

# Study says megadrought nearly certain this century

**Deborah Sullivan Brennan, San Diego Union-Tribune, 10-10-16**

The West is almost certain to experience a decades-long drought by the end of the century, if greenhouse emissions continue as usual, a new climate study concluded.

The chance that the Southwest will experience a megadrought – a dry period lasting 35 years or more – is between 70 and 99 percent by the end of the century, according to the study, published Wednesday in *Science Advances*, an online, open access academic journal.

“The kind of events that we were looking for, and the risk we were looking at, would be like extending the current California drought for another 30 years,” said Toby Ault, a climate scientist at Cornell University, who authored the paper with Justin Mankin, Benjamin Cook and Jason Smerdon of Columbia University.

“There could be a few good years in there, but we’re talking about extending the worst conditions in the 20th century, for 35 years,” he said.

The work expands on, and elevates, the warning Ault and his colleagues issued in a previous work published in 2014, in which they estimated that the chance of a megadrought at 10 percent to 50 percent by the century’s end.

The difference, Ault said, is that the previous study looked only at projections for precipitation amid a changing climate. The current study also factored in the effect of increasing temperatures, which would increase the rate of evaporation.

Combining global climate models from research institutions around the world with their own statistical risk analysis, Ault and his colleagues found that the moisture loss from a warming planet would be a game-changer.

“Evaporation blows off more moisture, and that rolls the dice to make megadrought more probable,” he said.

So much more probable that there’s an overwhelming risk of megadrought even if precipitation increased slightly, the study found.

California is in the midst of a five-year drought that is one of the most severe – if not the most severe – in the last millennium, Ault said. Some climatologists say that despite a few wet years, the drought really began a decade and a half ago.

Current conditions are likely to become the new normal sometime this century if greenhouse emissions continue at their current rate, Ault said. Aggressive cuts in carbon emissions, however, could cut the risk in half, the study projected.

“The sooner the better,” Ault said. “The sooner we do it and the more aggressively we do it, the lower the climate risk.”