

WEATHER GONE WILD

FACT SHEET

By the year 2050, Canada will experience 5 times as many hot days above 30 degrees Celsius. (IBC, ICLR)

For every degree of temperature rise, the atmosphere can hold an extra 7% of water vapour, which leads to more precipitation and more intense storms. (Environment Canada)

The bill for the June 2013 Calgary flood damage was \$6 billion. Only \$1.7 billion was insured, primarily because in Canada, the damage caused by water that enters a home overland via doors and windows (as opposed to up from the sewer system) is not covered by insurance. (IBC, ICLR)

By the year 2050, Canada can expect double the number of storms with heavy precipitation, with periods of drought in between. (IBC, ICLR)

Flash floods on one day in Toronto in July 2013 caused \$1 billion worth of damage. 99% of the homes affected were not in any of the predicted flood zones. (IBC, ICLR)

Upgrading Canada's electrical system to withstand extreme weather is going to cost more than 350 billion dollars. (Canadian Electricity Association)

Hurricane Sandy was the largest Atlantic hurricane in history. It had already weakened significantly by the time it hit New York City, but 44 people still died, mostly by drowning in the storm surge. (New York City Mayor's Office)

400,000 people live on the flood plain in New York City. (New York City Mayor's Office)

WEATHER GONE WILD

The temperature of the planet increased by 5 degrees Celsius over 10,000 years, to end the Ice Age. But the temperature has increased by one degree Celsius in just the last 100 years, and it is the speed of the increase that causes concern. 3 more degrees Celsius are predicted by 2100. (Gordon McBean)

Nine of the 10 warmest years on record have occurred since 2000. (NASA)
As the ocean temperature rises, so does the sea-level – because warm water has greater volume than cold water. (Gordon McBean)

Sea-level rise is a global phenomenon, but it is not uniform around the world. The eastern coast of North America will be particularly hard-hit and can expect sea-level rise of more than 1.5 feet by the year 2050. The US Army Corps of Engineers recommends that planners base their building scenarios on a sea-level rise of 5 feet by the year 2100. (US Geological Survey, US Army Corps of Engineers)

70% of the world lives in coastal cities, or in cities built on rivers. (Piet Dircke, Arcadis)

Using a conservative prediction of a half meter (20 inches) of sea-level rise, the Organisation for Economic Co-operation and Development estimates that by 2070, 150 million people in the world's large port cities will be at risk from coastal flooding, along with \$35 trillion worth of property—an amount that will equal 9 percent of the global GDP.

The melting of the Arctic ice pack does not contribute to sea-level rise because that ice is not on land, it's already on the water and is factored into the current sea-level. The melting of the Antarctic and Greenland ice packs will increase sea-level because they are on land. (Gordon McBean)

WEATHER GONE WILD

In the Netherlands, over 20% of the land and 60% of the population is below sea level. (Piet Dircke, Arcadis)

California has been enduring a multi-year drought, with 2014 being the driest year on record. By the end of summer 2014, 60% of the state was experiencing “exceptional” drought, which is the most severe category. (National Drought Mitigation Centre, US)

* * *

Source abbreviations:

IBC – Insurance Bureau of Canada

ICLR – Institute for Catastrophic Loss Reduction

Gordon McBean – currently holds professorships in the Departments of Geography, Political Science and Physics at the University of Western Ontario in London, and in September 2014 became President of the International Council for Science, the first Canadian to hold that position in more than 40 years. He was a member of the IPCC (Intergovernmental Panel on Climate Change) that was awarded the Nobel Prize in 2007, and is a former Assistant Deputy Minister of Environment Canada where, from 1994 to 2000, he was responsible for climate, weather and air quality sciences and services in the federal government.

Piet Dircke, Arcadis – Arcadis is a large engineering and design firm in the Netherlands that consults on projects around the world. Piet Dircke is their Global Water Management Leader.