

'Hidden cost' of wildfire smoke: Stanford researchers estimate up to 3,000 indirect deaths

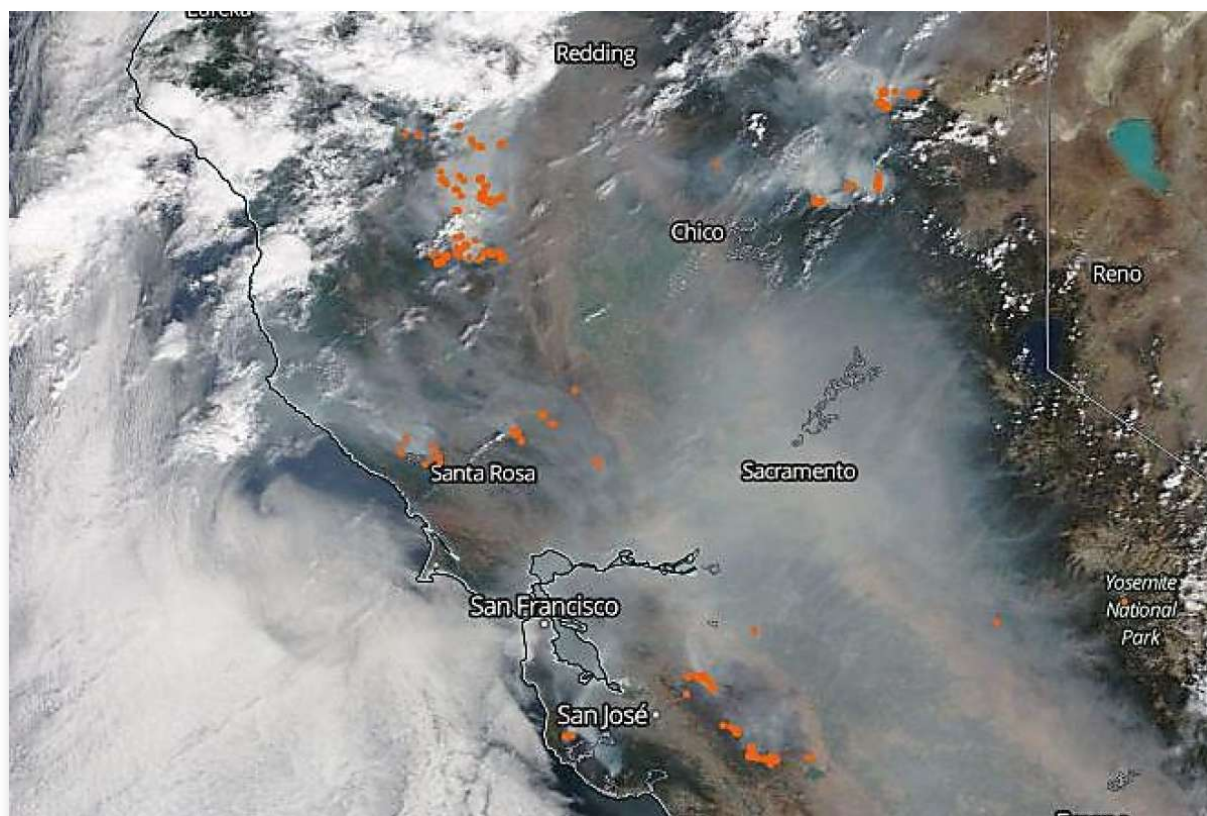


Reyna Parenteau walks dogs Sadie and Beejee despite the smoky conditions near Jack London Square in Oakland, Calif. on Thursday, Sept. 10, 2020. Photo: Paul Chinn / The Chronicle

More than two dozen people¹ have died as a direct result of California's devastating wildfires so far this year. But the actual number of lives lost because of them may have been much higher.

Researchers at Stanford University estimate² that the pollution from an unprecedented stretch of heavy wildfire smoke³ is likely to have led to at least 1,200, and up to 3,000, deaths in California between Aug 1. and Sept. 10 that otherwise would not have occurred.

They refer to these deaths — among people 65 and older, many of whom had underlying conditions — as "excess deaths."



NASA's Terra satellite on Monday, Aug. 22, 2020, captured a view that showed a pall of wildfire smoke covering most of California. Photo: NASA

¹ <https://www.fire.ca.gov/incidents/>

² www.g-feed.com/2020/09/indirect-mortality-from-recent.html

³ <https://www.sfchronicle.com/california-wildfires/article/Yes-the-Bay-Area-just-suffered-some-of-its-15567137.php>

"You could think of it as the hidden cost of air pollution exposure," said Marshall Burke, an associate professor of earth system science at Stanford whose team estimated the impacts.

Burke's team was interested in the potential health costs, mortality in particular, for the people in California subject to poor air quality for almost a month straight. They used two numbers: one that tracked how bad the air quality was, and another that would estimate the likely health toll of prolonged exposure. For that estimate, they relied on existing literature about air pollution exposure and mortality from detailed Medicare data.

Burke said the estimate by his team has not been peer-reviewed, and the actual data on mortality will not be available for several months. Also, he said, it's not known whether the pandemic could further increase the number of excess deaths, or decrease the estimate, considering that many people were already staying inside to keep safe from the coronavirus.



Wildfire smoke covers the skies seen toward downtown from Dolores Park on Wednesday, Aug. 19, 2020, in San Francisco, Calif. - Photo: Liz Hafalia / The Chronicle

But Burke said his prediction is that the pandemic has likely made the numbers even worse.

"There's evidence that exposure to air pollution worsens COVID-19 outcomes," he said. "People are already more vulnerable than they would have been otherwise and now they're exposed to this very extreme stressor for a month."

The state's record-breaking heat⁴ also could have been a factor, Burke said, as some who lacked air conditioning may have resorted to opening their windows and forgoing air pollution recommendations.

"There's this socioeconomic and racial gradient to COVID-19 outcomes," he said. "We see much worse outcomes among many minority groups ... often they live in houses where air pollution more readily infiltrates, so even if they were at home, likely they would have been more exposed than their wealthier neighbors."

Dr. Stephanie Christenson, an assistant professor and pulmonologist at UC San Francisco, said the research by Burke's team tracks with the large body of evidence that already exists around exposure to wildfire smoke and mortality.

She said it's even more likely, given the increased hospitalizations and the cumulative effect of many wildfire seasons in California, that the team is underestimating the actual toll of this recent period of poor air quality.

"That might be just the tip of the iceberg," she said.

Much is already known about how air pollution over time can increase the risk of lung diseases, cancer, heart disease and death. Young, healthy people who may not have an underlying condition, or think that their short-term exposure won't affect them, are also at risk. The impacts can take a while, Christenson said, but they are very significant.

⁴ <https://www.sfchronicle.com/news/article/Heat-wave-to-steamroll-the-Bay-Area-for-at-least-15485510.php>

"If we're in this for the long haul (because) climate change isn't going away, we really need to stay on top of this," she said. "We all need to be protecting our lungs from the pollution."

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