

Natural Disasters in Canada

WILDFIRES

Ontario Forest Fires

- In 2025 Ontario recorded 643 wildfires
- In 2024 Ontario recorded 480 wildfires
- The 10-year average is 712 wildfires

See the Government of Ontario website for up-to-date information:

<https://www.ontario.ca/page/forest-fires>

Wildfires

What are some of the different environmental and social effects of wildfires in Canada?

Wildfires

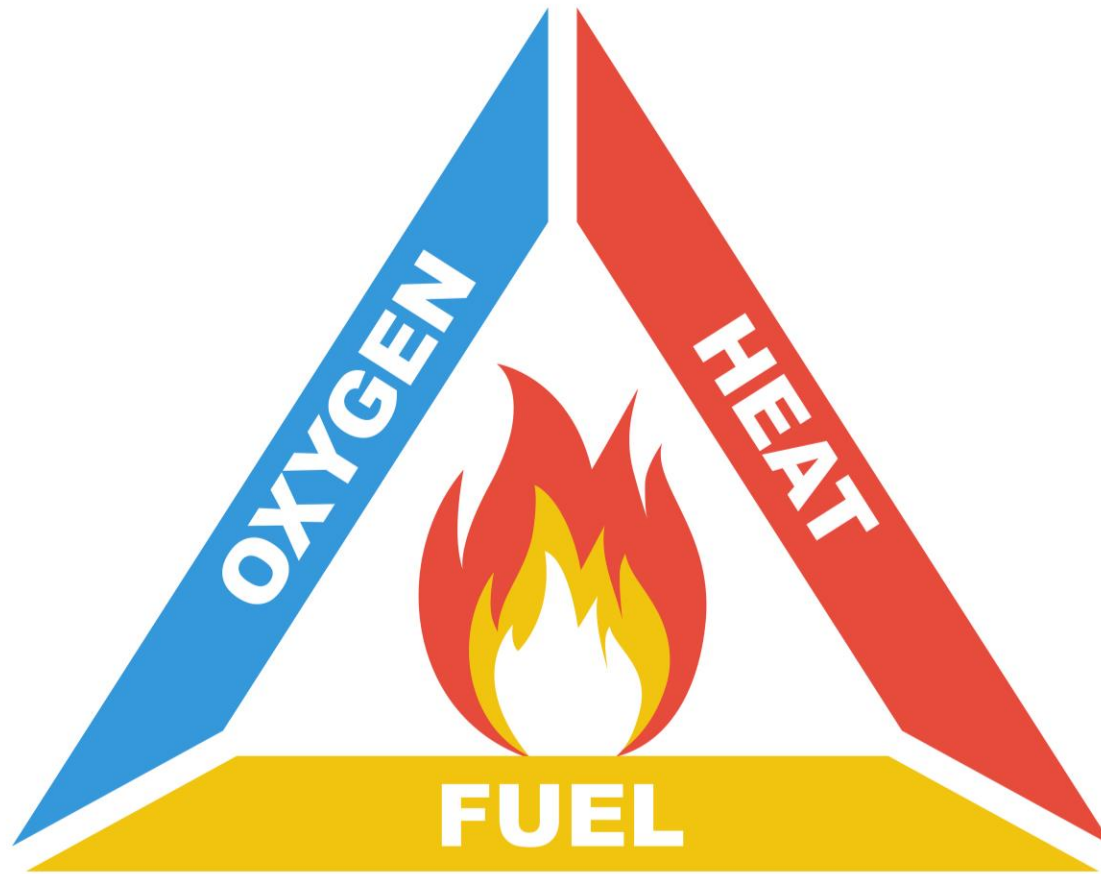
- Damage ecosystems
- Pollute the air and affect water quality
- Contribute to soil erosion
- Impact climate change by releasing carbon dioxide into the air
- Cause long-terms health problems (respiratory and cardiovascular) and mental health effects
- Economical losses and property damage



Wildfires

Three elements are needed to start a fire:

1. Fuel
2. Oxygen
3. Heat



Element Sources

- **Fuel** sources include vegetation and man-made structures
- **Oxygen** is a component of air making up 21% of the atmosphere
- **Heat** sources include lightning and human activities

Elements of Wildfires

- If **one** of these elements is **not** present, the fire will **not** burn
- The goal of firefighters is to remove at least one of the elements to control and stop the forest fire from spreading

Controlling Wildfires

- Cooling the air with water will remove the **heat** source
- Smothering the fire with soil or water will remove the **oxygen** source
- Removing access to vegetation or other structures with water or flame retardant on unburned sections will remove the **fuel** source

Fuel

- Types of fuel include grasses, deciduous and coniferous types of vegetation
- Grasses and small branches burn quicker than large pieces of wood
- If fuel is close together, the fire will spread faster
- If fuel is scattered and spaced apart by a natural barrier, the fire will spread more slowly

Topography

- **Aspect**: describes which direction that the slope is facing
 - If it is facing south, it will be much hotter and therefore the fuels will be drier making it easier to burn

Topography

- **Slope**: a slant in the earth's surface that is either upward or downward
 - If the fire is burning up a slope, vertically, it will burn faster because the fuel receives heat, drying it out before the flames reach it
 - If there are water bodies nearby such as lakes, rivers and ponds, they can slow or stop the spread of the fire

Weather

- Factors that affect fire behaviour include:
 - Humidity levels
 - Precipitation
 - Temperature
 - Wind
- Wind is one of the greatest factors that affect fire which affects direction and rate of speed at which fire spreads

Natural Roles of Wildfires

- Forest fires do have an important ecological role by maintaining biodiversity and creating different landscapes
- Jack pine for example need fire to reproduce
- Extreme heat is the only way that their cones will open to disperse their seeds

Controlled Burns

- Controlled burns are important for forest and wildlife management.
- These highly regulated burns can assist in:
 - Removing insect pests and diseases
 - Remove undesirable plants that compete for soil nutrient
 - Clear areas to prepare for planting
 - Enhance wildlife habitat

