

## **The Detwiler Fire is active at night, and a scientist says that's relatively new**

By Lewis Griswold

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A prolonged drought, tall grasses, steep terrain and erratic winds are making the Detwiler Fire in Mariposa County difficult to get under control, the California Department of Forestry and Fire Protection said.

But something else seems to be at play – high temperatures and low humidity at night are keeping the fire going.

It's unclear if global climate change is to blame, but a professor of fire science at the University of California Center for Fire Research and Outreach said firefighters have been reporting in recent years that wildfires in California aren't slowing down at night like they used to.

The 70,000-plus-acre Detwiler fire burning near Yosemite National Park west of Mariposa can be seen from a National Oceanic and Atmospheric Administration satellite above. The satellite imagery shows wind pushing the smoke.

The Detwiler Fire, which started July 16, had destroyed 60 homes and burned 75,200 acres as of Saturday morning and was 30 percent contained. Full containment is not expected until Aug. 5.

But the evacuation order for Mariposa was lifted Friday. Meanwhile, smoke has been drifting into the San Joaquin Valley, prompting the San Joaquin Valley Air Pollution Control District to issue a health caution.

Last week, Cal Fire noted that a lack of higher humidity at night was allowing the Detwiler Fire to keep growing. For example, from the evening of July 18 to the next morning, the fire nearly doubled, expanding from 25,000 acres to 45,724.

Temperature drops at night are important to wildfire managers, said UC Berkeley fire science professor Scott Stephens.

"Fires 'lay down' in the night, really subside," he said. "Those night periods are critically important. It's used in a major way in operations."

But based on what firefighters have been telling him in recent years, something seems to have changed, Stephens said.

"People keep saying the fire isn't going down at night," he said. "That's something we've been hearing from firefighters since 2008."

For instance, the Valley Fire that destroyed communities around Clear Lake in 2015 "had its great big run at night," Stephens said. Similar night action occurred at the Rim Fire near Yosemite in 2013 and the King Fire in El Dorado County in 2014, he said.

To date, the pattern has not been the subject of academic study and no research links it directly to climate change, Stephens said.

However, climate research has shown that "worldwide, low temperatures at night are going up," he said. "Night temperatures are warmer than they used to be. That's attributed to climate change."

The Detwiler Fire is the second-biggest 2017 wildfire in California, and nearly 4,500 firefighters have been assigned to it.

The fire started near Lake McClure and quickly spread through chaparral and oak tree woodlands on both sides of Highway 49 between Mariposa and Coulterville.

The elevation range is 866 feet to 4,162 feet.

One reason for the rapid spread has been the heavy growth of tall grasses that sprouted in the near-record wet winter of 2016-17, said Scott McLean, a Cal Fire spokesman in Sacramento.

"We have very heavy grasses we have not seen for years, and extremely tall" grasses, he said.

They are now dry and flammable everywhere in the state, McLean said. Until the Detwiler Fire, 113,000 acres had burned in wildfires this year, up from 32,000 acres last year at the same time.

The drought also killed plants that now are fire fuel, he said: "We are dealing with the result of the drought (and will be) for years to come."

But the death of more than 100 million trees statewide from drought and bark beetle infestations is a minor factor in the Detwiler Fire as such stands of trees are only in a few pockets, McLean said.

High daytime temperatures are a problem, however, he said.

"As the day gets hotter, the air rises," he said. "You have 'up canyon' winds. This causes eddies and erratic fire behavior."

When the Detwiler Fire broke out, the Valley was nearing the end of a 16-day string of triple-digit days. In Mariposa, elevation 2,231 feet, highs have ranged from 100 degrees to the low 90s since the fire started.

The topography has also made it hard to get the fire under control, McLean said.

"It's steep, it's rugged, some parts are inaccessible and it's difficult to get to parts of the fire."