

Canada's Battle Against Wildfires



The increasing number and severity of wildfires in Canada are causing significant concerns related to health, the environment and the economy. Wildfires are becoming more of a problem every year with wide-ranging impacts.

Wildfires are often unpredictable and destructive. Wildfires are dynamic events that evolve to respond to changing weather conditions, the abundance of available fuel and the characteristics of the surrounding landscape.

It's clear that there's a strong connection between wildfires, public health, nature and the economy, so it's essential to understand how they all relate. By understanding these connections, we can find effective ways to lessen the harmful effects of wildfires and make our communities better prepared for increasingly severe natural disasters and extreme weather.

Causes of Wildfires

The primary causes of wildfires include human activity and natural occurrences such as lightning strikes. Climate change is a significant catalyst for extreme lightning storms, with warmer and prolonged summers elevating land surface temperatures.

Higher temperatures and heightened carbon emissions create stronger updrafts, resulting in more potent and frequent lightning occurrences. Projections by some scientists indicate a potential **24 per cent surge** in lightning strikes by 2040, with an anticipated **80 per cent increase** by the end of the 21st century in Canada.



Scientists have also identified a correlation wherein each degree of global warming corresponds to a **12 per cent uptick** in lightning activity, amplifying the likelihood of fire ignition under dry and hot conditions. Wildfires ignited by lightning strikes pose more danger in remote areas, often distant from firefighting management resources, presenting significant challenges in containment efforts.

Wildfire Season

In Canada, the wildfire season spans from early April to late October, during which some 7,000 wildfires ignite annually. Densely forested regions nationwide face heightened wildfire risks, especially in dry weather and drought. However, 2023 saw an unparalleled wildfire season characterized by a broader geographic reach and greater severity than ever before. Nationally, a total of **7,131 fires ravaged the landscape, consuming a vast expanse of 17,203,625 hectares**. This was the highest amount of area burned ever recorded with the previous record being set in 1989 (7,597,266 ha).

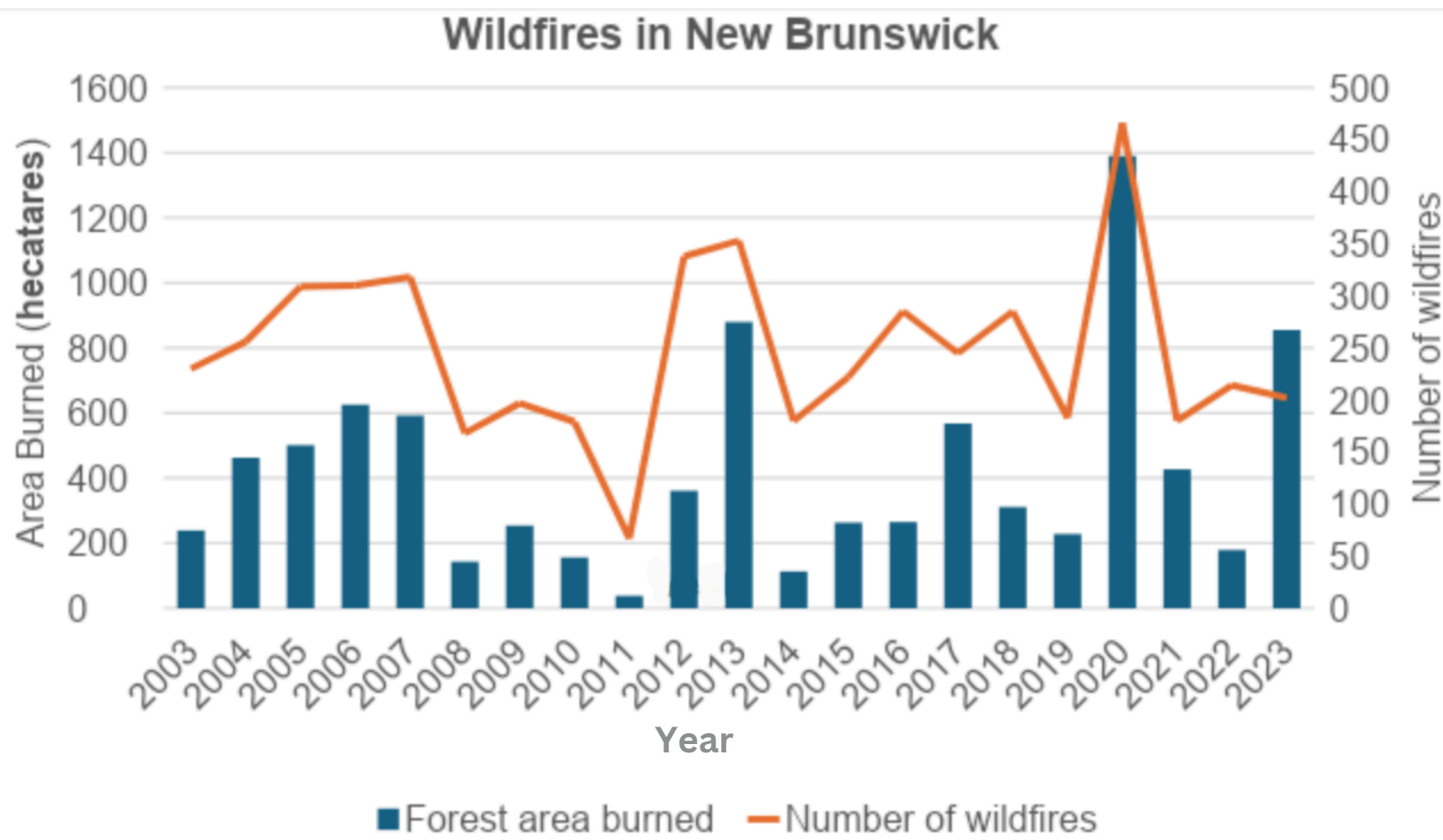


Figure 1: Forest area burned and number of wildfires in NB.

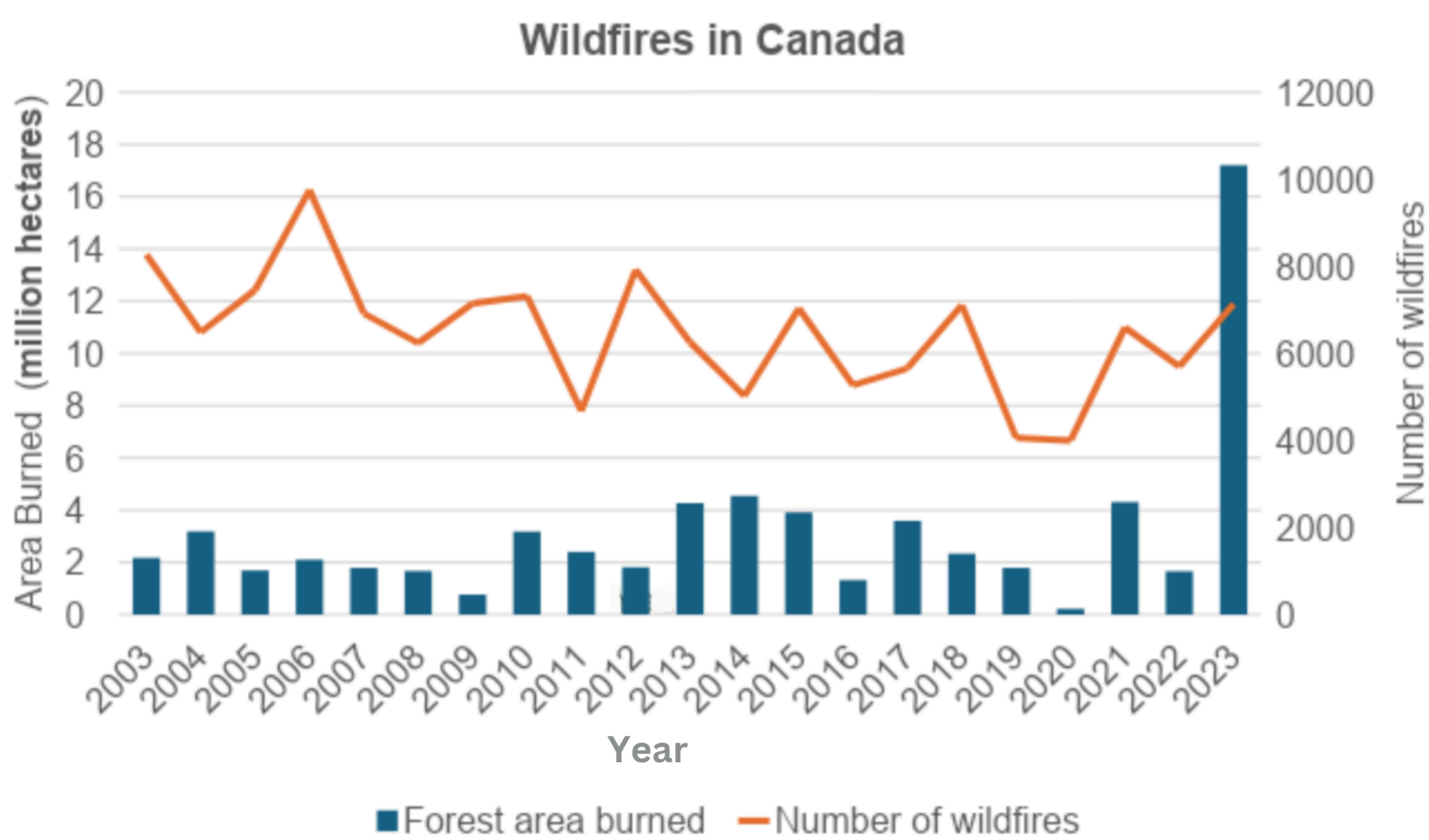


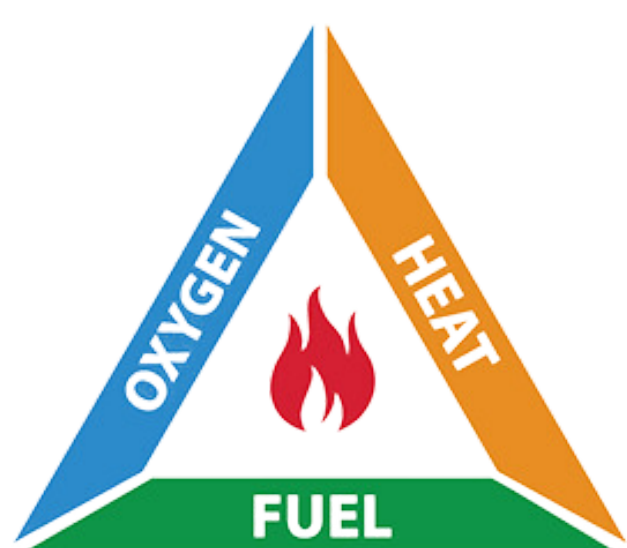
Figure 2: Forest area burned and number of wildfires in Canada.

Canadians and people worldwide are coping with more frequent, intense and severe wildfires. Wildfires in Canada are influenced by climate change, and the wildfire season is starting earlier than expected in recent years.



Wildfires often start small and initially go unnoticed but can spread quickly. They ignite trees, homes and buildings as they travel across large areas. Sparks and embers, carried by the wind, have the potential to ignite combustible materials close to homes, leading to significant damage. There are [three basic types](#) of forest fires: ground, surface and crown.

Type of Wildfire	Location	Description
Crown Fire	Tops of Trees	Burns through the tops of trees, spreading rapidly through the canopy. These are the most intense and dangerous wildland fires.
Surface Fire	Forest Floor	Burns along the forest floor, consuming grass, shrubs and small trees. These are the most manageable fires to put out and cause the least damage to the forest.
Ground Fire	Below the Surface	Burns beneath the forest floor, often in peat or organic soil layers. These fires move very slowly but can become difficult to put out or suppress fully.



Fire is a chemical reaction governed by the principles of [the fire triangle](#). It consists of three elements: heat (ignition caused by lightning or human activity), fuel (includes trees, vegetation, or other organic matter) and oxygen (from the surrounding air).

Established in 1969, the Conservation Council of New Brunswick is the province's leading public advocate for environmental protection.

A member of the United Nations' Global 500 Roll of Honour, we work to find practical solutions to help families and citizens, educators, governments and businesses protect the air we breathe, the water we drink, the precious marine ecosystem and the land, including the forests, that support us.



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