Where does California's water come from?

Posted by: Aquafornia on August 13, 2008 at 9:29 am

California has been called "the most hydrologically altered landmass on the planet", and it is true: the California of today bears little resemblance to its former self. Today, there are reservoirs where there once was desert, desert where there once was cropland, and cropland where there once was a swampy marsh. Some rivers have been dried up; some rivers flow through mountains into other rivers' beds; and some rivers even flow backwards at times.

California's transformation from a sparsely populated region into one of the world's leading agricultural and food production regions is due to the development of the area's natural resources, especially water. Water development, storage and distribution projects have transformed deserts into farmland and supported development of large cities and towns. These water projects have helped make California a leading agricultural producer, a major manufacturing center, the most populated state in the country, and the eighth largest economy in the world.

However, this rapid and intensive development has not been without its consequences. Fish populations have been depleted, wetlands have been drained, and dams and levees have altered natural water flow patterns. Invasive plants and species are changing ecosystems and altering native habitat. Species of many native plants and wildlife have declined or become extinct, and water quality has been impaired by agricultural, mining and urban sources.

IT NEVER RAINS IN CALIFORNIA…

California's climate is highly variable, ranging from 100\" a more per year in the northern part of the state to just a few inches in the southern deserts, and can vary widely from year to year. About 65 percent of the state receives less than 20 inches of rainfall per year, most of that in the winter months. While 70 percent of California's runoff occurs north of Sacramento, 75 percent of California's urban and agricultural demands are to the south.

No other state has rearranged its environment to the same extent as California. The abundant sunshine and mild temperatures of Central and Southern California are ideal for agriculture; the only ingredient missing is the rain. California's rainfall is seasonal : dry during the hot summer months, and wet for only a few months in the winter. Still, California has more irrigated acreage than any other state, thanks to massive water projects started early in the twentieth century and still continuing today.

WATER PROJECTS AND THE CALIFORNIA ECONOMY

Water fuels the economy of California, and managing it properly is of paramount importance. It has also been a source of decades-long political wars. Besides satisfying the needs of a growing population, demands for more water also come from the agricultural industry,

Aquafornia's Information Desk

AQUAPEDIA WATER A TO Z

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businesses, manufacturers and developers. These needs must be balanced against demands for protecting water quality and for protecting fisheries, wildlife and recreational interests. The fundamental controversy is one of distribution, as conflicts between these competing interests continue to be exacerbated by continued population growth and periods of drought.

Everything depends on the manipulation of water : capturing it behind dams, storing it in reservoirs, and rerouting it in concrete rivers over hundreds of miles. California has twelve hundred major dams, the two biggest irrigation projects on earth, and some of the largest reservoirs in the country.

AGRICULTURE IS IMPORTANT TO THE CALIFORNIA AND TO THE NATION

California is the nation's leading agricultural and dairy producer, producing 21% of the nation's milk supply, 23% of it's cheese, and 92% of all grapes grown in the U.S. Cotton, foliage and flowers are also in the top 10 agricultural commodities produced in California. California produces half of all domestically-grown fruits, nuts, and vegetables.

In all, over 400 different commodities are grown here. Some products, such as almonds, walnuts, artichokes, persimmons, and pomegranates, are solely produced in California.

One out of every six jobs in California is tied to agriculture in some way, and many counties rely on agriculture as their primary economic activity. California has the largest agricultural economy in the nation, containing nine of the nation's top ten agricultural counties. Fresno is the most productive county in the nation, with an agricultural worth of $3.5 billion dollars in 2000.

For more information:

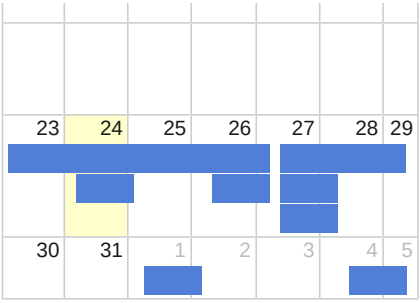
- California Farm Bureau Federation
- California Agricultural Resource Directory from the California Department of Food and Agriculture

THE WATER & ENERGY CONNECTION

Providing water to residences, businesses, and agriculture consumes large amounts of energy. Energy is required to convey (deliver) the water to the areas of need. Water treatment facilities use energy to treat and pump water. Water distribution systems use energy for pumping and pressurization. Consumers and businesses use energy to filter, heat and cool water for their own uses. Wastewater treatment plants use energy to pump wastewater, run treatment procedures, and process solids. Statewide, these processes together consume 20% of the state's electricity, 30% of the state's natural gas, and 88 million gallons of diesel fuel.

A significant amount of energy is used here in California to transport water over long distances. This generally requires pumping the water over hills and mountains, a process which consumes large amounts of energy. Some of this energy can be recaptured by sending the water down through turbines, generating hydroelectricity, but not all of it is recovered. The Central Valley Project, Hetch Hetchy Aqueduct and the Los Angeles Aqueduct are all net producers of energy; however, the State Water Project and the Colorado River Aqueduct, the two main systems that bring water into Southern California, are net users of energy.

In fact, the State Water Project is the largest single user of energy in California, accounting for about 3% of all electricity consumed statewide. The most energy is used delivering water to Southern California, where pumping one acre-foot of SWP water to Southern California requires about 3000 kWh, and pumping one acre-foot of Colorado



Aquafornia's Mission

Aquafornia's mission is to educate readers about the complex and often controversial issues surrounding water in California.

Aquafornia is affiliated with the Water Education Foundation, an impartial, nonprofit organization, whose mission is to create a better understanding of water resources and foster public understanding and resolution of water resource issues through facilitation, education and outreach.

E-mail Newsletter

To receive email announcements from the Water Education Foundation, sign up here.

Your email address:

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River Aqueduct water to Southern California consumes 2000 kWh.

For more information:

- The Energy-Water Nexus, comprehensive website from Sandia National Labs
- Energy Down the Drain: The Hidden Costs of California's Water Supply, report from the National Resources Defense Council

CALIFORNIA'S WATER SUPPLY

Statewide, precipitation produces about 200 million acre-feet of water each year, mostly in the northern part of the state. Of that amount, 50 to 60% will evaporate into the atmosphere, percolate into the soil, or be used by vegetation. The remaining 40 to 50% will flow in the state's streams and rivers towards the ocean or into salt sinks. The water that is collected in the state's reservoirs is called the developed supply, and it is this amount that is available to divert for urban or agricultural use, to put into reservoirs or groundwater storage, or to leave in the environment.

Leaving water in rivers and streams is important for the health of the environment, wildlife, and fish. However, how much is left over for the environment depends on a lot on yearly precipitation. In an average year such as the year 2000, urban use was 11%, agricultural use was 34%, and 48% was left in streams and rivers for the environment. In a dry year like 2001, urban use was 13%, agricultural use was 52%, and only 35% was left for the environment.

CALIFORNIA'S VAST WATER INFRASTRUCTURE

California is home to two massive water projects plus numerous local projects. The map to the left shows the water projects located throughout the state.

California's major urban centers, Southern California and the Bay Area, lack sufficient groundwater and other local resources to support their large populations, so water must be imported from other areas. The San Francisco Bay Area imports more than 65% of its water through the Hetch Hetchy Aqueduct, the Mokelumne Aqueduct, the State Water Project and the Contra Costa Canal (part of the Central Valley Project). San Jose and the Silicon Valley are served by both the Contra Costa Canal & the State Water Project. Southern California imports more than half of its water supply through the Los Angeles Aqueduct, the Colorado River Aqueduct, and the State Water Project.

California's vast agricultural industry also depends on large water projects. The Central Valley Project supplies water primarily for irrigation within the Central Valley, and Kern County relies on the State Water Project for its water. The Imperial Irrigation District manages the system which delivers Colorado River water to the Imperial Valley.

Here's a rundown of the main water systems supplying water to California cities and farms:

Groundwater: Groundwater typically accounts for about 30% of statewide water use in an average year; it can be up to 40% in a drought year.Groundwater is not distributed evenly across the state; some cities, such as San Francisco and San Diego, have very little groundwater resources.Other cities, such as Bakersfield, have abundant groundwater resources.Along the central coast, 90% of the drinking water is from groundwater. Find out more about California's groundwater by clicking here.

The Los Angeles Aqueduct: Owned and operated by the Los Angeles Department of Water and Power, the Los Angeles Aqueduct supplies a portion of the water needed to supply the residents and businesses in its 465 square mile service area. The Los Angeles Aqueduct system brings water 338 miles from the Mono Basin and 233 miles from the Owens Valley by gravity to Los Angeles. Find out more about the Los Angeles Aqueduct by clicking here.

The Hetch Hetchy Aqueduct: With its watershed located nearly entirely within Yosemite National Park, the Hetch Hetchy system delivers about 265,000 acre-feet of pristine Sierra Nevada water per year, providing for about 80% of urban uses for San Francisco, as well as parts of San Mateo, Santa Clara and Alameda counties.

Web Resources

Agriculture

- California Agriculture Online
- California Department of Food and Agriculture
- California Farm Bureau Federation
- California Farm Water Coalition
- California Rice Commission
- Family Farm Alliance

Climate Change & Water

- California Climate Change Portal
- Carpe Diem West (Western water and climate change)
- DWR's Climate Change Page
- SCVWD's Climate Change Portal
- Southwest Climate Change Network

Conservation

- Bay Area Water Supply and Conservation Agency
- Be Water Smart
- Be Water Wise
- California Urban Water Conservation Council
- H2O Conserve Website
- H2ouse.org
- Save Our Water
- Water – Use It Wisely

Current Conditions

- California Nevada River Forecast Center (NWS)
- Climate Data Exchange Center (DWR)
- Hydrologic Conditions-Executive Summary
- Major Reservoir Conditions (DWR)
- Precipitation Summary (NWS)
- Significant River Flood Outlook (NWS)
- Statewide Summary of Snow Water Content (DWR)
- U. S. Drought Monitor – West

Delta & SF Bay Resources

- Bay Delta Developments
- Bay Institute
- Bay-Delta Conservation Plan
- Delta Atlas
- Delta Conservancy

Find out more about the Hetch Hetchy Aqueduct by clicking here.

The Mokelumne Aqueduct: The East Bay Municipal Utilities District draws water from the Mokelumne River and transports it 91 miles from the Sierra Nevada through three steel pipeline aqueducts to serve its customers in the East Bay Area. The Mokelumne Aqueduct provides 90% of the water served by East Bay Municipal Utilities District. Find out more about the Mokelumne Aqueduct by clicking here.

The Colorado River: Spanning 1,440 miles from Wyoming to the Gulf of California, the Colorado River is the principal water resource for California and six other states, Indian tribes and parts of Mexico. Yet the river has been plagued by drought, climate change, and increasing demand from continued population growth. Find out more about California and the Colorado River by clicking here.

The Central Valley Project: As California's largest water supplier, the Central Valley Project delivers on average over 7 million acre-feet per year. Central Valley Project water is used to irrigate 3 million acres of farmland in the San Joaquin Valley, as well as provide water for urban use in Contra Costa, Santa Clara, and Sacramento counties.Find out more about the Central Valley Project by clicking here.

The State Water Project: The largest state-built water and power project in the United States, the State Water Project spans 600 miles from Northern California to Southern California, providing drinking water for 23 million people and irrigation water for 750,000 acres of farmland. Find out more about the State Water Project by clicking here.

Where does your water come from The answer depends upon where you live. Some areas have abundant local sources while other areas rely on imported water for most or even all of their water. When you turn on a faucet to draw a glass of water, you may be tapping a source close to home or one hundreds of miles away. Find out where your water comes from by clicking here.

THE DELTA : THE HUB AND CRITICAL LINK OF THE CALIFORNIA'S WATER SYSTEM

Nearly two-thirds of the state's population and millions of acres of farmland receive their water from the Sacramento-San Joaquin Delta area, also known as the Bay-Delta. The Delta is located where the Sacramento and San Joaquin rivers converge and flow into the San Francisco Bay. The mixture of fresh waters from the five rivers which feed into the Delta combine with the salty ocean water to create the largest estuary on the West Coast of North America. The 940 square-mile Delta area is home to over 750 different species of plants and animals.

Millions of migratory waterfowl use the Delta every year as they travel from South America to Alaska. The Delta is also home to many species of fish, including salmon, steelhead fish, and the Delta smelt.

However, in recent years, the population of native fish species in the Delta has plummeted. The population of the once-abundant Delta smelt has seen a rapid decline in the past two years, falling to its lowest level ever measured. The Delta smelt are considered an indicator of the biological health of the Delta, and their population has dropped so precipitously that some scientists fear they are on the brink of extinction. Other species, such as the Chinook salmon, are threatened as well.

The Delta water export pumps provide drinking water to more than 20 million people; and water agencies in central and southern California are dependent upon it, both directly and indirectly. Much of the state's annual runoff flows through the maze of islands, marshes and sloughs of the Delta. Massive pumps at the southern end of the marsh pull approximately 5.5 million acre-feet per year of fresh water from the waterways to feed both the Central Valley Project and the State Water Project.

RECENT COURT DECISIONS REGARDING FISH AND WATER PROJECTS

However, these pumps suck in and destroy significant amounts of fish, and these pumps have been the subject of a lawsuit recently. In December of 2006, the California Sportfishing Protection Alliance filed suit in Alameda County Superior Court asserting that the SWP does not have the proper permits to take (kill) certain fish species,

- Delta Protection Commission
- Delta Stewardship Council
- Delta Vision Foundation
- Delta WaterMaster
- Discover the Delta Foundation
- Restore the Delta
- San Francisco Bay and Delta (Access USGS)
- San Francisco Baykeeper
- San Francisco Estuary and Watershed Science website
- San Francisco Estuary Partnership

Employment & Water

- Get Hydrology Jobs

Environmental Organizations

- American Rivers
- California Invasive Plant Council
- California Water Impact Network
- Environmental Water Caucus
- Foothill Conservancy
- Friends of the River
- Mokelumne River News & Info
- Mono-Logue
- R4RD: Residents for Responsible Desalination
- San Joaquin Basin
- Sierra Club
- Sierra Club California
- Tree People
- Wholly H20

Fishing Blogs/Organizations

- California Sportfishing Protection Alliance
- Fish Sniffer
- Fishing the Aqueduct with Striper Bill
- Pacific Coast Federation of Fishermen's Associations
- Trout Underground

Investing & Water

- Water-Stocks.com

Legal Blogs

- BlueSky Mediation and Law
- California Water Law Journal
- Kronick Moskovitz Tiedemann & Girard – Natural Resources
- Legal Planet – Environmental Law & Policy
- Pacific Legal Foundation
- Somach Simmons & Dunn Environmental Law & Policy Alerts

such as the endangered Delta Smelt. In March of 2007, the judge agreed and ruled that the pumps must be shut down within 60 days unless the state acquires the proper permits from the Department of Fish & Game. (It is important to note that the ruling is based on a lack of paper permitting, rather than the impact on threatened species.)

In August 2007, Judge Wanger confirmed his earlier decision that the state and federal pumps operating in the Delta were in violation of the Endangered Species Act, and issued a court ruling restricting the amount of water that can be exported from the Delta in order to protect the endangered Delta smelt. This has reduced the amount of water that can be exported from the Delta during the months of January through June, and as a result, water contractors were told to expect only 35% of their allocation of State Water Project water for 2008.

In April 2008, Judge Wanger ruled once again that another federal permit was in violation of the Endangered Species Act, this time for the salmon. Wanger ruled that the water projects were affecting the salmon in a subsequent hearing in August of 2008; however, he imposed no other restrictions at that time. More litigation is upcoming in this case, and It is unclear at this time how this will affect water deliveries in the future.

DELTA LEVEES ARE A MAJOR CONCERN

Besides being the hub of California's water supply, the Delta serves many other uses. The Delta is a place where a lot of people live, and population is expected to continue to grow. There is a lot of water traffic in the Delta, with ships headed into the ports at Sacramento & Stockton. Three state highways cross the Delta, connecting the Bay Area to the Central Valley. There are railroads and power lines, as well as oil and gas transmission pipelines throughout the area. The Delta also has more than a half a million acres of incredibly productive farmland. All of this property and infrastructure is protected by an extensive network of fragile and aging levees.

In total, there are at least 1100 miles of levees that protect the Delta and channel water through the area; many of these were built soon after the Gold Rush. Since 1850, 95% of the estuary's wetlands and tidal marshes have been leveed and filled, with resulting loss of fish and wildlife habitat.

Much of the network of levees through the Delta has been built only to 100-year flood standards; by contrast, the levees in New Orleans were built to 250-year standards when Hurricane Katrina hit. Levees are susceptible to failure by erosion, seepage, rising sea levels, earthquakes, and land subsidence. In California, levees have failed 162 times in the past 100 years.

If a critical levee failure occurred, salt water would flood many Delta islands, potentially disrupting water deliveries to southern and central California. Water users would be forced users to rely on stored supplies. It could take several years and billions of dollars for the water system to be restored if a major levee break occurred.

For more information on the Delta:

- Why the Delta matters to every Californian, an Aquafornia exclusive
- California Delta Chambers and Visitor's Bureau
- Department of Water Resources, Delta Initiatives
- Discover the Delta Foundation
- The Bay Institute

THE PERIPHERAL CANAL DEBATE

Legislative Committees - State & Federal

- California State Assembly Committee on Water, Parks and Wildlife
- California State Senate Committee on Natural Resources & Water
- House Natural Resource Committee, Water & Power Subcommittee
- New State Water Legislation Mandates (KMTG)
- Select Committee on Delta Stewardship and Sustainability
- Senate Commitee on Environment & Public Works, Water and Wildlife Subcommittee
- The California Channel

Los Angeles River

- Friends Of Vast Industrial Concrete Kafkaesque Structures

Native Landscaping

- High Country Gardens
- The Garden Spot
- The Prickly Palace

News

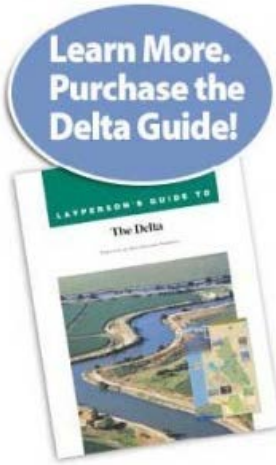
- ACWA's Water News
- All the top water news
- AWE Federal Legislation Watch
- B C Water News
- Circle of Blue's Water Dash
- High Country News
- New State Water Legislation Mandates (KMTG)
- Total Capitol (Legislative News)
- YubaNet.com

Public Policy Organizations

- Pacific Institute
- Planning and Conservation League
- Public Policy Institute of California

Regional Water Associations

- Mountain Counties Water Resources Association
- Northern California Water Association
- Regional Water Authority (Sacramento-area)
- Sacramento Groundwater Authority
- Sacramento River Watershed Program
- Southern California Water Committee
- Water Association of Kern County



In 1960, voters passed the California Water Resources Development Bond Act, authorizing $1.75 billion for construction of the State Water Project. However, the funds authorized by voters were insufficient to cover the cost of implementing the plan as originally designed, and so some dams and a planned 'peripheral canal' to divert water from the Sacramento River around the Delta were planned for later construction. In the meantime, engineers decided to convey water from Northern California to the Delta and divert water from there.

The original peripheral canal planned would have been large enough to carry the entire flow of the Sacramento River around the Delta, diverting fresh water away from the Delta to send it south. However, when the initiative to authorize its construction went before the voters in 1982, it was soundly defeated, in large part due to the efforts of an alliance of environmental and some agricultural groups. They saw the peripheral canal as a Southern California water grab that would promote unfettered growth and continued water wastage. The divisive battle has had a long lasting effect, as up until recently, the peripheral canal idea was considered the 'third rail' of California politics.

THE PPIC REPORT

However, the idea for a type of peripheral canal has reemerged, due in part to an influential study released in July of 2008 titled "Comparing Futures for the Sacramento-San Joaquin Delta". The report was authored by researchers at the Public Policy Institute of California, as well as the University of California Davis. One of the central findings of the report was that "a peripheral canal should be part of a long term strategy for the Delta to serve both water supply and environmental objectives. Out of the four alternatives evaluated, they determined that a peripheral canal "appears to be the best way to maintain a reliable, high-quality water supply and to improve conditions for fish and other wildlife.

The Delta as it is today, a levee-lined tidal channels surrounding deeply subsided islands, is unsustainable, researchers say. It is gradually shifting towards a estuary system with large tracts of open, deep water. The driving factors behind these changes include the subsidence (sinking) of the Delta islands, the rising sea levels connected to climate change, the risk of a major earthquake, and the changing inflows of water, all of which are putting stress on fragile and aging levees.

The cost of maintaining the current levee system will become increasingly expensive, as within 50 years, researchers say it is likely many islands will be flooded permanently. Upgrading and repairing the levees in an attempt to resist these changes will soon exceed all available bond funds, and will, at some point, go beyond the willingness of the public to continue to pay these repairs.

The PPIC Report concluded that a peripheral canal is the best option for providing a reliable, high-quality water supply for the residents of the Bay Area and Southern California, as well as for the millions of acres of farmland that depend on Delta water. A peripheral canal has the potential to benefit fish and other wildlife by being more responsive to the Delta's changes over time.

But the original fears still persist. Delta stakeholders today are worried that if the peripheral canal were built, Delta water quality would stagnate without fresh water flows to dilute the farm runoff and municipal discharges into the estuary. This would damage Delta fisheries and threaten the fresh water supply for communities and farmers who draw their water directly from the Delta. They are also worried that if the peripheral canal were built and the state no longer dependent upon the Delta to channel water to the pumps, the Delta would be abandoned, and the fragile levees will crumble as a result of neglect and inadequate funding.

Salton Sea

- Salton Sea 101
- Salton Sea Authority
- Salton Sea Ecosystem Restoration Program (DWR)

Stormwater & Flood Control

- Army Corps of Engineers – Los Angeles Area
- Army Corps of Engineers – Sacramento Area
- Central Valley Flood Management Protection Planning Program
- LA Stormwater Blog

Water Agencies

- ACWA – Association of California Water Agencies
- Bay Area Water Supply and Conservation Agency
- Contra Costa Water District
- East Bay Municipal Utility District
- Imperial Irrigation District
- Kern County Water Agency
- Las Virgenes Municipal Water District
- Long Beach Water Department
- Los Angeles Department of Water & Power
- Metropolitan Water District
- Municipal Water District of Orange County
- San Diego County Water Authority
- Santa Clara Valley Water District
- Sonoma County Water Agencies
- South San Joaquin Irrigation District
- State Water Contractors
- West Basin Municipal Water District
- Westlands Water District

Water Agencies - State & Federal

- Bureau of Reclamation – Lower Colorado Region
- Bureau of Reclamation – Mid Pacific Region
- California Dept of Water Resources
- California Public Utilities Commmision – Water & Sewer
- California Resources Agency
- California Water Commission
- State Water Resources Control Board

Still, it is becoming quite obvious that 'business as usual' in the Delta is simply not working for anyone, and a new direction and consensus is needed.

To read the PPIC Report:

- Comparing Futures for the Sacramento-San Joaquin Delta, by the Public Policy Institute of California

Other Reports on the Delta and Peripheral Canal:

- Water: Finding the Balance, report by the Environmental Defense Fund
- Fish Out of Water: How Water Management in the Bay-Delta Threatens the Future of California's Salmon Fishery, by the National Resources Defense Council

PLANNING FOR THE FUTURE OF THE DELTA

Several planning processes for the Delta are currently underway, the two most notable being the Bay Delta Conservation Plan and the Delta Vision Blue Ribbon Task Force.

The Bay Delta Conservation Plan

The Bay Delta Conservation Plan is being developed with the goal of creating an ecosystem-based approach that will protect at-risk species while providing for reliability of water project operations. It is being prepared by a group of state, federal, and local water agencies, state and federal fish agencies, and environmental organizations. One of the objectives of the BDCP is to obtain 50-year permits to operate water and energy projects and result in the issuance of 'take' permits from the state & federal agencies for covered activities.

The BDCP is being prepared to meet the requirements of both federal and state endangered species laws, as well as the National Communities Conservation Planning Act. The BDCP will consider alternatives such as the restoration of floodplains, intertidal marshes, channel and openwater habitat, as well as invasive species control. The BDCP hopes to identify an improved way to move water through and/or around the Delta to create a more natural estuarine environment, as well as reduce species entrainment. This may include finding new points for diversion of water, as well as other changes to existing SWP & CVP facilities.

The plan is currently in the scoping process, with a basic conservation strategy available around the end of 2008, with the full plan scheduled to follow mid-2009. It is hoped that by the end of 2010, the BDCP and permits will be approved.

For more information on the Bay Delta Conservation Plan:

- Bay Delta Conservation Plan website, California Resources Agency
- Bay Delta Conservation Plan EIR/EIS, Department of Water Resources

Delta Vision Blue Ribbon Task Force

In 2006, Governor Schwarzenegger formed the Delta Vision Blue Ribbon Task Force, and gave the newly formed task force the job of developing a long-term vision for sustainable management of the Delta.

The first report from the task force was released in December of 2007. It identified twelve integrated and linked' recommendations intended to be implemented together as an integrated solution. The recommendations would work in tandem to achieve success. The task force has identified two of the twelve recommendations as key elements of its vision:

> The Delta ecosystem and a reliable water supply for California are the primary, co-equal goals for sustainable management of the Delta. Both are irreplaceable assets and one must not be secured at the expense of the other.
>
> The California Delta is a unique and valued area, warranting recognition and special legal status from the state of California. The Delta's uniqueness and value must be protected through special designation to safeguard its assets, its culture, and its economy.

Water Blogs

- ACWA's Voices in Water blog
- Aguanomics
- Alex Breitler's Blog
- American Water Resources Assn. Blog
- Barry Nelson at the NRDC Switchboard
- Bay Delta Blog
- California Water Blog
- California Water Research Blog
- California Water Wars blog
- Central Arizona Project Power Lines and Water Ways Blog
- Chance of Rain
- Chronicles of the Hydraulic Brotherhood
- Delta National Park Blog
- Environmental Defense Fund Blog
- Following Water in California
- Greed, Green & Grains
- Green Roots Blog (PCL)
- GrokSurf's San Diego blog
- Inkstain – jfleck
- Klam Blog
- L. A. Creek Freak
- Northern California Water Association Blog
- On the Public Record
- Restore the Delta's blog
- Southern California Water Committee Blog
- Spouting Off – Mark Gold of Heal the Bay
- State of the Planet Blog
- The California Spigot
- Thirsty in Suburbia
- Tom Philp's Blog
- Valley Economy Blog
- Water Cooler Blog
- Water Librarian's Blog
- Water SISWEB
- Watering the Desert
- WaterWired

Water Information

- ACWA's California Water Crisis Website
- California Water Plan 2009
- UC Davis Center for Watershed Sciences
- USGS California Water Science Center
- USGS Water Resources of the US
- Water Education Foundation
- Water Resources Collections and Archives
- Where Does My Water Come From?

In October 2008, the Delta Vision completed its fifth and final version of the Delta Vision Strategic Plan. The task force identified specific strategies and actions to implement their co-equal goals of restoring the ecosystem and creating a reliable water supply for California:

1. Legally acknowledge the co-equal goals of restoring the Delta ecosystem and creating a more reliable water supply for California by writing these goals into the constitution or statute, and incorporate them into the mandated duties and responsibilities of significant agencies involved with the Delta.
2. Recognize and enhance the unique cultural, recreational, and agricultural values of the California Delta as an evolving place, an action critical to achieving the co-equal goals. The task force recommends applying for designation as a National Heritage Area, creating more state recreation areas into the Delta. They also recommend developing a regional economic plan and establishing a Delta Investment Fund to provide funds for economic development.
3. Restore the Delta ecosystem as the heart of a healthy estuary. Recommended strategies include restoring large areas of interconnected habitats, establishing migratory corridors, reducing risks of fish kills and harm from invasive species, restoring Delta flows and channels to support a healthy estuary, and improving water quality to meet long-term goals.
4. Promote statewide water conservation, efficiency, and sustainable use. The task force recommends achieving a statewide reduction of 20% per capita reduction in water use by 2020, and reducing dependency on Delta water by diversifying regional water supply portfolios.
5. Build facilities to improve the existing water conveyance system and expand statewide storage, and operate both to achieve co-equal goals. The task force recommends expanding options for water conveyance, storage, and improved reservoir operations, as well as integrating Central Valley flood management with water supply planning.
6. Reduce risks to people, property and state interests in the Delta by effective emergency preparedness, appropriate land uses, and strategic levee investments. Improving emergency protection for people, assets, and resources, discouraging inappropriate land uses, and developing a long-term levee investment strategy are among the task force's recommendations.
7. Establish a new governance structure with the authority, responsibility, accountability, science support, and secure funding to achieve these goals. The task force recommends establishing a California Delta Ecosystem and Water Council to replace the Bay-Delta Authority and take over CALFED programs, and require the new entity to prepare a legally-enforceable plan.

"The disparate interests with a stake in the Delta have attempted for years to reach agreement on the Delta's future. Those efforts, most recently the CALFED process, have failed. This task force is keenly aware of that history and the peril California faces from continued failure,\" wrote Phil Isenberg in his letter to Governor Schwarzenegger in the final report. Through our co-equal goals and the linked steps that go with it, the Task Force has tried to present a vision and strategies to break through our long years of water wars and begin to effectively address the future. \"¦. California must embrace a practical near-term and decades-long strategy that, with hard work and good will by all parties, creates a healthier, more sustainable future for the Delta and our state.

While much attention has focused on water exports from the Delta, the task force notes that upstream diversions also impact the Delta. The the Hetch Hetchy system and the Mokelumne Aqueduct divert water that would have otherwise drained into the Delta and instead carry the water across it to the cities they serve. "You can't have your own pipes crossing the Delta with water that used to flow through the Delta and claim it has no effect,\" said Phil Isenberg, the chairman of the Delta Vision task force said in a recent Contra Costa Times article. "It isn't just them. It's us."

For more information on Delta Vision Blue Ribbon Task Force:

- The Delta Vision Blue Ribbon Task Force website
- Delta Vision Strategic Plan (final)

THE DELTA – A COMPLEX AND CHALLENGING PROBLEM WHICH WE MUST SOLVE

In January of 2008, Lester Snow testified before the U. S. House of Representatives Subcommittee on Water and Power, and said of the Delta and it's myriad of problems: "Fixing the Delta is an incredible challenge, with multiple layers of complexity and constantly changing conditions. Notwithstanding the immensity of the challenge,

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California cannot afford to fail. Immediate actions are critical, but a long term comprehensive management strategy will be essential to the sustainability of the Delta."

IT'S A QUESTION OF BALANCE AND SUSTAINABILITY

Water is a limited resource; there is only so much of it to go around. Managing California's finite water supply in the future so that it is sustainable and reliable will require striking a balance between the three stakeholders: urban users, agricultural users, and the environment. As the state continues to grow, it's going to require rethinking in how we view and use water throughout the state, and we're all going to have to be more efficient in how we use it.

FOR MORE INFORMATION, CHECK OUT THE OTHER SECTIONS ON THE AQUAFORNIA INFORMATION DESK:

- Learn more about the issues facing California's water supply and the possible solutions: California's Water Crisis
- Find out more about the Delta and the critical issues are facing this tiny but vital region: Why the Delta is Important
- Check out the wide variety of resources and materials on California's water issues at the Water Education Foundation website.
- Saving water is something you can do today. Get an extensive list of things you can do to conserve water: Aquafornia's Water Conservation Tips
- For links to reports and other websites: Other Resources

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