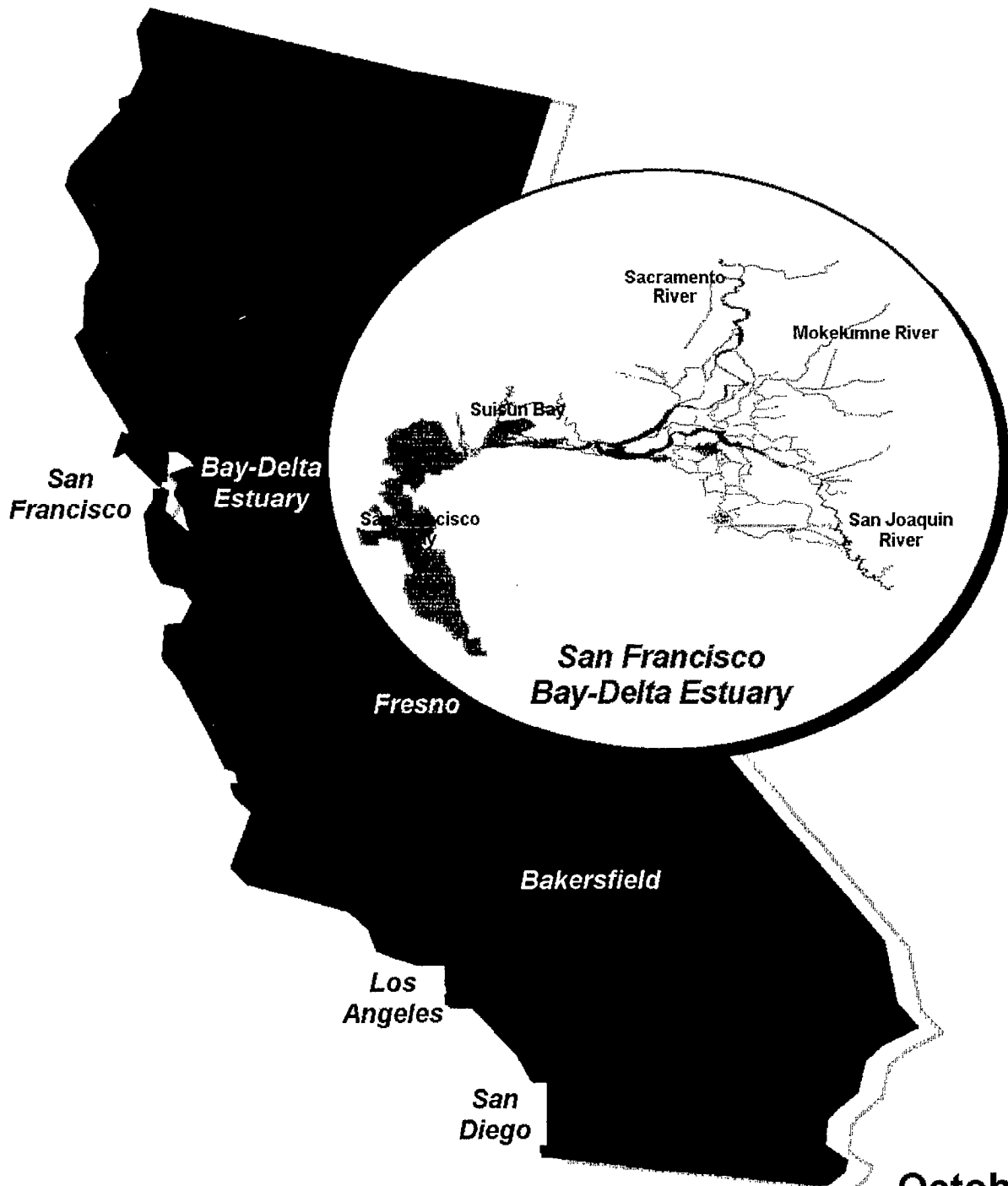


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Joint Proposal for Resolving San Francisco Bay-Delta Issues

A Briefing Book by Major Agricultural and Urban Water Agencies



October 1994

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Briefing Overview

I. Emerging Consensus Among Agricultural and Urban Water Suppliers for New Environmental Standards in the Bay-Delta

There is little doubt that many of the environmental resources of the Bay-Delta estuary have declined in recent decades. Operation of water supply projects throughout the Bay-Delta watershed in combination with a variety of other factors have contributed to this decline. Major agricultural and urban water suppliers in California that rely on supplies from the Bay-Delta watershed strongly support development and implementation of regulatory standards to help resolve the estuary's environmental problems.

Due to the importance of the Bay-Delta to water suppliers in all sectors of California's economy, agricultural and urban agencies are working together to develop a consensus position on standards and long-term environmental restoration measures.

Although all details are not yet finalized, consensus is growing among urban and agricultural agencies on the most appropriate approach for new standards. This briefing book contains the latest information regarding this emerging consensus.

II. Environmental Protection of the Bay-Delta is Crucial for the Long-Term Health of California's Economy

From a water resources perspective, California's economy and environment "meet" in the Bay-Delta estuary. The vast majority of the State's economy relies on the Bay-Delta or its tributaries as a major source of water supplies. At the same time, the Bay-Delta estuary provides some of the most important estuarine habitat on the West Coast.

We believe environmental and economic demands on the Bay-Delta can coexist with the natural resource base. Indeed, achieving a stable and reliable water supply requires resolution of the environmental problems in the Bay-Delta.

Water is perhaps the most critical input in one of California's most important economic sectors, agriculture. California agriculture generates nearly \$18 billion revenue annually and supports one out of every ten jobs in the State. California agriculture is so productive that it produces 50% of the Nation's fruits and vegetable on only 3% of the Nation's land.

The economic impact of previous water supply reductions on agriculture has been high. Farmers are finding it increasingly difficult to assure adequate water supplies to support their crops, and this uncertainty has caused some banks to withhold credit needed to buy seeds, fertilizers, and other inputs at the beginning of the growing season. These problems have contributed to falling land values in parts of the Central Valley.

In the urban economy, a compelling illustration of the economic stakes involved in solving the Bay-Delta water policy crisis appeared on March 21, 1994, when Standard & Poor's CreditWeek Municipal advised bond investors:

"[T]he allocation of water supplies for consumption in California remains in gridlock as both federal and state legislators try to achieve a workable solution to the conflicting interests in the Delta ... [The] problems faced by California water suppliers will have a generally negative impact on credit quality for years to come due to the economic impact and rising costs associated with water supply and reliability."

Briefing Overview (con't)

A down-grading of credit for public agencies in California would have a rippling effect throughout the economy, affecting utility rates and a myriad of other public and private services.

The economic issues at stake in the Bay-Delta prompted eleven of California's most prominent business leaders to ask President Clinton and Governor Wilson to seek resolution of Bay-Delta issues. Their letter, reported in newspapers statewide, stated in part:

"The continuing gridlock in setting standards for the Bay-Delta is simply unacceptable. The lack of approved standards is creating uncertainty that threatens the economic recovery we so desperately need. Please commit to achieving standards for the Bay-Delta this year."

III. Agricultural and Urban Water Agencies Have Developed a Comprehensive Program for the Bay-Delta that Lessens Water Costs

Although all details have yet to be resolved, agricultural and urban agencies have been moving toward a consensus position on new Bay-Delta standards.

During the past several months, agricultural and urban representatives have been exchanging views on the best approach for the Bay-Delta. These interests agree that current endangered species regulations are not effectively accommodating the competing demands for beneficial uses of Bay-Delta waters.

To remedy this situation, agricultural and urban agencies have been formulating an alternative program that builds upon EPA's proposal and addresses overall habitat quality in the Bay-Delta instead of current narrow requirements for a few particular species, and to do so at an acceptable water cost.

As we understand it, one of the early commitments of the Federal Ecosystem Directorate (Club FED) was to improve the Bay-Delta's ecosystem in a manner that minimizes water costs and associated economic impacts. This Joint Plan is consistent with this mandate from Club FED.

IV. Comprehensive Ecosystem Management Must Replace the Species-by-Species Approach of Current ESA Implementation

It has become clear to water users throughout California that endangered species actions that focus on the needs of particular species produces inadequate environmental protections while creating undue water supply uncertainty.

By contrast, this Joint Proposal is comprehensive in nature and focuses on overall habitat quality for all aquatic organisms. A comprehensive, multi-species ecosystem management plan is necessary to address the multitude of factors contributing to Bay-Delta fisheries decline and to provide an alternative to counterproductive and uncoordinated species-by-species measures under current endangered species regulations. Such a plan must also address the environmental tradeoffs posed by different management strategies, such as impacts on Mokelumne River salmon production goals from the proposed Delta operational changes.

This Joint Proposal will increase water supply reliability while maintaining high degrees of environmental protection. It should be noted, however, that success of this comprehensive program will be in jeopardy if present or future ESA implementation measures induce water supply constraints beyond those this program will produce. In other words, agreements by Federal and State resources agencies regarding this program must have sufficient "shelf-life" to assure the increased water supply reliability that California's economy demands.

Joint Proposal on Bay-Delta Standards

I. Background

In January 1994, the U.S. Environmental Protection Agency (EPA) proposed new Bay-Delta standards that included measures for three areas:

- A. Estuarine shallow-water habitat in Suisun Bay;
- B. Striped Bass spawning in the San Joaquin River; and
- C. Salmon smolt out-migration through the Delta

EPA elicited comments on their proposal and are scheduled to finalize it in December 1994.

II. Recommended Refinements to EPA's Proposed Standards

As an initial step toward ending the gridlock and setting Bay-Delta standards, agricultural and urban agencies studied EPA's proposed standards and recommended refinements that would provide as effective or more effective environmental protection at a lower water supply and economic cost.

This initial step included an intensive four-month analysis by independent scientists and technical representatives concurrent with meetings between representatives of agricultural, urban, environmental, and State/Federal agencies.

III. Joint Water Users' Comprehensive Proposal (Category I - IV)

Following efforts to recommend refinements to EPA's proposed water quality standards, major urban and agricultural agencies throughout the State intensified their efforts to develop a consensus position on a comprehensive package. This package not only addresses Spring outflow issues (which was the focus of EPA's proposal; referenced here as "Category I"), but

also included other essential elements necessary for the developing a coordinated estuarine habitat protection plan. These elements were grouped into the following categories:

Category I: Estuarine shallow-water habitat outflow/salinity standard for the Suisun Bay region (Spring period only);

Category II: Flow and operational requirements for the Bay-Delta estuary (Spring, Summer, Fall, & Winter);

Category III: Non-outflow related biodegradation factors and habitat and measures to improve fish transport; and

Category IV: Implementation measures including: balancing responsibility among watershed users, developing a mitigation credits program, and identifying possibilities for an Environmental Restoration Fund

A. Category I: Estuarine Habitat Standard

The estuarine habitat standard focuses on aquatic fish and wildlife habitat in the Bay-Delta Estuary caused by the interaction of tidal saltwater from the Pacific Ocean and freshwater flows from the Bay-Delta's watershed.

The proposed standard requires maintaining the quality of Bay-Delta waters as necessary to protect estuarine habitat, fish migration, cold freshwater habitat, and other existing beneficial uses.

Freshwater outflow, measured directly or indirectly through a "salinity" standard, is an important mechanism in establishing the necessary habitat conditions.

Joint Proposal on Bay-Delta Standards (con't)

The Joint Proposal's estuarine habitat standard incorporates a modified version of the "X2" salinity standard proposed by EPA and applies the X2 criterion in biologically more appropriate ways. "X2" stands for two parts per thousand salinity for a certain number of days at designated measuring locations. It can relate directly to freshwater outflow and thus serves as a convenient indicator of outflow.

The salient features of the X2 criteria include:

1) *Sliding Scale*

The X2 standard must reflect the inherent hydrologic variability of the estuary. The proposed "sliding scale" adjusts the standard on a monthly basis in response to recent hydrologic conditions. For example, if a period of high rainfall in February follows a dry December and January, EPA's proposed standard would keep X2 salinity levels farther upstream than under natural conditions. This proposal's sliding scale would update the standard monthly to ensure proper interaction with natural hydrologic variation.

2) *Measuring Stations*

EPA's proposal would measure X2 compliance at three points in the estuary, listed from farthest upstream to farthest downstream:

- a) The Confluence of the Sacramento and San Joaquin Rivers at Collinsville;
- b) Chipps Island; and
- c) Roe Island.

Roe Island Trigger: Some interests had originally expressed concerns that EPA's proposed Roe Island standard would provide uncertain biological benefits at a high water cost. The current Joint Proposal now supports Roe Island as a measuring station, with the proviso that the Roe standard only be effective when X2 exists at the Roe Island measuring station at least 14 days the previous month.

This trigger is necessary to more closely replicate natural hydrologic variability. In very dry years, X2 salinity levels would, in a natural state, occur farther upstream from Roe Island. Enforcing the Roe standard under such conditions would create unnatural habitat conditions and impose higher water costs.

Because the biological benefits of a Roe standard are still somewhat uncertain, a monitoring and evaluation program should analyze the affect of the Roe standard on habitat quality. Then the standard should be revised accordingly.

3) *Alternative Methods for Compliance*

At some times, unusual weather and tidal patterns could prevent the attainment of a salinity standards despite the best efforts of water operators. Therefore, the Joint Water Users' proposal permits compliance by meeting at least one of three alternative criteria:

- a) Average daily salinity (X2) at the compliance point; or
- b) 14-day running average salinity at the compliance point; or
- c) Maintenance of Delta outflow calculated to maintain desired salinity at steady-state.

B. Category II: Flow and Operational Controls

Water inflow/outflow and other management requirements comprise the second element of the Joint Water Users' proposed program. Some of these measures may be part of the consultation process for early implementation of standards, while other measures may require water rights review before the State Water Board. The operational measures the Joint Water Users suggest include:

Joint Proposal on Bay-Delta Standards (con't)

- 1) *Delta Cross Channel gate closures:* Selective closure of the Delta Cross Channel is one of the highest priority actions needed to protect certain migratory fish.
- 2) *Fish Barriers at Old River and other locations:* Installation of acoustical and/or physical barriers at the head of Old River and other locations in the Bay-Delta will help reduce delays in emigration and entrainment losses of juvenile chinook salmon.
- 3) *Flow Requirements:* Besides monitoring the location of X2 salinity, it will be necessary to provide specific levels of freshwater flow in the Sacramento and San Joaquin Rivers in order to improve general aquatic habitat conditions. Flows provide a "homing cue" for migrating fish and also transport fish eggs, larvae, and young downstream.
- 4) *Export Restrictions (Ratio Limits / Direct Restrictions):* Delta exports have direct and indirect impacts on estuarine habitats. Direct fishery losses at pumping facilities, along with detrimental effects of alterations in Delta flow patterns caused by exports need to be addressed by various measures

To alleviate the impact from export restrictions, the Joint Proposal incorporates a flexible formula that limits pumping as a ratio of export-to-inflow. This ratio formula allows the State and Federal water projects to export excess flows during high runoff years, while at the same time reducing the impacts of the pumps.

Rigid fixed export restrictions, on the other hand, place a fixed ceiling on pumping regardless of whether the system has excess flows. This type of export restriction provides no additional biological benefit and severely limits operational flexibility and any incentives for developing innovative wet-year banking programs

C. Category III: Non-outflow-related factors

In order to address the range of factors with significant effect on the Bay-Delta's ecological health, the Joint Water Users' coordinated program includes measures to control the following non-outflow (biodegradation) factors:

- 1) Unscreened water diversions in the Sacramento River and other locations
- 2) Waste discharge control and pollution prevention
- 3) Legal fishing (sport and commercial)
- 4) Illegal fishing (poaching)
- 5) Land-derived salts
- 6) Control of exotic species
- 7) Restoration of riparian, wetland, and estuarine habitats
- 8) Control of Delta channel alterations/local land-use modifications

Any program that fails to address these factors will not enhance the habitat conditions of the Bay-Delta to a sufficient degree to promote necessary levels of environmental restoration.

In addition, a program of demonstration projects and technical feasibility analyses will have to occur to help implement solutions to non-outflow factors.

Joint Proposal on Bay-Delta Standards (con't)

D. Category IV: Implementation Measures

After adopting a new protection plan for the Bay-Delta, the State Board will begin water rights proceedings for implementing the new standards and other proposed measures. In order to lessen negative economic impacts associated with new regulations, some agencies have supported the following implementation measures. Some of these measures continue to be points of discussion among agricultural and urban agencies.

1) Balancing responsibility among watershed users

Traditionally, the two major exporters from the Delta (the State Water Project and the Federal Central Valley Project) have borne the entire responsibility for meeting Bay-Delta water quality standards and outflow requirements. The Racanelli court decision and evolving needs of California's water users indicate the State Board will need to consider all Bay-Delta watershed users when allocating responsibility for meeting new Bay-Delta standards.

Although the State Board may wish to consider other approaches, the urban agencies presented one approach in their September 1, 1994 submittal to the State Board.

2) Mitigation Credits

The proposed mitigation credits program would allow a water user to meet some or all of its environmental obligations by substituting another resource deemed equivalent to its required actions. Some obvious alternatives include money paid to a fund to be used for the purchase of water and the direct purchase of in-lieu water from a willing seller.

Other alternatives may be dependent on a long-term ecosystem management plan, and could include authorizations to divert water in exchange for

the purchase of an equivalent forbearance by another user or the creation of an environmentally beneficial project that is deemed to be an acceptable substitute for the obligation.

A State agency such as the State Board or an entity formed specifically for this purpose would administer the program. To the extent possible, the State Board should establish the parameters of a mitigation credits system in the implementation phase of Bay-Delta hearings.

3) Environmental Restoration Fund

If the State wishes to obtain additional water for environmental purposes, it could purchase the supplies through an environmental restoration fund. Financing for the Fund could come from a fee on water users, State General Fund moneys, or a general obligation bond issuance. A State or non-governmental entity would manage the Fund.

Besides going toward water purchases, the Fund could help provide State matching funds for implementation of the Central Valley Project Improvement Act or could finance additional environmental improvement projects such as rehabilitation or construction of fish screens, replenishment of spawning gravel, installation of temperature control devices, and other mitigation and evaluation projects identified by fishery agencies and other fishery experts.

E. Comprehensive Monitoring Plan

The Joint Proposal includes a comprehensive evaluation and monitoring plan to assess the effectiveness of measures implemented under Categories I, II, and III. Several management measures will require real-time monitoring and exploration of cause and effect relationships between relevant biological variables.

Joint Proposal on Bay-Delta Standards (con't)

F. Unresolved Issues

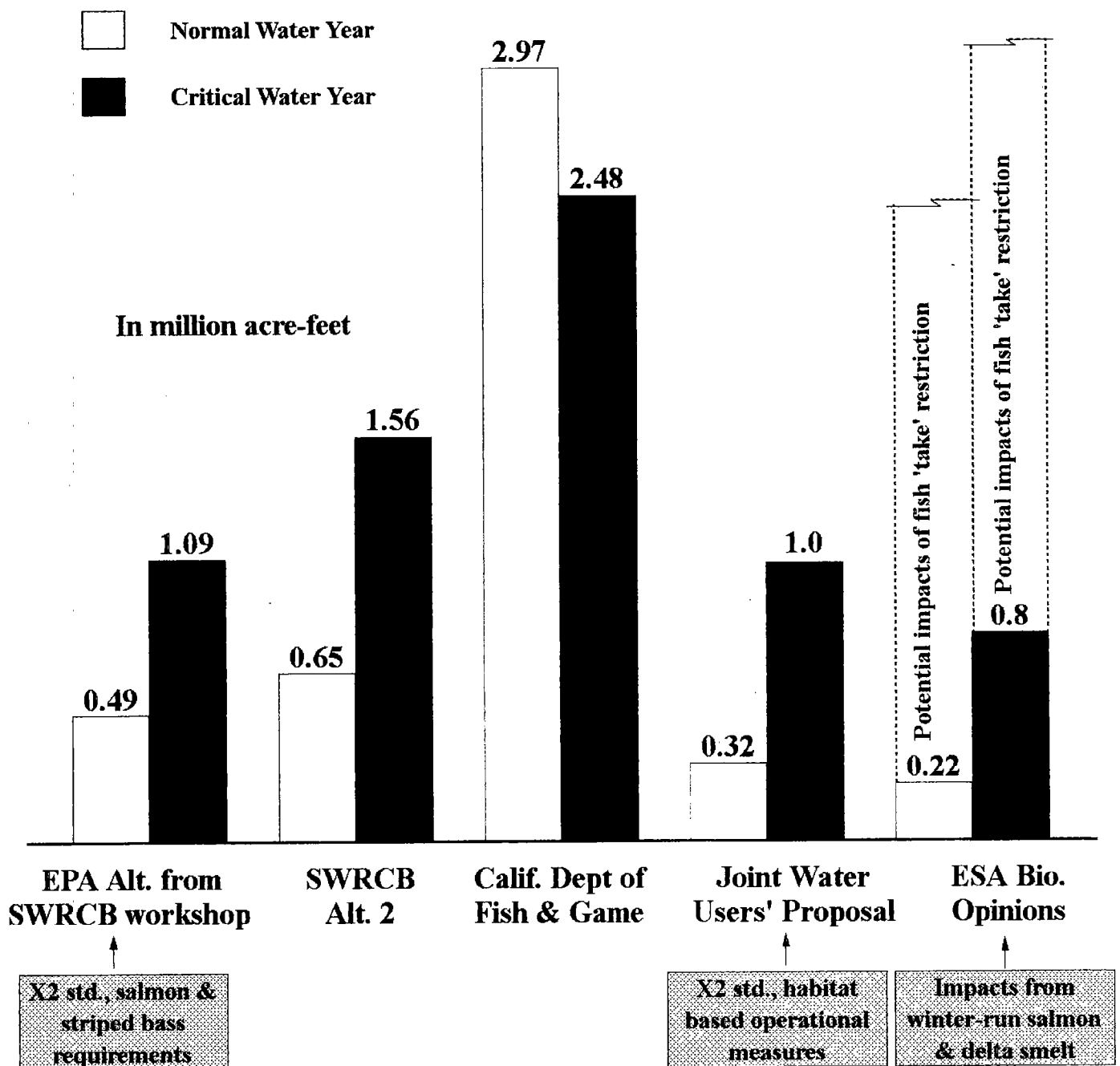
Several unresolved issues remain between the Joint Water Users' position and the Federal and State resource agencies. The Joint Water Users have recently met with these agencies and have heard their technical concerns regarding this proposal. The parties to this proposal are presently examining these issues and will continue to meet with the resource agencies. The unresolved issues include:

- 1) *Statement of Goals*: Should there be a stated target level for improving the health of the estuary, and if so, what should it be?
- 2) *Cross-Channel Gate closure*: What is the optimal schedule for closing the Delta Cross Channel? The Cross Channel protects migrating fish from diversion into the interior Delta.
- 3) *San Joaquin River flows*: What flow or salinity parameters are necessary to provide healthy aquatic habitat in the San Joaquin River for the benefit of all species, including chinook salmon and striped bass?
- 4) *Control of fish mortality at pumping facilities*: What is the appropriate method for limiting fish mortality at the State Water Project and Central Valley Project pumping plants? The Joint Water Users are continuing to meet to refine their recommendations on this issue.

Water Supply Impacts of Proposed Standards

When formulating new Bay-Delta standards, the State Board should seek alternatives that provide effective environmental benefits at a reasonable water cost.

Current analysis indicates the Joint Proposal will require approximately one million acre-feet of additional outflow in critical years, as compared to higher water costs for the alternatives listed below.



CALFED -- State/Federal Partnership

I. The State/Federal Framework Agreement

In June 1994, Federal and State resource agencies executed a "framework agreement" for resolving long-standing Bay-Delta issues. The agreement represents a new cooperative relationship between the State and Federal governments, who had been at odds over Bay-Delta issues.

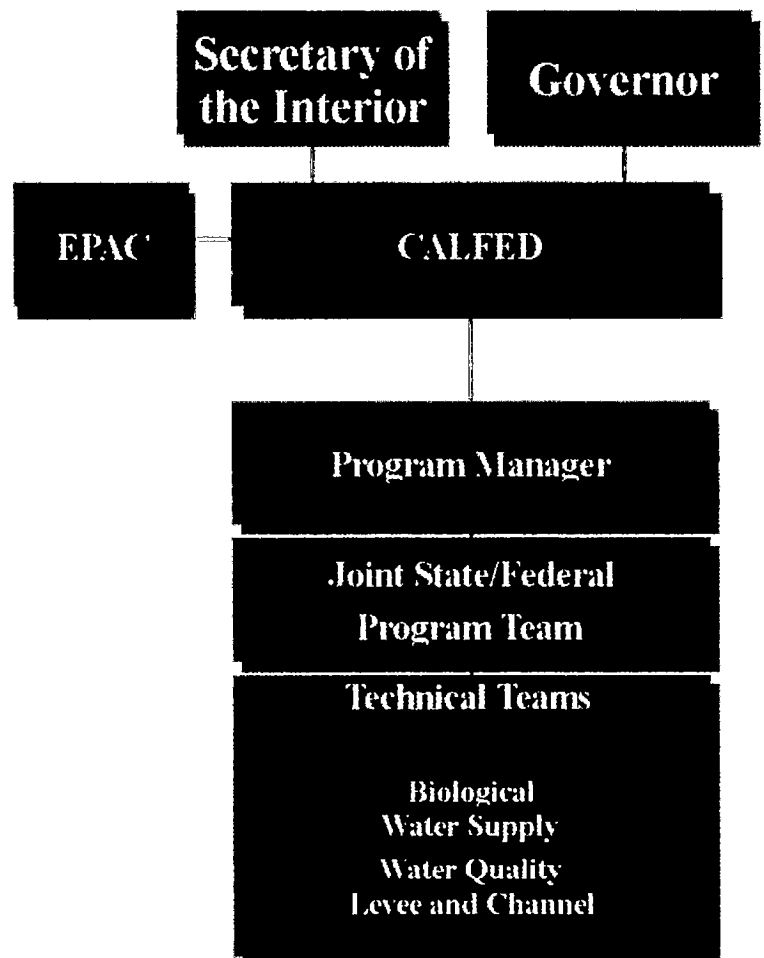
The agreement includes several key provisions:

- 1) EPA will adopt final Federal water quality standards in December 1994. The State Board, in cooperation with Federal agencies, will develop a Bay-Delta protection plan that meets both Federal and State requirements. After EPA approves the State's plan, EPA will withdraw the Federal standards.
- 2) The Federal and State agencies will coordinate water project operations with the requirements of the Endangered Species Act and the Central Valley Project Improvement Act.
- 3) The State and Federal agencies agree to jointly manage the Bay-Delta Ecosystem Partnership, a long-term process for resolving Bay-Delta environmental and water supply issues.

III. The Bay-Delta Ecosystem Partnership

Federal and State resources agencies recently announced the creation of the Bay-Delta Ecosystem Partnership to identify long-term solutions for the Bay-Delta. Recognizing that immediate standards are only the first step in restoring the Bay-Delta, these agencies acknowledge the need for a more comprehensive, multi-species ecosystem management program.

The organization of the Partnership is still under discussion, but probably will resemble the following:



CALFED -- State/Federal Partnership (con't)

Organizational Units:

1) The **Governor** and **U.S. Secretary of the Interior** will oversee the entire process and jointly appoint members of the Estuary Policy Advisory Council (EPAC).

2) **CALFED**, consisting of high-level officials of the Federal and State resource agencies party to the Framework Agreement, will provide policy direction and oversight to the process and ensure consistency between the program policy and statutory requirements. While the Governor and Secretary of the Interior have ultimate approval authority over this process, functional decision-making responsibility will rest with CALFED. CALFED also will nominate appointees to EPAC.

3) **EPAC** (the Estuary Policy Advisory Council) is a citizens' advisory group consisting of representatives from the urban, agricultural, and environmental communities. EPAC will recommend issues the CALFED/Partnership should address, suggest evaluation criteria for alternative Bay-Delta planning components, and recommend preferred alternatives.

4) The **Program Manager** will: (a) be responsible for development and implementation of the solution-finding process; (b) be responsible to CALFED and will work closely with EPAC; (c) direct the daily activities of the joint State/Federal Program Team; (d) serve as the primary point of contact under NEPA/CEQA for public input and overall program comments; and

(e) be responsible for coordination with the Central Valley Project Improvement Act (CVPIA), Comprehensive Conservation Management Plan (CCMP), and other ongoing State and Federal programs. CALFED will select the Program Manager from a pool of qualified candidates.

5) The **Joint State/Federal Program Team** will include staff from State and Federal agencies with expertise in subject areas such as water supply, biological resources, water quality, levees and channels, NEPA/CEQA, and administrative and budgetary issues.

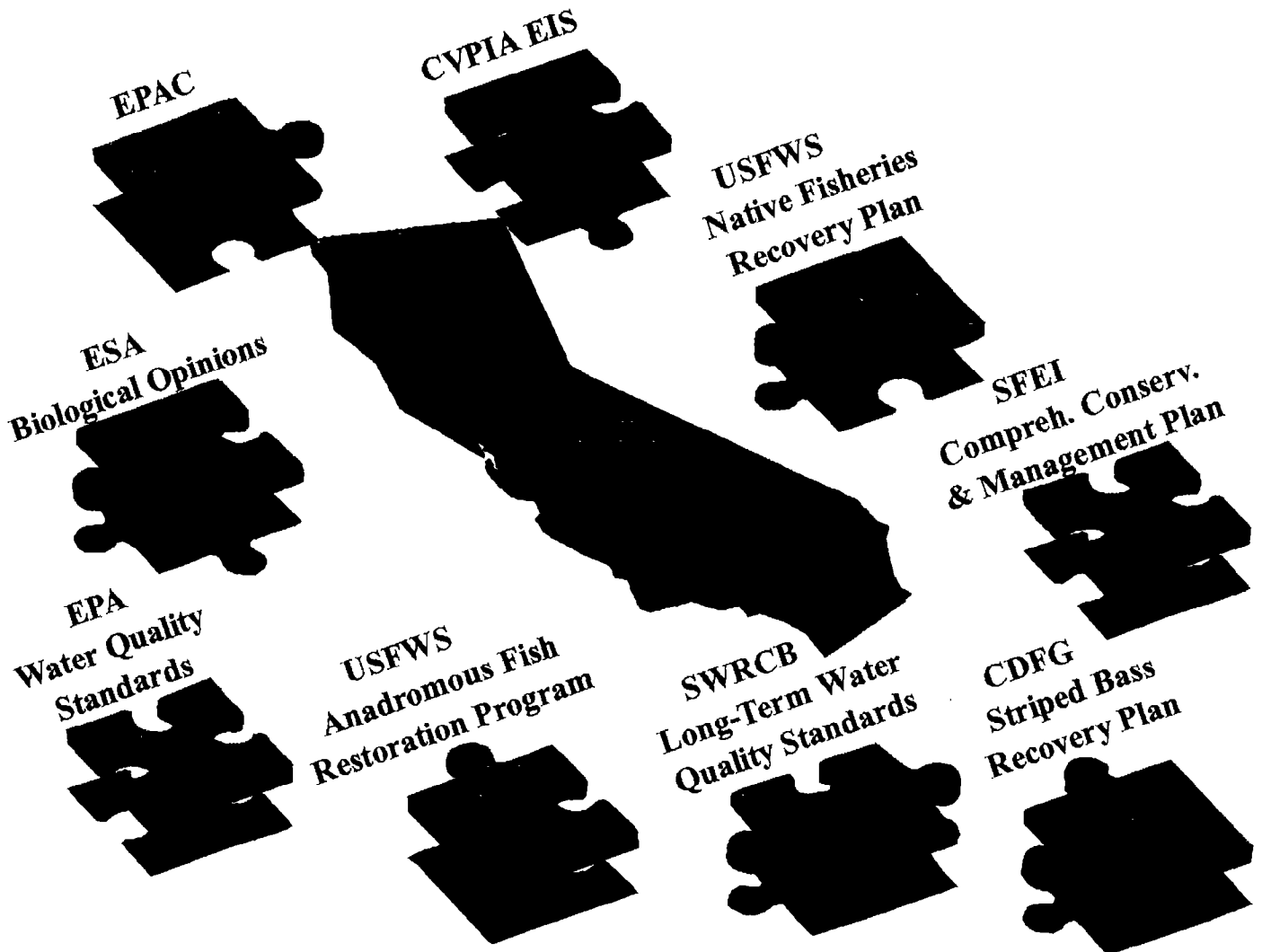
6) **Technical teams** will work under the Joint Program Team and will provide technical assistance on specific projects or components of the CALFED/Partnership process. The technical teams would include staff from State and Federal agencies and might include outside experts and consultants as needed.

CALFED -- State/Federal Partnership (con't)

III. Integration of Bay-Delta regulatory processes with CALFED/Partnership

A primary motivation for the CALFED/Partnership is integration of the myriad State and Federal activities in the Bay-Delta. The Joint Water Users believe that it is essential this CALFED intent is carried out as soon as practical. For instance, it would defeat the purpose of developing a multi-species ecosystem management plan if requirements under new or existing endangered species listings were not integrated into the CALFED process and thus altered the biological parameters and assumptions underlying CALFED's deliberations.

Therefore, it will be necessary for participating agencies to do more than merely coordinate their enforcement actions with the CALFED/Partnership. The relevant agencies should enter into Memoranda of Agreement that will fully integrate their endangered species enforcement actions into the CALFED/Partnership process. Actions requiring integration would include listings, consultations and formulation of biological opinions, jeopardy opinions, and recovery plans for listed species.



Comprehensive Ecosystem Management

I. The Impact of Endangered Species Actions in the Bay-Delta

Current implementation of the Federal Endangered Species Act (ESA) requires frequent and unpredictable shut-downs of Delta export facilities to prevent exceeding take limits for individual species, the listed winter-run chinook salmon and delta smelt. These shut-downs decrease the reliability of California's water supply infrastructure and jeopardize the water plans of agencies throughout the State and inherently interfere with efforts to develop more comprehensive habitat management approaches.

A lack of coordination by various Federal and State agencies regarding ESA actions compounds these problems. Measures to protect one species may counteract measures required by another agency for a different species. The net effect of this approach is using more water for less biological benefit. Effective biological planning will require integrating these processes that agencies currently undertake in isolation.

Moreover, ESA actions in the Bay-Delta too often have focused almost exclusively on water project operations, to the exclusion of non-water project factors that also contribute to the problem (e.g., Category III measures).

II. Multi-Species Planning and Ecosystem Management

Consensus has emerged from all sides of the water community that multi-species planning and ecosystem management must take place to avoid the problems created by the ad hoc, species-by-species approach of current endangered species regulations. Species-by-species management is inherently inefficient as it exacts higher water costs without comparable increases in habitat protection.

Comprehensive ecosystem management is a new and evolving area of science, and developing a multi-species plan for the Bay-Delta provides an opportunity to advance this innovative field.

Plans must focus on the ecosystem as a whole. Managers can modify a program "mid-stream" to accommodate the needs of species that appear not to respond positively.

III. "Shelf-Life": The Need for Regulatory Assurances

Secretary of the Interior Bruce Babbitt recently announced a new policy regarding the certainty associated with agreements to protect endangered species. The new policy provides assurances that agreements regarding endangered species protections will not later be subject to greater demands. The U.S. Fish and Wildlife Service recently announced regulatory guidelines ensuring that this new policy applies to aquatic species as well as terrestrial species.

The Bay-Delta Ecosystem Partnership provides an opportunity to apply this "shelf-life" policy to agreements regarding aquatic habitat and species.

Increasing Water Supply Reliability Requires Assurances

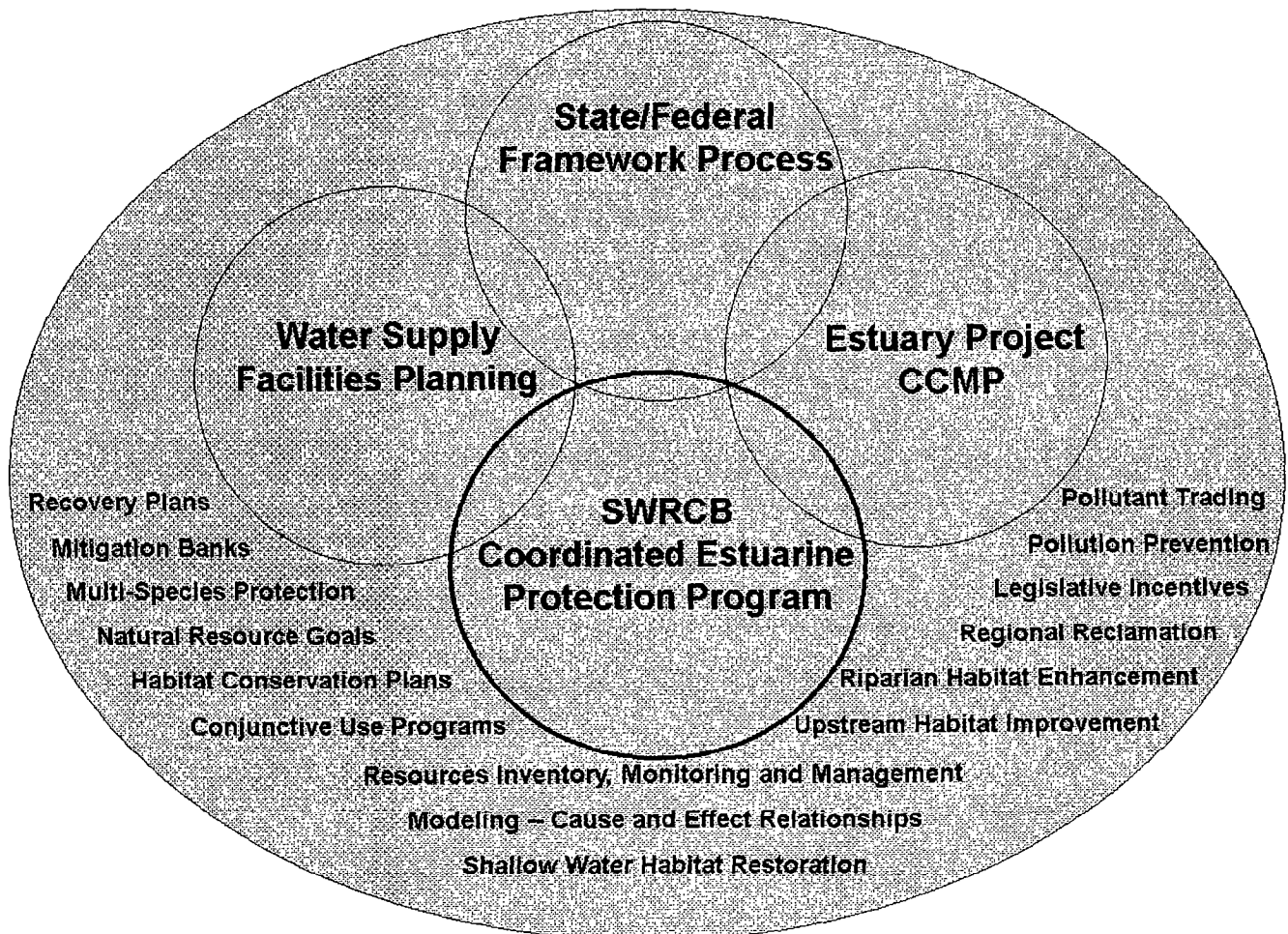
The Joint Water Users support the adoption of new Bay-Delta standards and commencement of a multi-species planning effort because of the promise these actions hold for increasing the reliability of water supplies from the Bay-Delta watershed.

This reliability will fail to materialize, however, if agreements reached with federal agencies have insufficient "shelf-life" to support reliance by water agencies for long-range supply planning.

Comprehensive Ecosystem Management (con't)

Comprehensive Ecosystem Management Plans will involve interlocking commitments among public and private entities with overlapping jurisdictions and interests in the Bay-Delta. The following diagram depicts some of the related actions and programs of a long-term program for the Bay-Delta. It will be necessary for the State Board to coordinate new standards with such a broad program.

Urban and agricultural agencies view the State/Federal Bay-Delta Ecosystem Partnership as the primary process for developing this comprehensive plan and ensuring consistency with applicable state and federal environmental laws, policies, and regulations.



ACTIONS

Flow & Operational Requirements

Spring

Summer

Fall

Winter

FLOW REQUIREMENTS

FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC JAN

Sacramento River Flows

Min. cfs flows at Rio Vista in C/D/BN/AN/Wet year types

San Joaquin River Flows

Min. cfs flows at Vernalis in C/D/BN/AN/Wet year types

Pulse/attraction flow in all years, except no two critical years in a row; includes closure of Old River barrier

Delta Outflow

Min. cfs flows in C/D/BN/AN/Wet year types

Estuarine Habitat Standard (based on avg. daily salinity, 14-day avg. salinity, or equivalent flow)

Pulse flow in Critical & Dry year types

Min. 30-days if X2 at Confluence

							3,000	3,000 - 4,000	3,500 - 4,500	
	1,000	2,000 - 5,000	1,000					1,000		
								28,000 AF Pulse		
		6,000	4,000	4,000 - 8,000	3,000 - 4,000	3,000	3,000 - 4,000	3,500 - 4,500	4,500 - 6,000	
		X2 Sliding Scale w/ 3-Way Compliance at Roe, Chipps, & Confluence (In D/C yrs, Feb.=28-days of X2 @ Confluence)								
		30-days of X2 @ Conf	7,000 cfs pulse for 28-days							

EXPORTS & DIVERSIONS

Export/Inflow Ratio Limits

Min. pumping

Limit pumping to X% Delta inflow (X% if no significant adverse impact to fisheries);

Increased monitoring at pumps & in-Delta:

Direct Export Limits

Exports w/ Old River barrier no greater than Vernalis flow

Min. 1,500 cfs pumping in all year types				
65%	30% (35% if no signif. impact)	35%(55%)	55% (65%)	65%
If the mortality estimate \leq X% density of population, then OK to pump at higher % inflow; or				
If the mortality estimate $>$ X% density of population, then maintain export/inflow ratios at lower % inflow;				
Exports \leq Vernalis flow				

ACTIONS

Flow & Operational Requirements

Spring

Summer

Fall

Winter

GATE & BARRIER OPERATIONS

FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | JAN

Cross Channel

Close radial gate in all year types

Old River

Install barrier for San Joaquin River salmon smolt emigration, adult salmon migration, & pulsed flows.

Georgiana Slough

Install acoustic barrier in all year types.

Cross-channel closed thru May 20		Closed	
Barrier for emigration	Barrier closed for adult migration & pulsed flows		
Acoustic barrier installed		Acoustic barrier installed	

SALINITY

Delta Agriculture

SWP/CVP Intakes

So. Delta Agriculture Wtr. Quality Modeling Assumption

Max. 1.0 EC (based on 14-day running average of mean daily ln mmhos)

1.0 EC at Vernalis

0.7 EC at Vernalis;

1.0 EC at Vernalis;

Emmaton (Sacramento River):

C	2.78 EC	
D	0.45 EC	1.67 EC
BN	0.45 EC	1.14 EC
AN	0.45 EC	0.63 EC

Jersey Point (San Joaquin River):

W	0.45 EC	
C	2.20 EC	
D	0.45 EC	1.35 EC
BN	0.45 EC	0.74 EC
AN	0.45 EC	

Terminous (Mokelumne River):

W	0.45 EC	
C	0.45 EC	
D	0.45 EC	
BN	0.45 EC	
AN	0.45 EC	

San Andreas Landing (San Joaquin River):

W	0.54 EC	
C	0.87 EC	
D	0.45 EC	0.58 EC
BN	0.45 EC	
AN	0.45 EC	
W	0.45 EC	

ACTIONS

Flow & Operational Requirements

Spring

Summer

Fall

Winter

SALINITY

FEB | MAR | APR | MAY | JUN | JUL | AUG | SEP | OCT | NOV | DEC | JAN

Municipal & Industrial

At CCWD or Antioch Wtr Works Intake on the S.J. River
At CCWD, City of Vallejo, Clifton Court,
Tracy Pumping Plant, & North Bay Aqueduct

Max. 150 mg/l chloride for 155/165/175/190/240 days/yr. during C/D/BN/AN/W; in intervals ≥ 2 weeks in duration.

Max. 250 mg/l maximum mean daily chloride

STRIPED BASS SPAWNING

Prisoners Pt: Max. mean daily EC until spawning has ended; Relaxed when Antioch spawning criteria relaxed.
Antioch (S.J. River): Max. 14-day avg. of mean daily salinity until spawning has ended

0.44 EC

0.55 EC

1.5 EC

Replaces above Antioch & Chipps criteria whenever the projects impose deficiencies

Deficiency

Critical Year Criteria

Dry Year Criteria

0.0 maf

1.5 EC

1.6 EC

0.5 maf

1.9 EC

1.8 EC

1.0 maf

2.5 EC

1.8 EC

1.5 maf

3.4 EC

1.8 EC

2.0 maf

3.7 EC

1.8 EC

SUISUN MARSH PRESERVATION AGREEMENT

Suisun Marsh Preservation Agreement (Normal)
Suisun Marsh Preservation Agreement (Deficiency)

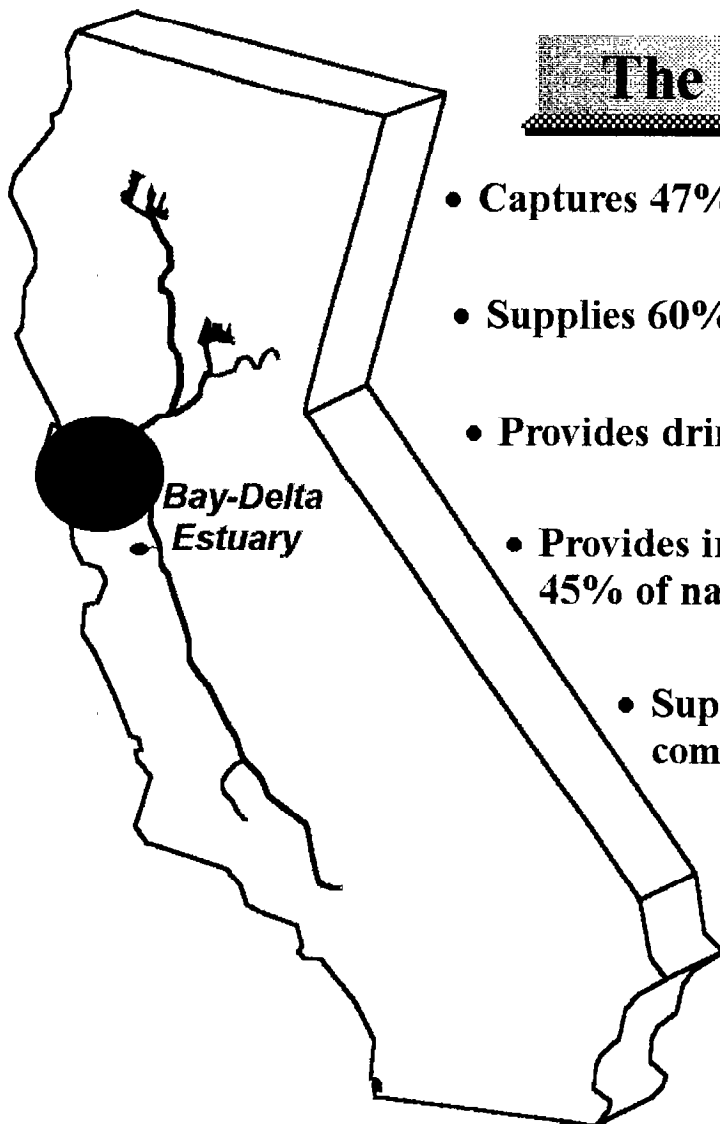
8.0 EC	8.0 EC	11.0 EC	11.0 EC		19.0 EC	16.5 EC	15.5 EC	12.5 EC
15.6 EC	15.6 EC	14.0 EC	12.5 EC		19.0 EC	16.5 EC	15.6 EC	15.6 EC

- The S.M.P.A. is based on the monthly average of both daily high tides in mmhos/cm EC at Collinsville, Montezuma Slough, Chadbourne Slough, Cordelia Slough, Suisun Slough, & Goodyear Slough (locations may differ).

The Bay-Delta -- A General Overview

The San Francisco Bay-Delta Estuary's environmental resources have been the focus of increased attention over the past few years as concerns about the declining health of the ecosystem have been highlighted by the recent six-year drought and various State and Federal regulatory actions.

From a water resources perspective, California's economy and its environment "meet" in the Bay-Delta Estuary. The Delta provides valuable habitat for a variety of sensitive fish and terrestrial species, and at the same time it serves as the hub of California's major water supply system that is essential to the operation of an \$800 billion State economy.



The Bay-Delta:

- Captures 47% of State's runoff
- Supplies 60% of State's drinking water supplies
- Provides drinking water to over 20 million people
- Provides irrigation water for 200 crops, including 45% of nation's fruits & vegetables
- Supports over 120 species of fish, and large commercial & recreational fisheries
- Contains the largest wetland habitat in western U.S.

*Data from EPA/USFWS/NMFS Briefing
and Calif. Dept. of Finance*

Bay-Delta Problems -- Environment & Water Supply Reliability

Environmental Problems:

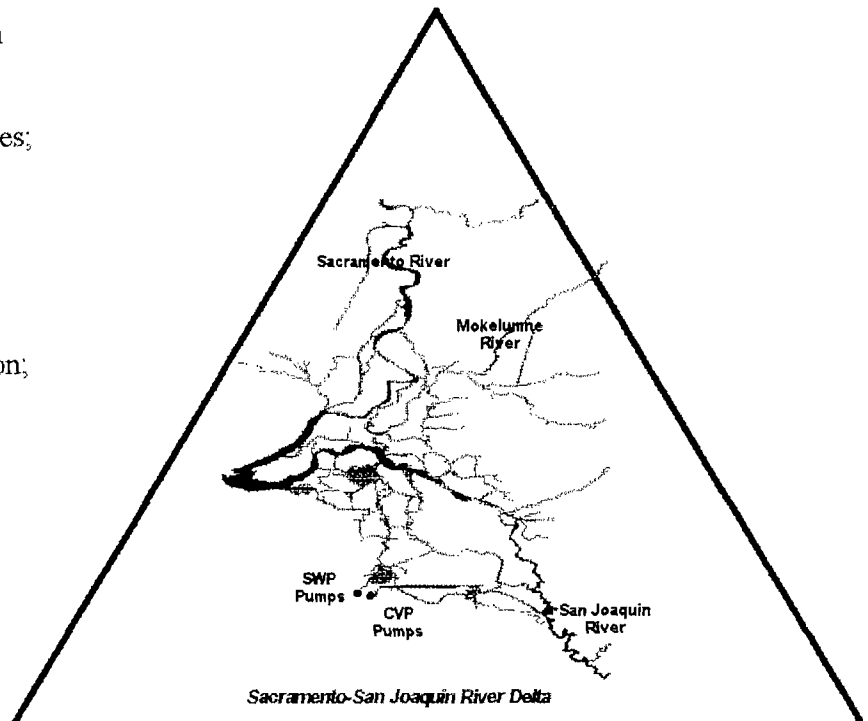
The operation of major water storage and diversion projects in the Bay-Delta watershed is an important factor in the decline of Bay-Delta environmental resources. These operations have changed the timing and amount of runoff to the Bay-Delta, altering habitat conditions in and around the Suisun Estuary. Low outflows in the spring months (February through June) caused by water project operations and diversions specifically affect habitat conditions in the Suisun Estuary.

In addition, other factors have also affected the biological resources of the Bay-Delta. Since the 1850's, the San Francisco Bay and Sacramento-San Joaquin Bay-Delta have been altered significantly by:

- Dredging and fill, resulting in habitat losses;
- Levee construction, also causing loss of habitat;
- Mining;
- Urban, industrial, and agricultural pollution;
- Loss of upstream spawning habitat from land development;
- Introduction of non-native species;
- Over-harvesting and poaching of fish and wildlife; and
- Others.

Constrained Water Project Operations and Water Transfer Opportunities:

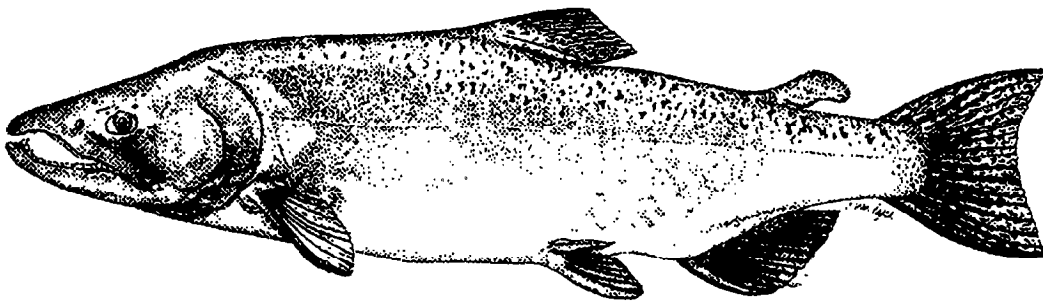
Because the State and Federal water project diversion points are located in the middle of critical Bay-Delta fishery habitat, constraints on operations of these projects continue to increase resulting in greatly reduced water supply reliability. In addition to flow requirements, there are now severe export limits in every month of the year in order to protect federally listed winter-run salmon and Delta smelt. With year-round diversion limits, it will be extremely difficult for existing water users affected by the Bay-Delta regulatory requirements to mitigate water supply losses through water transfers.



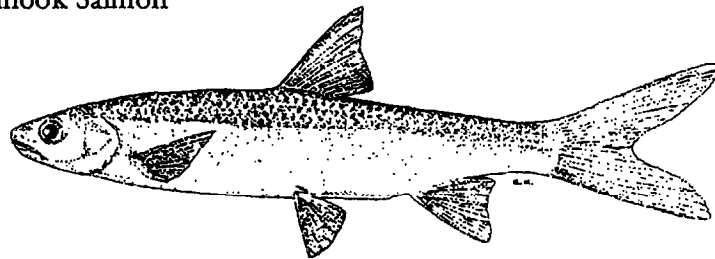
Recent and Proposed ESA Actions in the Bay-Delta

Winter-Run Salmon: Originally listed as "threatened" under the federal ESA, its status has been changed to "endangered". It is also listed as endangered under the State ESA. Requirements include cold-water releases from Lake Shasta and operational requirements in the Delta including very restrictive "take" limits. Its critical habitat area is provided a high level of protection.

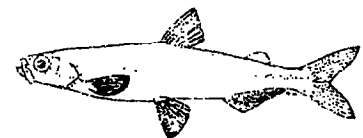
Delta Smelt: Listed as "threatened" under the federal ESA and State ESA. Water project requirements in 1994 will likely include additional Delta outflows and an all-year "take" limit. Protection of its critical habitat area has been proposed and expansion of that area is being considered.



Winter-run Chinook Salmon



Sacramento Splittail

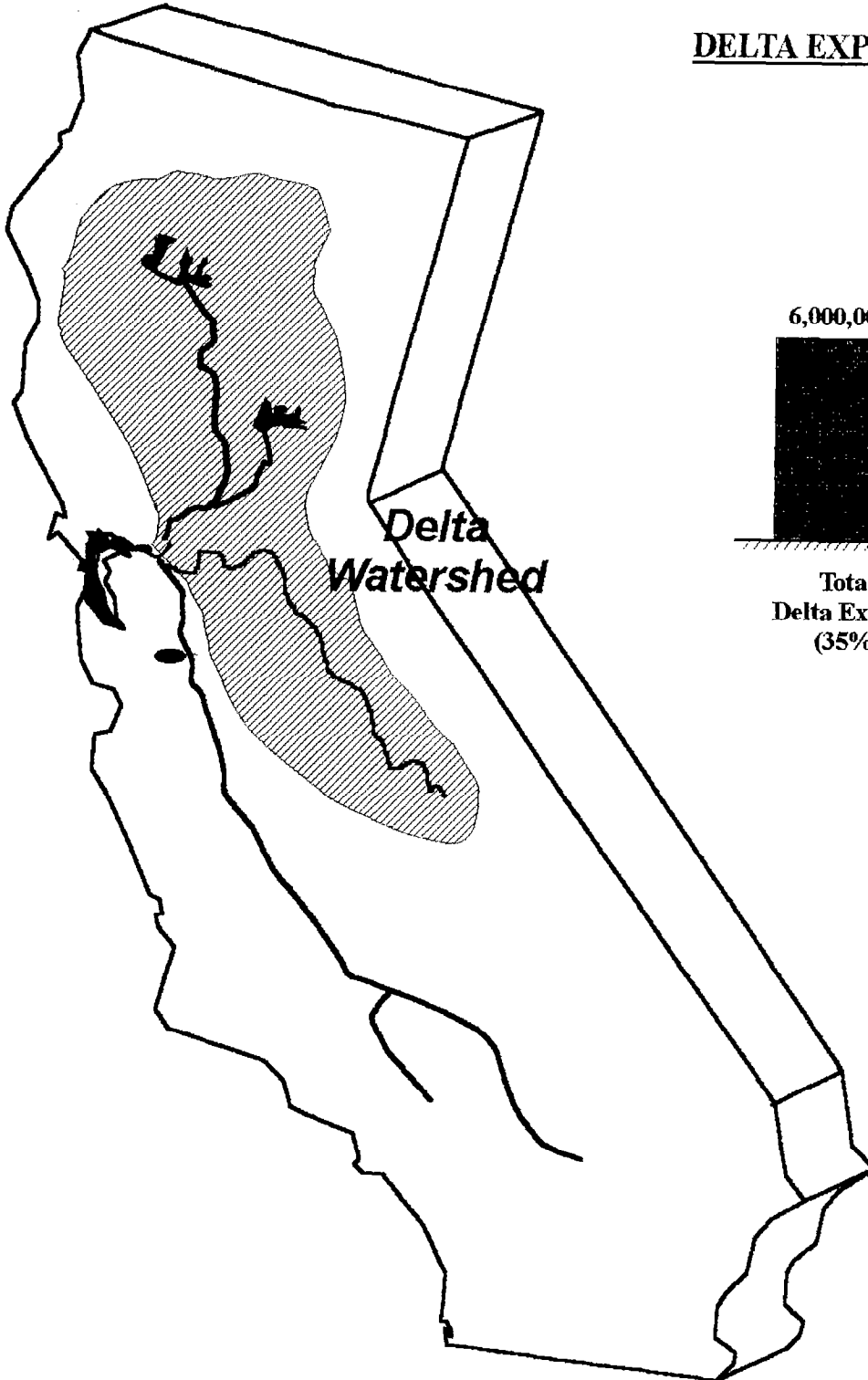


Delta Smelt

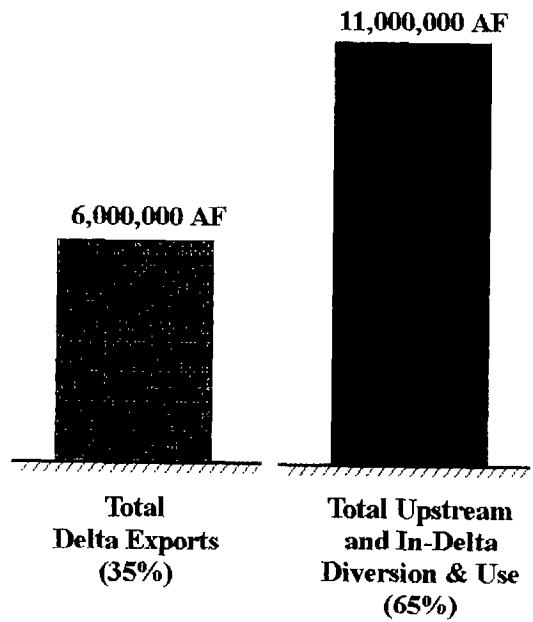
Sacramento Splittail: Proposed for listing under the federal ESA. Water project requirements are unknown at this time but will likely include an all-year "take" limit.

Future Additional Listings: Additional species could be listed in the future including San Joaquin fall-run salmon, Sacramento spring-run salmon, and green sturgeon. Such listings would result in additional restrictions on water project operations.

California's Water Use & Export from the Bay-Delta Watershed



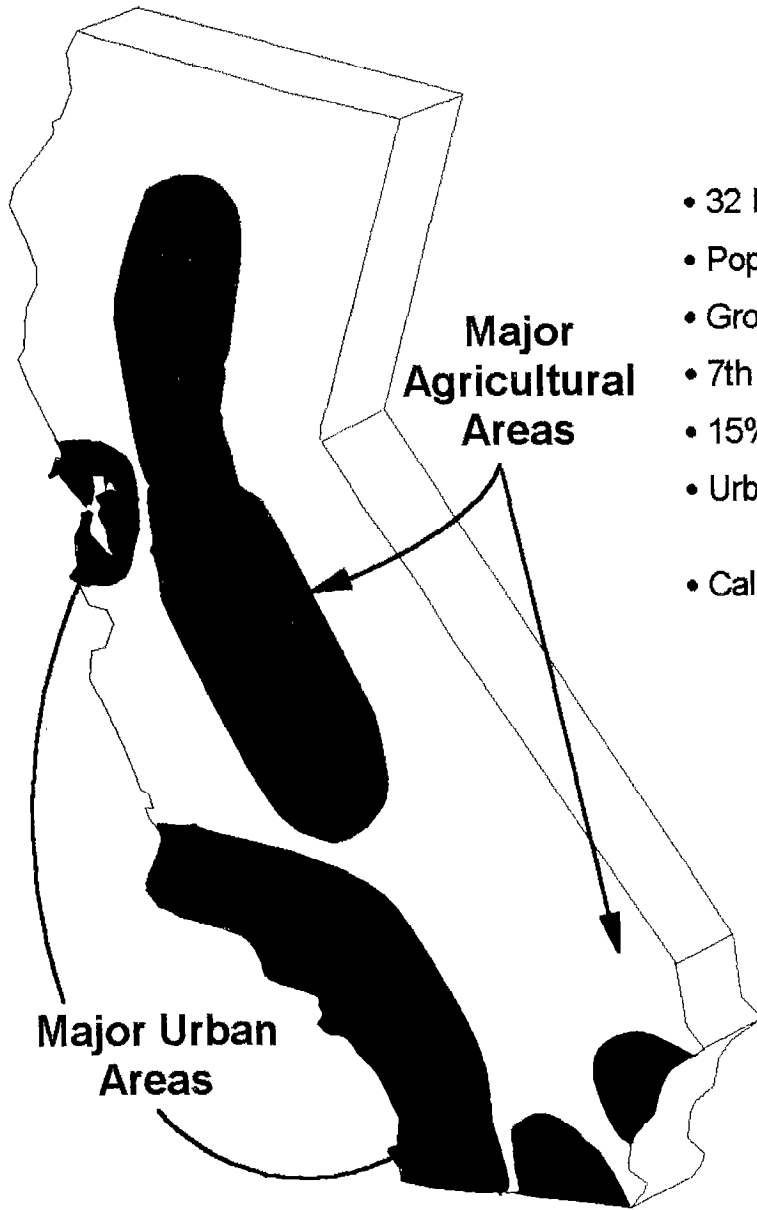
DELTA EXPORT vs. UPSTREAM USE



Data from DWR Bulletin 160-87

California Economy -- An Overview

Because of its sheer size, the health of the California economy is essential to the economic well-being of the entire Nation. California is not only the largest producer of jobs and goods and services in the nation, it is the center for Pacific Rim trade and the access point for the nation to many critical world markets. Federal natural resource policies that adversely affect the California economy will undermine the recovery of the national economy.



- 32 Million People
- Population Growth -- 500,000 / yr.
- Gross State Product -- \$800 Billion
- 7th Largest World Economy
- 15% Share of Total U.S. Economy
- Urban & Agriculture Water Use -- 35 Million Acre-Feet
- California's Status in Overall U.S. Economy:
 - 1st -- Gross State Product
 - 1st -- Personal Income
 - 1st -- Manufacturing Output
 - 1st -- Retail Trade
 - 1st -- Agricultural Output

Data from Calif. Dept. of Finance

June 30, 1994

The Honorable William Jefferson Clinton
The White House
Washington D.C. 20500

The Honorable Pete Wilson
State Capitol
Sacramento, CA 95814

Dear Mr. President and Governor Wilson :

As business leaders throughout California, we applaud the recently signed state-federal "framework agreement" and strongly support rapid approval and implementation of water quality standards for the Bay-Delta that protect both our environment and our economy.

Many of us worked hard to promote and secure the passage of water marketing legislation. We believe that an expanded water market -- supported by state and federal law and developed by private initiative -- would benefit all Californians. Instead, government inaction in the Bay-Delta has prevented the market for water from developing and blocked progress toward resolving many other crucial water issues.

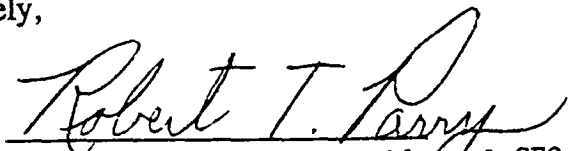
Tackling the problems of the Bay-Delta will require state-federal cooperation on two key steps. First, standards must be established this year for the estuary. Second, we must commence longer-range comprehensive multi-species planning to protect Bay-Delta habitats and avoid the inevitable conflicts arising from a species-by-species regulatory approach.

The continuing gridlock in setting standards for the Bay-Delta is simply unacceptable. The lack of approved standards is creating uncertainty that threatens the economic recovery we so desperately need. Please commit to achieving standards for the Bay-Delta this year.

Sincerely,



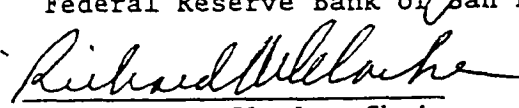
Richard Rosenberg, Chairman & CEO
BankAmerica Corporation



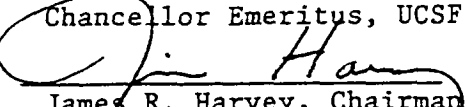
Robert T. Parry, President & CEO
Federal Reserve Bank of San Francisco



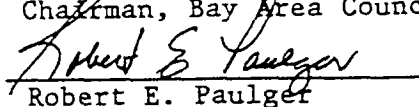
Julius R. Krevans, Chairman
Bay Area Economic Forum
Chancellor Emeritus, UCSF



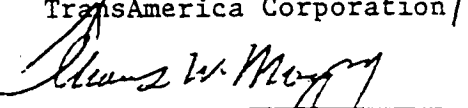
Richard A. Clarke, Chairman & CEO
Pacific Gas & Electric Company
Chairman, Bay Area Council



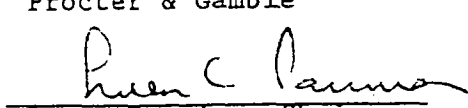
James R. Harvey, Chairman
TransAmerica Corporation



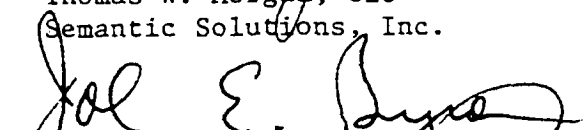
Robert E. Paulget
Procter & Gamble



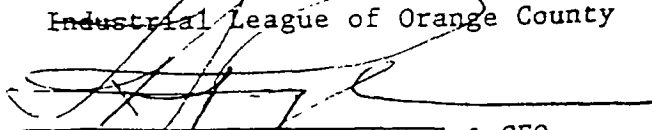
Thomas W. Morgan, CEO
Semantic Solutions, Inc.




Loren Pannier, Chairman
Industrial League of Orange County



John E. Bryson, Chairman & CEO
Southern California Edison



Thomas A. Page, Chairman & CEO
San Diego Gas & Electric Company



Paul Hazen, President
Wells Fargo Bank

Businesses Push for Federal-State Accord on Delta Water Use

By MARLA CONE
TIMES ENVIRONMENTAL WRITER

Forging an unusual alliance, top California business executives are urging President Clinton and Gov. Pete Wilson to agree on environmental standards for the San Francisco Bay-San Joaquin River Delta, saying prolonged uncertainty over the state's main water supply is threatening California's economy.

"The continuing gridlock in setting standards for the Bay-Delta is simply unacceptable," says a letter mailed Wednesday by chief executive officers from firms including BankAmerica Corp., Southern California Edison and Procter & Gamble. "The lack of approved standards is creating uncertainty that threatens the economic recovery we so desperately need. Please commit to achieving standards for the Bay-Delta this year."

The letter from the executives may put election-year pressure on the Republican governor to reach agreement with Clinton's environmental aides over how much water to restore to the

Please see **BUSINESSES, A22**

BUSINESSES: Water Plan

Continued from A3

Bay-Delta for endangered fish and other wildlife. The two administrations have been debating for months over standards for the sprawling estuary, which supplies two-thirds of the drinking water in California.

Although pushing for environmental controls is unusual for business interests, the executives stress that some resolution is crucial because so much water is at stake.

For 15 years, the state has been unable to decide on permanent allocations of delta water for cities, farms and wildlife. Last year, the Clinton Administration, facing a lawsuit from environmentalists, proposed salinity standards that would reduce available fresh water by an average of 9% per year.

The Wilson Administration opposes the federal proposal, saying the standards were set arbitrarily and could harm agricultural interests and cities. Because the state operates the biggest aqueduct that drains the delta, without the governor's support the standards would not be implemented.

California Secretary for Resources Douglas Wheeler said the state water board will develop its own proposal by Dec. 15—the deadline for the federal government's final standards—and he is optimistic that some disputed issues will be resolved soon.

"In this letter, they are reminding us—as we should be reminded—that this is a matter of utmost concern to the entire state of California. This is an environmental issue as well as an economic one," Wheeler said. "We are in total agreement with them about the need to provide a solution that provides reliability and predictability."

Last month, the two administrations partly broke their deadlock by forming a partnership to work together on Bay-Delta protection. The real challenge, however, remains in developing standards that appease both.

The business leaders said they worry that bond ratings of major utilities, which are now undergoing review, could be lowered because of the lack of water standards. They also said a "water market"—in which utilities and landowners buy and sell water rights—cannot thrive until standards are approved.

The business alliance is unusual in that it represents executives from both ends of the state, who historically have been at odds over the transfer of Northern California's water to the south.

Chief executive officers who signed the letter are Richard Rosenberg, BankAmerica Corp.; Julius R. Krevans, Bay Area Economic Forum; Richard A. Clarke, Pacific Gas & Electric Co.; James R. Harvey, TransAmerica Corp.; John E. Bryson, Southern California Edison Corp.; Robert E. Paulger, Procter & Gamble; Thomas A. Page, San Diego Gas & Electric Co.; Thomas W. Morgan, Semantic Solutions; Paul Hazen, Wells Fargo Bank; Robert T. Parry, Federal Reserve Bank of San Francisco; and Loren Pannier, Industrial League of Orange County. A similar letter signed by Airtouch Communications CEO Sam Ginn was sent by the California Business Roundtable.

The goal of the standards is to return enough fresh water to the estuary to normalize its excessive salt concentrations so that populations of rare chinook salmon and other spawning fish can be revived.



CHARTERED BY. American Federation of Labor and Congress of Industrial Organizations

Los Angeles County FEDERATION of LABOR, AFL-CIO

2130 WEST NINTH STREET
P.O. BOX 20630
LOS ANGELES, CALIFORNIA 9000
Telephone: (213) 381-5611
FAX: (213) 383-0772

JIM WOOD
SECRETARY-TREASURER

August 4, 1994



President Bill Clinton
The White House
Washington, D. C. 20500

Dear President Clinton:

California's working men and women need a reliable source of water to sustain the jobs on which they and their families depend.

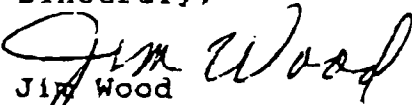
Water in California is a scarce commodity, and it sustains virtually all industrial and manufacturing activities. When drought occurs and the water needed in the urban economy is unavailable, many jobs are lost. A reliable water supply is an essential component for strong economic growth and job-creation in California.

We have become increasingly aware over the past years that regulatory gridlock in the Bay/Delta threatens the reliability of water for our industries and jobs. This regulatory gridlock that has prevented solving the economic and environmental problems associated with the Bay/Delta is simply unacceptable to us.

The Bay/Delta is the hub of California's water supply infrastructure, and the economic stakes of keeping it functioning efficiently are high. We support reasonable standards for the Bay/Delta now. Over the longer term, we support other actions that will sustain the reliability of water supplies, create jobs for Californians today and tomorrow, and protect water reliability in the future through infrastructure maintenance and development.

Thank you for your valuable attention to this matter.

Sincerely,


Jim Wood
Secretary-Treasurer

JW:db/srm
opeiu#537
afl-cio,clc

Babbitt offers binding conservation agreements

ENVIRONMENT: Feds say they will not try to renegotiate deals made with landowners.

By **LISA RICHWINE**
States News Service

WASHINGTON — Interior Secretary Bruce Babbitt offered developers a new deal Thursday — all endangered-species agreements are final.

Babbitt offered a promise that once developers adopt a habitat-conservation plan, as required under the Endangered Species Act, federal officials will be barred from demanding more money or land from developers.

Officials from the Irvine Co. and the Santa Margarita Co. hailed Babbitt's promise, which will be honored even if other species living on the property be-

come endangered or threatened after the agreement is signed, Babbitt said.

"We're telling landowners that a deal is a deal," Babbitt said. "If you invest money and land into saving species, we won't come back 10 years from now and say you have to pay more or give more."

Developers said the policy change dispels the uncertainty that makes many private companies leery of entering into species-conservation plans.

"Lack of certainty has been a major obstacle to large-scale private conservation planning," said Monica Florian, senior vice president for the Irvine Co.

Under the Natural Communities Conservation Plan being negotiated among Orange County landowners, county planners and wildlife officials, some habitat for the threatened California

gnatcatcher could be destroyed as long as coastal sage is preserved elsewhere.

The plan has been praised by Babbitt, who has embraced regional habitat-protection plans over protecting individual species. Orange County is likely to receive \$750,000 in federal money to enact the plan once both chambers of Congress sign off on next year's spending bill for Interior programs.

Babbitt's announcement was one in a series he has made this year to address criticisms of the endangered-species law, which has come under attack from developers and private-property owners. The secretary said the act, which is facing a major congressional overhaul, has become unfairly stigmatized.

The secretary stressed that the department will still have the ability to respond to changing

habitats, but will not hold the original parties liable for new protection strategies.

At Babbitt's side Thursday were six representatives of development companies, including Richard Broming of the Santa Margarita Co., who welcomed the policy.

"This policy helps to provide clarification and guidance as well as give landowners a presence," Broming said.



BRUCE BABBITT: 'We're telling landowners that a deal is a deal.'

'Shelf life' key to Delta pact

Species protection law threatens future water supplies' certainty

By Jim Mayer
Bee Staff Writer

Sacto BEE 9/12/94

Months of intense negotiations are yielding an agreement to protect the troubled Sacramento-San Joaquin River Delta.

But in a dilemma tainted with irony, the solution to one of California's most vexing environmental problems is running into a large obstacle: a tough national environmental law, the Endangered Species Act.

Farm and urban water officials say they accept that they will have to divert less fresh water from the Delta in order to protect fish and wildlife dependent on the maze of sloughs, islands and marshes.

But in exchange, they want environmental officials to promise that water supplies will not be reduced again any time soon in the name of a new endangered animal. They have come to call that certainty "shelf life."

Wildlife officials say they are looking for a way to get around the impasse. But Joel Medlin, field super-

DISCOVERY

visor for the U.S. Fish and Wildlife Service, said they are reluctant to guarantee what they can't be sure of — that the new water quality standards will rejuvenate all declining aquatic species.

Wildlife officials say the law requires them to protect all species, and if the EPA's standards are inadequate, they may not have a choice but to enact additional restrictions.

For years, while southern cities and farms pumped increasingly more fresh water, biologists lamented the expansive estuary's decline and the inadequacy of environmental laws. Not until winter-run chinook salmon was declared threatened in 1989, and Delta smelt in 1993, were the federal and state systems of dams and canals forced to reduce pumping.

"Ignoring the needs of the Delta has brought us to this crisis, and thus the listing of species," said John

Please see DELTA, page A13

Continued from page A1

Amadeo, executive director of the Bay-Delta Oversight Council, charged with crafting a long-term solution to the problem.

"Now the Achilles' heel is the Endangered Species Act. You need to achieve measures that provide for the species, while providing shelf life for the standards."

The State Water Resources Control Board set out in 1987 to set tougher water quality standards for the Delta, but each effort was politically undermined by water utilities that wanted to take more water.

The U.S. Environmental Protection Agency in December proposed its own Delta standards, which would let more fresh water flow through the Delta to San Francisco Bay and make less available for diversion.

The strategy is to push young fish away from the giant pumps and to re-create the brackish conditions near Suisun Marsh that biologists say are needed for a healthy food chain.

The EPA is scheduled to approve a revised version of that

plan this December.

The revisions are intended to reduce the water costs by one-third without reducing the environmental protections. Under the latest plan and in the driest of years, the new rules would require 1.1 million acre-feet — about one-fifth the water pumped south by the Central Valley Project and State Water Project.

This month, the California Urban Water Agencies endorsed major portions of the EPA plan.

Earlier this summer, the Bay Area Economic Forum urged Gov. Pete Wilson to support water quality standards that would end the dispute, restore water supply predictability and allow water sales that could help meet growing urban needs.

The signers included the chief executive officers from BankAmerica Corp., Wells Fargo Bank, the Federal Reserve Bank, Pacific Gas and Electric Co., TransAmerica Corp., and Southern California Edison Corp.

"We are getting closer," said EPA Bay-Delta chief Patrick Wright. "It has been such a difficult and contentious issue for so long, I hate to be too confident.

But the elements of an agreement are there."

Wright said the largest remaining issue is the water suppliers' fear that the EPA plan won't be the environment's last need.

David Schuster, a consultant for San Joaquin Valley irrigation districts, said most farm water officials realize they will lose water and there is no profit in stalling a resolution.

"It is not in our interest to stay in the position we are in," Schuster said. "Our guys want stability for the short term. So we can plan and we can maybe survive, depending on how much it rains."

Federal and state agencies have been pushing a strategy — known as habitat conservation planning — wherein land is set aside for protecting species in exchange for permission to develop otherwise protected habitat.

But biologists are unconvinced that such a plan can be worked out for aquatic habitats — especially in California, where the only constant is change. Seasonal and annual fluctuations in river flows, and the biological responses in thousands of species, are too complex to anticipate every condition.

Jay Ziegler, an aide to Interior Secretary Bruce Babbitt, said water suppliers will get what they pay for: The better the protections they agree to, the less chance more water will be needed to secure another endangered species.

"It's like an insurance policy," Ziegler said. "The policy can only cover what we know about now. And the more comprehensive the coverage, the lower the risk."

Even environmentalists are trying to figure out how to give their longtime opponents the certainty they seek.

John Krautkraemer, an attorney with the Environmental Defense Fund, said one such plan would be to use money from an environmental restoration fund to buy any additional water needed for the Delta.

But he also is confident the years of research that have gone into the EPA proposals will produce the intended results — more salmon, bass and smelt.

"If you put this in place, the ESA problems are going to get less serious over time," Krautkraemer said. "I really am convinced of that."