hallock et al 1970 suggests that export pumping exacerbates the dissolved oxygen problem on the lower San Joaquin River by denying alternative routes to migrating salmon. This is due to the effects of reverse flows in the southern Delta which prevent any San Joaquin Basin water from reaching the western Delta by routes other than the lower San Joaquin River.

To the extent that dissolved oxygen problems near Stockton are the result of dredging activities in the Stockton Ship Channel and turning basin and effluent discharges near Stockton, the burden of mitigating these impacts cannot be transferred to other entities. Dissolved oxygen problems resulting from net reverse flows in the lower San Joaquin River are export-related, and the burden of mitigating these impacts must be placed on the export projects. (SJTA-2)

Response: The pulse flow in the fall is designed to attract the chinook salmon upstream to the tributaries; improved water quality in the lower San Joaquin River would be an additional benefit.

The responsibility to meet the objectives will be established during the water rights proceeding.

Comment: Compliance with the dissolved oxygen standard at Stockton has not been evaluated if freshwater releases are considered the only measure to achieve the standard. (SFPUC-2)

Response: The plan states that compliance with the dissolved oxygen objective will be achieved through a combination of control of wastewater discharges, construction of barriers, and freshwater flows. This plan's objectives for flows in the San Joaquin River at Vernalis are expected to contribute to achieving the dissolved oxygen objective and additional flow-related measures will be considered by the SWRCB during the water rights proceeding.

## **B. Recommendations to Other Agencies**

Comment: The League of Women Voters recommends that the draft plan include provisions encouraging the maximum use of water conservation and reclamation in both the agricultural and urban sectors. We also urge the implementation of the SJVDP and concur that all water supply agencies receiving water from the Delta should establish aggressive groundwater management programs. (LWV-1)

Response: The draft plan is a regulatory document that establishes beneficial uses, water quality objectives, and a program of implementation for the objectives to protect the waters of the Delta. Implementation of the SJVDP is part of the program of implementation of the objectives, and it has been included in the plan. The other elements cited by the commenter, conservation, reclamation and groundwater management, are important elements in ensuring water supply reliability, but they are not elements of this water quality control plan. Conservation, reclamation, and groundwater management are discussed in the draft environmental report as mitigation measures, and the SWRCB recommends maximum use of these measures. The SWRCB may incorporate provisions encouraging the maximum use of water conservation and reclamation into the water rights decision that will implement, in part, the requirements in the plan.

Comment: The draft plan should recognize the efforts of those involved in developing the Category III implementation plan and acknowledge that recommendations on actions to address non-flow related factors may change as a result of those efforts. (JCWU-1)

Response: The draft plan is amended as suggested by the commenter.

Comment: The following sentence, or similar language, should be added to this section of the plan. (BISF-1)

"The ability of this plan to meet its obligations 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."

Response: The recommended language is not incorporated into the plan, but additional language has been added to emphasize the importance of securing funding for the recommended actions. The plan states that the SWRCB will support appropriate legislation to secure funding, if necessary, and may consider the issue during the water rights process.

Comment: Is it reasonable to deliver water to irrigate lands when that action results in drainage and wastewater that is toxic to fish, other aquatic life, and wildlife, and which degrades both public and private beneficial uses of the receiving water? (SARA-1)

Response: It is not reasonable to retire productive, irrigated land due to drainage problems unless all other options are exhausted. The plan includes a program of implementation to manage salt loads in the short-term, and it recommends construction of an isolated drainage facility in the San Joaquin Valley to solve the problem in the long-term.

Comment: The Principles for Agreement identified provision of adequate flows for San Joaquin River fisheries during the spring pulse flow as a continuing problem. The SWRCB should, therefore, include an additional recommendation to the USBR and other agencies to acquire water through purchases from willing sellers to augment flows on the San Joaquin River during the April/May pulse flow. These augmentation flows should not be subject to 100 percent of San Joaquin River flow export criterion during this period. (BISF-1)

Response: The flow objectives on the San Joaquin River from April 15 through May 15 range from 3,110 cfs to 8,620 cfs. These flows are substantially higher than recent historical flows during this period. The effect of these flow objectives should be evaluated before recommending that they be augmented.

Comment: We feel that the SWRCB should be more aggressive in defining methods to manage the various factors that influence fish and wildlife in the Central Valley. The plan defines various other recommended actions, such as drainage control and harvest management. However, because of the criticality of these impacts on restoration activities and their interrelationship with the factors under the SWRCB's direct authority, these other factors must be emphatically addressed. (NCPA-1)

Response: The SWRCB agrees that all of the factors that affect aquatic resources in the Estuary must be emphatically addressed. The combination of the water quality objectives and the recommendations to other agencies is intended to accomplish this goal. The SWRCB will monitor the effectiveness of the plan and correct any deficiencies as they become evident.

Comment: [Page 29, last para.] The BCDC has taken a strong position against the discharge of San Joaquin Valley agricultural drain water into the San Francisco Bay. The draft plan might be interpreted to be endorsing such action. To ensure that salts and agricultural pollutants are dealt with on site, we emphasize the need for source control and discourage the use of reservoir releases for pollution dilution in the San Joaquin River. (BCDC-1)

Response: As stated in the plan, in the long-term, in-basin management of salts must be supplemented by disposal of salts outside of the San Joaquin Valley if agriculture is to continue on existing lands. Therefore, the SWRCB recommends that the USBR reevaluate

alternatives for completing a drain to discharge agricultural drainage outside of the San Joaquin Valley. The most likely alternative discharge locations are the ocean or the Bay-Delta Estuary. The most appropriate site for the discharge should be selected through the reevaluation process. Waste discharge requirements to protect the beneficial uses will be developed after the discharge location is selected and environmental studies are completed.

Comment: [Page 30] We support the approach to fish screening incorporated in the draft plan. The implications of location, timing, and methodology need to be much better understood before what could otherwise be an extremely expensive, disruptive, and ineffectual construction program is started. (CDWA-1)

Response: The SWRCB agrees with this comment. The recommended action outlines a stepwise approach for evaluating the need for screens and a program for their installation, as appropriate.

Comment: [Page 30] The diverter has a responsibility to screen diversions as a cost of doing business. Screening has not been rigorously enforced by the SWRCB. An injunction should be filed by the Attorney General against the diverters that are not complying with the screening requirements, or that have inadequate screens. (SARA-1)

Response: The SWRCB can take enforcement action against a diverter if the method of diversion is unreasonable. The recommended actions in the plan include a program to develop both performance criteria for diversions and testing specifications to assess if diversions are having an unreasonable effect on fish.

Comment: [Page 32] The following five comments address the construction of the Old River Barrier and the possible benefit of such construction, as illustrated by the USFWS salmon smolt survival model:

1. We urge the SWRCB to consider including the Old River barrier in the preferred alternative as recommended by all of the parties. To ignore the Principles for Agreement and require a large amount of water to provide protection where a physical solution is recognized will be a waste of water. (SJTA-2)
2. The USFWS model shows the significance that the Old River barrier has on survival. The USFWS smolt model has been incorporated into the EACH model, and with a barrier there is a 3-4 fold increase in salmon population over the base case through a ten year period. (SJTA-2)
3. The figures in Chapter VIII show that without the Old River Barrier there is only a 0.01 improvement in the salmon smolt survival index between the calculated and the preferred alternative using the 1984-1992 reference period hydrology, and only 0.03 using the 1922-1992 baseline. The preferred alternative achieves these trivial gains at enormous costs to upstream water users. In contrast the same USFWS model predicts

increases of 0.16 to 0.20 in the index when the barrier is present under the preferred alternative flows. According to the model results, there is essentially no benefit to salmon smolts as a result of the proposed San Joaquin River flows. Therefore, it makes no sense to require such high spring flows without the Old River Barrier in place. (SJTA-2)

4. Which of the alternatives include the Old River Barrier? It is not apparent from the discussion which alternatives, if any, include the Old River Barrier. It is misleading to tout the benefits of the Old River Barrier when the SWRCB's preferred alternative does not include the barrier. (SJTA-2)
5. There have been no studies to date regarding the potential effect of the Old River Barrier on Delta smelt. Reservations about the use of a barrier because of its effect on Delta smelt are based on speculation and judgement. Requiring high spring flows without the Old River Barrier would be a waste and unreasonable use of water. (SJTA-2)
6. The Principles for Agreement included requirements to install and operate a physical barrier at the head of Old River between April 15 and May 15, coincident with the outmigration of salmon smolts, and between October 1 and October 31, consistent with provision of pulse flows to attract adult fall-run chinook salmon in the San Joaquin River. Similarly, the Principles for Agreement includes a requirement to install an acoustic barrier at the head Georgiana Slough between November 1 and June 30, coincident with outmigration of salmon smolts. These requirements have been omitted from the draft plan, which should be revised to include them. (JCWU-1)

**Response:** The program of implementation of the plan includes a recommendation to the DWR and the USBR, in consultation with the DFG, USFWS, and National Marine Fisheries Service (NMFS), to test the use of a physical barrier at the head of Old River and either a physical or acoustic barrier at the head of Georgiana Slough. These barriers are still experimental, and a requirement to install them at this time is premature. There is general agreement that the barriers are beneficial to emigrating salmon smolts, but their effect on estuarine species is uncertain. It is premature to require construction of barriers until evaluation and environmental documentation of their effectiveness is complete.

**Comment:** [Page 33] I am concerned about the proposed research to determine the impact of introduced species, specifically striped bass, and the limitation on the introduction of new species, under recommendations to other agencies. I feel that it's a case of pitting one species against the other and maybe punishing a substantial population to benefit other beneficial uses, such as water diversions. (Transcripts-BFC)

**Response:** The recommendations regarding introduced species are intended to determine the impacts of introduced species on native species, and to protect native species, as necessary,

against introduced species. The recommended research is intended to determine the impacts on introduced species and the potential benefits of control measures. The restriction regarding requests for introduction of new aquatic species is not applicable when there is reliable evidence that such action will not have deleterious effects on native species.

Comment: [Page 33] We support the construction of a hatchery on the Tuolumne River. (SJTA-2)

Response: Comment noted.

Comment: [Page 34] Ramping rates for the protection of salmon and steelhead are already given due consideration as part of the FERC licensing process. It would be inappropriate for the SWRCB to recommend changes in instream flow requirements in water rights permits on FERC-licensed facilities. (SJTA-2)

Response: The comment is noted. The SWRCB believes that it does have the authority to recommend some changes in instream flow requirements and to modify water rights permits with respect to these facilities.

Comment: [Page 34] We support the draft plan's approach of looking at various alternative water conveyance facilities, especially in view of the increased outflow the draft plan provides. Keeping the primary nursery areas well west of the export pumps should reduce the impact of the export pumps on the eggs, larvae, and smaller fish that are hardest to screen, and will probably eliminate carriage water needs. Incremental solutions short of an isolated transfer facility should be the most effective means of dampening the impacts of water conveyance facilities. Isolated transfer facilities would in our view violate the common pool concept which is at the heart of the Delta Protection Act. (CDWA-1)

Response: The Delta Protection Act (Water Code sections 12200-12205) ensures an adequate water supply in the Delta to maintain and expand agricultural, industrial, urban, and recreational development. Any alternative conveyance facility considered under this recommendation must comply with this act and any other applicable law.

Comment: [Page 35] We concur with the statement of the need to perform biological and hydrodynamic studies regarding the effectiveness of pulse flows. Design of such studies should ensure that adequate information is acquired to distinguish between the effects of pulse flow/export reduction and barrier effectiveness. (SFPUC-2)

Response: The SWRCB concurs with your suggestion that these studies distinguish between the effects of pulse flow/export reduction and barrier effectiveness.

Comment: [Page 37] A statement regarding the potential for implementation of a sliding scale for western Suisun Marsh standards should be included in the program of implementation. (DWR-2) (This comment was submitted by the DWR; however, it was

titled "Joint Recommendations on Suisun Marsh Objectives Presented in the SWRCB's Draft Water Quality Control Plan", and it was signed by the USBR, DWR, DFG, and SRCD. Support for this recommendation was also expressed by JCWU-2 and CWA-1)

Response: In general, sliding scales result in objectives more consistent with the natural hydrologic conditions in the Estuary. Therefore, the suggested statement is included in the plan.

Comment: [Page 37] A statement should be included in the program of implementation regarding the importance of operating the Suisun Marsh Salinity Control Gates to meet salinity standards in both the eastern and western Suisun Marsh, and describing a process to address potential future requests to alter their operation. (DWR-2) (This comment was submitted by the DWR; however, it was titled "Joint Recommendations on Suisun Marsh Objectives Presented in the SWRCB's Draft Water Quality Control Plan", and it was signed by the USBR, DWR, DFG, and SRCD. Support for this recommendation was also expressed by JCWU-2 and CWA-1)

Response: The statement is unnecessary at this time. The process outlined by the commenter is applicable to all of the objectives. There is no reason to single out this objective for discussion of the process. If appropriate, the SWRCB may consider this issue during the water rights process.

Comment: [Pages 37-38] The draft plan should include a specific recommendation for the mitigation of adverse salinity impacts on brackish tidal wetlands through restoration of this type of habitat elsewhere in the Suisun Marsh. This mitigation should be a high priority under the section titled "Recommendations to Improve Habitat Conditions". To assist in the implementation of this mitigation program, we request that the BCDC be included in the Suisun Marsh Ecological Work Group. (BCDC-1)

Response: The plan includes a recommendation to restore and preserve marsh, riparian and upland habitat in and upstream of the Delta. These activities are important throughout the watershed. The BCDC is added to the Suisun Marsh Ecological Work Group, as recommended. It should be noted that the list of recommended parties on the work group was not meant to exclude any other interested party from participation.

Comment: [Page 38] Staff from the NMFS and the USEPA should be included on the Suisun Marsh Ecological Work Group. (DWR-2) (This comment was submitted by the DWR; however, it was titled "Joint Recommendations on Suisun Marsh Objectives Presented in the SWRCB's Draft Water Quality Control Plan", and it was signed by the USBR, DWR, DFG, and SRCD. Support for this recommendation was also expressed by JCWU-2 and CWA-1)

Response: The NMFS and the USEPA are added to the Suisun Marsh Ecological Work Group. It should be noted that the list of recommended parties on the work group was not

meant to exclude any other interested party from participation.

Comment: [Page 38] A statement should be included in the program of implementation for evaluating and meeting Suisun Marsh objectives in the western Marsh. (The proposed language in the statement is provided by the commenter. The statement charges the Suisun Marsh Ecological Work Group with evaluating the objectives scheduled to begin in October 1997, and it includes a brief history of the facilities previously envisioned to meet these objectives. The statement also discusses the ability of the DWR and the USBR to control the salinity at these locations.) (DWR-2) (This comment was submitted by the DWR; however, it was titled "Joint Recommendations on Suisun Marsh Objectives Presented in the SWRCB's Draft Water Quality Control Plan", and it was signed by the USBR, DWR, DFG, and SRCD. Support for this recommendation was also expressed by JCWU-2 and CWA-1)

Response: The plan states that the work group will evaluate the beneficial uses and water quality objectives for the Suisun Bay and Suisun Marsh ecosystem. This statement should adequately address the commenter's concerns. The issue of the ability of the DWR and the USBR to meet the objectives in the western marsh will be considered during the water rights proceeding.

### **C. Monitoring Program**

Comment: Federal agencies will be working with the State agencies and others to develop a monitoring program to address the needs and requirements of the new standards. We believe the IEP is the appropriate vehicle to develop such a monitoring program and that integrated monitoring should be the goal. The monitoring program should also aid the efforts involved with the CVPIA implementation and the joint long-term State and federal Delta planning process. (CFED-1)

Response: The SWRCB agrees that an integrated monitoring program to assess the overall condition of aquatic resources in the Bay-Delta should be developed by the IEP. The provisions of the plan are consistent with this recommendation. The compliance monitoring program, however, is based on the need to ensure that the objectives are being met, and a detailed compliance monitoring program is included in the plan.

Comment: Representatives of the IEP have been working with representatives of water and environmental interests to develop a mutually agreeable monitoring program to evaluate the protective measures and provide information for revising the measures in the future. The document specifying monitoring goals, objectives, and strategies is being prepared to guide IEP monitoring programs development. This document exists in draft form. The parties have not reached the point of mutual agreement on the content language. Our intent is to submit a document acceptable to all parties to the SWRCB before the March 10, 1995, comment submission deadline. (Transcripts-IEP)

Response: The final version of the document mentioned by the IEP has not been submitted to the SWRCB.

Comment: The following principles should be used in developing and implementing the monitoring program (the commenter also provides specific suggestions about the application of the principles): (1) monitoring should evaluate the condition of organisms as well as populations; (2) monitoring should clarify the effects of water temperature on salmon smolts; (3) monitoring should incorporate up-to-date statistical methods; (4) monitoring should try to answer multiple questions; (5) monitoring methods should be evaluated by simulations; (6) monitoring should be complemented by modeling; (7) monitoring programs should have close supervision; (8) monitoring programs should provide for contingencies; (9) monitoring programs should take advantage of the intellectual resources of California's universities; (10) monitoring conducted under the Principles for Agreement should be coordinated with monitoring mandated by the CVPIA. (WILLIAMS-1)

Response: Monitoring necessary to characterize the condition of biological resources in the Bay-Delta is developed through the IEP. The IEP draws upon technical resources from multiple State and federal agencies and the university community. The principles recommended by the commenter are largely adhered to by the IEP.

Comment: The monitoring plan needs a great deal of work before it actually provides a blueprint for the monitoring that needs to be done. Any monitoring plan must address such issues as design, power and replication if we are to have any confidence in its results. We recommend that the current draft and subsequent iterations that add details be subject to extensive external review. (SFEI-1)

Response: The compliance monitoring program in the draft plan is sufficiently detailed at this time. The special studies element of the monitoring program is not detailed because it is undergoing constant refinement through the IEP process. The draft plan establishes only general goals for the special studies element. The IEP program is subject to extensive review. The SWRCB will consider adding more detail to the monitoring program during the water rights proceeding to implement the plan, if appropriate.

Comment: One of the most significant impediments to developing effective standards for protecting the Estuary has been the failure to conduct a coherent research and monitoring program aimed at answering key management questions. An independent review of the monitoring effort concluded that, while much money has been spent on monitoring, much of the data collection was unfocused. Although coordination and direction of the monitoring effort has improved, we are concerned that the mistakes that occurred after D-1485 will be repeated. In the draft plan's description of the monitoring program, it is clear that the monitoring will not include key resources such as the south Bay and will inadequately characterize San Pablo Bay. There is little emphasis on important hydrologic, hydrodynamic, and geomorphic processes affecting the Estuary. In addition, there is a disturbing confusion in terminology whereby research is characterized as an element of

monitoring. Furthermore, it appears the SWRCB intends to abdicate any leadership on the research effort; placing a difficult burden on agency scientists to determine management priorities. (BCDC-1)

Response: The SWRCB believes that the IEP is the appropriate place to develop a coherent research and monitoring program. The IEP draws upon the expertise of scientists in government, the universities, and the private sector. The independent review referred to by the commenter largely focused on IEP activities, and the IEP has been restructured to ensure that key management questions are addressed.

The monitoring section of the draft plan has been redrafted and the confusion in terminology referred to by the commenter has been eliminated.

Comment: While all of 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 SWRCB give guidance to that effort. The SWRCB has included a special studies element in addition to routine water quality and biological monitoring activities. We believe that two program elements 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 for these species will rely on improvements in the ability to monitor distribution and migration of these species. (2) In the long term, estuarine research programs to increase understanding of the Bay-Delta ecosystem must be drastically expanded. (BISF-1)

Response: The two program elements identified by the commenter are important. The elements fall within the goal statements that are incorporated into the revised plan.

Comment: We recommend that the following long-term goals be included in the monitoring program: (1) understanding the ecological responses of species of special concern to water project operation and design, with a view towards maximizing the predictability and sufficiency of water supplies while minimizing adverse impacts on these species; and (2) increasing our understanding of the large scale characteristics and functions of the Bay-Delta Estuary ecosystem, in order to better predict systemwide responses to management options. (BISF-3)

Response: The second goal has been incorporated into the monitoring program. The content of the first goal is incorporated into other goal statements in the monitoring program, but the wording is different.

Comment: The Joint Agencies indicated in their earlier comments that efforts were ongoing to address the development of an appropriate monitoring program for the plan and related activities. While substantial progress has been made in this area, ongoing efforts may continue past the anticipated date of the SWRCB's adoption of the plan. To reflect the status of current activities and stress the need for continuing work, the Joint Agencies recommend replacing the monitoring program section of the plan. (Proposed language for a complete monitoring program is provided.) (JCWU-2)

Response: The monitoring program section has been redrafted. Much of the language suggested by the commenter is incorporated into the redrafted section.