

Coping In A Drier World: California's Drought Survival Strategy

By Kirk
Siegler

The past few years have been California's driest on record. Forecasters predict that punishing droughts like the current one could become the new norm.

The state uses water rationing and a 90-year-old water distribution system to cope until the rains come. The system is a huge network of dams, canals and pipes that move water from the places it rains and snows to places it typically doesn't, like farms and cities.

"The system that we have was designed back in the 1930s through 1950s to meet population and land use needs of the time," says Doug Parker, director of the California Institute for Water Resources in Oakland.

"Now things have changed in the state and that system really hasn't evolved to keep up with the times in California," he says.

And so much has changed. First off, there weren't 38 million people here back then. The other problem is that they designed this system during an unusually wet period in the West. Turns out, droughts are pretty normal here.

"And the question is, how is that system going to perform in 2050?" Parker asks.

Not so well, unless some big changes come.

Parker says to picture it like this: You've got an old four-lane highway serving a city that everyone wants to move to. You need to add more lanes. But also some toll roads.

In water geek speak: Make it a 21st century water distribution system.

Gov. Jerry Brown is urging voters to approve a \$7 billion water bond to upgrade that massive infrastructure system. The measure would pay for building two new large reservoirs and the expansion of dozens more.

There is also tens of millions of dollars earmarked for water recycling and reuse. Because, after all, you can't really build your way out of a drought if it doesn't rain again.

A sewage plant along the scenic coastline near Monterey Bay is already one step ahead.

"Yeah, I've heard it called 'showers to flowers,' which is a pretty good one," says Brian Lockwood, a hydrologist who helped set up the state-of-the-art recycled water waste plant.

"Much of the nation's strawberries, raspberries, blackberries and vegetable crops come from this valley," he says. "So we had to figure out, how can we protect the thriving agriculture industry of the Pajaro Valley?"

Lockwood's agency got to thinking. Why not capture all the waste water from all the cities here that would otherwise drain into the ocean, and instead, treat it, and pipe it back to farmers?

Seven million gallons of water now gets recycled here every day, and state drought relief money will soon allow the operation to expand. Farmers in the valley are happy about that.

"It supplements our wells, but it keeps us from pumping more water out of the ground," says Stuart Kitayama, a farmer who grows flowers and berries in the valley.

And this is a big deal in years like this one. At his farm, Kitayama measured 3 1/2 inches of rain all year. In a good year there's 20.

He says farmers like him were skeptical about this idea at first, but they're starting to see that to survive, they're going to have to get creative, and manage to live with less.

And a lot of people seem to think this state can manage its way through this drought.

Eric Garcetti, the mayor of Los Angeles, recently signed a sweeping executive order that aims to cut freshwater use in his city by 20 percent in the next three years.

"The ongoing drought has created a water crisis second to none," Garcetti said after signing the executive order. "We need bold action, and that is what I am delivering today."

LA wants to go local. Money is flowing to more of those showers-to-flowers projects and also storm water capture. The rains that do come in the future may come all at once, which could mess with the already crumbling infrastructure in the state.

This summer, a 90-year-old water main broke, sending 20 million gallons of precious water onto the streets in the Westwood neighborhood of LA. It made a drought-weary public cringe, but it also highlighted the fact that California cities lose an average of 15 percent of their water every year from leaky pipes and spills.

"It's gonna be a lift but we're gonna have to try," says Marcie Edwards, general manager of LA's Department of Water and Power.

She says fixing the city's plumbing system is also a top drought-coping strategy. Her agency cut its leaks by 40 percent in the past couple of years.

"We're going to be aggressively replacing both our main lines, our trunk lines, our valves," Edwards said. "So despite the fact that I think we're doing pretty good at that end, there's going to be more that's needed."

So, in the end, if California's going to cope in a drier world it may take an upgrade of all these things. The only certainty is that, if the big storms don't come for a fourth straight year, they're all about to get put to a serious test.

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Transcript

AUDIE CORNISH, HOST:

The extreme drought in California has leaders thinking about how the state can survive in the future with a lot less water. There are predictions that punishing droughts like this one could be the new norm. So what can the nation's most populous state and one of the world's largest economies do if the rain doesn't come? NPR's Kirk Siegler went to find out.

KIRK SIEGLER, BYLINE: These are extraordinary times in California - the driest years on record, water rationing and a water distribution system that's pushing 90 years old. It's a huge network of dams, canals and pipes that moves water from the places it rains and snows to places it typically doesn't like farms and cities. Doug Parker is someone who knows this thing inside and out.

DOUG PARKER: The system that we have was designed back in the 1930s through 1950s to meet population and land use needs of the time.

SIEGLER: I paid him a visit in Oakland where he heads the California Institute for Water Resources.

PARKER: Now things have changed in the state, and that system really hasn't evolved to keep up with the times in California.

SIEGLER: Think of all that's changed. First off, there weren't 38 million people here back then. The other problem is that they designed the system during an unusually wet period in the West. Turns out droughts are pretty normal here.

PARKER: And the question is how is that system going to perform in 2050?

SIEGLER: Not so well unless some big changes come. Parker says to picture it like this. You've got an old four-lane highway serving a city that everyone wants to move to, so you need to add more lanes, but also some toll roads. In water geek speak, make it a 21st-century water distribution system. So you have drought coping strategy number one - spend and build more.

(SOUNDBITE OF ARCHIVED RECORDING)

GOVERNOR JERRY BROWN: With the worst drought on record, we've seen devastation across California. Our reservoirs - way, way down - land where there used to be water.

SIEGLER: This is Governor Jerry Brown asking voters to approve a \$7 billion water bond to upgrade that massive infrastructure system. The measure would pay for building two new large reservoirs and the expansion of dozens more. There is also tens of millions of dollars earmarked for water recycling and reuse because after all, you can't really build your way out of a drought if it doesn't rain again. And so we have drought coping strategy number two - efficiency, saving your way.

Let's take a trip over to the scenic coastline near Monterey Bay. There's a cool, misty sea breeze. Towering redwoods blanket the foothills. There's a sewage plant.

BRIAN LOCKWOOD: Yeah I've heard it called showers to flowers which is a pretty good one because...

SIEGLER: But this is no ordinary sewage treatment plant. Brian Lockwood is a hydrologist to help set up this, a state-of-the-art recycled wastewater plant.

LOCKWOOD: Much of the nation's strawberries, raspberries, blackberries and vegetable crops come from this valley, so we had to figure out how can we protect the thriving agricultural industry of the Pajaro Valley.

SIEGLER: So Lockwood's agency got to thinking. Why not capture all the wastewater from all the cities here that would otherwise drain into the ocean? Instead, treat it and pipe it back to farmers.

SIEGLER: Seven million gallons of water now gets recycled here every day, and state drought relief money will soon allow this operation to expand. Showers to flowers, get it? Stuart Kitayama is someone who actually grows flowers in this valley and some berries.

STUART KITAYAMA: It supplements our wells but it keeps us from pumping more water out of the ground.

SIEGLER: And this is a big deal in years like this. At his farm, Kitayama measured three and a half inches of rain all year. In a good year there's 20. He says farmers like him were skeptical about this idea at first, but they're starting to see that to survive, they're going to have to get creative and manage to live with less. That brings us to the third and final way California is trying to deal with the drought. A lot of people here seem to think this state can manage its way through this.

(SOUNDBITE OF ARCHIVED RECORDING)

MAYOR ERIC GARCETTI: Here we go.

(APPLAUSE)

SIEGLER: Here's the mayor of Los Angeles, Eric Garcetti, signing a sweeping executive order that aims to cut freshwater use in this city by 20 percent in the next three years.

(SOUNDBITE OF ARCHIVED RECORDING)

GARCETTI: The ongoing drought has created a water crisis second to none. We need bold action, and that is what I'm delivering today.

SIEGLER: LA wants to go local. Money is flowing to more of those showers-to-flowers projects and also storm water capture. The rains that do come in the future may come all at once. And remember that infrastructure - the old highway? It's predicted that California cities lose an average 15 percent of their water every year due to leaky pipes and spills.

MARCIE EDWARDS: It's going to be a lift, but we're going to have to try.

SIEGLER: At the mayor's event, I met Marcie Edwards. She's general manager of LA's Department of Water and Power. She says fixing the city's plumbing system is a top drought coping strategy. Her agency has cut its leaks by 40 percent in the past couple years.

EDWARDS: We're going to be aggressively replacing both our mainlines, our trunk lines, our valves. So despite the fact I think we're doing pretty good at that end, there's going to be more that's needed.

SIEGLER: So in the end, if California's going to cope in a drier world, it may take some of all three of these things. The only certainty is that if the big storms don't come for a fourth straight year, they're all about to get put to a serious test. Kirk Siegler, NPR News. Transcript provided by NPR, Copyright NPR.