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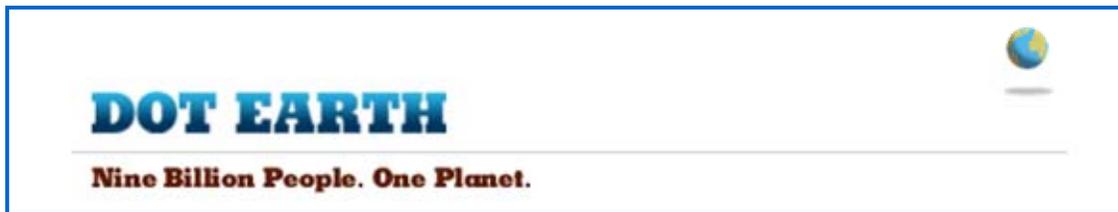
The New York Times

Sunday, September 6, 2009

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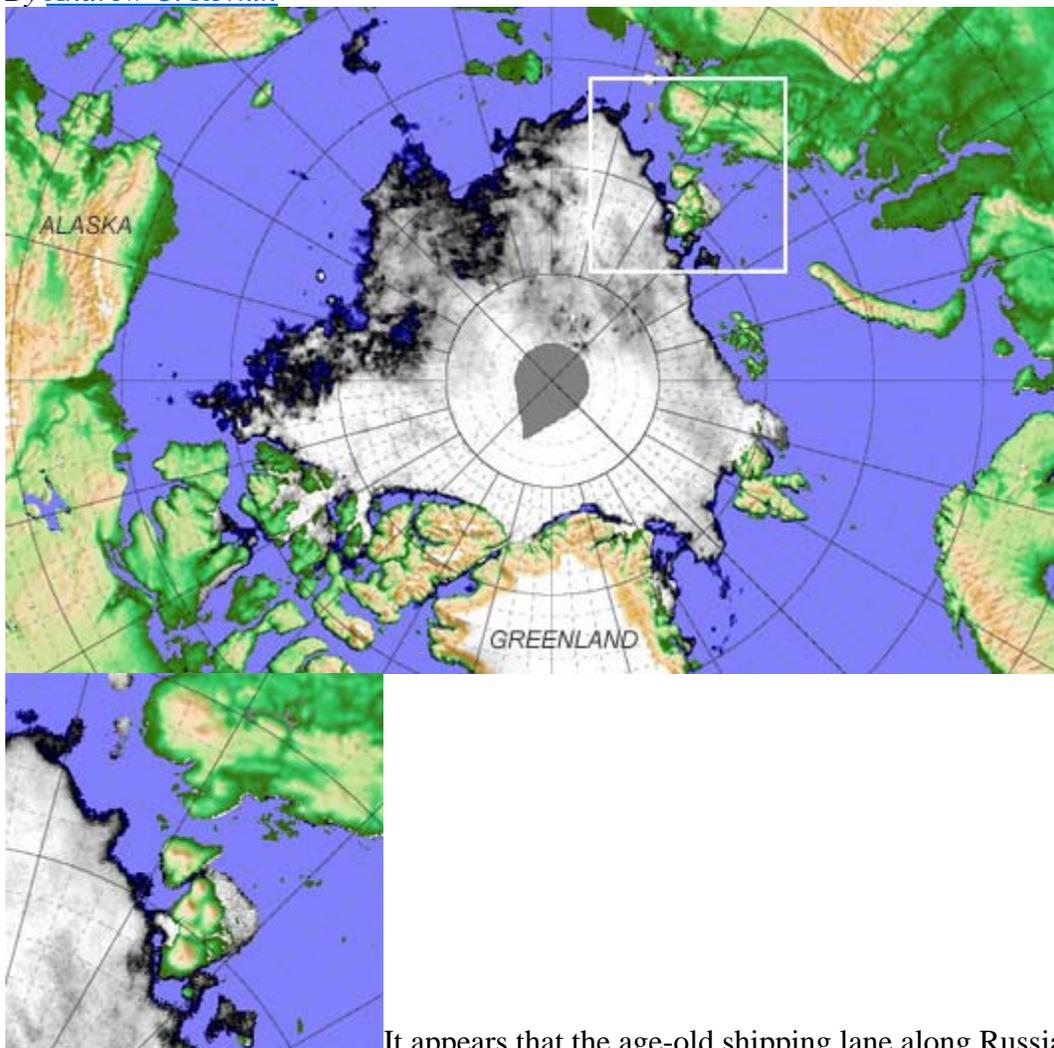
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September 6, 2008, 12:42 am

Experts Confirm Open Water Circling Arctic

By [Andrew C. Revkin](#)



It appears that the age-old shipping lane along Russia's Arctic coast, the Northeast Passage, is wide open, as is one route through the Northwest Passage over Canada, according to a map of sea ice on Sept. 2, created by German scientists using NASA satellite data. The inset shows an area that typically is clogged with ice. An American ice-tracking agency had said the route was not open, but on Friday confirmed that the ice had parted and a navigable route existed. (Credit: [Institute of](#)

[Oceanography](#)/ University of Hamburg)

[**UPDATE 9/6:** The National Ice Center on Friday said that a navigable passage has opened through sea ice along the entire Russian Arctic coast, although the center added that patches of dangerous thick ice still pepper the area. In a statement, the center said: "**This is the first recorded occurrence of the Northwest Passage and Northern Sea Route both being open at the same time.**" The [full statement](#) is below in the comment string. Here's an [animation loop of the retreating sea ice](#).]

There have been some breathless headlines in the last few days about the [North Pole's being an "island"](#) for the [first time in 125,000 years](#). Aside from the fact that 90 degrees north sits in the middle of a 2.5-mile-deep ocean, that's quite a statement considering two things: first, no one has been routinely monitoring sea ice along both coastlines between then and now, and second, the region was clearly warmer than it is today (in summers) around [8,000 to 10,000 years ago](#) — on both the Siberian and [North American](#) sides.

And one of the groups focusing most closely on possible Arctic shipping lanes, the [National Ice Center](#) operated by the Navy and Commerce Department, says flatly that the satellites are misreading conditions in many spots and that there is too much ice in a critical spot along the Russian coast (highlighted in the smaller image above) to allow anything but ice-hardened ships to get through. In an e-mail message Wednesday, Sean R. Helfrich, a scientist at the ice center, said that ponds of meltwater pooling on sea ice could fool certain satellite-borne instruments into interpreting ice as open water, "suggesting areas that have substantial ice cover as being sea-ice free." The highlighted area is probably still impassible ice, including large amounts of thick old floes, he said. I sent the note to an array of sea-ice experts, and many, including Mark Serreze at the [National Snow and Ice Data Center](#), concurred.

Headlines and shipping lanes aside, it's becoming clearer that the [Arctic Ocean of our history and lore](#) — an ice-locked region hostile to humans (except for seal-hunting Inuit and the crews of nuclear submarines) — is transforming in summers to a place where ships may in a few decades find [reliable short cuts](#) between Asian manufacturers and distant markets, where [polar bears may be fewer](#) and thinner, where [oil and gas rigs](#) may increasingly dot the land and sea. Human-driven global warming is almost certainly playing a growing role in the region, although experts still say there are large natural fluctuations involved as well (darn, [more hedges](#)).

In the long run, it's entirely possible that if and when my sons have children, they'll grow up with an entirely new sense of the word Arctic, less attuned to the fatal 19th-century misadventures of the "man who ate his boots," [England's Lord Franklin](#), and more to the growing geopolitical tussles over the world's newest fully functioning sea.

Efforts to propel aggressive action to cut risks from building greenhouse gases face many challenges, and one is surely the "[shifting baselines](#)" of human awareness over time. Jeremy Jackson has convincingly asserted that this trait has largely masked the near [destruction of ocean fish stocks](#). [Robert Brulle](#) has noted how it has blunted communities' awareness of degrading environments.

[After each evacuation](#), New Orleans appears at risk of losing ever more of its population, not in a refugee-style rush like those described by many climate campaigners, but as [one household at a time](#) gives up the fight. The Arctic Ocean's shift to having a more [Antarctic-style sheath of floating sea ice](#) — present in winter, absent in summer — will not happen with a glaring headline.

But one day, a generation may well be born for whom the notion of north-pressing explorers with ships crushed in the floes will seem almost outlandish.

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1. 1. September 3, 2008 4:40 pm [Link](#)

How soon til all the ice is gone?

Can't WAIT!

When can we start looking forward to the straight line ANWR-to-Polyarnyy Regatta?

— *Sanjong Thapa*

2. 2. September 3, 2008 5:09 pm [Link](#)

Mr. Revkin. Thanks for your thoughtful post. I appreciate your playing the role of the skeptic, actually examining “evidence” of inevitable catastrophe. I even appreciate your saying that human-driven gw is ALMOST certainly impacting the region.

It can be said with absolute certainty that the planet has been warming for 10,000 or so years. I still say that agw impact is something less than an “almost” certainty. Without plunging into semantics, I would say that agw is probable, but the extent of it is speculative, at best. Climate models and other attempts to quantify agw fall into the “garbage in - garbage out” bucket.

I know I can say this without fear of contradiction, since people who disagree have special filters to shield them from opinions such as this. Or maybe some of the filters put a little tag on them that says “this person is obviously not a scientist, so his (her) opinion should be ignored or laughed at.” Those whose software does this should now be silent, or in the alternative, they can start laughing.

— *spalding craft*

3. 3. September 3, 2008 5:36 pm [Link](#)

“shifting baselines” of human awareness’

In other words, human beings have always adapted make the best of a constantly changing environment, and always will. That is precisely why we’re the most successful species in the history of life on earth.

— *David Veksler*

4. 4. September 3, 2008 6:01 pm [Link](#)

spalding craft (2) — Actually, there is an overwhelming abundance of evidence that the climate warmed to a maximum, so-called optimum, temperature at different times in different regions, but about 8–6 thousand years ago; it had been cooling, on average since until humans started added considerable quantities of global warming (so-called greenhouse) gases started in, say, 1850 CE. Since then it has been, on average, warming rapidly; in some regions it is now warmer than at a time in the past 5000+ years. In British Columbia, 7000 years:

<http://news.softpedia.com/news/Fast-Melting-Glaciers-Expose-7-000-Years-Old-Fossil-Forest-69719.shtml>

— *David B. Benson*

5. 5. September 3, 2008 6:01 pm [Link](#)

The ice at the GISP2 site in central Greenland was only one ice age thick before they hit rock, (as opposed to Antarctica where the ice is more than 6 cycles 700,000 years thick) indicating that ALL

the Central Greenland ice melted during the previous warming cycle (125,000 years ago). At that time no doubt the Arctic ocean was ALSO open during summers (& this was when CO2 was only 280ppm, before mankind started burning hydrocarbons.)

Second point: Even though it WAS warmer 8000 to 10,000 years ago, this does NOT mean that the ice all melted then. It takes TIME and accumulated energy to melt all that ice. Greenland still has ice. We have a long way to go (10,000 to 25,000 years) before we hit the warmest point, when the Earth hits the point of smallest eccentricity.

Get used to it, the Earth is warming. Unless you can change the Earth's orbit you can't stop it.

— *John Dodds*

6. 6. September 3, 2008 6:29 pm [Link](#)

What I don't understand is when people say "the earth was warmer some time ago" as though that will stop global warming from causing catastrophic problems for mankind _today_.

That is stupid. Sure it may have been warmer 10,000 years ago. There were also 1/1000 of the number of people on earth and they didn't have telecommunications to talk about the fact that they had less food (or more food depending on what part of the earth they lived at).

Just because I know that other people have had car accidents in the past does not mean that I need to ignore having a car accident myself ... especially when I can see the accident getting ready to happen down the road. I may not know when the accident is going to happen, but I know that it is going to happen - time to take my car off auto-pilot and do something.

So folks, what are you going to do ?

— *robert r*

7. 7. September 3, 2008 6:33 pm [Link](#)

To #3:

"That is precisely why we're the most successful species in the history of life on earth."

Either that's a brilliant piece of sarcasm or pride surely goeth before a fall. By what criteria can one suggest we are the most successful species? Biologically having the greatest numbers for the longest period of time would be the measure of success, and we aren't even in the race. We are short lived both individually and as a species. By relative comparison to ants we build tiny structures of little complexity. It is quite clear that other species adapt, though perhaps not with our flourish, as they pay little heed to themselves as an audience.

We may have the most highly developed intellect, and we are probably the species with the greatest variety of language and a unique ability to record our thoughts for posterity. But this is surely only an academic measure of success, and possibly an abstract one. If we eventually fail to adapt to an environment of our own making, will we then be considered successful for having changed the environment, or a failure for having been incapable of adapting?

— *Ralph in Glen Cove*

8. 8. September 3, 2008 6:51 pm [Link](#)

“we’re the most successful species in the history of life on earth”

is that a fact?

— *andrea*

9. 9. September 3, 2008 7:00 pm [Link](#)

So now the warmers are stretching global warming back into the 1850’s (see David B. Benson). This is typical. The current evidence doesn’t match the theory, so just change the theory.

— *John*

10. 10. September 3, 2008 7:14 pm [Link](#)

“In other words, human beings have always adapted make the best of a constantly changing environment, and always will. That is precisely why we’re the most successful species in the history of life on earth.”

...so far.

It remains to be seen whether human intelligence is actually a long-term evolutionary advantage.

I suspect not, unless people could be genetically programmed/educated to be less selfish, less greedy, less prolific and think beyond their limited horizons.

— *Andy Haveland-Robinson*

11. 11. September 3, 2008 7:26 pm [Link](#)

Hey Dave Veksler...

Are we really the most successful species with in the history of life on earth? What, 4 thousand years and we’re on the brink. I wish I was some sort of virus, bacteria, small mammal or even an insect would do I suppose.

— *William Reid*

12. 12. September 3, 2008 7:44 pm [Link](#)

Ice extent at minimum this year will be more than last year, and given global cooling, next year’s will probably be more than this year. Arctic Ice melt each year is a poor proxy of global temperature, which is more dependent upon local conditions like temperature, wind, currents and storms. Nonetheless, the Arctic has been relatively melting for 30 years, probably because of global warming, and it will reverse with global cooling. So no Club Beaufort’s yet, thank you.

=====

— *kim*

13. 13. September 3, 2008 7:50 pm [Link](#)

David:

Thanks for the link proving that it was warmer during the Holocene optimum than it is today.

Now here is your next question. How did the polar bears survive a period where the temperatures are warmer than today and were warmer than today for an extended period?

And another. How do you know that the arctic wasn't ice free in the summer during this warmer time?

And another. Why didn't the threshold to runaway warming happen at that time. No albedo. Gases from the ocean floor and the arctic tundra, etc?

And another. How did it get so warm without CO2 contributions from mankind?

— *Tilo Reber*

14. 14. September 3, 2008 7:57 pm [Link](#)

gee, it's fun being provocative just for the heck of it!

— *john gage*

15. 15. September 3, 2008 7:58 pm [Link](#)

Re David Benson #3

Your characterization of the last 10,000 years of climate is supported by the EPICA ice core data in Antarctica, except that there was a warming trend from 5000BC to 1400BC, which did NOT quite get to the highs of 7000BC, hence cooling since 6-8K yrs ago is misleading. It has actually cooled, warmed then cooled again.

BUT it is contradicted by the GISP2 data in Greenland.

The GISP2 data (R Alley data at the WDC paleoclimatology site) says that the Greenland temperature peaked in 8000BC and in 7000BC and in 1400BC (with a sub peak half a degree lower in 100BC), at about 2 degrees C warmer than today. It bottomed about three degrees below the peaks in 8400BC, 7300BC, 5000BC and 800AD and 1700AD.

In these 10,000 years the temperature has gone up and down 2 to 3 degrees C, in a span of 200-300 years about 16 (SIXTEEN) times. JUST like it has gone up about 1.5 degrees from 1700-2000.

Temperature changes like what has been observed in the last 300 years ARE perfectly normal. In fact according to GISP data, the AVERAGE temperature during mankind's civilized past (ie the last 10000 years) is actually ABOVE where it is NOW, BY A DEGREE OR SO.. We have been below normal since the dark ages about 500AD (Except for a few hundred years for the Vikings). Note that the peaks in 8000 & 7000 BC correspond to the invention of farming, and the 1400BC to 100BC time is the peak of European history for the Phoenicians, Greeks, Romans etc.

To me the GISP and EPICA/VOSTOK data looks to be extremely cyclical. It goes up and down

on natural irregular ~900yr and ~3600 year cycles (just like it did during the ice age from from 50000 years ago to now) and we are just now (since 1700) going into the warming cycle. If the cycles continue, then expect a 120-200 year cooling of no more than one degree C (similar to 2200BC-2000BC) from 1998 thru 2200 (as is already evident in the 1998 thru 2008 cooling), followed by 500 years of very fast (but irregular) warming back up or close to the “so-called optimum” or possibly cooler if you are in Antarctica.

This is why warming is inevitable- get used to it. We are in the warmest part of the celestial cycle since 400,000 years ago when we last got to such a small eccentricity, and the “regular, 100,000 year” ice age was missed.

— *John Dodds*

16. 16. September 3, 2008 8:23 pm [Link](#)

Mr Benson. Apparently you don't use denier filters. In any event, thanks for neither laughing nor being silent.

Actually, though, although I'm not a scientist I'm pretty familiar with the hockey stick, of which your post, I believe, is a verbal representation. There is legitimate debate over the hockey stick concerning both data accuracy and co2/temperature relationships. To me the skeptics arguments are persuasive, but to you I guess they aren't.

— *spalding craftc*

17. 17. September 3, 2008 8:28 pm [Link](#)

From Wang Suya

Andy said “But one day, a generation may well be born for whom the notion of north-pressing explorers with ships crushed in the floes will seem almost outlandish” too sad about it. Human being fight against global warming. Please stop it!! Hope next generation, and next next generation, next,next next will dance on North pole ice like Andy used to do. This is holding by our generation action. World citizens, politicians, business men, please action!!

— *Wang Suya*

18. 18. September 3, 2008 9:29 pm [Link](#)

Now here is something that I find really funny. Due to the global warming hype and the disinformation that has been so widely disseminated by the AGW cultists and by the main stream media, some people were actually of the opinion that they could kayak to the North Pole. Here is their report while they are still 600 miles from their destination.

““We're stuck”

I have slept poorly. The floating ice, while thin, is so prevalent that, throughout the night, it grinds noisily against the side of the boat in a slightly alarming fashion - imagine someone scraping their nails across an old-fashioned blackboard. The then begins earlier than normal and, unusually, I am not woken by Robbie bounding into my room. Instead the ship's engine roars to life earlier than normal - at around 5.30 - and the MV 'Havsel' begins to judder ominously. I clamber out of bed and scramble up to the bridge - all the ship's crew are there, and they look serious. I look outside

and I can see why. The sea is almost entirely congested with ice floes - I would estimate 80% plus of the sea is covered by them. There is a real risk that we could get stuck up here. We have drifted in the night into a much icier area than where we stopped last night. I wake up the team, and everyone groggily makes their way to the bridge. There's a mixed reaction in the team to the prospect of getting stuck up here."

— *Tilo Reber*

19. 19. September 3, 2008 10:32 pm [Link](#)

John (9) — Here are the additions of excess CO₂:

http://cdiac.ornl.gov/trends/emis/tre_glob.htm

From atmospheric 280 ppm CO₂ in 1750 CE, this was enough to increase to 288 in 1850 CE. Just that is enough to create about 0.08 K of warming; not much but over the sunspot cycle the global temperature varies by about 0.1+ K. In any case, I certainly have not changed the theory.

Tilo Reber (13) — You are welcome and here is the direct link to that page:

<http://news.softpedia.com/news/Fast-Melting-Glaciers-Expose-7-000-Years-Old-Fossil-Forest-69719.shtml>

Somewhere I read that a subspecies (population) of polar bears did not survive the Holocene; don't know how true that is. The marine coring record for the Arctic suggests that the Arctic has never been (summer time) ice free for at least hundreds of millions of years; you'll have to find the papers and look at the extent of coverage yourself. It seems that part of the reason for the Holocene was that the Laurentide ice sheet had not completely melted, suppressing arctic temperatures.

You would have to check ice cores for methane data at that time, but I'm fairly sure that CO₂ didn't go above 290 ppm.

The warming was entirely due to orbital forcing.

John Dodds (15) — I have the GISP2 ice core temperatures right in front of me, for the Holocene since 10,428 ybp. Here are the warmest measurements, around 7825 ybp:

7.81732 -28.702
7.83454 -28.712
7.85147 -28.7472

It warmed up briefly at around 3300 ybp

3.29707 -28.748

and yes, there are various ups and downs before the end of the record in 1855 CE:

0.0951409 -31.5913

with the temperature difference between the highest and the lowest being 3+ K, this being the difference between the 8.2 kybp event and the Holocene optimum.

Now one way to study this is to take the average temperature of each millenium of the record: doing so shows the most recent millenium was the coolest and the one just previous next so; this is in keeping with orbital forcing theory. The two prior are anomalously warm. Explanations for all this are offered by W.F. Ruddiman's early antropocene hypothesis, as explained in his popular book "Plows, Plagues and Petroleum".

Despite this anomalous warmth in central Greenland, this clearly didn't cause meltback in British Columbia (link above) nor in the Alps:

<http://news.bbc.co.uk/2/hi/science/nature/7580294.stm>

where only now has significant glacier retreat occurred.

I fear your presentation of the GISP2 record isn't quite right, nor from just one region can a global average be obtained. There have been attempts to do so. In these, despite the various minor ups and downs, the general trend is down until about 1850 CE when anthropogenic effects really started lifting the temperature, following the excess global warming (so-called greenhouse) gases.

Nor, I fear is your analysis of orbital forcing quite right; see David Archer's new book "The Long Thaw" or various of his papers; these may be obtained from his publications web page.

Finally, I've throughly analyzed the GISP2 ice core record of periodic and quasi-periodic phenomena. By the standard FFT there is no evidence of any periodic trends in that temperature data. Using the Bond periogram method to explore for quasi-periods, up to 300 years I find none except possibly between 45 and 90 years; these might be due to the various ocean 'oscillations'. In any case, even these ought to be considered random.

As for the various time scales for climate, I recommend W.F. Ruddiman's "Earth's Climate: Past and Future"

But with regard to global warming, yes, get used to it, somehow. It is entirely due to excess global warming gases.

— *David B. Benson*

20. 20. September 3, 2008 10:34 pm [Link](#)

In any case, it's important to see the words "islands" and "climate change" finally show up together in the press.

Please, folks, sign the petition:

http://www.avaaz.org/en/islands_climate_warning/

— *Islands First*

21. 21. September 3, 2008 11:44 pm [Link](#)

I'm with Wang Suya's comment No. 17, above, re:

[Andy said "But one day, a generation may well be born for whom the notion of north-pressing explorers with ships crushed in the floes will seem almost outlandish" -- too sad about it. Human beings fight against global warming. Please stop it!! Hope the next generation, and next next generation, next,next next will dance on North pole ice like Andy used to do. This is holding by our generation action. World citizens, politicians, businessmen, please take action!!]

What future generations behold may very well be outlandish, good point, Andy! And good roundup of all the conflicting news about just how much ice has melted this summer.

Side reading here: [NSFW! Kidding!]

(<http://www.rushprnews.com/2008/09/03/wake-up-we-are-on-the-brink-of-extinction-says-ecoactivist>)

— *Danny Bloom*

22. 22. September 4, 2008 1:18 am [Link](#)

Andy, thanks for the balanced, highly informative reporting. I appreciate that you have strong views but never propagandize.

— *E. O'Neal*

23. 23. September 4, 2008 1:53 am [Link](#)

Tilo, thanks for the laugh. I hope the kayakers don't get stuck, but if they do, perhaps they'll nourish one of the cute, starving polar bears we keep seeing heart-breaking pictures of, as they fend off National Wildlife Federation helicopters.

— *E. O'Neal*

24. 24. September 4, 2008 1:55 am [Link](#)

Warming periods are natural. There was a Roman warm period, a medieval maximum and several others in historic times, let alone the 8000 years-ago one mentioned. CO2 is a weak greenhouse gas. It is almost negligible compared to water vapor, the major greenhouse gas. Each incremental addition of CO2 has a smaller effect as well, because it absorbs in a spectrum bands that are mostly blocked out by water vapor already, and the existing CO2. The Northern Passage has been open numerous times, and documented. Plants evolved in a much richer CO2 concentration, and we have been close to starving the biosphere. Below 200 ppm and plant life (and us) would die. We need more CO2, not less. Also the next ice age is 500 years overdue. AGW is all propaganda, a political construct to get power.

— *Jeff S.*

25. 25. September 4, 2008 1:58 am [Link](#)

To all denying, foolish and boring trolls:

“Let us be thankful for the fools. But for them the rest of us couldn’t succeed.” - Mark Twain

Mark Twain had a great sense of humor about fools and charlatans. However, there’s nothing funny about polar and Greenland rapid meltdowns unless you think ‘05 Katrina, Rita and Wilma followed by ‘08 Gustav, Hanna, Ike, Josephine and more, are just big, boring jokes.

The largest hurricanes have gotten stronger over the past 25 years. The Atlantic and Gulf Coasts can expect many more category fours and fives, or haven’t you noticed ?

Dot Earth is about science not foolish wishful thinking, alchemy and boring trolls.

— JR

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By 2050 or so, the world population is expected to reach nine billion, essentially adding two Chinas to the number of people alive today. Those billions will be seeking food, water and other resources on a planet where, scientists say, humans are already shaping climate and the web of life. In Dot Earth, reporter Andrew C. Revkin examines efforts to balance human affairs with the planet's limits. Supported in part by a John Simon Guggenheim Fellowship, Mr. Revkin tracks relevant news from suburbia to Siberia, and conducts an interactive exploration of trends and ideas with readers and experts.



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