

CATTALES

e-newsletter of the Institute for Catastrophic Loss Reduction



**Institute for Catastrophic
Loss Reduction**

Building resilient communities

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ICFM9 a huge success. ICFM10 coming to ICLR @ Western in 2026

**By Slobodan Simonovic,
Director of Engineering Studies, ICLR
Professor Emeritus, Facility for Intelligent Decision Support – FIDS,
Department of Civil and Environmental Engineering, The University of
Western Ontario**

The International Conferences on Flood Management (ICFM) is a global organization that focuses on integrated flood management. Its main objective is to offer a platform for international collaboration by organizing an international conference every three years, maintaining an interactive website (www.icfm.world), and holding regular webinars on current flood management issues. The ICFM aims to facilitate the exchange of ideas and experiences among various specialists, including engineers, planners, social scientists, health specialists, disaster managers, decision-makers, and policymakers, to promote effective flood management practices, raise awareness of flood risk, and provide support to those affected by floods. Such interdisciplinary collaboration is vital for developing effective and sustainable solutions to the complex problem of flooding. Additionally, the ICFM provides an opportunity to share experiences and best practices from different countries and regions, which can help inform and improve flood management policies and practices globally.



The ICFM is run by an ad hoc committee comprised of volunteer members from various organizations worldwide. The committee ensures continuity from one conference to the next, identifies the location and local host for the next conference, offers global outreach, and assists the host with the conference, including drafting a declaration for review by conference participants.

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Gordon McBean honoured by world's largest scientific society for work on climate change

American Association for the Advancement of Science recognizes renowned professor and climatologist for international leadership, communicating climate change

Award-winning climatologist Gordon McBean is joining the ranks of the American Association for the Advancement of Science (AAAS) as a Fellow, a lifetime honour. McBean, a renowned climate expert, is a geography and environment professor emeritus and an adjunct research professor of physics and astronomy who has studied climate change for more than five decades.

"To me it's very much an honour to be a Fellow of the AAAS. It's a very prestigious international organization. I'm a fellow of quite a few others, but that's one of the biggies. I'm so pleased someone nominated me," McBean said.

The director of policy at the [Institute for Catastrophic Loss Reduction](#), McBean was elected for his "leadership in international programs and organizations, and for communicating climate change to the public, political leaders, and the business community," [according to the AAAS](#).

McBean helped create or lead a slew of programs, projects and global organizations dedicated to climate research and action, including a term as president of the [International Council for Science](#) from 2014 to 2018.

He had a long career as a scientist and assistant deputy minister with Environment Canada and came to Western in 2000.

McBean's environmental work has taken him across the globe, from a ship off the coast of Northern Africa researching hurricanes, to breakfast meetings with the president of Taiwan, to conferences on almost every continent.



Western professor and renowned climatologist Gordon McBean (right) has been honoured by several organizations for his contributions to research and policy. He can be seen here receiving the 2023 Warren Washington Research and Leadership Medal from Richard D. Clark, president of the American Meteorological Society.

That international collaboration has been a crucial undertaking – along with providing hundreds of millions in research funding over the course of his career – to better understand the science behind the warming planet, with special emphasis on weather extremes, natural hazards and the Arctic.

He helped create the [Intergovernmental Panel on Climate Change](#) during his time as chair of the [World Climate Research Programme](#).

Those cross-continental connections were also about furthering scientific research on pressing issues.

"We said, we're not trying to do all the science on climate change, we're trying to do projects that will bring together the science community where you need major participation on a global basis," McBean said.

"We're all scientists for a global public good."

Explaining the realities of climate change to the public is equally important to McBean. He started giving talks to his children's elementary school classes when he was a scientist with Environment Canada, stressing the need to address climate change for the sake of our children, grandchildren and all those around the world.

He's since met with world leaders, [and even battled them](#) during attempts to muzzle scientists when policies and politics conflicted, all to educate and drive change.

"To me it's always been important to communicate to the public. We need to be willing to talk and openly discuss the science, not try to be too political about it, just talk about the benefits of science," he said.

Overseeing more than 100 scientists at Environment Canada, he empowered his team to hold briefings by putting staff through media and communication training and encouraging them to "explain the science, as it really is."

McBean's research and prominence led to advocacy work, pushing back against political forces and heads of state looking to dismiss the scientific community when climate change was a newer phenomenon, or when it garnered controversy.

Those efforts have been recognized with some of the top prizes in Canada and worldwide.

McBean was a member of the Intergovernmental Panel on Climate Change team that won the 2007 Nobel Peace Prize.

The following year, he was appointed to the Order of Canada, one of the country's highest honours, for contributions that "enhanced Canada's stature on the world stage."

He was recently awarded the 2023 [Warren Washington Research and Leadership Medal](#) from the [American Meteorological Society](#).

McBean is among 506 scientists across the world elected as AAAS 2022 Fellows for "efforts to advance science applications that are deemed scientifically or socially distinguished."

"AAAS is proud to elevate these standout individuals and recognize the many ways in which they've advanced scientific excellence, tackled complex societal challenges and pushed boundaries that will reap benefits for years to come," Sudip S. Parikh, chief executive officer of AAAS said in a statement.

The AAAS is the world's largest general scientific society and publishes the journal *Science*, among other publications.

[Brock Fenton](#), a professor emeritus in biology, was [elected AAAS Fellow in 2015](#), the last Western faculty member to receive the honour.

This article originally appeared in Western News, January 31, 2023

New publication

Cities Adapt with Climate Resilient Infrastructure

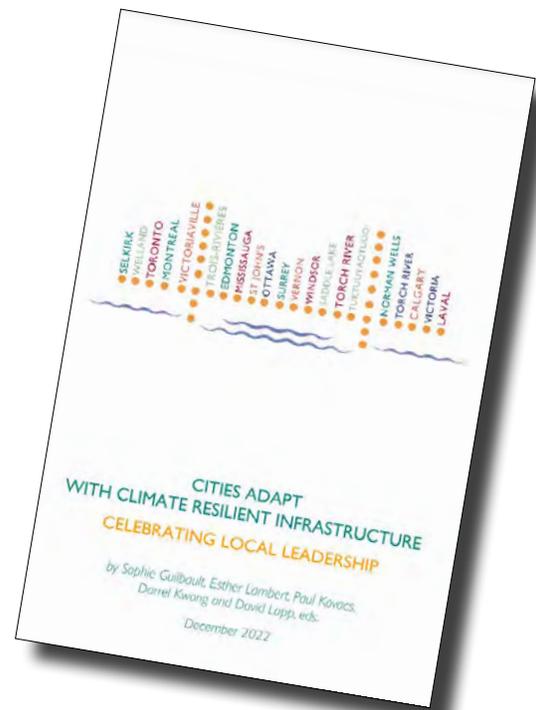
ICLR has released *Cities Adapt with Climate Resilient Infrastructure: Celebrating local leadership*, the latest in a series of books that contain real-world examples of actions being taken by Canadian communities to adapt to climate change.

The adaptation actions taken by the 20 local governments presented in the book align with the Sendai Framework's recommendations. The local leadership showcased in this report is inspirational and presents tangible examples of what communities can achieve and what should be built upon into the future. Most case studies presented have had great success by establishing successful partnerships and collaborations with provincial, federal, and territorial governments, as well as the private sector.

This publication presents cases from eight provinces and one territory, featuring communities ranging from under 3 km² to over 5,000 km². It includes both urban and rural communities as well as various

scales of infrastructure. Yet, from this diverse group, each community has taken strong action to reduce their vulnerability and improve the climate resilience of various infrastructure assets.

While many communities continue to experience the devastating impacts of aging infrastructure destroyed by more frequent extreme climate and weather events, the 20 communities presented in this report prove that a lot can be done to ensure greater resilience of public infrastructure. Municipal adoption of best practices like the Public Infrastructure Engineering Vulnerability Committee (PIEVC) protocol has helped communities to understand the state of their assets and provides recommendations on concrete actions to be taken to improve resilience. The benefits of taking action extend way beyond the avoided damage to the infrastructure itself and include the broader social, natural, and economic environment.



The book brings to 100 the number of local climate change adaptation case studies covered by the series.

Cities Adapt with Climate Resilient Infrastructure can be downloaded in its entirety or by chapter at www.citiesadapt.com.

Far and wide

By Glenn McGillivray, Managing Director, ICLR

Large storms like the kind we saw in 2022 can present unique challenges to Canadian insurers

Preliminary numbers for 2022 Canadian insured disaster losses are in (or out), and they're not pretty.

According to Catastrophe Indices and Quantification Inc. (CatIQ) 15 declared events classed as 'cats' (i.e. each driving losses of a minimum of \$30 million insured, up from \$25 million previously) resulted in preliminary insured losses of \$3.1 billion.

This places the year in the top three costliest on record, with 2016 (the year of the Fort McMurray wildfire and other events, ~\$5 billion insured) and 2013 (the year of the Southern Alberta and Toronto floods and other events, \$3.1 billion insured).

Both 2013 and 2022 have been rounded up. None of the figures include loss adjustment expenses.

According to a [CatIQ release](#) "[T]wo events made up a substantial portion of the overall industry total – the May 21 derecho in Ontario and Quebec (\$1 billion) and Hurricane Fiona in Atlantic Canada in September (\$800 million)."

The pair are now included in the top ten costliest weather events in Canadian insurance history.

The year marks only the second time the country has experienced two billion-dollar events (economic) in the same year, after the two major floods in 2013.

Three events experienced in Canada last year shared an important attribute, one which I would like to focus on here – size.

The derecho in Southern Ontario/Southern Quebec in May, post tropical storm Fiona in September and the bomb



Storm damage on Merivale Road at Viewmount Drive caused by the May 2022 Derecho that struck the city of Ottawa. (Josh Robillard – Wikimedia Commons)

cyclone close to Christmas were all spatially massive storms with huge damage footprints – even moreso when including the US side.

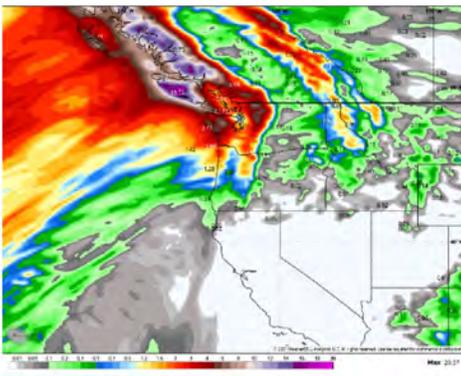
The May derecho spanned some 1,000 kilometres in length when considering both the US and Canadian portions. Looking at Canada alone, there was damage reported along an 800 kilometre-long tract, with several major Canadian urban centres being impacted, including Windsor, London, Hamilton, Burlington, Oakville, Mississauga, Toronto, Pickering, Whitby, Oshawa, Kingston, Ottawa, Montreal and Quebec. The region impacted by the storm is responsible for generating about a full quarter of the country's GDP. Close to 63,000 claims were filed as a result of the event.

Post tropical storm Fiona made landfall between Guysborough and the Canso area of Nova Scotia on the evening of September 23 and into the early hours of the 24th ripping through large portions of Cape Breton Island before moving on to Prince Edward Island and Newfoundland and Labrador. Damage from the storm was extensive, with roofs blown off

buildings; trees down on houses and vehicles; piers, ports and boats destroyed; and structures washed out to sea. Critical public infrastructure, such as roads, bridges and culverts, also took a beating. Power outages were extensive, with 400,000 customers without electricity in Nova Scotia and almost all of PEI in the dark by the morning of the 24th. Close to 36,000 claims were filed as a result of the event.

The bomb cyclone was described by CatIQ as "An expansive, rapidly intensifying low pressure system, [which] passed through southern Ontario, southern Quebec, and the Maritimes between December 22 and 25. Prolonged powerful sustained winds and gusts drove blizzard conditions, toppled trees and power lines, and caused coastal flooding. Power outages were prolonged in some areas, leaving customers in the dark for more than a week in some cases." Close to 20,000 claims were filed as a result of the event resulting in preliminary insured damage of \$180 million (CatIQ).

A couple of other recent events also fit the bill for inclusion in this discussion.



Nov 2021 atmospheric river in BC (top left), Dec 2022 bomb cyclone (top right), May 2022 derecho (bottom left), and post tropical storm Fiona Sept 2022 (bottom right).

The November 2021 atmospheric river event in the Pacific Northwest hit widespread areas of southwestern BC with extreme rains and resultant rock and mudslides. According to a study by the Canadian Centre for Policy Alternatives, the flooding may have led to almost \$5 billion in economic damages. Insured damage came in at more than \$675 million (CatIQ).

In early May, 2018 a massive windstorm with gusts of up to 126 km/h whipped across Southern Ontario and Southern Quebec, essentially leading to a large number of relatively small damage claims (in most cases). Close to 72,000 claims were filed as a result of the event, leading to insured damage exceeding \$600 million (CatIQ).

Storms with these kinds of damage footprints can present a unique challenge to insurers, particularly smaller, regional carriers.

Along with their potential to overwhelm insurers from a claims adjusting/management and restoration perspective is the issue of accumulation management.

While accumulation management is always important (an overconcentrated carrier can get itself into trouble if it writes a lot of business in a small geographical area), even companies that are really good at watching this risk can take a bad hit when a large storm sweeps through an insurer's area of operation.

The hit can be lethal.

As a result of the derecho, one very small company in Ontario was rumoured to have received claims valued at more than twice the company's annual premium volume. It was saved by a stop loss reinsurance agreement that it had in place. Another smaller, regional player in Eastern Canada was reported to have received about 300 claims an hour in the days following Fiona.

This threat underscores the need for a robust, well-crafted cat reinsurance program.

From a loss control perspective, four out of five of the storms mentioned above featured extreme wind as a major source of damage.

ICLR has been advocating for some time now that new homes in Canada be built with extreme wind in mind and has been working with building codes officials, home builders and others to this end. The building industry often pushes back with the argument "Why build for tornadoes when they are so localized and relatively rare."

Our retort is that we have to build with extreme wind in mind, and while that includes tornadoes of up to EF2 in rating, it may also include other forms of extreme wind.

These large storms nullify arguments that we shouldn't build for wind because only select areas (of Ontario, for example) are at risk.

We know this just isn't the case.

This article originally appeared in InsBlogs, February 2, 2023

ICFM9 a huge success. ICFM10 coming to ICLR @ Western in 2026... *Continued from page 1*

The committee comprises stalwarts in disaster management, water resources planning, and hydro-climatology from academia, government organizations, and public and private sectors of three different continents. ICLR plays an essential role within ICFM, with Prof. Simonovic chairing the Ad Hoc Committee, Paul Kovacs and Dan Sandink serving as members of the Ad Hoc Committee, and providing the best poster awards at each of the conferences.

Established 23 years ago, the ICFM has successfully held eight conferences globally. The recently concluded 9th ICFM Conference took place from February 18-22, 2023, in Tsukuba, Japan, under the theme "River Basin Disaster Resilience and Sustainability by All - Integrated Flood Management in the Post COVID-19 Era." The conference brought together over 400 experts and stakeholders from various disciplines from over 30 countries to discuss the challenges and solutions related to flood management. Engaging discussions were held on topics such as building flood resilience, flood risk assessment, early warning systems, flood response planning, and community engagement in five plenary sessions, 24 parallel sessions, and 90 poster presentations.

ICFM9 concluded that preventable loss of life and destruction of property as a result of flooding is unacceptable and requires bold and transformative action. Concerted actions should be undertaken according to internationally accepted goals and targets, including those addressed in the Sendai Framework for Disaster Risk Reduction 2015-2030, the 2030 Agenda for Sustainable Development, and the 2015 Paris Agreement. To improve resilience, it is necessary to understand and address systemic factors that create flood risk through cross-sectoral and basin-wide coordination. Economic recovery investment activities stemming from the COVID-19 pandemic should be linked with efforts to build a resilient society. Flood disaster resilience and sustainable development are closely and structurally interlinked, and their issues must be comprehensively understood. Flood managers should promote holistic, integrated, and interdisciplinary approaches, conduct planning, implementation, and evaluation to enhance resilience, and consider the key concepts of resilience, sustainability, and inclusiveness as guiding principles for executing flood resilience projects.

The ICFM9 made several recommendations: (a) to establish cross-sectoral frameworks at local,

national, regional, and global levels to link cutting-edge science beyond disciplines with on-site decision-making and action to achieve goals using an end-to-end approach; (b) to promote collecting, archiving, and sharing data and information on flood risk; (c) to improve models of flood events and their economic impact, as intensified by climate and social changes, to plan practical policies for national and global economic development; (d) to promote water cycle consilience by integrating the knowledge of water cycle, climate, agriculture, and energy using well-organized observation, modeling, and data and information systems; (e) to foster the integration of "facilitators" to work as catalysts capable of providing expert advice in the local context based on a broad range of scientific knowledge about flood resilience and sustainable development under climate change; and (f) to understand and integrate the impacts of social inequity, and the rights of indigenous peoples into all strategy, planning, and action for flood resilience.

We are very pleased to announce that the 10th Anniversary Conference will be hosted by ICLR and Western University in the summer of 2026 in London, Ontario.

Institute for Catastrophic Loss Reduction

Mission

To reduce the loss of life and property caused by severe weather and earthquakes through the identification and support of sustained actions that improve society's capacity to adapt to, anticipate, mitigate, withstand and recover from natural disasters.

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