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Fighting Wildfires and Adapting to a Changing Climate: Canadian Experiences

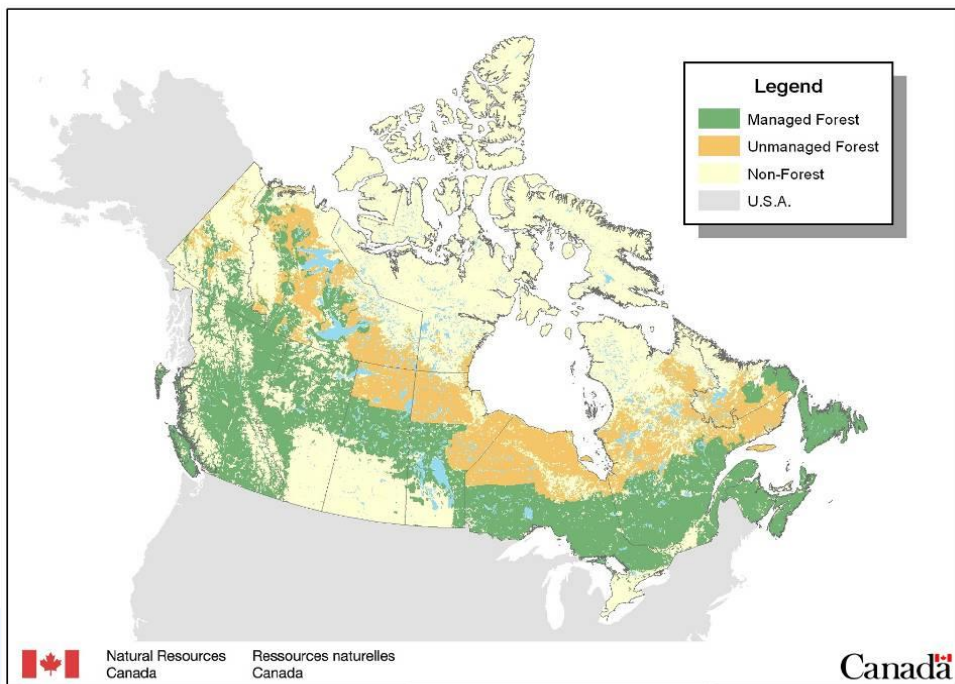
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Canada's Forests



- **Canada has about 9% of the world's forests** (367 million ha, or more than 1/3 of Canada's landmass)
 - Managed forest: 226 M ha
 - Unmanaged forest: ~141 M ha
- **Canada's managed forests store about 46 Gt of carbon**
 - Playing a critical role in mitigating climate change
- **Boreal forest is 75% of forest area (270 million ha)**
 - Wildland fire is a natural disturbance in boreal forests
 - Evolved around high-intensity, stand-replacing fires
- **90% of forest land owned by provinces and territories**
 - Forest management falls under the jurisdiction of PTs
 - >10.5% of tenure volume is Indigenous-held

National Roles and Responsibilities



Provinces & Territories

Fire suppression
Fire management
Risk mitigation
Emergency response



Government of Canada

National emergency management
Wildland fire science, technology and expertise
Public safety & education coordination
International agreements



Canadian Interagency Forest Fire Centre (CIFFC)

Provides support/intelligence to fire management agencies
Coordinates national/international resource support
Home of FireSmart Canada



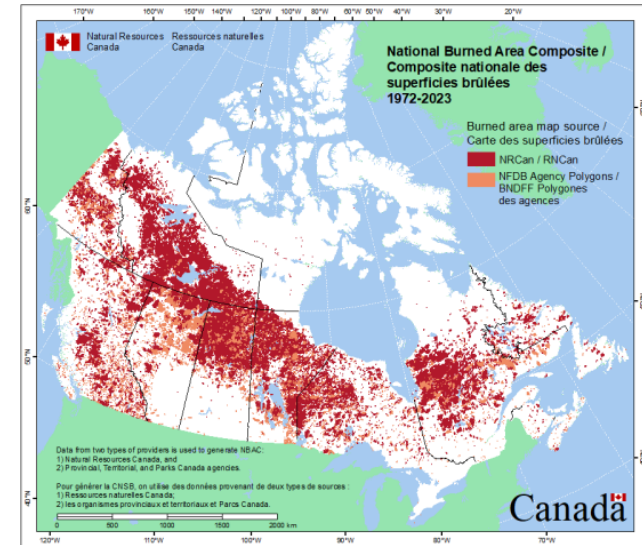
Canadian Council of Forest Ministers (CCFM)

Forum for collaboration on forestry related matters
Provides strategic & policy advice on national fire management issues
Close partnership with CIFFC

Indigenous Peoples play a critical role in fire and emergency management.

Wildfires in Canada

- The majority of burned area is ignited by lightning
- Fire suppression has resulted in forest expansion and densification, especially across Western North America
 - More hazardous conditions for wildfire
- **~2.5 million ha** burns annually on average (approx. half size of Nova Scotia)
 - High year to year variability
 - Large years can be much higher than average (e.g., 1989 and 2023, see next slide) and these infrequent years cause a substantial portion of fire impacts
 - Fire regime varies across Canada
- PTs have the responsibility for wildland fire management in most areas (fire suppression, emergency response, risk mitigation)
- Federal government has responsibility for national emergency management, wildland fire science and research, public safety and education, and international cooperation.



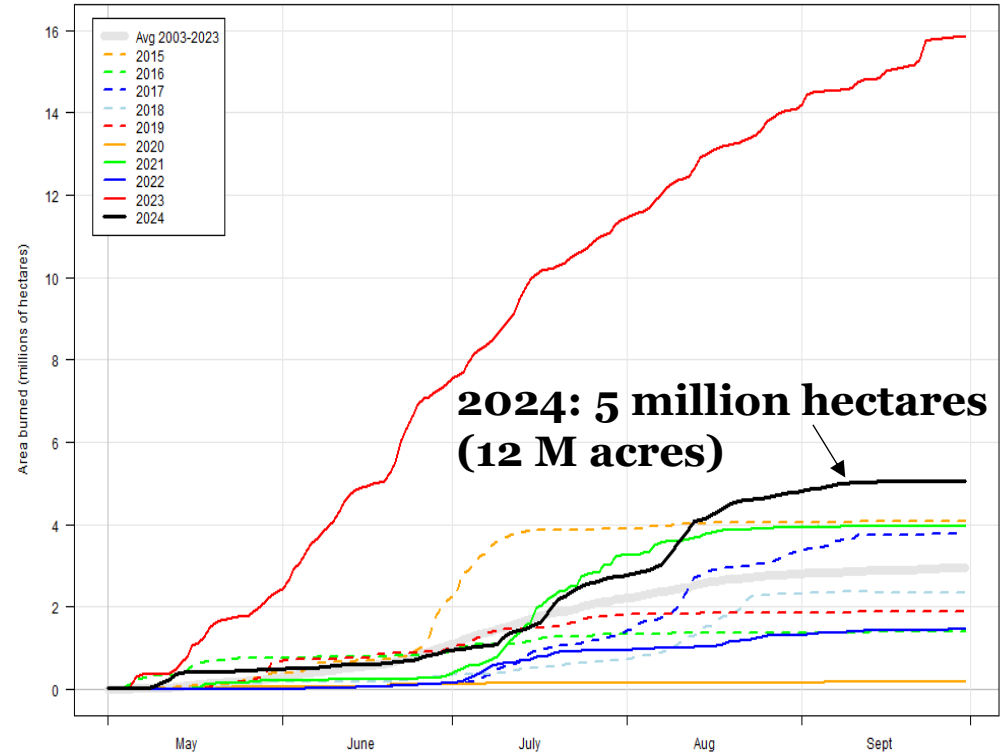
National Burned Area Composite, CFS 2023

Long Term Trends

- Climate change is resulting in conditions that are more conducive to wildfire (warmer temperatures, drier conditions)
- Overall **increasing trend in the area burned** by wildfire
 - Great variation from year to year
- The **number of large wildland fires** are also increasing, and the **season is getting longer**
- Decline in the number of human-caused ignitions but increase in lightning-caused ignitions

Area Burned

Cumulative area burned in Canada by year estimated from satellite hotspots



Source: Canadian Wildland Fire Information System

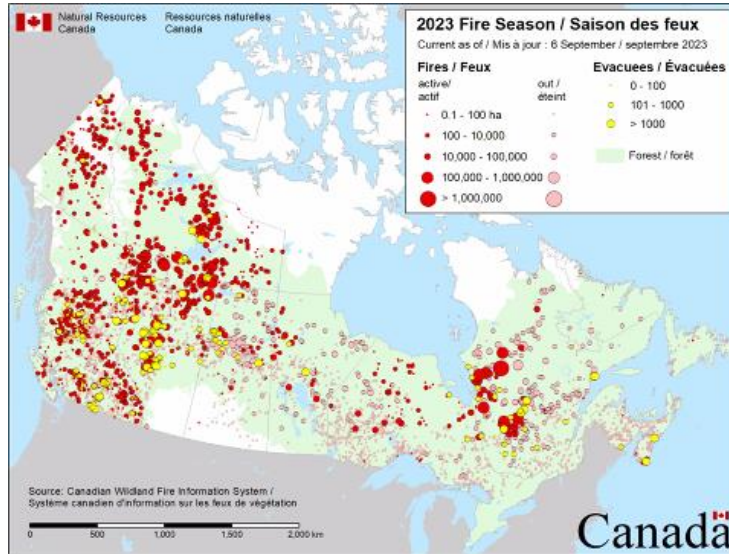


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Impacts



Canadian Wildland Fire Information System, CFS 2024

- **Economic losses**
 - 2023 was the most expensive wildfire season in Canada's history
 - 2023 cost estimate for wildfire suppression in BC alone was over \$1 billion
- **Displacement of communities**
 - 232,000 people across 12 of the 13 provinces and territories were forced to evacuate in the 2023 season
- **Reduced air quality causing health impacts**
 - 5,000+ poor air quality alerts in 2023
 - In 2023, smoke crossed the Atlantic Ocean to impact Western Europe
 - Wildfire smoke causes an increase in emergency department visits
- **Indigenous communities are uniquely affected**
 - Indigenous Peoples are 30% more likely to be impacted by wildland fires compared to non-Indigenous Canadians.
- **Changes in ecosystem services**
 - Changes in fire regime are altering landscape composition and availability of various wildlife habitats

Driven by climate change...



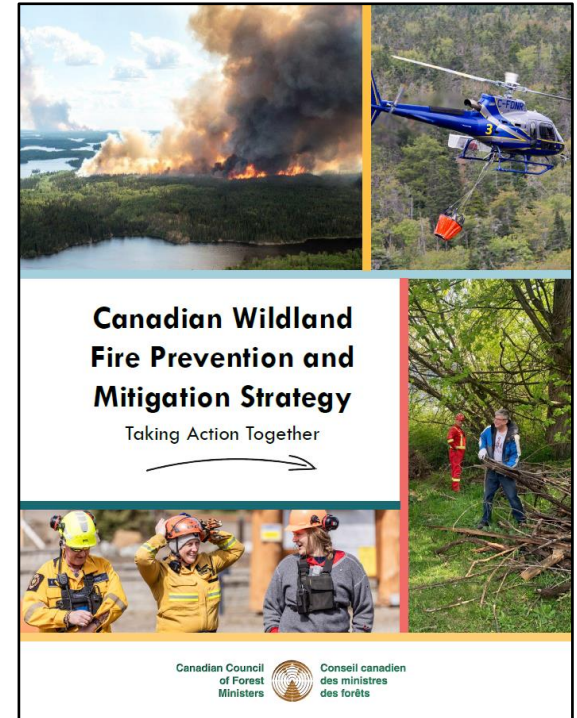
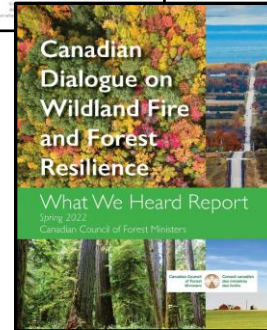
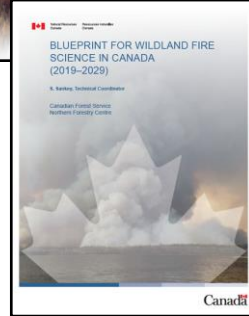
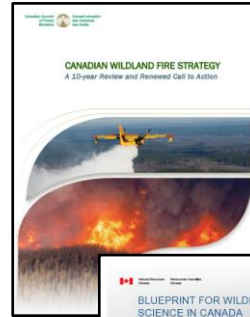
...we must adapt and transform the ways we approach wildland fire management...

...for better resilience

Transforming Wildfire Management

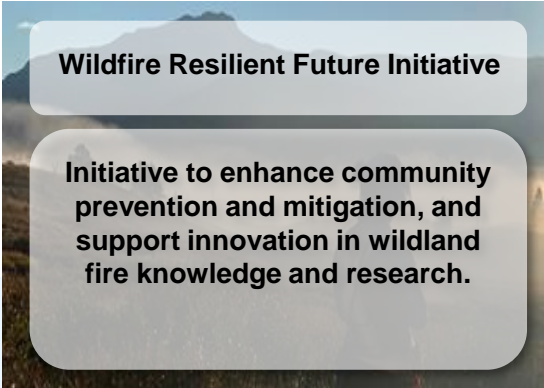
NRCan collaborates with partners to transform national wildfire resilience:

- Canadian Wildland Fire Strategy (2016)
- Blueprint for Wildland Fire Science in Canada (2019-2029)
- Wildland Fire Management Working Group Action Plan (2021-26)
- Canadian Dialogue on Wildland Fire and Forest Resilience (2022)
- **MOST RECENT:** Canadian Council of Forest Ministers Canadian Wildland Fire Prevention and Mitigation Strategy (2024)



Wildfire Mitigation Measures

- Implementation of **proactive** (increase forest resilience to wildfire) measures to complement ongoing **reactive** (wildfire suppression) measures
- Proactive measures include: prescribed burning, fire breaks, planting more deciduous trees, thinning, fuel load management, and inclusion of Indigenous Peoples and their diverse knowledge and practices in wildland fire management and response

A graphic for the Wildfire Resilient Future Initiative. It features a background image of a mountain range under a cloudy sky. The text is contained within two white rounded rectangular boxes.


Wildfire Resilient Future Initiative

Initiative to enhance community prevention and mitigation, and support innovation in wildland fire knowledge and research.

A graphic for the Canadian Wildland Fire Prevention & Mitigation Strategy. It features a background image of a wildfire with smoke rising from the trees. The text is contained within two white rounded rectangular boxes.

Canadian Wildland Fire Prevention & Mitigation Strategy

Canadian Council of Forest Ministers strategy to provide a cohesive vision of wildland fire prevention and mitigation to mobilize collective action, reduce negative impacts of wildland fire.

A graphic for WildFireSat. It features a background image of a satellite view of a forest with a wildfire. The text is contained within two white rounded rectangular boxes.

WildFireSat

A mission to monitor all active wildfires in Canada from space on a daily basis.

Canadian Wildland Fire Prevention and Mitigation Strategy

Shift to Prevention and Mitigation



Provides...

- A pan-Canadian vision of wildland fire prevention and mitigation.
- Shared goals and coordinated action to build on prevention and mitigation work of FPTI partners.



Is informed by....

- A whole-of-society approach to wildland fire resilience: input from many voices coast to coast to coast (variety of sectors, groups, and organizations)



Will be achieved through...

- Equity, inclusivity and self-determination, further advancing reconciliation in a meaningful way.
- A living document, that will evolve as progress is made and whole-of-society partners continue to shape the Strategy.



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Strategy Goals and Commitments

Commitments

A pan-Canadian Wildland Fire Prevention and Mitigation group will be established to help identify and mobilize Whole-of-Society actions on wildland fire prevention and mitigation.

Develop and make accessible wildland fire risk assessment and risk planning resources and promote their adoption and integration across all sectors of society.

1. Enhance whole-of-society collaboration and coordination

Commitments

Collectively advance collaboration with First Nations, Métis and Inuit communities and organizations to remove barriers to participation and provide long-term support for Indigenous-led wildland fire prevention and mitigation efforts.

2. Strengthen First Nations, Métis and Inuit Partnerships

Goals

Commitments

Public awareness campaigns aimed at promoting awareness and understanding of wildland fire prevention and mitigation actions across whole-of-society will be developed.

Training targeted at increasing wildland fire prevention and mitigation expertise across Canada will be developed.

3. Increase knowledge and understanding

Commitments

Recognizing the need for sustained investment and focus to increase wildland fire resiliency, incentives and support programs will be created and/or enhanced to support the advancement of wildland fire prevention and mitigation efforts.

4. Expand investments in prevention and mitigation

Indigenous Fire Stewardship

- In June 2023, The *United Nations Declaration on the Rights of Indigenous Peoples Act Action Plan* was released, providing an evergreen roadmap for reconciliation efforts.
- Momentum and recognition of Indigenous Fire Stewardship in the *Blueprint for Wildland Fire Science in Canada* and the Canadian Dialogue on Wildland Fire and Forest Resilience.
- Embracing the cultural significance and value of fire and supporting Indigenous use of fire as a management tool is a key strategic direction for wildland fire management in Canada.
- The REDFire Lab and Thunderbird Collective are two key initiatives in reconciliation and indigenous fire stewardship.

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