

The long-term effect of wildfires in Canada: Q and A

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The most harmful air pollutant worldwide is fine particular matter. In Canada, the biggest natural source of this pollutant is wildfires. Winds can spread wildfire smoke over a wide area, affecting areas hundreds of

kilometers downwind. Professor Rebecca Saari, who studies the consequences of climate change and climate policy on human health and environmental inequality, examines what causes these wildfires and the long-term effect on society.

How do wildfires affect air quality and our health?

Significant [wildfire](#) activity can result in poor air quality with high levels of pollutant concentrations resulting from wildfire smoke. We have seen dangerous levels of air pollution near the fires across British Columbia, Alberta, Manitoba, and Northern Ontario, but also, for example, in downtown Toronto due to winds spreading the smoke.

Wildfire releases smoke and gases that include a harmful mixture of pollutants. Individually, many of these pollutants are known to affect our health. We might experience irritation in our throat, coughing, headaches, or other respiratory symptoms when exposed. People with underlying health risks, especially respiratory and cardiovascular illness, are at higher risk for more serious outcomes, like asthma attacks, that may require hospitalization.

What long-term effect may wildfires cause on air quality?

The effects of wildfires on air quality are most severe while fires are actively burning. Thus, the worst effects are short-term. The chemistry and dynamics of the atmosphere mean that some effects can last for weeks and others for years, but these processes are complex. Over the long term, more frequent wildfires could continue to lead to more frequent days with poor air quality in affected areas.

Is climate change or something else to be blamed for

the numerous wildfires?

Specific wildfires can have particular causes. Climate change is a change in the average weather. It plays a role in creating the [weather conditions](#) that make fires more likely to start, persist, and spread. The recent Sixth Assessment Report by Working Group I of the Intergovernmental Panel on Climate Change notes the role of climate change in making wildfires more likely to occur over the last century and predicts future increases over parts of North America. Other reports, including Canadian academic studies, have suggested that conditions leading to unmanageable fires can more than double in parts of the country due to climate change this century.

What needs to be done to lessen wildfires?

Preventing wildfires and their effects is a complex challenge. Focusing on the atmospheric-related factors, we have increasing evidence that reducing the emissions causing [climate change](#) can help prevent some of the conditions that make wildfires more likely to occur and spread uncontrollably. We can also take multiple concrete steps to prevent some of the health-related effects of [poor air quality](#) on our health. For example, we can reduce other sources of air pollution to avoid some of the worst air quality and chronic exposure to poor air. We can continue to invest in systems that provide warnings and advice to lower exposures to wildfire smoke. Lastly, we can work to protect public health through prevention, targeting underlying [health risks](#) that make people vulnerable to poor air, and building [public health](#) systems resilient to future risks from wildfires.

Provided by University of Waterloo

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