

CLIMATE

3 reasons why California's drought isn't really over, despite all the rain

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Heard on Morning Edition

By Lauren Sommer

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Water pours out of Lake Oroville in Northern California in March. Reservoirs levels plummeted over the last three years, but now have more water than they can hold.

Ken James/California Department of Water Resources

ASK a water expert if California's drought is finally done, and the answers sound something like this:

"Yes and no." "Kind of." "Depends what you mean by drought."

The state has been deluged by storms this winter, hit by 12 atmospheric rivers that have led to evacuation orders, rising rivers and broken levees. In some parts of the Sierra Nevada, more than 55 feet of snow have fallen.

With reservoirs filling up, many Californians are eager to put the severe, 3-year drought behind them. A major water supplier in Southern California recently lifted mandatory conservation rules that limited outdoor watering. Large parts of the state are now free of drought, according to the federal government's Drought Monitor, which looks at rainfall and soil moisture.

But in California, water shortages aren't just due to a lack of rain, and the state's chronic water problems are far from over.

"While we've seen some pretty fantastic wet weather and we've seen conditions improve, in a whole lot of places we still have some lingering impacts that still challenge California," says Mike Anderson, the state's climatologist.

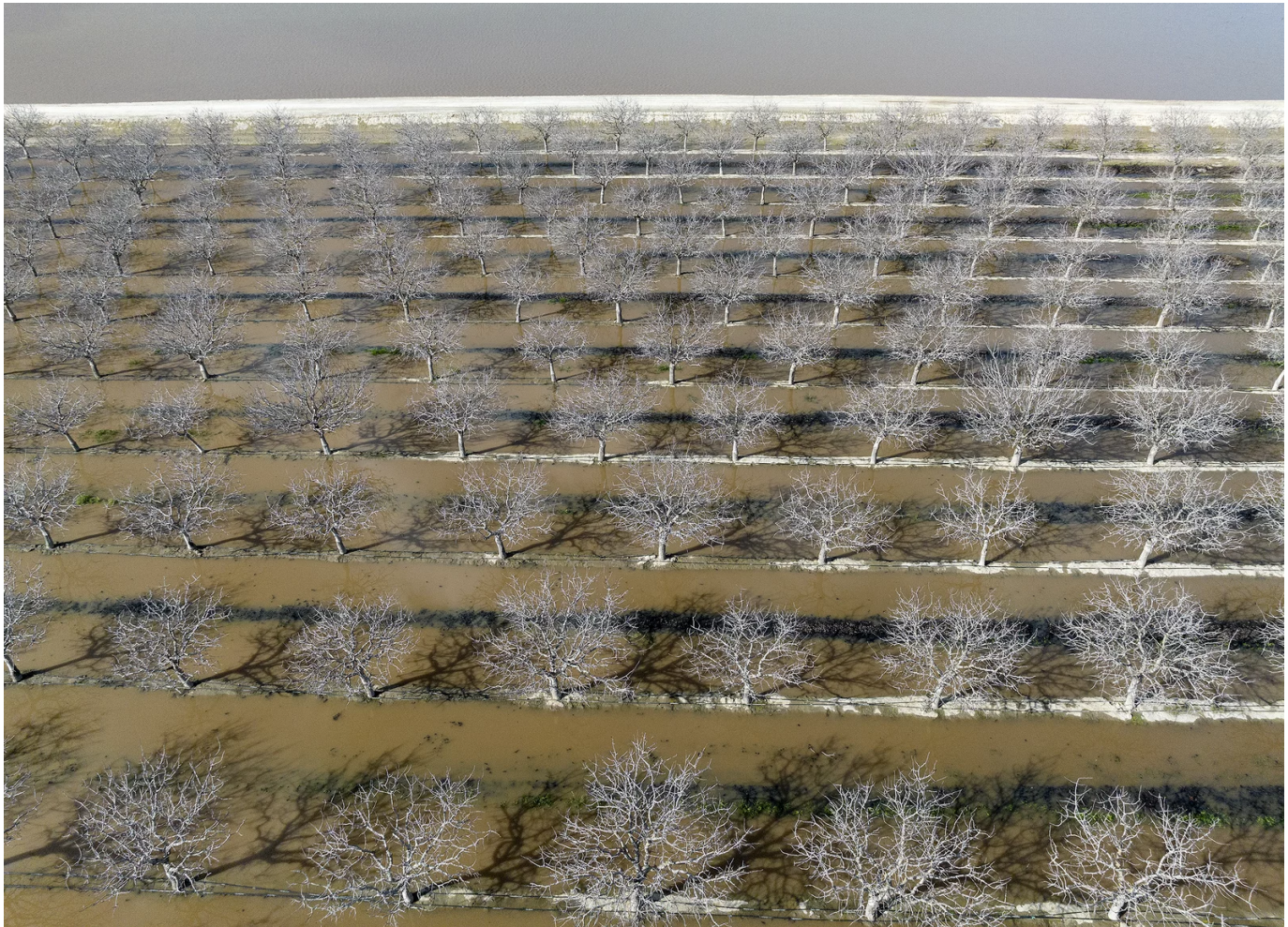
Decades of drought have taken their toll, and experts say that deeper issues need to be addressed before California can be fully-drought free. Here are three reasons why:

#1 - California's groundwater drought is still bad

When California's reservoirs declined, many cities and farmers turned to another water source: vast aquifers underground.

In drought years, groundwater has supplied up to 60% of California's water. But the pumping has been largely unregulated. So over the decades, water levels have fallen dramatically in California's aquifers. Before this winter, some groundwater wells were at the lowest points ever recorded. That's because in the Central Valley, groundwater hasn't been replenished after previous droughts.

"Groundwater is the dark matter of the hydrologic cycle," says Graham Fogg, professor emeritus of hydrogeology at the University of California Davis. "The fact that these are such huge volumes of water allows them to take a lot of abuse and to be depleted year after year."



Floodwater in Fresno County, Calif., is diverted onto agricultural land, so it can seep into underground aquifers. Groundwater levels have fallen dramatically during the state's droughts.

As a result, more than 2,000 household wells went dry over the last three years in California, many in low-income communities of color. Temporary water supplies, including bottled water, had to be brought in.

"We're not out of a drought," says Susana De Anda, executive director of the Community Water Center, an environmental justice organization in the Central Valley. "In California, the human right to water was passed in 2012. Unfortunately to this day, many Californians don't have that reality, and it's important to recognize that."

This winter, a new effort is underway to use some of the floodwaters to fill aquifers. California is also in the process of implementing a new groundwater law, intended to get over-pumping under control. Water users are currently writing plans for keeping groundwater use in balance with supply, but they won't be fully implemented until 2040.

"Over the years, pretty consistently, California has been using a lot more water than its surface water and groundwater system can supply," Fogg says. "So that has to change."

#2 - California's other water source is still in drought

Most of California's major cities exist today because their water is delivered from hundreds of miles away. In Southern California, that distance is thousands of miles, because the region uses water from the Colorado River.

A two-decades long drought has hit the Colorado River hard, causing its massive reservoirs, Lake Powell and Lake Mead, to plummet. Climate change is shrinking the snowpack that feeds the river, and the seven states that use it have long made claim to more water than is available on average.



Heavy storms caused a levee to break in Pajaro, Calif., flooding nearby homes. The parade of winter storms has tested the state's infrastructure.

Ken James/California Department of Water Resources

Those states are now in emergency negotiations over cutbacks to their water supply, but are struggling to agree. With some of the oldest water rights on the river, California has seniority and is technically last in line for cuts. But its water supply will still be impacted. Many Southern California cities have been working on conserving and recycling water locally, so they're less dependent on faraway supplies.

"We just have to get better at managing the more limited resources that we have there, and that means figuring out how to share a smaller pool of water than what we've been

using up all now," says Elmer Hanak, director of the Water Policy Center at the Public Policy Institute of California.

#3 - The next drought is coming...

Cue the John Steinbeck quote – it's easy to forget about the dry times once the rains come. But drought will return.

"We always have to be ready," Hanak says. "Drier times could come again as soon as next year."

As the climate gets hotter, California's extremes are expected to get more extreme. That means droughts will be drier, putting even greater strain on the state's water supply.

After the last major drought ended in California in 2017, some water conservation behavior seemed to stick. Water use didn't rebound to pre-drought levels, because some residents made lasting changes, like replacing water-hungry lawns and swapping for more efficient fixtures and appliances.

Still, experts warn that keeping a drought-mindset can only help California weather future challenges. So there's a risk in acting like drought is a thing of the past. Saving water now could help keep reservoirs fuller, a safe bet in a state where next year's winter storms are never guaranteed.