

MAJOR ISSUES FOR THE DELTA

SUBSIDENCE

Historically, the loss of land surface elevation has been as high as 6 inches per year. Currently, the rate of subsidence averages about 1.5 inches per year. The causes of subsidence are also changing. During the early 1900s, compaction, burning, and wind erosion played a significant role. Now, the oxidation of the organic peat soils due to farming accounts for most of the soil loss. The volume of soil lost, or the void currently below sea level, is in excess of 3.5 million acre-feet or almost 8,000 Rose Bowl stadiums! As the islands (more appropriately called “holes”) go deeper below sea level, the water pressure on the levees becomes exponentially greater. Ongoing subsidence increases the potential impacts from a large earthquake by increasing the size of the seawater “gulp” as seawater rushes in to fill the void.

SALINITY INTRUSION

Exporting water supplies from the south Delta requires that the delta channels be kept relatively fresh year-round, which is not the Delta’s historic condition. Prior to the construction of the Central Valley Project, the salinity varied significantly from spring to fall and from wet year to dry year. Native aquatic species had adapted to these conditions over the millennia. Keeping the estuary more of a monoculture has favored the non-native species, putting additional strain on the ecosystem of the estuary.

SEA LEVEL RISE

Experts say Delta planners should plan for a 1-foot rise in sea level by 2050 and 55 inches by 2100. Raising the levees to keep up with this rise will cost between \$4 billion and \$12 billion, according to DWR. Rising sea levels will not only put greater pressures on the levees, but will cause seawater to intrude further inland. Sophisticated modeling predicts salt could move well inland, unless vast quantities of water are released from upstream reservoirs to repel it.

EARTHQUAKES

According to the USGS, there is a 60 percent chance of a magnitude 6.7 earthquake hitting the Bay-Delta

region by 2032. And according to DWR’s Delta Risk Management Study, there is a 25 percent chance of an earthquake causing 30 islands to collapse in the next 25 years. Statewide economic costs of such an event could exceed \$40 billion. If the 1906 earthquake hit today, it is estimated it would cause the failure of 22 Delta islands, which would likely cut off Delta water exports for several years, and it is likely that water exports would never fully recover.

FISH CONFLICTS

The current location for water diversions in the Delta was never intended to be permanent. Exporting water at the end of a channel creates a dead-end for fish with no way to move past the screens, as you would have on a river system. Eggs, larvae and small fish that are drawn into the channels around the state and federal pumping plants need to be screened out of the water and then trucked 20 miles back to Sherman Island in the western Delta.

CARBON

Carbon is an essential element in a vibrant aquatic food web. It also can present serious health problems as a by-product of the drinking water treatment process. Consequently, carbon is causing a major conflict in the Delta since society is asking the estuary to be both a water supply and a fully functioning ecosystem. A canal separating the water supply and ecosystem functions can solve this problem.

NON-NATIVE SPECIES

Over 95 percent of the biomass in the Delta is non-native. Striped bass, Black bass, Asian clams and many other invaders, large and small, are either eating the native populations or the foods upon which they rely. In this highly-altered environment, the introduced species are outcompeting the native species and are a key factor in the reducing populations of some endangered species.

LOSS OF HABITAT

Tidal wetlands and extensive riparian forests are an essential part of a thriving estuary. They create diverse sources of food and habitat. Unlike the landscape today, pre-historic land forms were dynamic and resilient, easily adapting to changing conditions and climate.