Respond, Restore, Reimagine:

How Canada's Forest Sector Can Support Wildfire Resilience

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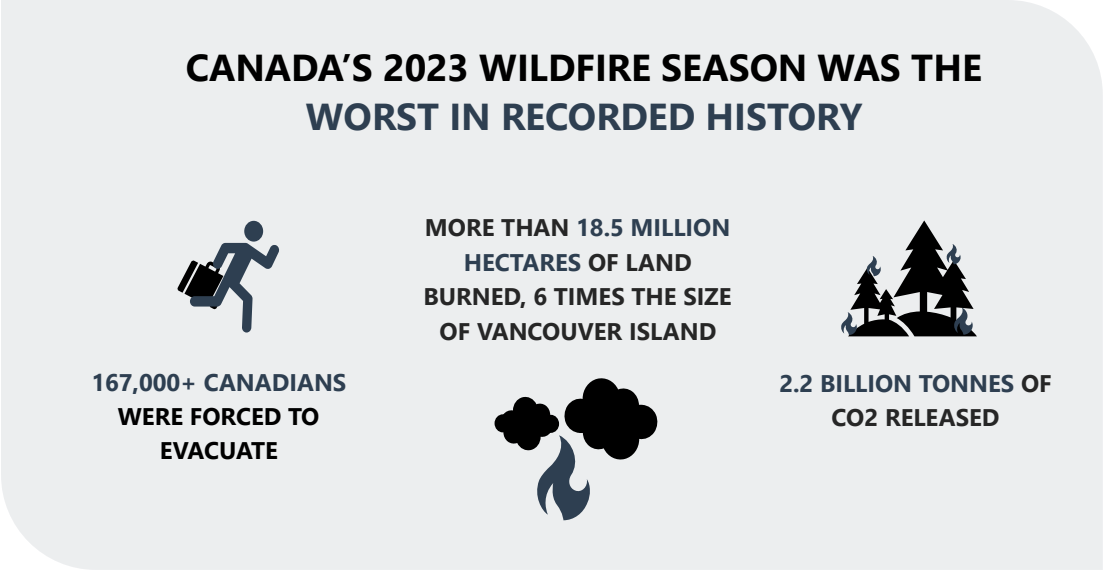
Introduction

The impacts of climate change, including rising temperatures, droughts, extreme weather, a history of aggressive fire suppression, and other factors have led to more severe wildfire seasons in Canada. These wildfires pose significant risks to public safety, infrastructure, and the environment, generating 2.2 billion tonnes of greenhouse gas emissions in 2023 alone—more than triple Canada's total annual emissions in 2021. The annual national cost for Canadian governments to fight wildland fire exceeded $1 billion for most of the last 10 years. In 2023, a single week of wildfire smoke cost Ontario over $1.2 billion in health impacts, while British Columbia faced $720 million in losses from two wildfire events—its costliest event in history[1]. The 2024 wildfire season continued this trend of devastation, becoming Canada's second-worst wildfire season in history next to 2023. As with many of the most serious effects of climate change, these wildfires have a disproportionate effect on the safety and prosperity of Indigenous communities.

The massive financial impacts being felt across the country should be a signal to policymakers that Canada must quickly adapt; catastrophic events that were once anomalies are the new norm.[2] Yet despite two record-shattering wildfire seasons in a row—and with the 2025 wildfire season off to an early and ferocious start—Canada has not yet made the crucial and potentially life-saving adjustments to policies and programs that are needed to help mitigate fire risk in the immediate and long-term.



[1] *Severe Weather in 2023 Caused Over $3.1 Billion in Insured Damage* by the Insurance Bureau of Canada (2024).
[2] For many provinces, annual costs that are currently considered extreme (i.e., occur once every ten years) are projected to become commonplace (i.e., occur once every two years or more often) as the century progresses (Hope et al. 2016).

Context

Canada is Burning Faster and More Severely than Ever

Forest fires (commonly referred to as 'wildland fires' or 'wildfires') are a natural part of the Canadian landscape and play a crucial role in forest renewal. However, a combination of climate change, increasingly frequent pest infestations, and an unnatural accumulation of fuel loads (i.e., highly flammable branches, leaves, and tree segments that normally would have burned) – which are accumulating from decades of aggressive fire suppression activities without corresponding efforts to remove flammable materials—are creating severe wildfire seasons that are far more damaging than natural fire cycles. More severe wildfires—which burn faster and more intensively—do more damage to the forest floor and soils, making forest recovery more problematic. Increased frequency means forests that begin to recover are at greater risk of re-burning, putting their recovery at risk, and potentially changing the ecosystem away from a forest to a more open, less treed system. More severe and more frequent wildfires are now Canada's largest net source of GHG emissions, and pose significant risks to people, infrastructure, and the environment.

The Federal Agenda for Building Wildfire Resilience

At all levels of government in Canada, there is growing recognition that we must enhance the health and resilience of our forests. In 2024, the Canadian Wildland Fire Prevention and Mitigation Strategy was jointly published by Natural Resources Canada (NRCan) and the Canadian Council of Forest Ministers (CCFM). It recognizes that a whole-of-society approach with government leadership is crucial to changing course. Still, current government processes are failing to mitigate the growing threat of wildfires. Canada's new federal government has an opportunity to prioritize action on wildfire risk and recovery. Substantial and proactive escalation of government-led fire management efforts are necessary to effectively mitigate catastrophic fires and their impacts on Canadians.

How the Federal Government Can Unlock Forest-Based Solutions

Many of the devastating and costly impacts of wildfires can be mitigated through active forest management, which help harness a whole-of-society approach. In FPAC's recent Forest Sector Action Plan for the new federal government, we defined the national imperative for working with the forest sector to support wildfire resilience, including a high-level directive outlining how the government can work with the sector on federal wildfire management initiatives. More specific measures to unlock forest sector solutions to wildfire resilience include:

Scale up federal forest fire mitigation and prevention activities:

The Wildfire Resilient Futures Initiative, announced in 2022 which will invest $285 million into wildfire resilience and capacity-building, is a commendable first step towards building resilience into Canada's forests and communities. Significantly more should be invested in the prevention and the reduction of wildfire risk. To manage the costs of doing so, the government can emulate the Forest Enhancement Society of BC, which made "optimizing the recovery and utilization of low-value residual fibre" a key selection criterion and generates larger economic returns than the initial investment it provides. NRCan should also use its $48 million investment in the Build and Mobilize Foundational Wildland Fire Knowledge Program, announced in 2024, to scale well-known fire management programs and tools, described later in this brief.

Elevate fire prevention as a national policy priority and amend regulatory barriers that threaten this objective:

To scale fire mitigation and prevention activities, the federal government must raise fire prevention as a key national policy priority and address anticipated barriers caused by specific federal regulations including the *Fisheries Act, Migratory Birds Convention Act, and Species at Risk Act* (SARA). While important for environmental conservation, these regulatory frameworks are either dated or misaligned with the need for more active fire prevention and mitigation activities. For instance, under the Migratory Bird Regulation, there is currently no provision or permit to allow timely tree removal in areas with high wildfire-risk around communities. In addition, policies protecting Critical Habitat under SARA do not recognize adaptation (e.g., implementation of Canada's new National Adaptation Strategy), and in some instances, implementation of SARA can be maladaptive from a climate resiliency lens. For example, a strict focus on maintaining late seral stage boreal forests as habitat for woodland caribou in areas of high or extreme fire risk is neither conducive nor

effective for maintaining habitat nor preventing or reducing catastrophic wildfires. Amending these policies to actively increase forests' adaptive capacity can in turn support species and ecosystem recovery, as well as human safety.

Endorse climate smart forestry and the forest sector's role in policy development and implementation:

Publicly demonstrating the government's support for climate smart forestry and the sector's ability to deliver solutions can ensure the forest sector has adequate social license and a stable investing environment to promote forest fire resilience at a meaningful scale. Ensuring that the forest sector's voice is strongly represented in framework development and adaptation strategies is tangible evidence of such support.

Support the deployment of 'best in class' wildfire predictive models and fuels mapping:

Communities, businesses, and the public should understand the growing risk of wildland fire to enable proactive fire prevention activities and to direct resources to areas most in need of fire mitigation treatments. If forested communities and First Nations have access to high-quality information on forest fire exposure risk in certain areas, they can make informed FireSmart and emergency preparedness planning decisions. NRCan should provide accurate, up to date, adaptable mapping, and predictive models to illustrate fire risk across the country, factoring in the difficulty of predictive modelling in the context of rapidly evolving climate conditions. This can be achieved through the ongoing evolution and ground-truthing of NRCan's model or through the adoption of third-party models. These tools should follow an adaptive approach, including regionalized predictive models that reflect recent fire patterns and locations, and be updated each season as conditions change.

Enhance capacity for Indigenous-led fire management:

The government should provide financial and logistical support to Indigenous communities to facilitate their leadership in the development and implementation of fire-related strategic actions, as well as their support for policy development and revision. The government should also provide financial and logistical support to Indigenous communities to scale up Indigenous-led fire management initiatives, such as cultural burns, firebreak creation, and collaborative emergency management planning with Indigenous communities. Such initiatives can be scaled using the existing Indigenous clauses in the Wildfire Resilient Futures Initiative and the Fighting and Managing Wildfires in a Changing Climate program.

Leverage the Wildland Fire Innovation and Resilience Centre of Excellence and fund place-based knowledge mobilization initiatives:

In 2025, NRCan announced an investment of nearly $12 million to establish a virtual Centre of Excellence (CoE) for Wildland Fire Innovation and Resilience that will gather and share knowledge and expertise on wildland fire. In addition to sustaining funding for this CoE, to foster a whole-of-society approach, this CoE should bring together a wide group of impacted stakeholders and experts that focuses on on-the-ground solutions and prevention. Providing sufficient funding to initiatives that focus on place-based knowledge mobilization, Indigenous fire stewardship, and long-term land management is key.

Canada's Forest Sector Can Help Integrate Wildfire Resilience through Forest Management

Canada's foresters offer essential "boots on the ground" support that helps keep communities safe. They deploy active forest management techniques to improve forest conditions and reduce fuel loads through routine activities, but also through enhanced strategic efforts that fall outside the boundaries of established industrial or commercial activity. In addition, supporting the forest sector's wildfire risk reduction activities is a win-win for federal housing and emissions reduction goals. A 2024 report shows how using more Colorado forest thinnings for mass timber projects can all at once support wildfire risk reduction, decarbonization of the built environment, create high-quality jobs for rural Coloradans, and support local economies.

Immediately recognizing and responding to wildfire risk:

The forest sector can apply a wildfire risk lens while planning their activities. To do so, the sector can train employees in climate and FireSmart landscape management techniques and use Climate Change Vulnerability Assessments tools developed by the CCFM. Forest sector companies can collaborate with local communities, Indigenous Peoples, and provincial governments to feed into government's wildfire risk mapping activities and develop risk management plans. Climate smart and FireSmart forestry practices can be implemented at the landscape and stand levels.

Contribute to the revitalization of cultural burning:

By working closely with Indigenous Peoples, forestry companies can simultaneously support cultural revitalization and sustainable land management that reduces fire risk. Forestry companies can support Indigenous communities' development and implementation of forest management plans that combine Indigenous cultural burning practices with modern forestry techniques.

Inform the development of effective policy tools and frameworks:

The regulated community (i.e., the forest sector) has direct knowledge and experience that can inform where and how existing policies may impede fire prevention and mitigation efforts, supporting policy coherence, alignment, and reform.

Utilize networks for coordination and capacity-building:

Forestry companies have forged strong relationships at the local level with Indigenous Peoples, local communities, the conservation community, as well as experts and knowledge holders in the field of wildland fire. Tapping into this network can help bolster the coordination, funding and capacity-building of initiatives that enhance forest health and resilience on the ground. Examples of such initiatives include revitalizing cultural burning practices, facilitating forest restoration following fires or pest disturbances, strategically harvesting vulnerable trees, and implementing fuel reduction treatments that align with the values of local communities.

TRANSFORMING WILDFIRE PARADIGMS:
RESEARCH AT FPInnovations

Understanding forests as complex and adaptive systems takes on a higher level of importance when viewed from the lens of wildfire risk and resiliency. In the context of climate change and rapidly evolving disturbance regimes, a multi-disciplinary approach is needed to better manage our forests. FPInnovations, a not-for-profit research organization for pulp and paper, forest operations, wood products, and bio-sourced products, is gathering evidence on the efficacy of fuel treatments, including the type, location, and maintenance of fuel treatments. FPInnovations is testing fuel treatments in real wildfire scenarios to provide evidence-based recommendations on how vegetation management for wildfire risk reduction practices. This research is necessary for informed decision-making regarding silviculture adaptation by industry and government.

FPInnovations

Fire Management Programs, Tools, and Practices to Scale Up

The forest sector can offer unique knowledge, skills, and resources to deliver on national fire resilience goals through the following activities – which many forest sector companies and contractors already conduct and would like to scale up:

British Columbia Forest Enhancement Society (FES): FES is funded by the BC government and works to coordinate wildland fire fuel reduction treatments and increase the utilization of in-forest residuals. It is a win-win for reducing fire risk and greenhouse gas emissions.

Vulnerability Assessment: The CCFM developed a framework for assessing the vulnerability of sustainable forest management practices in Canada to climate change, then uses an adaptation process to integrate the assessment's results into forest management decision making. These vulnerability assessments have not yet been systematically funded and conducted.

The Disaster Mitigation and Adaptation Fund: A federal merit-based program of $3.375 billion that supports large-scale infrastructure projects to help communities manage the risks of disasters triggered by natural hazards. So far, this Fund does not appear to support projects on fire risk reduction.

Government Policy: Placing a specific "climate adaptation lens" on policy development would offer important advantages when responding to rapid changes in climate conditions that drive more severe and frequent fires. This could take the form of more flexibility in the application of regulatory measures governing in-forest activities when those activities are undertaken for the primary purpose of active fire management or mitigation.

Predictive Models: Fire prediction models help prioritize the allocation of resources and implementation of fire prevention and mitigation activities. They can be developed in partnership with research institutions and the academic community.

FireSmart Program: Well-known in British Columbia and Alberta. Delivered through the Union of BC Municipalities (UBCM) and Forest Resources Improvement Association of Alberta (FRIAA). There is opportunity to expand eastward and coordinate with Indigenous Services Canada to support FireSmart at the landscape scale, broadening its current focus on homeowners and communities.

Climate Smart and FireSmart Practices: Foresters already implement forest management practices that minimize disturbances like pest and fire outbreaks while

renewing our forests with younger trees to restart the carbon-storing cycle. These practices can be implemented at the landscape and stand levels and include:

- **"Cooling off" the landscape with broadleaf trees:** Encouraging the regeneration and retention of broadleaf trees can strategically reduce wildfire risks because they are more fire-resistant than conifers and provide more shade that creates a cooler, more humid understory. That said, the effectiveness of this technique depends on environmental factors such as tree density and may not work in all forested landscapes.
- **Creating firebreaks in the landscape:** The area affected by fire can be reduced through the creation or retention of firebreaks within the forested landscape. These include strategically located areas, such as broadleaf or mixed-wood forests that are less flammable, and that when combined with roads, lakes or rivers, or other impediments can help prevent fires from spreading. Integrating varied elements into the forested landscape can reduce the continuity of highly flammable fuels.
- **Preparing the landscape for prescribed burning:** The use of FireSmart forest management practices not only limit the size of wildfires but also increase opportunity for the use of prescribed burning—itself a technique for reducing fire risk and improving or maintaining forest health—by minimizing the risk to resource values, infrastructure, and public health and safety.
- **Systematically monitoring forest health:** Government's work to monitor and address forest health issues, such as insect infestations and disease outbreaks, can be complemented and supported by commercial harvesting practices. Healthy forests are less likely to experience large-scale tree mortality, reducing the availability of fuel for wildfires without reducing forest biodiversity.
- **Strategically thinning forests:** Forest thinning maintains a healthy forest structure by selectively removing targeted trees to reduce tree density which increases the spacing between trees and thus reduces the likelihood of crown fires (fires that spread from treetop to treetop). Lower tree density reduces the production of embers, which can help prevent spot fires. Thinning can also promote the growth of fire-resistant tree species and removing trees that are more susceptible to ignition. Firefighters can also more safely and effectively work in areas with reduced tree density.
- **Reducing fuel loads:** Tree residues like branches and nonmerchantable trees (i.e., too small or low-quality to harvest for use in manufacturing) can be harvested and removed from healthy forests. These materials are otherwise left to rot and potentially fuel wildfires. Removing this fuel can mitigate fire risk while reducing the intensity of fires and making them easier to control. In addition, the removal and use of forest residues can feed into bioproducts and bioenergy, such as

forest biomass-derived heat and electricity. Incentivizing investment in the bioproducts and bioenergy sectors is an important complementary measure.

- **Designing forest harvest and road networks with fire suppression and prevention in mind:** Harvest blocks' boundaries can be revamped to facilitate firefighting; skid trails, landings and roads can help control the spread of wildfires; strategic placement and retention of forest roads infrastructure can enable timely access for equipment, supplies and firefighting personnel to suppress wildfires; road building equipment can be used to establish temporary water sources within cut-blocks; and cut-blocks can be oriented according to the prevailing wind direction to facilitate prescribed burning at later stages. Locating harvest blocks in proximity to areas with high fuel loads and the strategic retention of roads can also facilitate fire prevention activities, such as prescribed burning and Indigenous cultural burning.
- **Prioritizing high-risk stands:** During the forest management planning process, and in consultation with Indigenous communities and local stakeholders, identify and prioritize high-risk stands for harvest and/or treatment.
- **Data sharing:** Collaborate with other levels of government, research institutions (e.g., colleges, universities, independent organizations), and the private sector to continuously refine relevant and underlying data and ensure the most up-to-date information is used to drive decisions (e.g., updated forest inventories).

Conclusion

Canada's forest sector stands ready to support national efforts to mitigate the increasing frequency and severity of wildfires. By integrating forest sector solutions into relevant policy and management frameworks, we can create increasingly fire-resistant landscapes, respond more quickly and effectively to fire, and restore and regenerate affected areas. It is essential that governments, communities, and industry work collaboratively to ensure the safety and prosperity of our forests—as well as those who rely on them—for generations to come.