

Global Warming and Its Real-World Effects: Supplemental Facts

By James M. Taylor
Senior Fellow, Environment Policy
The Heartland Institute
taylor@heartland.org
941-776-5690

Montana Environmental Quality Council
Helena, Montana
September 13, 2007

INCONVENIENT TRUTH

Scientific "Consensus"

More than 17,000 scientists have signed the Oregon Petition, asserting that alarmist global warming is unsupported **by** sound science (<http://www.oism.org/project/>)

A 2003 survey of more than 500 climate scientists shows that scientists are very sharply divided regarding global warming. (<http://www.heartland.org/Article.cfm?artId=20732>)

A 2006 National Registry of Environmental Professionals survey of environmental scientists and **environmental** professionals found substantial disagreement as well (<http://www.nrep.org/globsurv.htm>)

41 percent disagreed warming in large part caused by humans

47 disagreed that Kyoto-style agreements are sound policy options

71 percent disagreed that recent hurricanes are linked to global warming

Himalayas

Alarmist claims aside, the Himalayas are not a global warming crisis. Glaciers appear to be receding some in the Eastern Himalayas, while glaciers in the Western Himalayas are growing.

An alarmist myth:

World Wildlife Fund March 14, 2005

(http://www.panda.org/about_wwf/where_we_work/asia_pacific/where/nepal/news/index.cfm?uNewsID=19111):

"Himalayan glaciers are among the fastest retreating glaciers globally due to the effects of global warming, and this will eventually result in water shortages for hundreds of millions of people who rely on glacier-dependent rivers in China, India, and Nepal."

The World Wildlife Fund press release continues, "water level in rivers will decline, meaning massive economic and environmental problems for people in western China, Nepal, and northern India."

The truth, reported exactly one day earlier:

Insurance Digest March 13, 2005 (formerly linked at

<http://www.whyinsure.com/text1/news-number-537.html>, but an extended quotation of which still exists under the March 14 entry at <http://www.junkscience.com/mar05.html>):

"There's good news for the geologists and the environmental scientists who have been craving to assuage their anxieties over shrinking of glaciers and drying up of snow-

fed rivers. Heavy snows in the higher regions of **Himachal** Pradesh this year have rejuvenated them all.

"The snowfall has given a **fresh** lease of life to both perennial and seasonal glaciers in the region. ... The region has received its heaviest snowfall in over two decades this year."

The article continues, "The heavy snowfall is also fortuitous for the rivers, especially snow-fed ones which will have abundant water during summers when the snow melts, which in **turn** shall boost **[hydro]-power** generation."

National Geographic Sep 11, 2006:

In an article title "Some Glaciers Growing Due To Climate Change" (<http://news.nationalgeographic.com/news/2006/09/060911-growing-glaciers.html>) states, "Some glaciers in Pakistan's Upper **Indus** River Basin appear to be growing, and a new study suggests that global warming is the cause." The article continues, "[**T**he region's winter snowfall, which feeds the glaciers, has been increasing. And average summer temperatures, which melt snow and glaciers, have been dropping."

February 11, 2007 **Hindustan** Times

(http://www.iceagenow.com/Himalayan_Glaciers_Not_Shrinking.htm):

"Some experts have questioned the alarmists theory on global warming leading to shrinkage of Himalayan glaciers. **VK Raina**, a leading glaciologist ... is one among them." According to **Raina**, "Claims of global warming causing glacial melt in the Himalayas are based on wrong assumptions." Regarding research focused on approximately 50 glaciers in India's Western Himalayas, "Nearly 200 years data has shown that **nothing abnormal** has **occurred** in any of these glaciers," the **Hindustan** Times reports.

August 1, 2007, BBC News (<http://news.bbc.co.uk/2/hi/science/nature/6926597.stm>):

"Clouds of pollution over the Indian Ocean appear to cause as much warming as greenhouse gases released by human activity, a study has suggested."

"Writing in *Nature*, they said the tiny particles ~~increased~~ increased the solar heating of the lower atmosphere by about 50%."

"The warming could be enough to explain the retreat of glaciers in the Himalayas, the scientists proposed."

"[The pollution] contributes as much as the recent increase in **anthropogenic** greenhouse gases to regional lower atmospheric warming trends," they suggested.

"We propose that the combined warming trend of 0.25 Kelvin per decade may be **sufficient** to account for the observed retreat of the Himalayan glaciers."

And just as the media had previously reported shrinking glaciers would threaten the water supplies of tens of millions of people, they now claim the water supplies of millions of people are threatened by growing glaciers.

In an August 24, 2006 article titled "Global warming boost to glaciers," (http://news.bbc.co.uk/2/hi/uk_news/england/tyne/5283278.stm) BBC News reported, "Researchers at Newcastle University looked at temperature trends in the western Himalaya over the past century. They found warmer winters and cooler summers, combined with more snow and **rainfall**, could be causing some mountain glaciers to increase in size."

Not content to dismiss the prior **false** alarms about glacier retreat straining water resources, **BBC** News warned about the now-growing glaciers, "the findings are significant, because temperature and rain and snow trends in the area impact on water availability for more than 50 million Pakistanis."

Kilimanjaro

One of the most striking scenes in **Al Gore's** movie are the before and after photographs of Africa's Mt. Kilimanjaro. Gore shows a photograph of the Kilimanjaro alpine glacier in 1970, and then shows a photograph of the same alpine glacier in 2005. The more recent photo shows a smaller snow cap than was previously the case. This, Gore tells us, is proof of global warming. However, the science tells us something different.

From 1953 through 1976, the globe was cooling, and yet **Kilimanjaro** lost 21 percent of its original snow cover. Moreover, **from** 1979 to 2000, satellite data measured additional cooling in the Kilimanjaro region, and yet **Kilimanjaro's** glacier continued to shrink.

So how can Kilimanjaro's snow cap be shrinking during cooling temperatures?

As far back as 2003, science had the answer. The following is a quote **from** a November **34, 2003** article in *Nature* magazine's *Nature Online* (<http://www.nature.com/nsu/031117/031117-8.htm>):

"Although **it's** tempting to blame the ice loss on global warming, researchers think that deforestation of the mountain's foothills is the more likely culprit. Without the forests' humidity, previously moisture-laden winds blew dry. No longer replenished with water, the ice is evaporating in the strong equatorial sunshine."

Quotes from *American Scientist* **July-August 2007**

(<http://www.americanscientist.org/template/AssetDetail/assetid/55553/page/1>):

"**[W]arming** fails spectacularly to explain the behavior of the glaciers and plateau ice on **Africa's** Kilimanjaro **massif**, just 3 degrees south of the equator, and to a lesser extent

other tropical glaciers. The disappearing ice cap of the 'shining mountain,' which gets a starring role in the movie, is not an appropriate poster child for global climate change. Rather, extensive field work on tropical glaciers over the past 20 years by one of us (Kaser) reveals a more nuanced and interesting story. Kilimanjaro, a trio of volcanic cones that penetrate high into the cold upper troposphere, has gained and lost ice through processes that bear only indirect connections, if any, to recent trends in global climate."

"For the free troposphere, a deep layer including Kibo's peak, the warming rate during the period 1979-2004 for the zone 20 degrees latitude north and south of the equator was less than 0.1 degree per decade—smaller than the surface trend for that time and not statistically different **from** zero."

Temperature readings "do not suggest that any warming at Kilimanjaro's summit has been large enough to explain the disappearance of most of its ice, either during the whole 20th century or during the best-measured period, the last 25 years."

"[A]ir temperatures measured at the altitude of the glaciers and ice cap on Kilimanjaro are almost always substantially below **freezing** (rarely above -3 degrees)."

"Is Kilimanjaro's ice cap doomed? It may be. ... Imagine, though, a scenario in which the atmosphere around Kilimanjaro were to warm occasionally above **0** degrees. Sensible and **infrared** heating of the ice surface would gradually erode the sharp corners of the ice cap; gentler slopes would quickly develop. If, in addition, precipitation increased, snow could accumulate on the slopes and permit the ice cap to grow. Ironically, substantial global warming accompanied by an increase in precipitation might be one way to save Kilimanjaro's ice."

Tornadoes

IPCC: "There is **insufficient** evidence to determine whether trends exist ... in small scale phenomena such as tornadoes."

Hurricanes

The National Oceanic and Atmospheric Administration, known as the NOAA, on November 29, 2005 released a study in response to claims that Hurricanes Katrina and Rita were caused by global warming. According to NOAA, "NOAA attributes this increased activity to natural **occurring** cycles in tropical climate patterns near the equator. These cycles, called 'the tropical multi-decadal signal,' typically last several decades (20 to 30 years or even longer). As a result, the North Atlantic experiences alternating decades long (20 to 30 year periods or even longer) of above normal or below normal hurricane seasons. NOAA **research** shows that the tropical multi-decadal signal is causing the increased Atlantic hurricane activity since 1995, and is not related to greenhouse **warming**." ([http://www magazine noaa gov/stories/mag184.htm](http://www.magazine.noaa.gov/stories/mag184.htm))

Chris **Landsea**, one of the world's leading hurricane experts at the National Hurricane Center published a study on **May 1** documenting that hurricane activity is no higher now than in decades past. Regarding the number of recent hurricanes compared to earlier decades, "[**W**]e don't see any new trend. There's no link to global warming that you can see at all," **Landsea** reports. (<http://www.newsdaily.com/TopNews/UPI-1-20070502-19042700-bc-us-hurricanes.xml>)

Hurricane expert William Gray reported just a few days earlier, on April 27, that the number of major hurricanes making landfall on the U.S. Atlantic coast has declined in the past 40 years, even while **temperatures** and carbon dioxide levels have risen. (<http://www.ihf.com/articles/ap/2007/04/28/america/NA-GEN-US-Top-Forecaster-Global-Warming.php>)

Hurricane scientists reported in the April 18 *Geophysical Research Letters* that computer models show global warming will not significantly increase hurricane activity. Global warming will cause more wind shear, which serves to prevent hurricanes **from** forming, the hurricane scientists report.

"The environmental changes found here do not **suggest** a strong increase in tropical Atlantic hurricane activity during the 21st century," reported the authors. (<http://www.rsmas.miami.edu/pressreleases/20070417-wind.html>)

Sahara Desert

Claims by **Al Gore** and others that **Africa's** deserts, and particularly the southern Sahara desert, are expanding are contradicted by sound science.

September 18, 2002 New Scientist magazine:

"Africa's deserts are in 'spectacular' retreat." The article documents how vegetation is **reclaiming** large expanses of barren land across the entire southern edge of the Sahara desert." (<http://www.newscientist.com/article.ns?id=dn28111>)

The article continues, "The southern Sahara desert is in retreat, making **farming** viable again in what were some of the most arid parts of Africa. ... **Burkina Faso**, one of the West **African** countries devastated by drought and advancing deserts 20 years ago, is growing so much greener that families who fled to wetter coastal regions are starting to go home."

Still further: "Nor is it just a short-term trend. Analysts say the gradual greening has been happening since the **mid-1980s**, though has gone largely unnoticed. Only now is the evidence being pieced together.

Aerial photographs taken in June show "quite spectacular regeneration of vegetation" in northern **Burkina Faso**, according to Chris **Reij** of the Free University, Amsterdam.

There are more trees for firewood and more grassland for livestock. And a survey among farmers shows a 70 per cent increase in yields of local cereals such as sorghum and millet in one province in recent years. The survey, which **Reij** is collating, was paid for by Dutch, German and American overseas aid agencies.

Meanwhile, **Kjeld Rasmussen** of the University of Copenhagen has been looking in detail at sand dunes in the same area. Once they seemed to be marching south. But since the **1980s**, he says, there has been a "steady reduction in bare ground" with "vegetation cover, including bushes and trees, on the increase on the dunes".

The January 1, 2007 issue of *Geology* reports that central **Africa** is currently "experiencing an unusually prolonged period of stable, wet conditions in comparison to previous centuries of the past millennium." Moreover, "the patterns and variability of 20th century rainfall in central Africa have been unusually conducive to **human** welfare in the context of the past 1400 years." Indeed, *Geology* reports, "unless global warming is a mitigating factor, central **Africa** is overdue for a **return** to decades-long drought that exceeds anything observed in the past century."
(<http://www.co2science.org/scripts/CO2ScienceB2C/articles/V10/N13/C2.jsp>)

Moreover, this phenomenon of a greening planet is not limited to the southern Sahara desert. A study on variations in northern hemisphere vegetation taken **from** satellite data **from 1981-1999**, reported in the September 16, 2001 (<http://www.gsfc.nasa.gov/topstory/20010904greenhouse.html>) issue of *Journal of Geophysical Research*, found **an 8-to-12 percent** increase in vegetation across North America and Eurasia. A subsequent comment in the same journal, *Journal of Geophysical Research* concluded that **a** concurrent rise in atmospheric CO₂ was primarily responsible for the increased vegetation.
(<http://www.co2science.org/scripts/CO2ScienceB2C/articles/V5/N45/EDIT.jsp>)

Greenland

In a 2006 study in *Journal of Geophysical Research*, researchers at the Danish Meteorological Institute and the Climatic Research Unit at the University of East Anglia (UK) correlated Greenland's surface temperature readings and ice core data dating back to 1784.

They made a remarkable discovery. The past two **decades** were the coldest decades for Greenland since the 1910s. Average **annual** temperatures during the past two decades were colder than in any of the previous six decades. Indeed, Greenland's temperatures during the 1980s and 1990s averaged a **full 1.5 degrees Celsius** lower than average annual temperatures during the 1930s and 1940s.
(<http://www.worldclimatereport.com/index.php/2006/11/17/cooling-the-debate-a-longer-record-of-greenland-air-temperature/>) and
(<http://www.agu.org/pubs/crossref/2006/2005JD006810.shtml>)

Moreover, according to a December 2005 study in *Journal of Glaciology*, seven scientists who had analyzed 10 years worth of data reported, "the Greenland ice sheet is thinning at the margins and growing inland, with a **small** overall mass gain."

(<http://www.ingentaconnect.com/content/igsoc/jog/2005/00000051.00000175.art00001>)

Short-term accelerated melting in 2005-2006, has now returned to normal.

(<http://tierneylab.blogs.nytimes.com/2007/02/08/greenlands-glaciers-take-a-breather/>)

and (<http://www.sciencemag.org/cgi/content/abstract/1138478v1>)

Gulf Stream

The Gulf Stream is in no danger of shutting down.

The November 17, 2006 issue of *Science* magazine reports, "A close look at the Atlantic Ocean's currents has confirmed what many oceanographers suspected all along: There's no sign that the ocean's heat-laden "conveyor" is slowing."

(<http://www.sciencemag.org/cgi/content/summary/314/5802/1064a>)

Reporting on an October 2006 conference of scientists who had studied the Gulf Stream, the magazine reports, "more than 95 percent of the scientists at the workshop concluded that we have not seen any significant change of the Atlantic circulation to date."

Similarly, Johan Jungclauss, a **German** scientist who models ice sheets, reported in the November 7 *New Scientist*, "Abrupt climate change initiated by the ice sheet melting is not a realistic scenario for the **21st** century."

(<http://environment.newscientist.com/article/mg19225763.900.html>) and

(<http://illusionsforum.jconserv.net/viewtopic.php?t=33&sid=a3166c416cf511650a4f948d4f3c5bf9>)

Antarctica

Portions of West Antarctica are warming, but this is the exception to the rule. Most of Antarctica is cooling.

On January 13, 2002, online edition of *Nature* magazine reported that Antarctica as a whole has been dramatically cooling for **decades**. *Nature* reported that temperatures across the continent have dropped an average of 0.125 degrees Fahrenheit per year, or 1.2 degrees Fahrenheit per decade, since 1978.

(<http://www.sciencedaily.com/releases/2002/01/020114073549.htm>) and

(<http://www.usatoday.com/news/science/cold-science/2002-01-13-antarctic-cooling.html>)

"The decline is alarming," *Nature* quoted Diana Wall of Colorado State University who compiled the Antarctic data. "These cooling repercussions may have a long-term effect," said Wall.

More recently, scientists reported in a July 2006 article published in the British journal *Philosophical Transactions of the Royal Society A: Mathematical, Physical, and Engineering Sciences*, that satellite measurements of the Antarctic ice sheet showed significant growth between 1992 and 2003. (<http://bowfell.geol.ucl.ac.uk/~lidunka/EPSS-papers/djw3.pdf>)

According to the most recent scientific measurements, as reported by Royal Society scientists, "Mass gains from accumulating snow, particularly on the Antarctic Peninsula and within East Antarctica, exceed the ice dynamic loss **from** West Antarctica." (<http://www.journals.royalsoc.ac.uk/content/38315t2244r5w3m4/fulltext.pdf>)

IPCC February 2007: "the Antarctic ice sheet will remain too cold for widespread surface melting and is expected to gain in mass." (http://www.ipcc.ch/WGI_SPM_17Apr07.pdf)

Polar bears

Ice bergs breaking off of ice shelves are **natural** – ask the surviving passengers of the Titanic.

Polar bears are capable of swimming 60 to 100 miles without interruption. They are never in danger of being stranded on a breakaway iceberg.

There are currently more than 25,000 wild polar bears in the world and that their numbers are not in decline.

February 7, 2005 Edinburgh Scotsman
(<http://thescoatsman.scotsman.com/international.cfm?id=143012005>):

"The world's polar bear population is on the increase despite global warming, which scientists had believed was pushing the animal towards extinction.

"According to new research, the numbers of the giant predator have grown by between 15 and 25 per cent over the last decade.

"Some authorities on Arctic wildlife even claim that hunting, and not global warming, has been the real cause of the decrease in polar bear numbers in areas where the species is in decline.

"A leading Canadian authority on polar bears, **Mitch** Taylor, said: "We're seeing an increase in bears that's really unprecedented, and in places where we're seeing a decrease in the population it's **from** hunting, not from climate change."

March 9, 2007 London Telegraph
(<http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2007/03/09/wpolar09.xml>):

"A survey of the animals' numbers in Canada's eastern Arctic has revealed that they are thriving, not declining, because of mankind's interference in the environment.

"In the Davis Strait area, a 140,000-square kilometre region, the polar bear population has grown from 850 in the mid-1980s to 2,100 today.

"There aren't just a few more bears. There are a hell of a lot more bears,' said **Mitch** Taylor, a polar bear biologist who has spent 20 years studying the animals.

"**His** findings back the claims of Inuit hunters who have long claimed that they were seeing more bears."

Polar bears evolved from brown bears anywhere **from** 200,000 years ago (<http://www.alaskazoo.org/willowcrest/polarbearhome.htm>) to 3 **million** years ago (<http://www.bbc.co.uk/nature/wildfacts/factfiles/7.shtml>). They survived at least one period where polar temperatures were at least 6 degrees Celsius **warmer** than today (http://en.wikipedia.org/wiki/Image:Ice_Age_Temperature.png) and perhaps **temperatures** as warm as 15 degrees **Celsius** warmer than today (http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20070705/greenland_dna_070705/20070705?hub=SciTech)

Prior Interglacials

In each of the last 4 **interglacials**, temperatures were substantially warmer than temperatures in our current interglacial (http://en.wikipedia.org/wiki/Image:Ice_Age_Temperature.png)

Just a few hundred thousand years ago, Greenland was 15 degrees Celsius warmer than today (http://www.ctv.ca/servlet/ArticleNews/story/CTVNews/20070705/greenland_dna_070705/20070705?hub=SciTech and <http://www.sciencemag.org/cgi/content/abstract/317/5834/111>)

C02 and Climate

Warming has always preceded **CO2** elevation, not the other way around (<http://www.sciencemag.org/cgi/content/abstract/299/5613/1728>)

Most of the warming of the past 100 years occurred very suddenly prior to 1940 (http://en.wikipedia.org/wiki/Image:Instrumental_Temperature_Record.png), before significant **CO2** emissions. Then, **from** 1945 through 1978, temperatures fell even while **CO2** levels were rising significantly. Only during the final 20 years of the century did temperatures and **CO2** levels show a similar rising trend. This very brief period of similar trends is itself called into question by scientists at the Russian Academy of Sciences

(<http://www.heartland.org/new/Article.cfm?artId=20516>) and the Danish National Space Center

(<http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2007/02/11/warm11.xml>), who report that solar output is higher than it has been for at least the past 1,000 years. CO₂ is no more correlated with current temperature trends than is **solar** output, these scientists report.

IPCC

Each successive **IPCC** report is less and less alarming about **future** climate projections.

For **example**, the middle-of-the-road climate scenarios in the **IPCC**'s latest report project roughly 2.4 degrees Celsius of warming during the entire next century. (<http://ipcc-wg1.ucar.edu/wg1/wg1-report.html>) This is a far cry **from** the several degrees of warming trumpeted by **the** media after prior **IPCC** reports.

Moreover, many **IPCC** scientists themselves report that the **IPCC** process is skewed to project more global warming than is likely to actually occur. Many **IPCC** contributors are not scientists. Those **IPCC** contributors that are scientists are selected by governments rather than by climate science organizations, and are accordingly subject to political biases. Even the lead authors have very suspect objectivity, representing such activist groups as Environmental Defense and **Greenpeace**. Given all this, it is not surprising that even the increasingly moderate climate projections **from IPCC** are criticized by real climate scientists as being too alarmist.

For example, a 2003 international survey of more than 500 climate scientists found that less than 25 percent of climate scientists "strongly **agree**" that **IPCC** accurately reflects the consensus of thought within the scientific community. Indeed, the survey found that more climate scientists "strongly disagree" than "strongly **agree**" that climate change is mostly the result of **anthropogenic** causes. (<http://downloads.heartland.org/20732.pdf>)

However, even taking the much-criticized **IPCC** findings at face value, **IPCC** predicts merely 1 foot of sea level rise during the entire next century, half of which would be expected regardless of any projected global warming. (<http://ipcc-wg1.ucar.edu/wg1/wg1-report.html>) **IPCC** projects that most of North America will receive more rather than less precipitation this century, and that North American agriculture will benefit rather than suffer due to global warming. (<http://ipcc-wg1.ucar.edu/wg1/wg1-report.html>)

Sea Level

The March 16 issue of Science magazine reports that the Greenland and Antarctica ice caps are contributing just 0.35 millimeters per year to sea level rise. This equates to less than 1 ½ inches of sea level **rise per century**.

(<http://www.sciencemag.org/cgi/content/abstract/315/5818/1529>)

The June 2007 issue of *Global Planetary Change*

(http://www.sciencedirect.com/science?_ob=ArticleURL&_udi=B6VF0-4NITISV-3&_user=10&_coverDate=06%2F30%2F2007&_rdoc=1&_fmt=&_orig=search&_sort=1&view=c&_acct=C000050221&_version=1&_urlVersion=0&_userid=10&md5=b2239f82f670b1de6ed3e76f3b9dc3fe) reports the total sea level rise from all sources – natural and **anthropogenic** – is currently at a pace of only 5 inches for the entire next century. (<http://www.co2science.org/scripts/CO2ScienceB2C/articles/V10/N32/C1.jsp>) This is well within historical natural parameters.

The March 8 issue of *Nature* magazine reports that glaciers existed on Greenland 30 million years ago "at a time when temperatures **and** atmospheric carbon dioxide concentrations were substantially higher" than they are today.

(<http://www.nature.com/nature/journal/v446/n7132/edsumm/e070308-01.html> and <http://www.co2science.org/scripts/CO2ScienceB2C/articles/V10/N12/EDIT.jsp>)