

## Where Rivers Meet-The Sacramento-San Joaquin Delta

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An aerial look at the Delta

The Sacramento-San Joaquin Delta is a region where two of California's largest rivers meet. Freshwater from the rivers mingles with saltwater from the Pacific Ocean, creating the West Coast's largest estuary. Composed of 57 leveed island tracts and 700 miles of sloughs and winding channels, the Delta is a unique blend of small town communities, busy ship ports, farmlands, industries, highways, historical sites, and marinas.

When first explored by the Spanish in the 1770s, the Delta was a vast marsh covered with tules and teeming with wildlife. Settlers, mostly unsuccessful Forty-niners, began farming the region shortly after the start of the Gold Rush. To reclaim the land from swamplike conditions, they began to build levees. The levees were raised and strengthened over time and now protect islands whose surface can be 20 feet or more below the outside water level.

Today, the Delta is the hub of the State's water distribution system. About two-thirds of all Californians and millions of acres of irrigated farmland rely on the Delta for water from the State Water Project and federal Central Valley Project. Delta water is vital to California's economy, fifth largest in the world, and its growing population, expected to reach 53 million by 2030 (Department of Finance).

### Many Uses

As a water distribution system, the Delta not only serves the State and federal projects but also many agricultural and municipal water diverters surrounding and within the Delta itself. Delta water from the State Water Project serves both urban and agricultural areas in the Bay area, the Silicon Valley, the San Joaquin Valley, the Central Coast, and Southern California.

Salmon migrate through the Delta to freshwater rivers to spawn.



A rich and productive habitat for more than 500 species of wildlife, the Delta's unique ecosystem supports 20 endangered species, such as the salt harvest Suisun Marsh mouse and the Delta smelt, and serves as a vital migration path for salmon traveling to and from their home streams and to the Pacific Ocean.

With a population of more than 500,000, the Delta's community is largely rural. The majority of its 738,000 acres is devoted to agriculture. Its fertile peat soil produces crops such as asparagus, pears, corn, grain and hay, sugarbeets, and tomatoes, which bring in over \$500 million annually.

Railways, highways, and utilities crisscross the Delta. Ships, traveling up and down deepwater channels to Sacramento and Stockton, transport millions of tons of cargo to busy ports. Thousands of recreational boats ply its other waterways, smaller channels winding around leveed island tracts, in search of fun and fish. And visitors sightsee at popular historical spots such as the town of Locke, a Chinese settlement once known for its culture and entertainment, and the Ryde Hotel, one of the State's earliest.

### **A Region In Need**

Over decades, these competing uses for water supply and habitat have jeopardized the Delta's ability to meet either need. All stakeholders agree the estuary is in trouble and requires long-term solutions to ensure reliable, quality water supplies and a healthy ecosystem.



The region is also a popular recreation spot for many.

Many factors have contributed to the Delta's decline. Agricultural, industrial, and urban runoff has polluted its waters. Invasive, non-native species have adversely impacted the food chain and, in turn, native fish and wildlife populations. Particularly during dry years, the needs of the ecosystem and water users clash.

Environmental mandates to protect the resident Delta smelt and the salmon migrating through the region limit state and federal water operations. Environmentalists point to the water exports as a leading cause of the Delta ecosystem's deterioration. Water users note the importance of Delta water to California's economy and say that alternative actions, such as improving habitat conditions, can offset the impacts of water exports.

Past conflicts prevented viable solutions for Delta problems—deteriorating water quality, unreliable water supplies, declining fish and wildlife populations. The Delta islands themselves are at peril, with scientists concerned about levee failures in the event of an earthquake.

The stalemate has resulted in a crisis that must be resolved so California can continue to prosper economically, socially, and environmentally.

## CALFED AND THE FUTURE

In 1994, state and federal resource agencies signed an agreement that led to the formation of [CALFED Bay-Delta Program](#). The focus of this cooperative organization, working with other governmental and water and environmental agencies, is to find long-term solutions to the Delta dilemma.



Aerial view of one of the Delta channels

To accomplish this, CALFED and its staff have focused on reliable quality water supply, ecosystem restoration, levee rehabilitation, increased water storage, and improved water conveyance. In 2000, a comprehensive plan, an official Record of Decision, was approved to meet CALFED's goals to ensure reliable quality water supplies for the State's environment and economy.

CALFED has funded hundreds of ecosystem restoration projects—such as fish screen research and installation, spawning habitat restoration projects, and water quality and watershed improvements. Although it is difficult to determine the contributions of the different projects, important fish populations are increasing

Grants are provided for local groundwater recharge, water conservation, and water reclamation projects. CALFED aims to augment existing water supplies through such techniques and the development of an effective water transfer market. "On Tap," a web site created by the agency, provides water market information to aid water transfers.

An Environmental Water Account was established to ensure water for environmental purposes without reducing allocations to agricultural and urban users. Farmers were assured of no further reductions in their water allocations by the federal government because of Endangered Species Act requirements.



The Bay-Delta is rich in wildlife.

Another CALFED focus is to improve levee system integrity and protect the island tracts. Levee failure can result in flooding, causing more saline water to intrude, thus degrading water quality for water users and wildlife habitat.

Its comprehensive plan also includes such proposals to increase reservoir storage and groundwater projects, improve the conveyance of water through and from the Delta, and improve Delta drinking water quality.

## **SACRAMENTO-SAN JOAQUIN RIVER DELTA FACTS**

### **Population:**

515,264 (2000 Census)

### **Counties in the Delta:**

Alameda, Contra Costa, Sacramento, San Joaquin, Solano, Yolo, and a portion of Rio Vista

### **Major Cities Partly Within the Delta:**

Sacramento, Stockton, West Sacramento

### **Size in 1991:**

538,000 acres of agriculture

64,000 cities and towns

61,000 water surface

75,000 acres of undeveloped areas

Total acreage: 738,000

### **Levees (total mileage, 1987):**

1,100

### **Rivers flowing into the Delta:**

Sacramento, San Joaquin, Mokelumne, Cosumnes, Calaveras (These rivers plus their tributaries carry about half of the state's total annual runoff.)

### **Diversions Directly from the Delta:**

State Water Project

Federal Central Valley Project

Contra Costa Canal

North Bay Aqueduct

City of Vallejo

Western Delta Industry

1,800+ Agricultural Users

### **Water Supply:**

Drinking water for 22 million people; supports California's trillion dollar economy (fifth largest in the world) and \$27 billion agricultural industry

### **Recreation:**

User days annually 12 million

### **Transportation:**

Interstate Highways 5, 80 and 205

State Highways 4, 12 and 160

Deepwater Ship Channels to Sacramento and Stockton

Railroads: Southern Pacific/Union Pacific, Atchison, Topeka & Santa Fe and Sacramento Northern

### **Agriculture (1990):**

Average Annual Gross Value-over \$500 million

Main Crops: corn, grain and hay, sugar beets, alfalfa, pasture, tomatoes, asparagus, fruit and safflower

### **Plant and Animal Species:**

500

### **Major Anadromous Fish:**

Salmon, Striped Bass, Steelhead Trout, American Shad and Sturgeon