

# U of I, Colorado, Columbia Study Pinpoints 2017 Wildfire Triggers Ahead of Fire Season

**June 05, 2018**

Western wildfire seasons are worse when it's dry and fuel-rich and the chances of ignition are high. All three factors were pushed to their limits last year, triggering one of the largest and costliest U.S. wildfire seasons in recent decades, according to a new paper by a University of Idaho researcher and counterparts at the University of Colorado at Boulder and Columbia University.

"Policy steps are being made to alleviate the costs of firefighting and allow for more proactive fire risk mitigation," said [John Abatzoglou](#), associate professor in U of I's [Department of Geography](#). "However, fire is a natural hazard that we will live with and efforts should be made to reflect fire risks based on future conditions rather than the past."

According to a paper published this week in the journal [Fire](#), climate change likely helped exacerbate fuels and dryness in 2017 – and people's behavior contributed the sparks.

"Last year we saw a pile on of extreme events across large portions of the Western U.S., the wettest winter, the hottest summer and the driest fall — all helping to promote wildfires," said Jennifer Balch, director of Earth Lab, a joint program between CU Boulder and the Cooperative Institute for Research in Environmental Sciences, and lead author on the study that included research by Abatzoglou and scientists from Columbia University and CU Boulder's Earth Lab and Institute of Arctic and Alpine Research.

The 2017 wildfire season cost the United States more than \$18 billion in damages. Approximately 71,000 wildfires scorched 10 million acres of land — destroying 12,000 homes, evacuating 200,000 people and claiming 66 lives. By comparison, 2016 saw only 5.4 million acres burned.

The research team sought to pinpoint the precursors that led to these fires in order to support decision makers considering policies that might prevent or minimize future fire disasters. The study found the three major "switches" affecting fire — fuel, aridity and ignition — were either flipped on or kept on longer than expected last year.

It started with a wet winter. Increased precipitation early in 2017 fed the growth of fine grasses across the Western United States — grasses that would later serve as fuel for fire. Summer and fall then swept in a wave of dry, arid conditions, baking the dense fields of grasses into dehydrated kindling.

With the fuel growth and aridity switches flipped on, the scene was set for the third switch: ignition. Nearly 90 percent of total wildfires last year were caused by people. [Previous work](#) from Abatzoglou, Balch and others has illuminated just how extensively humans exacerbate wildfire. Human activity triples the length of the average fire season.

Computer climate models project an increased risk of extreme wet winters in California, according to the study, and a decrease in summer precipitation across the West Coast. Although naturally occurring climate variability influences environmental conditions that affect the wildfire season, Balch said that variation is superimposed on a warmer world and climate change is magnifying the effects of heat and precipitation extremes.

This project, National Aeronautics and Space Administration Terrestrial Ecology Program, was funded under NASA grant No. NNX14AJ14G to the Regents of the University of Colorado. The total amount of federal funds for the project is \$442,595, which amounts to 100 percent of the total cost of the project.

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