

As Canada wildfires rage, experts examine the ramifications

May 19 2016, by Thea Singer



A massive wildfire, captured here in early May, continues to rage across parts of Alberta, Canada, forcing the evacuation of nearly 90,000 residents. Credit: Chris Schwarz/Government of Alberta

Since early May, wildfires have been raging in and around the city of

Fort McMurray in Canada's Alberta province, the country's oil-sands capital. The latest evacuation took place on Monday: Some 8,000 workers at oil-sands facilities and camps north of the city were ordered to leave when a new fire to the west began heading north. The air quality health index had soared by then, reaching 38; the scale normally goes from 1 to 10. More than two weeks earlier, 88,000 residents had been ordered to leave their homes, and nearly 10 percent of all buildings in the area—some 2,400 out of 25,000—have been destroyed.

The catastrophe resonates across disciplines, among them resilience, finance, and climate change. We asked Northeastern experts in those areas to examine the repercussions.

Daniel Aldrich, professor of political science, public policy, and urban affairs and co-director of Northeastern's Security and Resilience Studies master's program

The devastation from the fires has been severe. What will determine how long the recovery process will take, and how might it be helped along?

Recovery is a function of three primary factors: labor markets/jobs, internal cohesion and social capital, and government-directed infrastructure and housing-recovery money. With thousands of houses destroyed, it will take months, if not years, for permanent housing to be built for the evacuees. Many may choose to live near their old homes in shelters or trailers until the process is complete; one-third or more may choose to relocate and start lives elsewhere. A big factor influencing this is their sense of belonging to the community and their ties to the area. If they have friends, family, children in school, and other strong ties, they may ignore the costs of rebuilding and wait it out. If they are more isolated, have fewer connections, and feel less sense of place, they are

likely to move on. To accelerate the rebuilding process, the Canadian government should ensure that all plans are driven by actual need, and not envisioned need, and that the community can keep together through regular contact—ideally face to face.



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There will likely be psychological repercussions for the tens of thousands evacuated. How can these effects—*anxiety, perhaps post traumatic stress disorder*—be ameliorated?

In our research in New Orleans and Fukushima, Japan, we have identified several factors to help alleviate anxiety, depression, and PTSD after traumatic events, and all of them are linked to social networks. Individuals who have more friends, more connections, and more sense of belonging will find themselves better shielded against the anxiety and depression that regularly accompany large traumas like the destruction of a home, death of a loved one, or forced evacuation. Further,

integrating these survivors into the rhythms of daily life—by ensuring that the children are back at school and by creating jobs for the adults—will accelerate their ability to process the trauma. Survivors who do very well turn their narratives of surviving disaster into ones of growth and furthering goals rather than of simply being survivors.

Jeffrey Born, professor of finance in the D'Amore McKim School of Business who specializes in oil and gas

Some 40 percent of U.S. oil imports come from Canada. What effect will the wildfires likely have on the average U.S. consumer regarding gas prices for our cars, heating for our homes, and other oil-based products?

There are news reports out of the region suggesting that oil production will return to pre-fire levels in a couple of weeks. Oil prices have generally risen since the scope of the fire became evident. This will probably add a couple of cents to a gallon of gasoline, but whether this will be a permanent increase is unclear.



**Oil production dropped by
1 million
barrels a day, about
40%
of the province's output**

Nor is it clear whether [oil prices](#) will be able to hold to these levels. This month, the promotion of Khalid Al-Falih, chairman of the state oil company Saudi Aramco, to the position of Saudi oil minister was unexpectedly sped up. This move and a plan to privatize part of Aramco are being broadly interpreted as confirmation of rumored oil-production increases by the Saudis. This, combined with the Canadian [oil production](#)'s going back on line, suggests that this will be the second straight summer of low [gas prices](#).

Brian Helmuth, professor of environmental science and public policy who specializes in the effects of climate and climate change on the physiology and ecology of marine organisms

There have been many large wildfires around the world in the past few years in addition to the one this

month in Alberta, Canada. Other parts of the world that have experienced them include the U.S., Tasmania, Siberia, Mongolia, and China. What role does global warming play in these catastrophes?

We generally think of [global climate change](#) as a "threat multiplier," meaning that it tends to make existing problems like forest fires much worse. Large fires tend to happen during periods of drought, which are more frequent and of greater intensity under climate change: Already wet places are getting wetter, and dry places are getting drier. Higher temperatures in the early spring often cause snow to melt earlier, for example, which increases the likelihood of drought and a longer fire season. These conditions also tend to make the fires hotter and longer burning. So while we can't attribute any fire, such as the one in Alberta, directly to climate change, we do know that the likelihood and magnitude of such fires is on the rise due to the impacts of climate change. It's sort of like dousing the roof of your house in kerosene—the actual fire may be "caused" by someone smoking in bed, but the fact that you made your house flammable greatly increased the chances of having a really bad fire.

Conversely, how do such massive fires contribute to climate change themselves?

There is evidence that large fires are in turn contributing to climate change through the rapid release of carbon dioxide into the atmosphere from burning trees. Trees serve as a huge carbon sink. So the enormous forest fires that we have been seeing do make the problem of [climate change](#) worse, creating a viscous feedback loop.

Provided by Northeastern University

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