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Air Pollution Progress Still Undermined by Western Wildfires

New report highlights links between wildfires, health, climate change in 4 western states

(PRINCETON, N.J.) — Tiny air particles linked to detrimental health effects are increasing in parts of the West besieged by wildfires, offsetting clean air progress made in recent decades. In the new report, [Air Pollution Progress Still Undermined by Western Wildfires](#), Climate Central researchers describe the number of days with dangerous particulate matter increasing during wildfire season in two big California basins, despite an overall decrease in air pollution following the passage of the Clean Air Act in 1970. The report updates Climate Central’s findings from 2017 for the two basins, and expands the analysis to include Idaho, Oregon and Washington, as well.

“As the world gets hotter with climate change, the wildfire risk increases, and in turn, so do the health consequences that come with wildfires.,” said Bernadette Woods Placky, Climate Central Chief Meteorologist. “Even with the best air pollution standards, the climate-change-induced risk to long-term human health from wildfires is likely to grow,” Placky added.

Tiny wildfire smoke particles, which can sometimes go unnoticed in small concentrations, are known as PM_{2.5} — referring to particulate matter that is less than 2.5 micrometers in diameter. These particles are about four times smaller than dust, pollen, or mold particles, and about [30 times smaller than the diameter of a human hair](#). They can reach deep into the lungs and the bloodstream, raising the risk of [heart disease](#), [lung disease](#), and [diabetes](#).

For the study, Climate Central researchers analyzed trends in annual PM_{2.5} concentrations between 2000 and 2017 for the Sacramento Valley and the San Joaquin Valley, which together comprise California’s Central Valley. PM_{2.5} was chosen because of its association with wildfires and detrimental health impacts. In both the Sacramento and San Joaquin Valleys, the number of days for which PM_{2.5} concentrations exceeded the standard set by the Environmental Protection Agency declined between 2000 and 2017, likely related to [efforts to curb emissions from industrial sources](#). However, the percent (as well as the absolute number) of exceedances each year occurring during California’s wildfire season (June to September) was found to be increasing.

Other findings include:

- In Oregon, the percentage of days exceeding the EPA threshold for PM_{2.5} occurring in the wildfire season is going up

- In Idaho, overall air quality (based on PM_{2.5} exceedances) improved only about 3 percent with approximately 40 exceedances per each year in the 1999 to 2017 period
- In Washington, a clear trend during wildfire season has not yet emerged, in large part due to insufficient data

Across the West, wildfire season is now [105 days longer](#) on average when compared with the 1970s.

“Wildfire and smoke are part of these Western landscapes, and you don’t need to have your home lost to wildfire to be impacted by our fire problem,” said John Abatzoglou, Associate Professor of Geography, University of Idaho and a reviewer of the report. “The smoke from long-lived fire events affect populations well removed from active fires, leading to a shared problem we all have to address.”

Climate Central’s journalism program produced and published related feature stories on Wednesday in partnership with KQED in California and the Idaho Statesman, with additional coverage planned.

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[Climate Central](#) communicates climate science, effects and solutions to the public and decision makers. Its interdisciplinary work is conducted by a team whose backgrounds include natural and social sciences, data analysis, journalism, and other fields.