

# Climate Change as a Wake-up Call

by Ralph C. Martin

This spring, sarcastic comments about global warming and winter storm warnings are as common as freezing rain. Beneath the jesting, there is some earnest doubt about climate change. The warm weather in March of 2012, on the other hand, apparently confirmed that climate change is underway. What's up?

It is important to understand that temperatures in specific weeks, in our region, do not confirm or refute an average global trend. This global average trend requires many temperature readings, from all around the world, over long periods of time.

According to the University Corporation for Atmospheric Research and the Intergovernmental Panel on Climate Change (IPCC) ([www.ipcc.ch](http://www.ipcc.ch)), temperatures averaged over all land and ocean surfaces in the world, have gone up 0.74°C in the last 100 years. Notably, 54% or 0.4°C of this increase occurred in the last third of this century of a rising average global temperature.

As global average temperatures increase, scientists such as Dr James Hansen of NASA advise us to keep the increase to less than 2°C. The International Energy Agency indicates current practices will take us to a 3.5°C increase, by 2035.

Bill McKibben who leads the 350 campaign ([www.350.org](http://www.350.org)) notes that for the period humans have been farmers, about 10,000 years, we've also had a stable atmospheric concentration of 275 parts per million (ppm) CO<sub>2</sub>. In the last 2 centuries, but mostly in recent decades, we climbed to above 392 ppm CO<sub>2</sub> and are still climbing about 2 ppm per year. Depending on how long we continue business as usual, with just minor tweaks, we're on track to surpass 450 ppm CO<sub>2</sub>, possibly carrying on to 550 ppm CO<sub>2</sub> and perhaps even to 650 ppm CO<sub>2</sub>.

It was Hansen who warned publically, in 2007, that the point of danger is 350 ppm CO<sub>2</sub>. Data show that average global temperatures rise in proportion to the overshoot beyond 350 ppm CO<sub>2</sub>.

Some Canadians wonder why that is a problem. As much as we might hope for warmer, benign weather, the climatic models tell us there is more variability with a rising average global temperature.

Hansen and scientists of IPCC warn of risks of too much or too little water or temperatures which are too high or too low, at the wrong times. We appear to be at dusk in the Goldilocks period.

For the first time, in 2009, the Insurance Bureau of Canada recorded over \$1 billion in claims associated with extreme weather and this record was broken again in 2010, and again in 2011. In Canada, the average temperature increase was 1.3°C from 1948 to 2007, at 2 times the global average and, in 2010, the average temperature in Canada was 3.0°C above normal. Since the 1950s, annual average precipitation in Canada rose 12% with 20 more days of rain.

How can we start changing? Carbon dioxide emissions of air travel per passenger kilometre are 10 to 12 times higher than travelling by bus or train, assuming each mode of travel is at about 75% capacity. By some estimates of IPCC, the impact of jets flying in the upper troposphere is an additional warming effect which is 2.7 times higher than what would be expected by carbon emissions alone. We could travel less, and if we must move, then do so by train or bus.

Science can only reveal the trends. It will take many individuals making personal decisions to reduce greenhouse gas (GHG) emissions of carbon dioxide, methane and nitrous oxide to reverse trends. Having made personal decisions we can work with others in our communities to reduce GHG emissions further and to practically vote by selectively buying services and products.

Provincial and federal governments wait for us to demonstrate political backing to address climate change. International agreements tend to follow awareness and commitments of leading nations. As discouraging as it is to see tentative, inadequate global agreements to address climate change, it is also a prod to get going as individuals and communities. Many already have.

The longer we pretend climate change is not true and wait to mitigate or lessen the trend toward extreme levels of water and temperatures, at the wrong times, the more disruptive our mitigations will have to be. Similarly, the longer we wait to adapt to wonky weather, the more extreme and expensive our adaptations will have to be.

It is reasonable to fear changes to our way of living, which are set to happen with or without our creative participation. However, climatic feedback systems of Earth may

allow humans to live more fully. Maybe this is an opportunity to wean ourselves from the distractions of excessive travel, services and products and to use our intellectual, emotional, spiritual and psychological capacities to understand and nurture what we really need. Perhaps climate change is a grand wake-up call for us to rise up to our human potential.

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