

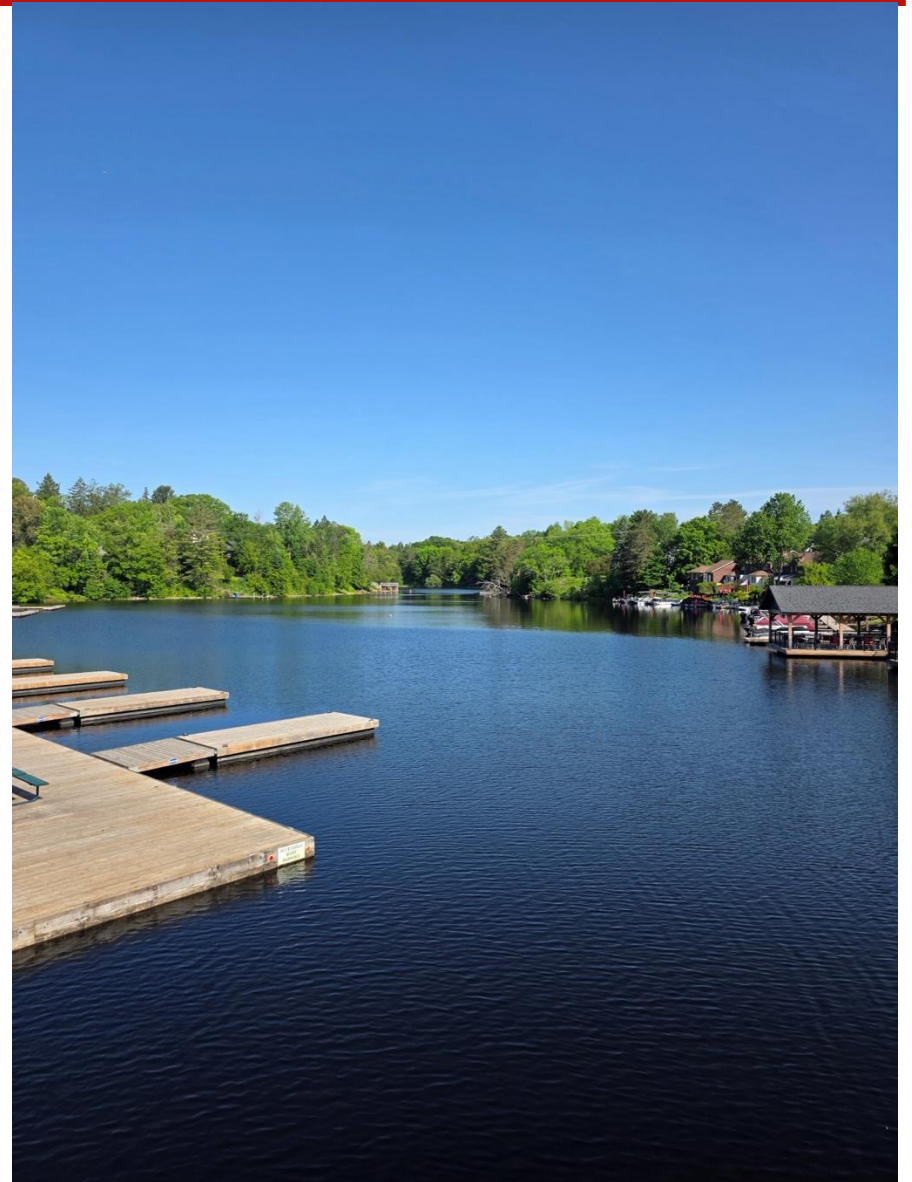
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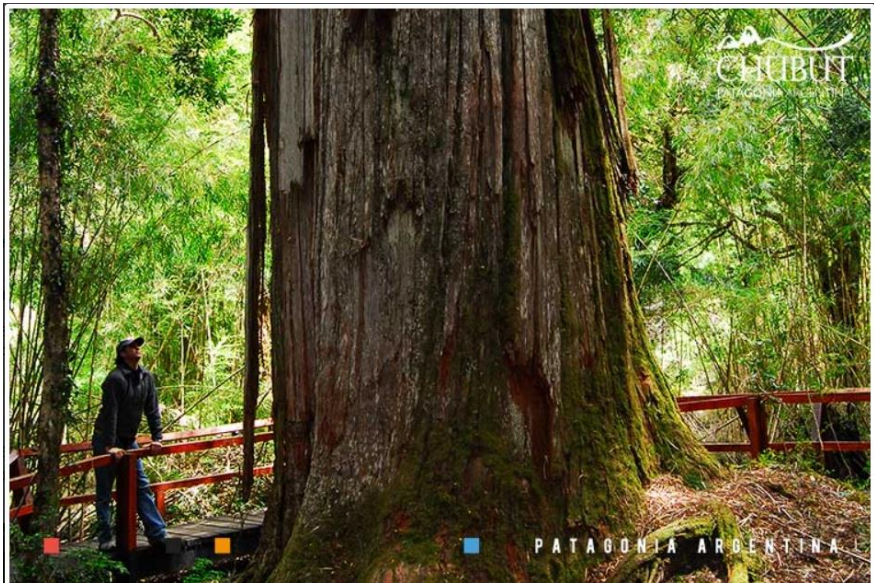
# Wildfire and Climate Change: Reducing Risk in the Muskoka Region

2025 Muskoka Summit on the Environment, Living Smarter in a Changing Climate

October 3, 2025

Dr. Anabela Bonada  
Managing Director, Climate Science  
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# About the Intact Centre



**Applied research  
institute with  
national focus**



**Easy to follow,  
actionable  
guidelines**



**Whole-of-society  
approach**



**Address climate  
adaptation**



**Focus on  
knowledge  
mobilization**



# Setting the Context



# As Temperatures Rise, So Do Extremes



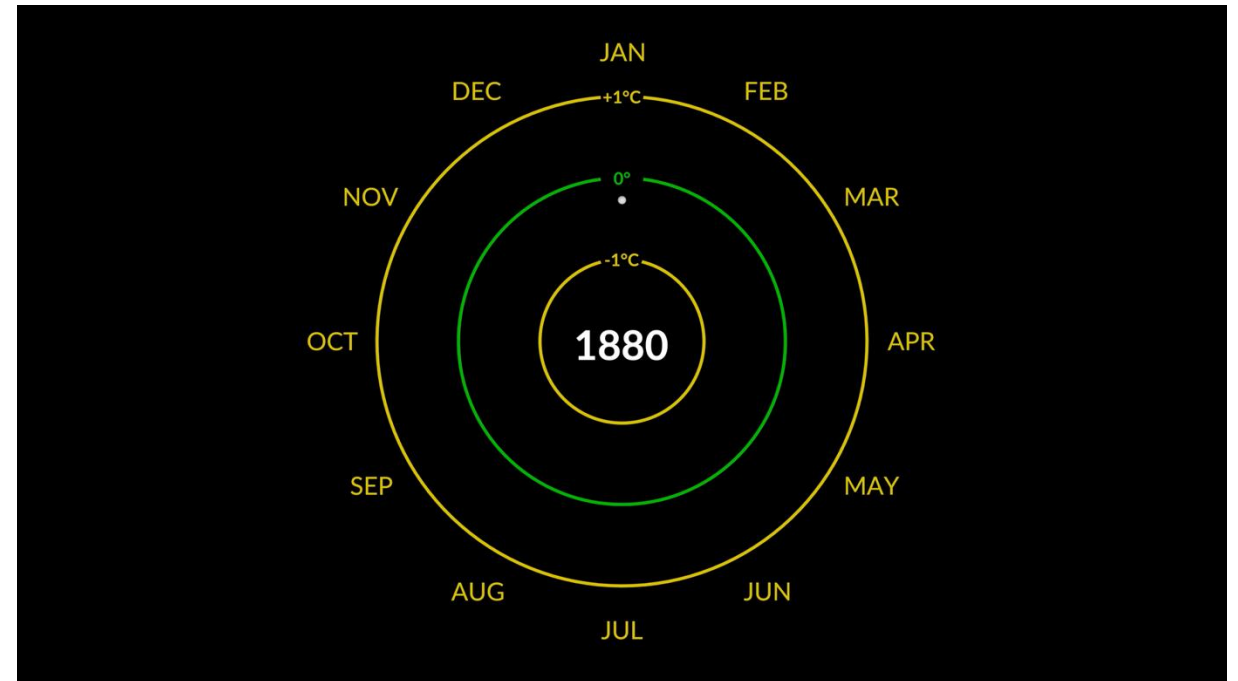
Since 1948, the average temperature in Canada has risen by approximately **2.0°C**.



This has contributed to **more frequent and severe extreme weather events**.



We must **urgently slow climate change and adapt to its impacts NOW**.



This data visualization, which is updated monthly, shows monthly global temperature anomalies on Earth's surface, and how those temperatures deviate from the average from 1951 to 1980. Download this visualization from NASA Goddard's Scientific Visualization Studio: <https://svs.gsfc.nasa.gov/5190>. Credit: NASA's Scientific Visualization Studio

# Ontario ice storm power outages could last until Friday

## Human-made climate change made 10 summer heat waves more likely: experts



By **Sean Previl** • Global News

Posted September 17, 2025 6:06 pm · Updated September 17, 2025 10:22 pm · 4 min read

EXPLAINER

### Where

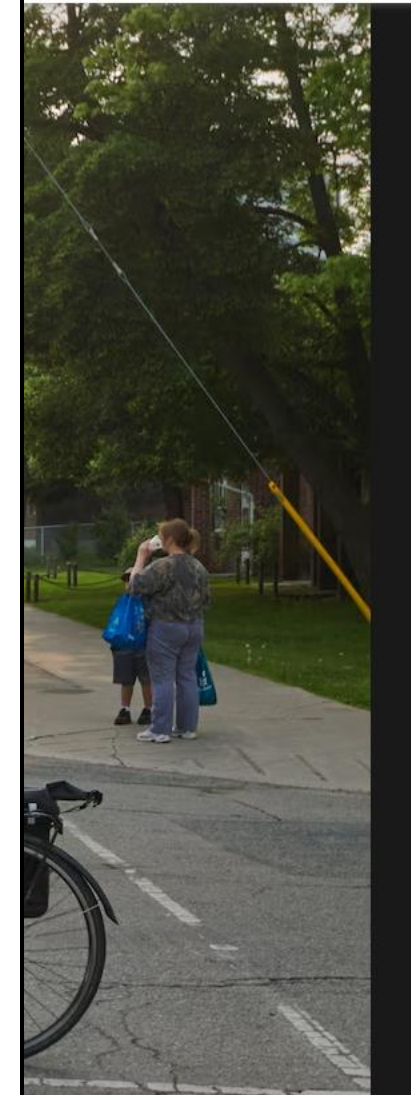
Major Canadian cities burn. Here's a primer

CLAIRE MCFARLANE > , SOPHIA  
TORONTO AND WINNIPEG  
THE GLOBE AND MAIL  
PUBLISHED JUNE 6, 2025  
UPDATED JULY 9, 2025

DENARE BEACH, SK



Research links Canada's heat waves to climate change



An aerial photograph of a residential neighborhood. The foreground shows a large area of destruction, with rubble and charred remains of buildings. In the middle ground, several intact houses with grey and red roofs are visible. The background is a dense forest of tall, thin trees. The text "Let's talk about wildfire" is overlaid in white, with a white underline.

Let's talk about wildfire



# Wildfire



Wildfires are a natural and essential part of Canada's forest ecosystems, particularly in boreal and montane regions where wildfire disturbances contribute to forest diversity and health.



About 12.3% of the population lives in the WUI, including 32.1% of the on-reserve Indigenous population.

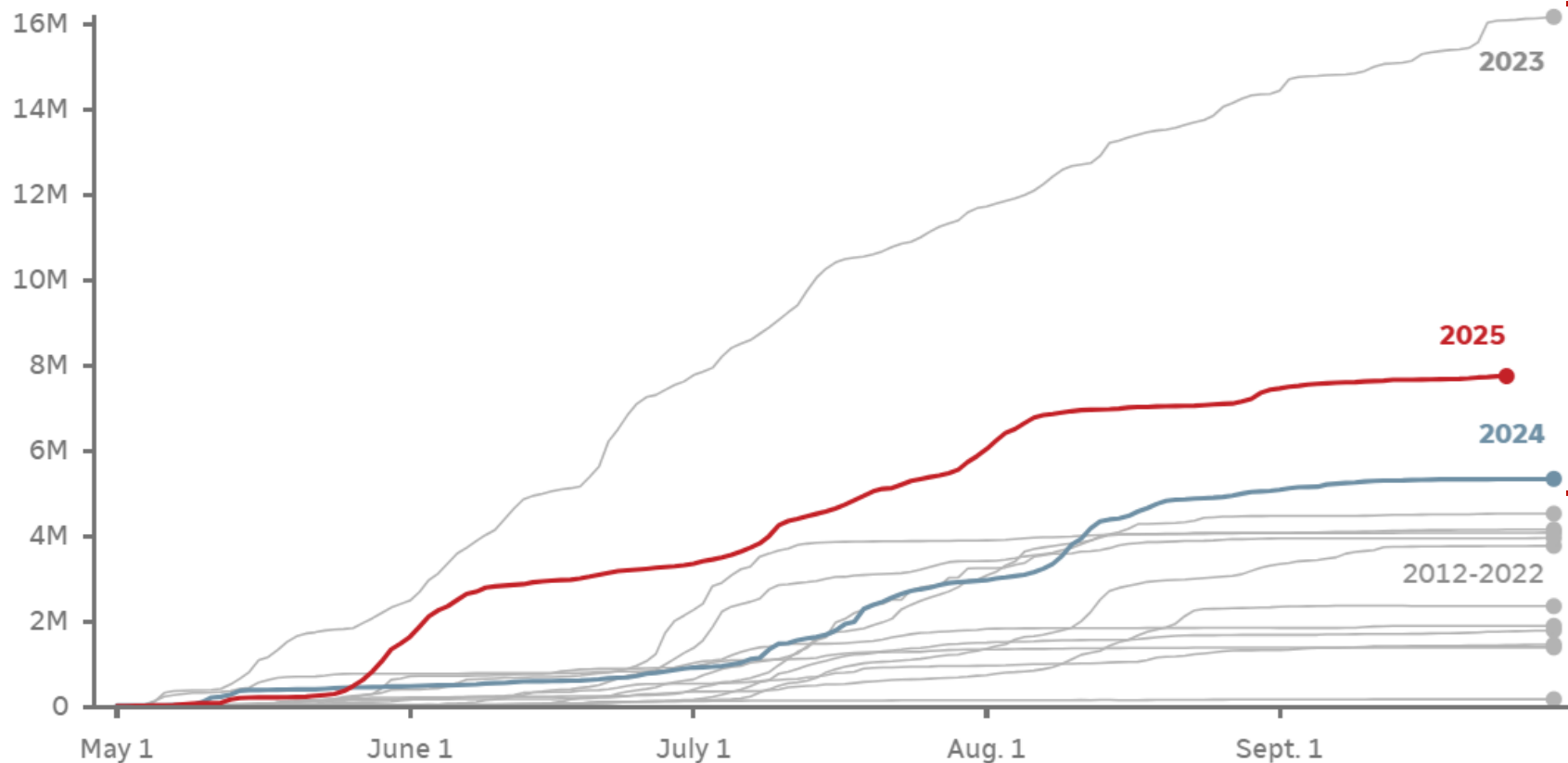


Wildfire risk is on the rise due to population growth, lack of building codes, decades of fire suppression and climate change.

# Wildfire Risk is Increasing

## How much has burned so far this year in Canada

Estimated cumulative hectares burned in wildfires from satellite-detected hotspots



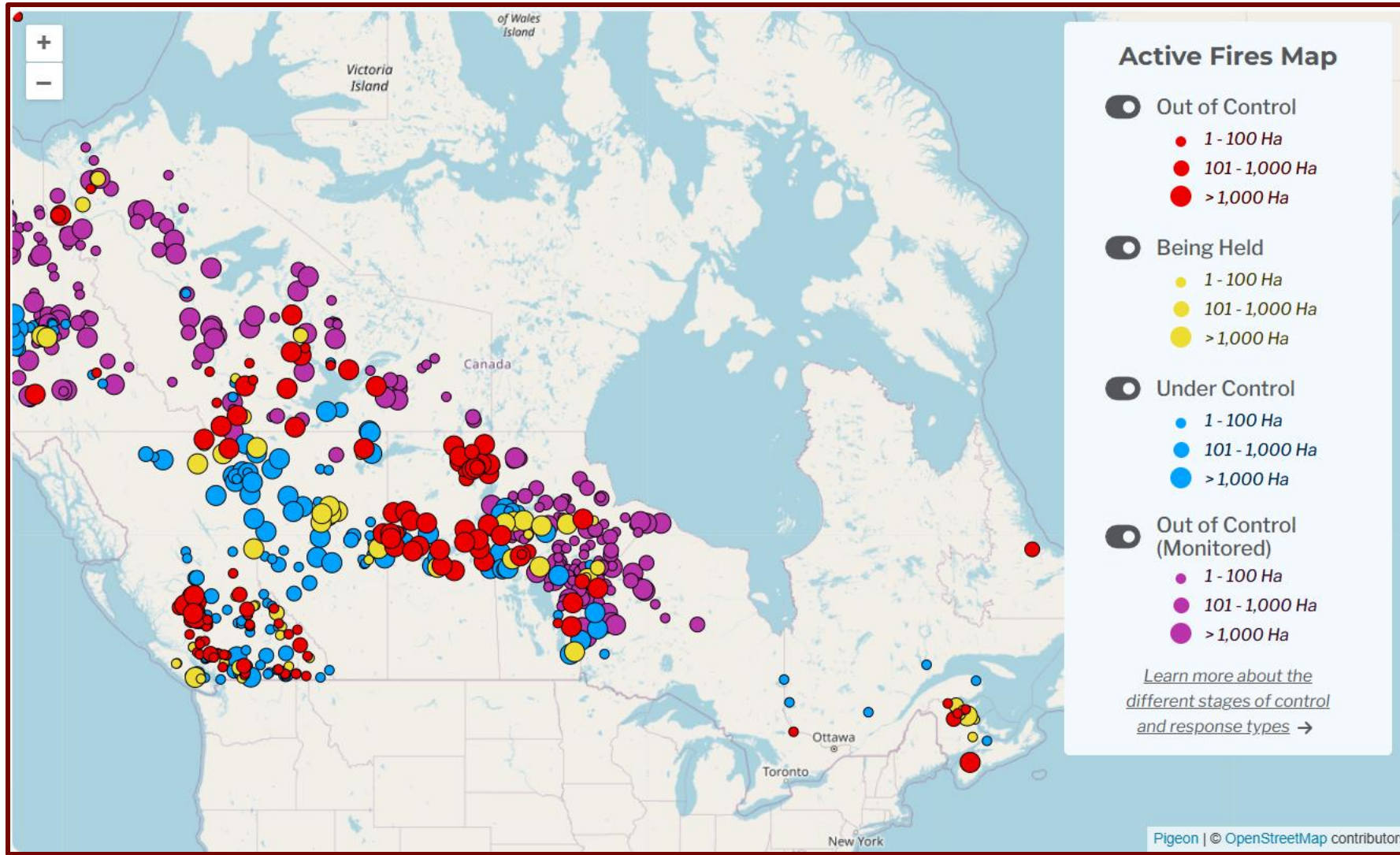
**7% of  
Canada's  
forest have  
burned in the  
last 3 years.**

Data last checked on Sep. 25, 2025, at 2:31 p.m. ET

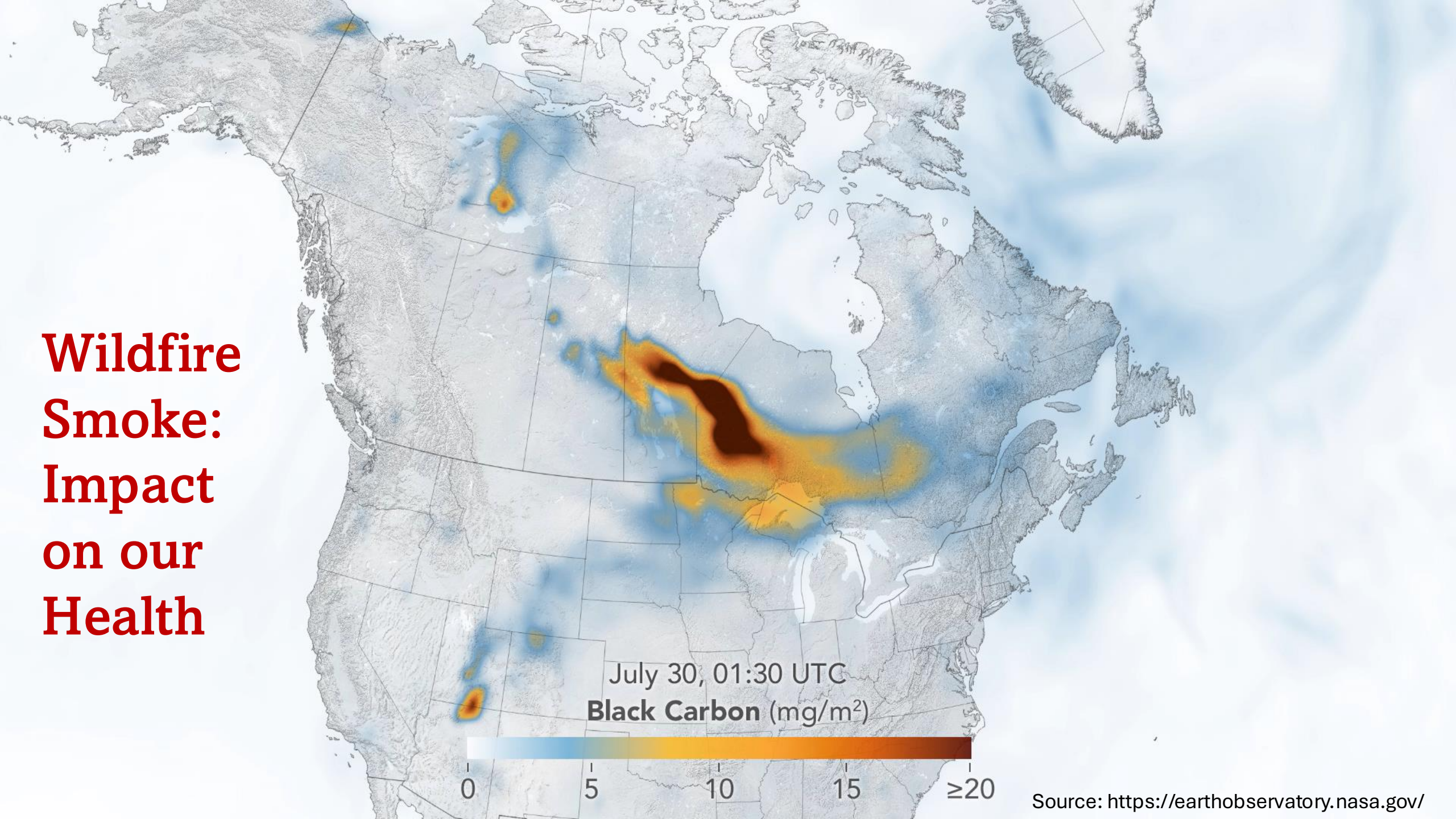
[Get the data](#)

Source: Canadian Wildland Fire Information System (Graeme Bruce/CBC)

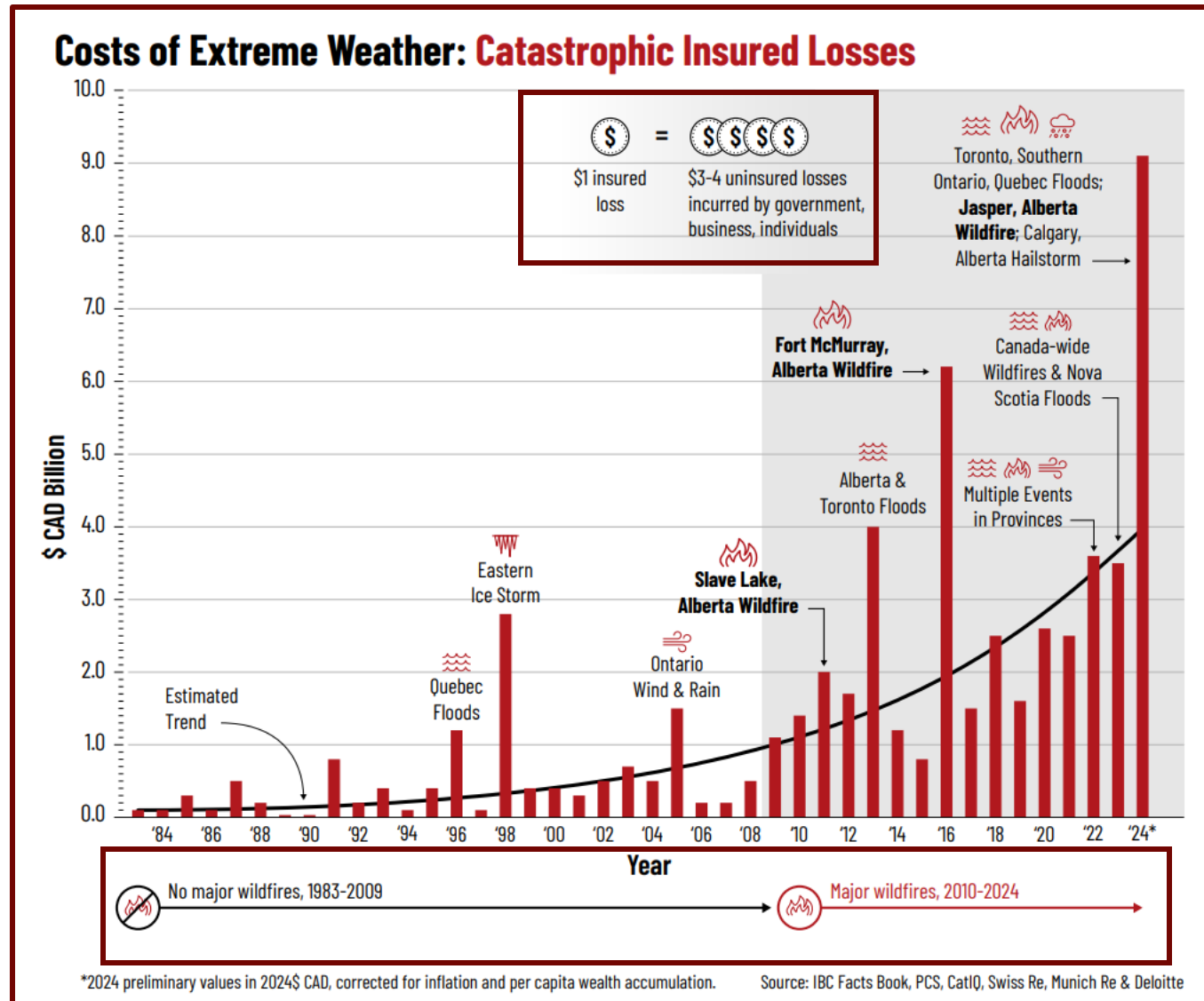
# Wildfire Risk is Expanding Beyond Traditional Zones



# Wildfire Smoke: Impact on our Health



# As Extreme Weather Increases, So Do Costs



The New York Times

## *Climate Shocks Are Making Parts of America Uninsurable. It Just Got Worse.*

The largest insurer in California said it would stop offering new coverage. It's part of a broader trend of companies pulling back from dangerous areas.

CBC

## Some insurers stop covering California homes over costs linked to wildfires. Is Canada next?

There are concerning trends for Canadian homeowners who need insurance in high-risk disaster areas



1.5 homes in Canada (~10%) are uninsurable due to flooding



Insurance premiums have gone up 20-25% over past 6 years



Insurance cap coverage is lowering



*How do we live safely with  
wildfire, without losing what  
we love about Muskoka?*

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# How do we prepare for climate change?

**Mitigation** focuses on reducing greenhouse gas emissions to slow or halt climate change.



**Adaptation** involves adjusting to the ongoing impacts of climate change.



A prescribed, revitalizing “good fire” gets under way at West Vaseux Lake in the Okanagan to restore ecosystems and biodiversity.  
(Source: UBC Forestry)

# Climate Adaptation and Wildfire Management

Vegetation and Land Management

Community Planning and  
Preparedness

Emergency Response and Risk  
Awareness

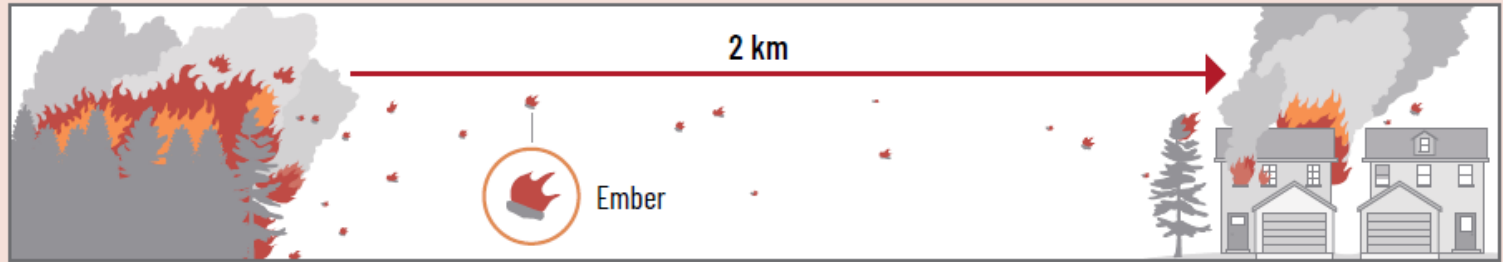
Post-Fire Recovery and Resilience

Whole-of-Society Engagement

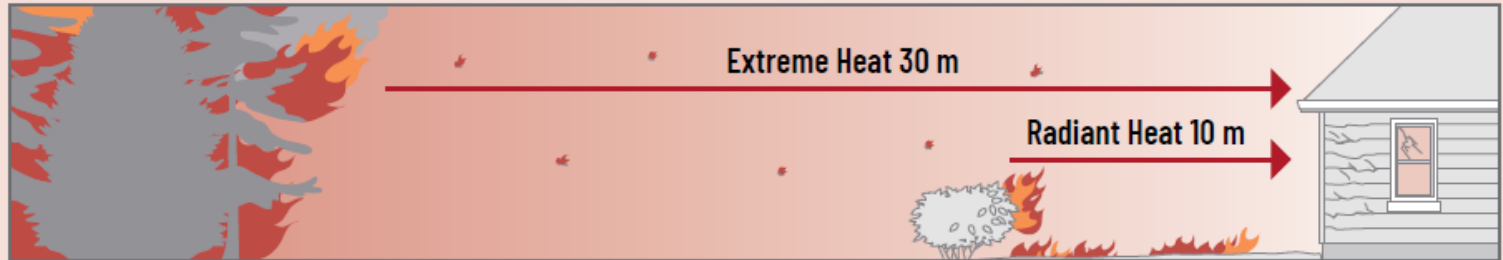
# How do wildfires enter communities?

## How Do Wildfires Spread into Communities?

**Embers** - These small burning fragments, produced by wildfires, **can be carried by wind and hot air 2 km or more from the active wildfire**. These embers can ignite flammable materials on and around the home.



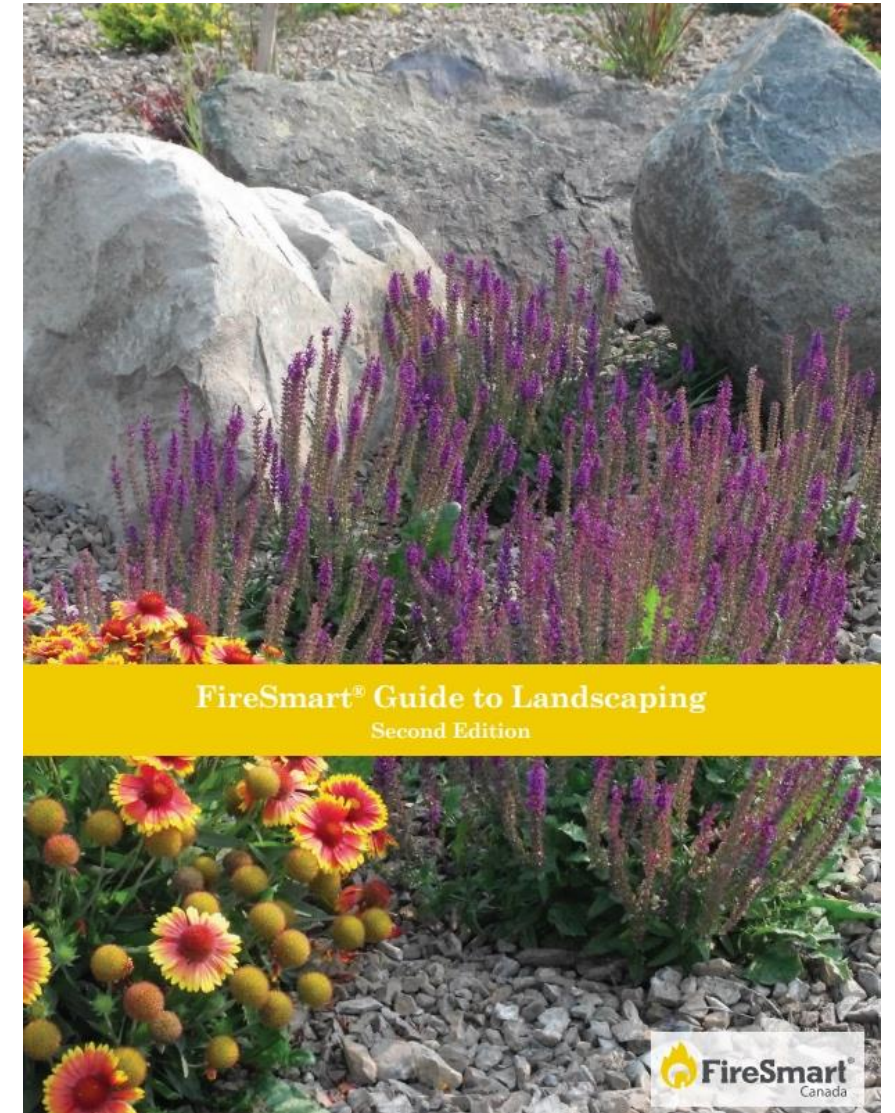
**Extreme and Radiant Heat** - Fires can generate extreme heat up to 30 m away from flames, making flammable materials more vulnerable to ignition. Radiant heat can break glass, melt siding and ignite flammable materials up to 10 m away from flames.



**Direct Flame** - Wildfires spread by igniting flammable materials with which they come in direct contact.



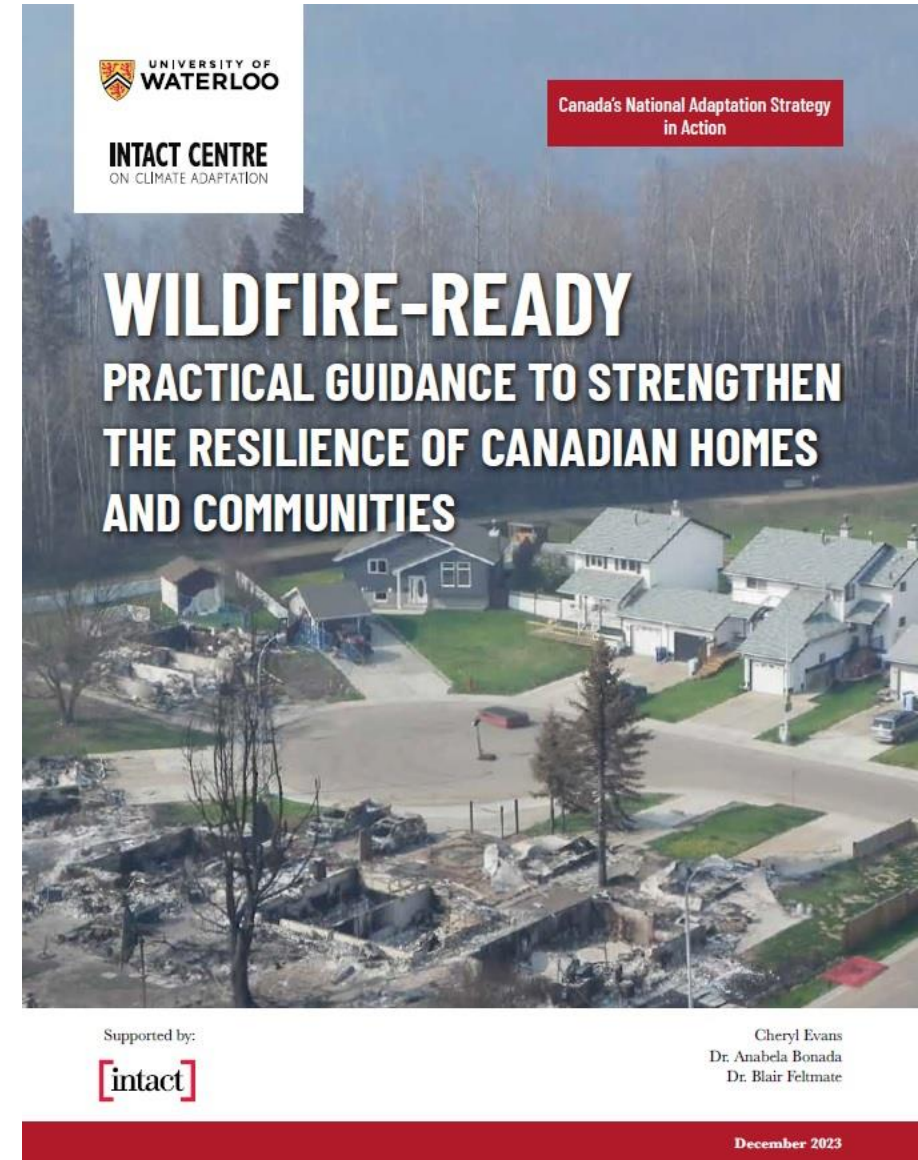
(Adapted from FireSmart BC Homeowners Manual)



# Wildfire-Ready

Developed using:

- The National Research Council's Wildland-Urban Interface Guide
  - FireSmart Canada best practices
- 
- ✓ **User-friendly and easy to read**
  - ✓ **Brief and concise**
  - ✓ **Adopts a whole-of-society approach**
  - ✓ **Includes a clear call to action**



# THREE STEPS TO A COST-EFFECTIVE FIRESMART™ HOME

## Step 1: Maintain what you've got at least twice per year

Do-it-yourself, \$0 - \$300



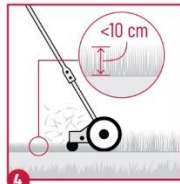
**1** Remove needles, leaves and other debris from gutters, roof surfaces, decks and balconies. Regularly clean vents.



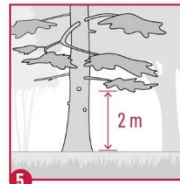
**2** Remove all combustible ground cover (mulch and plants) within 1.5 m of the house perimeter.



**3** Remove combustible materials (firewood and lumber) stored within 10 m of house perimeter and under decks.



**4** Mow the lawn to <10 cm and plant low-growing, well-spaced shrubs and other fire-resistant plants.



**5** Prune trees to create a 2 m clearance from the ground to the lowest tree branches.

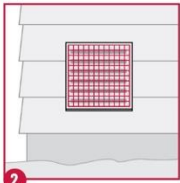


## Step 2: Complete simple upgrades

\$300 - \$3,000



**1** Replace worn or missing weather stripping on all doors including garage doors.



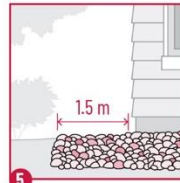
**2** Add a non-combustible 3 mm screen to all external vents, except dryer vents.



**3** Create a 15 cm ground-to-siding non-combustible clearance (e.g., install cement board or metal skirting).



**4** Install non-combustible fencing within 1.5 m of the house (cement fiber, metal, chain link or stone).



**5** Install non-combustible ground surfaces within 1.5 m of the house (mineral soil, rock, concrete or stone).



## Step 3: Complete more complex upgrades

Work with a contractor, \$3,000 - \$30,000



**1** Install Class A fire-resistant roof covering (e.g., cement fibre, metal or asphalt shingles).



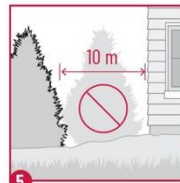
**2** Install non-combustible siding (stucco, metal, stone, cement fibre board).



**3** Install multi-pane or tempered glass windows and exterior fire-rated doors.



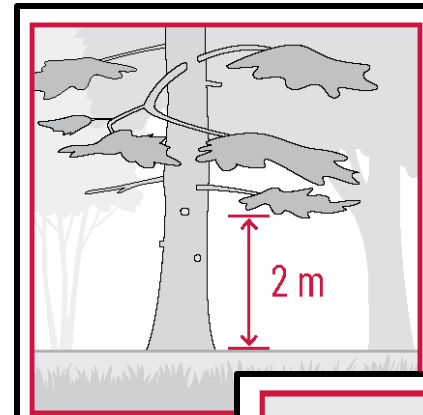
**4** Retrofit all deck components to be fire-rated, with a continuous fire surface.



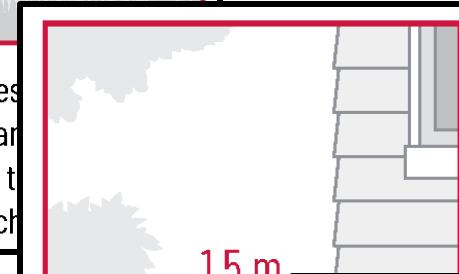
**5** Remove conifer trees that are within 10 m of the house.



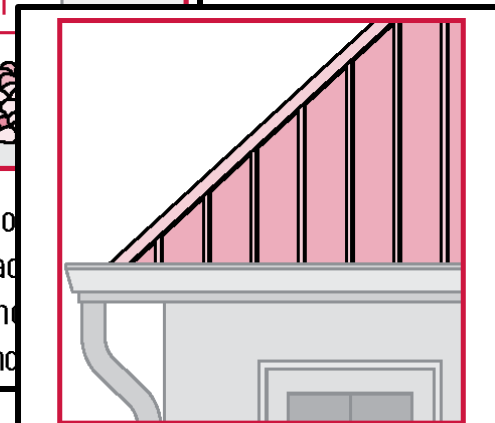
Note: not all actions will be applicable to each home. Completing these steps does not guarantee the prevention of fire.



**5** Prune trees to create a 2 m clearance from the ground to the lowest tree branches.



**5** Install non-combustible ground surface within 1.5 m of the house (mineral soil, rock, concrete or stone).

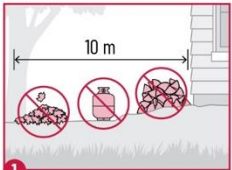


**1** Install Class A fire-resistant roof covering (e.g., cement fibre, metal or asphalt shingles).

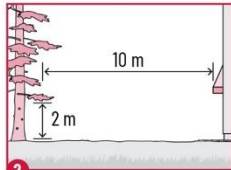
# THREE FEATURES OF A WILDFIRE-READY COMMUNITY

Communities can integrate wildfire-ready features into their risk management plans to limit damage and disruption due to wildfire events and strengthen emergency preparedness. By working with Provincial/Territorial wildfire agencies, communities can access available tools, training, and resources to help them assess their unique risks, and create customized action plans.

## Feature 1: Wildfire-Ready Structures & Infrastructure



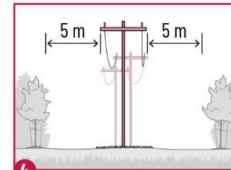
**1** Complete regular maintenance of structures, infrastructure, and landscaping within 10 m to limit accumulation of flammable materials (e.g., leaves, brush piles, stored items, fuel tanks).



**2** Install/replace landscaping with fire resistant materials within 10 m of structures and infrastructure.

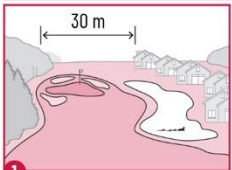


**3** Build/update structures and infrastructure using fire resistant building materials (e.g., Class A roofing/metal roofs, non-combustible siding, metal, or concrete hydro poles).

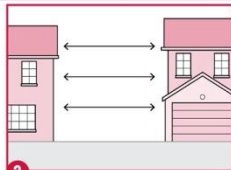


**4** Design/update structures and infrastructure to be ignition resistant (e.g., 5 m distance between vegetation and power lines, power supply lines below ground where feasible).

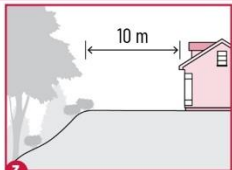
## Feature 2: Wildfire-Ready Community Design



**1** Integrate minimum 30 m wide zones (fire breaks) featuring ignition resistant materials (e.g., mowed grasses, ponds, roads) into community design to limit the spread of fire. Increase minimum to 50 m on steep slopes.



**2** Provide greater spatial separation between structures in hazard areas to limit the spread of fire from one structure to another.



**3** Require minimum 10 m setback from the crest of a hill to limit spread of fire to structures.



**4** Restrict development in hazard areas where mitigation measures cannot meet minimum standards for health, safety, and environmental protection.

## Feature 3: Wildfire-Ready Emergency Response



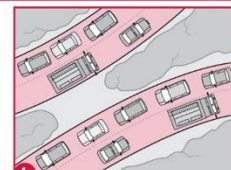
**1** Complete annual emergency planning and cross-training exercises that include multiple agencies (e.g., wildland and structural firefighters).



**2** Designate at least one emergency shelter per community.

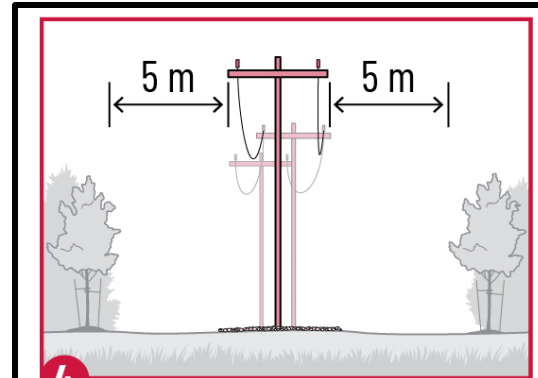


**3** Ensure minimum water supply for firefighting.

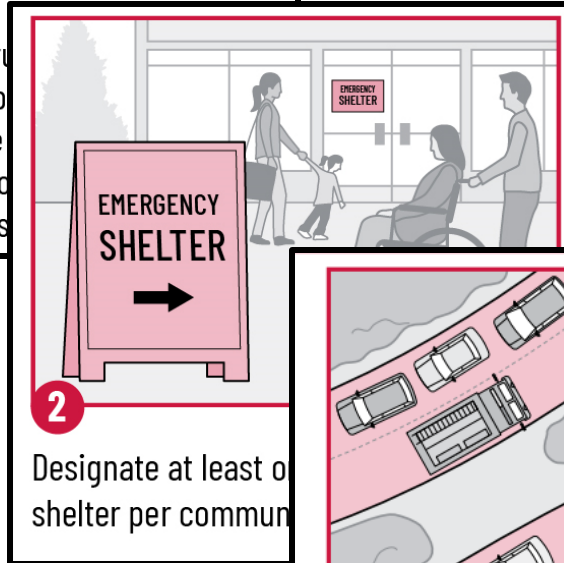


**4** Provide two or more access and egress routes.

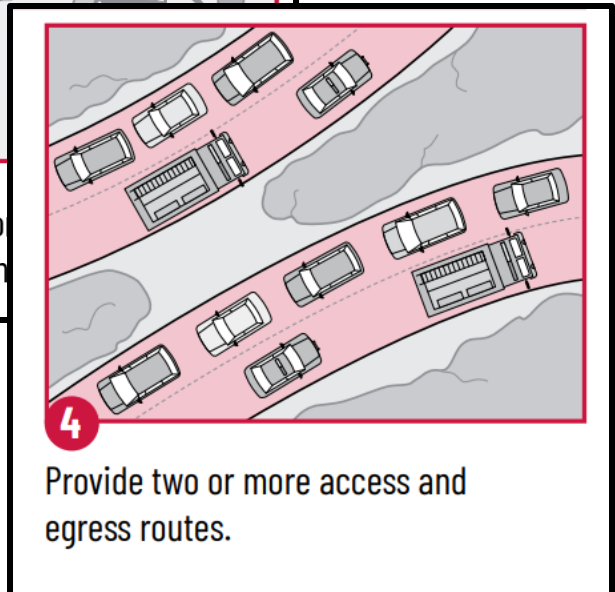
Note: The guidance in this document is voluntary. Completion of actions should not conflict with applicable building and fire codes. Wildfire-ready communities can reduce but not eliminate risk.



**4** Design/update structures and infrastructure to be ignition resistant (e.g., 5 m distance between vegetation and power lines, power supply lines below ground where feasible).



**2** Designate at least one emergency shelter per community.



**4** Provide two or more access and egress routes.



Wildfires will remain a part of our future in Muskoka—but catastrophic losses don't have to be.

By **planning smarter, managing our forests, and preparing our communities**, we can live safely with wildfire while protecting what **we love most** about this region.



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For more information  
visit [IntactCentre.ca](https://IntactCentre.ca)

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