

ICLR Board of Directors

Kathy Bardswick (Chair)
The Co-operators
Jean-Jacques Henchoz
Swiss Re
Andy Hrymak
UWO
Chris Kiah
Allstate Canada
Paul Kovacs
ICLR
Deborah Moor
Lloyd's Canada
Rowan Saunders
RSA
Brian Timney
UWO
David Wardlaw
UWO

Storm loss data for ICLR members

New service launched with ICLR support

On March 16, ISO and MSA Research Inc. announced the creation of PCS Canada, a new service that will track and record Canadian catastrophic loss claims exceeding \$25 million. ISO has offered this service in the U.S. for more than 50 years.

As a key partner in the provision of this new service, the Institute for Catastrophic Loss Reduction (ICLR) has negotiated an agreement with PCS Canada that will allow us to offer the database free of charge to those Institute members who contribute data.

The formalized tracking of such data marks an important milestone for the Canadian property and casualty insurance industry, particularly given the alarming trend of more frequent and larger catastrophe losses. Indeed, 2009 marked one of the worst years in recent memory for insured losses due to natural catastrophes in Canada. As a \$43 billion-plus industry — the seventh largest p&c market in the world — it is important for Canadian insurers to have access to the tools and data they need to plan and make better decisions against the backdrop of a growing number of increasingly complex catastrophe losses in the country. PCS Canada will do just that.

The service will enable primary insurance companies, brokers, reinsurance companies, reinsurance intermediaries, and others to receive industrywide data

on Canadian catastrophes, both manmade and weather-related. The data will assist insurers in setting more accurate reserves, improve benchmarking, enhance modeling, promote reinsurance transactional efficiencies, and fine-tune catastrophe response plans. As discussed with the ICLR Insurance Advisory Committee, PCS Canada will begin populating the database with a survey on major 2009 losses. Future surveys will take place as events occur.

“Insurers need reliable catastrophe information to make underwriting and reinsurance decisions,” said Gary Kerney, assistant vice president of ISO’s PCS unit. “Since the Canadian property/casualty insurance industry lacked a single, comprehensive catastrophe claims service, many insurers have relied on their own or incomplete industry catastrophe loss data as the basis for their underwriting, loss reserving, and reinsurance decisions.”

“The Canadian insurance industry has been experiencing an ever-increasing frequency of extreme and costly weather events,” said Joel Baker, CEO of MSA Research Inc. “The PCS-Canada service will enable insurers, reinsurers, and others to benefit from a robust collection of data and refined analysis about such events and loss trends. Our goal is to create a catastrophe service for the Canadian market that works similarly to — and as ►

Inside this issue:

Storm loss data for ICLR members cont...	2
First three months of 2010 worst ever for cat losses	2
ICLR releases new study on the Peterborough floods	2
Annus horribilis: The sequel	3/4
Natural catastrophes and man-made disasters cost insurers USD 26 billion in 2009	5
ICLR retrofits a community health centre in Victoria, B.C.	6

successfully as — the U.S. PCS unit. We have been consulting with industry leaders on establishing this service for many months now, and the response has been extremely positive. We are encouraged further that we are launching this service with the support of the IBC and the Institute for Catastrophic Loss Reduction (ICLR) and with the endorsement of the Reinsurance

Research Council (RRC). We plan to work closely with all stakeholders to ensure that PCS-Canada service brings value to the industry,” added Baker.

ICLR looks forward to active participation by its membership and to giving its members access to the consolidated industry data that the new database will house.

Provision of access to this database is yet another demonstration of the measures ICLR is taking to ensure that it is providing its p&c insurance members with the information and tools they need to manage natural catastrophe risk. 🐾

Willis Re: \$16 billion catastrophe tab makes first three months of 2010 worst ever for natural peril losses

As part of its April reinsurance renewals report, Willis Re noted that an unprecedented US\$16 billion in losses from the Chilean earthquake, the European storm Xynthia and other natural catastrophes have made the first three months of 2010 the worst first quarter on record for such events. Willis Re is the reinsurance broking arm of Willis Group Holdings, the global insurance broker.

Willis Re's 1st View renewals report said that following a year of historically low

frequency and severity of losses and resulting excellent financial performance, the first quarter 2010 results of reinsurers will, for the first time in many years, be worse than those of their primary insurance company clients.

The Willis Re report, titled "Calm Amid Calamity", tracks reinsurance rate movements across numerous territories and product classes. The review said the difficult first quarter does not bode well for reinsurers because their largest losses are coming from smaller

markets, where they are less able to generate significant premium volumes to accelerate post-loss payback. At the same time, losses in the first three months of the year leave reinsurers exposed to the historically more loss-prone third and fourth quarters, Willis Re said. Adding to the potential for future market volatility, some forecasters are now predicting a more-active-than-usual North Atlantic hurricane season. 🐾

ICLR releases new study on the Peterborough floods

ICLR's latest study "*Citizen participation in flood reduction planning: Strategic choices in Peterborough, Ontario*" explores the role of citizen participation in a post-disaster flood hazard mitigation planning program in Peterborough, Ontario.

Recognizing that citizen participation is an integral element of hazard mitigation planning, a review of the relevant literature identifies six strategic planning choices that should be considered in the design of a citizen participation program. The strategic choices include:

1. Administration – whether or not to include participation in the

planning process and how to staff citizen involvement efforts;

2. Objectives – whether to simply educate citizens, seek their ideas and preferences, or actually grant them influence in decision making;

3. Stage – when to start encouraging and allowing citizen participation in the planning process;

4. Targeting – which types of stakeholder groups and segments of the population to invite to participate in the planning process;

5. Techniques – what types of approaches are employed to generate citizen participation; and,

6. Information – what types of information and dissemination processes are used to inform participants.

The study uses this framework to analyse the strategic choices made during the Flood Reduction Master Plan (FRMP) process undertaken in Peterborough following a severe flood event in 2004. Many successful elements and several opportunities for improvement of citizen participation in the planning program were found.

The paper can be downloaded at www.iclr.org 🐾

Annus horribilis: The sequel

The last time Canada had a \$1 billion-plus year was 2005. But now it looks like 2009 will go down as another costly year for cat losses.

By Glenn McGillivray, Managing Director, ICLR

In a January 2006 article published in *Canadian Underwriter*, "Annus horribilis," I wrote about the heavy natural catastrophe losses experienced in Canada the year prior -- a cool Cdn\$1 billion for 2005. The total came largely as a result of the Aug. 19, 2005 deluge in the Greater Toronto Area (GTA), where more than 150 mm of rain fell in just three hours, triggering in excess of \$500 million in claims. Other losses in 2005 came from heavy downpours and flooding in Alberta in June (causing an estimated \$275 million in insured damage), a tornado in Hamilton in November, and a few other, more minor events.

In 2009, the list of losses was a bit longer, though many individual events appear to have flown under the industry's radar (except, of course, for those companies hit hardest). However one, the Aug. 20, 2009 tornado outbreak, left an indelible mark on many, as the twisters were caught on cellphone video cameras and sent to media outlets, and residents of one of Canada's densest residential areas had to scramble to their basements to seek shelter.

This and that, here and there

As is usually the case, the country was hit by several relatively small events in 2009. Among these was a Feb. 2 snowstorm in Ontario, which caused an estimated \$25 million in insured damage, according to Aon Benfield. The Insurance Bureau of Canada (IBC) reported that an F2 tornado in Mont Laurier, Quebec on Aug. 4 caused an estimated \$6 million in damage. In the Atlantic provinces, Hurricane Bill caused an estimated \$10 million on Aug.

23 and Tropical Storm Danny caused about \$25 million on Aug. 29, according to Aon Benfield.

Hailstorms in southern Manitoba from Aug. 13 to 15 caused an estimated \$50-\$75 million in damage (mostly crop hail), Aon Benfield says. The Canadian Crop Hail Association commented on Aug. 28 that storms produced hail around Niverville, Hamiota, Lasalle, Starbuck, Brandon, Miniota, Birtle, Somerset, Deloraine, Hartley, Melita, Boissevain, Oak River and Notre Dame De Lordes, and baseball-sized hail hit areas near Lasalle and Brandon, causing 100% crop loss in the heart of the storm.

Eighteen confirmed tornadoes -- a record for the most in one day in Canada -- tore across Southern Ontario on Aug. 20, resulting in the tragic death of a young boy in Durham and damage to some 600 homes in Vaughan, just north of Toronto. Damage, concentrated largely in Woodbridge and Maple, was widespread, including smashed cars, utility poles and a variety of buildings. IBC pegged the insured damage at more than \$76 million, a number that may appear low to many given the perceived size of the event.

Tornado outbreaks are not unheard of in Ontario. On Aug. 2, 2006, 17 twisters touched down across parts of south and central Ontario, causing damage mostly throughout cottage country. At that time, it was the highest number of tornadoes for a single event ever in the province, amounting to the equivalent of what Ontario normally sees in one year, according to Environment Canada. And what the media often refer to as the "Barrie Tornado" event in May 31, 1985, actually was comprised of 13 twisters that ripped across parts

of southern Ontario late that afternoon. These events, however, pale in comparison to some of the larger outbreaks that have occurred in the United States.

On May 2, 1999, 76 tornadoes tore through 18 U.S. states, leaving at least 46 people dead. The largest twister, which was more than 1.6 kilometres wide at times, was also to be the most powerful ever recorded: the F5 tornado had wind speeds clocked at 512 kilometres per hour—strong enough to scour pavement from road surfaces. From Apr. 3-4, 1974, in what is known as 'The Super Outbreak,' 148 tornadoes were confirmed in 13 states; and in the second Palm Sunday tornado outbreak of Apr. 11, 1965, 47 tornadoes hit the U.S. Midwest.

One-two punch

Just as occurred in 2005 with the August 'Freaky Friday' event in the GTA and the Alberta storms, two events alone caused the lion's share of the insured damage in 2009.

On July 26, 2009 more than 100 millimetres of rain in under three hours inundated parts of Hamilton, Ontario, flooding thousands of basements -- particularly in the city's east end. Aon Benfield notes that providing accurate estimates of insured damage for this event is difficult, since many insurers suffered aggregate damage that fell within their retentions. The reinsurance intermediary estimated insured damage of \$100 to \$150 million. Other sources have put the range between \$200 million and \$300 million, and even as high as \$325 million. The IBC pegs the damage figure at \$196 million. The final numbers may not ►

be known for some time.

Just a few days later, from Aug. 1-3, major wind and hail in Alberta caused more than \$365 million in insured damage, according to the IBC. Other sources place the insured damages from this event in the neighbourhood of \$500 million, which would make it the second-most-costly natural catastrophe loss in Canadian history (pushing the Aug. 19, 2005 GTA event to third place).

In Alberta, one person was killed and 15 were injured -- four critically -- when high winds knocked down a stage at the Big Valley Jamboree in Camrose on Aug. 1, 2009. The winds were also blamed for the death of a three-year-old girl in downtown Calgary after corrugated sheet metal fell from a construction site onto a family walking on 9 Avenue SW. Her father and seven-year-old brother were sent to hospital with serious injuries. The strongest reported winds were clocked at 141 km/h at Three Hills and 125 km/h at Red Deer. Subsequently, overnight Sunday and into the wee small hours Monday, vicious winds clocked at 107 km/h, lightning and hail wracked Calgary and area, leaving a swathe of downed trees, shattered windows and hail damage. According to David Phillips of Environment Canada, hail inside the main zone reached baseball size. In some places, hail measured 10 cm deep.

Phillips described the Alberta event as follows: "The nearby town of Carstairs was devastated by the battering large hail. Literally every house in town suffered major hail damage. Some looked like they'd been hit by gunfire with gaping holes left in the siding. Repair crews set up mini-camps nearby to help repair the damage -- a job that is not likely to be completed this year. Hail damage stretched from Olds to Bow Island and was 55 km wide in places. Baseball-size hailstones crunched grain bins

and stripped bark off trees, while powerful winds blew over sheds and barns. Some horses and cattle had to be euthanized. The massive hailstorm decimated more than 600,000 ha of Alberta cropland, triggering 1,500 hail crop damage claims. In total, two-thirds of the year's hail crop losses occurred as a result of the long weekend storm."

Two considerations

Two things are worth noting about recent natural catastrophe losses in North America.

First, when it comes to such losses, timing is everything. The \$2-billion-plus hit that came in 2005 -- the big natural catastrophe losses noted above, plus the \$1.2-billion, man-made Suncor loss -- occurred during a moderately profitable year for the industry, which took in net income of \$5.2 billion that year. In comparison, 2009 is shaping up to be a rather weak year for Canadian property and casualty insurers, with only \$1.6 billion in profits recorded for the first three quarters. At a presentation of preliminary 2005 industry results made back in early 2006, IBC noted that had the '05 losses occurred in 2001 (one of the worst years ever for the Canadian property and casualty segment), the industry's 111% combined ratio would have ballooned to almost 121%, its ROE would have turned negative, from 2.6% to -3.3%, and 64 companies would have recorded a solvency score of under 10%. Hence, a big loss and/or a series of medium and small losses in an already bad year can put companies at risk of insolvency.

Second, two trends appear to be emerging vis-a-vis insured losses from natural catastrophes. I have written before about the first: the fact that over the last decade or so, the industry has seen the birth and subsequent rise of \$1-billion-plus

insured natural loss events that fall outside the realm of earthquake, hurricane and flood (see "The New Normal: Billion-Dollar Bruisers," *Canadian Underwriter*, July 2007). It is no longer uncommon to experience billion-dollar insured losses from ice storms, hail, tornadoes and wildfires. The second, though less clear, focuses on the issue of what may be called "mini-cats" for lack of a better term. These can be defined as small-to medium-sized events that, while substantial from a loss perspective, fall within insurance company retentions and are therefore taken net on the balance sheet. Several of these in a year (as with 2005 and 2009) can quite severely impact a carrier's bottom line. Again, if they happen in a weak year for the industry, these kinds of losses can have a negative impact on solvency.

On top of all this, due to higher retentions and the shift from proportional to non-proportional reinsurance that took place over the last 10 to 15 years, many reinsurers are picking up a lower proportion of cat losses than they once did.

Given the active cat years that Canada has seen as of late, and also taking into account a changing climate that bodes ill for future losses, carriers may wish to think twice about maintaining high retentions. Further, they may wish to consider buying aggregation covers, which are reinsurance agreements that allow insurers to consolidate losses from several events into a single reinsurance claim with one deductible.

Under the scenarios noted above, companies need to take a serious look at their reinsurance programs: structuring them the old way may no longer serve them well. 🐾

Swiss Re: Natural catastrophes and man-made disasters in 2009 cost insurers USD 26 billion

According to Swiss Re's latest *sigma* study released on March 15, natural catastrophes and man-made disasters claimed approximately 15,000 lives and cost insurers USD 26 billion in 2009. The overall cost to society was USD 62 billion. Insured losses were below average due to a calm U.S. hurricane season.

On a worldwide basis, natural catastrophes cost insurers USD 22 billion in 2009, while man-made disasters cost an additional USD 4 billion.

Insured losses were highest in North America, where they cost insurers over USD 12.7 billion. The death toll was the highest in Asia, where nearly 9,400 of the world's 15,000 catastrophe victims lived. Insured losses in the region were approximately USD 2.4 billion.

Compared to previous years, 2009 was a low loss year. According to Swiss Re 133 natural catastrophes and 155 man-made disasters occurred in 2009. Six events each triggered insured losses in excess of USD 1 billion. The costliest event was the European winter storm Klaus, which struck France and Spain in January, and led to insured losses of EUR 2.35 billion (nearly USD 3.4 billion).

Historically, catastrophe losses have been highly volatile, with a strong upward trend. In U.S. dollars, the historic upward trend for global insured losses is around 10%, and is driven by higher income, increasing wealth, a higher value concentration of wealth in loss prone regions and a trend towards more insurance coverage. Global warming and the related higher risk of extreme weather conditions also contribute to the trend.

Thomas Hess, Chief Economist for Swiss Re, commented: "The probability that we will see natural catastrophe losses as low as those in 2009 is

less than 35%. We have already seen significant events in 2010 with winter storm Xynthia in Europe and the earthquakes in Chile and Haiti. The industry is therefore well advised to prepare for much higher losses. Given their high volatility, losses could easily be three to five times what they were in 2009. In 2005, insured losses set a record when they soared to USD 120 billion. I would not be surprised if this record is broken in the not too distant future."

Most of the attention in recent years has been mainly focused on the primary perils – i.e. earthquakes, hurricanes and winter storms. However, many other natural phenomena, referred to as secondary or other perils, can also cause widespread damage to property. The most prominent secondary perils are flooding, landslides, hail storms, tornadoes, winter storms outside Europe, snow and ice storms, droughts and bush fires. In 2009, more than half of the natural catastrophe loss burden was caused by secondary perils.

According to Dr Jens Mehlhorn, co-author of the *sigma* study: "Premiums from primary perils are often used to cross-subsidize losses from secondary perils. The risk is that if premiums deteriorate, they can become insufficient to pay for the sum of losses caused by primary and secondary perils. More advanced probabilistic risk assessment models would help to better gauge and price the risk of secondary perils."

The massive earthquakes that struck Haiti in January 2010 and Chile in February 2010 are grim reminders of the destructive force of earthquakes. Since 1970, 360 damaging earthquakes have claimed over 1 million lives. According to Dr. Brian Rogers,

co-author of the *sigma* study: "The deadliest earthquakes tend to occur in less economically developed countries and in regions that are usually densely populated and prone to earthquakes. These countries typically have low per-capita income and fewer resources for prevention- and post-disaster management."

Although the death toll is usually higher in developing countries, insured losses are highest in the developed countries due to their wealth.

However, wealthier countries often have advanced prevention measures in place and better infrastructure to limit the consequences of disasters.

Economically advanced nations also tend to purchase more insurance cover, which helps to finance the costs of reconstruction.

Less developed economies can also benefit from insurance cover, especially if the public and private sectors – i.e. (re)insurers, brokers, governments and international agencies - work together.

Thomas Hess commented: "By contributing to catastrophe insurance solutions, private insurers and reinsurers can help create more stability in emerging markets, but this is only the beginning." Governments and reinsurers have successfully teamed up in the past to implement reinsurance and capital market solutions. These solutions have provided significant financial relief when disastrous earthquakes and windstorms occurred as they allocate immediate liquidity to participating governments. 🐾

ICLR retrofits a Victoria, B.C. community health centre against earthquake

The Institute for Catastrophic Loss Reduction (ICLR) conducted a non-structural retrofit of a community health centre in Victoria, British Columbia to reduce the impact of a potential earthquake. ICLR and James Bay Community Project staff were onsite on February 4 to provide a tour of the facility and answer questions from the media.

Glenn McGillivray, Managing Director of ICLR, conducted a media tour of the centre. According to McGillivray: "History and science tell us that major earthquakes have struck Canada's west coast, some in recent memory, and they will strike again. This is a certainty, so we must be prepared."

Canada's West coast represents the country's most densely populated seismic zone. According to the Geological Survey of Canada, Western Canada experiences an average of 1,000 earthquakes each year and in the off-coast region west of Vancouver Island, more than 100 earthquakes of magnitude 5 or greater have occurred in the last 70 years. Southwest B.C. and northern Washington state have experienced four Richter 7+ events in the last 130 years. The 6.8 Seattle earthquake of February 28, 2001 caused some damage in southern British Columbia.

At the event, the media received practical tips to share on how homeowners, owners of small businesses and administrators of health and social service agencies and

others can reduce the impact of an earthquake in order to reduce deaths, injuries and property damage.

Says McGillivray. "We can prevent natural hazards from becoming disasters by taking appropriate preventative measures now. The actions showcased in this facility are affordable and easy to implement. Indeed, staff and volunteers of the James Bay Community Project did the bulk of the work themselves."

According to Penny Coates, Manager of Family and Community Services, James Bay Community Project: "Through ICLR, we have learned simple, practical, low cost strategies to increase the overall safety of our facility in the event of an earthquake, without compromising our program priorities and activities. This project has also heightened staff awareness about the importance of preparedness and motivated us to review and update our emergency policies and procedures."

In recent years ICLR has retrofitted existing homes as part of Emergency Preparedness Week, held in May each year. In 2009 a home in Toronto was retrofitted against winter storm and blackout. In 2008 a home in Montreal was retrofitted to protect against winter storm and earthquake, and in 2007 a home in Edmonton was retrofitted to protect against tornado and winter storms. In 2006, a home in Ottawa was made more resilient to earthquakes and winter

storms. In 2005, a home in Vancouver was made more resilient to earthquakes, and in 2004, a Halifax home was protected against hurricanes. In 2003, a home in London was made more resilient to tornadoes. The Institute has also retrofitted child care centres across Canada as part of its "Protecting our Kids from Disasters" program. The James Bay Community Project is the first health and social service facility to be retrofitted by ICLR.

James Bay Community Project is a uniquely integrated community health and social service center which includes five core components: a primary health care centre, seniors outreach programming, the Victoria youth drop-in clinic, early childhood/family resource programs and a range of community services such as a library, information and referral services, food security programs, a thrift store, and community volunteer placements. The programs are based on a broad definition of health, and seek to improve community, family and individual health and well-being. JBCP works in partnership with many other agencies and organizations in the Greater Victoria area. JBCP is a non-profit society (James Bay Health and Community Services Society), with a community elected board of directors. 

Institute for Catastrophic Loss Reduction

20 Richmond Street East
Suite 210
Toronto, Ontario
M5C 2R9
Tel: (416) 364-8677
Fax: (416) 364-5889
www.iclr.org

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.

1491 Richmond Street
The University of Western Ontario
London, Ontario
N6G 2M1
Tel: (519) 661-3234
Fax: (519) 661-4273
www.iclr.org