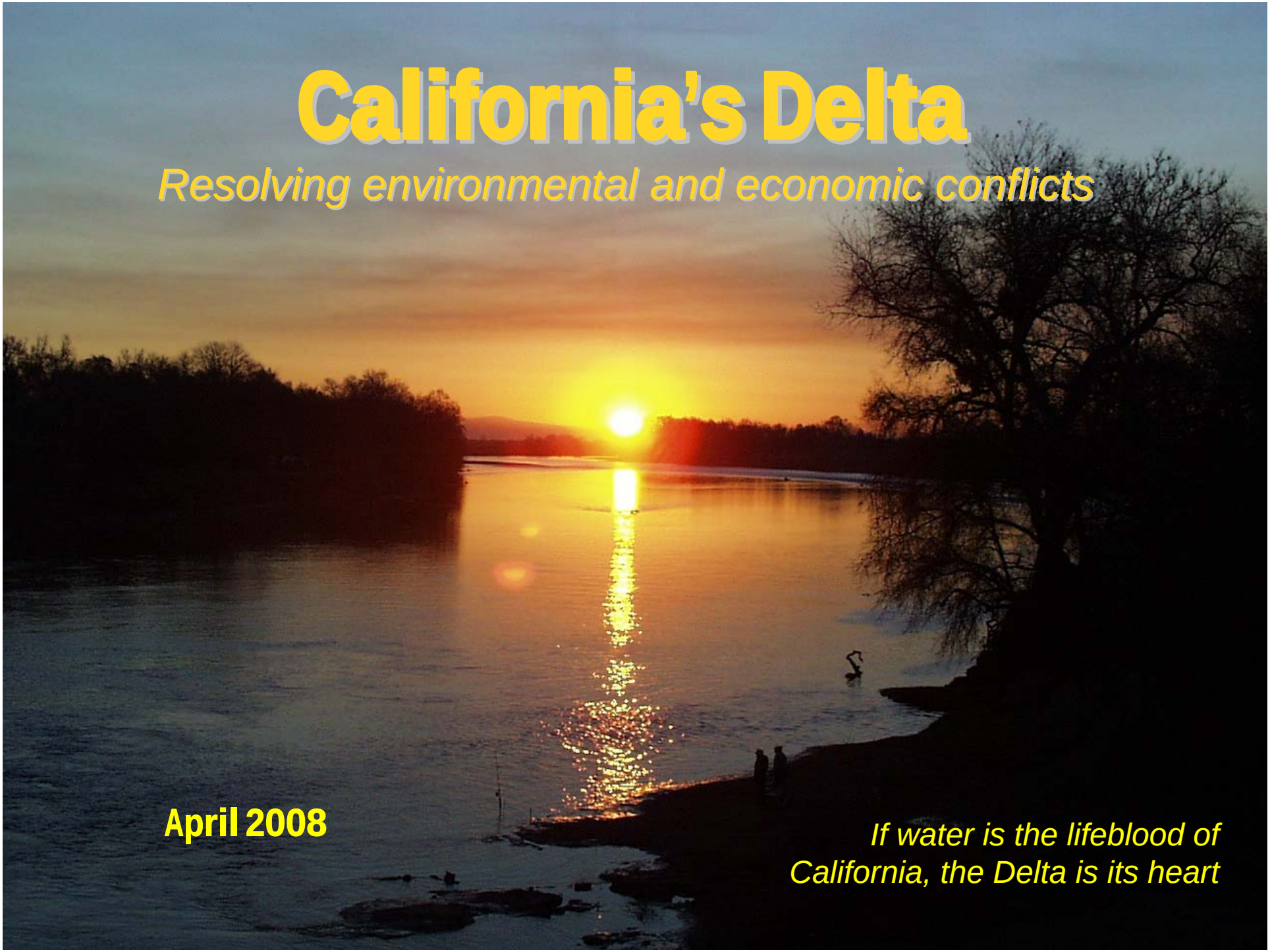
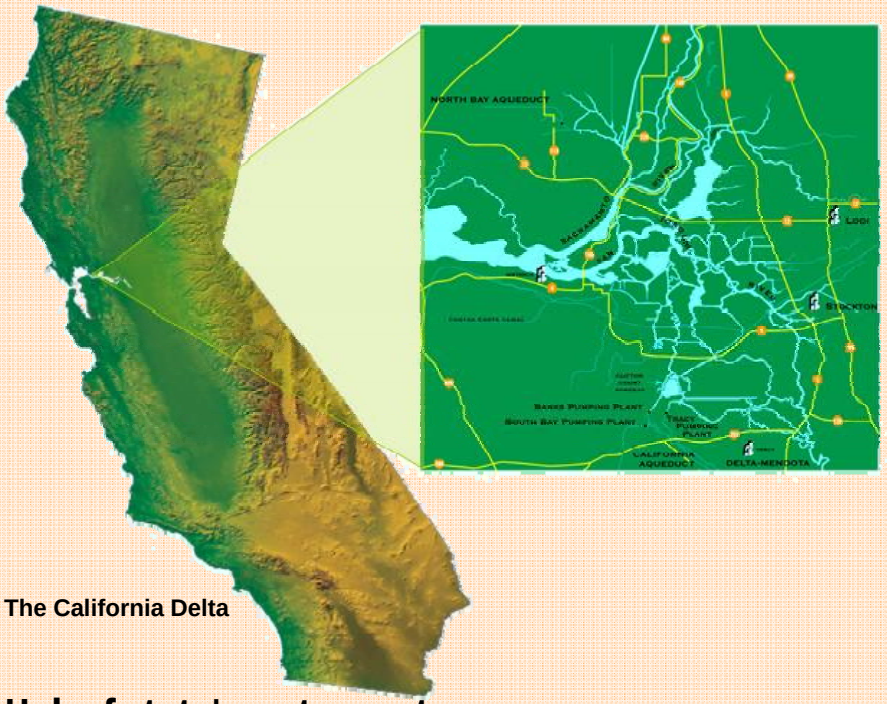

California's Delta
Resolving environmental and economic conflicts
April 2008
If water is the lifeblood of
California, the Delta is its heart

Preeminent estuary

California's Delta lies at the confluence of the state's two largest rivers – the Sacramento coming in from the north, and the San Joaquin from the south. About 47 percent of California's total runoff flows into the Delta.

California's Delta is a nationally important estuary – and is the largest on the West Coast. Estuaries are places where freshwater mixes with salt water, resulting in rich ecological zones. Estuaries are critical feeding and nesting ground for migratory birds along the Pacific Flyway. More than 120 species of fish live in the Delta's waterways, including Chinook salmon, steelhead, sturgeon and striped bass. Some species live nowhere else in the world.

Major California Water Systems



The California Delta

Hub of state's water systems

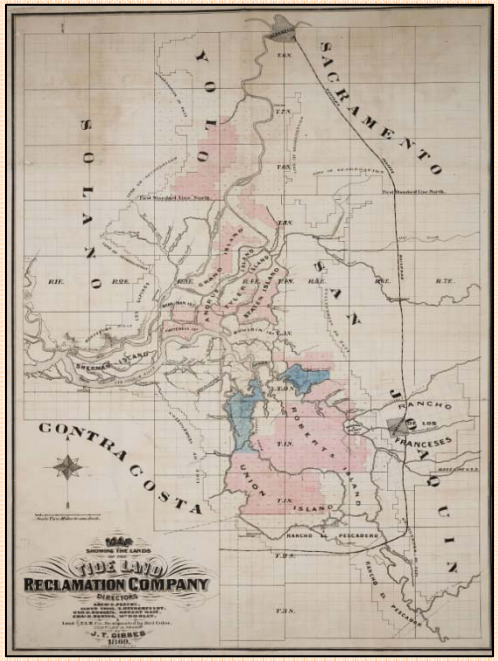
California's Delta can be thought of as where California's economy and environment meet. It our single-most important source of water for drinking and irrigation.

In the 1940s and 50s, the largest water project in the state – the federal Central Valley Project – came online to serve the growing needs of agriculture. Its key features include Shasta, Folsom and Friant dams, Tracy Pumping Plant, and the Delta-Mendota and Friant-Kern canals.

To meet growing urban needs as well as agriculture's, the State Water Project was constructed in the 1960s, and its main features include Oroville, Castaic and Perris dams, Banks Pumping Plant, and the North Bay, South Bay and California aqueducts. The key message from the map (left) is how so many of these major projects go into and out of the Delta – like spokes on a wheel.

A sense of place

California's Delta is a unique place that has value in its own right. It is not solely an infrastructure system or an ecosystem. The Delta is a place of great beauty and for generations it has been a great natural resource and destination. It has a regional economy and culture as old as any in California, consisting of communities, farming and recreational areas.



1869 Reclamation map, left; Isleton Bridge, below.

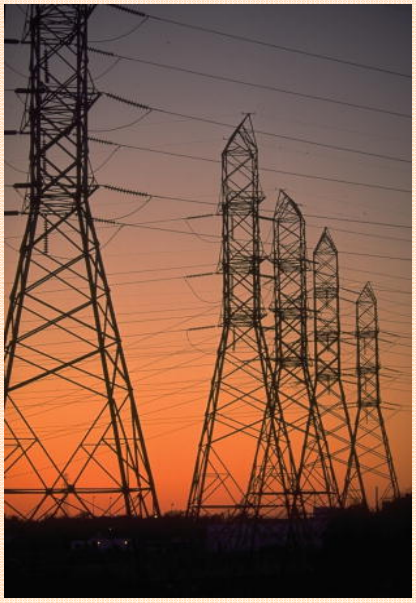
Great Blue Heron, top; Community of Discovery Bay.

The Delta is home to 515,000 Californians, more than 750 native species of plants and animals and a major tourist destination for boaters, fishermen, birdwatchers, water sport enthusiasts and for those simply looking for a quiet and quaint place to relax and dine.

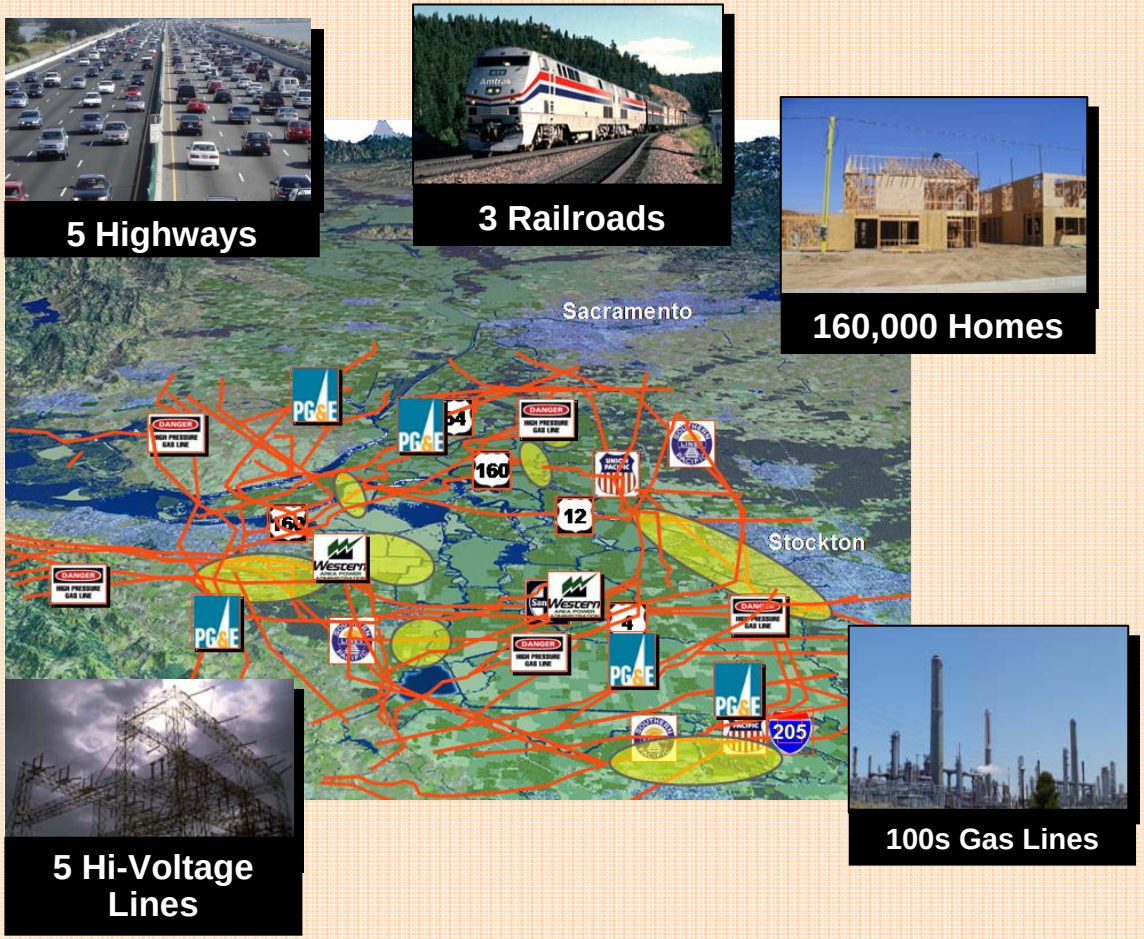
A major crossroads

Besides being a place of great beauty and environmental and resource significance to the state, the Delta is an infrastructure hub.

The California Delta's pastoral landscape belies the fact that it is criss-crossed above and below ground by infrastructure for transportation and utilities. Located close to major metropolitan areas, California's Delta is a convenient and attractive place to live.



Rio Vista Bridge, top; Delta's infrastructure, above; windsurfing and wind machines, center; major freeways in the Delta, far left; Electrical transmission lines through the Delta, left.



An Intersection for Infrastructure

This depiction of the Delta clearly shows the intensity of activity taking place there – activity that must co-exist with pressures on the Delta as a water supply hub and unique environment.

Five highways, three railroads, gas and electric utilities and shipping corridors to Stockton and Sacramento all transect the Delta's 1,000 square miles. More than 500,000 people living in 25 communities call the Delta home, with many more homes under construction.

All modes of transportation can be found in the Delta. Transportation corridors are relatively direct for those passing through the Delta between population centers outside the area. Local transportation routes within the Delta are more maze-like.

The Delta's flat, largely unpopulated terrain is a valuable site for regional utility corridors such as water pipelines, natural gas pipelines, underground natural gas storage areas, and electricity transmission lines. Along with these regional lines, local lines serve the population residing within the legal Delta boundaries.

History of Conflict

No sooner had reclamation of the vast Delta been completed in the 1930s, than conflicts began over its water. The first State Water Plan envisioned major transfers, and by the 1940s, federally constructed facilities were exporting water. A canal to convey water around the periphery of the Delta was considered at that time, but not constructed.

In the 1950s and 1960s, more pressure was placed on the Delta when construction of the Delta Cross Channel began. California voters authorized construction of the State Water Project, that also put conveyance on the table.

The 1970s and 1980s saw pressures placed on the Delta in terms of water quality and the decline of important Delta fish species. Winter-run Chinook salmon was listed as an endangered species in 1989, and delta smelt was listed as a threatened species in 1993.

The State Water Resources Control Board (SWRCB) adopted a water quality control plan for the Bay-Delta in 1991, but it was disapproved by the US Environmental Protection Agency (EPA) under the Clean Water Act. An interim set of Delta water quality standards was issued by the SWRCB in 1992, but withdrawn in 1993. Environmental groups then sued EPA because the agency had not issued federal water quality standards.

Further turmoil resulted from Congressional passage of the Central Valley Project Improvement Act in 1994,

Early Delta dredging, right; the California Aqueduct heading south, below.

which dedicated a portion of the federal water supply to the environment. And California officials continued to resist EPA pressure to adopt federally designed water quality standards.

Discussions between top state and federal officials led to a June 1994 Framework Agreement to develop water quality standards to protect the estuary, coordinate operations of the state and federal water projects, and develop a long-term solution for the Delta.

Six months later, in December 1994 the Bay-Delta Accord gave rise to the CALFED Bay-Delta Program.

CALFED: What it promised

The CALFED Bay-Delta Program is the largest and most comprehensive water management and ecosystem restoration program in the nation. Formed in 1995, it brings together state and federal agencies to work cooperatively with local and regional interests to resolve often competing demands for California's water supply from the Delta.

Ultimately, 25 state and federal agencies joined together under the CALFED banner to coordinate and implement the actions set forth in the CALFED Record of Decision.

CALFED promised a balanced 30-year approach to the four major objectives of a healthy Delta:

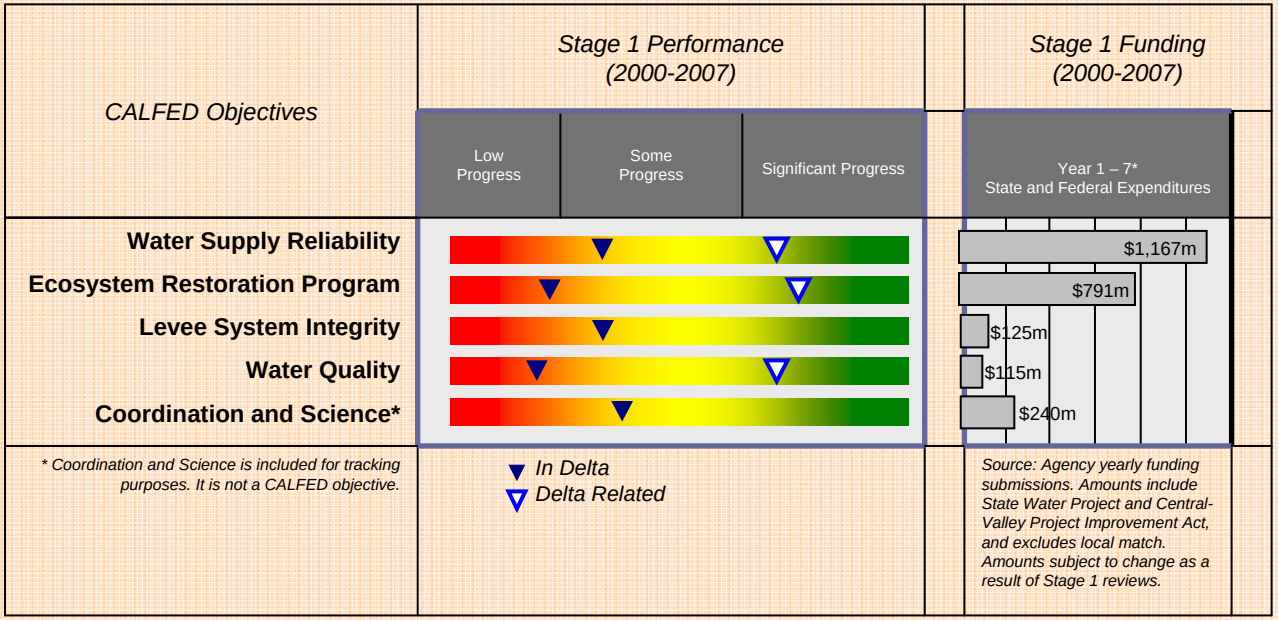
- A water supply that was of high quality
- A water supply that was reliable for all beneficial uses: residential, agricultural, commercial, industrial and ecological
- A restored and preserved Delta ecosystem
- Delta levees that are stable and reliable

The program promised to include a broad range of voices in its deliberations, including stakeholders from various sectors of the water world: Business, agriculture, residential users, tribal concerns and the disenfranchised.

Another promise of CALFED is an emphasis on funding and guiding sound scientific research of the Delta and its many issues.

CALFED Performance Assessment

Over the first seven years of its 30-year program, CALFED delivered on promises in each of its major program objective areas.



Water Supply Reliability: Although some key projects lagged behind, CALFED agencies accomplished the majority of their water supply goals during Stage I. In fact, more water has been reliably delivered during CALFED than in the years preceding the program.

The accomplishments are impressive; however, the challenges are also great. Despite past successes, future water supply reliability is in jeopardy. The overall performance noted above resulted in numerous improvements to water supply reliability, including:

- Development of 1 million acre-feet of new water
- A 15% increase in water to south of Delta agriculture
- 1.6 million acre-feet of water for fish protection

Ecosystem Restoration: Key accomplishments, mostly upstream, include significant investments in fish screens, temperature control, improvements in fish passage and habitats, and significant habitat protection and restoration efforts. These efforts have resulted in an improved outlook for some species in the Delta through numerous projects, including:

- Installation and/or improvement of 82 fish screens to aid fish migration
- Protection and/or restoration of nearly 200,000 acres of agricultural land and habitat
- The removal of dams and barriers for fish

Levee System Integrity: This program has been significantly under-funded in CALFED's first seven years. As a result, some important activities have not moved forward. Some progress has been made in improving levee integrity in some areas. The Delta Emergency Response Plan and Delta Risk Management Strategy are underway and contributing to the following better understanding of Delta levee stability. Ongoing efforts to improve Delta levee system integrity has achieved some notable results, including:

- Delta levee maintenance subvention funding of $60 million
- Delta levees stabilized by use of 1.4 million cubic yards of dredge material

Water Quality Program: Since the ROD was signed, regulatory water quality standards in the Delta continue to be met. However, beyond those standards, little improvement in drinking water quality has occurred. The CALFED agencies are re-evaluating whether or not it is possible to achieve water quality improvements beyond regulated standards using through-Delta conveyance. However, some program accomplishments have netted results, including:

- Reduced salinity and improved water quality in the San Joaquin River
- More than $2.25 billion to support new technology for drinking water and $76 million for source control projects to improve drinking water quality

Coordination and Science: The Resources Agency coordinates with the CALFED implementing agencies and oversees the CALFED Program. CALFED staff work with the implementing agencies to coordinate Program planning and annual reporting and ensure that stakeholders and the public are involved. Science and research conducted as part of the CALFED Science Program have led to significant changes in how the Bay-Delta system is managed. Program tracking staff compile and report on the cross-cut budget and program accomplishments.

CALFED: Lessons Learned

- ✓ Agency actions must be linked to the accomplishment of one or more of the Program objectives through an effective tracking system.
- ✓ Growing scientific evidence indicates that the Delta is a dynamic system and cannot be sustained as it is currently managed.
- ✓ Furthering ecosystem health requires recognition that actions to benefit one species may be detrimental to others. Continued reliance on through-Delta conveyance for significant exports is likely not sustainable.
- ✓ Most major Delta issues remain unresolved due to lack of funding or support. Also, many of these tough decisions are pending because each of the options present varying degrees of consequences.

CALFED Program Funding

The table to the right summarizes the combined funding amounts, by CALFED objective, for program years 1 through 8. Funding for years 1 through 7 reflects actual expenditures reported, while year 8 is the amount proposed.

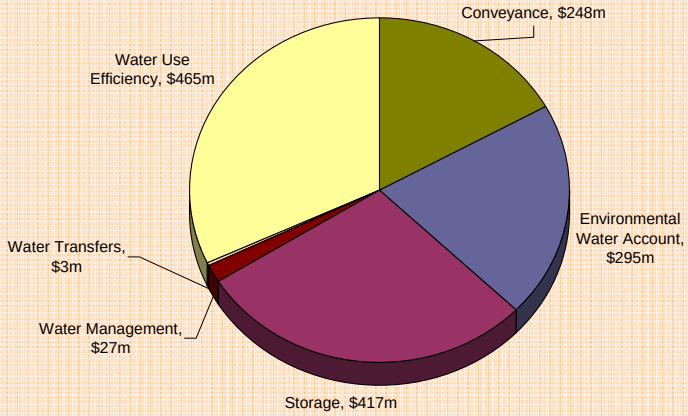
Objective	Years 1 to 7 (actual)	Year 8 (budget)	Total
Coordination and Science	$ 204,830,000	$ 55,898,000	**$ 260,727,000**
Ecosystem Restoration	$ 791,271,000	$ 319,648,000	**$1,110,919,000**
Levees	$ 125,139,000	$ 68,098,000	**$ 193,237,000**
Water Quality	$ 115,285,000	$ 101,981,000	**$ 217,266,000**
Water Supply Reliability	$ 1,166,944,000	$ 287,815,000	**$1,454,760,000**
Total	**$ 2,403,469,000**	**$ 833,440,000**	**$3,236,909,000**

Source: Agency yearly funding submissions. Amounts include State Water Project and Central-Valley Project Improvement Act, and excludes local match.

Amounts subject to change as a result of Stage1 reviews.

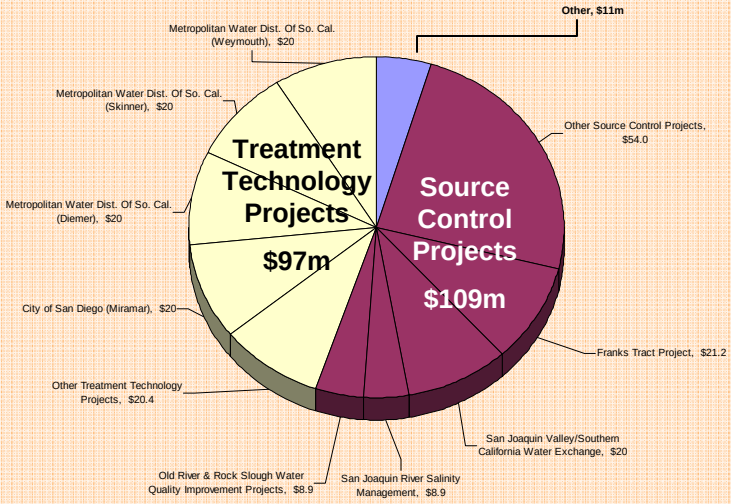
Water Supply Reliability
Total Funding, Years 1 – 8

Total: $1.455m

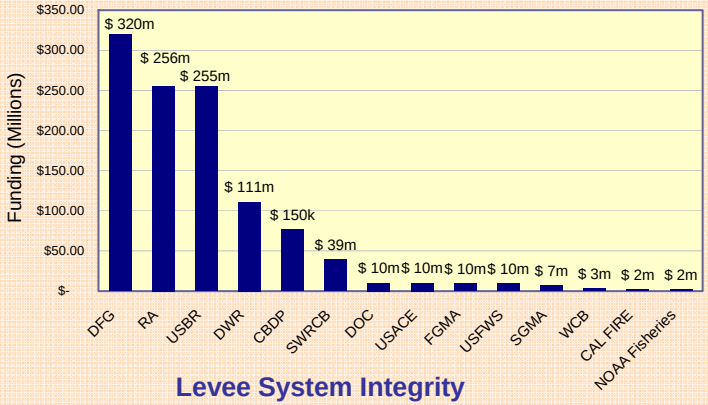


Water Quality
Total Funding, Years 1 – 8

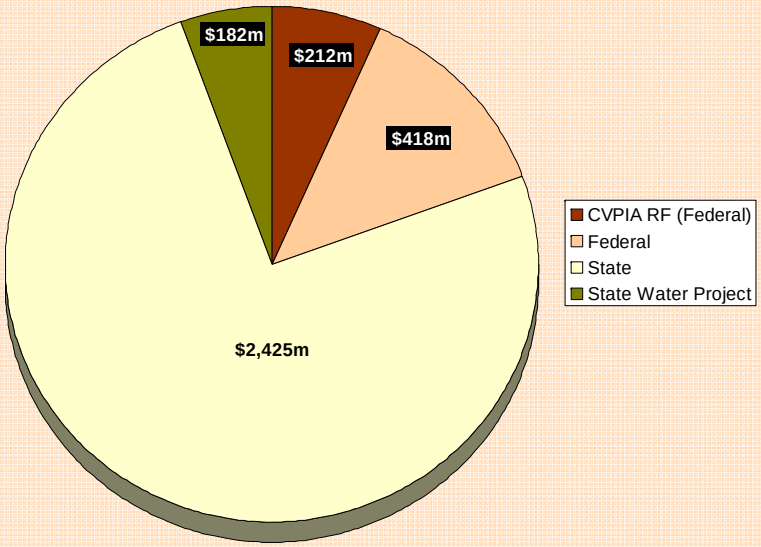
Total: $217 m



Ecosystem Restoration
Total Funding, Years 1 – 8
Total: $1.1 b



Federal $630m

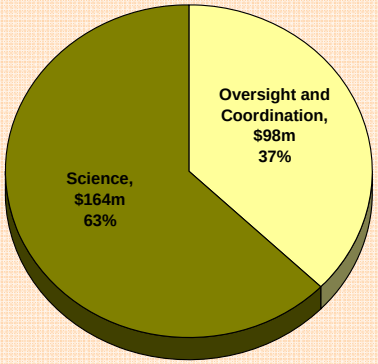


State $2,607m

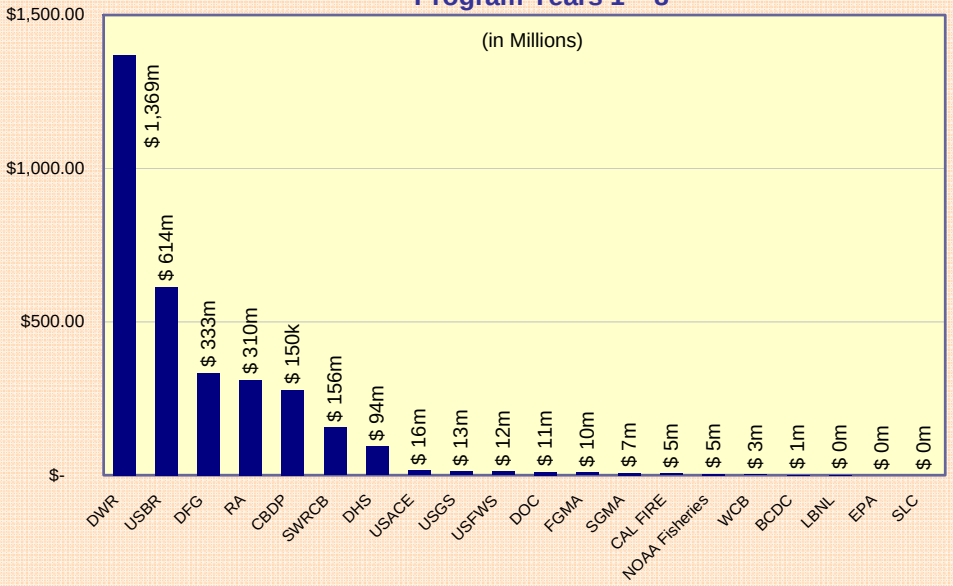
Levee System Integrity
Total Funding, Years 1 – 8
Total: $193 m

Effort	Funding
Subventions and Special Projects	$153.0m
Levee Support and Coordination	$31.0m
Delta Risk Management Strategy (DRMS)	$8.0m
CALFED Levee Stability Program	$0.4m
West Delta Levees	$0.4m
Levee System Integrity - Beneficial Reuse	$0.2m
Total for all Years 1 - 8:	**$193.0m**

Coordination and Science
Total Funding, Years 1 – 8
Total: $261m

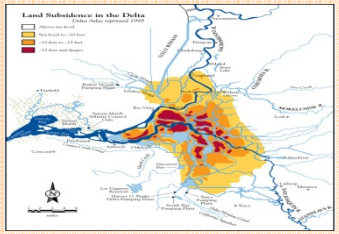


CALFED Funding By Agency
Program Years 1 – 8



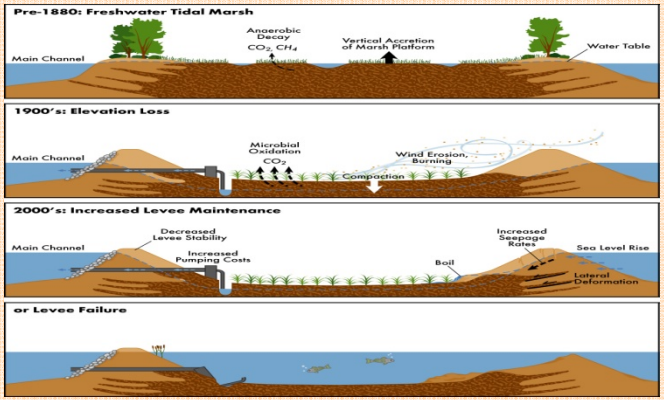
Drivers of Change for the Delta

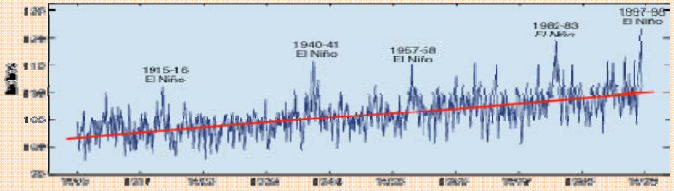
There are several factors or "drivers of change" that are expected to affect the future of the Delta.



Subsidence

Most of the Delta is as much as 15 feet or more below sea level due to land subsidence. This subsidence occurs primarily through microbial oxidation of organic soils, dramatically increasing the differential between land and water surface elevations. Over the next 200 years, some areas of the Delta could subside by another 18 feet if current land practices continue, making Delta levees more susceptible to failure.



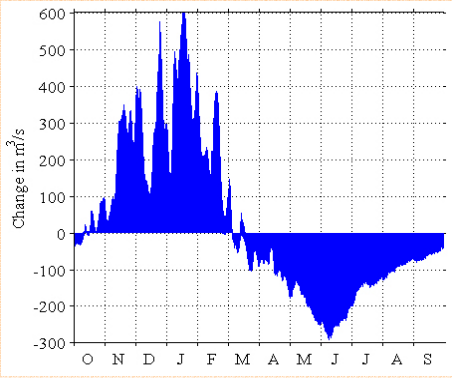


Sea Level Rise

The character of the Delta – all hydrodynamics, habitat conditions, and levee heights – are tied to historic and current sea level. The rate of sea level rise is increasing – 8 inches over the past 100 years and 28-39 inches projected over the next hundred years. A modest rise overwhelms the current Delta levee network.

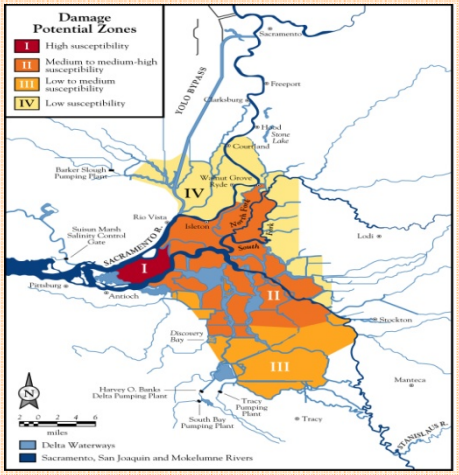
Climate Change / Delta Inflows

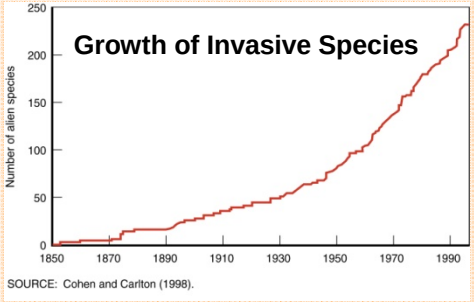
An on-going shift in runoff timing toward winter extending low-flow periods, coupled with an increase in intensity and frequency of winter runoff events, will add stress to Delta levees. All this will be compounded by rising sea level (tides).



Seismic Activity

The Delta and Suisun Marsh lie just east of major faults that are capable of generating moderate to strong ground shaking, particularly in the western Delta. Some earthquake scenarios describe a flooding of 20 islands, resulting in formation of a body of water the size of Lake Tahoe, with the potential to affect the region's climate. Studies have predicted that this scenario could occur in this century.





Invasive Species

Invasive species now dominate all habitats within the Delta, making it the most invaded ecosystem in the world. For example, 88 percent of fish captured during 2003 juvenile fish surveys were introduced species. Introduced species that are also invasive spread rapidly, take over habitats and displace native species.

Population Growth and Urbanization

Projections based on the 2000 U.S. Census suggest the combined population of the six Delta counties will grow from the 3.3 million reported in 2000 to approximately 7.7 million by 2050, a more than 130 percent increase. Pressure from development will lead to conversion of Delta agriculture lands to urban land, limiting open spaces and options for future adjustments to Delta management strategies.

Urbanization in close proximity to Delta levees can put homes and people at risk for flooding.

Key Court Cases Affecting the Delta

Currently, there are several significant legal challenges in process that affect CALFED and the Delta.

NRDC v. Kempthorne, U.S. District Court for the Eastern District of California, Case Number 1:05-cv-1207 OWW.

On May 25, 2007, US District Court Judge Oliver Wanger found that the 2005 Operations Criteria and Plan (OCAP) biological opinion for delta smelt was unlawful. On December 14, 2007, Judge Wanger issued an interim remedial order remanding the biological opinion back to the National Marine Fisheries Service (USFWS) to complete a new one by September 15, 2008, and requiring the US Bureau of Reclamation and the Department of Water Resources (DWR) in the interim to, among other things, increase smelt sampling and monitoring and meet the Court's specifications for limiting net upstream flow in the Delta's Old and Middle Rivers. USFWS is required to report to the Court on April 30, 2008, on the status of the new biological opinion.

Pacific Coast Federation of Fishermen's Associations v. Gutierrez, U.S. District Court for the Eastern District of California, Case No. 1:06-CV-00245 OWW.

On October 3, 2007, a hearing was held in Judge Wanger's court on the merits of a companion lawsuit challenging the validity of the 2004 OCAP salmon and steelhead biological opinion issued by NMFS. A decision has not yet been rendered.

The delta smelt was listed as threatened in 1993.

Watershed Enforcers v. California Department of Water Resources, Alameda County Superior Court Case No. RG06292124.

On May 7, 2007, DWR appealed a lower state trial court ruling requiring DWR to shut down the State Water Project pumps pending compliance with the California Endangered Species Act. On January 29, 2008, the appeals court granted a joint motion to stay the appeal through December 31, 2008, subject to subsequent request of any party or order of the court.

California Sportfishing Protection Alliance v. California Regional Water Quality Control Board, Sacramento County Superior Court.

In this case, CSPA and Baykeeper sued the Regional Water Quality Board for the Central Valley Region, challenging the California Environmental Quality Act (CEQA) Initial Study and Negative Declaration and final decision of the Board adopting two Conditional Waivers of Waste Discharge Requirements for Discharges from Irrigated Lands The suit alleges that the agricultural waiver program has been ineffective, contributes to damage to threatened and endangered fish and violates state and federal clean water laws.

In earlier litigation, involving Deltakeeper and the California Farm Bureau among other parties, the irrigated agriculture waiver program had been largely upheld, with some modifications.

Laub v. Davis, California Supreme Court Case No. S138974; *Regional Council of Rural Counties v. State of California*, Supreme Court Case No. S138975 (*In re Bay-Delta Programmatic Environmental Impact Report Coordinated Proceedings.*)

On April 2, 2008, the California Supreme Court heard oral argument in the consolidated CEQA challenges to CALFED's programmatic environmental compliance documents. The main issues on appeal were whether CALFED should have studied in those documents a reduced export alternative, and whether those documents discussed with enough specificity the sources of water for the program and the impacts of providing that water. A decision is expected within 90 days, or by July 2, 2008. A companion National Environmental Protection Act (NEPA) lawsuit is pending in U.S. District Court. That federal case has been postponed by agreement of the parties until the CEQA case is determined.

Efforts to Develop a Sustainable Delta

A lot has changed since the Record of Decision was signed in 2000. We know much more about the science of the estuary and the effects of some specific actions. Research promoted by CALFED and other science agencies has increased our understanding of how the Bay and Delta function and has challenged some long-held beliefs. Problems of water management, environmental protection, and levee integrity continue to intensify, however, and are being further complicated by climate change and sea level rise.

The framers of the ROD anticipated that our knowledge base would grow and built in flexibility, requiring an evaluation of the preferred alternative – through-Delta conveyance – at the end of the first seven years. This evaluation was completed in December 2007, concluding that through-Delta conveyance as the sole method of moving water to the export system was not meeting the CALFED objectives and was unlikely to meet them without significant modification. The CALFED agencies agreed that alternative conveyance mechanisms should be explored.

Both the Delta Vision process and the efforts to establish a Bay-Delta Conservation Plan (BDCP) are based on the work done through CALFED and are natural progressions from the End-of-Stage-1 determination that through-Delta conveyance alone will not meet CALFED objectives.

Delta Vision

In February 2007, Gov. Arnold Schwarzenegger appointed a seven-member Blue Ribbon Task Force to develop a long-term sustainable Vision for the Delta and an implementation plan by October of 2008.

The Vision was released in December 2007 and makes 12 linked recommendations. The Task Force emphasized that the Delta cannot be "fixed" by any single action and that Californians must change the fundamental way they behave toward the environment and water.

Task Force's work was based on the finding that the Delta ecosystem and a reliable water supply for California are co-equal values.

From there, the Task Force recommended significant increases in conservation and water system efficiency, new facilities to move and store water in an integrated manner, and likely reductions in the amount of water taken from the Delta's watershed. The Task Force also recommended a new governing structure for the Delta with secure funding and the ability to approve spending, planning and water export levels.

The Task Force also recommended several near-term actions that focus on preparing for disasters in or around the Delta. These include emergency flood protection and disaster planning, discouraging urban encroachment and making immediate improvements to protect the environment and the system that moves water through the Delta.

Bay-Delta Conservation Plan

The Bay-Delta Conservation Plan (BDCP) is a collaborative effort by state and federal agencies and stakeholder groups to develop a plan for the Delta to address the current conflict between the protection of at-risk fish species and water supply.

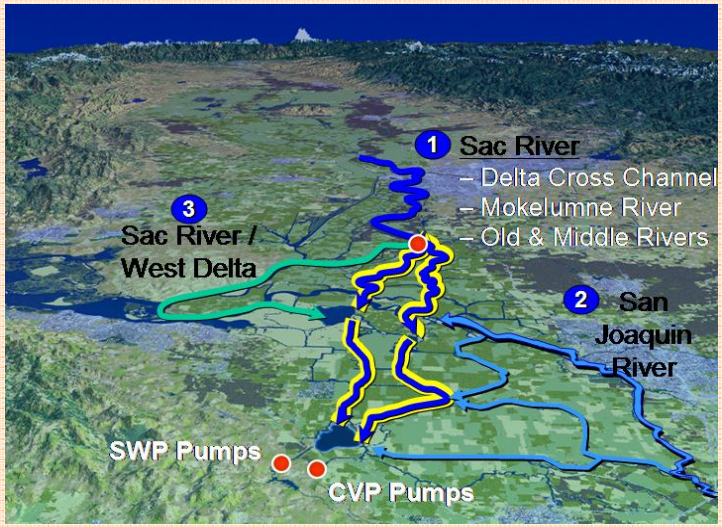
BDCP will provide the basis for long-term (50-year) permits to operate new and existing energy projects. Activities covered by BDCP will support water supply and power generation and facility maintenance and improvements.

Species whose conservation and management will be provided by the plan are delta smelt, three species of Chinook salmon, longfin smelt, green and white sturgeon, Sacramento splittail and Central Valley steelhead. Land-based species will be considered in the future.

This effort builds on recommendations of the Delta Vision Blue Ribbon Task Force that define environmental restoration and water supply as co-equal goals for the future of the Delta. While BDCP will focus on the fish/water supply issues in the context of broad ecosystem protection principles, the effort also will address water conveyance alternatives, habitat restoration and management and other ecological problems including invasive species and toxic pollutants.

The BDCP process began in late 2006, and concluded 2007 with agreement on the most promising approach for achieving its goals of conservation and water supply: Develop and analyze environmentally friendly was to move water through and/or around the Delta. A basic overall strategy is scheduled to be completed by the end of 2008, with a full draft by mid-2009.

Sacramento River water is moved through the Delta cross Channel, right, and flows through the Delta to the state and federal pumping plants, below.



Preparation of a draft Environmental Impact Report/Statement on the BDCP has begun, with workshops scheduled throughout the state. This document will be available for public review by the end of 2009, and the steering committee anticipates approval of the BDCP and a permit decision by end of 2010.

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