## Deniers provide 'facts' with no bite

The op-ed Kyoto: The Dog With No Bite (Dec. 12) by Dr. Tim Ball and Tom Harris was a masterpiece of disinformation. In it, Ball and Harris purport to tell the reader what science really says about global warming. Unfortunately, each of the five points they present as "evidence" against global warming is either disingenuous or just plain wrong. None of the so-called "facts" against global warming stands up to scientific scrutiny.

For example, Ball and Harris state that global temperatures have declined since 1998. This is not true. The mean global temperature in 2005 was higher than that in 1998 and the mean temperature for 2006 looks like it could well surpass that for 2005. According to NASA's Goddard Institute for Space Studies, the five warmest years in recorded history were 2005, 1998, 2002, 2003 and 2004.

Likewise, the claim that past temperature increases associated with glacial cycles precede the rise in atmospheric carbon dioxide levels is wrong. Global temperatures and carbon dioxide levels have varied in more-or-less lock-step for at least the past 500,000 years (Shackelton, *Science* Sept. 15, 2000).

A recent paper by Foukal and coworkers (*Nature*, Sept. 14, 2006) clearly demonstrated that variations in solar luminosity are not the cause of current global warming. Ball and Harris are correct in saying that atmospheric carbon levels have been higher in the past. What they don't say is that you have to go back about 50 million years to find them (Lowenstein & Demico, *Science*, Sept. 29, 2006). Fifty million years ago, there were crocodiles in the arctic.

Ball and Harris' last claim about the "hockey-stick" model for temperature change over the past 1,000 years is also

bunk. In response to attacks on the model and its proponents by climate-change denier Rep. Joe Barton (R-Texas), the U.S. National Academy of Sciences did a thorough review of both the data and the model. The validity of both were reaffirmed (Brumfiel, *Nature*, June 29, 2006).

Normally, one wouldn't cite references in a letter to the editor, but in this case we felt it was necessary (*Science* and *Nature* are the two most prestigious scientific journals in the world).

As Ball and Harris have demonstrated, it is easy to make unsubstantiated claims. What is difficult to do is to support these claims with facts — preferably facts that have been published in the peer-reviewed literature. The reader should be highly skeptical of anyone who can't or won't do this.

Another good clue as to what is the truth is to look at who stands to lose if a

particular program is adopted. Readers who are interested should look up the article Nurturing Doubt About Climate Change Is Big Business by Charles Montgomery, published in The Globe and Mail Aug. 12.

The scientific community would love to be proved wrong about global warming. Scientists, like everyone else, will have to make changes in their lifestyle. Some of these changes will be painful. However, the pain of doing nothing will be a lot greater.

Ball and Harris claim that measures to combat climate change will sacrifice thousands of jobs and much of the country's prosperity, yet the 2006 Stern report, written by the former chief economist at the World Bank, states that the cost of doing nothing will far exceed the cost of dealing with climate change.

To paraphrase Ball and Harris, the climate change dog will certainly bite if we don't get it under control.

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