

# **Green Scene: All I want for Christmas is my two front teeth...**

**by Elaine Golds**

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This song, dating from the 1940s, is one that probably most of us have sung or, more likely, listened to some annoying little “chipmunks” singing. Nonetheless, if there is something I want this Christmas which comes in twos, it wouldn’t be front teeth but no more than two degrees of global warming. The political leaders of the world have just concluded a conference in Durban where they have apparently agreed global warming must be limited to an increase of no more than 2 degrees to avoid catastrophic effects. Exactly how they intend to achieve this remains murky.

Since the Kyoto Protocol was initially adopted in 1997, we have made only a little progress in limiting our greenhouse gas emissions. From the pre-industrial level of 278 parts per million, atmospheric carbon dioxide concentrations continue to rise every year and have now reached over 390 ppm. Despite growing evidence of damage wrought by a warming climate, our fossil fuel habits are proving hard to kick. What is especially worrying is recent analysis which indicates we need to reduce the carbon dioxide level back to 350 ppm (about where it was in 1989) to keep our planet from overheating by no more than two degrees,

In recent years, there has been abundant evidence of global warming and the associated increase in extreme weather patterns. Examples include record-breaking floods and droughts in various parts of the world as well as the beetle epidemic in the boreal forests of BC where winters are no longer cold enough to ensure a beetle die-off. Every summer, the Arctic Ocean reaches a new lower limit for ice cover. Some of these changes actually promote even more global warming. For example, ice cover over the Arctic Ocean prevents solar radiation from heating the water so as more ice melts, more heating of the ocean takes place.

Trees take up carbon dioxide from the atmosphere as they grow and convert some of this carbon into wood. In fact, planting trees remains one of the most effective mechanisms for removing carbon dioxide from the air. With the beetle epidemic in BC having now killed millions of trees, we appear to have lost over 270 million tonnes worth of carbon storage. As the permafrost thaws in the north, underground stores of methane, a potent greenhouse gas, are being released into the atmosphere. Scientists worry we may reach a tipping point where such positive feedback mechanisms will suddenly worsen global warming beyond a point of no return. That is one reason why it is so important to limit climate change to no more than two degrees of global warming.

Climatologists have estimated what some of the changes could be in a world four degrees warmer than now. Several low-lying nations would face severe challenges or disappear under oceans that would be several metres higher. Coral reefs could also disappear, due not only to rising oceans, but largely to waters made much more acidic from increased carbon dioxide absorption from the atmosphere. The great deserts of the world would shift further north turning what is now productive farmland into dustbowls in many parts of the planet. While more northern areas might then develop temperatures suitable for farming, the fertile soils required for farming will not be in place because such soils, created through natural processes, take centuries to form.

From what I comprehend a four degree warmer world to be like, I would not wish it on future generations. I know that I am not alone in believing we must take action against global warming. As much as we can all make environmentally-friendly changes in our personal habits, we really need decisive actions and effective policies from governments to be able make substantial reductions in our collective greenhouse gas emissions. Some countries, especially those in Europe, have already made impressive progress. There are no good reasons why Canada could not also demonstrate such leadership. One thing we don’t need is a fear-mongering Environment Minister irresponsibly spreading misinformation about the Kyoto Protocol. But for all Christmases to come, we do need to ensure human-induced global warming will be limited to two degrees or less. That would be the most wonderful gift of the magi.