

Killing the Colorado

The Truth Behind the Water Crisis in the West

California's Drought Is Part of a Much Bigger Water Crisis: Here's What You Need to Know

By Abraham Lustgarten, Lauren Kirchner and Amanda Zamora June 25, 2015, 12:30 p.m.



A ditch between rice farms in Richvale, Calif. (AP File Photo/Jae C. Hong, File)

Why do I keep hearing about the California drought, if it's the Colorado River that we're "killing"?

Pretty much every state west of the Rockies has been facing a water shortage of one kind or another in recent years. California's is a severe, but relatively short-term, drought. But the Colorado River basin — which provides critical water supplies for seven states including California — is the victim of a slower-burning catastrophe entering its 16th year. Wyoming, Colorado, New Mexico, Utah, Nevada, Arizona and California all share water from the Colorado River, a hugely important water resource that sustains 40 million people in those states, supports 15 percent of the nation's food supply, and fills two of largest water reserves in the country.

The severe shortages of rain and snowfall have hurt California's \$46 billion agricultural industry and helped raise national awareness of the longer-term shortages that are affecting the entire Colorado River basin. But while the two problems have commonalities and have some effect on one another, they're not exactly the same thing.

Just how bad is the drought in California right now?



Commuters are urged to conserve water during the morning rush to downtown Los Angeles. (AP Photo/Richard Vogel, File)

Most of California is experiencing "extreme to exceptional drought," and the crisis has now entered its fourth year. This month, signaling how serious the current situation is, state officials announced the first cutback to farmers' water rights since 1977, and ordered cities and towns to cut water use by as much as 36 percent. Those who don't comply with the cuts will face fines, but some farmers are already ignoring the new rules, or challenging them in court.

The drought shows no sign of letting up any time soon, and the state's agricultural industry is suffering. A recent study by U.C. Davis researchers projected that the drought would cost California's economy \$2.7 billion in 2015 alone.

In addition to the economic cost, the drought has subtle and not-so-subtle effects on flora and fauna throughout the region. This current drought may be contributing to the spread of the West Nile virus, and it's threatening populations of geese, ducks and Joshua trees. Dry, hot periods can exacerbate wildfires, while water shortages are making firefighters' jobs even harder.

And a little bit of rain won't help. NOAA scientists say it could take several years of average or above-average rainfall before California's water supply can return to anything close to normal.

What about a lot of rain? Couldn't that end the drought in California and across the West?





Irrigation pipes stand empty along a dried irrigation canal near Stockton, Calif. (AP Photo/Rich Pedroncelli, File)

Not necessarily. A half-decade of torrential rains might bail California out of its crisis, but the larger West's problems are more structural and systemic. "Killing the Colorado" has shown that people are entitled to more water from the Colorado than has flowed through it, on average, over the last 110 years. Meanwhile much of the water is lost, overused or wasted, stressing both the Colorado system, and trickling down to California, which depends on the Colorado for a big chunk of its own supply. Explosive urban growth matched with the steady planting of water-thirsty crops – which use the majority of the water – don't help. Arcane laws actually encourage farmers to take even more water from the Colorado River and from California's rivers than they actually need, and federal subsidies encourage farmers to plant some of the crops that use the most water. And, as ProPublica has reported, it seems that "the engineering that made settling the West possible may have reached the bounds of its potential" – meaning that even the big dams and canals we built to ferry all this water may now be causing more harm than good.



Arizona cotton awaiting harvest. Related: How federal dollars are financing the water crisis in the West (Jake Stangel, Special to ProPublica)

Water use policies—perhaps more than nature—have caused the water crisis in the West. As the former Arizona governor and U.S. Secretary of the Interior Bruce Babbitt told ProPublica: "There is enough water in the West, [but] there are all kinds of agriculture efficiencies that have not been put into place."

While there are mixed views on whether climate change can be blamed for California's drought, a recent National Oceanic and Atmospheric Administration (NOAA) report found climate change was not the cause. Global warming has caused excessive heat that may have worsened the drought's effects, but it isn't necessarily to blame for the lack of rain. It's true that recent years have yielded much less rain and snow than previous times in history, the NOAA report explains, but that's just a result of "natural variance" and not necessarily because of man-made pollution. But in both California and the larger Colorado River basin, mismanagement of the water supply has left the West more vulnerable to both short and long-term changes in climate.

What do you mean by mismanagement?

When officials divvied up rights to Colorado River water nearly a century ago, it happened to be a wetter period than usual. The result? The states vastly overestimated the river's annual flow. Today, the river's reserves are especially low and states are *still* claiming the same amount of water from the Colorado River that they always have — which is 1.4 trillion gallons a year more than the river actually produces. This sort of oversubscription is similar in California, where historic water rights give many farms first rights to California's streams and rivers, and haven't been adjusted as the state's population has increased and its cities have grown.

Wait — don't we all have equal water rights?

Well, if you believe Steve Yuhas, a resident of affluent Rancho Santa Fe, California, "we're not all equal when it comes to water." (Yuhas made the unfortunate mistake of complaining on social media that he and his neighbors deserve more water because they pay more property taxes, and "should not be forced to, golf on brown lawns," and was pilloried by readers of the Washington Post article that drew attention to his comments.) But actually, every state has its own laws about who gets how much water—and it has nothing to do with property taxes.

To the uninitiated, "water law" is arcane and confusing—hence the need for, yes, water lawyers). Sometimes, water law seems to defy common sense. For instance, in Colorado, if you put a barrel in your yard to collect rainwater for your plants, you are technically "stealing" that water right out of the sky; under water law, "nearly every drop is spoken for."

But the underlying rule of water in the West is that the first people to show up and claim it were the first people to get it, and everyone who came after took a place further back in line. Called "prior appropriation," this remains the dominant thread in Western water issues, more than 100 years later.

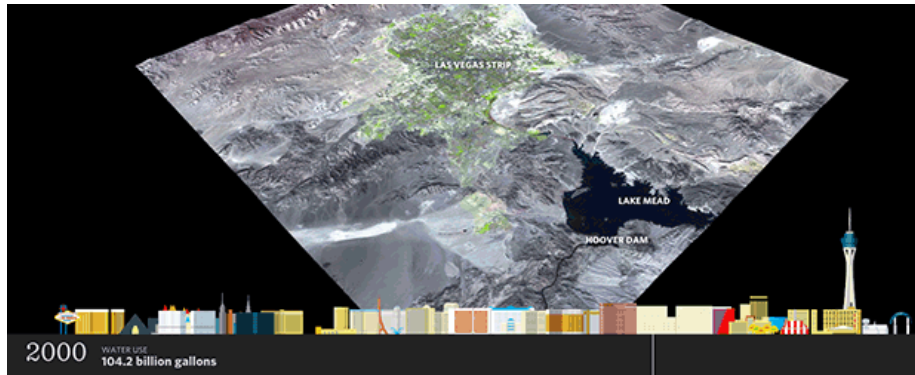
So where is all this water going?

For all of the warnings people in the West get about taking shorter showers and turning off sprinklers, the fact remains that agriculture uses the most water, by far. Farming and agriculture use more than 70 percent of the water that flows from the Colorado River to the seven river basin states.

In addition to those crops, cotton is one of the thirstiest crops a farmer can grow, especially in a desert. As it happens, many of the crops that use less water entitle farmers to fewer federal subsidies, and so farmers don't have much of an incentive to switch crops. Though cotton production has dropped steeply in California, since 1995, California farmers have gotten \$3 billion in federal subsidies to grow it. On top of subsidies, "Use it or Lose It" clauses in state water laws actually encourage farmers to flood their fields with much more water than they need lest they lose the right to that amount of water in

the future.

Urban development is also a big factor. Las Vegas has grown faster than any other city in the West, its footprint doubling in the past 25 years as more and more people have moved there. It is far from the only urban strain on the West's water supplies, but its approach to growth is emblematic of cities from Phoenix to San Diego. Denver's metro population hit 2.7 million in 2013, more than three times what it was in 1960. For all its problems, Las Vegas pioneered ways to save water and incentivize efficiency more than a decade ago that Los Angeles is only beginning to adopt today.



Twenty of the nation's largest cities are in Western states that receive water from the Colorado River. See how Las Vegas' explosive growth is straining water supplies. (Al Shaw/ProPublica)

What is California doing to address its water problems? Is it working?

Californians do seem to be answering the call to use less water in their daily lives after Gov. Jerry Brown imposed cutbacks in March. The state's "water czar," Felicia Marcus, continues to crack down on water waste, and creative ad campaigns are finding varying degrees of success. The state has cut deliveries of water to farmers through the state and federal aqueduct systems, and is now beginning to tackle the tough tasks of reforming water rights and curtailing some of the state's most senior users.

The federal government is also sending millions of dollars in "drought aid," and local counties are exploring how to desalinate ocean water to replenish water supplies. Some enterprising individuals are even proposing to revive old plans to tow icebergs or haul water down from Alaska.





Fidel Fraga, right, volunteers at a food distribution event in Firebaugh, Calif., serving hundreds of farmworkers out of work because of the drought. (AP Photo/Scott Smith)

Meanwhile, like any prolonged crisis, the drought is drawing out the best and worst in people. Some people are conscientiously conserving water in their homes in little ways—by not washing their cars or by capturing shower water from inside for their gardens outside, for instance. The drought has also inspired innovation in water conservation for restaurants, pools and lawns. Meanwhile, others have been caught stealing water from their neighbors and drought-shaming campaigns have multiplied online.

To the extent that climate change exacerbates the drought, California's efforts to curb greenhouse gas emissions may eventually help. In 2006 the state passed a law mandating that it buy less coal-fired energy. The Los Angeles Department of Water and Power is now also selling its stake in the Navajo Generating Station to invest in clean energy alternatives, though the plant (which generates more climate-warming gases than almost any other plant in the nation) will continue pumping Colorado River water to Arizona.

Will California cutbacks alleviate the larger Colorado River problem?

California uses almost one-third of the entire Colorado River flow, having a larger share than any other Colorado River basin state. California gets 16 percent of its surface water — water that comes from snowpack, streams and rivers — from the Colorado River via two huge aqueducts. The California Aqueduct runs beneath mountains into Riverside County and eventually toward Los Angeles, providing a substantial supply for both L.A. and San Diego. The All-American Canal moves water along the tail-end of the Colorado River near the Mexican border, nourishing one of the state's most valuable agriculture areas, Imperial County, where a large proportion of the nation's winter fruits and vegetables are grown.

Of the seven basin states, California holds the most senior legal rights to the Colorado, which entitle it to keep drawing water even as Lake Mead runs dry and the rest of the Colorado River states suffer through shortages. That means in the short term, not much that California does will change the situation on the Colorado, unless it were to voluntarily surrender more of its entitlement to the river. But should Colorado River shortages worsen to the point that the states ever re-negotiate that division of water, a reduction of California's Colorado River water rights could have a brutal impact on California's remaining supplies. Officials in California, like every other state in the region, are now facing a "new normal," as nature places new limits on the state's previously unchecked growth.

I don't live in California or the West, so why is this my problem?



A sign warns of rising food costs along Interstate 5 in Coalinga, Calif. (AP File Photo/Jae C. Hong)

California grows and exports a majority of the fruits and nuts eaten by the rest of the country, so water shortages there affect food supply everywhere. Calculations by the Pacific Institute indicate that, by eating food grown in California, each American indirectly uses more than 300 gallons of the state's water each week. Almonds, which require a comparatively huge amount of water to produce, have become the most visible scapegoat for an enormous problem of which they are only one small part. One almond takes almost an entire gallon of water to produce—but so does a tiny slice of cantaloupe, four strawberries, two florets of broccoli, or a fraction of an egg.

In fact, some of the biggest "water hogs," indirectly, are meat and dairy. Cows and chickens and other animals eat a lot of crops, which in turn require a lot of water. So it takes 86 gallons of water to make just 1.75 ounces of beef. Some research has suggested that the country's meat industries create such a high demand for water-thirsty feed crops, that if every American ate meat one less day a week, it could save as much water as flows through the Colorado River in an entire year.

Regardless, if the water crisis gets worse, Americans across the country can expect the cost of their food to go up, and some of it, perhaps, to not be available at all. Power prices may also rise as hydroelectric plants have difficulty generating with low water flows—and to the extent that very complicated power distribution affects a larger region, consumers far away from the Colorado River basin might feel the pinch. Finally, California and the rest of the Colorado River basin amount to the world's seventh largest economy, and contribute significantly to the country's GDP. When California struggles economically, the nation is close behind.

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