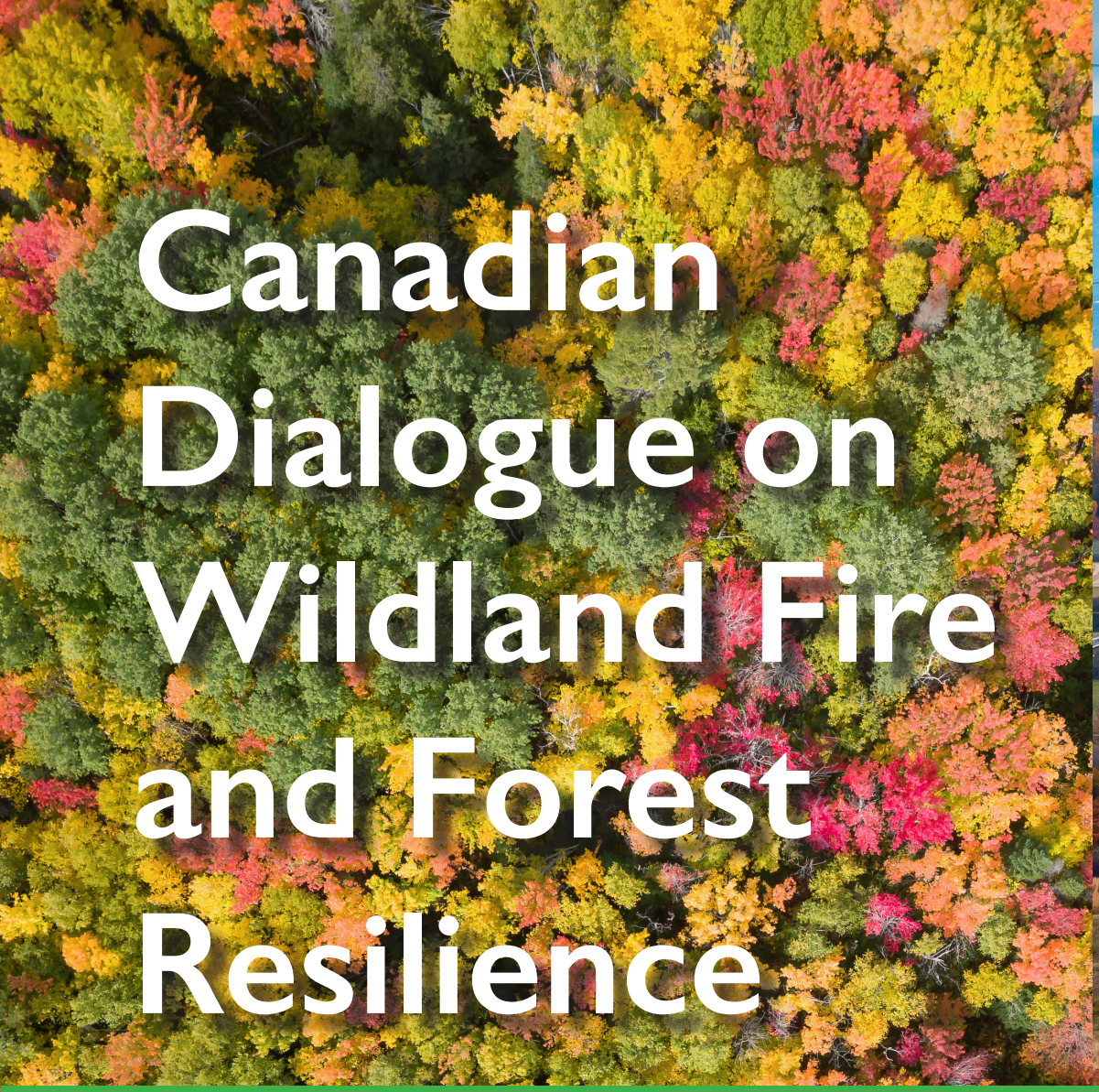

Canadian Dialogue on Wildland Fire and Forest Resilience

What We Heard Report

Spring 2022

Canadian Council of Forest Ministers

Canadian Council of Forest Ministers

Conseil canadien des ministres des forêts

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Introduction

Out of control wildland fire is a terrifying phenomenon that threatens communities across Canada. Every year we see the terrible devastation caused by these fires to families, homes, communities, culturally significant areas, business and vast swaths of critical forest habitat. The catastrophic effect of fires is even more pronounced on rural, remote, and Indigenous communities who are particularly vulnerable and suffer most from fire damage, the dislocation of evacuation, and the cost of mitigation and rebuilding. No one can see the horrible images and be unmoved to action.

And the risk is only increasing. The science is clear: on the current path major wildland fires will be more frequent and more severe, because of climate change and because there are more people and activity than ever before at the wildland urban interface, where human activity and forests meet. We know that we can't, and shouldn't, eliminate fire from the landscape, but we also know that Canada needs a new approach to living with elevated wildland fire risk, and mobilizing all of our available resources to make a difference where it counts.

That's why the Canadian Council of Forest Ministers (CCFM) has embarked on the creation of a comprehensive Canadian Wildland Fire Prevention and Mitigation Strategy, and why we began this process with a diverse and wide ranging Dialogue on the issues and opportunities before us.

The purpose of the Dialogue was to bring together stakeholders from across society – Indigenous leaders, firefighting agencies, public safety organizations, municipalities, researchers, forest industry representatives, and more – to start putting in place the foundational elements of a whole-of-society strategy, and to kick-start new connections and partnerships that will form the basis of exciting work yet to come.

Wildland fire is a complex and multi-faceted issue, and we know that federal and provincial governments cannot tackle these challenges alone. What the Dialogue series has already revealed is that Canada is home to an incredible diversity of skilled and experienced people and organizations who share a sense of urgency, a willingness to adapt, and a strong desire to work together for the benefit of us all. This report summarizes the key points of feedback from the Dialogue series, and serves as the formal launch of a process that will require new thinking and hard work from this group of people and more.

We were honoured to serve as co-chairs of this first step, and energized by the process. Yes, we face many challenges, but we and our CCFM colleagues are now more confident than ever that Canada possesses the tools and commitment to make a real difference in building healthier forests, more resilient communities, and protecting the people, places, and practices that we all value so deeply. We look forward to building on the ideas contained in this report and creating a national strategy that enables us all to work together and be even more than the sum of our ample resources.

Canadian Dialogue on Wildland Fire and Forest Resilience Co-chairs:

The Honourable Mike Holland
Minister of Natural Resources and Energy Development
New Brunswick

The Honourable Jonathan Wilkinson
Minister of Natural Resources
Canada

Purpose

The purpose of the Canadian Dialogue on Wildland Fire and Forest Resilience was, ultimately, to inform the creation of a Canadian Wildland Fire Prevention and Mitigation Strategy, led by the Canadian Council of Forest Ministers, and help inform action on prevention, mitigation, preparedness, response, and recovery. To help drive the strategy the Dialogue brought together a diverse group of experts and stakeholders to share their perspectives on the risks we face from wildland fire, and opportunities to make gains. The CCFM vision – by 2030, communities and infrastructure across Canada will be more resilient to the threat and impacts of wildland fire – is one that depends not just on governments, but on a whole-of-society approach reflective of the myriad ways that wildland fire affects people, communities, the environment, and the economy, with little regard for jurisdictional and territorial boundaries. To that end, the dialogue was also designed as a springboard to:

- Mobilize the whole-of-society, encouraging diverse sectors to own, lead, and collaborate on wildland fire resilience
- Strengthen relationships between fire management agencies, rights holders, other partners and stakeholders
- Identify tangible activities, at multiple scales, to increase wildland fire prevention and mitigation
- Build our collective understanding of the unique challenges and complexities related to wildland fire across provinces, territories, and different sectors of society

Process

Five dialogue sessions were held during February 2022, focusing on, but not limited to:

- A Whole-of-Society Approach to Living With Wildland Fire
- Wildland Fire Resilient Communities and Infrastructure
- Indigenous Perspectives and Considerations for Wildland Fire Prevention and Mitigation
- Financial Instruments to Support Wildland Fire Resilience
- Fire Management and Healthy Forests

For each dialogue a large and diverse panel of leaders – including Indigenous communities, firefighting professionals, municipalities, forest industry representatives, researchers, financial professionals, and more – met online in a roundtable format and shared their perspectives on the critical issues. In addition, government and stakeholder observers attended each session to learn from the discussion. In all, nearly 100 speakers participated in the dialogue. The dialogue sessions were designed to stimulate discussion and put ideas on the table to help drive strategy going forward. Therefore, this report is reflective of the input and ideas that we heard during the dialogue sessions, and does not reflect any specific direction to be adopted by the Canadian Council of Forest Ministers (CCFM). In spite of this, it seems clear from the dialogue that there is emerging consensus on the big picture, and a shared sense of urgency that will be a great strategic advantage as we move forward together.

Next Steps

The Dialogue series is just the first step toward a Canadian Wildland Fire Prevention and Mitigation Strategy. The development of that Strategy, led by the CCFM, will take a whole-of-society perspective, and will therefore include more opportunities for all interested stakeholders to provide input and suggest measures to help build a more wildland fire-resilient Canada.

Context

Canada is home to approximately 9% of the world's forests, encompassing a vast area that includes diverse communities, lands vital to Indigenous ways of life, critical habitat for innumerable species, economic activates of many types, and so much more. Forests depend on wildland fire as a key change agent and source of renewal, releasing nutrients and stimulating new growth. Wildland fire is an indispensable part of a healthy forest ecosystem. However, the reality of wildland fire is complex and dangerous; every year we see wildland fires burning out of control and threating extreme social, environmental, and economic damage. Recent catastrophic wildland fires in Fort McMurray Alberta, and Lytton B.C. are painful reminders that these risks are real and not just abstract ideas. Today, Canada confronts wildland fire risks greater than at any time in its history. Below we have included some of the current and evolving risks around wildland fire in Canada. However, the most important risk is that to public safety and the threat to the lives of Canadians, which remain the top priority of all governments.

Climate Change and Wildland Fire

Climate change is no longer a possible future – it is happening now, and recent fire seasons are a testament to rapid change that is already happening. Climate change has a direct relation to escalated wildland fire risk through rising temperatures, strong winds, arid conditions and decreased soil moisture, longer fire seasons, decreased water availability, and more extreme weather that is more likely to start and fuel wildland fires. Taken together this contributes to unhealthy forests, and ecosystems under stress that cannot withstand fire intensity or easily recover from fire. As a result, we must expect more severe wildland fires in traditional areas, but also increased risks where wildland fire has not been historically prominent, creating new pressures across the country.

Effect on Indigenous Peoples

Indigenous peoples are disproportionately affected by wildland fire than the rest of the Canadian population: facing greater risk of evacuation, threats to communities, and importantly threats to the lands that Indigenous peoples depend on for food, medicines, ceremony, and other uses. Canada's reconciliation journey includes a need to address the key threat that wildland fire poses to Indigenous communities and ways of life.

Risks for Rural and Remote Communities

Small, rural, and isolated communities across Canada are at greater risk, and this risk is compounded by the remoteness of those communities. They often lack resources, critical infrastructure, and communications links to access assistance and aid in prevention, mitigation, and evacuation.

Expanding Wildland Urban and Resources Interface

As the wildland urban interface expands – with more people living in and accessing forested areas, more infrastructure, and more economic activity – the frontline grows ever wider. This means that Canada's total exposure to wildland fire risk has increased markedly, and also includes critical infrastructure not located in strictly-urban environments.

Public Health Risks

The public health risks created by fires are numerous and complex. We have an increasing understanding of the risk posed by wildland fire smoke, which can affect Canadians in urban centres far from wildland fires themselves. Smoke mixed with urban pollution can create significant health risk with a real impact on populated areas, further increasing the potential impact of catastrophic wildland fires. Fire can take an enormous toll on the mental health of residents and first responders. And overall, we know that vulnerable persons – the economically disadvantaged, people with disabilities, women, children and youth – are disproportionately affected by natural disasters. The public health implications of wildland fire go well beyond the immediate threat to human life, which is, of course, of paramount concern.

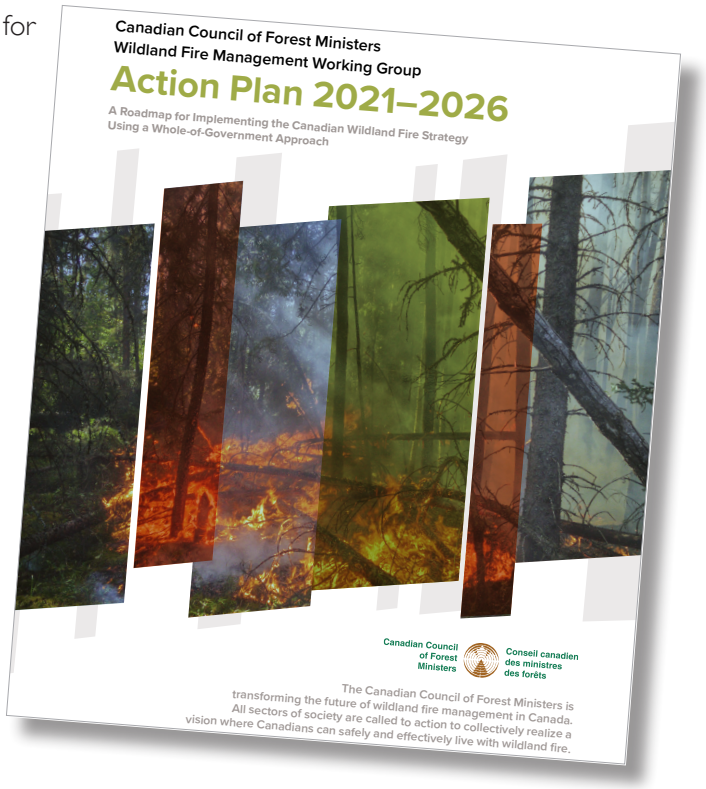
Wildland Fire Costs

In addition to the great human toll, the economic impact of wildland fires is immense, including wildland fire response, evacuations, damage to infrastructure, loss of property, loss of valuable timber, and productivity disruption (including emergency shutdowns to businesses as varied as mines, sawmills, and tourist resorts). As wildland fires become more intense and longer lasting, and as the wildland urban interface expands, the cost of wildland fire also escalates, straining the budgets of federal, provincial, territorial, Indigenous, and municipal governments, and causing significant private hardship.

Context: Canada's Response

The threat of wildland fire is not new. In 2005, the Canadian Council of Forest Ministers (CCFM) released the *Canadian Wildland Fire Strategy* (CWFS), a foundational document that drives wildland fire management across the country. The CCFM renewed the Strategy in 2016, noting that although great gains had been made in wildland fire suppression capacity over the previous 10 years, more work was needed to advance the shared responsibility of wildland fire resilience. Canada therefore has the advantage of almost two decades of wildland fire strategy and coordination to build upon, but we know we need to do more in terms of bringing together all players in society, building resilience, increasing preparedness, and including Indigenous voices into all elements of wildland fire action. The CCFM Wildland Fire Management Working Group published a 2021-2026 Action Plan for implementing the overall Strategy, which defines six major actions:

1. Enhance Whole-of-Government Collaboration and Governance to Strengthen Resilience
2. Improve Understanding of Wildland Fire Risks and all Sectors of Society
3. Prioritize Whole-of-Government Prevention and Mitigation Activities
4. Enhance Wildland Fire Preparedness, Response Capacity and Coordination, and Foster the Development of New Capabilities
5. Strengthen Recovery Efforts to Increase Resilience and Minimize the Impacts of Future Wildland Fires
6. Advance the Next Generation of Wildland Fire Management Science, Innovation, and Research



Expanding existing work into a Canadian Wildland Fire Prevention and Mitigation Strategy is a direct extension of this Action Plan, and requires input and ideas from across society, and that is the focus of the Canadian dialogue, and this report.

What We Heard

What follows is an overview of the major points of feedback heard during the Dialogue series. The discussions were designed to solicit the views of participants and help inform subsequent decisions and direction. The Canadian Council of Forest Ministers will use these perspectives as a key input in driving the creation of a Canadian Wildland Fire Prevention and Mitigation Strategy.

Overall Feedback

Summary of key points raised by dialogue participants

Indigenous participation and leadership is critical

We heard that Indigenous Peoples and Nations have a critical role to play in any response to increasing wildland fire risk. Indigenous peoples are deeply affected by wildland fire, with many communities located in the highest risk forested areas of the country. Because Indigenous ways of life are intrinsically linked to their territories, the loss of significant forest areas can be particularly devastating. Many Indigenous communities are in remote locations and – primarily due to underfunding, particularly in comparison to non-Indigenous communities – lack the resources to effectively deal with wildland fire issues independently. In addition, Indigenous peoples are active on their territories and possess knowledge of forest and wildland fire management practices that can be hugely impactful both in terms of preventative measures, and while actively fighting wildland fires. We heard that creating space for Indigenous leadership is a major opportunity. The dialogue featured a discussion dedicated to Indigenous issues and opportunities, and more detail is provided in that section, below.

Staying the course is not an option

All parties to the dialogue conveyed the same overall message: simply continuing on our current path is not a viable option. While Canada has been largely successful in its historical wildland fire suppression objectives, this has effectively removed fire from the landscape and increased fuel load. The projected increased intensity of wildland fires mean that we need to change our approaches, and we need to change now. Today's forest landscapes are loaded with fuel, climate and weather risks are increasing, and there is no plausible scenario in which wildland fires aren't more frequent, more intense, and more prevalent across a wider geographic area. What needs to change? A more holistic approach encompassing comprehensive prevention efforts, renewed and more coordinated firefighting, mitigation efforts, and new thinking about how we build back after wildland fires.

Wildland fire is a climate change adaptation issue

Participants shared a broad understanding that wildland fire is connected to climate change; this is not controversial. The further insight provided by many is that responses to wildland fire risks are connected to other climate change adaptation measures, for example flood preparedness, the effects of other extreme weather events, and enormous financial risk presented by climate change. Governments are undertaking numerous parallel and complementary efforts to adapt to climate change and the wildland fire strategy must be located in this context: aligned with overall adaption objectives, and taking advantage of the many synergies that exist in this space. Furthermore, uncontrolled wildland fire is a threat to a major climate asset: the carbon sinks that our forests represent, further arguing for urgent action and connection to overall climate adaption strategy.

Photo: firefighters in British Columbia preparing to board a helicopter

Whole-of-society approach is appropriate

The diversity of speakers and their insights and examples highlighted that a whole-of-society approach is not just appropriate, but mandatory. The dialogue underscored the extent to which wildland fire touches federal, provincial, territorial, Indigenous, and municipal governments, involves forest industries, the building industry, interacts with markets, impacts agriculture, affects individual citizens and property owners, and so much more. No single entity is responsible for the vast array of issues affected by wildland fire risks and response, and progress on such a complex issue demands a multilayered response. When we talk about "whole-of-society" we mean:

- All orders of government, and within those the entities responsible for forest management, public safety, public health, Indigenous services, climate adaptation, and more
- Indigenous Peoples and Nations
- Firefighting agencies, including government and private sector operators, and professional and volunteer firefighters
- Industry: most notably timber, but also including every type of industry located in and affected by forested areas, and including agricultural lands and mining
- Research and academia: to help inform policy decision-making, identify risks, track progress, and more
- Construction industry: builders, planners, architects, and more
- Communities who organize and undertake action to reduce wildland fire risk and respond in case of emergencies
- Standards development organizations
- Disaster response agencies
- Civil society organizations with an interest in forest management, public health, and disaster response
- Community-based organizations
- Information technology providers, both public and private sector, to develop and share key data
- International partners
- And many other groups and entities

In short, the scope of players involved in wildland fire prevention and mitigation is immense, and each party has an important role to play. At the same time, we heard that a whole-of-society approach should not be confused with a lack of government leadership: government retains its key role in convening, leading, and funding many actions across the space. Casting a wide net is appropriate, but accountability and leadership remain a key government remit.

There is no single solution

Participants told us that success will be based on using a diverse toolkit that responds to different needs and addresses different risks across Canada. Not surprisingly, there is not one simple, single action we can take today that will address the better part of wildland fire risks and issues. The implication is that the system of protections and resilience-building measures is generally as strong as its weakest link. Great success in a limited area of focus will be less impactful than an overall raising of our collective wildland fire resilience; wildland fire exploits weaknesses and raising our aggregate level of protection is important. This is one of the reasons a whole-of-society approach is so important.

Partnerships are happening but need to be scaled up

Participants spoke repeatedly of partnerships that are already in place: communities working together, firefighting agencies coordinating resources, information sharing, and many other examples. These types of partnerships are essential for making a difference, especially with longer and more intense fire seasons that are stretching the capacity of every organization and demanding greater collaboration with others. However, speakers stressed that today's successful partnerships are the individual efforts of the parties involved, and in many cases they need help and resources to scale them up to a landscape or national level. Scaling up partnerships and programs is not a simple exercise, and scale increases the complexity of an issue exponentially and often requires coordination, engagement, funding and other competencies and assets that go beyond the resources of the original partners. For this reason government has a role to play in helping bring their successful models to a larger constituency.

Scaling up solutions needs to happen at different levels, depending on the nature of those solutions; different ecosystems and regions may share certain attributes, but may also differ substantially. We should expect and plan for flexibility and variation in whole-of-society solutions.

Valuing the human impact of wildland fires and the stress of evacuation

Discussion of wildland fire risks and impacts can focus on the easily quantifiable: hectares burned, value of property destroyed, the financial cost of rebuilding, etc. Dialogue participants emphasized the critical health, social, emotional, and economic toll imposed on people directly affected by wildland fires. We heard about remote communities evacuated repeatedly, disrupting their entire society and way of being, and plunging individuals into unstable housing far from home. We heard about the fear and uncertainty of wondering if one's family and neighbours will be affected, and how to respond. We heard about the risks faced by firefighters. We heard about the devastating emotional and financial impacts for families who lose everything. Overall, we were reminded to remember that the big picture statistics need to be considered also in light of the thousands of Canadians facing peril, stress, and hardship as a result of wildland fire.

Photo: Copper Ridge celebrates a FireSmart leadership award

Quick wins now

Participants stressed a desire for immediate action and momentum-building, reflective of the urgency of our present situation. Repeatedly we heard that stakeholders want to act now and make a difference as soon as possible. On the ground action is critical, not just talking about problems. However, this was not a desire for band-aid solutions. We also heard that a renewed strategy needs to maintain a longer-term focus, and that one of the weaknesses of our current system is a bias (largely driven by urgency and scarce resources) toward focusing on surviving the upcoming fire season, at the cost of the bigger picture actions required to reduce wildland fire risks over the longer term. Therefore a desire for immediate action should be interpreted as action now in the service of long-term impact, and not just acting to look like we're doing something.

Data is key

We heard from several dialogue participants about the importance of data in several dimensions. First, that accurate geo-spatial data is indispensable for making informed prevention and mitigation decisions and investing limited resources. Tools exist today that provide managers with a wealth of information, but not everyone has access to them or is using them. There is important work to be done in supporting the widespread adoption of geo-spatial platforms. Second, we need better and more data, which is connected to the adoption of data collection and analysis platforms. The more complete the picture, the better. Third, transparency of wildland fire risk data is critical. Numerous actors, from governments down to individual citizens can benefit from shared information to inform preventative and resilience-building actions on their parts. Conversely, without access to clear information on wildland fire risks and projections, we are significantly hampered in terms of our ability to persuade and move people and organizations to action. Transparency in this context includes timeliness – information needs to be released and shared quickly in order to make a real difference.

Cost is significant but the risk is even greater

Participants stressed that at the end of the day, stable investment on a significant scale is required to address the key risks presented by wildland fire. Yes, better coordination and enhanced partnerships can mean more efficient use of the resources that exist today, but in general we heard an expected requirement for new investment. However, the cost of inaction and the risk of extreme financial hardship for governments, citizens, and industry is enormous. Deferring investment over the medium-term is all but guaranteeing major financial risk and a requirement for reactive, disaster-focused spending in the future. Financially there is a potential risk that the cost of bearing wildland fire risk will accelerate and be unbearable for insurers and individual property owners at the wildland urban interface level, pushing an even greater burden onto governments and thereby the public. Investment can also come from individuals, and to make that happen we need to build proper incentives and a better understanding of the risks property-owners and citizens face.

Importance of intragovernmental coordination

In addition to point to the necessity of a broad societal approach, the dialogue underscored the importance of coordination within governments. Numerous departments – responsible for forest management, environment, Indigenous services, industry, public health, agriculture, parks, and much more – are implicated in a comprehensive strategy to build forest resilience and address wildland fire risks. We heard concern, particularly at the federal level, that departments with complementary mandates need to work hard to ensure coordination and consistency of approaches, both to ensure an effective overall government response and to enable efficient engagement with stakeholders who lack the resources to engage in duplicative or overlapping coordination with governments; this is especially the case for some Indigenous communities or governments already suffering from consultation and coordination fatigue.

FireSmart™ is a strong platform

We heard from many participants that FireSmart™ – a comprehensive program for identifying and mitigating wildland urban interface wildland fire risks – is a key part of Canada's toolkit. FireSmart provides actionable guidance for individual homeowners and communities, enabling real measures that make a practical difference. Leveraging this existing body of knowledge, guidelines, and advice can have a major impact. We are not starting from a blank slate, and have resources and programs already in place, FireSmart being the most oft-cited example of a tool whose use should be amplified. We heard suggestions to promote, scale up, and make FireSmart a truly national program better integrated with insurance, mortgage lending, and other programs.

FireSmart™ Canada | IntelIi-feu™ Canada

FireSmart is a comprehensive program of the Canadian Interagency Forest Fire Centre, that provides a range of programs, resources, and tools to help manage and mitigate wildland fire risk at the wildland urban interface. FireSmart programming is implemented through seven disciplines:

- **Education**
- **Emergency Planning**
- **Vegetation Management**
- **Legislation**
- **Development**
- **Interagency Cooperation**
- **Cross Training**

To find out more visit **firesmartcanada.ca**

Indigenous Perspectives and Considerations for Wildland Fire Prevention and Mitigation

Feedback from the dialogue on Indigenous issues and consideration. Note: this session was not a formal consultation, and was designed to hear Indigenous perspectives. No consent or endorsement by any party to any policy direction is assumed or implied.

Involvement in planning

Participants expressed a desire for greater Indigenous engagement in planning activities. Today there is a wide variety of engagement models; in some jurisdictions joint planning is quite mature, and in others it doesn't happen at all. We heard that Indigenous governments, as title holders and with rights under both the *Constitution* and the government-endorsed *United Nations Declaration on the Rights of Indigenous Peoples*, have a role to play in planning for vital risk management activities on their lands and traditional territories. This means a role in decision-making, not just being informed of plans.

Specifically on the issue of planning, we heard from those who told us that some wildland fire authorities decided to allow more remote wildland fires to burn, until they became a threat to a nearby Indigenous community, which then had to confront a much larger and more dangerous wildland fire. This is an example of a policy and planning issue with important implications for communities.

Respecting Indigenous governments and expertise during a crisis

Participants told us that often during wildland fire response, Indigenous governments are not recognized by emergency response personnel, and are excluded from decision-making. We heard a desire to be part of ongoing responses, to provide advice, and to help shape responses. Moreover, Indigenous expertise – as knowledge keepers of the specific areas battling a wildland fire – is often not sought, denying responding agencies key insights into topography, wind patterns, and more. Dialogue participants told us plainly that all too often firefighting "experts" come into a territory with no on-the-ground knowledge, and act as though they have nothing to learn from local peoples, to the detriment of everyone.

More broadly, participants told us that Indigenous peoples bring a vast amount of knowledge and experience to the table, given their connection to the land and cultural heritage. Indigenous people are a natural fit for firefighting roles, and Canada would do well to recognize this asset. We even heard a suggestion that firefighting work could be incorporated into restorative justice programs, to allow individuals to gain skills, contribute to the community, and further reconciliation.

Learning From Each Other

In Saskatchewan, Saskatchewan First Nation Emergency Management has worked with the federal and provincial governments to establish emergency response coordinators at every tribal council, a technical working group with all emergency response coordinators, and cost-shared capacity building across First Nations communities. As a result, Saskatchewan has a cadre of trained and resourced firefighters available to protect not just First Nations communities, but to access contracts for firefighting needs across the province, and to undertake prevention and mitigation activities in the offseason. This is an asset that benefits all citizens, and could be adapted and scaled up to a national level.

Valuable lessons learned are out there

We heard about an **extensive review** in the wake of the 2017 Elephant Hill wildland fire conducted in partnership between the Secwepemcúlecw Restoration and Stewardship Society and researchers at the Faculty of Forestry at the University of British Columbia. This report – which includes comprehensive recommendations from preparation to response to recovery – provides an example of the many lessons learned from which a Canadian strategy can benefit. Some of the conclusions in the report may be relevant to the particular circumstances and governments involved, but there are broad implications for a national strategy.

Project-based funding precludes long-term thinking

We heard that many funding programs, which have the right objectives, are structured around limited time periods and specific projects. This has three unintended effects. First, wildland fire risk mitigation activities undertaken on a project basis have an inherently narrower focus on short-term objectives, and can't see the big picture. This works in addressing immediate issues but leaves larger, systemic issues unrecognized. Second, project-based funding drives communities to compete for resources, rather than collaborate on issues of mutual concern. Third, project-based funding denies communities opportunities to build the long-term capacity necessary to tackle long-term issues. It is difficult to hire and retain expertise over the long term with unstable project funding, and in fact some communities struggle with the capacity to even navigate complicated funding application processes.

In another note on the structure of funding, we heard that federal funding for wildland fire risk mitigation work often flows to Indigenous communities through provincial governments, and not to communities directly. This again has the potential to introduce friction and inefficiency in the apportioning of resources to where they are needed most.

New dedicated funding and programming

Resources are the key to unlocking much of the potential for success and growth amongst Indigenous communities when it comes to wildland fire. We heard suggestions for dedicated funding for Indigenous communities and calls for Indigenous service providers to have greater access to firefighting contracts. More broadly, we heard that many communities need programs to help them invest in modern equipment, and to coordinate with other communities, to create networks of mutual assistance. Along with increased funding, integrated fire management was also a key message: ensuring that the programs, tools, and resources we have available are managed in a coherent and complementary way, wherever possible.

Whole-of-society means incorporating whole-of-society values

Dialogue participants told us that a whole-of-society approach is the right way to go, and is important for making progress. In addition, such an approach is about more than just ensuring that a diverse array of interests and institutions are at the table. It also includes incorporating Indigenous value systems that see forested areas, for example, as intrinsic to ways of life, and as having merit and value in their own right, beyond their utility for human enjoyment or resource extraction. Making sure that Indigenous values are a full part of a wildland fire resilience strategy, and not just a bolt-on after the fact, is important for living up to the spirit of reconciliation, and will give us insights into positive new thinking, and better wildland fire management practices, to the benefit of everyone.

Indigenous interests extend to all traditional territory

When we consider the scope of Indigenous interests around forested areas we should be careful to take a broad view, including the full extent of traditional territory, and not limited to specific modern day treaty areas, reserves, and other boundaries. Indigenous peoples have an interest and concern for the entire area of their traditional territories, and should not be limited to a smaller geographic sphere of influence.

Diversity of views and needs

Wildland fire is a national issue that expresses itself differently in different regions of the country. Similarly, Indigenous peoples have very different cultures, historical contexts, governance systems, and practices across Canada. Therefore, the strategy should not attempt to define a single Indigenous role or set of practices, but should instead allow for flexibility to meet the demands of unique communities and geographies. As an example, some cultures have a long history of cultural burning, and others do not. We should not make assumptions or lump Indigenous cultures together.

Discrimination against Indigenous firefighters

Participants told us that they have felt firsthand the structural barriers and discrimination faced by Indigenous firefighters. We heard that Indigenous firefighting crews can be used to do "grunt work" without being involved in decision-making, and that the system of levelled accreditation creates bias against Indigenous crews. Firefighters are typed from Type 1 to 3, corresponding to their training and certification, and Indigenous crews – which may lack the financial resources to access expensive government-provided training – who have a lower level of certification feel looked down upon and disrespected. One participant told us that in spite of their extensive experience they mostly hear "here's what you're doing" and not "what do you think?". We heard suggestions to overhaul this system completely (including a potential unique designation for Indigenous firefighters) as it creates needless barriers and the grounds for discrimination.

Participants suggested that it can be difficult for Indigenous firefighters to get year-round employment in firefighting, in spite of the fact that there are ample opportunities for important off-season activities in mitigation (thinning, burning, etc.) and prevention (e.g. emergency planning and education).

We also heard that the practice of bringing in foreign firefighting capacity in emergencies has a twofold effect. First, it denies Indigenous firefighters in Canada the opportunity to grow their expertise and capacity. Second, this practice also denies Indigenous communities access to the economic benefits that come with firefighting expertise. We should be clear that this viewpoint was not to suggest that Canada never import foreign assistance in a time of crisis, but that we could use some of these resources to enhance domestic capacity.

Social toll of evacuations

Evacuations are traumatic and disruptive for any community, but for remote Indigenous communities it can be particularly harmful. Taking people away from their social support structures and exposing them to stress, dislocation, economic upheaval and the many social risks of cities is a threat to those communities. We heard that some communities are evacuated regularly, and for long stretches of time, denying community members any sense of normalcy, access to support and ceremony, and more. For this reason, evacuation should be understood as a measure that brings with it significant risk and danger for evacuees, especially from smaller or more remote Indigenous communities. Preparing for evacuations, and ensuring that we have appropriate hosting environments ready can make a big difference.

Harden communities to avoid evacuation

Participants suggested that a future strategy could call for resources to harden communities, both in terms of FireSmart-type activities to protect community perimeters, to establish fire towers to improve intelligence, and to create sites of refuge for community members (in addition to enhanced protections for key community infrastructure) so that evacuations are not necessary as often. In addition, we heard suggestions that firefighting activities should be prioritized earlier in smaller wildland fires near Indigenous communities, to prevent larger problems once a wildland fire becomes too large. We also heard that Indigenous communities in particular require enhanced infrastructure and equipment in order to build their resilience to fire.

The important role of cultural fire

Some participants made note of the fact that wildland fire plays an important role in ecosystems, and that wildland fire suppression everywhere is not a realistic nor desirable goal. For example, burning is important for the creation and maintenance of blueberry habitat that is a key resource for many Indigenous communities. Where governments historically seem to view all wildland fire as bad, and require communities to excessively jump through hoops to engage in cultural wildland fire practices, we can lose sight of the value of wildland fire – in a controlled context – on the landscape.

Building Resilient Communities and Financial Instruments to Support Wildland Fire Resilience

Summary of key points raised by dialogue participants

Existing versus new build requirements

Finding ways to enable and incentivize the enhancement of existing structures will be critical. It can be easy to focus on requirements to protect new homes and buildings, but the stock of existing structures is far larger than newly constructed homes and buildings. We need information and training for builders, developers, and landscapers to bring resilient practices to practical levels that can make a difference on the ground, including both new and existing structures.

Vulnerability assessments for communities

Wildland fires, like any disaster, tend to have disproportionately negative impacts on populations who are already disadvantaged or vulnerable, either physically, socially, or economically. Therefore, to limit the harm of disaster we need to plan not just for communities as a whole, but also for the most vulnerable members of those communities, to ensure that we have the plans and resources in place to meet their needs. Doing vulnerability assessments is a great way to identify these needs, and also to help design communications to specifically target those who are most at risk and spur action on their parts to protect themselves from disaster.

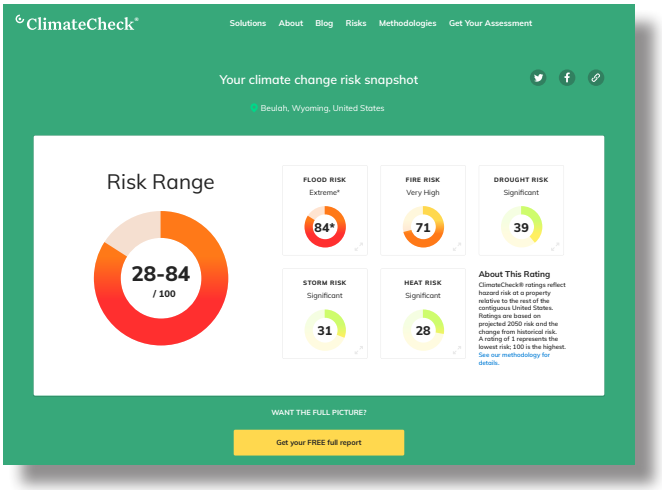
Supporting Rebuilding

Participants suggested that municipalities in particular need support in the aftermath of a wildland fire as they make key decisions about rebuilding. It was suggested that a strategy could include the provision of a toolkit of information and planning resources to help municipalities – who often lack resources and recovery expertise – to make informed rebuilding and recovery plans that mitigate risk and avoid creating a cycle of disaster and recovery. Planning can be a powerful tool, but one that requires resources and knowledge that not every community has readily at hand. A toolkit helping municipalities navigate common issues, access funding, and understand key risks would be helpful. Beyond a toolkit, it was also suggested that some means of providing advice and guidance to local communities could be beneficial.

Data: helping communities and individuals understand risk

It was suggested that Canada could undertake a program to provide individuals and communities with customized location-based risk data for wildland fire. This would allow anyone to quickly look up their location and know if they are in a high-risk area, and what types of measures they might take in response. This is applicable not just to wildland fire, but also to other climate hazards, most notably flooding. There is an opportunity to provide citizens with comprehensive information on the risks they face and empower individuals and communities to take informed action.

It was further suggested that a dashboard like climatecheck.com (pictured), is a useful model to look to in developing a Canadian tool for individuals and property owners. Other models, such as those being developed by the Canada Mortgage and Housing Corporation could make climate information about properties available to the public in the future.



Data: helping policy and decision-makers see what works

We heard that more data is required to understand what preventative measures are effective, in what circumstances, particularly in a Canadian context. Especially at the wildland urban interface level, we have good data and standards about structural fires and the way fire moves amongst buildings in that context, but we lack detailed information about the larger and more complex wildland fire context, and the measures and circumstances that can make a difference. To this end, the Institute for Catastrophic Loss Reduction shared the paper ***Developing a method for conducting wildland/urban interface fire case study research*** which provides important insights that can inform planning and study design.

Data: geo-spatial information

For managers and decision-makers, understanding the full extent of measures in place and planned, and risks on the landscape is invaluable. We have the tools to see a rich and complex picture, but the data has gaps. We need a shared and accessible view of as much wildland fire-related geo-spatial data as possible to inform investment and risk mitigation actions. Such information can also greatly assist response and recovery efforts.

Importance of measuring progress

It was suggested that a strategy should include specific, measurable targets so that all parties can track progress, course correct, and ultimately build on the record of proven success. Participants cited the United Nations sustainable development goals as examples of goals with clear indicators to which many parties can contribute, and where everyone can see themselves, not just major organizations.

Standards and building codes as a tool

We heard that standards can be a powerful tool in translating best practices into real world action. This includes evolving standards for climate change adaptation in construction, firefighting equipment, and other dimensions. Standards bodies have an established, broad stakeholder group ready to work together, and can be a part of a resilience-building strategy going forward.

At the same time, we heard concern that elevating standards or building code requirements can be reasonable on paper, but have unintended market consequences. It was noted that Canada is in the midst of a housing affordability crisis and that measures taken to reduce wildland fire risk, for example, must be considered in light of potentially prohibitive cost increases. There is a tension between these objectives and finding the bliss point between them may not always be easy.

Resilient emergency operations centres

A possible element of a future strategy for resilience could be increased resilience for emergency operations centres and other key infrastructure essential to responding to wildland fire and other disasters. This could include requiring that key command posts have power generation capacity and self-sufficient communications links, so that they are not knocked out of commission when they are needed most.

Breaking down silos

We heard that there is a need to ensure that silos do not exist or develop amongst communities of practice, encompassing a range of public, private, and civil society players. This includes sharing information continually amongst partners and ensuring that coordination is consistent, and not just when disaster strikes.

National strategy, local action

Dialogue participants cautioned that the complex web of different orders of government, transboundary issues, and jurisdictional overlap will necessitate national leadership, but likely action at a more local level. That is, we cannot enact one-size-fits-all measures emanating from the federal government, as many of the key areas for action and success are not exclusively federal jurisdiction. This means that a strategy will have to consider and enable federal leadership but adoption of measures at the local level, including flexible approaches to meet the unique needs of different communities.

On the subject of federal leadership, we heard a desire for strong coordination within the federal government – where many departments have a role to play on wildland fire specifically, and climate adaption more generally – including the creation of some type of Chief Resiliency Officer responsible for intragovernmental coordination.

Role of the insurance industry

We heard that the insurance industry has a role to play in helping to build incentives for risk mitigation action. In particular in sharing risk information, helping customers adopt mitigation strategies, and offering incentives for particular actions taken. The Fire Underwriters Survey is a toolkit used for decades by insurers to ask systematic questions about properties and communities with a focus on structural fire and resilience infrastructure supports. We can build on this base and expand it to look at wildland fire risk as well, and work with realtors and mortgage lenders to build instruments that incent resilient behaviours.

At the same time, we were cautioned that insurance policy discounts have limited effectiveness on their own, as policies price for a suite of risks, and the practical savings expected from wildland fire risk mitigation is unlikely to drive most individuals to take major action involving significant expense. Insurance incentives can be part of the solution but are not a panacea.

Scale of risk is significant

The potential scale of financial risk associated with climate adaptation in general and wildland fire in particular is enormous. In a scenario where more frequent and severe wildland fires occur, the market may be simply unable to accommodate the risk to property owners through traditional insurance products and the mortgage and lending system. This could in turn create long term problems related to housing funding stability, and would require federal help backstopping the system from a financial perspective.

Role of institutional investors

Institutional investors are a highly impactful constituency within financial markets, having the power to drive behaviour and consider new risks throughout the market. We heard that a focus of strategy could be working with large institutional investors to bring climate adaptation considerations – including wildland fire – to the forefront of investment decision-making, in an effort to send a powerful signal to the market that climate risk needs to be considered and priced in the context of investment decisions.

Home retrofitting funding

Further to some of the points noted above (regarding the importance of investment in existing infrastructure, and the prohibitive cost of some actions) it was suggested that a future strategy include a home retrofitting funding program that specifically targets risks at the wildland urban interface. Successful energy retrofitting funding programs are a model that could be adapted for this purpose.

Information on financial risk for municipal decision makers

Participants highlighted that insurance costs are significant for municipalities in particular as they face severe infrastructure and property risks. Municipalities may need support in understanding long-term financial risks and implications, especially when considering infrastructure investments that may bear significant upfront costs, but which can avoid major liability in the future.

Furthermore, we heard that municipalities are facing a cash crunch – that even if they wish to adopt sound, long-term risk mitigation measures, they may lack the resources to fund those measures. A future strategy needs to consider a greater share of funding for municipalities to reduce wildland fire risks, going beyond the 1/3 sharing agreements that typify federal/provincial/municipal cost sharing.

Public awareness

It was suggested that the CCFM could initiate a widespread public awareness campaign immediately to build education and awareness for every Canadian who lives in a wildland fire risk area. This campaign could include general awareness but also practical tips for immediate action to protect homes and other property. This would be general information and proven practices that apply generally, and do not require modelling or other sophisticated techniques.

Wildland Fire Management and Healthy Forests

Summary of key points raised by dialogue participants

Reducing fuel loads

Forest management and wildland fire suppression practices over the past 100 years have left forests in a state of significant fuel load, and an overall goal of a future strategy should be the targeted reduction of that fuel. What practices are most appropriate for this task will vary by location and available resources, but the overarching idea is that fuel management is an important objective.

Improving our analytic capacity to manage forests

We heard that we have very good forest inventories with a lot of valuable information. But where we are lacking, collectively, is integrated inventory information with fuel characterizations, and driving more precise management planning not just spatially, but over time. Can we increase our analytic capacity and design new approaches and tactics based on that knowledge? It was suggested that expanding and using forest inventory information could have positive benefits for a range of stakeholders and ultimately build forest resilience.

Shared best management practices

Participants suggested that identifying and sharing forest management practices will be important, including actions like: prescribed or hazard reduction burning to mitigate fuel hazards, species conversion to less flammable species near communities, fuel breaks on the landscape, and harvest practices. We have a sense today of what these practices are and how they can be used, but we need to do a better job of sharing them, scaling them, and seeing that they are put into practice across the landscape.

At the same time, we heard concern that over-management of forests is a danger. That is, we should be careful not to attempt to intervene at a micro level and disrupt the natural order of forests in an attempt to save them. There is a balance between sound management and allowing forests to thrive without human control.

Forest industry role

Participants told us that the forest industry can play a more proactive role as part of an overall forest management strategy. The industry can reduce fuel load, capture carbon in wood products, target harvesting activities in areas of high wildland fire risk. However, industry cannot do this independently, and require government to play a planning and coordinating role. In addition, the forest industry could undertake further treatments like piling and burning debris, or removing wood too small to use for lumber, but these activities have no market demand, and would need program funding.

Capacity building

We also heard that a lack of capacity to undertake prescribed burning is a constraint. Here we heard suggestions to increase Indigenous participation, and to utilize firefighting industry professionals year round, not just during the fire season.

More generally, it was suggested that capacity across the sector is a risk, and that building and retaining a skilled forest management workforce will be critical for the success of any strategy.

Photo: Youth in Newfoundland & Labrador participate in a fire risk reduction program

Policy analysis

We heard the suggestion that CCFM might consider a policy analysis to identify areas where landscape objectives conflict with wildland fire management priorities. Today we may face instances of working at cross purposes, where important lands, especially near communities, are subject to different land use prioritization, which lessens the potential efficacy of wildland fire risk mitigation actions.

Prescribed burning

Participants told us that prescribed burning is an important part of the wildland fire management toolkit, but that the practice faces some significant hurdles. Namely, legal constraints around liability and smoke management, as well as conflicting policy requirements – where we might wish to undertake prescribed burning for forest management purposes, we may be constrained because of a conflicting desire to preserve wildlife habitat. Additionally, the cost of prescribed burning can be prohibitive, when factoring in required planning, monitoring, weather stations, and more. For clarity, prescribed burning in this context (see sidebar) is about managed fire for the purposes of hazard reduction or ecological benefit. Indigenous cultural wildland fire practices are a parallel, managed burning activity.

What is prescribed burning?

The deliberate, planned and knowledgeable application of fire by authorized personnel and in accordance with policy and guidelines to a specific land area to accomplish pre-determined forest management or other land use objectives

- Canadian Interagency Forest Fire Centre Glossary

Photo: Fire crews in the Yukon conducting a prescribed burn to reduce risk to the surrounding landscape

ANNEX A
Canadian Dialogue on Wildland Fire and Forest Resilience List of Participating Elders, Hosts and Organizations

Elders and Hosts

Elder Heather Poitras, Elder in Residence, Northern Forestry Centre, Canadian Forest Service, Natural Resources Canada

Elder Joe Gilchrist, Fire Keeper for Interior Salish Fire Keepers, Skeetchestn Indian Band

Honourable Mike Holland, Minister, New Brunswick Natural Resources and Energy Development; Canadian Council of Forest Ministers Chair; and Canadian Dialogue Co-chair

Honourable Jonathan Wilkinson, Minister, Natural Resources Canada; and Canadian Dialogue Co-chair

Honourable John Streicker, Minister, Yukon Energy, Mines and Resources

Honourable Katrine Conroy, Minister, British Columbia Forests, Lands, Natural Resource Operations and Rural Development

Honourable Nate Horner, Minister, Alberta Agriculture, Forestry and Rural Development

Honourable Pierre Dufour, Québec Ministère des Forêts, de la Faune et des Parcs

Honourable Scott Fielding, Minister Manitoba Natural Resources and Northern Development

Honourable Shane Thompson, Minister, Northwest Territories Environment and Natural Resources

Honourable Warren Kaeding, Minister, Saskatchewan Environment

Deputy Minister Monique Rolf von den Baumen-Clark on behalf of the Honourable Greg Rickford, Minister, Ontario Northern Development, Mines, Natural Resources and Forestry

Organizations

Aboriginal Firefighters Association of Canada

Anishinabek Nation

Aon Public Sector Partnership

Assembly of First Nations

Business Council of Canada

C.D. Howe Institute

Canada Mortgage and Housing Corporation

Canadian Association of Chiefs of Police

Canadian Association of Fire Chiefs

Canadian Association of Petroleum Producers

Canadian Home Builders Association

Canadian Institute of Planners

Canadian Interagency Forest Fire Centre

Canadian Mental Health Association

Canadian Public Health Association

Canadian Red Cross

Canadian Wood Council

Canfor

City of Williams Lake

Co-operators

Conseil de la Nation Atikamekw

Conseil de la Premiere Nation Abitibiwinni

Conseil des Innus de Pessamit

Federation of Canadian Municipalities

First Nations' Emergency Services Society of British Columbia

Forest Products Association of Canada

ANNEX A
Canadian Dialogue on Wildland Fire and Forest Resilience List of Participating Elders, Hosts and Organizations

Fort Resolution Métis Government

FPInnovations

Gwich'in Council International

Independent First Nations Alliance

Indigenous Centre for Cumulative Effects

Indigenous Leadership Initiative

Institute for Catastrophic Loss Reduction

Insurance Bureau of Canada

Intact Centre on Climate Adaptation

Intact Public Entities

JD Irving Limited - Woodlands Division

Louisiana-Pacific/LP Building Solutions

Manitoba Métis Federation

Métis National Council

Metis Settlements General Council

National Aboriginal Forestry Association

Natural Resources Canada

Nature Conservancy Canada

Nishnawbe Aski Nation

Ontario Forest Industries

Pauingassi First Nation

Piikani Nation

Prince Albert Grand Council

RBC Capital Markets

RW Gray Consulting Ltd.

SaskPower

Secwepemcúl'ecw Restoration and Stewardship Society

Skeetchestn Indian Band

Standards Council of Canada

Sustainable Forestry Initiative

The Confederacy of Mainland Mi'kmaq

Thompson River University

Town of High Level

Tŝilhqot'in National Government

Union of British Columbia Indian Chiefs

University of Québec

University of Waterloo

West Fraser

Wildlife Conservation Society

Yukon First Nations Wildfire Limited Partnership

ANNEX B
Canadian Dialogue on Wildland Fire and Forest Resilience Backgrounders

Wildland Fire in Canada: An Overview

A Whole-of-Society Approach to Living with Wildland Fire

Wildfire Resilient Communities and Infrastructure

Indigenous Perspectives and Considerations for Wildland Fire Prevention and Mitigation

Financial Instruments to Support Wildland Fire Resilience.

Fire Management and Healthy Forests

Canadian Council of Forest Ministers | Conseil canadien des ministres des forêts

WILDLAND FIRE IN CANADA: AN OVERVIEW

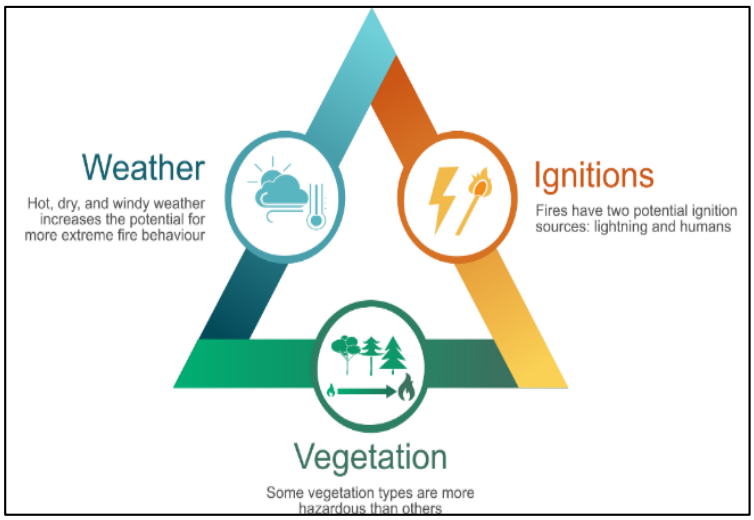
Wildland fire is a natural hazard in much of Canada's forested areas and is an essential component for maintaining healthy and diverse forest ecosystems. Fires become a concern when they threaten communities and other forest-based values, such as infrastructure, timber supply, and areas of cultural significance.

Wildfire 101 – understanding wildland fire

Behaviour

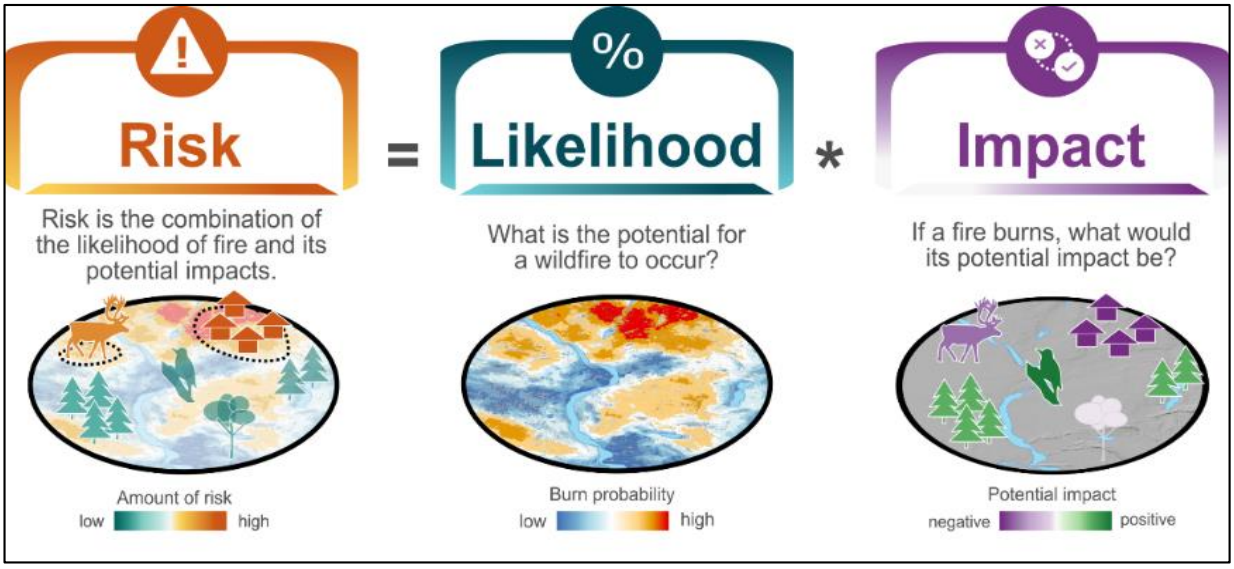
Wildfire behaviour is driven primarily by three elements (the "wildfire behaviour triangle"). The lower a fire's intensity and spread, the better chance there is it can be halted or controlled.

- Ignitions: Wildland fires have two potential ignition sources—lightning and people
- Weather: Humidity, temperature, wind, and precipitation all influence the amount of vegetation that is dry enough to ignite and burn. Hot, dry, and windy weather increases the potential for more extreme fire behaviour.
- Vegetation: Some vegetation types (fuels) are more hazardous than others. For example, under certain conditions coniferous fuels (spruce, fir, pine) are more likely to ignite, spread at higher rates, and burn at greater intensity than a stand of deciduous trees (maple, oak, birch).



Risk

Wildland fire risk is measured by considering the **likelihood** a fire will occur at a given location, combined with the **impact** the fire would have if it occurred. Likelihood varies and depends on unique combinations of fuels, weather, topography, and human activity. Impacts can be both positive and negative; fire can have detrimental effects on some resources, but positive effects on others.



Trends in Wildland Fire

The wildland fire season typically runs from April through to September.[1] Approximately 7,300 wildfires occur each year, with an average of 2.5 million hectares (ha) burned.[2] However, like many parts of the world, Canada is experiencing longer wildland fire seasons, more frequent and extreme fire behavior and greater impacts on communities, economies, and the environment. With this growth in fire activity, our ability to fight them can be stretched beyond resource capacity and support is often required from international partners including the United States, Australia, Mexico, New Zealand, and South Africa.

Annual national costs for fighting wildland fire typically total over $1 billion. Additional losses are estimated to be around $500 million per year but this is usually higher during seasons with more fire activity. As wildland fires become bigger and more intense, the overall costs for fighting them will continue to rise. Experts predict that annual national costs could exceed $1.4 billion by the end of the century.[3]

2021 was one of Canada's busiest fire seasons in recent years, seeing 6,224 fires burn over 4.18M hectares.[4] The season was driven by periods of intense drought and record-breaking high temperatures, resulting in extreme fire danger ratings across most of central and western Canada. Saskatchewan, Manitoba, and Ontario each saw high levels of fire activity while British Columbia recorded its third worst fire season ever, behind 2018 and 2017. There were five fatalities resulting from wildfire or suppression activity in 2021, the highest number in Canada since 1986. Overall, there were approximately 208 evacuation events, four times the 20-year average of 49 evacuations per year (2001-2021).

Changes in fire risk and behaviour

A number of factors are driving changes in wildland fire risk and behaviour, including climate change; the growth of the wildland urban interface (people, activities, and assets located in forested areas); and historic land and wildland fire management practices (e.g. putting out all fires in the belief all fire was "bad") which interrupted the natural restorative function of fire in the forest. As a result, we are seeing more evacuations, damage to infrastructure, disruptions to industry and greater effects on people's health. For example, between 2014-2018, Canada saw an almost 20% increase in wildland fire emergencies and 25% increase in First Nation evacuees.

Indigenous communities are especially at risk of wildland fires because approximately 80% are located near forested areas prone to wildland fire. The result is that Indigenous communities are 18 times more likely to be evacuated during wildland fires than non-Indigenous communities.

Canada's Wildland Fire Management Structure

There are a number of organizations involved in wildland fire management across Canada:

- **Provinces and territories** own and manage 90% of Canada's forests. Fire management and fire suppression, as well as broader forest management, is primarily provincial and territorial responsibility.
- **At the federal level**, Parks Canada serves as an operational fire management agency (in national parks). Natural Resources Canada's Canadian Forest Service (CFS) conducts wildland fire science and provides national policy support. Public Safety Canada also has responsibilities for overall coordination and support of emergencies.

[1] For more information, go to: Natural Resources Canada – Wildland Fire Management
[2] Only 3% of all wildland fires grow to be bigger than 200 ha, but these larger fires account for 97% of the total area burned across the country.
[3] Hope, E.S.; McKenney, D.W.; Pedlar, J.H.; Stocks, B.J.; Gauthier, S. 2016. Wildfire suppression costs for Canada under a changing climate. PLoS One 11(8):e0157425
[4] This compares to the 10-year average of 5,248 fires and 2.6 million hectares burned

- **The Canadian Interagency Forest Fire Centre** (CIFFC) is an independent, not for profit organization, collaboratively owned and funded by federal, provincial, and territorial governments. CIFFC supports wildland fire preparedness and response across the country (such as sharing of firefighting resources and information). In 2020, CIFFC's mandate was expanded to also include work on prevention and mitigation, including oversite of the FireSmart Canada/Intelli-feu Canada™ program.
- **The Canadian Council of Forest Ministers** (CCFM) is a forum that brings all these players together to provide strategic leadership for issues related to forests including fire. In 2005, CCFM established the Canadian Wildland Fire Strategy (CWFS) for the specific purpose of creating a pan-Canadian approach to wildland fire preparedness, mitigation, and response. The CWFS was updated in 2016 and continues to serve as Canada's highest-level policy guidance on wildland fire management.

Photo credit: Government of Ontario

Photo credit: Government of Saskatchewan

Photo credit: Government of Canada

Photo crédit : Government of Quebec

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THE CANADIAN DIALOGUE ON WILDLAND FIRE AND FOREST RESILIENCE

A WHOLE-OF-SOCIETY APPROACH TO LIVING WITH WILDLAND FIRE

Severe wildland fire events are increasing in frequency, intensity, and costs, placing growing risks on communities and infrastructure; business and financial sectors; individual and public health and well-being; and long-term forest health. The devastation that occurred in Lytton, BC this past summer and in Fort McMurray, AB in 2016 are just two examples of the catastrophic impact that wildland fires can create.

In 2005, the Canadian Council of Forest Ministers (CCFM) released the Canadian Wildland Fire Strategy (CWFS), a foundational document that drives wildland fire management across the country. The CCFM renewed the CWFS in 2016, noting that although great gains had been made in fire suppression capacity over the previous 10 years, more work was needed to advance the shared responsibility of wildland fire resilience.

A new vision

CCFM's vision is simple but bold: by 2030, communities and infrastructure across Canada will be more resilient to the threat and impacts of wildland fire. The vision recognizes this is an effort that cannot be taken by governments alone; the "whole-of-society" has a role to play in transforming the ways we manage for and live with wildland fire.

> ***Resilient capacity is built through a process of empowering citizens, responders, organizations, communities, governments, systems, and society to share the responsibility to keep hazards from becoming disasters. Resilience minimizes vulnerability … by creating or strengthening social and physical capacity in the human and built environment to cope with, adapt to, respond to, and recover and learn from disasters.***
>
> ***Public Safety Canada***

The road to resilience

The road to resilience rests upon a strong framework of prevention and mitigation.[1] To date, this has included broadening the mandate for the Canadian Interagency Forest Fire Centre (CIFFC), moving the collaborative body beyond its traditional role of fire response support to include fire prevention and mitigation. It also includes the anticipated development of a pan-Canadian Wildland Fire Prevention & Mitigation Strategy, a document that will augment the intent and goals of the CWFS.

In support this framework, CCFM Ministers are convening the *Canadian Dialogue on Wildland Fire and Forest Resilience*. The Dialogue will bring together a broad spectrum of voices to identify shared needs, priorities, and approaches. A report on dialogue outcomes and recommendations will be delivered to CCFM in spring 2022 to directly inform future development of the national prevention and mitigation strategy.

Purpose and outcomes

The purpose of the *Canadian Dialogue on Wildland Fire and Forest Resilience* is to energize public discussion and encourage engagement on wildland fire, with an emphasis on prevention and mitigation. Expected outcomes include:

[1] In the past, emergency management in Canada largely consisted of preparedness and response activities. Today, increasing focus is placed on prevention and mitigation. This evolution in approach aligns with the international movement toward Disaster Risk Reduction, including the United Nations' 2015 Sendai Framework for Disaster Risk Reduction. One of the key elements of the Sendai Framework is adopting a whole-of-society approach to ensure existing knowledge, experience, and capabilities are leveraged to support resilience.

- Mobilization of the whole-of-society, encouraging diverse sectors to own, lead, and collaborate on wildland fire resilience;
- Strengthened relationships between fire management agencies, rights holders, other partners and stakeholders;
- Identification of tangible activities, at multiple scales, to increase wildland fire prevention and mitigation;
- Better understanding of the unique challenges and complexities related to wildland fire across provinces, territories, and different sectors of society;
- CCFM Ministers are informed to develop a Canadian Wildland Fire Prevention and Mitigation Strategy and support a Canada-wide approach to building wildland fire resilience.

Dialogue outcomes will support and contribute to other, concurrent and integrative national processes related to emergency management, disaster risk reduction, and climate change adaptation.

Wildland Fire in Canada

- Wildland fire is a natural hazard in many forested areas, essential for maintaining healthy and diverse forest ecosystems. They become a challenge when they threaten communities and other forest-based values, such as infrastructure, timber supply, and areas of cultural significance.
- The risk of wildland fire is growing. This is due to a number of factors including: climate change; more people, activities, and assets located in forested areas; and historic land and wildland fire management practices (i.e. complete fire suppression) which interrupted the natural restorative function of fire in the forest.
- Wildfire season typically runs from April through to September. Canada experiences around 7,300 wildfires each year, burning an average of 2.5 million hectares.
- Annual national costs for fighting wildland fire total over $1 billion. Additional losses are estimated to be around $500 million/year.
- Even communities far away from a fire can be significantly impacted by smoke – air quality, health, and transportation can be adversely affected for weeks from fires hundreds of kilometers away.[2] There are additional, cascading impacts following a fire event. Wildfires in BC in 2021 increased the likelihood of the flooding and mudslides that took place in November.

Questions for Consideration

1) Why is whole-of-society engagement important to enhancing wildland fire resilience? What role can you play?
2) What steps can be taken immediately to increase resilience? What will be needed long-term?
    - What activities are needed to increase wildland fire prevention and mitigation?
    - How can leaders best support these activities?
    - What flexibilities need to be considered?
    - Do you have the tools you need?
3) What partnerships are needed? Do they exist? If not, what must be done to build them?

[2] Smoke from wildland fires in Northwest Territories in 2014 was recorded as far away as Portugal. Fires in northern Quebec in 2013 shut down major highways, delaying delivers of food and supplies, and particulates from the smoke triggered power failures across the province, including a complete shutdown of Montreal's metro.

4) What challenges does your sector face in relation to wildland fire? What can you do to address those challenges?

Resources[3]

- CCFM Wildland Fire Management Working Group Action Plan 2021-2026: The Action Plan details steps to enhance the CWFS and to transform the focus of wildland fire management from forestry centric toward a whole-of-society perspective in which all orders of government, Indigenous peoples, all sectors and individuals can participate and coordinate efforts to live with wildland fire.
- Implementing Whole-of-Society Resilience/Strategies for Supporting Community Resilience (Defence Research and Development Canada/CRISMART, National Defense College, Sweden). This collection of articles details multinational experiences to support community resilience and inform government processes through public participation, partnership, and innovation.
- Transformation towards sustainable and resilient societies – backgrounder developed for the United Nations High-Level Political Forum on Sustainable Development.
- The Sendai Framework for Disaster Risk Reduction - The Sendai Framework is the third international framework on disaster risk reduction since 1995. Canada is signatory to the framework.
- The Blueprint for Wildland Fire Science in Canada (2019-2029): Preparing and managing for wildland fire events requires evidence-based decisions, policies, and practices, supported by strong science and technological innovation. Strong science can help make Canada more resilient in the face of new and changing wildland fires, from how we understand fire behaviour and manage our forests to how we build our homes and communities. The Blueprint is a 10-year strategic plan of action, focused on building national wildland fire science capacity.

Resilience defined:

The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform, and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management….a resilient society in today's world recognizes the pivotal transformative forces at play and develops strategies to address systemic challenges and transform them into opportunities.

- United Nations Forum on Sustainable Development

[3] Resources are listed to provide participants with a cross-section of information and background that might be of interest. They are not intended to be an endorsement or recommendation of approach.

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THE CANADIAN DIALOGUE ON WILDLAND FIRE AND FOREST RESILIENCE

Wildfire resilient communities and infrastructure

Severe wildland fire events are increasing in frequency, intensity, and costs, placing growing risks on communities, critical infrastructure, economies, and long-term forest health. The Canadian Council of Forest Ministers is convening this dialogue to enable a cross-country, whole-of-society conversation on wildland fire resilience. There will always be fire in our forests. The path forward lies in learning to live with it – identifying shared priorities and the tools we need to collectively prepare for, prevent, and mitigate its potentially catastrophic impacts.

Wildland fire can be a destructive force for people, communities, and the built environment we live and work in. Fire can destroy homes, businesses, areas of cultural significance, critical utilities and services, and roads and transportation corridors. The pollutants they release can irritate eyes and throats, cause headaches, trigger respiratory and cardiovascular illnesses and place increased strains on healthcare services. Wildfires can also create extreme psychological challenges as people struggle with evacuations and displacement, financial stressors or personal loss, uncertainty and lack of control, and even the visual post-event reminders of a fire's devastation. Canada's wildland urban interface (areas where the built environment meets or mixes with wildland vegetation) is growing. As it does, more communities, more infrastructure, and more people will be at risk. This roundtable will focus on identifying tools, relationships, processes, and priorities to create healthy, resilient communities and critical built infrastructure.

"Building resilient communities and infrastructure entails anticipating wildfire – not just considering the possibility of its occurrence, but counting on it – to influence how, where, what, and why structures are built. It also entails reducing risks, limiting losses, and building robust structures and recovery systems, which in turn will create safer communities and more secure physical infrastructure."

The Blueprint for Wildland Fire Science in Canada (2019-2029)

Wildland fire and safe communities

- There are more than 32 million hectares of wildland urban interface (WUI) in Canada. An additional 10.5 million hectares can be categorized as "industrial interface" and close to 110 million hectares as areas of "infrastructure interface."[1]
- 60% of all cities, towns, settlements, and reserves across Canada have a significant amount of WUI (more than 500 hectares of WUI within a 5 km radius) creating potential for interface fire issues.[2]
- Eighteen months after the Fort McMurray wildfire, students in Grades 7–12 were surveyed to determine possible long-term psychological impacts from the event. 46% met criteria for one or more probable diagnosis of PTSD, depression, anxiety, or alcohol/substance abuse.[3]
- An assessment of the health impacts and costs associated with wildfires found:
  - between 2013 and 2018, as many as 2,700 premature deaths and related health issues were attributable to wildfire smoke.

Resilient infrastructure is a key to reducing the impacts of disasters. Infrastructure that can perform during or shortly after a crisis can not only reduce impacts on people's lives and livelihoods but can be of substantial national economic and social benefit.

[1,2] Johnston, L.M.; Flannigan, M.D. (2018) Mapping Canadian wildland fire interface areas. International Journal of Wildland Fire 27:1-14.

[3] Brown Matthew R. G., et al., Significant PTSD and Other Mental Health Effects Present 18 Months After the Fort Mcmurray Wildfire: Findings From 3,070 Grades 7–12 Students. 2019. Frontiers in Psychiatry. v10, p623

- Economic valuation of population health impacts was estimated at $410 million to $1.8 billion for acute health impacts, and $4.3 billion to $19 billion for chronic health impacts, per year.[4]
- An international study found Canadians have the highest relative risk of respiratory mortality resulting from wildfire pollution.[5]

Questions to consider

1) What community and infrastructure values are at risk?
2) What needs to be done to make communities and infrastructure safer?
3) Are the necessary relationships in place? Who else needs to be at the table?
4) What are your greatest needs and priorities?
   - Do you have access to the information, tools, expertise and guidance you need?
   - If no, what do you need and what is the best way for you to access it?
5) What short-term or immediate outcomes can we aim for towards wildland fire resilience?

Resources[6]

- FireSmart™ Canada: The FireSmart program helps Canadians reduce wildfire risk and build resilient homes, neighbourhoods, and communities.
- National Guide for Wildland Urban Interface Fires: Published by the National Research Council of Canada, the guide seeks to reduce the wildfire threat on structures, specifically for new or expanding communities.
- Climate Resilient Infrastructure: Although not specific to wildland fire, this OECD document seeks to enable and support development of climate-resilient infrastructure
- Health Emergency and Disaster Risk Management Framework: published by the World Health Organization, the framework provides an overview of policy considerations and risk management concepts to build resilience of health systems.
- Financial Instruments for Resilient Infrastructure: This report from the Centre for Global Disaster Protection looks at monetising the 'resilience dividend' to provide strong incentives for resilient infrastructure construction.
- Urban fire storm: suburban sprawl raising risk of destructive wildfires: This article from The Guardian examines the growth of the WUI and increasing risks from wildfire.
- How risk management can prevent future wildfire disasters in the wildland-urban interface: This article assesses the conditions that lead to wildland fire disasters and provides a risk assessment framework to help reduce residential losses from fire.

[4] C.J. Matz, M. Egyed, G. Xi, J. Racine, R. Pavlovic, R. Rittmaster, S.B. Henderson, D.M. Stieb. Health impact analysis of PM2.5 from wildfire smoke in Canada (2013-2015, 2017-2018). Sci. Total Environ., 725 (2020), p. 138506

[5] Chen, G., *et al.* (2021) Mortality risk attributable to wildfire-related PM2·5 pollution: a global time series study in 749 locations. *The Lancet.*X doi.org/10.1016/S2542-5196(21)00200-X

[6] Resources are listed to provide participants with a cross-section of information and background that might be of interest. They are not intended to be an endorsement or recommendation of approach.

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THE CANADIAN DIALOGUE ON WILDLAND FIRE AND FOREST RESILIENCE

Indigenous Perspectives and Considerations for Wildland Fire Prevention and Mitigation

Severe wildland fire events are increasing in frequency, intensity, and costs, placing growing risks on communities, critical infrastructure, economies, health and safety, and long-term forest health. The Canadian Council of Forest Ministers (CCFM) is convening this dialogue to enable a cross-country, whole-of-society conversation on wildland fire resilience. There will always be fire in our forests. The path forward lies in learning to live with it – identifying shared priorities and the tools we need to collectively prepare for, prevent, and mitigate its potentially catastrophic impacts.

A note regarding ownership, control, access and possession of information: This roundtable seeks advice for CCFM ministers on wildfire prevention and mitigation and is not an Indigenous Knowledge gathering exercise. The event is being held in the public domain. Transcripts and summaries of the table will not be public, but they will be accessible by CCFM member agencies. They will be held by Natural Resources Canada. A 'What We Heard Report' containing information from all five roundtables of this Dialogue process will be made publicly available by the CCFM later this year.

Severe wildland fire events in Canada are increasing in frequency, intensity, and costs, placing increasing risk on communities and infrastructure; business, people's health, and the sustainability of forest. Indigenous Peoples are particularly vulnerable to these impacts. Sixty percent of First Nation reserves lie within or intersecting the wildland-urban interface (McGee et al. 2019). Much of this vulnerability is the result of colonial mechanisms (e.g., residential schools, criminalizing Indigenous fire practices) that have interrupted the transmission of Indigenous Knowledge and disrupted its use on the land. Several notable community reports and academic contributions have highlighted these vulnerabilities and issued calls for more proactive inclusion of Indigenous People. These calls extend to all aspects of fire management including firefighting where Indigenous firefighters have always played an important role.

This Dialogue event seeks to be a step forward, not just in ensuring Indigenous voices are heard but in ensuring Indigenous People and perspectives are included in future approaches to wildland fire management. There is a collective opportunity to show leadership, to identify shared priorities, to honour reconciliation and ensure alignment with *Bill C-15: An Act respecting the United Nations Declaration on the Rights of Indigenous Peoples*

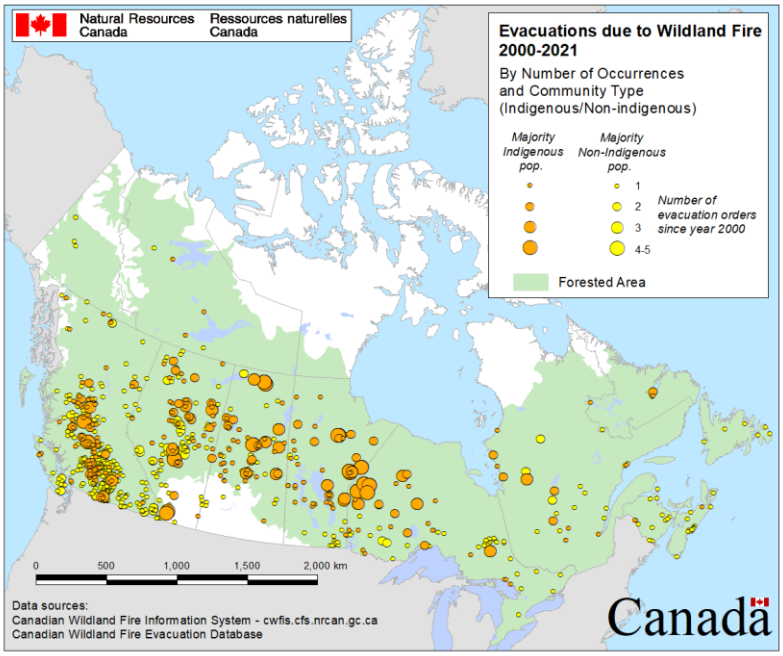
Indigenous Fire Stewardship (IFS):

" the use of fire by various Indigenous, Aboriginal, and tribal peoples to: (1) modify fire regimes, adapting and responding to climate and local environmental conditions to promote desired landscapes, habitats, species, and (2) to increase the abundance of favored resources to sustain knowledge systems, ceremonial, and subsistence practices, economies, and livelihoods. IFS is the intergenerational teachings of fire-related knowledge, beliefs, and practices among fire-dependent cultures regarding fire regimes, fire effects, and the role of cultural burning in fire-prone ecosystems and habitats" (Encyclopedia of Wildfires) and Wildland-Urban Interface (WUI) Fires)

(UNDRIP)[1], and ultimately to develop new collaborative approaches to wildland fire prevention and mitigation.

Wildfire & Indigenous Peoples in Canada

- Indigenous peoples in Canada have an important relationship with fire. For millennia, communities across the country have used fire for many purposes including managing landscapes, reducing community risks, enhancing food production and hunting conditions, and for spiritual purposes. Lightning-caused fire on a mosaic landscape is as important as stewarded fire.
- Landscapes impacted by wildfires support a number of species that Indigenous peoples depend on. These fires can help create and support habitat for woodland caribou, deer, bison, moose and other fur-bearing and game species.
- The revival and expansion of Indigenous fire knowledge and stewardship practices can play an important role in improving biodiversity and reducing wildfire risk to communities.
- Approximately 41% of wildfire evacuations between 2000-2021 were of communities with greater than 50% Indigenous populations, and about 40% of all wildfire evacuees in Canada were from Indigenous communities. In the last 20 years, certain Indigenous communities have been evacuated as many as five times from wildfire alone.



Questions for Consideration

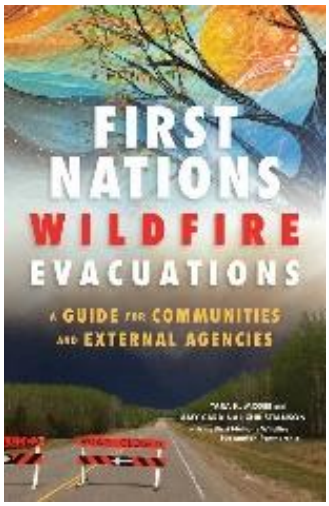
- What are Indigenous peoples currently doing to prevent and mitigate wildland fire risk to their communities?
  - How can you be better supported in these activities by governments and wildfire management agencies?
  - Is there an approach that could be applied across Canada?
- What messages does the Canadian Council of Forest Ministers need to hear about Indigenous Stewardship of Fire?
- What are the opportunities for Indigenous leadership in preventing and mitigating fire risk?

[1] FOOTNOTE: Article 31(1) of the United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP) states that Indigenous peoples have the right to maintain, control, protect, and develop their cultural heritage, traditional knowledge, and traditional cultural expressions, as well as the manifestations of their sciences, technologies, and cultures …. They also have the right to maintain, control, protect and develop their intellectual property over such cultural heritage, traditional knowledge, and traditional cultural expressions." (United Nations 2007)

  - What would you like to be able to do to reduce wildfire risk to your communities?
  - What is preventing you from doing that?
- What are the opportunities for partnership between Indigenous peoples and fire management agencies to reduce wildfire risk to Indigenous communities?
- What are some of the challenges/barriers to the use of Indigenous knowledge for wildfire prevention mitigation practices?

Resources[2]

- Preparedness and Emergency response: 2017, 2018 and 2021 wildfires broke records in British Columbia. Indigenous communities are documenting their experiences and lessons learned.
  - This report chronicles the lessons learned by the people of Nadleh Whut'en during the 2018 Shovel Lake wildfire. It captures the key events, challenges, and recommendations resulting from the wildfire event.
  - The Fires Awakened Us. Tsilhqot'in Report of the 2017 Hanceville Fire and the Plateau Wildfires.
  - Elephant Hill: Secwépemc leadership and lessons learned from the collective story of wildfire recovery.
- Indigenous experiences during evacuations: These resources examine evacuation experiences and share lessons learned to prepare for evacuations.
  - This evacuation guide is based on interviews with over two hundred wildfire evacuees from seven First Nations. By comparing the evacuees' experiences, both good and bad, it provides direction on how Indigenous communities and external agencies can best prepare for the different stages of an evacuation. Packed with real-life stories, checklists, and guiding questions, it gives an overview of what to expect and how to plan.
  - This academic theses addresses issues relating to risk, vulnerability, and resilience (specifically cultural resilience), with a particular focus on Elders and the elderly from Theassin'skowitiniwak (Rocky Cree) Community of Pelican Narrows, Saskatchewan.



- Indigenous Cultural Burning: These resources focus on Indigenous fire knowledge and application:
  - Indigenous Cultural Burning – Shackan Indian Band
  - Indigenous Cultural Burning – Xwisten (Bridge River) First Nations
  - Reviving cultural burning: First Nations Emergency Services Society
  - The art of fire: reviving the Indigenous craft of cultural burning

[2] Resources are listed to provide participants with information and background that might be of interest. They are not intended to be an endorsement or recommendation of approach.

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THE CANADIAN DIALOGUE ON WILDLAND FIRE AND FOREST RESILIENCE

Financial instruments to support wildland fire resilience

Severe wildland fire events are increasing in frequency, intensity, and costs, placing growing risks on communities, critical infrastructure, economies, health and safety, and long-term forest health. The Canadian Council of Forest Ministers is convening this dialogue to enable a cross-country, whole-of-society conversation on wildland fire resilience. There will always be fire in our forests. The path forward lies in learning to live with it – identifying shared priorities and the tools we need to collectively prepare for, prevent, and mitigate its potentially catastrophic impacts.

Wildland fire events have both direct and indirect costs and recovery can be costly. In addition to direct costs for suppression and response activities, there are costs associated with property loss and damages, business and industry disruptions, and recovering or rebuilding critical infrastructure and services. Financial and insurance providers also face risk, including pressures around risk assessment, event coverage, and economic loss. Appropriate financial instruments and supports can help drive resilience, incentivize behaviour change and risk-planning, and help reduce overall economic impacts of wildfire. This table will focus on identifying risks, vulnerabilities, and financial mechanisms that will encourage fire-resilient behaviours and reduce wildland fire risks.

The costs of wildland fire

- Prior to 2003, no single wildfire event in Canada caused more than $10 million in losses. Since then, a number of catastrophic events have occurred, causing billions of dollars in insured losses and uninsured damage:[1,2]
  - Kelowna, BC (2003) - $250 million in insurance payouts;
  - Slave Lake, AB (2011) - $600 million in insured losses;
  - Fort McMurray, AB (2016) - $3.8 billion in insured losses (total economic costs close to $7 billion);
  - Combined losses from 2017's Elephant Hill and Williams Lake, BC fires exceeded $100 million;
  - Lytton, BC (2021) – estimated $78 million in insured damage.

Urgent action is needed from governments, finance institutions, the private sector, and others to ensure finance flows for a climate-resilient future.
Global Centre on Adaptation

- Since the creation of Disaster Financial Assistance Arrangements (DFAA) in 1970, disasters have cost the federal government an estimated $8.7 billion. Wildland urban interface (WUI) fires represent the second costliest hazard to date under the DFAA – totaling roughly $1.2 billion across 20 events. Since 2010, wildland fires have accounted for 19% of total DFAA expenditures.

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[1] S. Taylor, B. Stennes, S. Wang et. al., "Integrating Canadian Wildland Fire Management Policy and Institutions: Sustaining Natural Resources, Communities and Ecosystems," 2006.

[2] Porter, K.A., Scawthorn, C.R., and Sandink, D. (2021). An Impact Analysis for the National Guide for Wildland-Urban Interface Fires. Prepared for the National Research Council of Canada. Institute for Catastrophic Loss Reduction, Toronto, ON, 136 p.

Questions to consider

1) What are the current risks for Canada's financial services sector relating to wildland fire?
2) What financial measures and incentives are needed in Canada to support wildland fire resilience?
3) What barriers exist to implementing those measures?
4) What incentives can be created to encourage investment in wildland fire prevention and mitigation?
5) What relationships are needed to build resilience? Do those relationships exist?
6) What short-term activities or immediate outcomes can we aim for?

Resources[2]

- Wildfire and Insurance: prepared for the Institute for Catastrophic Loss Reduction, this 2001 abstract examined trends in wildfire losses and provided an overview of the role of insurers in future wildfire management.
- Climate and Disaster Risk Financing Instruments: This UN document looks at the instruments that are available and could be considered as part of a climate and disaster risk finance strategy.
- Rethinking climate finance to improve infrastructure resilience: Set in the US context, this study explores natural disaster management policy, considers ways to manage vulnerability to wildfires, and examines public financing for wildfires and the role risk-transfer tools can play in enhancing the resilience of state budgets.
- Financial Instruments for Resilient Infrastructure: This report from the Centre for Global Disaster Protection looks at monetising the 'resilience dividend' to provide strong incentives for resilient infrastructure construction.
- Global Center on Adaptation: Climate Finance Program: The Center says there is a need "to shift the way investment decisions are made to account for climate risks," including mainstreaming climate adaptation and resilience across decision-making; scaling up climate adaptation and resilience finance; and creating innovative finance instruments.

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THE CANADIAN DIALOGUE ON WILDLAND FIRE AND FOREST RESILIENCE

Fire Management and Healthy Forests

Severe wildland fire events are increasing in frequency, intensity, and costs, placing growing risks on communities, critical infrastructure, economies, health and safety, and long-term forest health. The Canadian Council of Forest Ministers is convening this dialogue to enable a cross-country, whole-of-society conversation on wildland fire resilience. There will always be fire in our forests. The path forward lies in learning to live with it – identifying shared priorities and the tools we need to collectively prepare for, prevent, and mitigate its potentially catastrophic impacts.

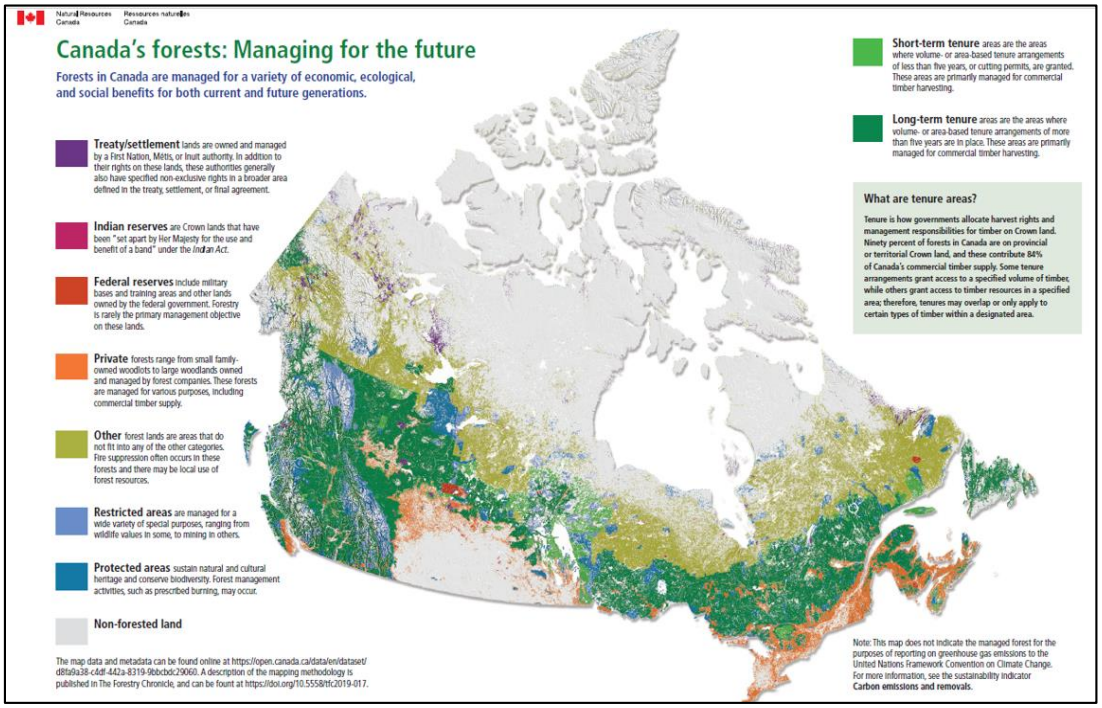
Wildland fires are a natural disturbance in many forests and can provide ecological benefits for forest health and maintenance. However, large, high-intensity fire events are becoming more frequent, threatening forest-based resources, forest composition, species habitat, carbon storage/GHG emissions, and cultural or other forest uses. Wildland fire is an important consideration in forest management – effective fire management supports sustainable forest health, while sustainably managed forests can reduce the risk of catastrophic wildland fire. Indigenous peoples have used fire for millennia, for land management, risk reduction, and maintaining forest resources. Forest managers can play a collaborative role in addressing wildland fire concerns, such as: planning in the wildland urban interface to reduce risks to communities; developing fire breaks in harvested areas or regenerated stands; and introducing incentives for fuel reduction activities in ways that support wildfire risk reduction. This table will focus on the intersection of fire and forest management, identifying collaborative opportunities, innovations, and approaches to use fire for forest health, sustainability, and resilience.

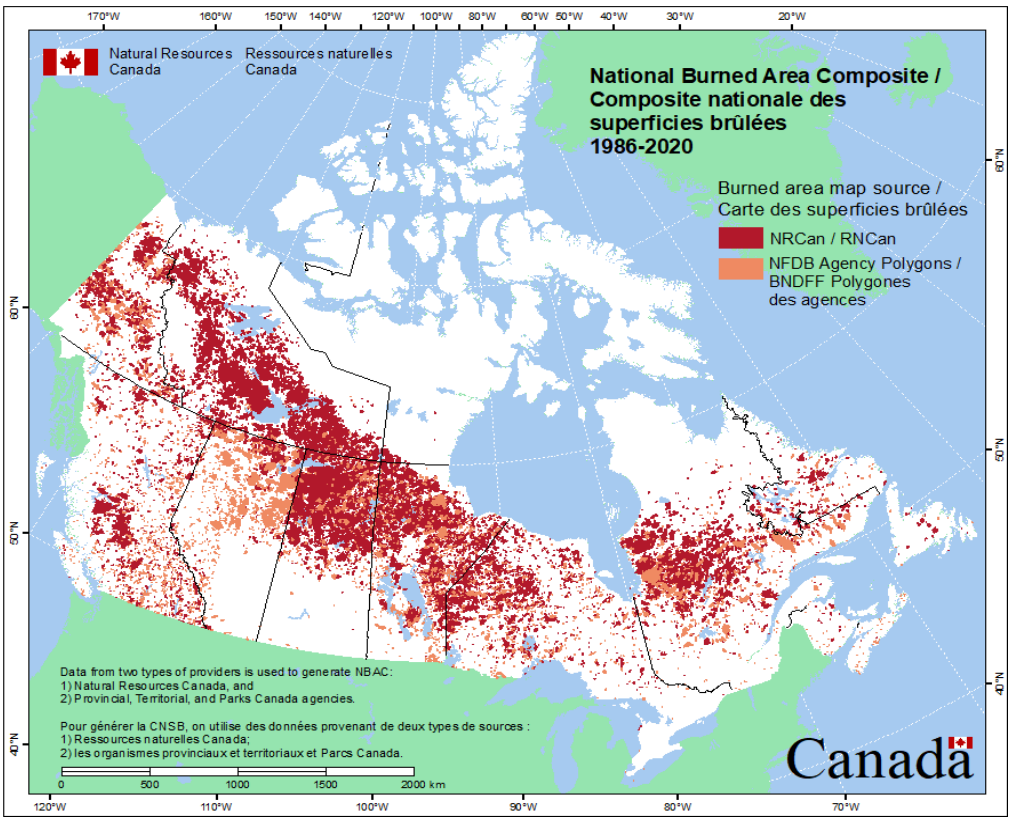
Wildland fire and forest management

- Canada's forests and forest sector are facing rapid and widespread change: extreme weather events and changing environmental conditions associated with climate change are increasing tree mortality, affecting wood fibre quality and supply, and leading to more frequent and severe wildfires.[1]
- Each year, forest disturbances (including wildfire) affect more than 18 million hectares of forests. By killing trees, these disturbances increase light penetration and disturb the soil to varying degrees. They also allow new trees to sprout, grow and start new periods of forest growth.
- Just as fire is an integral part of the forest, fire management is an integral part of forest management. Fire management is the process of planning, preventing and fighting fires to protect people, property and the forest resource. It also involves fire to attain forestry, wildlife and land-use objectives.

[1] The State of Canada's Forests: Annual Report 2020.

At a Glance: Comparing Canada's Managed Forests and Annual Area Burned Area





Questions to consider

1) What collaborative ways you can work with others to increase wildland fire resilience?
    a) Where do opportunities lie?
2) What challenges exist in integrating fire management and forest management policies and practices?
3) Do barriers exist to creating these collaborative relationships? If so, how can these barriers be reduced?
4) Are the necessary relationships in place?
    a) Who else needs to be at the table?
    b) Are the necessary resources in place? If not, what's needed?
5) What short-term activities or immediate outcomes can we aim for?
    a) What long-term changes and fixes are required?

Resources[2]

- Jasper/Canfor Fuel Reduction project: This video showcases the unique collaboration between Parks Canada, the Town of Jasper, and Canfor to reduce fire risk in Jasper National Park. For more information or to receive a full report on the Jasper/Canfor fuel-reduction project, contact:
    - Keri Stuart-Smith (Canfor): kari.stuart-smith@canfor.com or
    - Landon Shepard (Parks Canada): landon.shepherd@canada.ca.
- Fire in managed forests of eastern Canada: Risks and options: This paper looks at past, present and future trends in seasonal fire danger and activity in eastern Canadian boreal forests, and provides a critical assessment of the ability to conduct sustainable forest management over the 21st century.
- Is the END (emulation of natural disturbance) a new beginning? A critical analysis of the use of fire regimes as the basis of forest ecosystem management: This paper examines emulating natural fire regimes to achieve a more sustainable form of forest management.
- Indigenous Cultural Burning: These resources focus on Indigenous fire knowledge and application:
    - Indigenous Cultural Burning – Shackan Indian Band
    - Indigenous Cultural Burning – Xwisten (Bridge River) First Nations
    - Reviving cultural burning: First Nations Emergency Services Society
    - The art of fire: reviving the Indigenous craft of cultural burning
- Different strategies for resilience to wildfires: The experience of collective land ownership in northwest Spain: This article analyses fire resilient strategies (best practices, innovations, barriers) of a group of forest communities in northern Spain, finding that a key characteristic of resilient communities is the use of fire as a land management tool.

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