

The Bay-Delta Reimagined Over Time by Caty Wagner



The Bay-Delta

Reimagined Over Time

By Caty Wagner, Los Angeles/Occupied Tongva Land

Ms. Wagner is first and foremost a community organizer for [Sierra Club California](#), and paints as a hobbyist. The Bay-Delta Science Conference is the perfect opportunity to blend her two passions. This series examines the Bay-Delta imagined as it was in 1821, before European settlers and large-scale agricultural practices began, as it is today, and finally, what it could be like in 2121 if climate change is not curbed and the Delta Conveyance project is built.



The Bay-Delta, Reimagined in 1821

The Bay-Delta we can imagine in 1821 was a lush place, full of life. Skies were blue, free of smog and particulate matter. Freshwater was of a better quality- free of nitrates, pollutants, agricultural byproducts and runoff, low salinity, and in plentiful supply, creating the right temperature and climate for salmon and many other fish species. [Local Tribes](#) like the Winnemem Wintu, Miwok and Maidu people had built levees to protect against flooding, but also served as sacred burial sites.

The California grizzly bear roamed the Delta feasting on salmon, as did grey wolves and other wildlife that have since gone extinct from the region. Sandhill cranes gathered in larger numbers, as did millions of birds, as the Bay-Delta is a stop on the [Pacific Flyway](#).



The Bay-Delta, 2021

In this image, we see a greying sky- in part due to the wildfires that have become exceedingly more dangerous and expansive with climate change- and in part due to smog. Stockton, a Bay-Delta city, is in the [top 25 cities](#) for worst air quality in the United States. The Bay-Delta is located in the San Joaquin Valley, whose low elevation allows for the settling of particulate matter in the air from cars, and then agricultural practices like tilling, soil erosion, burning and processing plants. Development has led to less forested lands, and extinction of native species. The Delta smelt and [Sacramento splittail](#) have [not been found](#) in the Bay-Delta since 2017 unless they have been introduced by scientists. Water quality, affected by pesticides, nitrates and [pollution](#) is one reason, but much of their decline is due to reduced flow of Bay-Delta freshwater. With less rain and groundwater available, we see [less wildflower](#) blooms.

The yellowing hills are an example of a hotter, dryer climate and land where water has been diverted for agriculture. Water is sent through the State Water Project and Central Valley Project south to the Central Valley and Southern California. Diversions have reduced the [amount of water](#) needed for wildlife- including for salmon and smelt. This has led to saltwater intrusion, hotter temperatures, and fewer salmon available to marine mammals in the Pacific Ocean. [Salmon](#) fishing is one of the biggest industries for Tribes along the North Coast. The bright green water shown in the stagnant river is a harmful algal bloom ([HAB](#)), which is a deadly threat to the residents and wildlife of the Bay-Delta.



The Bay-Delta, Reimagined 2121

The [Department of Water Resources](#), aided by [Metropolitan Water District](#) and other water agencies, is trying to build the Delta Conveyance project, aka the Delta tunnel. It has previously been known as CA WaterFix or the Twin Tunnels. In late 2020, participating water agencies agreed to fund research and planning for the project's environmental review. A vote to build the tunnel is scheduled for 2024.

If built, this \$16-40 billion project, [paid for](#) by water ratepayers and property taxes, will not be a [reliable source](#) of water given the future of global warming. We can expect wildfires to exacerbate in the future. Despite their claims, the tunnel is not [earthquake-resistant](#) or immune to [sea level rise](#). The tunnel relies completely on rain and snowmelt from the Sierra Nevada and Cascade mountains, which is declining. If the tunnel is built, we will see trillions of gallons of water diverted away from the Bay-Delta. We can expect the [HABs](#) to thrive- and the botulism caused by HABs and stagnant water is [deadly](#) to birds and other wildlife. It is unlikely that the Delta smelt or longfin smelt will survive, and they are critical components of the Bay-Delta ecosystem. Salmon, and their predators in the Pacific, are looking at a [bleak fate](#).

Get Involved

You can help protect the Bay-Delta by getting involved with Sierra Club California and organizing your community.

Contact Caty Wagner to get involved, or for [more information](#) about the [negative effects](#) of the Delta tunnel at caty.wagner@sierraclub.org