The Conference Board of Canada

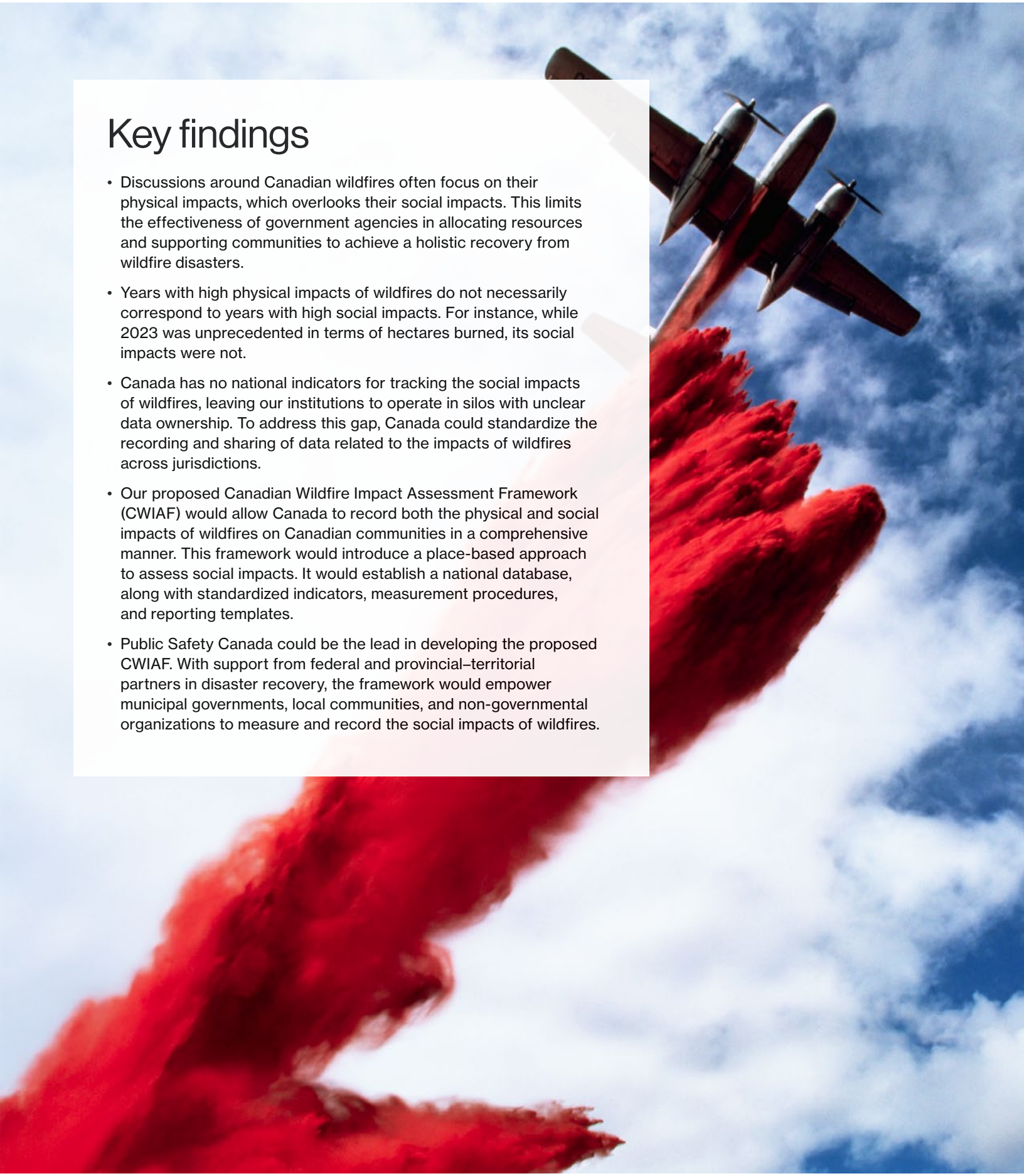
Canadian Red Cross

Canada's Wildfire Blind Spot

The Missing Data on Social Impacts

Impact paper | December 15, 2025

Contents



Key findings

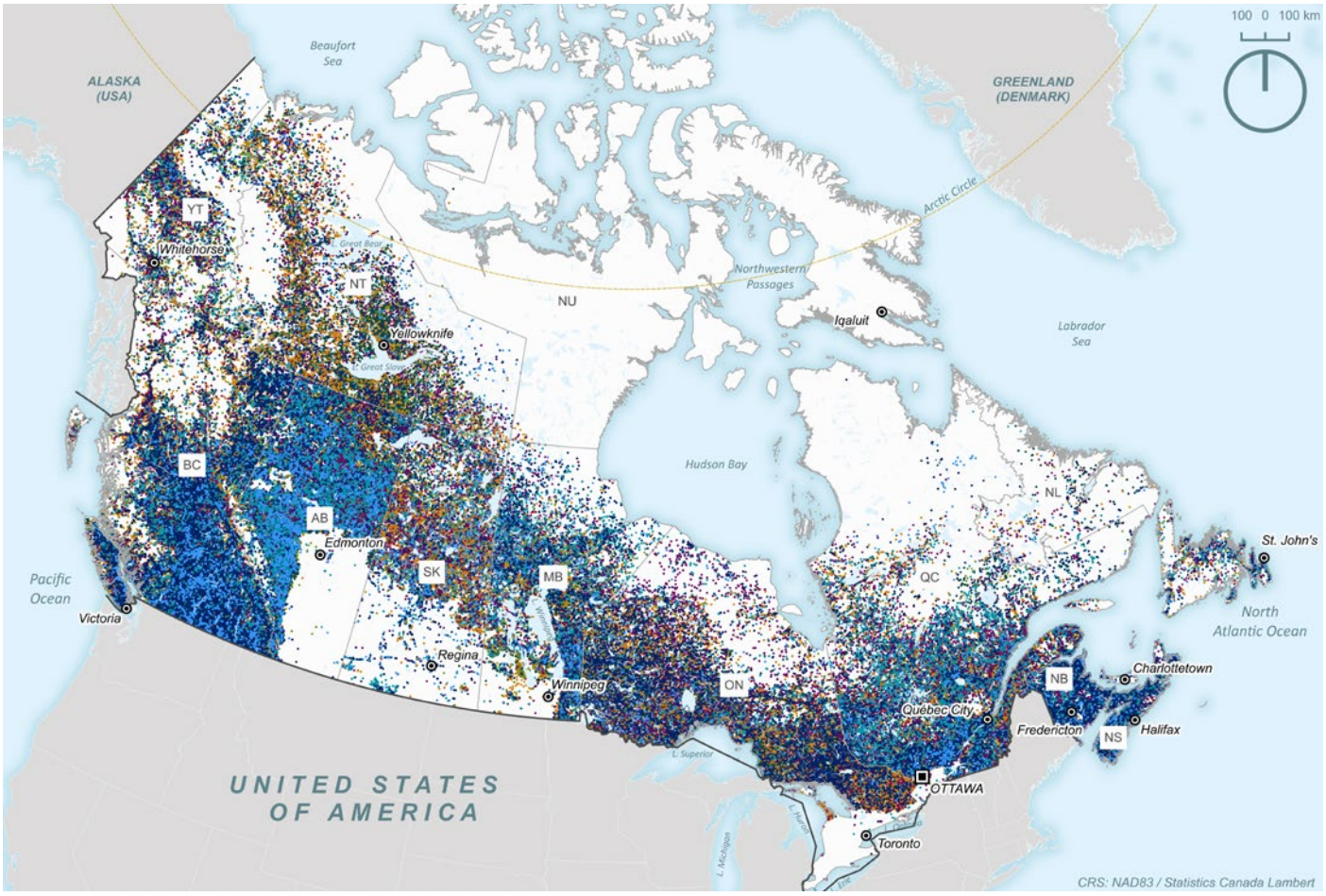
- Discussions around Canadian wildfires often focus on their physical impacts, which overlooks their social impacts. This limits the effectiveness of government agencies in allocating resources and supporting communities to achieve a holistic recovery from wildfire disasters.
- Years with high physical impacts of wildfires do not necessarily correspond to years with high social impacts. For instance, while 2023 was unprecedented in terms of hectares burned, its social impacts were not.
- Canada has no national indicators for tracking the social impacts of wildfires, leaving our institutions to operate in silos with unclear data ownership. To address this gap, Canada could standardize the recording and sharing of data related to the impacts of wildfires across jurisdictions.
- Our proposed Canadian Wildfire Impact Assessment Framework (CWIAF) would allow Canada to record both the physical and social impacts of wildfires on Canadian communities in a comprehensive manner. This framework would introduce a place-based approach to assess social impacts. It would establish a national database, along with standardized indicators, measurement procedures, and reporting templates.
- Public Safety Canada could be the lead in developing the proposed CWIAF. With support from federal and provincial–territorial partners in disaster recovery, the framework would empower municipal governments, local communities, and non-governmental organizations to measure and record the social impacts of wildfires.

Wildfire impacts: Measuring what matters

Canada is better at assessing wildfire risks than its impacts. Social impacts are under-reported. This limits the effectiveness of government agencies in allocating resources and supporting communities to achieve a holistic recovery from wildfire disasters. Addressing this gap is critical to equitable disaster recovery.

Natural Resources Canada defines wildland fires as any fire ignition—whether caused by natural forces like lightning or through human activity—that occurs in wildland areas and consumes natural vegetation and fuels.[1] Climate change is intensifying Canadian wildfires. Exhibit 1 depicts all historical wildfire incidents between 1930 and 2023.

Exhibit 1
Western, Eastern, and Atlantic Canada have had high exposure to wildfires in recent decades

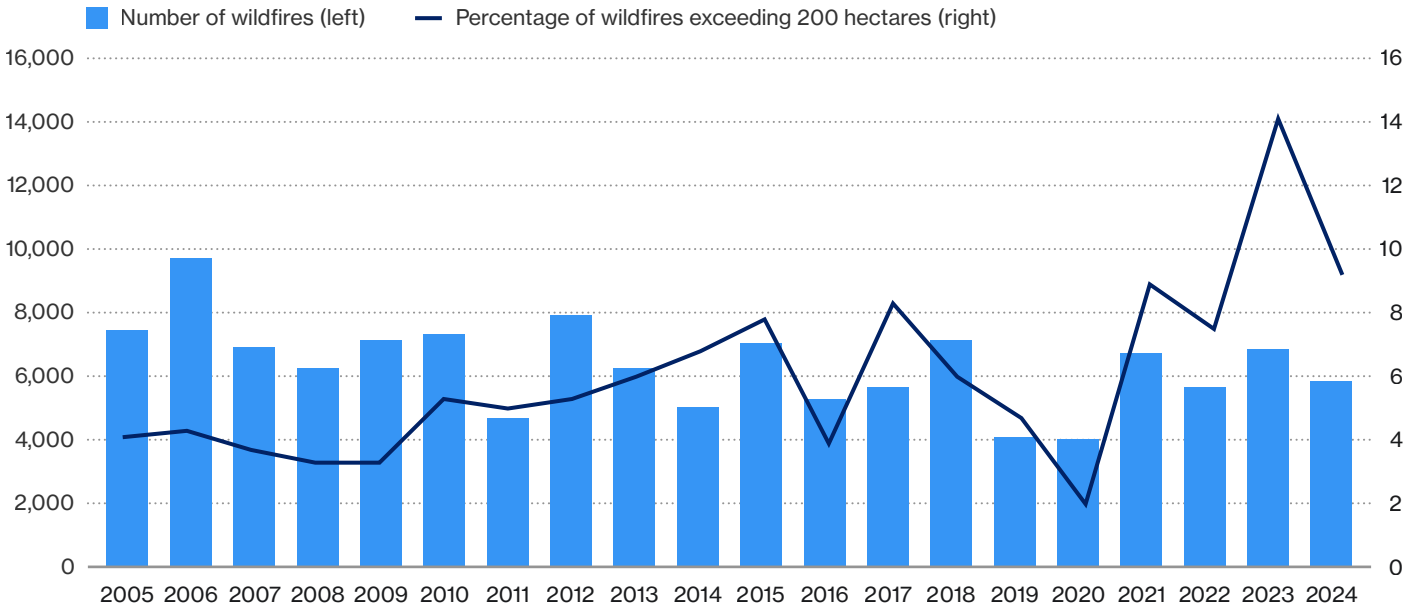


Notes: All recorded Canadian wildfires by location from 1930 to 2023.
Sources: Natural Resources Canada, "Canadian Wildland Fire Information System"; The Conference Board of Canada.

1 Natural Resources Canada, "Forest fires."

According to Canada's National Risk Profile, the area burned by wildfires each year has more than doubled since the 1970s and is projected to double again by 2100.[2] Between 2005 and 2024, the country experienced 5,000 to 8,000 wildfires annually. During this period, the years 2006 and 2023 are noteworthy: 2006 was an outlier at nearly 10,000 wildfires and Canada recorded the highest share of large wildfires[3] of any year in 2023. (See Chart 1.)

Chart 1
Highest percentage of wildfires that exceeded 200 hectares over the past 20 years was recorded in 2023



Sources: The Conference Board of Canada; Natural Resources Canada.

2 Public Safety Canada, *National Risk Profile.*

3 Natural Resources Canada considers a wildfire large when its final burned area exceeds 200 hectares. See Natural Resources Canada, "Fire regime."

Beyond physical impacts

In 2023, Canada recorded 6,843 wildfires, which burned more than 15 million hectares—an area greater than England.[4] More than 7,000 personnel were deployed to fight these wildfires—more than double the highest annual deployment between 1982 and 2022.[5] The wildfires also displaced 185,000 Canadians—the highest number recorded since data became available in 2008.[6] Both the United Nations Office for Disaster Risk Reduction and Natural Resources Canada described the 2023 wildfire season as "unprecedented."[7]

When wildfires occur, their impacts are usually discussed in terms of an important but limited set of physical and tangible indicators. Examples include the number of hectares burned, as well as the type and volume of resources deployed to manage fire damage and support community recovery.

While physical assessments of wildfire impacts provide valuable information, they leave out impacts of community evacuations, including the frequency and duration of evacuation orders, unmet social needs, and health impacts. Thus, the emphasis on physical assessments downplays the social impacts of wildfires on communities. (See "The dominance of physical impacts: Root causes.")

"Characterizing how severe a fire season is tends to be numbers of fires and area burned, and we know the numbers aren't a useful metric really. The broader reverberating effects across the larger system are a lot more complicated."
Research respondent

Missing social impacts

Wildfires can have profound social impacts. For instance, they can displace communities, cause homelessness,[8] disrupt livelihoods,[9] and affect local businesses.[10] School-age children may lose the opportunity to attend school regularly, impacting their learning and development. Communities may experience the weakening of social bonds due to dislocation.[11]

Wildfires strain public health systems due to smoke-related illnesses[12] and exacerbate mental health challenges from trauma and loss.[13] We highlight the intangible impacts of wildfires on mental health to understand what is missing from the current approach's emphasis on physical impacts.

4 Natural Resources Canada, "Canada's record-breaking wildfires in 2023."
5 Canadian Interagency Forest Fire Centre, *Canada Report: 2023 Fire Season.*
6 Internal Displacement Monitoring Centre, "Canada."
7 United Nations Office for Disaster Risk Reduction, "Canada wildfires, 2023."
8 Batko and McTarnaghan, "How the Los Angeles Fires."
9 Drolet and others, "Social, Economic and Health Effects."
10 Davis and others, "The Community Economic Impacts of Large Wildfires."
11 Kulig and Townshend, "Impacts of wildfires."
12 Health Canada, *Human Health Effects of Wildfire Smoke.*
13 To, Eboreime, and Agyapong, "The Impact of Wildfires on Mental Health."

Impacts unseen: Mental health

People who live through wildfires have increased incidences of mental health conditions such as anxiety, depression, and post-traumatic stress disorder (PTSD).[14] People living in areas exposed to large wildfires are more likely to use psychotropic medicines in the post-fire period compared to the pre-fire period.[15] Similarly, severe wildfires increase the prevalence of major depressive disorder.[16]

Apart from the impacts on ordinary residents, wildland firefighters also experience high levels of PTSD, suicidality, and other mental health disorders.[17] For example, a Canadian study following the 2016 Fort McMurray wildfire found high rates of PTSD, anxiety disorders, and depression in first responders.[18] Stress disorders like PTSD caused by repeated exposure to wildfire events can lead to other long-term health consequences, such as cardiovascular disease, digestive issues, and diminished cognitive functioning.[19]

Impact inequities

Communities bear the impacts of wildfires inequitably. Social markers such as age, poverty, disability, and Indigeneity can worsen the consequences of exposure,[20] and wildfires impose heavy costs on vulnerable individuals. They can also weaken cohesion within communities and erode trust in the government, especially during contested response and recovery processes.[21]

Research shows that recovery programs that consider the social impacts of wildfires are better designed and more responsive to socio-economic and demographic characteristics. Overall, post-disaster recovery programs that address social impacts are found to lead to more equitable outcomes.[22]

14 Belleville and others, "Psychological Symptoms Among Evacuees."
15 Wettstein and Vaidyanathan, "Psychotropic Medication Prescriptions."
16 Mao and others, "The Impact of Severe Wildfires on Mental Health."
17 Bonita, Halabicky, and Liu, "Exposure to Wildfires Exposures."
18 Cherry and others, "Prevalence of Mental Ill-Health."
19 Grennan and others, "Differences in interference processing."
20 Morgan and others, "Defining Disadvantaged Places."
21 Prior and Eriksen, "Wildfire preparedness, community cohesion."
22 Emrich and others, "Measuring social equity."

The dominance of physical impacts: Root causes

Why are the social impacts of wildfires less prominent than the physical impacts in discussions about wildfires? The physical impacts of Canadian wildfires are visible and easy to quantify, as there are agencies dedicated to measuring physical impacts such as land burned and allocation of firefighting resources. Emergency management organizations (EMOs) track the land burned, number of buildings lost, and firefighting resources allocated during a season.[23] In comparison, it is harder to measure mental health indicators, community cohesion, loss of cultural artefacts, and traditional ways of life in concrete terms. Canada lacks a rooted, place-based framework for measuring the social impacts of wildfires. (See the section on the Canadian Wildfire Impact Assessment Framework).

Many physical impacts of wildfires are immediate, while social impacts generally unfold over longer periods of time.[24] In the immediate aftermath of a wildfire, policy developments are often driven by the estimated economic costs of rebuilding physical infrastructure, while policies addressing social impacts typically emerge more slowly. Furthermore, most wildfires in Canada occur far from major urban centres and disproportionately affect the country's most vulnerable populations.[25] As a result, these events can fail to capture the broader public's imagination.

23 Natural Resources Canada, "Forest fires"; Public Safety Canada, "The Canadian Disaster Database"; Canadian Interagency Forest Fire Centre, Canada Report; and Canadian Council of Forest Ministers, "National Forestry Database."

24 To, Eboreime, and Agyapong, "The Impact of Wildfires on Mental Health."

25 Internal Displacement Monitoring Centre, "Canada – Record wildfires"; and Public Health Agency of Canada, *Rapid Review.*

Assessing vulnerability

Developing indicators for measuring social impacts of wildfires is challenging. Social vulnerability indices (SoVIs) can help. SoVIs combine social, economic, and demographic variables to calculate a community vulnerability score.[26] They also generate numerical scores ranging from low to high on the vulnerability scale. These scores enable decision-makers to compare relative vulnerability across communities.

SoVIs have been widely applied in areas such as hazard assessment,[27] community planning,[28] public health,[29] and climate adaptation,[30] with documented use in communities across the world. For example, researchers at the University of Waterloo (UoW) combined a SoVI with flood exposure maps to visualize flood risk in six Canadian communities as part of its work on inclusive resilience.[31]

We built a Community Vulnerability Index (CVI) to identify Canadian communities with high socio-economic vulnerability. (See Exhibit 2.) Based on a review of community resilience literature, we used 2021 census data at the dissemination area[32] level on income, immigration, language skills, unemployment, age, and housing as attributes informing this index.[33] (Refer to the methodology section for more details.)

26 Cutter, "The origin and diffusion."

27 Tate and others, "Profiles of social vulnerability."

28 Chakraborty and others, "Leveraging Hazard, Exposure, and Social Vulnerability Data."

29 Haggerty, Minotti, and Bouharaoui, "Development of an individual index."

30 Neumann and others, "Towards urban climate justice."

31 Partners for Action, *Inclusive Resilience.*

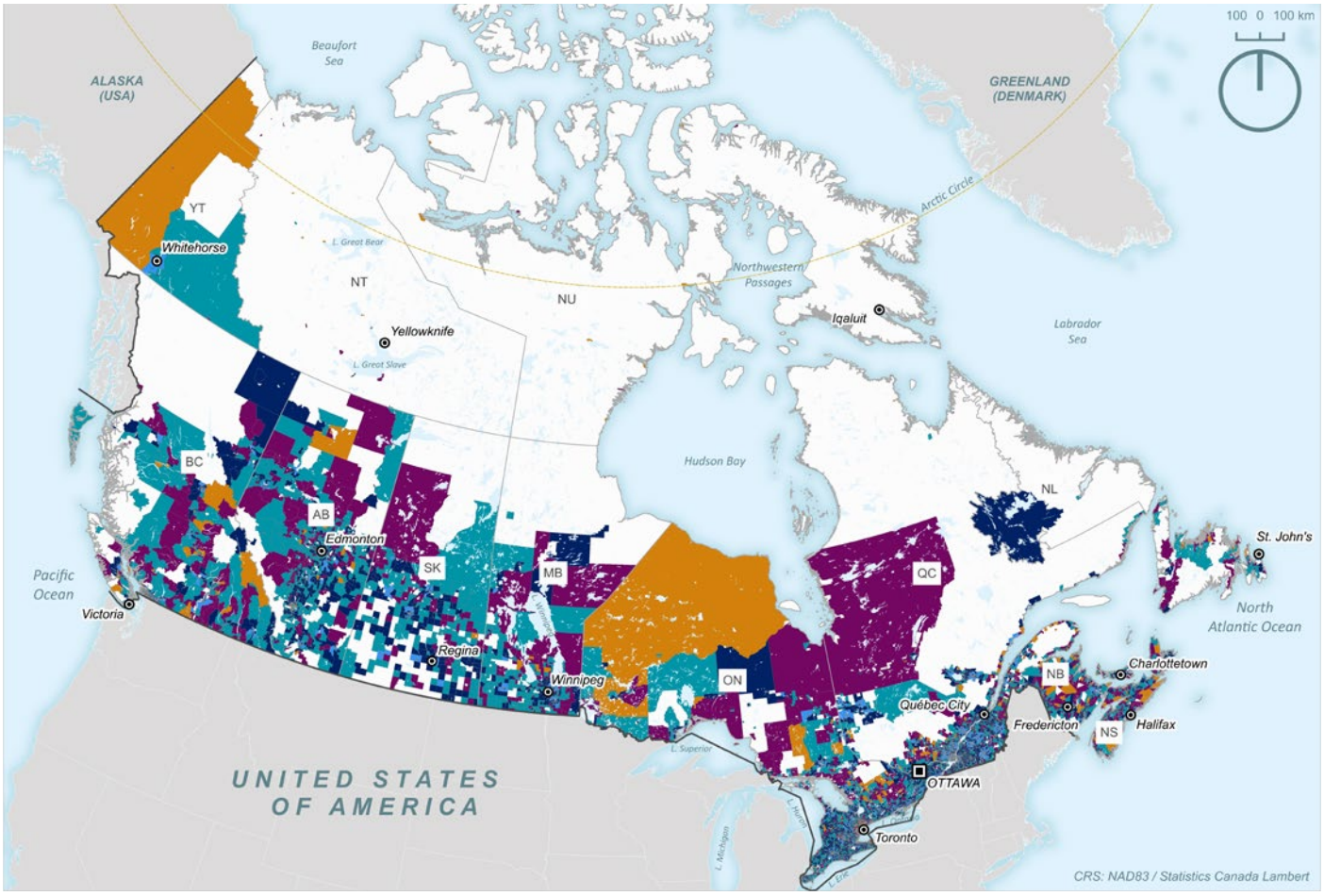
32 Dissemination areas are the smallest standard geographic unit in Canada, each typically containing an average of 400 to 700 people. There are 57,932 dissemination areas across the country. See Statistics Canada, "Dissemination area."

33 Statistics Canada, "Data."

Our CVI closely aligns with the approach taken for the Canadian Index of Social Vulnerability (CISV), developed by the Canadian Centre for Justice and Community Safety Statistics at Statistics Canada, in the selection of census data for indicators on education, employment, income, housing, age, and migration.[34]

A point of distinction from both the UoW's SoVI and Statistics Canada's CISV is that we also integrated the distance to the nearest urban centre with a population over 10,000 – a factor that reflects the capacity of host communities to receive people displaced by wildfires.[35]

Exhibit 2
Communities with higher scores on the Community Vulnerability Index are distributed across Canada



Note: Based on The Conference Board of Canada's Community Vulnerability Index, 2021.
Sources: Statistics Canada; The Conference Board of Canada.

34 Statistics Canada, "The Canadian Index of Social Resilience."

35 See Institute for Catastrophic Loss Reduction, *Fort McMurray Wildfire*, for a discussion on how cities play a major role in accommodating evacuees fleeing disasters from neighbouring communities.

A higher CVI score indicates a higher level of socio-economic vulnerability. We found that 29 per cent of the Canadian population had high to very high socio-economic vulnerability. (See Table 1.) In a disaster, these communities are likely to experience more severe social impacts than others. Prioritizing these communities for disaster mitigation[36] and post-disaster recovery can help Canada achieve equitable recovery.

Table 1
Nearly one-third of Canadians experience high to very high socio-economic vulnerability

Scores	Percentage of land area	Percentage of population
Insufficient data	59.3	3.0
0.00 to 1 (very low vulnerability)	0.8	10.9
1.01 to 2 (low vulnerability)	6.1	24.9
2.01 to 3 (medium vulnerability)	13.0	32.6
3.01 to 4 (high vulnerability)	12.9	22.1
4.01 to 5 (very high vulnerability)	7.9	6.5
Total	**100.0**	**100.0**

Note: Statistics Canada is legally required under the Statistics Act to protect individual and household information. Geographically specific data in sparsely populated areas such as rural census subdivisions, unorganized territories, or small First Nations reserves may be suppressed to preserve their anonymity. Thus, the Community Vulnerability Index proposed here does not account for 59.3 per cent of Canada's landmass, home to 3 per cent of the population.
Sources: The Conference Board of Canada; Statistics Canada.

36 We did not consider the likelihood of exposure to disaster events in our analysis for this report.

A deep disconnect

The CVI shows that years with high physical impacts of wildfires do not necessarily correspond to years with high social impacts. For instance, while 2023 was unprecedented in terms of hectares burned, its social impact was not. More Canadians facing socio-economic vulnerability were exposed to wildfires in 2020 and 2022, compared to 2023, despite the overall number of wildfires being higher in 2023. (See Chart 2.)

This divergence highlights the need for impact measurement that tracks the disproportionate burdens on vulnerable groups and goes beyond aggregate fire statistics. Disaggregated analysis is essential for informing targeted support and resource allocation, thus ensuring that recovery efforts reach those most acutely affected, even when the overall disaster footprint is modest. Bridging this "disconnect" with social impact assessments is crucial for an equitable disaster response and long-term resilience across Canada.

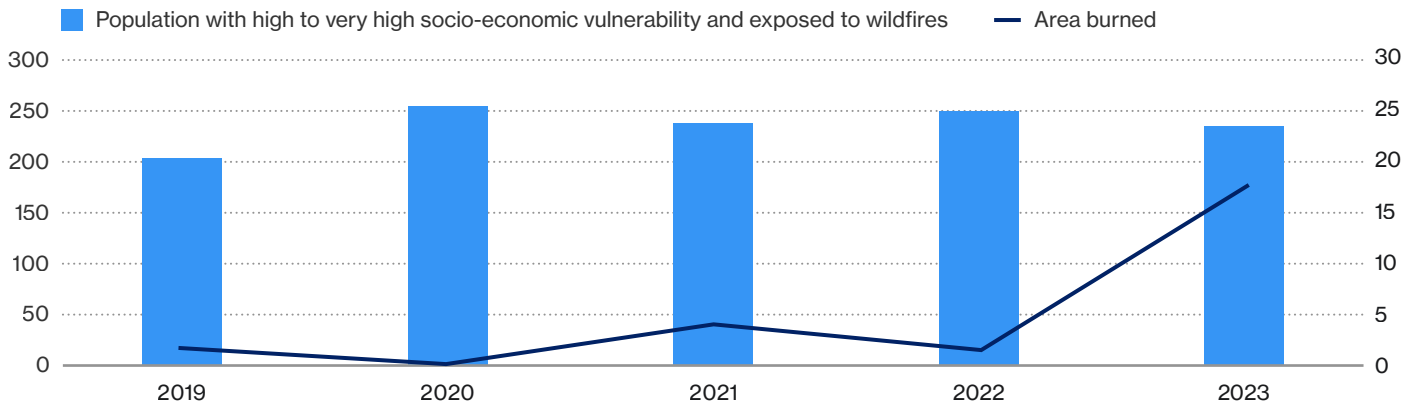
Rather than comparing fire seasons solely by hectares burned, Canada could gain a more comprehensive picture by also incorporating social impacts into the discussion on wildfire impacts.

We believe this approach could enhance our understanding of the impacts (physical and social) of wildfires and improve recovery strategies. What challenges are preventing Canadian agencies from integrating social impacts into wildfire impact assessments?

Chart 2

A larger population with high to very high socio-economic vulnerability was exposed to wildfires in 2020 and 2022, compared to 2023

(population, thousands; area burned, millions of hectares)



Note: Based on the Community Vulnerability Index, 2021.
Sources: Natural Resources Canada; The Conference Board of Canada.

A fragmented data landscape

Publicly available wildfire impact data in Canada has four major categories: basic information about community impacts; information about the spatial extent of wildfire impacts; economic costs of wildfire events; and information about the use of suppression resources. Below, we discuss the wildfire impact databases available in Canada.

Canadian Wildland Fire Information System

The Canadian Wildland Fire Information System (CWFIS), operated by Natural Resources Canada, integrates weather information, satellite imagery, and modelling to provide information on wildfire risks, current behaviour, and future forecasts.[37] This information plays a key role in supporting monitoring and suppression activities across the country.

Additionally, the CWFIS also features historical analysis of wildfire events, including burned areas and wildfire perimeters dating back to 1972. While it includes some data on physical impacts, it does not provide any information on the social impacts of wildfires.

Canadian Disaster Database

The Canadian Disaster Database (CDD), hosted by Public Safety Canada, collects basic information about major[38] historical Canadian disaster events, including natural disasters. The CDD allows users to search by disaster type and includes 113 wildfire events dating from 1903. The database presents important data points, including the place, the number of deaths, injuries and evacuees, start dates for the disaster event, and estimated total cost.[39]

While the CDD is an important source of historical impact data, it has noteworthy limitations. For example, it draws from non-standardized sources, which limits consistency and comparability. Therefore, the CDD is of limited use for creating meaningful comparisons over time. As well, information in the database is incomplete and only periodically updated.[40] For example, wildfire-related data is current only until 2020.

National Forestry Database

The National Forestry Database (NFD), maintained by the Canadian Forest Service, is a unique data resource that is not available for other types of disasters beyond wildfires.[41] The database is built on a partnership between the federal government and each of the provincial–territorial forest ministries.

Key wildfire data hosted by the NFD includes monthly and annual tallies of fires and their cause, information on the number of hectares burned, and data on wildfire-related property loss. However, the data is not uniformly available across time. Some data such as number of wildfire events and area burned is available from 1990 through 2023; other data such as the value of property losses is only available through 2020.

37 Natural Resources Canada, "Canadian Wildland Fire Information System."

38 Currently, the Canadian Disaster Database tracks events that meet the following thresholds. 10 or more people killed; 100 or more people affected, injured, infected, evacuated, or homeless; an appeal for national/international assistance; historical significance; and significant damage and interruption of normal processes such that the community affected cannot recover on its own.

39 Public Safety Canada, "The Canadian Disaster Database."

40 Council of Canadian Academies, The, *Building a Resilient Canada.*

41 Canadian Council of Forest Ministers, "National Forestry Database."

Canadian Interagency Forest Fire Centre

The Canadian Interagency Forest Fire Centre (CIFFC) is a not-for-profit corporation that is collectively owned and operated by federal, provincial, and territorial fire management agencies. Its mandate is to coordinate and share resources and information, mainly related to suppression operations.

CIFFC publishes annual data[42] on the use of suppression resources, including the number of aircraft and personnel mobilized. This data is highly standardized through interagency agreements and thus provides important indirect insight into the scale of a fire season and the resources required to manage it. CIFFC also publishes annual reports that include jurisdictional descriptions of a fire season. The reports provide valuable contextual information on fire impacts.[43]

Insured loss reports

Insured loss reports, like the Insurance Bureau of Canada's annual Facts Book,[44] provide valuable high-level figures on property loss and insurance claims.[45] However, these reports do not account for the share of uninsured property loss, and tend to underestimate impacts, especially for low-income households. In addition, fine-grain detail from insurance companies and financial institutions is typically not available to the public or is expensive to access.

In context: Wildfire impact data

Table 2 compares the five major Canadian sources of wildfire impact data (Canadian Wildland Fire Information System, Canadian Disaster Database, National Forestry Database, CIFFC reports, and insured loss reports). We focus on their scope and ability to track both physical and social impacts. The CDD is somewhat better at capturing the social impacts of wildfires. First, it records fatalities, injuries, and evacuations, although it lacks consistency and uniformity, while other databases do not capture this data. Second, its focus is on disaster events, while other databases focus on forestry, operational costs, and insured losses. Any effort to create a central repository for impact data could use the CDD as a starting point.

Other efforts

Apart from these databases, municipalities and non-governmental organizations capture some social impact and recovery needs. For example, the Municipality of Jasper is currently capturing social impact and recovery needs data following the 2024 wildfires. However, these efforts are not always guided by provincial policies or supported by programs that measure and address community needs.

42 Data from 2016 onward is publicly available.
43 Canadian Interagency Forest Fire Centre, Canada Report.
44 Insurance Bureau of Canada, *2023 Facts.*
45 Insurance Board of Canada, "Severe Weather in 2023."

Institutional silos and lack of ownership of social impacts

Our engagements with key actors in disaster recovery highlighted two critical issues: the difficulty of inter-jurisdictional coordination and the lack of clear ownership over impact data.[46]

Several Canadian agencies across provincial–territorial boundaries are concurrently involved in measuring impacts. These agencies usually stick to their limited mandate. Most of the datapoints they collect concern the physical impacts of wildfires and ignore the social impacts (Table 2). No one agency is solely responsible for tracking social impacts, and there is a lack of common modalities for collecting, recording, and standardizing impact data across emergency management and recovery agencies.

An important exception is the Canadian Interagency Forest Fire Centre, whose main mandate is to coordinate suppression resources. To facilitate resource mapping and distribution, CIFFC, through its federal and provincial–territorial members, has developed a set of common metrics, which it can use to make direct comparisons between jurisdictions and fire seasons. Because CIFFC has developed a sophisticated architecture for collaborating with members and for sharing data, it could, with an expanded mandate, support the development of standardized impact measures.

"Having localized data and case studies but also having a central repository where that could feed into a library makes a lot of sense because I can connect it to action that could be taken rather than just a number that you estimate."

Research respondent

Table 2
Canadian Disaster Database is relatively better at capturing the social impacts of wildfires

Criteria	Canadian Wildland Fire Information System	Canadian Disaster Database	National Forestry Database	CIFFC reports	Insured loss reports
Agency responsible for maintaining database	Natural Resources Canada	Public Safety Canada	Canadian Forest Service, Natural Resources Canada	Canadian Interagency Forest Fire Centre	Insurance Bureau of Canada
Focus of the database	Information on wildfire risks, current fire behaviour, and forecasts	Disasters of all types and their impacts	Statistics related to wildfire impact on forestry	Statistics on wildland fire management operations	Property loss and insurance claims data for all disasters
Scope of data	Historical and current data and wildfire behaviour forecasts	High-impact disaster events, fatalities, injuries, evacuations, and costs	Number and areas of wildfires by month	Seasonal summary of resources allocated to wildfire management	Catastrophic loss associated with disaster events
Physical impacts	Burned areas and wildfire perimeters	Physical description of disaster events	Area burned by wildfires	Location, size, and stage of control of wildfires	Not available
Social impacts	Not available	Fatalities, injuries, and evacuations	Not available	Not available	Not available
Economic impacts	Not available	Estimated costs for major events	Value of property loss	Not available	Insured losses for major disaster events
Timeframe	1972 onwards	1900 onwards	1990 onwards	2016 onwards	1972 onwards

Sources The Conference Board of Canada; Natural Resources Canada, "Canadian Wildland Fire Information System."; Public Safety Canada, "The Canadian Disaster Database"; Canadian Council of Forest Ministers; Canadian Interagency Forest Fire Centre; Insurance Bureau of Canada, *2023 Facts of the Property and Casualty Insurance Industry in Canada.*

46 Appendix A provides more details on our stakeholder engagement process.

Australia's data-driven approach to measuring the impact of wildfires

Australia's approach to measuring wildfire impacts offers several best practices that can be replicated. It employs a robust methodology, which utilizes technology, data collection, and structured frameworks to capture the social, economic, and environmental impacts of wildfires. Along with a combination of financial incentives, legislative requirements, shared responsibilities, and standardized frameworks, Australia is able to encourage and ensure compliance with wildfire impact data collection by local authorities and states.

Federal level

The major government agencies involved in measuring impacts at the federal level include Australian Climate Services, the Commonwealth Scientific and Industrial Research Organisation, Geoscience Australia, and the Emergency Management Spatial Information Network. Their collaboration resulted in the Digital Atlas of Australia, which provides the locations and extents of historical bushfires[47] dating from the late 1800s to 2024.[48]

Also, the Australian Government's Department of Agriculture, Fisheries and Forestry provides nationally consistent data on burned areas from fires, including for the periods 2011–2016 and 2016–2021, as part of its State of the Forests Report, which is released every five years.[49] Finally, the Department of Climate Change, Energy, the Environment and Water developed the National Indicative Aggregated Fire Extent Dataset to quantify the specific impacts of the landmark 2019–2020 bushfire season.[50] These include impacts on wildlife, plants, and ecological communities.

Australia's emergency management efforts are coordinated by the National Emergency Management Agency (NEMA). The agency is responsible for the Australian national disaster response plan, COMDISPLAN.[51] This all-hazards plan identifies the capabilities of Australian government agencies in addressing hazard-related crises. Additionally, it allocates roles and responsibilities and outlines the financial arrangements that fund recovery activities. NEMA also provides federal-level guidance for impact assessment.[52] It delegates the collection of social impact data to state emergency management departments.

State–territorial level

Australia's state and territorial governments are responsible for both emergency management and measuring wildfire impacts within their jurisdictions. They develop detailed frameworks and processes to collect, analyze, and report these impacts.

For example, the State of Victoria publishes an emergency management plan,[53] which outlines the roles and responsibilities of agencies in planning, information-sharing, impact management, recovery, and building long-term community resilience. The plan includes detailed guidelines for measuring impacts—including social impacts—as well as for collecting and sharing data. It also identifies agencies and their activities for assessing long-term psychosocial needs.

47 In Australia, a "bushfire" means any unplanned vegetation fire, whether it is in grasslands, woodlands, heathlands, or forests. It can be used interchangeably with wildfires.

48 Digital Atlas of Australia, "Bushfire Historical Extents."

49 Montreal Process Implementation Group for Australia and National Forest Inventory Steering Committee, *Australia's State of the Forests Report 2018 and Australia's State of the Forests Report Synthesis 2023.*

50 Department of Climate Change, Energy, the Environment and Water, "National Indicative Aggregated Fire Extent Dataset."

51 National Emergency Management Agency, *COMDISPLAN.*

52 National Emergency Management Agency, *National Disaster Recovery Needs.*

53 Emergency Management Victoria, "State Emergency Management Plan."

Local level

Councils at the local level collect most of the impact data. The data is then aggregated to the state level, where it informs state-level assessments of disaster impacts. For example, Emergency Management Victoria provides a framework that guides municipal councils in collecting social, economic, built environment, and natural environment-related impacts.[54] The data is collected through on-the-ground surveys and community engagement.

The surveys help uncover property losses, displacement, housing needs, employment needs, and impacts on businesses. Local councils also use community outreach to assess psychosocial needs, especially among vulnerable community members. The councils also collect data on environmental impacts, such as effects on parks, water bodies, and vegetation.

A wildfire impact assessment framework for Canada

Canada would benefit from a framework consisting of standardized national indicators and place-based assessments.[55] A Canadian Wildfire Impact Assessment Framework (CWIAF) would:

- adopt standardized national data to surface trends over time and facilitate comparisons across the country;
- employ place-based assessments that would include social impact measures as reported by affected communities.

Implementing our proposed CWIAF involves four major steps. (See Exhibit 3.)

The first step would be to build a national database of disaster impacts, which extend across physical and social realms. The new framework would integrate data from the Canadian Disaster Database, National Forestry Database, Canadian Interagency Forest Fire Centre, and other agencies that currently manage wildfire impacts data.

Exhibit 3
Proposed Canadian Wildfire Impact Assessment Framework in four steps

Source: The Conference Board of Canada.

54 Emergency Management Victoria, *Secondary Impact Assessment Framework.*

55 By "place-based" assessment, we mean the collecting and reporting of social impacts tied to a specific geographic location, such as a community, region, or municipality, rather than generalized or national-level data.

Second, standardized indicators would be defined for social impact data across key domains: health and well-being, education, employment, and cultural factors. The CWIAF would identify Canadian agencies and outline their roles in recording impacts, such as creating standard operating procedures and reporting templates that they will use across jurisdictions.

Third, responsibilities would be established for agencies to share and review impacts data. With this third step, the CWIAF would provide a pathway towards assigning ownership for tracking wildfire impacts.

Fourth, agencies would collect and integrate impacts data into the national database of disaster impacts.

Place-based social impacts assessment

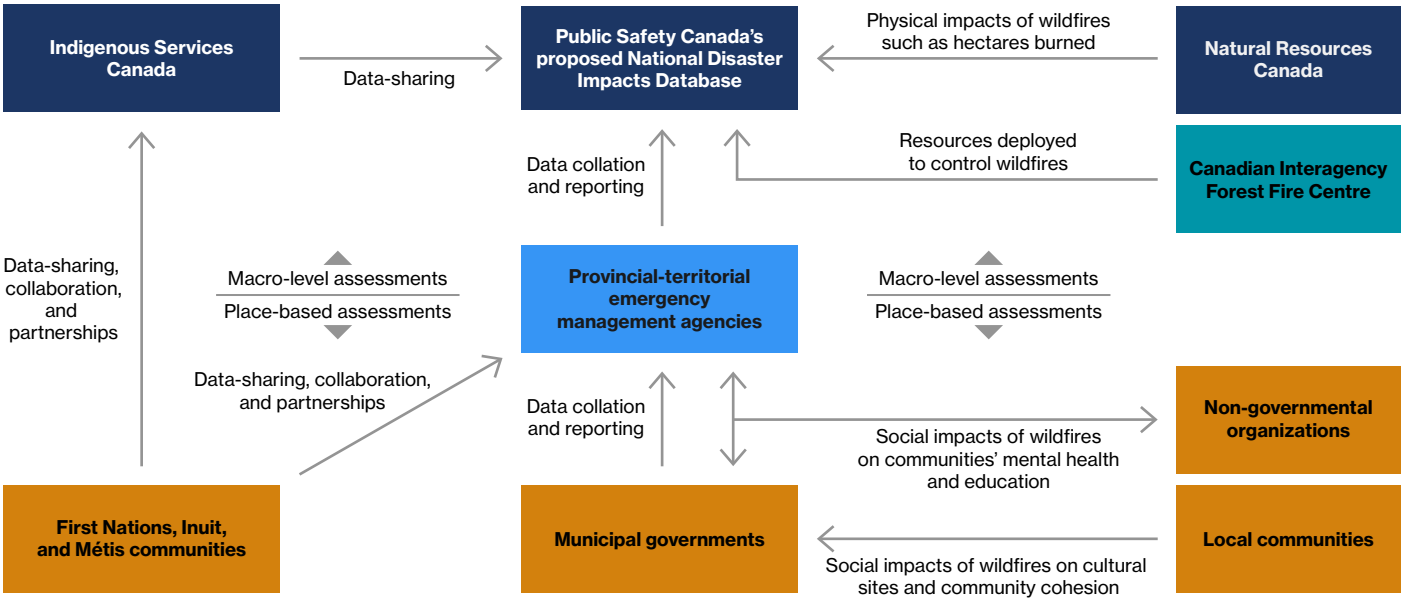
The proposed framework would differentiate between the reporting of physical and social wildfire impacts. Federal agencies such as Natural Resources Canada and interprovincial agencies such as the Canadian Interagency Forest Fire Centre (CIFFC) could continue to report the extent of forestlands burned. (See Exhibit 4.)

Learning from the Australian example, we recommend that municipalities track the social impacts of wildfires. Local communities have intimate knowledge of their context, which would lead to more accurate, nuanced, and equitable recovery efforts.

Municipalities could leverage their direct connection with communities and non-governmental organizations and are also well suited to capture socio-economic vulnerabilities that may be overlooked by higher-level agencies. Ensuring effective and consistent tracking of this information would require municipalities to take on added responsibilities. This would necessitate increased financial outlays and additional support from provincial–territorial and federal governments. The proposed CWIAF would include additional incentives for agencies to undertake the extra work of collecting data on the social impacts of wildfires.

The data collected by communities and local non-governmental organizations would flow up through municipal governments, to provincial–territorial governments and finally to the national disaster database.

Exhibit 4
Proposed Canadian Wildfire Impact Assessment Framework will collate wildfire impacts data from Canadian agencies involved in disaster recovery



Source: The Conference Board of Canada.

Similarly, First Nations could report the social impacts of wildfires to Indigenous Services Canada, while Inuit and Métis communities could report them to their respective provincial–territorial emergency management agencies.

Collecting data to measure social impact should be followed by using that data to inform programming and develop policy. Social impact data could be used by policy-makers to both plan and prioritize the allocation of resources to recovery efforts.

By integrating Canada's existing capacity to report large-scale physical wildfire impacts with detailed, place-based social impact reporting, communities are more likely to see better recovery outcomes.

Implementing the CWIAF

Leverage Public Safety Canada's leadership

Public Safety Canada is best placed to lead the planning and implementation of the Canadian Wildfire Impact Assessment Framework (CWIAF). It already curates the Canadian Disaster Database; however, it only records physical impacts of wildfires, albeit inconsistently.

As the proposed CWIAF involves recording social impacts in addition to physical impacts, continuing with the Canadian Disaster Database in its present form may cause issues around comparability and continuity. Therefore, we propose establishing a National Disaster Impacts Database (NDID) that would integrate the comprehensive impacts of disasters, including wildfires.

As the federal agency in charge of emergency preparedness and management, Public Safety Canada has experience in steering large-scale coordination efforts. It could also leverage its existing relationships with federal and provincial–territorial stakeholders involved in recently modernizing the Disaster Financial Assistance Arrangements (DFAA) program. Public Safety Canada may consult with these stakeholders to develop standardized indicators and interjurisdictional arrangements for measuring and sharing impacts data.

Standardize wildfire impact indicators

Provincial–territorial emergency management agencies could collaborate with sector experts, municipal governments, local communities, and non-governmental organizations to define place-based indicators for wildfires, with a focus on social impacts. Together, they could also develop measurement tools and reporting templates for impacts data. The federal government could compensate these groups for the time and resources required to take on this additional task. Indigenous communities must be engaged in a way that acknowledges their unique status and needs.

Municipalities and affected communities often lack the human capital and financial resources to assess wildfire impacts effectively. Provincial–territorial emergency management agencies could help bridge this gap. Public Safety Canada could also use its leadership to ensure that indicators are robust and compatible with the proposed NDID and across jurisdictions.

Broaden the discourse on wildfire impacts

Finally, federal agencies such as Natural Resources Canada could partner with provincial–territorial emergency management agencies to broaden the discourse on wildfire impacts. Using impact data from the NDID, these agencies could release short, regular, and accessible publications with analyses of the physical and social impacts of wildfire seasons. These efforts could contribute towards reshaping the public and policy discourse on how we assess wildfire impacts in Canada.

Appendix A

Methodology

We used a three-step approach to understand how to better account for the social impacts of wildfires: environmental scan, stakeholder engagement, and a Community Vulnerability Index. The environmental scan provided an overview of the wildfire impacts landscape, while stakeholder engagement helped us capture the perspectives of key actors involved in wildfire response and recovery. Finally, the index helped us measure the relative social vulnerability of Canadian communities.

Environmental scan

The environmental scan helped identify:

- federal government emergency management agencies that track wildfire impacts;
- approaches to measuring wildfire impacts;
- best practices for measuring wildfire impacts from peer jurisdictions.

We examined 45 scholarly articles and grey literature, including reports published by federal and provincial–territorial emergency management agencies in Canada and other countries. We used a combination of keywords, such as “Canada,” “wildfires,” “disaster,” “social,” and “impacts,” to make our selection. The articles were sorted by date and citations, where applicable. We limited our sources to those published in the last 15 years in reputed journals or government websites.

The environmental scan helped us deepen our understanding of the wildfire impacts data landscape.

Stakeholder engagement

While the environmental scan gave us an overview, it did not capture the perspectives of key actors involved in wildfire management and disaster recovery. For this part of the research, we gathered inputs on the availability of wildfire data from 19 individuals employed in 10 wildfire management and recovery agencies across Canada. The engagement—conducted via Microsoft Teams—aimed to uncover the opportunities and challenges in handling wildfire impact data.

Our goal was to engage with 10 to 15 participants. We reached out to 30 potential participants via email, based on desktop research, and had a 33 per cent response rate. Our inclusion criteria required participants to be involved in the practice or research of wildfire response and recovery.

We engaged respondents from the following organizations:

- Canadian Association of Fire Chiefs
- Canadian Interagency Forest Fire Centre
- Canadian Red Cross
- Emergency Management Organization, Government of Manitoba
- Emergency Measures Organization, Government of New Brunswick
- Health Canada
- Natural Resources Canada
- Public Safety Canada
- Société de protection des forêts contre le feu, Government of Quebec
- University of Alberta

Questionnaires, developed from our environmental scan, were shared with the participants in advance. We asked questions about data collection and tracking, information gaps and challenges, and community-level resources for collecting data on the impacts of wildfire. Participants were offered anonymity, and their responses would not be attributed to them.

The engagements were conducted in May and June 2024. Some engagements included more than one participant from the same organization. The engagements lasted between 45 and 60 minutes and were recorded. On average, the notes from our dialogue with research participants amounted to 1,000 words per engagement.

Community Vulnerability Index

Finally, we developed a Community Vulnerability Index. We used a three-step process for calculating the index: data collection and preparation; computation of vulnerability; and identification of wildfire-exposed dissemination areas.

Data collection and preparation

We used data from the 2021 Canadian census at the scale of a dissemination area for the following parameters:[1]

- **Percentage of low-income households:** Low-income households face greater challenges in preparing for and recovering from wildfires, increasing their overall vulnerability to the social impacts of wildfires.[2]
- **Percentage of new arrivals within the last five years:** Immigrants often have limited social capital[3] and face socio-cultural barriers in accessing emergency resources.[4] These can increase their vulnerability to the social impacts of wildfires.[5]
- **Percentage of the population that speaks neither English nor French:** Inability to speak either of Canada's official languages is associated with barriers in accessing emergency resources, leading to a greater vulnerability to the social impacts of wildfires.[6]
- **Rate of unemployment:** Unemployed Canadians are more vulnerable to the social impacts of wildfires, as unemployment is associated with lower psychosocial well-being, lower life satisfaction, and an elevated risk of poor mental health.[7]
- **Percentage of residents over the age of 85:** People over the age of 85 may have pre-existing health conditions and reduced mobility, which can make them more vulnerable to the social impacts of wildfires.[8]
- **Percentage of residents in core housing need:** People experiencing core housing need—defined in Canada as living in housing that is unsuitable, inadequate, or unaffordable, with no ability to afford better—are more vulnerable to the social impacts of wildfires due to fewer resources to engage in mitigation.[9]
- **Shortest distance to the nearest urban centre with more than 10,000 residents:** We used QGIS, a geographic information system software tool, to calculate the shortest distance between the centroid of the dissemination area to the nearest municipality with more than 10,000 residents.[10] Major cities often accommodate people who are evacuating from climate-related disasters in their communities.[11]

Computing vulnerability

To reduce complexity, we applied principal component analysis (PCA) to the seven variables, discarding the components with the least variance. The resulting principal components were weighted equally and divided into five quintiles. Each dissemination area received a score corresponding to its quintile. The scores were then averaged to calculate the final CVI score (between 1 and 5). A higher score meant a higher level of socio-economic vulnerability.

Identifying wildfire-exposed dissemination areas

Finally, we used QGIS to identify dissemination areas with CVI scores above 3 that intersect with wildfires from 2019 to 2023. These areas were isolated. We aggregated the populations in each area by year to estimate the number of people with high to very high socio-economic vulnerability exposed to wildfires.

1 About 9 per cent of the 57,932 Canadian dissemination areas lacked sufficient data for these variables and were excluded from the analysis.

2 Cutter, Boruff, and Shirley., "Social Vulnerability to Environmental Hazards."

3 Dadson and others, "Experiences of Immigrants During Disasters."

4 Solis, Hightower, and Kawaguchi, *Guidelines on Cultural Diversity.*

5 Doust Mohammadi, Salmani, and Farahmandnia, "Social vulnerabilities among immigrants."

6 Solis, Hightower, and Kawaguchi, *Guidelines on Cultural Diversity.*

7 Paul and Moser, "Unemployment impairs mental health"; Adu and others, "Exploring the prevalence and predictors."

8 Melton and others, "Wildfires and Older Adults."

9 Lowe and Garfin, "Crisis in the Air."

10 Canadian provinces use different population thresholds to define a "city." In Alberta, a community must have a population of at least 10,000 to be classified as a city.

11 Major urban centres play a critical role in providing equipment, services, and support to neighbouring communities during times of crisis. See Institute for Catastrophic Loss Reduction, Fort McMurray Wildfire, and Temmer, Smith, and Terton, *Building a Climate-Resilient City.*

Appendix B

Bibliography

Adu, Medard K., Reham Shalaby, Belinda Agyapong, Raquel da Luz Dias, and Vincent I. O. Agyapong. "Exploring the prevalence and predictors of low resilience and likely PTSD in residents of two provinces in Canada during the 2023 wildfires." *Frontiers in Public Health* 12 (2024): 1343399. https://doi.org/10.3389/fpubh.2024.1343399.

Batko, Samantha, and Sara McTarnaghan. "How the Los Angeles Fires Are Compounding the Risk of Homelessness." *Urban Wire*, January 15, 2025. https://www.urban.org/urban-wire/how-los-angeles-fires-are-compounding-risk-homelessness.

Belleville, Geneviève, Marie-Christine Ouellet, Jessica Lebel, Sunita Ghosh, Charles M. Morin, Stéphane Bouchard, Stéphane Guay, Nicolas Bergeron, Tavis Campbell, and Frank P. MacMaster. "Psychological Symptoms Among Evacuees From the 2016 Fort McMurray Wildfires: A Population-Based Survey One Year Later." *Frontiers in Public Health* 9, no. 655357 (2021). https://doi.org/10.3389/fpubh.2021.655357.

Bonita, Isabelle, Olivia M. Halabicky, and Jianghong Liu. "Exposure to Wildfires Exposures and Mental Health Problems among Firefighters: A Systematic Review." *Atmosphere* 15, no. 1 (2024): 78. https://doi.org/10.3390/atmos15010078.

Canadian Council of Forest Ministers. "National Forestry Database." Canadian Council of Forest Ministers, last modified February 2, 2024. http://nfdp.ccfm.org/en/index.php.

Canadian Interagency Forest Fire Centre. *Canada Report: 2023 Fire Season*. Canadian Interagency Forest Fire Centre, 2024. https://ciffc.ca/sites/default/files/2024-03/03.07.24_CIFFC_2023CanadaReport%20%281%29.pdf.

Chakraborty, Liton, Jason Thistlethwaite, Andrea Minano, Daniel Henstra, and Daniel Scott. "Leveraging Hazard, Exposure, and Social Vulnerability Data to Assess Flood Risk to Indigenous Communities in Canada." *International Journal of Disaster Risk Science* 12, no. 6 (2021): 821–38. https://doi.org/10.1007/s13753-021-00383-1.

Cherry, Nicola, Jean-Michel Galarneau, Andrea Melnyk, and Scott Patten. "Prevalence of Mental Ill-Health in a Cohort of First Responders Attending the Fort McMurray Fire." *The Canadian Journal of Psychiatry* 66, no. 8 (2021): 719–25. https://doi.org/10.1177/0706743720974824.

Council of Canadian Academies, The. *Building a Resilient Canada: The Expert Panel on Disaster Resilience in a Changing Climate.* The Council of Canadian Academies, 2022. https://cca-reports.ca/wp-content/uploads/2022/01/Building-a-Resilient-Canada-web-EN.pdf.

Cutter, Susan L. "The origin and diffusion of the social vulnerability index (SoVI)." *International Journal of Disaster Risk Reduction* 109 (2024): 104576. https://doi.org/10.1016/j.ijdrr.2024.104576.

Cutter, Susan L., Bryan J. Boruff, and W. Lynn Shirley. "Social Vulnerability to Environmental Hazards." *Social Science Quarterly* 84, no. 2 (2003): 242–61. https://onlinelibrary.wiley.com/doi/10.1111/1540-6237.8402002.

Dadson, Yvonne Appiah, DeeDee M. Bennett-Gayle, Victoria Ramenzoni, and Elisabeth A. Gilmore. "Experiences of Immigrants During Disasters in the US: A Systematic Literature Review." *Journal of Immigrant and Minority Health* 27, no. 1 (2025): 134–48. https://doi.org/10.1007/s10903-024-01649-8.

Davis, Emily Jane, Moseley, Cassandra, Nielsen-Pincus, Max, and Pamela J. Jakes. "The Community Economic Impacts of Large Wildfires: A Case Study from Trinity County, California." Society & Natural Resources 27, no. 9 (2014): 983–93. https://doi.org/10.1080/08941920.2014.905812.

Department of Climate Change, Energy, the Environment and Water. "National Indicative Aggregated Fire Extent Dataset." Australian Government, 2020. https://fed.dcceew.gov.au/datasets/erin::national-indicative-aggregated-fire-extent-dataset/about.

Digital Atlas of Australia. "Bushfire Historical Extents." Australian Government, last modified December 24, 2024. https://digital.atlas.gov.au/datasets/912492b1683e494e8efbe84573ce6d70/about.

Doust Mohammadi, Mohammad Mahdi, Ibrahim Salmani, and Hojjat Farahmandnia. "Social vulnerabilities among immigrants and refugees in emergencies and disasters: a systematic review." *Frontiers in Public Health* 11 (2024): 1235464. https://doi.org/10.3389/fpubh.2023.1235464.

Drolet, Julie L., Caroline McDonald-Harker, Nasreen Lalani, Meagan McNichol, Matthew R. G. Brown, and Peter H. Silverstone. "Social, Economic and Health Effects of the 2016 Alberta Wildfires: Pediatric Resilience." *Journal of Disaster Research* 15, no. 7 (2020): 833–44. https://doi.org/10.20965/jdr.2020.p0833.

Emergency Management Victoria. *Secondary Impact Assessment Framework: Part 1 – Guidelines*. Victoria State Government, 2019. https://www.mav.asn.au/__data/assets/pdf_file/0006/27744/Part-1-Secondary-Impact-Assessment-Guidelines.pdf#page=20.07.

—. "State Emergency Management Plan." Report. Emergency Management Victoria, Victoria State Government, 2024. https://www.emv.vic.gov.au/responsibilities/state-emergency-management-plan-semp.

Emrich, Christopher T., Eric Tate, Sarah E. Larson, and Yao Zhou. "Measuring social equity in flood recovery funding." *Environmental Hazards* 19, no. 3 (2020): 228–50. https://doi.org/10.1080/17477891.2019.1675578.

Grennan, Gillian K., Mathew C. Withers, Dhakshin S. Ramanathan, and Jyoti Mishra. "Differences in interference processing and frontal brain function with climate trauma from California's deadliest wildfire." *PLOS Climate* 2, no. 1 (2023): e0000125. https://doi.org/10.1371/journal.pclm.0000125.

Haggerty, Jeannie, Simona C. Minotti, and Fatima Bouharaoui. "Development of an individual index of social vulnerability that predicts negative healthcare events: a proposed tool to address healthcare equity in primary care research and practice." International Journal for Equity in Health 22, no. 157 (2023). https://doi.org/10.1186/s12939-023-01965-9.

Health Canada. *Human Health Effects of Wildfire Smoke*. Government of Canada, 2024. https://www.canada.ca/content/dam/hc-sc/documents/services/publications/healthy-living/human-health-effects-wildfire-smoke/human-health-effects-wildfire-smoke.pdf.

Institute for Catastrophic Loss Reduction. *Fort McMurray Wildfire: Learning from Canada's costliest disaster*. Institute for Catastrophic Loss Reduction, 2019. https://www.iclr.org/wp-content/uploads/2019/10/Fort-McMurray-Wildfires_Canadian-Copright.FINAL-2_One-Page.pdf.

Insurance Bureau of Canada. *2023 Facts of the Property and Casualty Insurance Industry in Canada.* Insurance Bureau of Canada, 2023. https://www.ibc.ca/industry-resources/resources-data/facts-book.

—. "Severe Weather in 2023 Caused Over $3.1 Billion in Insured Damage." News release, January 8, 2024. https://www.ibc.ca/news-insights/news/severe-weather-in-2023-caused-over-3-1-billion-in-insured-damage.

Internal Displacement Monitoring Centre. "Canada." Internal Displacement Monitoring Centre, n.d. https://www.internal-displacement.org/countries/canada.

—. "Canada – Record wildfires spread to urban areas." Internal Displacement Monitoring Centre, May 14, 2024. https://www.internal-displacement.org/spotlights/canada-record-wildfires-spread-to-urban-areas.

Kulig, Judith, Ivan Townshend, Dana Edge, William Reimer, and Nancy Lightfoot. "Impacts of wildfires: aftermath at individual and community levels?" *Australian Journal of Emergency Management* 28, no. 3 (2013): 29–34. https://knowledge.aidr.org.au/media/2259/ajem-28-03-08.pdf.

Lowe, Sarah R, and Dana Rose Garfin. "Crisis in the air: the mental health implications of the 2023 Canadian wildfires." *The Lancet Planetary Health* 7, no. 9 (2023): e732–33. https://doi.org/10.1016/S2542-5196(23)00188-2.

Mao, W., R. Shalaby, B. Agyapong, G. Obuobi-Donkor, R. Dias, and V. I. Agyapong. "The Impact of Severe Wildfires on Mental Health: Prevalence of Major Depressive Disorder and Related Factors among Residents in Alberta and Nova Scotia, Canada." *European Psychiatry* 67, no. S1 (2024): S254–S254. https://doi.org/10.1192/j.eurpsy.2024.538.

Melton, Colleen Cummings, Carson M. De Fries, Rebecca M. Smith, and Lisa Reyes Mason. "Wildfires and Older Adults: A Scoping Review of Impacts, Risks, and Interventions." *International Journal of Environmental Research and Public Health* 20, no. 13 (2023): 6252. https://doi.org/10.3390/ijerph20136252.

Montreal Process Implementation Group for Australia and National Forest Inventory Steering Committee. *Australia's State of the Forests Report 2018*. Australian Bureau of Agricultural and Resource Economics and Sciences, 2018. https://www.agriculture.gov.au/sites/default/files/abares/forestsaustralia/documents/sofr_2018/web%20accessible%20pdfs/SOFR_2018_web.pdf.

—. *Australia's State of the Forests Report Synthesis 2023*. Australian Bureau of Agricultural and Resource Economics and Sciences, 2023. https://www.agriculture.gov.au/sites/default/files/documents/Australia%27s%20State%20of%20the%20Forests%20Report%20Synthesis%202023.pdf.

Morgan, Grayson R., Erin M. Kemp, Margot Habets, Kyser Daniels-Baessler, Gwyneth Waddington, Susana Adamo, Carolynne Hultquist, and Susan L. Cutter. "Defining Disadvantaged Places: Social Burdens of Wildfire Exposure in the Eastern United States, 2000–2020." *Fire* 7, no. 4 (2024): 124. https://doi.org/10.3390/fire7040124.

National Emergency Management Agency. *National Disaster Recovery Needs Assessment Guidelines*. Australian Government, March 2024. https://www.nema.gov.au/sites/default/files/2024-08/nat-rec-needs-assess-guidelines.pdf.

—. *COMDISPLAN: Australian Government Disaster Response Plan.* Australian Government, last modified April 2025. https://www.nema.gov.au/sites/default/files/2025-07/Australian%20Government%20Disaster%20Response%20Plan%202025%20%28COMDISPLAN%29.pdf.

Natural Resources Canada. "Canadian Wildland Fire Information System." Government of Canada, n.d. https://cwfis.cfs.nrcan.gc.ca/home.

—. "Canada's record-breaking wildfires in 2023: A fiery wake-up call." Government of Canada, last modified December 27, 2024. https://natural-resources.canada.ca/stories/simply-science/canada-s-record-breaking-wildfires-2023-fiery-wake-call.

—. "Forest fires." Government of Canada, last modified September 10, 2025. https://natural-resources.canada.ca/forest-forestry/wildland-fires/forest-fires.

—. "Fire regime." Government of Canada, last modified October 8,2025. https://natural-resources.canada.ca/forest-forestry/wildland-fires/fire-regime.

Neumann, Saskia, Julie M. L. Berta, Thomas Elliot, and Lars Bodum. "Towards urban climate justice: Integrating social vulnerability in climate adaptation planning." *Environmental Development* 57, (January 2026): 101365. https://doi.org/10.1016/j.envdev.2025.101365.

Paul, Karsten I., and Klaus Moser. "Unemployment impairs mental health: Meta-analyses." *Journal of Vocational Behavior* 74, no. 3 (June 2009): 264–82. https://doi.org/10.1016/j.jvb.2009.01.001.

Partners for Action. *Inclusive Resilience: A Socio-Economic Vulnerability Index to Map Flood Risks for Targeted Communications and Disaster Risk Reduction.* Partners for Action and Canadian Red Cross, March 2024. https://uwaterloo.ca/inclusive-resilience/sites/default/files/uploads/documents/june-2024_p4a-sovi-report_en_final_.pdf.

Prior, Tim, and Christine Eriksen. “Wildfire preparedness, community cohesion and social–ecological systems.” *Global Environmental Change* 23, no. 6 (December 2013): 1575–86. https://doi.org/10.1016/j.gloenvcha.2013.09.016.

Public Health Agency of Canada. *Rapid Review: An intersectional analysis of the disproportionate health impacts of wildfires on diverse populations and communities*. Government of Canada, last modified July 18, 2024. https://www.canada.ca/en/public-health/services/publications/healthy-living/rapid-review-intersectional-analysis-disproportionate-impacts-wildfires-diverse-populations-communities.html.

Public Safety Canada. *National Risk Profile: A national emergency preparedness and awareness tool.* Government of Canada, last modified January 2024. https://www.publicsafety.gc.ca/cnt/rsrcs/pblctns/2023-nrp-pnr/2023-npr-pnr-en.pdf.

—. “The Canadian Disaster Database.” Government of Canada, last modified January 20, 2025. https://www.publicsafety.gc.ca/cnt/rsrcs/cndn-dsstr-dtbs/index-en.aspx.

Solis, Gabriela Y, Henry Culle Hightower, and June Kawaguchi. *Guidelines on Cultural Diversity and Disaster Management.* Emergency Preparedness Canada, December 1997. https://publications.gc.ca/collections/Collection/D82-45-1997E.pdf.

Statistics Canada. “The Canadian Index of Social Resilience and the Canadian Index of Social Vulnerability: User Guide.” Government of Canada, last modified May 27, 2025. https://www150.statcan.gc.ca/n1/pub/45-20-0001/452000012025002-eng.htm.

—. “Data.” Government of Canada, last modified October 25, 2025. https://www150.statcan.gc.ca/n1/en/type/data.

—. “Dissemination area (DA).” Government of Canada, last modified July 7, 2023. https://www12.statcan.gc.ca/census-recensement/2021/ref/dict/az/definition-eng.cfm?ID=geo021.

Tate, Eric, Samuel Rufat, Md Asif Rahman, and Shelley Hoover. “Profiles of social vulnerability for flood risk reduction.” *International Journal of Disaster Risk Reduction* 118 (February 15, 2025): 105250. https://doi.org/10.1016/j.ijdrr.2025.105250.

Temmer, Jennifer, Anika Terton, and Ryan Smith. *Building a Climate-Resilient City: Disaster preparedness and emergency management.* International Institute for Sustainable Development and University of Winnipeg, 2017. https://prairieclimatecentre.ca/wp-content/uploads/2017/04/pcc-brief-disaster-mangement-emergency-preparedness.pdf.

To, Patricia, Ejemai Eboreime, and Vincent I. O. Agyapong. “The Impact of Wildfires on Mental Health: A Scoping Review.” *Behavioral Sciences* 11, no. 9 (2021): 126. https://doi.org/10.3390/bs11090126.

United Nations Office for Disaster Risk Reduction. “Canada wildfires, 2023 - Forensic analysis.” United Nations, September 17, 2024. https://www.undrr.org/resource/canada-wildfires-2023-forensic-analysis.

Wettstein, Zachary S., and Ambarish Vaidyanathan. “Psychotropic Medication Prescriptions and Large California Wildfires.” *JAMA Network Open* 7, no. 2 (2024): e2356466. https://doi.org/10.1001/jamanetworkopen.2023.56466.

Acknowledgements

This impact paper was prepared with financial support provided by the Canadian Red Cross.

Canadian Red Cross

Babatunde Olateju, Director, PhD, developed this project and provided oversight throughout the research process. Yogi Joseph, Research Associate, and Jesse Steinberg, PhD, conducted the research. Stefan Fournier, Executive Director, MA; Leslie Twilley, Chief Research Officer, PhD; Michael Bassett, Director, MA; and Andy Joy, Senior Editor, provided feedback on this impact paper. This impact paper was designed by Natasha Delrosario, Graphic Designer.

We extend our sincere gratitude to our external reviewers for their input and feedback on the draft of this impact paper:

- **Sheila Gordon**, Manager, Public Safety Canada
- **Jonathan Boucher**, Research Scientist, Natural Resources Canada
- **Brenda Murphy**, Professor, Wilfrid Laurier University

Finally, we recognize the contributions from our 19 experts representing 10 Canadian disaster recovery organizations, whose perspectives informed our research.

Canada's Wildfire Blind Spot: The Missing Data on Social Impacts
Yogi Joseph and Jesse Steinberg

To cite this research: Joseph, Yogi, and Jesse Steinberg. *Canada's Wildfire Blind Spot: The Missing Data on Social Impacts.* Ottawa: The Conference Board of Canada, 2025.

Canadian
Red Cross

About the Canadian Red Cross

Here in Canada and overseas, the Red Cross stands ready to help people before, during and after a disaster. As a member of the International Red Cross and Red Crescent Movement – which is made up of the International Federation of Red Cross and Red Crescent Societies, the International Committee of the Red Cross and 191 national Red Cross and Red Crescent societies – the Canadian Red Cross is dedicated to helping people and communities in Canada and around the world in times of need, and supporting them in strengthening their resilience.

Where insights meet impact

The Conference Board of Canada

Publication P-01742-N4G0L4
Price: Complimentary

conferenceboard.ca