Institute for Catastrophic Loss Reduction
Building resilient communities

CATtales

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Inside this issue

ICLR launches new main website

The Institute for Catastrophic Loss Reduction announced the launch of a new main website, the third-generation site for the Institute.

The website features a wealth of disaster risk reduction (DRR) and climate change adaptation information that has been produced over the Institute's 20 years, much of it available in both English and French.

Along with a fresh new look, the new site offers a couple of new features.

First, visitors to www.iclr.org are able to navigate the site either by hazard or by role.

Navigating by hazard allows the user to jump straight to loss control information on ICLR's main areas of hazard research: Wind, Water (mostly basement flood risk reduction), Wildfire, Earthquake and Hail.

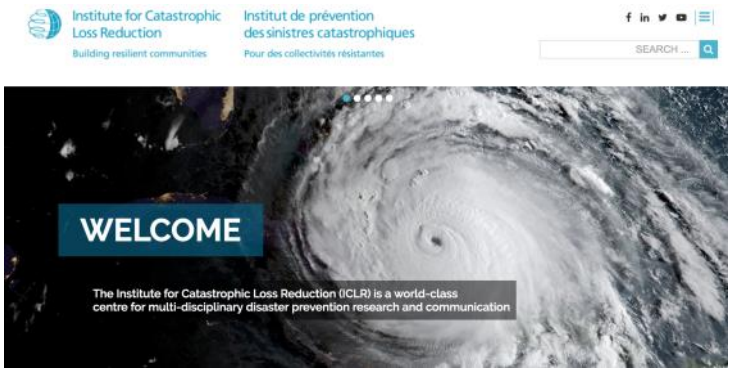
Navigating by role allows the user to find information that is relevant to who they are: homeowner, municipality, insurer, researcher or small business owner.

Second, in recognition of the massive changes that have taken place in technology over the years, the new site is 'dynamic', that is, the site navigation and layout varies depending on the type of device the visitor is using, whether phone, tablet, laptop or desktop.

The site also affords easy access to the 200–plus videos on ICLR's YouTube Channel (many of them being replays of the popular monthly workshop webinars held by the Institute). The site also contains the slide decks from almost every workshop held since the creation of ICLR two decades ago.

One of the main challenges in developing the new site was migrating the massive amount of information from the old site. Adding up all the studies, reports, newsletters, slide decks and other resources, more than 660 PDFs had to be migrated over.

The site currently features three new major studies published by ICLR already this year: *Hail climatology for Canada: An update*, *The governance of climate change adaptation in Canada*, and ICLR's newest study *Development permits: An emerging policy instrument for local governments to manage interface fire risk in a changing climate.* **CT**



Gordon McBean recipient of top WMO scientific prize

The World Meteorological Organization (WMO) has presented its top award to Gordon McBean of Canada for his outstanding work in meteorology and climatology and his leadership as a scientific researcher. Dr. McBean is currently President of the International Council for Science.

The IMO Prize is the equivalent of the Nobel Prize for meteorology. Established in 1955 and named after the predecessor of the WMO, the International Meteorological Organization (IMO), it is awarded every year by WMO Executive Council.

"Doctor McBean is an outstanding scientist and most deserving of our highest award. For more than fifty years, he has been engaged in meteorology, atmospheric and climate sciences, and climate change," said WMO President David Grimes.

"From his early career as a weather forecaster and research scientist with Transport Canada and Environment Canada, Dr. McBean has built on his accomplishments as a researcher, with breakthrough discoveries in the atmospheric boundary layer and storms over the oceans; as a leader in international and national science and committees; and as an innovator in cross-disciplinary science in disaster risk reduction and climate change adaptation, and associated societal impacts," said Mr. Grimes.

On the occasion of the award ceremony, Dr. McBean delivered a scientific lecture on Integrated Environmental Prediction - Addressing 2030 Global Agenda. Canada's Ambassador and Permanent Representative to the United Nations, Rosemary McCarney, attended.

Dr. Gordon McBean (centre) accepts the IMO Prize from the WMO.

Dr. McBean is ICLR's Director of Policy. **CT**

Slobodan Simonovic recipient of top IWHR Award

Dr. Slobodan Simonovic, Professor of Civil and Environmental Engineering at Western University and Director of Engineering Studies with the Institute for Catastrophic Loss Reduction, has been notified that he will be the recipient of the IWHR Award for Contribution to International Collaboration.

The China Institute of Water Resources and Hydropower Research (IWHR), located in Beijing, is a national research institution under the government's Ministry of Water Resources of China, and is engaged in almost all disciplines related to water resources and hydropower research.

With 60 years of development, IWHR has become a key think tank for the Chinese government for decision making in water-related areas.

In a letter to Dr. Simonovic, the President of IWHR noted that "Over the past decade you have made great contributions to the academic progress and overall development of our institute, as well as the scientific exchanges between China and Canada. As a recognition of your contribution, IWHR is going to honor you with the IWHR Award for Contribution to International Cooperation."

The award will be presented to Dr. Simonovic at the Forum on Modern Water Governance and Technological Innovation on October 18, 2018. **CT**

Development permits: An emerging policy instrument for local governments to manage interface fire in a changing climate

Reducing the risk of wildfire, several communities in western Canada are using development permits as a way to address construction of new residential development in the wildland-urban interface, the Institute for Catastrophe Loss Reduction (ICLR) notes in a new report.

More than a dozen communities in British Columbia and Alberta have begun to use development permits to control the extent, nature and location of new residential development, ICLR executive director Paul Kovacs wrote in *Development permits: An emerging policy instrument for local governments to manage interface fire risk in a changing climate*.

Some local governments now include covenants in the development permit system requiring fire resilient building materials for new homes, the report notes.

Conditions for approving a development permit may include:

- fire-retardant roofing
- exterior walls sheathed with fire-resistive materials
- windows with tempered or double-glazed glass
- decks built with fire-resistant materials
- screens on all eaves, attics and roof vents
- chimney spark arrestors

"The provincial and territorial governments do not presently include provisions addressing the risk of damage from wildland fires through their building codes," Kovacs wrote. "[F]ortunately, these public safety measures are now emerging in local government development permit requirements."

The report uses the following three case examples as an overview of the range of planning actions that have been taken by local governments.

Nelson, B.C.

The official community plan bylaw for Nelson – which experiences hot, dry summers and is located in a region with high wildfire risk – includes four pages of wildfire interface design guidelines in its development permit area regulations. Among other requirements, the plan identifies allowed, encouraged and not-permitted building materials for new homes. Nelson requires a fire-resistant roof and siding, as well as screened soffits. Siding that is not permitted includes wood siding, shingles or shakes; roofing that cannot be used includes untreated wood shingles or shakes. "Nelson is specific in the building materials required to secure approval, in contrast to the ambiguity found in other jurisdictions," the report says.

Swan Hills, Alberta

The town's land use bylaw is 107 pages in length. The bylaw includes a section setting out FireSmart regulations for dwellings and structures and a three-page appendix identifying fire-resistant plants. Some of the requirements include roofing on all structures be ULC (Underwriter Laboratory of Canada) fire-rated and all property owners undertake vegetation management within 10 metres of a build. While most other communities assessed in the study chose to focus on regulating new residential development, Swan Hills' bylaw appears to apply to new and existing homes.

District of North Vancouver, B.C.

The district issued a 25-page document setting out requirements for new development permits in natural hazards zones. North Vancouver requires that new homes in wildfire areas use fire-retardant roofing, and asphalt or metal roofing should be given preference. As well, new building construction should include the use of firebreaks, which may be in the form of cleared parkland, roads or utility right of ways and decks, porches and balconies should be sheathed with fire-resistive materials.

"The use of local government planning tools to address wildfire emerging in British Columbia and Alberta is likely to spread across Canada," Kovacs wrote, noting that in 2014, a revised provincial policy statement by the Government of Ontario introduced new requirements for local governments under the Planning Act. Local governments in Ontario are now required to use their planning powers to address flood and wildfire. **CT**

Bravery alone won't keep wildfire out of town

By Glenn McGillivray, Managing Director, ICLR

On a recent long haul flight I finally broke down and watched 'Only the Brave', the 2017 Josh Brolin movie about the 19 wildland firefighters killed at Yarnell Hill, Arizona in June, 2013.

Up to that point, I had refused to watch the movie, thinking that it would likely romanticize wildland firefighting and demonize wildland fire.

I refused to watch the movie like I refuse to call the Fort McMurray wildfire 'The Beast', an overly romantic moniker coined by the now retired fire chief of that city who gave the fire the qualities of an evil, soulless creature. I didn't (and still don't) see the benefits of animorphizing the fire, making it seem like a rational, calculating, punitive creature. In my view, it helps no one to imply that such a fire is some kind of intentional being with a mind of its own. We won't work to prevent such an event from reoccurring with such a mindset.

I remain dedicated to not calling the Fort McMurray fire that name, though I admit I was largely wrong about the movie. It is a pretty good flick, though there is one part where the fire superintendent (played by Brolin) looks over the expanse of scrub in his protection zone and says something to the effect that he and his crew "protect all of this.'

The idea of 'protecting' a forest against fire is largely the wrong stance to take (especially in Canada's boreal forest, which needs fire for its own good). It is this 'suppression at all costs' mentality that has gotten many North American jurisdictions into the mess they are currently in, i.e. where years of successful suppression has ensured that wildlands are choked with fuel that's now just waiting to go up like a tinder. In large measure, saying we need to stop fire on the landscape is akin to saying we have to stop the wind or the rain. But I don't wish to spend my time here talking about the issue of suppression.

Instead, I want to put forth an idea of how we can better understand the interface fire problem (i.e. the issue of fire getting into communities), at least partly by looking at what we've learned from the past.

In the distant past, several major cities, mostly in Western Europe and North America, have experienced large conflagrations caused by one thing or another (like rambunctious cows). Fires in such places as London, New York, Toronto, Chicago and San Francisco lead to many changes in how cities are designed, how buildings are constructed, and in fire education and safety.

I suspect that these fires were largely viewed in technical terms and, thus, were seen as addressable, where measures could be put into place to prevent or, at the very least, reduce the risk of reoccurrences.

Firewalls were placed within and between buildings; openings (like small windows) were limited on the exposure sides of buildings; fire doors became common; buildings were outfitted with fire alarms, suppression equipment with dedicated water supplies and, from the late 19th century, sprinkler systems; less wood was used in construction; open flames were limited, and so on. Parallel to these efforts came the rise of education programs to inform people about the risk of fire and actions they could take to limit ignitions and spread. Over time, both the frequency and severity of urban fires dropped precipitously, to the point where fires are no longer a major cause of death and the main cause of insured property damage in most industrialized countries.

These actions are essentially early examples of risk management and are largely still in practice today. Indeed, it is still common for the risk manager of, say, a factory or mill to do a walk around of a site and make recommendations about how to prevent ignition and spread of fire.

But we don't take this approach with homes in the interface. Why?

First, wildfires are viewed as 'natural disasters', and there is a widespread view that "nothing can be done about natural disasters" – they occur at the whim of Mother Nature. Really, though, a wildfire is a natural hazard, the disaster comes when the hazard exploits manmade vulnerabilities. I think the view that losses are inevitable when a hazard strikes is leading to inaction when it comes to wildland fire. For some reason, ►

we treat the prevention of interface fires differently than we treat the prevention of other fires. But fire is fire.

Second, people have a misconception about wildfires and the interface, believing that wildland fires roll through the forest, hit a built up area and keep rolling. But what largely happens is that embers from the wildfire are blown far ahead of the fire front and ignite flammable materials located around structures. These materials then either ignite the structure directly, or ignite something else (like a wood shed or deck) that in turn ignites the structure. This is what largely occurred in Fort McMurray. It is also what occurred in the Tubbs Fire in Northern California in October 2017, except the embers travelled very deeply into the urban core of Santa Clara, leading to the incineration of about 2,800 homes, mostly in the Low Risk part of town (as designated by the city's statutory state wildfire risk maps). These maps apparently did not take the state's often intense Santa Ana winds into consideration.

Once you realize that wildfires are not juggernauts that roll through town like a steamroller and that structural ignitions from wildfire embers are preventable, then you can put programs into place to address the issue of flammability of individual structures, subdivisions and entire communities located in the interface.

One problem I see is that we may be talking too much to the wrong folks; to wildland fire experts and not to structural fire experts, fire modellers and other urban fire experts.

Now don't get me wrong. Wildland fire experts, including fire ecologists and wildland fire suppression experts, are key throughout the entire lifecycle of a wildland fire – (long) before, during and (long) after. And we need to recognize that the condition and health of the forest around the interface community will largely dictate how intense the fire will be, the rate at which it spreads, and the amount of embers that are produced (the greater the fine fuels, the more embers).

But once a wildland fire gets into town, the fire stops being a forest fire and starts a new life as an urban fire, possibly becoming an urban conflagration or 'firestorm' if enough structures are ignited (often via structure to structure spread of fire).

So we have to recognize that once the fire hits town, it becomes a different fire, feeding on different fuels (like structures and vehicles). A fire ecologist, for example, has no expertise in the mechanisms that lead to structural ignition and spread of fire in an urban setting.

Thus, we need to bring structural or urban fire departments and experts into the discussion and leverage their knowledge (of course, many are already involved in the discussion, but many are not).

We have to pull in such organizations as the Canadian Association of Fire Chiefs, the Aboriginal Firefighters Association of Canada and their provincial counterparts, as well as provincial firefighter associations.

We need to bring in such researchers as fire modellers, to better understand how fire grabs hold and spreads in urban areas (we know what causes structures to ignite, but need to do more to understand how entire subdivisions are lost) and the sequence of such spread. Some work has already been done in the fire following earthquake research area, and much of the learnings there can be carried over to wildland urban interface fire research.

Essentially, we need to take the same approach with wildland fire in interface communities as we do with all other urban fires, including urban conflagrations.

This can only start by talking to the right people. **CT**

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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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