

Rapid Impact Assessment of Fort McMurray Wildfire

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Introduction

In May 2016, a wildfire burned through Fort McMurray resulting in unprecedented loss in terms of homes destroyed by fire and other damages. Assessing the economic impact of wildfire is often complicated. There is value in addressing the impact from several dimensions. This may include vegetation burned, property destroyed, lives lost, and damage to the ecosystem. Some losses can readily be measured in dollars while others are difficult to measure.

Research Questions

This research seeks to quantify the immediate, medium-term, and longer-term economic, environmental, health, human, and ecosystem impacts of the Fort McMurray wildfire at the local, provincial, and federal level. The impacts are broadly categorized as direct and indirect impacts. The study also seeks to identify any positive impacts, and uncertainties with respect to the recovery process.

Methods

Estimates of loss and damage is derived from four sources: Published data from agencies including Statistics Canada, Government of Alberta, the Municipality of Wood Buffalo, and other organizations; municipal property data and interviews with municipal and provincial officials; estimates based on application of the existing literature; and, statements reported in the media.

Preliminary findings

The assessment provides a detailed examination of initial data available and also sets out assumptions that are used to estimate the loss and damage from the wildfire in Fort McMurray. The immediate direct impacts include: private insured and uninsured property and other asset losses; economic, financial, and fiscal impacts; evacuation and rehabilitation impacts; local and provincial government expenditure and revenue impacts; labour market impacts; production disruption impacts; charitable donation impacts; and housing and rental market impacts. Long-term direct impacts are local and provincial government expenditure impacts, labour market impacts, and reconstruction phase impacts. The indirect impacts include human health, mental health, and other social, institutional, and non-market impacts. Most of the indirect impacts are long-term, hardly quantifiable and qualitative in nature.

The study estimates a total direct and indirect cost of \$10.9 billion for Canada. This is a partial estimate based on costs that can be quantified at this time. The total includes immediate direct net cost of \$7.91 billion and indirect cost of \$3.3 billion for Alberta. Total cost for Alberta is \$9.4 billion and after adding the federal government expenditure, total cost for Canada is \$10.9 billion.

Preliminary estimates of the costs (or benefits) associated with the fire include (in \$billions, for Alberta):

A. <u>Immediate Direct Impacts</u>	7.91
Damage to homes and businesses	4.11
Loss of production in the oil sands	1.7
Loss of production in other sectors	1.4
Provincial net spending on fire fighting and disaster recovery	0.468
Reduction in provincial and municipal revenue	0.186
Donations and transfers	(0.269)
Partial gain in property values	(0.04)
Lodging, food, living and community expenses	0.353
B. <u>Long Term Direct Impacts</u>	(1.844)
Provincial and local gains from rebuilding	(3.084)
Provincial and local long term expenditure	0.24
Alternative Road	1.0
C. <u>Indirect Impacts</u>	3.301
Carbon release	0.850
Timber values	2.178
Ecosystem impact	0.183
Water Quality and solid waste management impact	0.064
Mental health and other health impacts	0.027
Total direct and indirect cost for Alberta	9.4
Federal government expenditure	1.516
Total direct and indirect cost for Canada	10.9

Conclusion

Lessons learned begin with a recommendation to invest more in loss prevention, like a wildfire barrier around urban areas. The report recognizes the effort made to contain the fire and protect property, yet calls for more effective preparedness. Praise for the actions of the Red Cross and Government of Alberta to support the evacuation also include a request to make the recovery and rehabilitation process more efficient. The report recommends that the government and the private industry explore the provision of alternative evacuation routes. The report includes a call for private oil sands companies to invest more to protect their workers and assets, and for insurance companies to work with different levels of government to improve land management and emergency management.

The team of researchers made five recommendations for further research:

- Identify best practices to protect urban areas from wildfire
- Complete a detailed cost-benefit analysis of the Fort McMurray wildfire
- Better quantify the environmental, natural resource, human, and long term impact
- Examine the wildfire evacuation and rehabilitation process
- Conduct an analysis of the risk of wildfire damage to oil sands projects