

## Sweating 2014: Record warmth not considered climate change, but maybe a symptom

By Mark Grossi



Keith Nilmeier of Nilmeier Farms stands in a peach orchard of his located near Sanger, Calif. on Tuesday, Dec. 9, 2014. Nilmeier said pruning began late this year due to the warmer weather.

ERIC PAUL ZAMORA — THE FRESNO BEE | [Buy Photo](#)

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Fresno was a balmy 10 degrees above average last week — more like early April than the Christmas shopping season. But that's not news to anyone who lives in the San Joaquin Valley or the rest of California.

For Fresno, Bakersfield and [the state as a whole](#), 2014 will probably be the warmest year on record. Fresno's eye-popping year features 11 straight monthly averages that landed among the 10 warmest on record. December might make it 12 in a row.

Is this climate change? Or is it just nature doing what it has done for many thousands of years? Scientists say it's nature.

But most quickly add that they see the fingerprints of global warming all over California's warm year and the drought.



Here's how meteorologist Paul Iniguez of the [National Weather Service in Hanford](#) put it: The drought and warmer temperatures are intertwined. And in general, climate warming has become apparent in California.

But does the drought and warmth this year equate to a climate-change event?

"I would never point at an individual weather event and say 'Yep, climate change, right there,' " Iniguez said. "But the odds are tilting, loading the dice, (making) certain events more likely to occur than in the past. Drought is one of those type of events."

The [National Oceanic and Atmospheric Administration](#) last week likewise found no solid connection to climate change in California's three-year drought. It concluded the dry spell is just part of natural variability of weather.

It was no surprise that the report caught flak from some scientists, such as [Michael Mann, Penn State University meteorology professor](#) and author of books on climate change. The Union of Concerned Scientists also was critical, saying NOAA did not look hard enough at the warm temperatures.

"The NOAA study points to natural variability, but it is important to note that these random variations are happening in the context of higher overall temperatures caused by climate change and warmer temperatures spell trouble for water in California," said [senior climate scientist Brenda Ekwurzel of Union of Concerned Scientists](#) .

That's just one small corner of politically charged debate over climate change. The mountain of evidence about global warming and interpretations of it are bandied, parsed and challenged — most of all the idea that human contributions of carbon dioxide make it happen faster.

Both California and federal governments have begun programs to cope with it, and they attract criticism.

But debates aside, climate change is a natural part of the planet's processes, and it has happened over and over. Both warming and cooling are slow-motion changes over decades, centuries and millennia. Within the chaos of Earth's weather, big swings in heat, cold, storms and droughts have been part of the equation.

People sometimes see a study, a single season or even one storm as a determining event that proves or disproves climate change and how fast it is happening now. That's not how it works.

The long time scale of the process can make it confusing, says [Nick Bond, research meteorologist with the NOAA Joint Institute for the Study of the Atmosphere and Ocean](#) at the University of Washington in Seattle.

"I don't necessarily see a link to climate change from warm-ups and dryness in California," he said. "But there's no mistaking the trends over longer periods. What California is enduring now might be more what it will be like in the future."

So what did California look like this year? Statistics show both maximum and minimum temperatures are more than 3 degrees higher than the average for 120 years of records.

The state numbers also show a steady trend upward over more than a century. In response, [California](#) has begun a greenhouse gas reduction program, among other efforts to prepare and adapt.

"This year was definitely warm and has implications regarding climate change," said [California's climatologist, Michael Anderson](#).

In the San Joaquin Valley, farm water leaders often argue that larger reservoirs will be needed to capture precipitation that is expected to swing more toward rain than snow as the climate warms.

This year, the warm December has meant less chilling time — dormancy or a resting period — for the peach trees on Keith Nilmeier's Fresno-area farm. The trees need several hundred hours of temperatures below 45 degrees to

produce good fruit next year, he said.

At the same time, his citrus crop continues to grow, adding size.

“It’s good news for the citrus right now,” said Nilmeier, whose 350 acres includes peaches, apricots, oranges and grapes. “But it’s not good for the stone fruit. I do like the moisture we’re getting from this warm pattern.”

A year ago, Valley citrus growers faced a killing frost with overnight temperatures in the 20s. A passing storm dropped .15 of an inch of rain in Fresno on Dec. 7 last year. There was no measurable rain for nearly eight weeks after that storm.

The 2013 and 2014 weather patterns were within the range of nature, said Fresno-area private meteorologist Steve Johnson. But he said the research leads him to believe climate change is happening, and the Valley should prepare for it.

“Agriculture will need to adapt to warmer temperatures and drier years,” he said.

Out on his farm, Nilmeier says he doesn’t see it quite the same way. His grandfather told him about weather calamities that happened nearly 100 years ago. He says droughts have come and gone this way for centuries, and it doesn’t alarm him.

“I think ‘climate change’ is a catchphrase someone made up to make a few dollars,” he said. “What you’re seeing has happened before, and it will happen again. It’s just part of nature.”

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