Institute for Catastrophic Loss Reduction
Building resilient communities

Institut de Prévention des Sinistres Catastrophiques
Construction de resilient communities





Catastrophic loss trends in Canada

Glenn McGillivray
Managing Director

Institute for Catastrophic Loss Reduction
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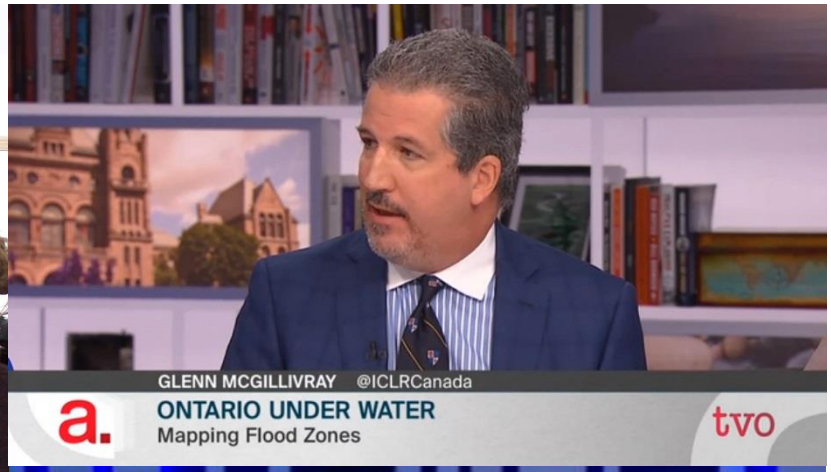
ICLR

- Mission - reduce loss of life and property caused by severe weather and earthquakes
- Created in 1997 by the insurance community to confront rising disaster losses
- Multi-disciplinary research and education provides an essential foundation for ‘science to action’
- 30 scientists / 100+ students / 12+ universities / 350+ research papers / $50+ million in research
- Western University affiliated

In the media


Designed...
for safer living
NEWS 10
CHANNEL


GLENN MCGILLIVRAY @ICLRCanada
ONTARIO UNDER WATER
Mapping Flood Zones
tvo


SLAVE LAKE WILDFIRE
Sponsored by
TRADE

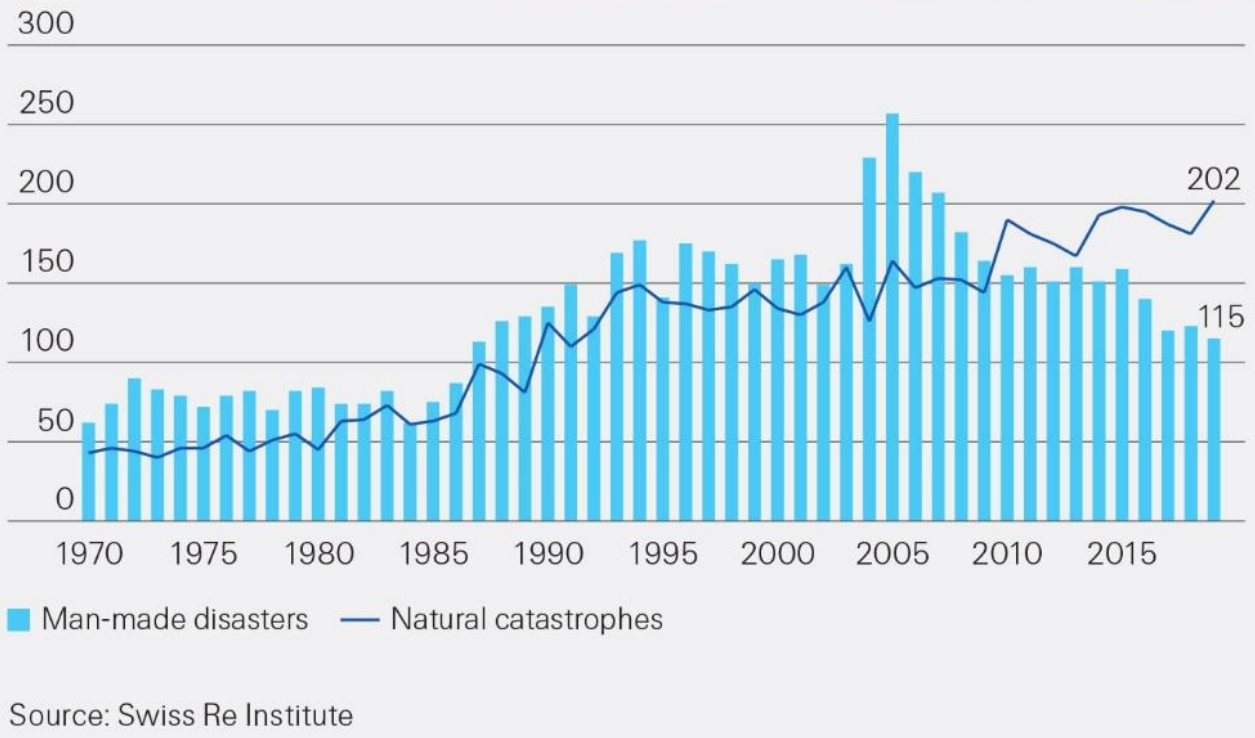

EARTHQUAKE PREPAREDNESS
Is Canada ready for a "big one?"
news now

Considerations

- Disasters are a growing threat
- Losses are rising. Why?
- What can be done about it?

Number of cat. events 1970-2019

Number of catastrophic events, 1970–2019

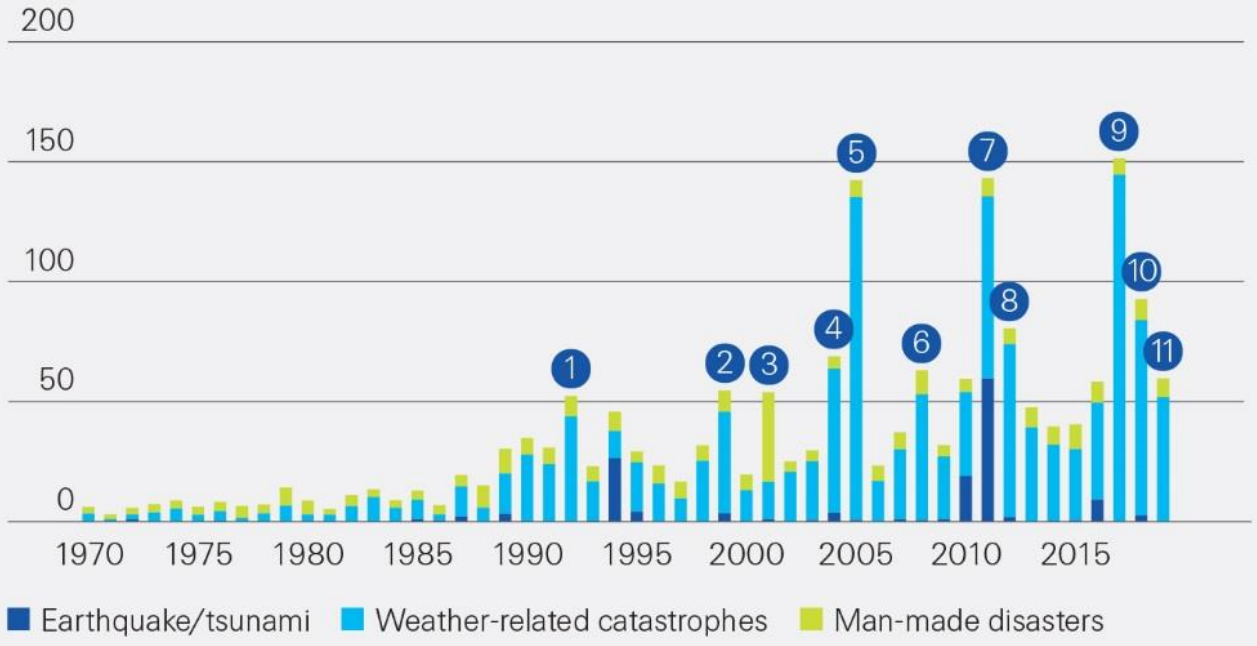


Source: Swiss Re Institute

Insured losses 1970-2019

Insured catastrophe losses, 1970–2019, in USD billion at 2019 prices

1. Hurricane Andrew
2. Winter Storm Lothar
3. WTC
4. Hurricanes Ivan, Charley, Frances
5. Hurricanes Katrina, Rita, Wilma
6. Hurricanes Ike, Gustav
7. Japan, NZ earthquakes, Thailand flood
8. Hurricane Sandy
9. Hurricanes Harvey, Irma, Maria
10. Camp Fire, Typhoon Jebi
11. Typhoons Hagibis, Faxai

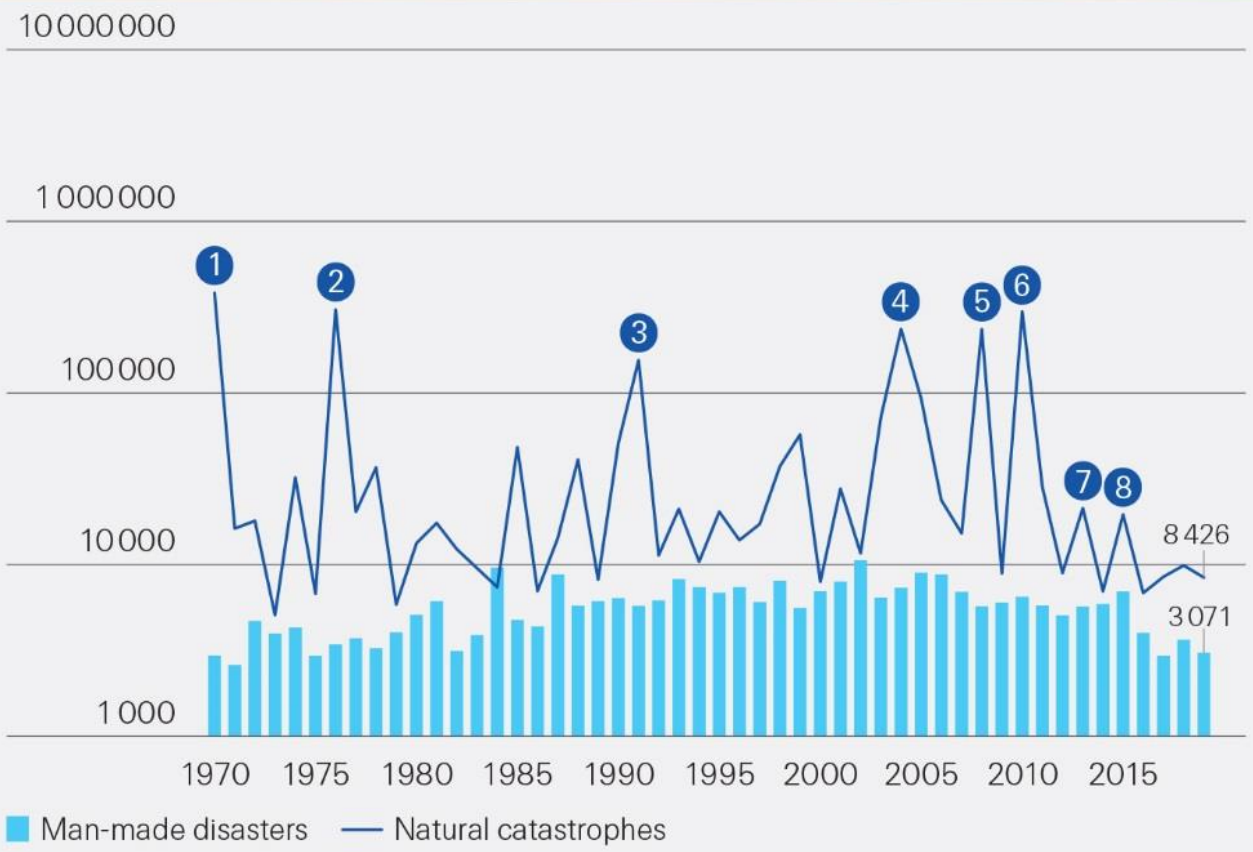


Source: Swiss Re Institute

Victims 1970-2019

Number of victims, 1970–2019

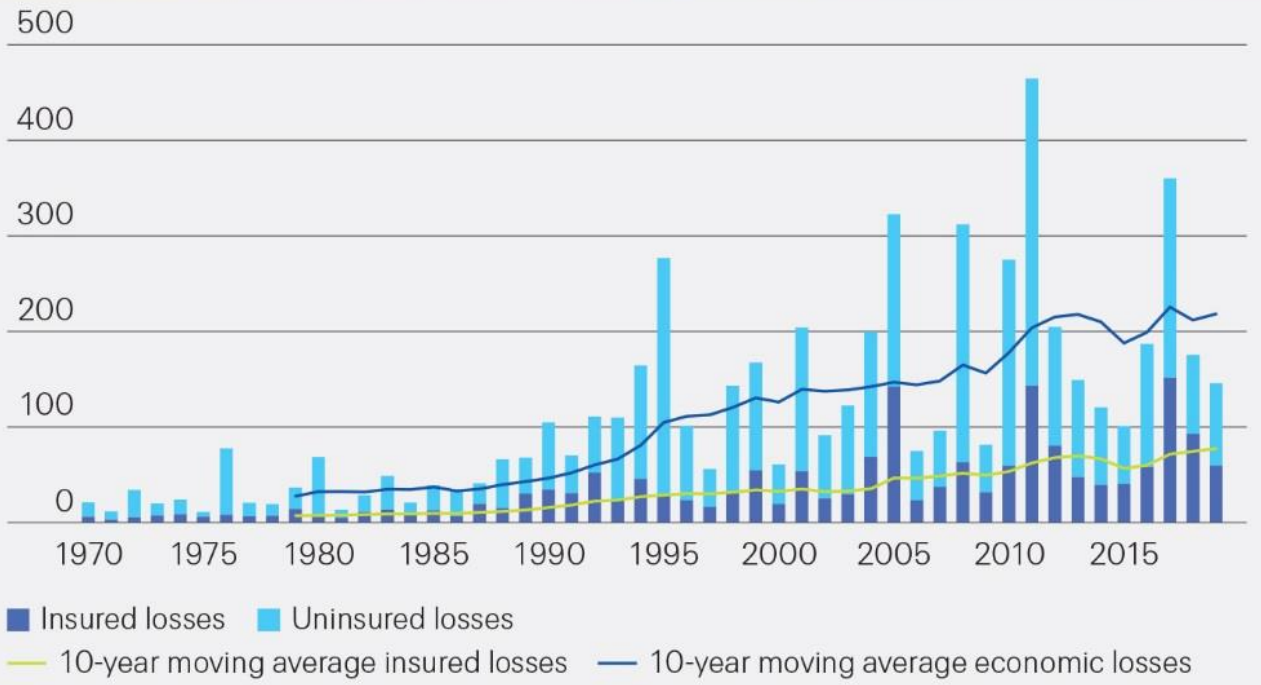
1. 1970: Bangladesh storm, Peru earthquake
2. 1976: Tangshan earthquake, China
3. 1991: Cyclone Gorky, Bangladesh
4. 2004: Indian Ocean earthquake and tsunami
5. 2008: Cyclone Nargis, Myanmar
6. 2010: Haiti earthquake
7. 2013: Typhoon Haiyan, Philippines
8. 2015: Earthquake in Nepal



Note: Scale is logarithmic: the number of victims increases tenfold per band.
Source: Swiss Re Institute

Coverage gap 1970-2019

Insured vs uninsured losses, 1970–2019 (USD billion, 2019 prices)



Economic losses = insured + uninsured losses;
Source: Swiss Re Institute

2019 in a nutshell

Total economic losses

USD 146 billion

down from USD 176 bn in 2018,
below 10-year average of USD 212 bn

USD 137 billion

of economic losses were caused by natural catastrophes, USD 9 bn by man-made disasters

0.17% of global GDP

below the 10-year average of 0.26 %

Total insured losses

USD 60 billion

down from USD 93 bn in 2018,
below 10-year average of USD 75 bn

USD 52 billion

of insured losses were caused by natural catastrophes, USD 8 bn by man-made disasters

3.3% of global property direct premiums written

below the 10-year average of 4.4 %

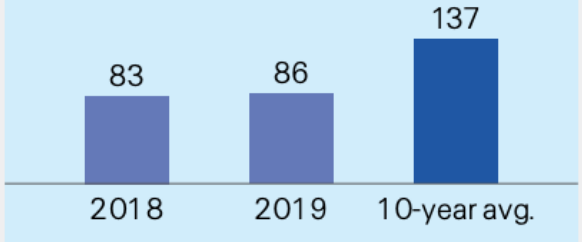
Victims

11 497

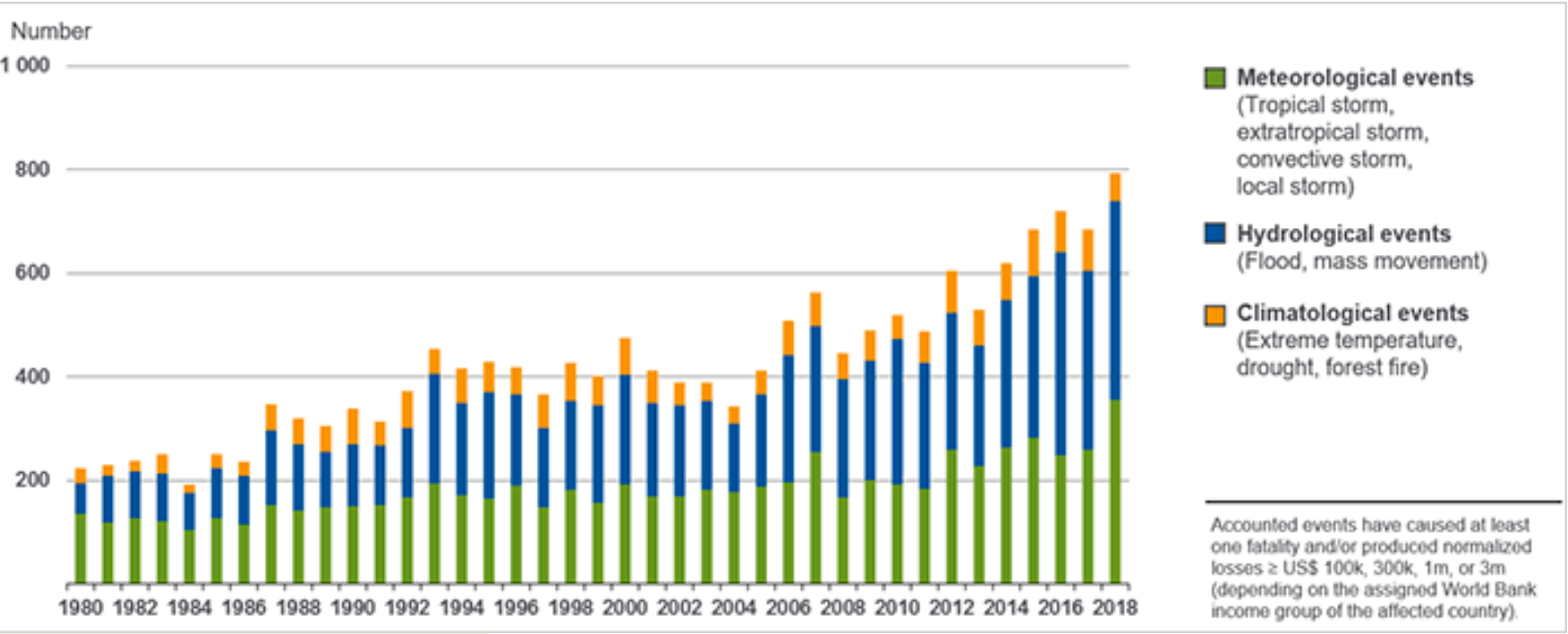
Number of catastrophe events

317

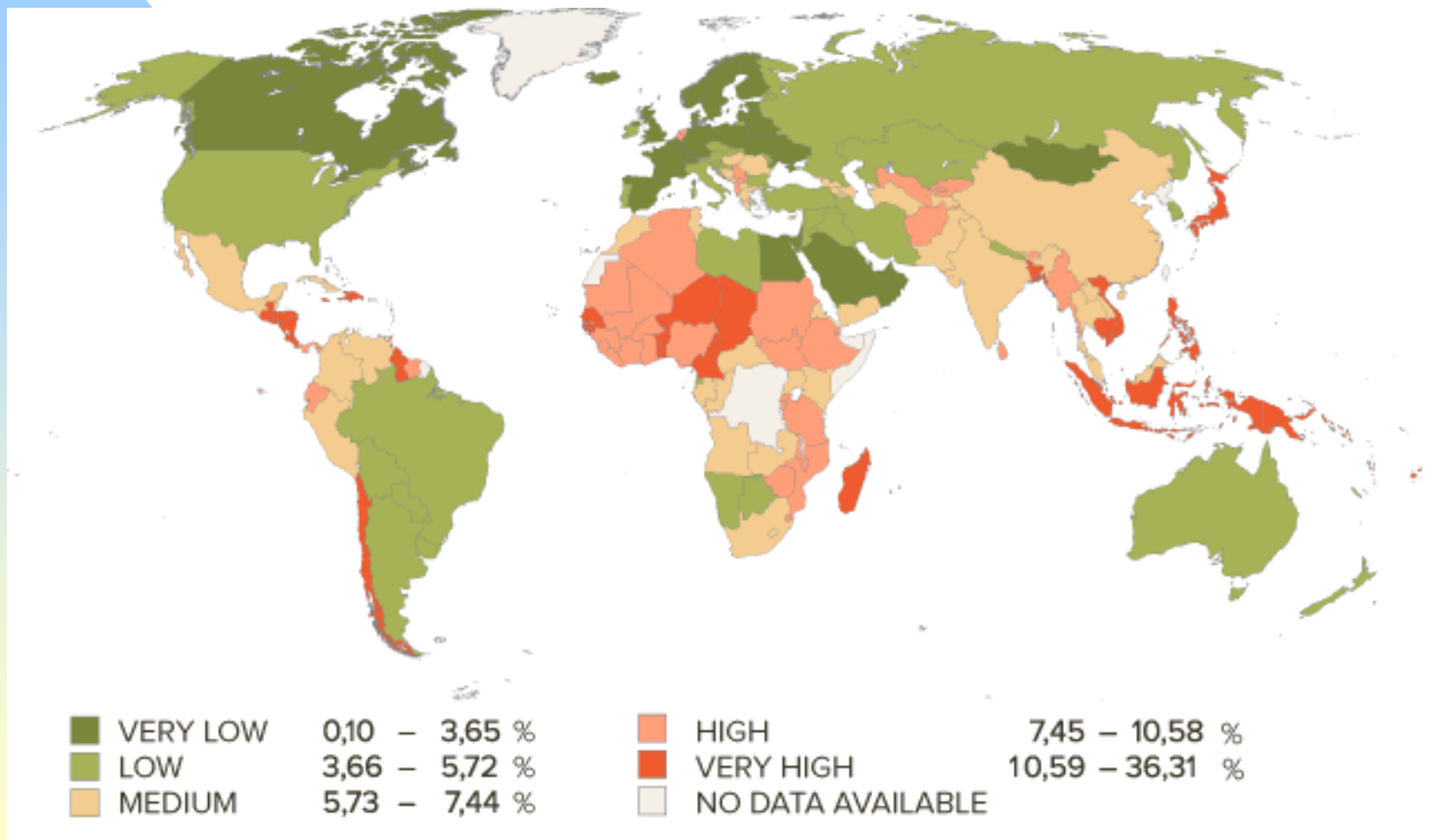
The global protection gap little changed and below average (USD bn)



Insured losses by peril 1980-2018

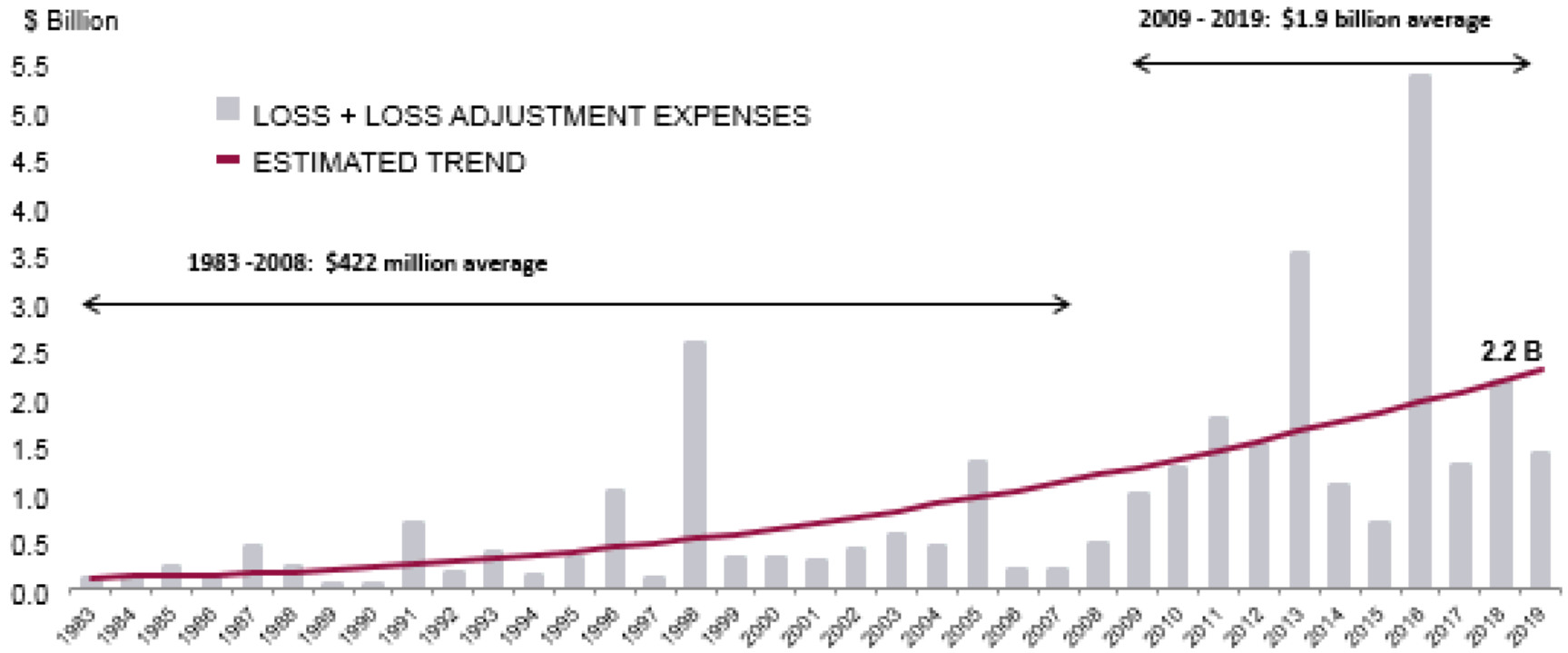


Canadian catastrophes
World risk index



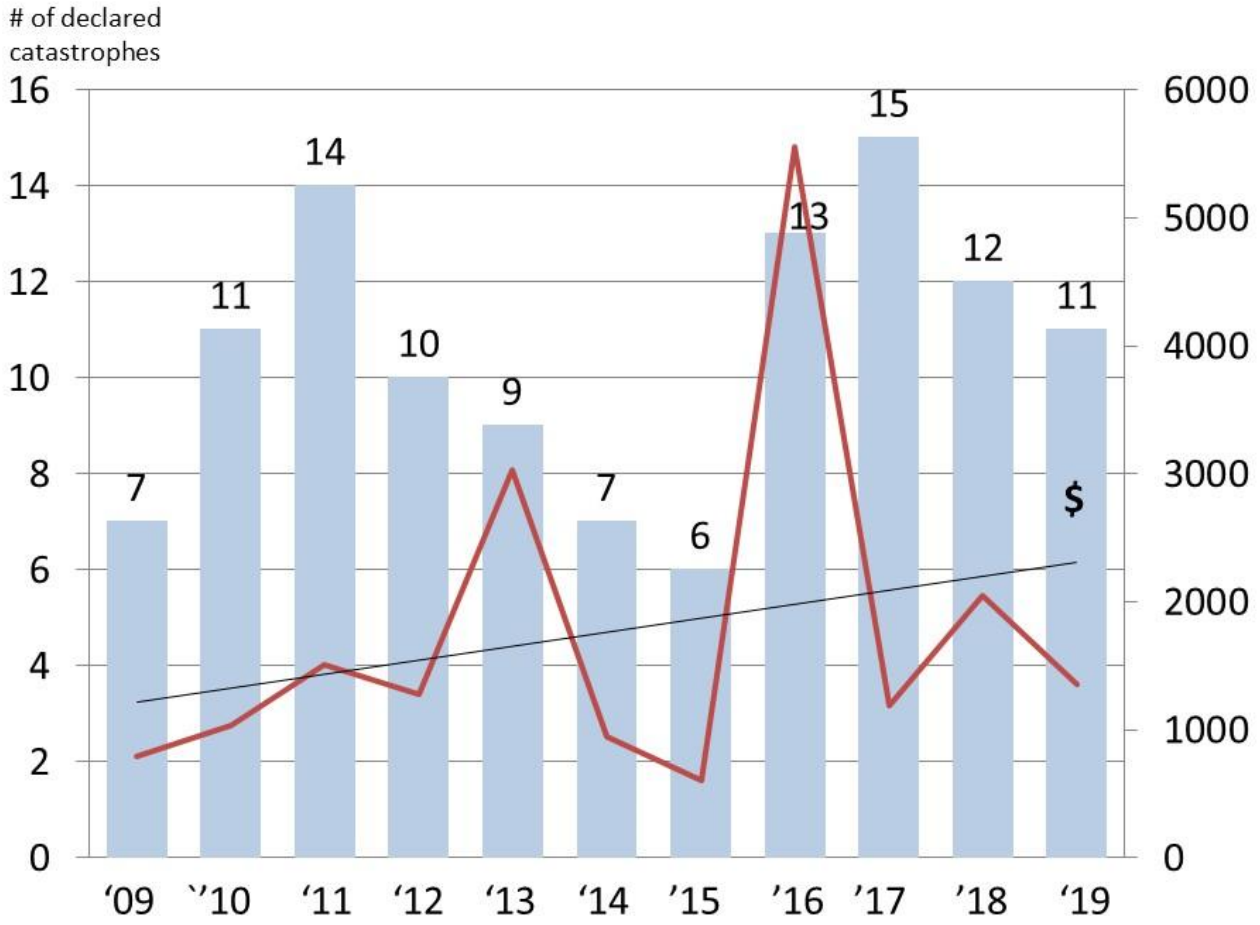
Canadian disaster damage

*A catastrophic loss = 1 event costing $25 million or more in insured damages



Source: IBC Facts Book, PCS, CatIQ, Swiss Re, Munich Re & Deloitte

Frequency & Severity



Catastrophe = event of ≥$25 million in insurance claims
Data: Catastrophe Indices and Quantification Inc. (CatIQ Inc.)

Calgary, Alberta

Toronto, Ontario


Toronto, Ontario
$225 million
insured damage

Burlington, Ontario

- August 4, 2014

$90 million insured damage


Aidrie, Alberta hailstorm
MAZDA
MAZDA
Service Reception
>$500 million
insured damage


Windsor, Canada
September 28 & 29, 2016
>$108 million insured damage
© 2013 Reuters/Mark Blinch


Sydney, NS, Canada
October 10, 2016
>$100 million insured damage
© 2013 Reuters/Mark Blinch

Windsor, Canada

August 28 & 29, 2017

>$124 million insured damage


Southern Ontario/Quebec
May 4, 2017
>$600 million insured damage
© 2013 Reuters/Mark Blinch

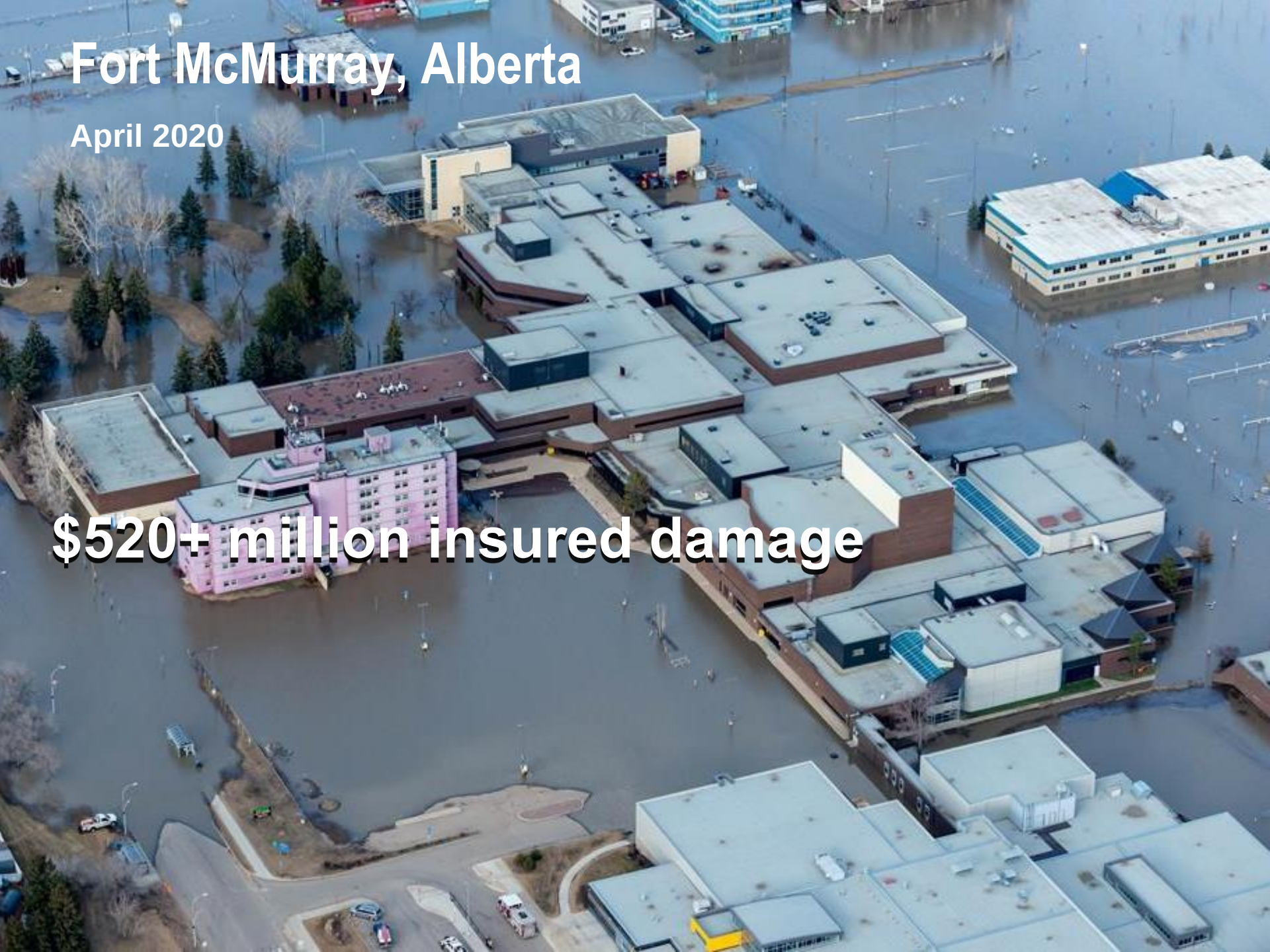
2008 to 2019 inclusive

$19.1 billion

Calgary, Alberta

- June 13, 2020

$1.3 billion insured damage


Fort McMurray, Alberta
April 2020
$520+ million insured damage

Billion-dollar years

- 1998 – Due solely to the ice storm
- 2005 – Due greatly to the August 19 GTA rainstorm
- 2009 – Due greatly to back-to-back windstorms in Alberta
- 2010 – Due greatly to large hailstorm in Alberta
- 2011 – Due greatly to Slave Lake wildfire
- 2012 – Due greatly to one large + two smaller hailstorms in AB
- 2013 – Due to the Southern Alberta flood and GTA flood
- 2014 – Due largely to the Aidrie hailstorm
- 2016 – Due almost entirely to Fort McMurray
- 2017 – A year of frequency not severity
- 2018 - $1 billion from two wind events alone
- 2019 – Another year of frequency not severity
- **2020 - $2 billion+ year (Alberta, Alberta, Alberta!)**

Why are losses rising?

- More people and property at risk
- Aging infrastructure
- The climate is changing

What can be done?

- Loss prevention
- Risk transfer

Loss prevention

- Structural measures
- Non-structural measures
- Public awareness

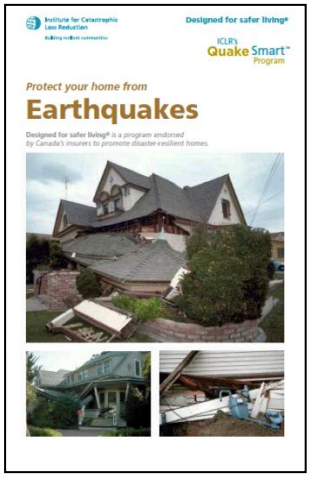
Five-year plan

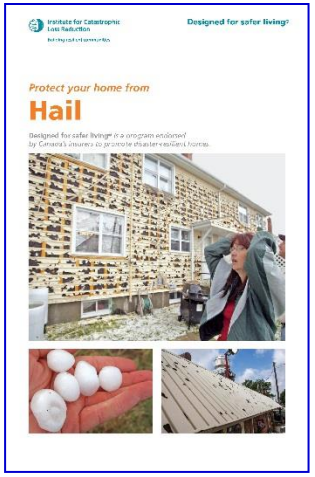
- Promote best practices to enhance the resilience of **existing homes** to damage from natural hazards
- Work with builders and others to champion resilient design and construction of **new homes**
- Partner with municipalities to advance homeowner **basement flood** risk reduction efforts
- Identify options to expand the role of private insurance

Hazard research

- Concentration on five main hazard areas
  - Wildfire
  - Earthquake
  - Wind
  - Hail
  - Water

Loss control information





To recap

- Natural disasters are increasing in frequency and severity, both worldwide and in Canada
- Since 2009, Canada has seen unprecedented growth in disaster-related costs and impacts
  - Water damage is seeing the most growth
- Though there are many reasons for the international/national trend, increased urbanization, degraded infrastructure and climate change are the top three drivers
- ICLR is conducting research into resiliency on behalf of the Canadian p&c industry, municipalities and society at large
- ICLR has loss control info that can be used by property owners

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gmcgillivray@iclr.org

www.iclr.org
www.basementfloodreduction.com
Twitter: @iclrcanada

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