

State facing worst drought in history

Bradley J.
Fikes

May 2,
2015



FILE - In this March 18, 2015 file photo, ski lift chairs sit idle at shuttered Soda Springs Resort in Soda Springs, Calif. The traditional snow season ended April 1 with what appears to be the most dismal Sierra Nevada mountain snowpack on record, cementing 2015's status as the fourth drought year in a row and setting the stage for a difficult summer in California and nearby states. The Lake Tahoe Basin's snowpack Tuesday, March 31, 2015 was only 3 percent of normal for the date and the Truckee River Basin's was measured at 14 percent, far worse than the end-of-season numbers for any of the previous three drought years. (AP Photo/The Sacramento Bee, Randy Pench, File) *The Associated Press*

Californians are used to droughts, which on average happen once every decade. But the drought we're in now looks different from all the rest in California's modern history in its length and severity.

As the Golden State enters new and disturbing territory, elected officials, water experts, municipal planners and the public are struggling to understand what lies ahead, how it will affect them, and what they can do.

California has a record population, unprecedented demands for residential and environmental uses, and a productive but threatened agricultural sector that feeds much of the United States. It faces these challenges with a system to store and deliver water that was largely finished decades ago. Plans to [renovate](#) the system have foundered because of political disagreements.

So now California is faced with drought again, in exceptionally unfavorable circumstances. The last drought began in 2007 ended with the wet year of 2011. But immediately after that, the dry years began again. In retrospect, 2011 was an outlier in nearly a decade of California drought.

Worse, drought has also taken hold on the Colorado River basin, California's other major source of water. The vast storage capacity of reservoirs such as Lake Mead had dipped dangerously low, just when the state needs it most. Hot

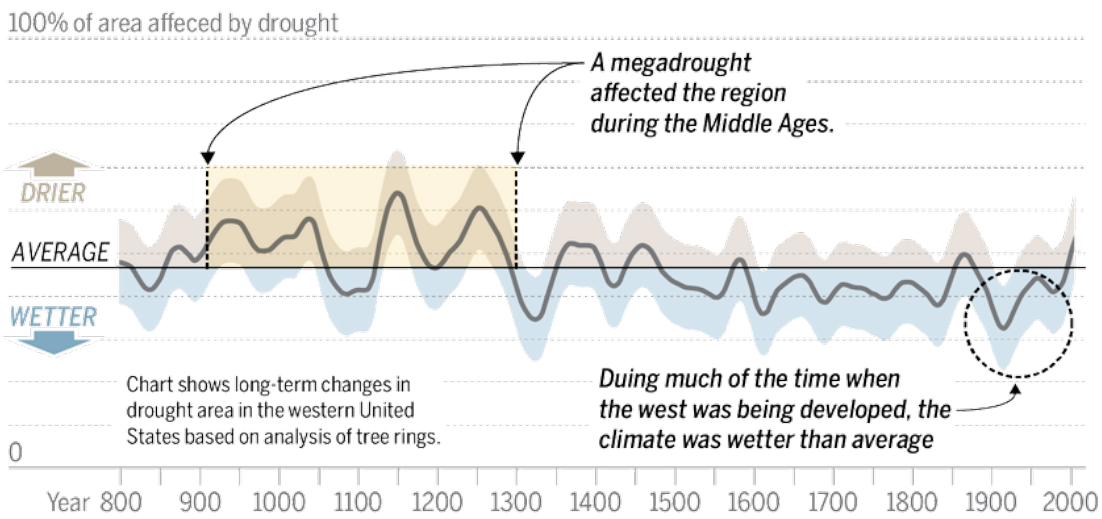
weather experienced in recent years makes rain less likely.

And while Californians are grappling with a 25 percent reduction in water use ordered by Gov. Jerry Brown, they should be aware the outlook can get a lot bleaker. Studies of California's climate going back 1,200 years have found evidence of [megadroughts](#) lasting up to 200 years. Even a drought of a few decades would be unprecedented in California's history as a state.

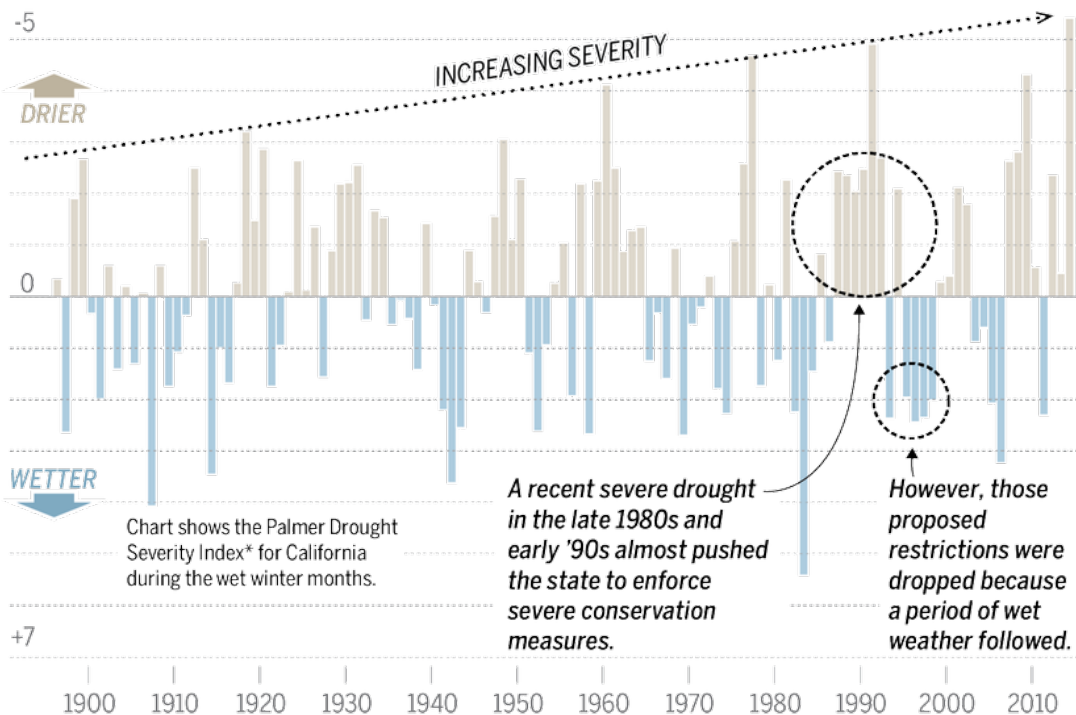
RELATED: [Dams, reservoirs may not be best answer](#)

How bad is the current drought?

Data from indirect measurements, such as tree ring growth, shows that the western part of the country regularly experiences prolonged periods of wet and dry climate.



The same fluctuations between wet and dry can be seen in more recent data for California. However, the severity of dry years within the state has been increasing .



*An index devised in 1965 that uses temperature and precipitation data to calculate water supply and demand, incorporates soil moisture, and is considered most effective for unirrigated cropland. It primarily reflects long-term drought.

Sources: Edward R. Cook, Lamont-Doherty Earth Observatory, Columbia University; National Oceanic and Atmospheric Administration; Climate Prediction Center

No one knows if we are entering a megadrought. Climate science has so far [failed](#) to accurately [predict](#) future climate trends. But history says an ultra-severe drought beyond the experience of California since it became a state in 1850 is very possible.

As California deals with this uncertainty, U-T San Diego talked with water experts to look at what is happening, and how the state could cope if the worst does take place.

If the drought does continue, water experts say conservation targets will become steadily more rigorous. A 50 percent cut is possible, a mandate briefly considered in early 1991, during the peak of another drought. Water transfers from farmers to cities will become more common. And the push for reclaimed water and desalinated water for drinking will accelerate.



California drought

[View Gallery](#)

Long journey

In a gigantic bucket brigade spanning hundreds of miles, Southern California gets most of its water from two main sources, Northern California rivers and reservoirs, and the Colorado River.

Northern California water reaches Southern California through Metropolitan Water District, the region's biggest water wholesaler. Metropolitan sells to the San Diego County Water Authority, which in turn sells to the retail agencies that supply residents, businesses and farmers. Metropolitan similarly sells to its other member agencies as far north as Ventura County and east nearly to Banning.

Page: