

California's rainy season starting nearly a month later than it did 60 years ago

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The start of California's annual rainy season has been pushed back from November to December, prolonging the state's increasingly destructive wildfire season by nearly a month, according to new research. The study cannot confirm the shift is connected to climate change, but the results

are consistent with climate models that predict drier autumns for California in a warming climate, according to the authors.

Wildfires can occur at any time in California, but fires typically burn from May through October, when the state is in its dry [season](#). The start of the rainy season, historically in November, ends wildfire season as plants become too moist to burn.

California's rainy season has been starting progressively later in recent decades and [climate scientists](#) have projected it will get shorter as the climate warms. In the new study, researchers analyzed rainfall and weather data in California over the past six decades. The results show the official onset of California's rainy season is 27 days later than it was in the 1960s and the rain that does fall is being concentrated during the months of January and February.

"What we've shown is that it will not happen in the future, it's happening already," said Jelena Luković, a climate scientist at the University of Belgrade in Serbia and lead author of the new study. "The onset of the rainy season has been progressively delayed since the 1960s, and as a result the precipitation season has become shorter and sharper in California."

The new study in AGU's journal *Geophysical Research Letters*, which publishes high-impact, short-format reports with immediate implications spanning all Earth and space sciences, is the first to quantify just how much later the rainy season now begins.

The results suggest California's wildfire season, which has been getting progressively worse due to human-caused [climate change](#), will last even longer in the years to come and Californians can expect to see more fires flaring up in the month of November. 2020 was California's worst wildfire season on record, with nearly 10,000 fires burning more than

4.2 million acres of land.

An extended dry season means there is more overlap between wildfire season and the influx of Santa Ana winds that bring hot, dry weather to California in the fall. These winds can fan the flames of wildfires and increase the risk of late-season fires getting out of hand.

"It's not just a matter of making the vegetation drier and keeping all else equal," said Daniel Swain, a [climate](#) scientist at the University of California Los Angeles who was not involved in the study. "You're also increasing the number of opportunities for extremely dry vegetation and extremely strong offshore winds to coincide."

The delay in the start of the [rainy season](#) is likely due to changes in the atmospheric circulation patterns that bring precipitation to the West Coast, according to the study authors. They found the atmospheric circulation pattern that dominates California during the summer is extending into fall across the north Pacific Ocean. This change is bringing more rain to the states of Washington and Oregon and leaving California high and dry.

The changes mean Californians will need to better plan how they manage [water resources](#) and energy production—a longer [dry season](#) means more irrigation is needed for crops in an already water-stressed state.

"All water-sensitive stakeholders should have this information and plan their management accordingly," Luković said.

More information: Jelena Luković et al, A later onset of the rainy season in California, *Geophysical Research Letters* (2021). [DOI: 10.1029/2020GL090350](#)

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