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Inside this issue

ICLR releases new report on communicating hurricane risk in Canada

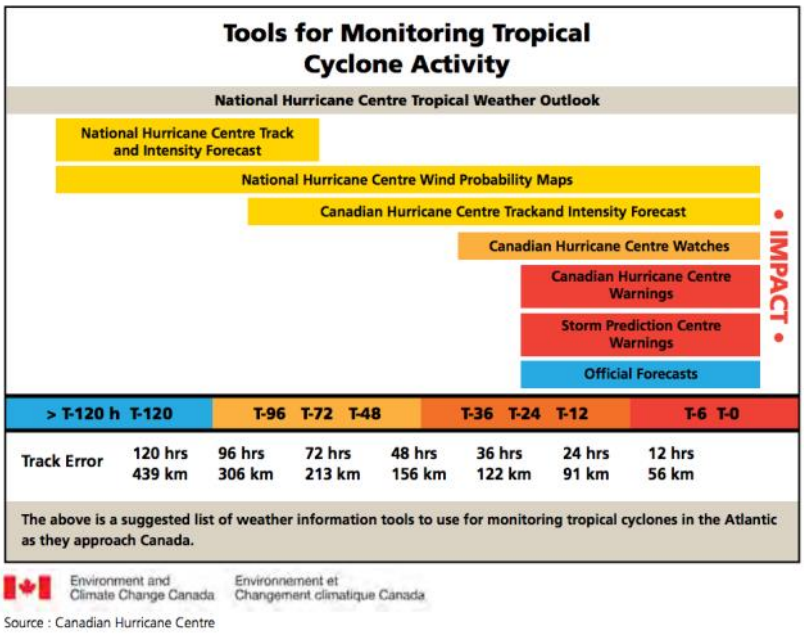
A "clear and direct communication line" should be established between the Canadian insurance industry and the Canadian Hurricane Centre (CHC), the Institute for Catastrophic Loss Reduction (ICLR) recommends in a research paper released on August 24.

The recommendation was one of two for the insurance industry contained in the report, titled *Communicating hurricane risk in Eastern Canada: Enhancing the communication lines between the Canadian Hurricane Centre, municipalities and insurers*. The other recommendation was that communication within the insurance industry be focused on risk-based analyses.

"Collaborative approaches, which include the participation of key players in the private sector (i.e. the insurance industry), can increase the likelihood that [emergency management organizations (EMOs)] can effectively manage emergency situations and improve outcomes for their publics," the report says.

The report also contains four government-centric recommendations:

1. Provincial and local governments should consider mandating compulsory training in the CHC's severe interpretation course;
2. Emergency management at the municipal level should be expanded to support all phases of emergency management;
3. EMOs should heighten, develop and expand sources of institutional memory; and ►



Source : Canadian Hurricane Centre

4. The warning structure should be changed from a hazard-based analysis to a risk-based/impact-based analysis.

"These reform options are designed to accommodate the existing emergency response framework and represent tangible, measurable and achievable options for tailoring the emergency management and response strategies for both the warning and insurance communities," the report suggests.

The recommendations are derived from a series of interviews with emergency management professionals in Nova Scotia and New Brunswick and a survey of the Canadian insurance industry.

The report noted that hurricanes represent a critical challenge for EMOs in Atlantic Canada: "These storms, while possessing similar baseline characteristics and identifying features, invariably possess a degree of distinctiveness and novelty, which translate into unique challenges for emergency managers and their organizations." Furthermore, the dynamic nature of systems within their jurisdictions requires EMOs to continually assess and refine their approaches, methods and strategies. "The link between climate change, hurricanes and public and private loss furthers this imperative in the Atlantic region," notes the report.

In addition to the six recommendations, the paper identifies three areas that could benefit from additional research: (1) jurisdictional complications and their relation to weather forecasting and emergency response; (2) demographic trends in the Atlantic region; and (3) warning fatigue.

"Refining the communication strategies possessed by EMOs in the Atlantic region represents a tangible and important step forward in the evolution of these institutions, and one that is necessitated by scientific projections," the report concludes.

Communicating hurricane risk in Eastern Canada was written by principal investigator Paul Kovacs, executive director of the ICLR, with help from research assistants Sophie Guilbault, ICLR's manager of partnership development and Brian Pentz, a PhD student in the Department of Physical and Environmental Sciences at the University of Toronto. **CT**

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Communicating hurricane risk in Eastern Canada: Enhancing the communication lines between the Canadian Hurricane Centre, municipalities and insurers

Hurricane Andrew: The benchmark

By Glenn McGillivray, Managing Director, ICLR

This article was first published in the October 1999 issue of Swiss Re Canada's 'review', a popular monthly technical reinsurance newsletter that I edited as part of my broader duties as Head of Corporate Communication. Some of the numbers and other facts are, of course, woefully outdated (some up to date info has been included in endnotes). But the idea, that a large natural disaster can bring broad, deep and long-lasting changes for insurers, reinsurers and society at large, still holds true. The discussion about weakening South Florida's pioneering wind code, it should be noted, is still making headlines to this day.

Almost every time a tropical storm in the North Atlantic matures into a hurricane, it gets measured against Hurricane Andrew. Much like a younger sibling, attending a high school for the first time, being compared to his overachieving elder brother. This is not only because Andrew still holds the record as the costliest U.S. natural catastrophe in history[1] ($15.5 billion[2], all figures in American dollars) but also because the aftermath left an indelible imprint on the psyche of average citizens and insurers alike.

For the industry, Hurricane Andrew was much more than just a large natural catastrophe. Though costly, the claims quickly became history. Sure, the bottom line was hurt for many an insurer and reinsurer. But overall, the effects of the payouts were mostly temporary. There were other impacts from Andrew that were far more important, and far longer lasting. Some will likely never fade.

Claims filed

Andrew, an F4 on the five-point Saffir/Simpson scale, broke the world record for number of insurance claims filed from a single event. The storm triggered 680,239 claims, at an average of $2,279 per claim. Allstate alone paid out $1.9 billion, $500 million more than it had made in profits from its Florida operations (all lines), including investment income, over 53 years it has been in business. Andrew's claims record has since been broken by Ice Storm 98, which recorded total claims (American and Canadian) of about 840,000.[3]

Bankruptcies

Eight property and casualty insurers became insolvent because of Andrew. These were: Florida Fire, Great Republic, Ocean Casualty, Regency, MCA, Guardian, Nova Southern, and Insurance Company of Florida. These companies were generally very small insurers (at least two were family owned operations). Most wrote business in Florida only. There may have been another three insurers that failed after Andrew, but the hurricane was only an indirect cause of those insolvencies (the three were already on the ropes when the hurricane struck).

Other insurers were severely financially challenged by the event. Some of the state's largest carriers had to be bailed out by their parent companies and many had to tap deep into their surpluses to pay losses. According to the Insurance Services Office, the insolvencies delayed payments to insureds and increased costs for surviving insurers and, ultimately, the public. Claims that were supposed to be paid for by the failed companies were instead paid by the Florida Insurance Guaranty Association.

A study by the ISO shows that a megacatastrophe – one costing the industry $50 billion to $100 billion – could result in the insolvency of up to 36 per cent of all insurers depending on where the event occurs. Unfunded claims could reach $56 billion. Andrew, thus, served as a wakeup call to legislators and industry regulators. If eight companies could go bankrupt from a $15.5 billion loss, what would happen if insured losses were double? Triple? Quadruple?

Building codes

Building codes established in South Florida after Hurricane ►

Andrew are said to be the toughest in all the United States. According to a post-storm analysis, $4 billion – or 25 per cent – of total insured losses from Andrew could have been averted if building codes had been properly enforced.

Effective inspection procedures from qualified officials are extremely important. Consider the fact, for example, that after widespread destruction (such as the kind seen as a result of Andrew or, in the case of earthquakes, after the recent temblors in Turkey or Taiwan) it is often tempting to try and rebuild a ravaged area as quickly as possible. Swift construction can mean shoddy construction.

In a speech September 13, 1999, James Lee Witt, director of the U.S. Federal Emergency Management Agency (FEMA), noted that for American building code officials, the calls for quick and affordable construction to handle the building boom in Turkey carried a familiar ring. "We heard them in South Florida before Hurricane Andrew struck," he said. "The results were equally tragic…We must not wait until tragedy strikes to adopt adequate building codes."

Florida has more than $1 trillion in insured property in its coastal counties alone. And yet, seven years after Andrew devastated South Florida and spurred a strict building code, legislators are currently considering a new statewide code that could weaken regional standards. The state is considering new construction regulations backed by builders that could usurp the strict South Florida provisions. Critics contend the proposed changes are dangerous. The new regulations would, among other things, no longer require storm shutters, and would reduce from eight to three the number of inspections during construction. Builders contend that having to adhere to too many different building codes drives up their costs. There are about 450 codes across the state. But some local officials claim builders just want to revert to cheap construction practices. They and South Florida residents wonder if those supporting the changes remember the lessons of Andrew.

The insurance industry says rates that skyrocketed after Andrew would likely surge even more if building codes are weakened.

Availability of insurance

Prior to Andrew, the worst-case insured loss scenario for a U.S. hurricane was pegged by experts at $8 billion. And prior to Hurricane Hugo in 1989, which triggered $4.2 billion in insured losses, no hurricane had resulted in claims of more than $1 billion. An insured loss of more than $8 billion, it seems, was not even being considered, never mind planned for. As a result, the insured loss total from Andrew was a shock to all players involved. If Andrew tore through Miami, experts pegged the range of insured damage at $50 billion to $100 billion. Had this happened, the industry would still be in shock to this day.

The fallout from Andrew is that many carriers decided they were overexposed in hurricane-prone areas, and stopped or reduced the number of new policies written, stopped or reduced renewal business or exited markets altogether. According to basic rules of supply and demand, the cost of coverage consequently increased dramatically for the common homeowner. Reinsurers, too, decided they were overexposed to Florida hurricanes and pulled out, making cat covers expensive for ceding companies. Consumers were facing such a dilemma that state legislators felt they had to act quickly to prevent the situation from worsening.

One of the legislature's responses to the availability crisis was the creation of an insurer of last resort, the Florida Property and Casualty Joint Underwriting Association (FPCJUA).[4] Created in 1993, the FPCJUA provides personal lines and commercial lines residential property insurance policies to applicants who are unable to obtain coverage from an insurance company. In its early years, the FPCJUA grew rapidly, eventually reaching a peak of more than 935,000 policies in force.

Florida legislators stated that massive cancellations and non-renewals of homeowners' policies, announced, proposed, or contemplated by certain insurers, "constitute a significant danger to the public health, safety, and welfare, and destabilize the insurance market." Consequently, in a second measure, legislators imposed a moratorium on the cancellation or non-renewal of homeowner's insurance policies. The law, codified in Chapter 93-401, Laws of Florida, applies to contracts that were in-force from November 14, 1993. The main part of the law states that…

627.7013 (2) (a) (1): In any 12-month period, an insurer may not cancel or non-renew more than 5 per cent of its homeowner's policies, 5 per cent of its mobile homeowner's policies, or 5 per cent of its personal lines residential policies of all types and classes in the state for the purpose of reducing the insurer's exposure to hurricane claims and may not, with respect to any county, cancel or non-renew more than 10 per cent of its homeowner's policies, 10 per cent of its mobile homeowner's policies, or 10 per cent of its personal lines residential policies of all types and classes in the county for the purpose ►

of reducing the insurer's exposure to hurricane claims. This subparagraph does not prohibit any cancellations or non-renewals of such policies for any other lawful reason unrelated to the risk of loss from hurricane exposure.

Legislation passed in May 1996 to further spur recovery of the Florida market extended the moratorium on non-renewals to October 1998 and created a new moratorium on condominium associations' non-renewals.

Another insurer of last resort – the Florida Windstorm Underwriting Association – had been created in 1970. The FWUA writes policies that cover only losses caused by windstorm, and writes these policies only in certain limited coastal areas. After Andrew, the Insurance Department expanded the geographic scope limiting where the association could write business. The FWUA provides personal lines and commercial lines property insurance policies (including both residential and non-residential policies) providing windstorm coverage to applicants who are unable to obtain coverage from an insurance company.

Availability of reinsurance

Andrew proved to be the topper of four straight years of huge losses for U.S. and international reinsurers. Not only did the reinsurers have to deal with Andrew's $15.5 billion in losses, but they also had to contend with Hawaii's Hurricane Iniki. The year before saw Typhoon Mireille hit Japan and Hurricane Bob hit the U.S. The annum prior, 1990, saw four costly winter storms hit Europe. And then there was 1989, the year of Hurricane Hugo, Piper Alpha, Exxon Valdez and the Loma Prieta earthquake. Between 1989 and 1992, the five biggest losses totalled almost $30 billion.

The result of these four ruthless years was a major reduction in capacity provided by many of the world's property reinsurers. Legislators, looking not only at the instability in the retail market, also looked at similar problems in the wholesale market, and took actions similar to those taken in the primary market.

The Florida Hurricane Catastrophe Fund was created in 1993 as Florida's 'safety net' for a large hurricane. The Catastrophe Fund provides the equivalent of reinsurance to Florida residential insurers, funded through a combination of premiums paid by insurance companies and emergency assessments on all p&c insurance premiums except for workers' compensation. The Catastrophe Fund is required by contract with each residential property insurer to reimburse the insurer for a selected percentage (45 per cent, 75 per cent, or 90 per cent) of the insurer's hurricane losses in excess of their retention.

Fundamental change

Claims payouts, insurance company insolvencies, and specific insurance/reinsurance supply and demand cycles, for the most part, eventually become a distant memory. A Florida Department of Insurance document, for example, says of the FPCJUA, "…This short-term solution to a crisis caused by natural disasters will only exist until the insurance industry recovers and more companies offer policies in Florida."

But there have been at least two permanent changes in the insurance and reinsurance industries that were prodded along greatly by Hurricane Andrew.

Bermuda market

The Bermuda property market rose at a time when there was a sudden drop in global reinsurance capacity in the early 1990s due primarily to the above-mentioned string of very costly natural and man-made disasters, particularly between 1989 and 1992. It was directly after Hurricane Andrew that Bermuda attracted its first property catastrophe reinsurer, Mid Ocean Re. (The since unmatched insured losses from Andrew prompted the creation of a total of eight Bermuda cat carriers.)

In the period 1990 to 1996, says Swiss Re's *sigma*, the four largest global reinsurers (Munich Re, Swiss Re, Employers Re[5] and General Re) increased their aggregate world market share from 22 per cent to 29 per cent. This percentage is now as high as 34 per cent following a renewed spate of deals. During this same period, though, the Bermuda market went from a 0 per cent market share to a 5 per cent share. This really came within just a four-year window, starting after Andrew.

Hence, the Bermuda market was born almost overnight, much of it in summer 1993. By 1997, the 50 largest providers of reinsurance on the island earned net premiums of $5.6 billion, with $1.1 billion coming from property/cat business (*sigma* 9/98). According to statistics from the U.S. Department of Commerce Bureau of Economic Analysis, the U.S. in 1997 ceded $3.95 billion in reinsurance to Bermuda (a record high) and got just $368 million back.

Rise of ART solutions

Along with a number of fundamental changes in the business needs of insurers and corporate buyers of insurance (i.e. corporates) over the years, came the series of major catastrophic losses listed above. These losses not only hit the bottom lines of many p&c industry players but also drove p&c rates upward for ►

corporates and reinsurance rates up for insurers. Insurance and reinsurance markets are largely cyclical, sometimes creating deep valleys of insufficient supply while other times creating sharp spikes of surplus capacity. Insurance and reinsurance rates follow these highs and lows, frustrating insurance companies and corporates, who both prefer to better know what the future holds so they can plan.

This irregular and unpredictable supply/demand cycle led some insurers and corporates to seek out more consistent avenues of dealing with challenges to their bottom lines, not just to transfer risk, but to finance it. Hence, the rise of ART solutions which "aim at increasing the efficiency of risk transfer, broaden the spectrum of insurance risks and tap the capital markets for additional capacity." (Swiss re *sigma* 2/99 *Alternative risk transfer for corporations: A passing fashion or risk management for the 21st century?).*

With the capital markets issue, the question is one of size. Capacity in the international insurance and reinsurance market, though significant, pales in comparison to that which is available on the world's capital markets. While the international insurance industry's surplus capital is estimated to be somewhere in the neighbourhood of $300 billion, one estimate puts total worldwide assets under management by institutional and private investors at $1.3 trillion[6]. Assets traded in the U.S. alone are estimated to total about $2 trillion – roughly 100 times more than the equity capital of U.S. reinsurers. Daily fluctuations of value in the capital markets alone are estimated for far exceed $100 billion, considerably more than the insured losses of even the worst natural catastrophe.[7]

According to sigma, "The spectrum of ART solutions has expanded rapidly over the last few decades, whereby the focus has been initially on captives. Such solutions allow companies to deal with high-frequency risk in a more cost-efficient way than through traditional industrial insurance."

"In the past two years," according to the Swiss Re publication *Insurance-Linked Securities*, "approximately $2 billion in worldwide insurance and reinsurance capacity has been created through the issuance of capital market instruments including over-the-counter swaps, exchange-traded and over-the-counter options, and private placement bonds[8]. Although still small in comparison to 1997 worldwide reinsurance industry premiums of $125 billion[9], this new class of insurance-linked security has broken new ground in the insurance and financial markets…The securities [also] constitute a potential new source of competitively priced insurance coverage, especially at times when such coverage is in short supply."

Conclusion

It's clear that few major natural catastrophes have driven as much change as there has been in the aftermath of Andrew. Had the massive and powerful Hurricane Floyd made landfall near Miami and ran north up the east coast from there, as storm trackers initially feared, Andrew would have become the little brother. But this wasn't the case.

So the infamous hurricane of 1992 not only blew winds of destruction, but also winds of change. And in some instances, things are still a little breezy. **CT**

Notes

1) Andrew now sits in third place, having been surpassed by Hurricanes Katrina and Sandy.

2) Now $27.368 billion in 2016 dollars including the Bahamas (Swiss Re *sigma* No. 2/2017).

3) Ice storm 98 has since been surpassed by Hurricane Katrina, with approximately 1.7 million claims filed over six U.S. states, and Hurricane Sandy, with approximately 1.58 million claims filed.

4) The FPCJUA is now known as Citizens Property Insurance Corporation.

5) Acquired by Swiss Re in November 2005.

6) Boston Consulting puts 2016 world assets under management at $71.4 trillion.

7) According to various sources, more than US$5 trillion in currency is currently traded on world markets every day.

8) According to Aon Benfield, alternative capital in the insurance and reinsurance market and across the range of insurance -linked securities (ILS) products hit $75.1 billion at the end of June 2016.

9) According to Aon Benfield, global p&c reinsurance premiums in 2016 totalled about $170 billion.

Catastrophes cause global total economic loss of USD 44b in 1H 2017: Swiss Re

- Total economic losses from disasters were USD 44 billion in H1 2017, significantly down from USD 117 billion in H1 2016, as a result of fewer and less intense events
- Insured losses from disasters were USD 23 billion in H1 2017, down from USD 36 billion in H1 2016
- Thunderstorms in the U.S. led to the largest losses
- Disaster events claimed around 4 400 victims in H1 2017

According to preliminary *sigma* estimates, global total economic losses from natural catastrophes and man-made disasters in the first half of 2017 were USD 44 billion. That was well below the first half annual average of USD 120 billion of the last 10 years in economic losses and significantly lower than the same period a year ago. Of the total losses in the first half 2017, USD 23 billion were covered by insurance. A series of severe thunderstorms in the U.S. caused some of the largest losses in the first half of 2017. Globally, around 4,400 people lost their lives or went missing in disaster events, compared with 4,800 in the first six months of 2016.

Out of the USD 44 billion total global economic losses, natural catastrophes alone accounted for USD 41 billion in the first half of 2017, compared with USD 110 billion in H1 2016, while the remaining USD 3 billion came from man-made disasters. Global insured losses from natural catastrophes fell to USD 20 billion from USD 30 billion the year before, while insured losses from man-made disasters were USD 3 billion, down from USD 6 billion. The number of victims of disaster events was around 4,400. That is low relative to recent years, but the toll may rise once estimates on the number of victims of Europe's severe June heat waves are included.

Biggest losses from thunderstorms in the U.S. – most of them covered by insurance

Severe convective storms (thunderstorms) in the U.S. resulted in the largest losses in the first six months of this year. Four separate severe weather events from February to May each caused insured losses of more than USD 1 billion. The most intense and costly event was a four-day long storm in May with heavy damage to property inflicted by hail in Colorado and strong winds in other parts of the southern and central states. The economic losses of this storm alone were USD 2.2 billion, with insured losses of USD 1.9 billion.

A high number of smaller storms and other weather events (eg. floods) in the U.S. in the first six months of 2017 led to insured losses of around USD 16 billion out of the overall USD 23 billion in insured losses. "Fortunately, in the U.S., most households and businesses are insured against wind risk so they are financially protected when severe storms strike," says Swiss Re's Chief Economist Kurt Karl.

A year of weather extremes

The largest and most costly insurance event outside of the U.S. was Cyclone Debbie, a category 4 tropical cyclone that hit the northeastern coast of Australia in late March. Wind gusts of up to 263 km/h and widespread flooding in central and southeast Queensland and northeast New South Wales during the following days led to insured losses of USD 1.3 billion.

Other large events included floods in Peru, and severe frost damage in late spring in the southeastern part of the U.S. and in Europe. At the beginning of the year, there was also a cold spell throughout Europe that claimed dozens of hypothermia victims. This was followed by a summer of heat waves and record temperatures in several European locations, making 2017 so far a year of weather extremes. High temperatures and dry weather have continued through the northern hemisphere's summer season, igniting wildfires in many parts of the world. **CT**