

Canada could become a superpower



Hilliard MacBeth

Hilliard's Weekend Notebook – Friday August 17, 2018

The dire predictions of the English cleric Thomas Robert Malthus in 1798 have proven to be incorrect, so far. Malthus predicted that rapid growth in human population coupled with slower growth in food production would lead to widespread famine and death.

Jeremy Grantham, of GMO and the Grantham Foundation for the Protection of the Environment is now making similar claims for agriculture, population growth and global warming.

Will a Malthusian catastrophe occur due to food shortages and population growth? What would happen to Canada?

Jeremy Grantham presented to the BCA Research Conference in 2003. He opened by saying, "I have never been wrong {long, awkward pause} ... "I've been early". The room erupted in laughter as Grantham was known and respected as a skeptical investor who heads a Boston-based firm which oversees more than \$120 billion in client assets.

Grantham predicted the 2007-2009 global financial crisis and stock market crash as well as the bursting of the dot-com bubble in 1999-2000. Both times he was early but eventually proven correct.

So, what is Grantham predicting now?

His recent White Paper is "The Race of Our Lives Revisited," available with free registration: www.gmo.com.

Sounding very gloomy at times, he adds to the debate with impressive analysis and research.

OUR PARTNERS

The MacBeth Group

Richardson GMP
10180 101 Street, Suite 3360
Edmonton, AB T5J 3S4

Tel. 1.780.409.7735

Fax 780.409.7777

www.TheMacBethGroup.com

Hilliard MacBeth

Director, Wealth Management

Portfolio Manager

Tel. 780.409.7740

First, the bad news:

Carbon dioxide is essential for human life, but higher levels lead to a warmer climate. In the last 400,000 years CO2 levels fluctuated between 180 and 300 parts per million but have recently surged to 400 PPM. Over the millennia, there has been a direct correlation between CO2 levels and temperature.

World population will grow to 11 billion by 2100, requiring humans to burn enormous amounts of fossil fuels, unless there's a decarbonization of the economy.

Africa will have the fastest population growth, going from 1.2 billion to 4.5 billion people.

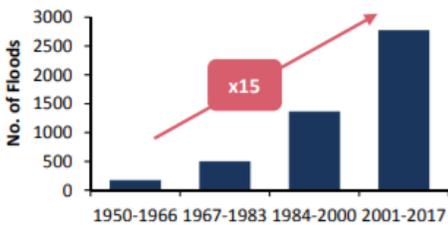
Agricultural production is affected by warming temperatures, with increased fire, drought and floods. Increased water vapor in the atmosphere leads to heavy downpours that cause soil erosion.

Loss of topsoil means that food production growth is slowing.

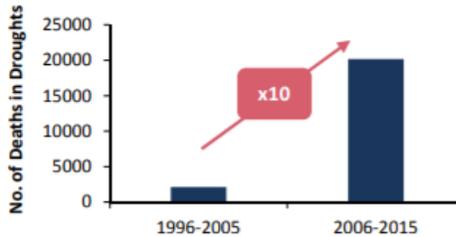
Extreme weather events are on the rise:

Extreme Weather Events on the Rise

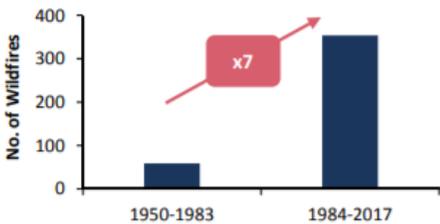
Floods



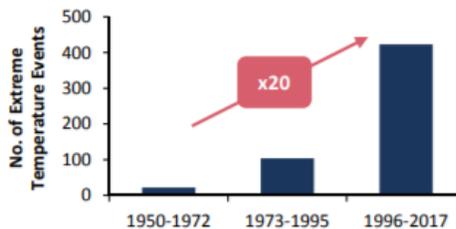
Drought Mortality



Wildfires



Extreme Temperature Events



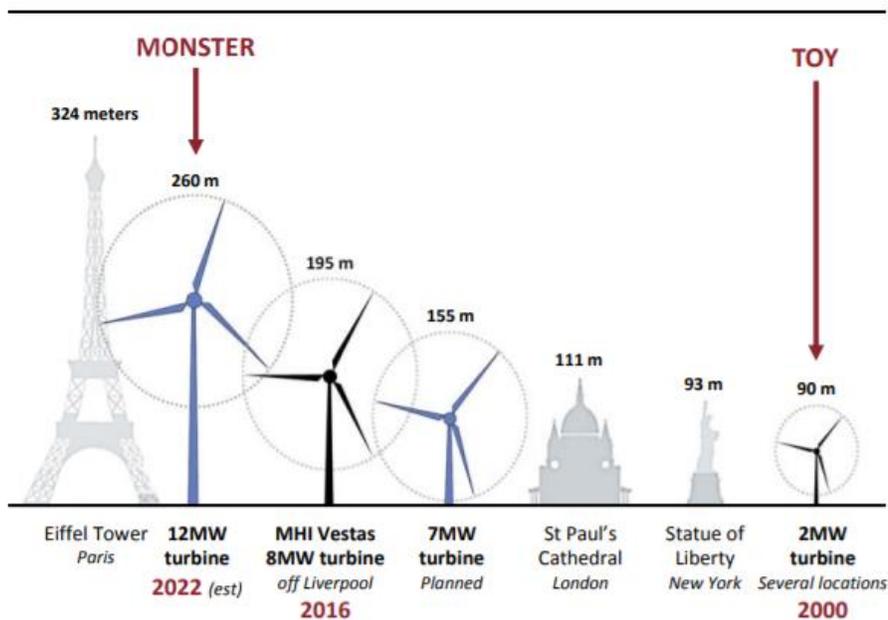
Source: EM-DAT database

Now, some good news:

Technological change is moving faster than anyone predicted. Wind and solar electricity costs are now lower than coal-fired production, even without incentives. Wind and solar will cost \$0.02 to \$0.03 per kilowatt hour without incentives, meaning that electrical production will be totally transformed.

Giant wind turbines are coming in the next five years. Currently at 2 megawatts, some producers are offering 12 megawatt turbines for delivery in 2022.

Giant Wind Turbines Illustrate the Speed of Change



Source: Reuters, GMO

How does Canada fare in a warmer world?

While Canada's most valuable exports are autos, crude oil and bitumen, Canada is a major agricultural exporter too. And Canada might be in the sweet spot for temperature as the farmland further south suffers from too much heat. Parts of northern Canada would be ideal for increased habitation and agricultural production global warming continues.

Canada could be a global superpower since agriculture is key to survival in a more heavily populated world. Vast parts of northern Canada would benefit from a longer growing season. [Natural Resources Canada estimates](#) that 20 to 40 days longer growing season could be possible by 2100.

Canada's population could grow to 100 million, 200 million or more.

Canada has 20 percent of the world's fresh water supply. Shipping through an ice-free Arctic Ocean will shorten routes between Europe and Asia.

And there is plenty of room. All of Germany's 83 million people would fit into an area smaller than Alberta, at Germany's current density.

It would be foolish to ignore Grantham's predictions given his track record, even if they seem extreme. But, among the dark clouds, there could be a silver lining for those living and working in Canada.

Hilliard MacBeth

The opinions expressed in this report are the opinions of the author and readers should not assume they reflect the opinions or recommendations of Richardson GMP Limited or its affiliates. Assumptions, opinions and estimates constitute the author's judgment as of the date of this material and are subject to change without notice. We do not warrant the completeness or accuracy of this material, and it should not be relied upon as such. Before acting on any recommendation, you should consider whether it is suitable for your particular circumstances and, if necessary, seek professional advice. Past performance is not indicative of future results. Richardson GMP Limited is a member of Canadian Investor Protection Fund. Richardson is a trademark of James Richardson & Sons, Limited. GMP is a registered trade-mark of GMP Securities L.P. Both used under license by Richardson GMP Limited.