

COS5

II. m. 6



**Kenneth Green <keng@fraserinstitute.ca>**  
05/15/2003 07:53:37 PM

Record Type: Record

To: Phil Cooney/CEQ/EOP@EOP

cc:

Subject: E-update #6: Hockey Stick Kerfuffle!

Dear Philip,

Climate alarmists continue to push for greenhouse gas emission controls, even as evidence grows that recent climate change is not historically unprecedented; that it's mostly natural; and that it's likely to be quite mild. Naturally, I had to push back, and given that the Stanley Cup playoffs are in progress, I just had to hook them together somehow, which I did in this column for Tech Central Station: <http://www.techcentralstation.com/1051/envirowrapper.jsp?PID=1051-450&CID=1051-050503A>. Of course, the Canucks didn't make the playoffs, but there's always next year!

A magazine called U-turn asked me to write an article to run opposite one by the David Suzuki Foundation, and since it's a concise piece, you might want to read it. In "Questions People Ask About Climate Change," I point out the many uncertainties that pervade climate science, as well as the limitations of the Kyoto Protocol. You can read the article here: <http://www.fraserinstitute.ca/shared/readmore1.asp?sNav=ed&id=163>.

In "The Climate Alarmist Two Step," I take apart a report by the Union of Concerned Scientists and the David Suzuki Foundation that threatens the Great Lakes area with climatic destruction. The alarmist two-step goes like this: in step one, you inflate the dangers with dubious assumptions and computer models that put out scary predictions, and in step two you call for the same old laundry list of market-hostile policies that old-school environmental activists have wanted for decades. You can do the hokey-pokey and read the rest here: <http://www.fraserinstitute.ca/shared/readmore1.asp?sNav=ed&id=167>.

And the speech I gave in a whirlwind trip across Australia, where I told our Aussie friends to resist people who want them to follow Canada's example in ratifying the Kyoto Protocol, has been posted to the Fraser Institute website. In "Canada's Kyoto Kerfuffle," I basically ask, "If your friend jumped off a cliff, would you jump too?" It was a great trip, and I got to use the word "Kerfuffle." You can find the speech here: <http://www.fraserinstitute.ca/shared/readmore1.asp?sNav=ed&id=157>.

Of course, I continue to push for a new, market-friendly environmentalism for Canada and the US, and when better than on Earth Day itself! My column on the subject ran in the Calgary Herald, but it's posted on the Fraser Institute website at: <http://www.fraserinstitute.ca/shared/readmore1.asp?sNav=ed&id=164>.

Lastly, I continue to nag in favor of toll-roads. A colleague and I recently put a column on the subject in the Vancouver Sun. If you favor market-based transportation policy, you can read about it here: <http://www.fraserinstitute.ca/shared/readmore1.asp?sNav=ed&id=166>.

Well, I better get back to work...the week of June 1 is Canadian Environment Week, and I need to get ahead of the curve!

Cheers!

Ken Green

>-----<

Dr. Kenneth Green  
Chief Scientist and Director,  
Risk and Environment Centre  
The Fraser Institute  
keng@fraserinstitute.ca | 604-688-0221  
www.fraserinstitute.ca

PS: If you love environmental quality and safety but also cherish economic freedom and individual liberty, you ought to check out the multinational work of The Fraser Institute. Heck, you might even want to support it - U.S. contributions are tax deductible, as are Canadian contributions!

PPS: To be added to The Fraser Institute general email update list, please visit [fraserinstitute.ca/subscribe.asp](http://fraserinstitute.ca/subscribe.asp).

PPPS: If you don't want these monthly updates that I send out, just let me know by return email, and you'll be off the distribution!



Friday, Ma

TCS > ENVIRO SCI > KYOTO



Kenneth Green  
Chief Scientist,  
Fraser Institute Risk  
and Environment  
Policy Centre

Email Author

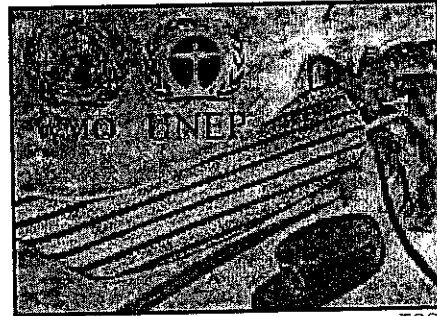
Biographical

# The Kyoto Cup

By Kenneth Green

05/05/2003

E-Mail Bookmark Print Save



TCS

In the fourth overtime period of a recent Stanley Cup playoff game, I found my mind wandering to a different kind of hockey stick - the kind that UN scientists claim is sketched out by temperature records going back 1000 years or so. Since the first reports of the United Nations Intergovernmental Panel on Climate Change, UN scientists have used a reconstruction of past climates based on evidence from tree rings, coral, boreholes, and other proxy indicators suggested the climate was mostly unchanging for the last 1000 years, with the spike of the last 150 years appearing to be clearly abnormal (Figure below) shooting upward like the blade of a hockey stick.

### NEWEST ARTICLES

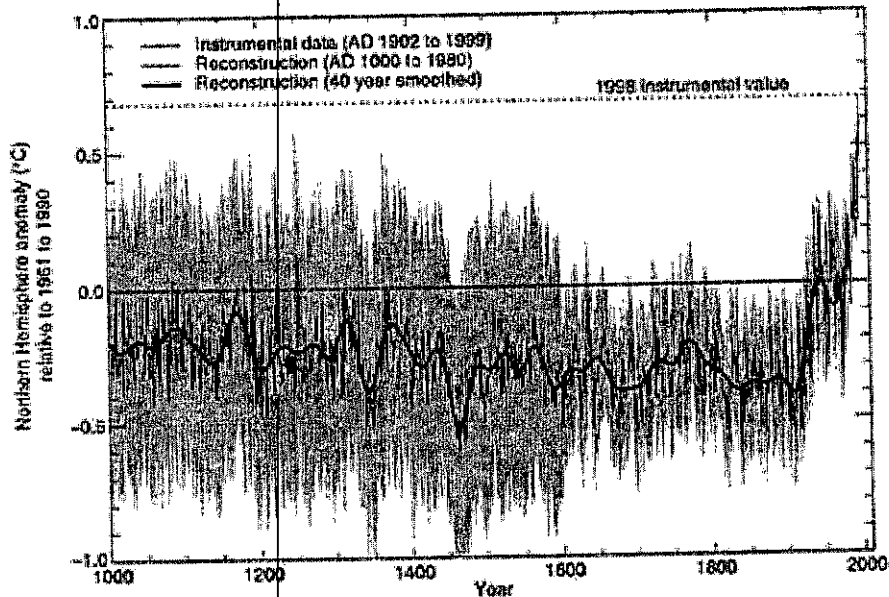
- Dying to Get There?
- Money Where the Mouth Is
- When Molecules Fly

### ARTICLES BY AUTHOR

- Whale of a Problem

### ARTICLES BY ISSUE

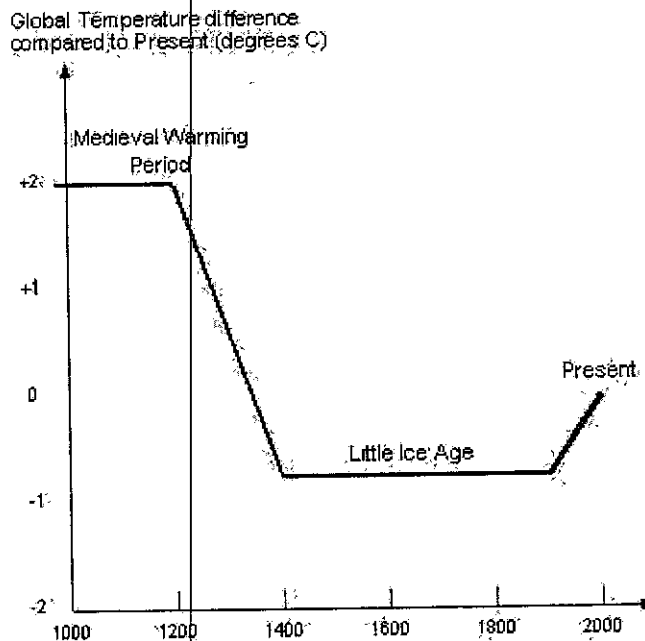
- Confused States
- Humanists vs. Naturalists
- Carbon Copy Coalition



Source: United Nations Intergovernmental Panel on Climate Change, Third Assessment Report

But over the years, data has accumulated arguing that the "IPCC hockey stick" is fundamentally flawed. Some researchers, studying the climate of the last 1000 years argued that the IPCC scientists were refusing to acknowledge evidence indicating that in reality, the temperature from about 1,000 A.D. to 1300 A.D. was quite a bit warmer than today, while the climate from 1300 A.D. to 1850 was unusually cold. As climate researcher David Wojick illustrates, a more realistic depiction of recent climate is not a hockey stick, but is more a matter of emerging from a climatic valley (see Figure below).

### Present, Medieval Warming Period and Little Ice Age (simplified graph)



Numerous studies now indicate that both the Medieval Warm Period and Little Ice Age were global events. The MWP is estimated to be about 2 degrees C warmer than today. If so then there is nothing unusual about the present warming.

David Wojick, Ph.D. -- [dwojick@climatechangedebate.org](mailto:dwojick@climatechangedebate.org)

Despite the accumulating evidence, UN scientists have continued to assert that the medieval warm period and the little ice age were strictly local phenomenon, and hence, were not representative of the Earth's climate as a whole. That willful ignorance led Australian climate researcher John Daly to label the IPCC hockey stick "A New Low in Climate Science." Daly argued that "What is required to disprove the Hockey Stick is to demonstrate conclusively the existence of the Medieval Warm Period and/or the Little Ice Age as recorded in proxy and/or historical evidence from around the world."

Fortunately, a new study, by the Harvard-Smithsonian Center for Astrophysics offers just what Daly requested. A review of more than 200 climate studies confirms the that both the medieval warm period and the little ice age were global, not regional phenomena. As astrophysicist Sallie Baliunas explains, "For a long time, researchers have possessed anecdotal evidence supporting the existence of these climate extremes. For example, the Vikings established colonies in Greenland at the beginning of the second millennium that died out several hundred years later when the climate turned colder. And in England, vineyards had flourished during the medieval warmth. Now, we have an accumulation of objective data to back up these cultural indicators."

The question of whether we're in hockey-stick mode, or hill-and-valley mode is critical, because it cuts right to the heart of the climate change debate. Is recent climate change abnormal enough to support the assumption that it be due to human activity, or is recent climate change within the realm of natural variation? The former argument is used to support mandatory

greenhouse gas reduction schemes, like the Kyoto Protocol, while the latter view is used to support arguments that our current best response to climate change is to build resilience, and get ready for a somewhat warmer environment.

As it becomes clear that recently observed climate changes are not unusual, the case for assuming human causation is greatly weakened. If the climate is changing due to forces other than human action, then greenhouse gas controls will do nothing to protect future generations confronting the impacts of climate change. UN scientists have acknowledged that there is no evidence implicating human activity with any warming before 1950, but they continue to attribute "most" of the warming since 1950 to human activity, and continue to clamor for immediate greenhouse gas emission reductions.

The world is in the second overtime period of the Kyoto Cup, with climate change alarmists pushing economically crippling greenhouse gas controls around the world with increasing desperation, while those holding climate change to be largely natural are fighting to preserve the economic freedom that provides the resources needed to secure health, safety, and environmental protection.

A lot is riding on the Kyoto Cup. If we waste our resources in controlling carbon emissions that are not responsible for causing recently observed warming, where are we going to get the resources to help those areas that will experience the negative impacts of a changing climate caused by Mother Nature? Let's hope that the UN breaks its hockey stick, and joins in a real exploration of how we protect future generations from a largely natural climate change.

*Environmental Scientist Kenneth Green is Director of the Risk and Environment Centre at The Fraser Institute. His most recent publication is "Global Warming: Understanding the Debate," a text-book for junior high school students.*

[BACK](#)

 E-Mail  Bookmark  Print  Save

#### feedback >>

[Post Feedback TCS Live Chat](#)

- ▶ Kyoto Rhetoric by Dano
- ▶ What to do? by Control Freek
  - ▶ Re: What to do? by Dano
  - ▶ Re: Re: What to do? by Rick Marliave
  - ▶ Re: Re: What to do? by Control Freek
  - ▶ Re: Re: Re: What to do? by Dano
- ▶ Clearly Unusual by Dano
  - ▶ Re: Clearly Unusual by Barry
  - ▶ Re: Re: Clearly Unusual by Mark
  - ▶ Things I disagree with may be right by Barry
  - ▶ Re: Things I disagree with may be right by Mark
  - ▶ Another problem with the by Mark
  - ▶ Re: Clearly Unusual by Mark
  - ▶ Re: Re: Clearly quite usual by Dano
  - ▶ Re: Re: Re: Clearly quite usual by Steven
  - ▶ Re: Re: Re: Re: Clearly quite usual by Dano
  - ▶ Re: Re: Re: Clearly quite usual by Mark
  - ▶ Clearly Unthinking by Mark
- ▶ Short End Of The Stick by Russell
  - ▶ Re: Short End Of The Stick by Ken Green
  - ▶ Re: Re: Short End Of The Stick by Russell
  - ▶ Re: Re: Short End Of The Stick by George E.
- ▶ Up or Down? by Barry
  - ▶ Re: Up or Down? by robb

- ▶ Let's make lemonade by michael
- ▶ Sea Level Rise by Steven
- ▶ Re: See Level Rise by Dano
- ▶ Re: Re: See Level Rise by Steven
- ▶ Re: Re: Re: See Level Rise by Dano
- ▶ Re: Re: Re: Re: See Level Rise by Steven
- ▶ Re: Re: Re: Re: Re: See Level Rise by Dano
- ▶ Re: Re: Re: Re: See Level Rise by Steven
- ▶ link works by Dano
- ▶ Which approach gets the job done? by michael
- ▶ Re: Which approach gets the job done? by Dano

[ tech ] [ defe

© 2003 Tech Central Station : [About Us](#) : [Privacy](#) : [Disclaimer](#) : [Toolbox](#) : [Links](#)



[Student Centre](#) [About the Institute](#) [Membership](#) [SUBSCRIBE to Fraser Institute](#)

**INFORMATION CENTRE**

**BY TYPE**

- [News Releases](#)
- [Editorials](#)
- [Publications](#)
- [Events](#)

**BY RESEARCH AREA**

- [Economic Freedom](#)
- [Education](#)
- [Environment & Risk](#)
- [Fiscal Policy](#)
- [Governance](#)
- [Health](#)
- [Law and Markets](#)
- [Non-profit Studies](#)
- [Pharmaceutical Policy](#)
- [Regulatory](#)
- [School Report Cards](#)
- [Social Affairs](#)
- [Trade and Globalization](#)

## EDITORIALS

### Questions People Ask About Climate Change

This article will be appearing in the April 2003 issue of U-Turn Magazine

**Author(s):**

**Kenneth Green**, Director of the Centre for Studies in Risk and Regulation  
 Email: [keng@fraserinstitute.ca](mailto:keng@fraserinstitute.ca)

**Release Date :** March 27, 2003

Many claims are made about the scientific understanding of climate that are not backed up by the core literature that dominates the field. But as most people read only summary versions of the scientific literature, they're easily led astray by alarmist groups that exaggerate the concerns, while waving away the uncertainties that pervade climate science. Let's consider some key questions about climate change.

#### IS THE ATMOSPHERE WARMING ABNORMALLY?

Assuming that we can trust the temperature data that we have available to us, the answer seems to be "yes, in some places, in recent years, the average temperature of the Earth's atmosphere seems to be increasing slightly." But the question of whether it's getting hotter is meaningless without a discussion of historical perspective and relevant measuring period. Climate has fluctuated, often wildly, for more than four billion years. Given that we have so little hard data about past climate conditions, the most intellectually honest answer to this question is "maybe" and even that answer is meaningless without some kind of qualifying time frame, and standard of comparison.

Recently, we seem to be seeing a minor warming in the Earth's average temperature, as best as we can measure it (which isn't very well). That's because our hard temperature data spans only about 150 years. In fact, temperature records are spotty before about 40 years ago and only cover a tiny portion of the globe, mostly over land. In addition to that 150-year conventional surface temperature record, temperature readings taken from weather balloons cover the last 30 years, and satellite temperature readings cover the last 18 years. Given that fluctuating, and spotty temperature record, one can create the impression that the temperature is rising, falling, or staying the same simply by changing the start and end points of the period being examined.

#### HOW CERTAIN IS OUR UNDERSTANDING OF THE ROLE OF HUMANITY IN CAUSING CLIMATE CHANGE?

Between our incomplete understanding of the climate system, and the

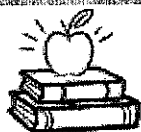
FEA  
PUBLIC



May 2003 - Tr  
an Effective

**SUPPORT  
THE FRASER  
INSTITUTE**

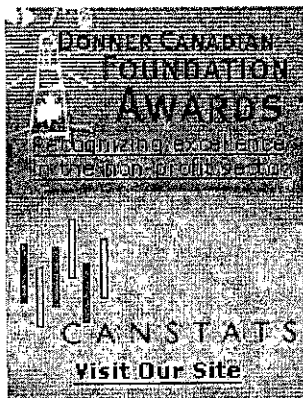
[click here](#)



**Children First**  
School Choice Trust  
VISIT OUR SITE >>

**VISIT OUR  
ONLINE  
BOOKSTORE**

**TAX CALCULATOR  
CALCULATE YOUR  
PERSONAL TAX  
FREEDOM DAY  
HERE**



difficulty of "scaling up" what we do know to the level of global climate effects, including effects on oceans, ecosystems, mountains, rivers, groundwater, solar variation, greenhouse gas emissions, clouds, aerosols, water vapor, and historical variation, then trying to scale the impacts back down to the local and regional level, we are left with a view best characterized as "through a glass, darkly."

One need not look beyond the landmark reports of the United Nations Intergovernmental Panel on Climate Change (IPCC) for expressions of that uncertainty. Of the twelve suspected "forcings" that are considered capable of changing the climate (either warming or cooling), the latest report ranks scientific understanding of only one type of forcing (from greenhouse gases) as "high." Fully 2/3 of the potential climate forcings, are ranked as "Very Low" in scientific understanding. Within those poorly understood forcings lies a climate cooling potential that could cancel out the theoreticized warming potential of the greenhouse gases altogether.

#### **GIVEN WHAT WE KNOW, WHAT'S OUR BEST COURSE?**

For any risk we face, there are many available risk-reduction actions available to us that let us move toward decreased environmental risk for ourselves and our children. But does the actual evidence tell us what to do? No. But it does suggest what we can do with any probability of success.

At the most generic level our options range from the resilient to the anticipatory -- from doing more research (and holding our greater resources back for a later time when we know more about the problem) -- to picking specific climate interventions now, in the face of uncertainty.

But how do we decide whether an anticipatory approach is more likely to work? A framework developed by risk-policy authority Aaron Wildavsky helps us answer that question. Wildavsky observed that the limiting factor in determining whether or not a potential anticipatory risk-reduction action is likely to be more beneficial than a resilient one depends not on what we know, but on what we don't know. Think about the knowledge you need to "head a risk off at the pass," compared to "waiting to see the whites of its eyes." You need to know which pass the risk is coming from, its magnitude, its timing, what you'd need to head it off, what was happening at all the other passes that pose risks, and you'd have to know that while you were out there heading off speculated risks at the pass, the business isn't getting done that will feed you, and support you through well known risks like poor nutrition, lower quality housing, lower quality education, etc. If you have little knowledge about any of those variables, you're likely to waste your resources trying to head off an uncertain risk, leaving you more vulnerable to other risks.

For climate policy, prevailing uncertainties clearly suggest that a policy of research and observation is best at this time, because: 1) the conditions needed to assure a reasonable chance of success for anticipatory actions are quite stringent; 2) there are more ways to get things wrong than to get them right; and 3) mistakes leave us less well prepared to deal with other current or future problems.

#### **WILL THE KYOTO PROTOCOL FIX THE PROBLEM?**

The belief that the Kyoto protocol by itself is unlikely to provide meaningful risk reduction benefits is widespread among those people cited as experts by proponents of the protocol at the 1997 Kyoto conference on climate change.

Jerry Mahlman, Director of the Geophysical Fluid Dynamics Laboratory at



Princeton University, told the Washington Post that "The best Kyoto can do is to produce a small decrease in the rate of increase" In a post-Kyoto Science news brief, Mahlman says that "it might take another 30 Kyotos over the next century" to cut global warming down to size.

Bert Bolin, the outgoing chairman of the United Nations Intergovernmental Panel on Climate Change, assessed the impact of Kyoto as a 0.4 percent reduction in greenhouse gas emissions compared to a no-protocol alternative, and concluded: "The Kyoto conference did not achieve much with regard to limiting the buildup of greenhouse gases in the atmosphere."

#### **WHERE DO WE NEED MORE RESEARCH?**

While recent studies of climate have contributed a great deal to our understanding of climate dynamics, there is still much to learn. Many areas of uncertainty remain. Current climate change models have acknowledged weaknesses in their handling of changes in the sun's output, volcanic aerosols, oceanic processes, and land processes which can influence climate change.

#### **The Natural Variability of Climate**

Despite the extensive discussion of climate modeling and knowledge of past climate cycles, only the last 1000 years of climate variation are included in the two state-of-the-art climate models referred to by the IPCC. As discussed earlier, however, the time framework in which we view climate variability makes a significant difference in the conclusions we draw. Until we know which perspective is more reflective of Earth's climate as a whole—the last 10,000 years, or a longer period of time—it will be difficult to put recent warming trends in perspective, or to relate those trends to potential impacts on the climate, and on the Earth's flora and fauna.

#### **The Role of Solar Activity**

At the front end of the climate cycle is the single largest source of energy which is put into the system, namely, the sun. And while great attention has been paid to most other aspects of climate, little attention has been paid to the sun's role in the heating or cooling of the Earth. Several recent studies have highlighted this uncertainty, showing that solar variability may play a far larger role in the Earth's climate than it was previously given credit for by the IPCC. If the sun has been heating up in recent times, researchers observe, the increased solar radiation could be responsible for up to half of the observed climate warming of the past century. Astrophysicist Sallie L. Baliunas attributes up to 71 percent of the observed climate warming of the past century to increased solar irradiance.

#### **The Role of Clouds and Water Vapor**

Between the emission of greenhouse gases and change in the climate are a range of climate and biological cycles ("feedbacks") that can influence the end result.

One such feedback is the influence of clouds, and water vapor. As the IPCC acknowledges: "the single largest uncertainty in determining the climate sensitivity to either natural or anthropogenic [or "manmade"] changes are clouds and their effects on radiation and their role in the hydrological cycle... At the present time, weaknesses in the parameterization of cloud formation and dissipation are probably the main impediment to improvements in the simulation of cloud effects on climate."

#### **Conclusion**

Supporters of the Kyoto protocol wish to portray the scientific understanding of climate change as high, the uncertainties as low, and the need to reduce greenhouse gases as urgent. But a review of the science suggests that uncertainty is so high as to raise a good prospect that mandatory greenhouse gas reductions will produce little or no environmental benefit. Meanwhile, a review of the economic literature suggests that greenhouse gas mandates hold the potential for inflicting massive economic harm, while it is economic productivity that lets us afford to protect our environment and health in the first place.

[Send this editorial to a friend](#)

Acrobat reader is required to view PDF files.  
[Click here to download it for free.](#)



#### **CONTACT US**

Head Office  
4th Floor, 1770 Burrard Street  
Vancouver BC Canada V6J 3G7  
Tel: (604) 688-0221  
Fax: (604) 688-8539  
[Copyright Policy](#)

Calgary Tel: 1-866-716-7175  
Toronto Tel: (416) 363-6575  
[info@fraserinstitute.ca](mailto:info@fraserinstitute.ca)  
Book Orders: 1-800-665-3558 ext. 580  
[sales@fraserinstitute.ca](mailto:sales@fraserinstitute.ca)  
Events: 1-800-665-3558 ext. 578  
[events@fraserinstitute.ca](mailto:events@fraserinstitute.ca)

[Having trouble opening any of our publications?](#)