

# Tapping the ocean for drinking water -- state lays down the law

**Peter Fimrite, San Francisco Chronicle, 5-7-15**

California adopted new rules Wednesday to help cities and water agencies figure out the best way to siphon water from the sea and turn it into drinking water without killing fish.

The plan, approved by the State Water Resources Control Board in Sacramento, marks the first time any state or country has developed environmental guidelines for building and operating desalination plants.

“It is a big deal,” said Jonathan Bishop, chief deputy director of the water board. “It sets the ground rules for how to get a desalination facility permitted that is protective of marine life.”

Adopting the rules is among a series of measures the state is taking to head off a water crisis caused by a fourth year of drought.

Experts agree that soon there won't be enough water for the state's population — 38 million people and climbing — while protecting fish and wildlife and their habitats. Dams and pipelines are costly, pose environmental issues and take years to build.

Desalination plants have the obvious attraction of tapping a limitless source of water, the ocean. Critics warn, however, that the plants kill fish as they suck in briny water, and spew greenhouse gases into the air from the energy they require to run.

The state's new rules seek to deal with some of those issues by requiring desalination plants to use subsurface intakes when possible, meaning seawater can be drawn in only from below the seabed. If open ocean intakes are necessary, they must have screens to keep from killing fish and other sea creatures.

Operators will have to use treated wastewater to dilute the salty brine that the desalination plants discharge after producing fresh water. If that is not possible, operators must place a device that rapidly mixes the brine with seawater at the end of the outfall. The salinity in the area near the outfall cannot increase by more than 2 parts per 1,000.

Bishop said technological improvements in recent years are making desalination plants a more attractive option for water providers.

“We have a number of local water districts, cities and entrepreneurs that are considering it, so we need to set ground rules,” he said. “The drought also provides more incentive for people to look at all their options.”

Seventeen desalination plants are in planning stages, including the \$1 billion Carlsbad facility near San Diego, which is expected to open in a few months. It will be the largest desalination plant in the Western Hemisphere and serve more than 110,000 customers in San Diego County.

In the Bay Area, Concord is considering building a plant that would serve every major water agency in the Bay Area, including San Francisco's. That plant would sit in Mallard Slough outside Bay Point and draw from delta waters flowing into Suisun Bay.

A \$400 million desalination plant is being planned in Monterey Bay. Other small plants are being considered in Santa Cruz and at Moss Landing.

Proposition 1, the \$7.5 billion water bond that California voters passed last year, promised desalination along with new storage facilities, conservation and recycled water.

“It's not a panacea,” Bishop said. “You wouldn't think about replacing our water project with desalination, but there are communities along the coast that have very few options and they need to look at everything.”