

# Will California De-Salt the Pacific to Alleviate Its Drought?

*A few special conditions might make expensive desalination plants worth the price.*

**Francie Diep, Pacific Standard, 3-5-15**

As California enters its fourth year of drought, several cities are considering a drastic solution: Huntington Beach, Monterey, and others are thinking about building desalination plants to turn the Pacific Ocean into potable water, the Los Angeles Times reports.

Getting water from the ocean may seem like an obvious idea, but nature and physics drive a hard bargain here. Desalination always requires lots of energy, which is hard on the environment, if the plant runs on fossil fuels. Burning up all that electricity is also expensive, making plants politically unpopular. The city of Santa Barbara, California, estimates its plant will raise water bills by 38 percent for the average household, the Los Angeles Times reports. Back in 2011, when Victoria, Australia, was building its desalination plant, the state's premier called it "a very expensive white elephant."

Still, certain conditions—including desperation—help citizens accept desalination plants. Researchers have pinpointed these conditions by studying places where desalination is popular. A look at those regions offers some hints about how likely California will be to follow suit.

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If water is contested in regions where states fight a lot about water rights, desalination can be a popular and peaceful solution. That's in part because people see lake and river water differently from the way they see desalinated water. States are more likely to feel that rivers or lakes "belong" to them, so they resist sending freshwater from within their borders elsewhere, University of Manchester geographer Erik Swyngedouw argues in a review he wrote for the *Annals of the Association of American Geographers*. When Spain—home to eight of the world's top 20 desalination companies—was considering sending Ebro River water to more arid areas, a million people took to the streets to protest.

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Another region where desalination is popular? The Middle East. Before Israel and Jordan began desalinating water from the Mediterranean and Dead Seas, they fought intensely over water from the Jordan River and local aquifers. Desalination made water less of a zero-sum game, according to researchers from Israel's University of Haifa. By analyzing governmental meeting minutes, the researchers saw a shift in how officials talked about water after desalination projects went up. Politicians stopped talking about water "rights" and started treating water like any other commercial good that they could buy and sell. It was also easier for officials to price water because they could tally up the cost of running a plant. The intrinsic value of river or aquifer water is more debatable.

Just last week, Jordan and Israel signed an agreement to build a plant that will desalinate water that Israelis and Palestinians will share.

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If people are worried about global warming, that also gives desalination a push. In many regions around

the world, climate change will make rainfall patterns more volatile and droughts more extreme. But the sea will always be a steady source of water.

The global-warming argument is popular in Spain, Swyngedouw writes in his review:

*Projections indicate a decrease of precipitation in the already highly water-stressed southern regions of up to 40 percent by midcentury compared to average 1961–1990 levels (Martín Barajas 2010). The overall predicted effect on reservoir water availability is estimated to be around –5 percent to –7 percent.*

*On the basis of such compelling data, a consensus has emerged among water business leaders, elite institutions, and some environmentalists that the twin forces of climate change and demographic expansion point to desalination as potential sociotechnical fix.*

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Of course, at some point, regions may just need water so badly that de-salting the sea seems worth it, outside of any other benefits. There's a reason desalination is so widely accepted in Israel, which makes about 20 percent of its water from the sea. The country is chronically in need of water. Compared to the United States, Israel naturally produces 100 times less renewable fresh water per capita.

Controversial water politics, global warming worries, and desperation—which of these conditions apply to California?

Although water rights are controversial throughout the American West, it's hard to imagine them rising to the level of Jordanian-Israeli relations.

One recent survey found that the majority of Californians are worried about climate change, but doesn't say whether folks correlate the issue to water availability. An environmentally friendly mentality is not necessarily compatible with desalination, either. Environmentalists often protest desalination projects because they dump super-salty water back into the ocean, which can be disruptive to marine life.

Is the drought in California bad enough to force people to accept pricey de-salted water out of desperation? Again, it's hard to imagine that anywhere in the U.S. will become as water-stressed as the Middle East. Perhaps Californians will get a little more thirsty if the drought continues, however. For now, the National Weather Service predicts the drought will either persist or intensify throughout the spring.