Bad news for science in *Newsweek*

by

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August 9, 2007

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Anthropogenic global warming is a scientific hypothesis, not an article of religious or ideological dogma. Skepticism and doubt are entirely appropriate in the realm of science, in which truth is determined by evidence, experimentation, and observation, not by consensus or revelation. Yet when it comes to global warming, dissent is treated as heresy -- as a pernicious belief whose exponents must be shamed, shunned, or silenced. The issue of global warming isn't a closed book. Smearing those who buck the "scientific consensus" as traitors, toadies, or enemies of humankind may be emotionally satisfying and even professionally lucrative. It is also indefensible, hyperbolic bullying.

--Jeff Jacoby, Boston Globe, 15 August 2007

BAD NEWS FOR SCIENCE IN *NEWSWEEK*

But the overriding reality seems almost un-American: We simply don't have a solution for this problem. As we debate it, journalists should resist the temptation to portray global warming as a morality tale -- as Newsweek did -- in which anyone who questions its gravity or proposed solutions may be ridiculed as a fool, a crank or an industry stooge. Dissent is, or should be, the lifeblood of a free society.
--Robert J. Samuelson, The Washington Post, 15 August 2007

"Don't know much about science"

The Third International Mathematics and Science Study Results reveals that US public school children are remarkably sub par in math and science capabilities.

Third International Mathematics and Science Study (TIMSS) Results (41 nations)

Math

Grade 4	Grade 8	Grade 12 *
1. Singapore	Singapore	Netherlands
2. Korea	Korea	Sweden
3. Japan	Japan	Denmark
4. Hong Kong	Hong Kong	Switzerland
5. Netherlands	Belgium	Iceland
12. USA	28. USA	19. USA

Science

Grade 4	Grade 8	Grade 12 *
1. Korea	Singapore	Sweden
2. Japan	Czech Republic	Netherlands
3. USA	Japan	Iceland
4. Austria	Korea	Norway
5. Australia	Bulgaria	Canada
	17. USA	16. USA

•Inexplicably, Some of the superior countries in grade 8 (especially the Asians) were not included in published 12th grade results.

Apparently things are not much brighter for the adults at *Newsweek* Magazine.

The cover article in this week's *Newsweek* is another breathless piece detailing its version of the history of climate change "deniers" and how a few groups with a paltry budget, have successfully, over the course of the past two decades, influenced the course of American politics on the issue of anthropogenic climate change. *Newsweek* acts appalled at this course of events. The article is basically a telling of history from a one-sided

perspective, and is noticeably lacking in hard science. What little science *Newsweek* tries to slip in, demonstrates the bias and lack of understanding of the most basic issues and facts.

Most of the "science" *Newsweek* includes in the article is contained in its final paragraph of summation:

> Look for the next round of debate to center on what Americans are willing to pay and do to stave off the worst of global warming. So far the answer seems to be, not much. The NEWSWEEK Poll finds less than half in favor of requiring high-mileage cars or energy-efficient appliances and buildings. No amount of white papers, reports and studies is likely to change that. If anything can, it will be the climate itself. This summer, Texas was hit by exactly the kind of downpours and flooding expected in a greenhouse world, and Las Vegas and other cities broiled in record triple-digit temperatures. Just last week the most accurate study to date concluded that the length of heat waves in Europe has doubled, and their frequency nearly tripled, in the past century. The frequency of Atlantic hurricanes has already doubled in the last century. Snowpack whose water is crucial to both cities and farms is diminishing. It's enough to make you wish that climate change were a hoax, rather than the reality it is.

The Really "Inconvenient truths"

And here is what the *real* situation is:

"This summer, Texas was hit by exactly the kind of downpours and flooding expected in a greenhouse world…"

Can/will *Newsweek* point to any "downpours" and "flooding" that they consider of the type *not* expected in a "greenhouse world," or are all instances of "downpours" and "flooding" examples of "greenhouse world" expectations? Does this mean every time it rains it is because of anthropogenic global warming? What about the "downpours" and "flooding" that occurred in Texas prior to the 1960s? 1940s? 1920? 1900s?

The Flood Safety Education Program points out that some of the heaviest rainfall events ever recorded in the world, have occurred in Texas.

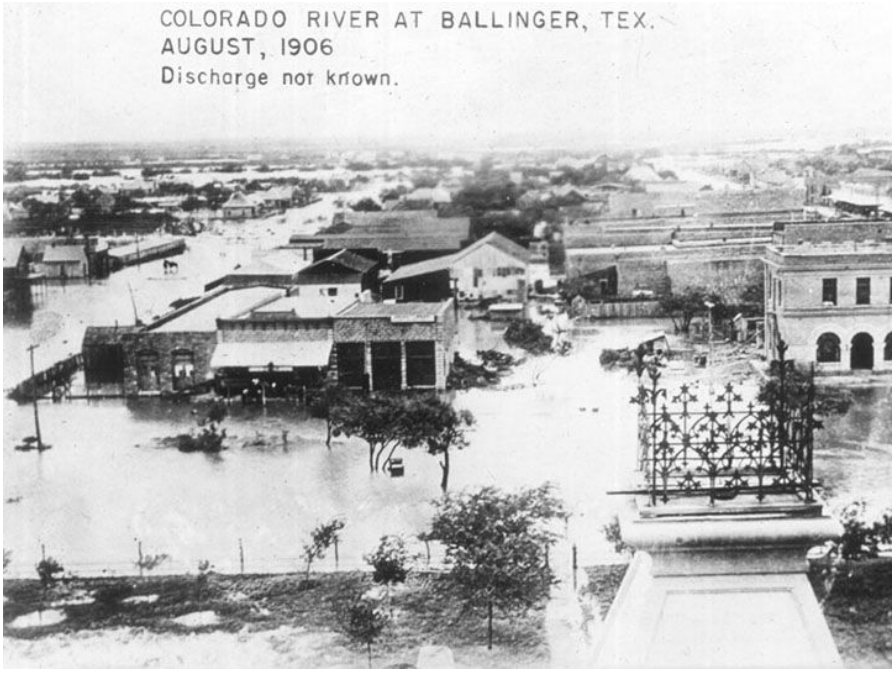
The Flood Safety Education Project (www.floodsafety.com) a non-profit organization whose goal is to "promote flood safety" describes Texas as the state that leads the nation almost every year in flood fatalities and property damage.

The Flood Safety Education Program points out that some of the heaviest rainfall events ever recorded in the world, have occurred in Texas and describe flooding there this way:

> Flooding from large storms has affected Texas throughout its history, causing many deaths and much economic loss and hardship. Floods occur regularly in Texas, and destructive floods occur somewhere in the State every year. Many of these floods are destructive because they often occur in areas where extreme flooding had not occurred for many years. These floods often are perceived as unexpected or even unprecedented because their peak water-surface elevations (stages) can greatly exceed those of past floods.

The following photos tell the tale:

Flood damage at the Guadalupe River at Comfort, Texas, July13-18, 1900 after heavy rainfall (image from www.floodsafety.com).



Flooding from the Colorado River at Ballinger, Texas, August 5-6, 1906 after more than 8 inches of rainfall occurred over the upper Colorado River basin (image from www.floodsafety.com).

Aftermath of flooding along the San Antonio River is San Antonio, Texas, September 8-19, 1921 that resulted from heavy rainfall over a large area in Central Texas. It was reported that Taylor, Texas in Williamson County recorded 23.98 in. during 35 hours, with 23.11 in. during 24 hours and that Thrall, Texas had 32 in. of rain in 12 hours (image from www.floodsafety.com).

Flooding of the Colorado River at Wharton, Texas, June 9-15, 1935 after more than six days of rainfall from a stalled weather system produced downpours resulting in more than 18 inches of rain in several locations (image from www.floodsafety.com).

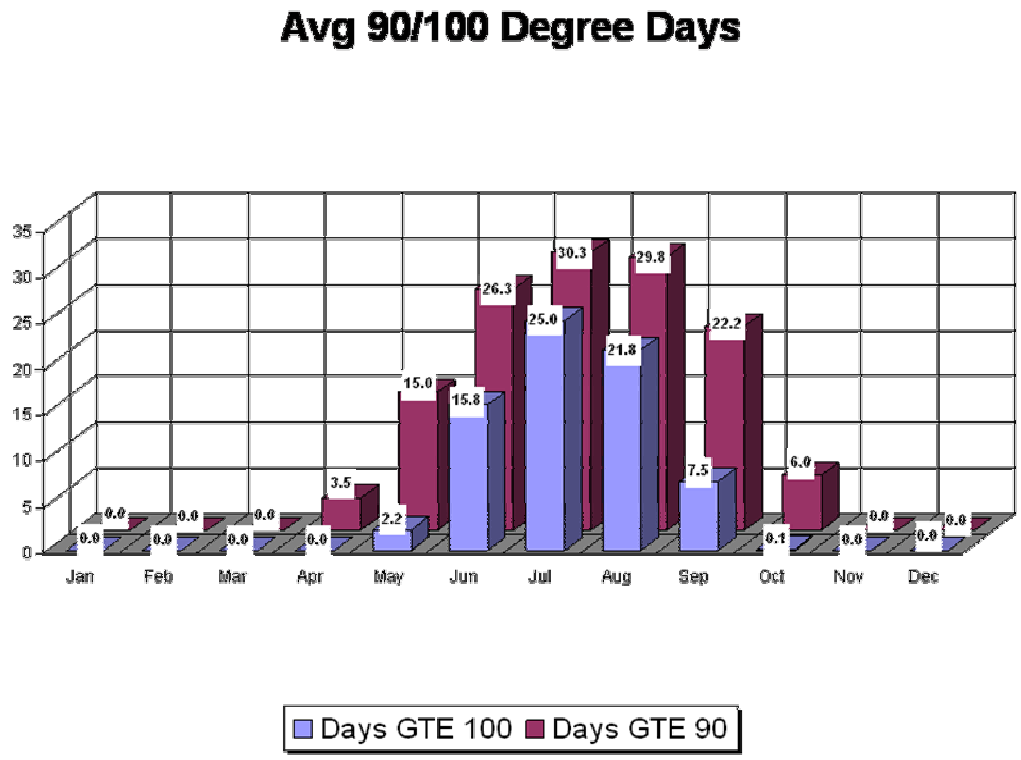
Flooding of the Clear Fork Trinity River in Fort Worth, May 17, 1949 after nearly a foot of rain fell over Village Creek in the West Fork Trinity River basin (image from www.floodsafety.com).

That *Newsweek* would point to "downpours" and "flooding" in Texas as being evidence of anthropogenic climate change is ignorant to the climate and the history of Texas.

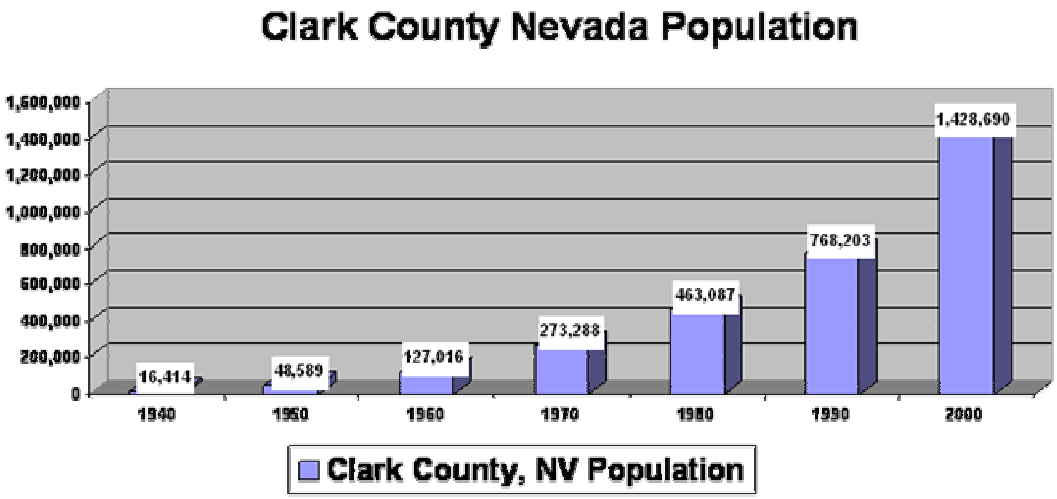
We can only image that had Texas not experienced "downpours" this summer, and instead conditions there were dry, *Newsweek* would have pointed to the drought there as evidence of a "greenhouse world."

"…and Las Vegas and other cities broiled in record triple-digit temperatures."

On average, 81% of July days in Las Vegas reach 100ºF. In several years, every single day in July has equaled or exceeded 100ºF. In July 1942, 28 days reached 105ºF, and 17 reached 110ºF. Of the 31 daily extreme high temperature records for the month of July in Las Vegas, 11 were set during the first 10 years of the record (1937-1936), compared to 8 that were set during the last 10 years (1998-2007). And all this time, the size and population of the city has been growing enormously. Las Vegas' desert setting, plus its enormously growing population center make triple-digit temperature a fact of life during the summers there (and in many other cities in the Southwest), global warming has little to do with it.



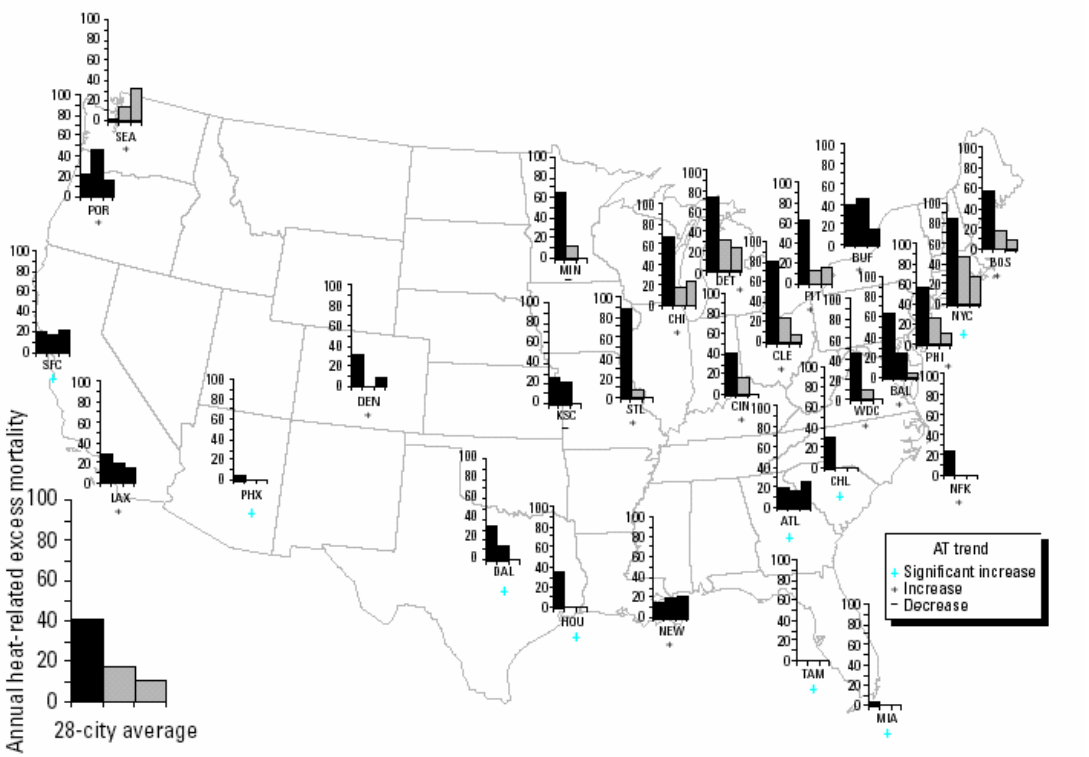
Average number of days with the maximum temperature greater than or equal to 90F (maroon bars) or 100F (blue bars) in Las Vegas (figure from the Las Vegas National Weather Service Office, http://www.wrh.noaa.gov/vef/climate/figure2.php)



Population of Clark County, Nevada, including the city of Las Vegas (figure from the Las Vegas National Weather Service Office, http://www.wrh.noaa.gov/vef/climate/figure7.php).

"Just last week the most accurate study to date concluded that the length of heat waves in Europe has doubled, and their frequency nearly tripled, in the past century."

Evidence clearly shows that the warmer a climate is, the *less* susceptible its residents are to extreme heat. This means, that if temperatures in Europe rise in the future because of climate change and heat waves become more frequent and more long-lasting, its population will adapt to them and be less impacted by their occurrence. Evidence for such adaptations can be found in the United States, as major cities across the country have grown better adapted to rising temperatures over the course of the past 40 years.



Annual heat-related mortality rates (excess deaths per standard million population). Each histogram bar indicates a different decade (from left to right, 1970s, 1980s, 1990s). (Source: Davis et al ., 2003).

A number of studies have shown that during the last several decades, the population in major U.S. cities has grown better adapted, and thus less sensitive, to the effects of excessive heat events (Davis et al., 2003a,b). Each of the bars of the illustration above represents the annual number of heat-related deaths in 28 major cities across the United States. There should be three bars for each city, representing, from left to right, the decades of the 1970s, 1980s and 1990. For nearly all cities, the number of heat-related deaths is declining (the bars are get smaller). In some cities, there is not a bar present at all in the 1990s. This indicates that there are no statistically distinguishable heat-related deaths during that decade (the most recent one studied)—meaning that the population of those cities has become nearly completely adapted to heat waves.
Further, as can also be seen in the figure, the pattern of the distribution of heat-related mortality shows that in locations where extremely high temperatures are more commonplace, such as along the southern tier states, the prevalence of heat-related mortality is much lower than in the regions of the country where extremely high temperatures are somewhat rarer (e.g. the northeastern U.S.). This provides another demonstration that populations adapt to their prevailing climate conditions.

Ill-thought-out mitigation policies that cripple the economy and increase costs on all energy services will diminish these improvements, lessen adaptation abilities and significantly increase deaths, particularly among the elderly and poor.

This adaptation is most likely a result of improvements in medical technology, access to air-conditioned homes, cars, and offices, increased public awareness of potentially dangerous weather situations, and proactive responses of municipalities during extreme weather events. Ill-thought-out mitigation policies that cripple the economy and increase costs on all energy services will diminish these improvements, lessen adaptation abilities and significantly increase deaths, particularly among the elderly and poor.

And this adaptation can occur rapidly. For example, during the Chicago heat wave in mid-July 1995, it is reported that there were more than 700 excess heat-related deaths. In July 1999, a heat wave of nearly identical character occurred, resulting in little more than 100 excess deaths there—a seven-fold decrease.

In only four years, the population of Chicago learned how to better deal with extreme heat, and reduced mortality by 86%. In 1999, the National Weather Service in Chicago issued heat wave warnings well in advance. Press releases reminded everyone of the 1995 death toll. “Cooling centers” were opened to the public throughout the city accessible via free bus service. And municipal workers and police officers checked on elderly residents. Those simple measures—adaptations made over a short period of time—saved literally hundreds of lives (Palecki et al., 2001).

Europe should respond similarly. W.R Keatinge, writing in a 2000 article in the *British Medical Journal*, concluded:

> Populations in Europe have adjusted successfully to mean summer temperatures ranging from 13.5°C to 24.1°C and can be expected to adjust to global warming predicted for the next half-century with little sustained increase in heat-related mortality. Active measures to accelerate adjustment to hot weather could minimize temporary rise in heat related mortality, and measures to maintain protection against cold in winter could permit substantial reductions in overall mortality as temperatures rise.

There seems to be every reason to believe that if heat waves become more commonplace in Europe in the coming centuries, people will pay far less a price for it than they did during the heat wave of 2003. All this is strikingly absent in the *Newsweek* article that boosts at least 4 contributing writers.

References:

Davis, R.E., et al., 2003a. Decadal changes in summer mortality in the U. S. cities. *International Journal of Biometeorology*, **47**, 166-175.

Davis, R.E., et al., 2003b. Changing heat-related mortality in the United States. *Environmental Health Perspectives*, **111**, 1712-1718.

Keatinge, W.R., et al., 2000. Heat related mortality in warm and cold regions of Europe: observational study. *British Medical Journal*, **321**, 670–673.

Palecki, M.A., S.A. Changnon, and K.E. Kunkel, 2001. The nature and impacts of the July 1999 heat wave in the midwestern United States: Learning from the lessons of 1995, *Bulletin of the American Meteorological Society*, **82**, 1353–1367.

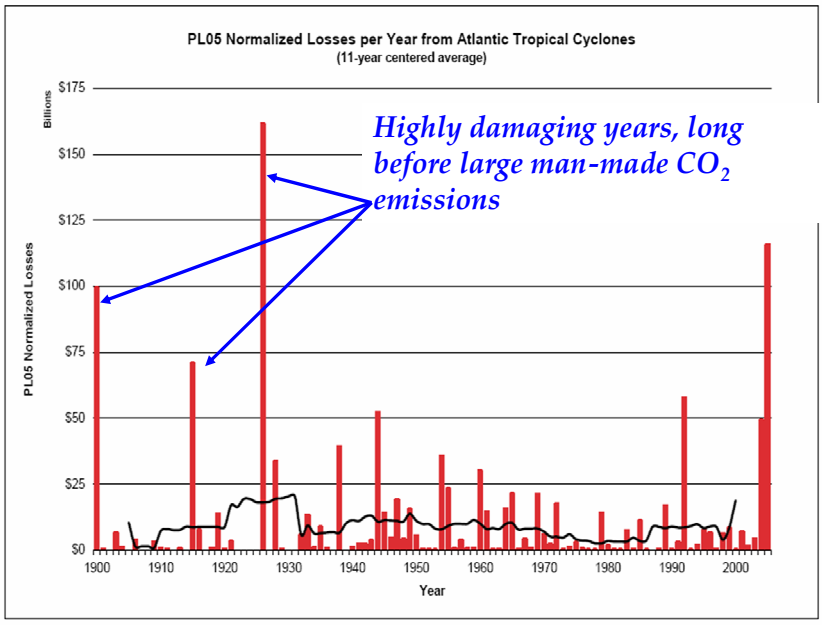
"The frequency of Atlantic hurricanes has already doubled in the last century."

This *appears* to be reference to the conclusions of a just-published paper by hurricane researchers Greg Holland and Peter Webster. However, this single paper is by no means the only work every done on the subject, nor does it reflect the consensus on the issue. Several papers have appeared in recent months that make a strong case ***that observational changes*** made over the course of the last century, from early ship reports to the most modern satellite technology, have resulted in an increasing number of tropical storms and hurricanes that are identified in the Atlantic Ocean (Landsea et al., 2006, Landsea, 2007, Kossin, 2007), **not global warming**.

Further, in research which has examined the intensity of hurricane landfalls along the United States coast, events that have likely not gone undetected during the past century as coastal population densities have been sufficiently high, no trend was found for the past 100 years (Landsea, 2005). And when factors such as inflation, population changes and increases in wealth are taken into account, there has been no trend in the levels of hurricane damage in the United States (Pielke Jr., et al., 2007)

Hurricane damage normalized from 1900-2005, even after accounting for Katrina, show *no trend* of increasing absolute damage

"The most damaging single storm is the 1926 Great Miami storm with $140-157 billion of normalized damage. Unless action is taken to address the growing concentration of people and properties (such as by strengthening the ability of buildings to withstand storms) in coastal areas where hurricanes strike, damage will increase, and by a great deal, as more and wealthier people increasingly inhabit these coastal locations."



Normalized Hurricane Damages in the United States: 1900-2005, Pielke, Jr. et al, submitted Nov. 6, 2006.

Five researchers summarize the state of the science on hurricanes and global warming, including the science of impacts and the policy significance of current understandings concluding that :

> *". . . the state of the peer-reviewed knowledge today is such that there are good reasons to expect that any conclusive connection between global warming and hurricanes or their impacts will not be made in the near term."* -- *R. A. PIELKE JR., C. LANDSEA, M. MAYFIELD, J. LAVER, AND R. PASCH*

That *Newsweek* opts to ignore findings that don't support their viewpoint, findings which are widely available in the scientific literature, suggests that its writers are as math and science challenged as our public school children or, worse yet, had no intension of reporting an accurate history or scientific picture.

The truth is, hurricanes have been taking lives and causing damage in the United States long before anthropogenic global warming could ever have played a role. Again, the photos speak for themselves:

References:

Holland, G.J., and P.J Webster, 2007. Heightened tropical cyclone activity in the North Atlantic: natural variability or climate trend? *Philosophical Transaction of the Royal Society A*, doi:10.1098/rsta.2007.2083.

Kossin, J.P., et al., 2007. A globally consistent reanalysis of hurricane variability and trends. *Geophysical Research Letters*, **34**, L4815, doi: 10.1029/2006GL028836.

Landsea, C. W., 2005. Hurricanes and global warming. *Nature*, **438**, E11-13.

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Landsea, C., 2007. Counting Atlantic cyclones back to 1900. *Eos: Transactions of the American Geophysical Union*, **88(19)**, ftp://ftp.aoml.noaa.gov/pub/hrd/landsea/landsea-eos-may012007.pdf

Pielke Jr., R. A., et al., 2007. Normalized hurricane damages in the United States: 1900-2005. *Natural Hazards Review*, in press, http://tsr.mssl.ucl.ac.uk/docs/Pielkeetal2007.pdf

"Snowpack whose water is crucial to both cities and farms is diminishing."

While this statement is largely true, *Newsweek* fails to properly document the causes. A paper published in *Nature* magazine last week (Ramanathan et al., 2007), puts a significant portion of the blame for melting glaciers in the Himalayans on particulate air pollution from Asian sources rather than simply greenhouse gases.

> Our general circulation model simulations, which take into account the recently observed widespread occurrence of vertically extended atmospheric brown clouds over the Indian Ocean and Asia, suggest that atmospheric brown clouds contribute as much as the recent increase in anthropogenic greenhouse gases to regional lower atmospheric warming trends. We propose that the combined warming trend of 0.25K per decade may be sufficient to account for the observed retreat of the Himalayan glaciers.

And in the western United States, natural variations in the pattern of warming in the Pacific Ocean—both the Pacific Decadal Oscillation (PDO) and the El Niño/La Niña cycle—play large roles in the snowpack variations over time (e.g., McCabe and Dettinger, 2002; Howat, I., and S. Tulaczyk, 2004).

References:

> Howat, I., and S. Tulaczyk, 2004. Trends in spring snowpack over a half century of climate warming in California. *Annals of Glaciology*, **40**, 40A094.
>
> McCabe, G.J., and M.D. Dettinger, 2002. Primary modes and predictability of year-to-year snowpack variations in the western United States from teleconnections with the Pacific Ocean climate. *Journal of Hydrometeorology*, 3, 13-25.
>
> Ramanathan, V., et al., 2007. Warming trends in Asia amplified by brown cloud solar absorption. *Nature*, **448**, 575-579.

It's enough to make you wish that climate change were a hoax, rather than the reality it is."

Actually, it is enough to make you realize that *Newsweek* seems to be the one perpetuating the hoax; it is the real science "denier."

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