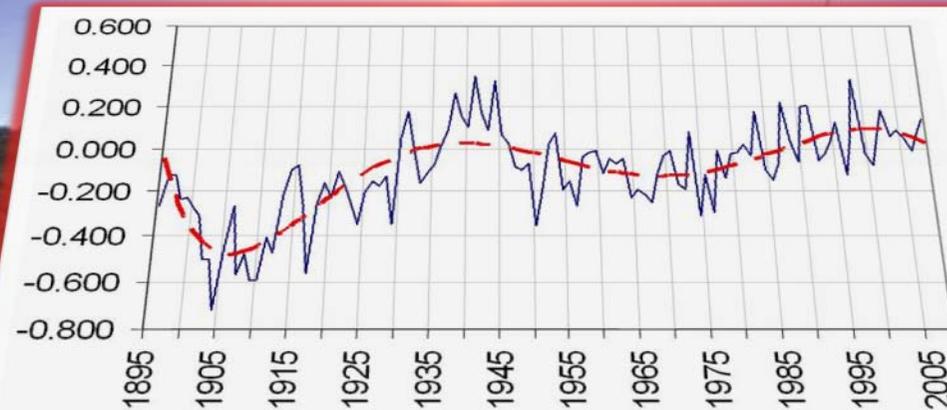


# SPPI MONTHLY CO<sub>2</sub> REPORT

September 2009 | Volume 1 | Issue 9



Christopher Monckton, EDITOR ♦ [www.scienceandpublicpolicy.org](http://www.scienceandpublicpolicy.org)

# SPPI MONTHLY CO<sub>2</sub> REPORT :: SEPTEMBER 2009

ACCURATE, AUTHORITATIVE ANALYSIS FOR TODAY'S POLICYMAKERS

## 20<sup>th</sup>-century warming: less than had been thought

SPPI's authoritative *Monthly CO<sub>2</sub> Report* for September 2009 reproduces with great pleasure a research paper by Dr. Joe D'Aleo showing that global temperatures over the past century, corrected for urban bias and other errors in the current datasets, have changed by far less than official sources suggest. *Science Focus*, pages 24-29.

- ✚ **“Global warming” poses no national-security threat.** Fearmongers are the real threat. *Editorial comment: Page 3.*
- ✚ **The North-East Passage has been open before,** so the Green shipowner's recent stunt that got a ship round the northern coast of Russia with the assistance of several ice-breakers is nothing new and tells us nothing of “global warming”. *Pages 4-5.*
- ✚ The **IPCC assumes CO<sub>2</sub> concentration will reach 836 ppmv by 2100,** but, for almost eight years, CO<sub>2</sub> concentration has headed straight for only 570 ppmv by 2100. This alone **halves all of the IPCC's temperature projections.** *Pages 6-7.*
- ✚ Since 1980 **temperature has risen at only 2.3 °F (1.4 °C)/century,** not the 7 F° (3.9 C°) the IPCC predicts. *Pages 8-10.*
- ✚ **Sea level rose just 8 inches in the 20<sup>th</sup> century,** and has scarcely risen since 2006. The oceans are not warming. *Page 11.*
- ✚ Arctic sea-ice extent is now beyond its summer low, but there was more summer ice than there was in 2007 or 2008. In the Antarctic, sea ice extent reached a record high in 2007. **Global sea ice extent shows little trend for 30 years.** *Pages 12-16.*
- ✚ **Hurricane and tropical-cyclone activity is almost at its lowest since satellite measurement began.** *Page 17.*
- ✚ **CO<sub>2</sub> residence time is about 7 years,** not the 100 years imagined by the UN's climate panel. *Page 18.*
- ✚ The Sun is still very quiet, but **some solar activity returned at the end of September.** *Page 19.*
- ✚ **The (very few) benefits and the (very large) costs of the Waxman/Markey Bill** are illustrated at *Pages 20-23.*
- ✚ **We offer a special puzzle to our readers, just for entertainment.** *Page 30.*
- ✚ As always, there's our “global warming” ready reckoner, and **our monthly selection of scientific papers.** *Pages 31-35.*
- ✚ **And finally,** a Technical Note explains how we compile our **state-of-the-art CO<sub>2</sub> and temperature graphs.** *Page 36.*

# EDITORIAL :: NATIONAL SECURITY THREAT? NO!

THE NON-PROBLEM OF CLIMATE IS HARMLESS, BUT FEARMONGERS ARE A THREAT

**THE PRESIDENT of the United States recently told the United Nations that “global warming” poses a threat to national security and may engender conflicts as populations are displaced by rising sea levels, droughts, floods, storms etc. etc. However, it is now clear that there is no basis for the notion that the barely-detectable human influence on the climate is likely to prove a threat to climate, still less to national security.**

The first principle to which any national security advisor must adhere is that of objective truth. Though he must have an understanding of politics, he is not a politician: he is a truth-bearer. Therefore, he begins by narrowing down the issue to a single, central question whose answer determines whether the suggested threat is real. He then tries to find the truthful answer to that question, and draws his conclusion from that.

*Quid enim est veritas?* What, then, is the truth? The single question whose answer gives us the truth about the climate question is this: By how much will any given proportionate increase in CO<sub>2</sub> concentration warm the world? We now know the answer. The oceans, which must store 80-90% of all heat-energy accumulated in the atmosphere as a result of the radiative imbalance caused by greater greenhouse-gas concentration, have shown no net accumulation of heat for almost 70 years, implying a very small influence of CO<sub>2</sub> on temperature (Douglass & Knox, 2009). The devastating analysis of cloud-albedo effects shortly to be published by Dr. Roy Spencer of the University of Alabama at Huntsville will show that the UN has wrongly decided that cloud changes reinforce greenhouse warming, when in fact they substantially offset it. Repeated studies of the tropical upper troposphere (e.g. Douglass *et al.*, 2008) show that it is failing to warm at thrice

the surface rate as required by all of the UN’s models, again implying very low climate sensitivity. The clincher is Professor Richard Lindzen’s meticulous recent paper demonstrating – by direct measurement – that the amount of radiation escaping from the Earth’s atmosphere to space is many times greater than the UN’s models are all told to believe. From this, the world’s most formidable atmospheric physicist has calculated that a doubling of CO<sub>2</sub> concentration, expected over the next 150 years, would cause 0.75 C (1.5 F) of warming, at most: not the 3.4 C (6 F) that the UN takes as its central estimate.

Most analysts would stop there. Yet some might ask, “Suppose that the single satellite on which Lindzen’s results depend is defective. What then?” They might consider the economic cost of attempting to mitigate the “global warming” which, as our *Monthly Reports* demonstrate, is not actually happening. The figures turn out to be startlingly simple. To mitigate just 1 C (2 F) of warming, one must forego the emission of 2 trillion tons of CO<sub>2</sub>. The world emits just 30 billion tons a year. So the analyst, as a thought-experiment, would shut down the entire world economy, emitting no CO<sub>2</sub> at all. Even then, and even on the incorrect assumption that the UN’s exaggerated projections of the effect of CO<sub>2</sub> on temperature are correct, it would take 67 years to mitigate 1 C warming. Preventing the 3.4 C (6 F) warming that the UN’s climate panel thinks would occur in 100 years would take 225 years without any transportation, and with practically no electrical energy. The national security advisor would at that point advise his head of government that there has never been any security threat less grave, or more expensive to prevent, than the non-problem that is “global warming”. It is the fearmongers that are the real national security threat. ***Monckton of Brenchley***

# FEATURED :: NORTH-EAST PASSAGE IS NOT NEW

AN ICE-FREE ARCTIC WOULD POSE NO NATIONAL SECURITY THREAT

## The recent voyage of one ship through the North-East Passage was a Green publicity stunt, not a security threat

- *We are grateful to Dr. Bill Kininmonth for having kindly drawn our attention to this article in Time magazine from 1937, which puts into perspective the recent Green publicity stunt in which a single vessel, assisted by a phalanx of Russian icebreakers, made its way through the North-East Passage from Norway via Russia's north coast to China. The media suggested that this voyage demonstrated a catastrophic disappearance of Arctic sea ice. History, however, suggests that an open North-East Passage is nothing new or alarming. The last paragraph of the article reveals all.*

### **Transport: North-West Passage II**

When in the late spring of 1497 John Cabot, middle-aged Italian navigator, hired out to England's Henry VII and sailed westward from Bristol, his destination was Asia, in particular Mecca, which he had already visited. On board the little three-masted Mathew were 18 men. Crammed under her planks were such trinkets, knives and cloths that "heathens and infidels" delight to trade for, and in the master's cupboard the commission by which His Majesty agreed to take only 20% of the profits of the trip.

Seven and a half weeks later the land he saw was not Asia but what is now Canada, an impassable barrier of earth, mountain and forest. When his reports were compared with those of his contemporary, Columbus, invincible explorers of Portugal, Spain, France and Britain knew that one must sail beyond or around that barrier to get at the riches of the East. The four-century search for a northwest passage had begun.

Frobisher, Davis, Hudson, Baffin, Parry, Ross and Franklin, intrepid seamen and scientists whose names memorially dot the Arctic, were some among dozens who sought a key to the Northwest Passage to Asia across America's ice-locked top. But not until 1906 did any man navigate completely across the Arctic. Roald Amundsen, Norway's hero-explorer, in a three-year trip and with the loss of one of his seven men, traversed the

first Northwest Passage\*—Baffin Bay, Barrow Strait, along the west coast of North Somerset Island to Cambridge Bay and out to Beaufort Sea and the Pacific. Amundsen's icebound trail, full of shallows, swirling currents and subject to sudden storms has since been followed by only three or four ships.

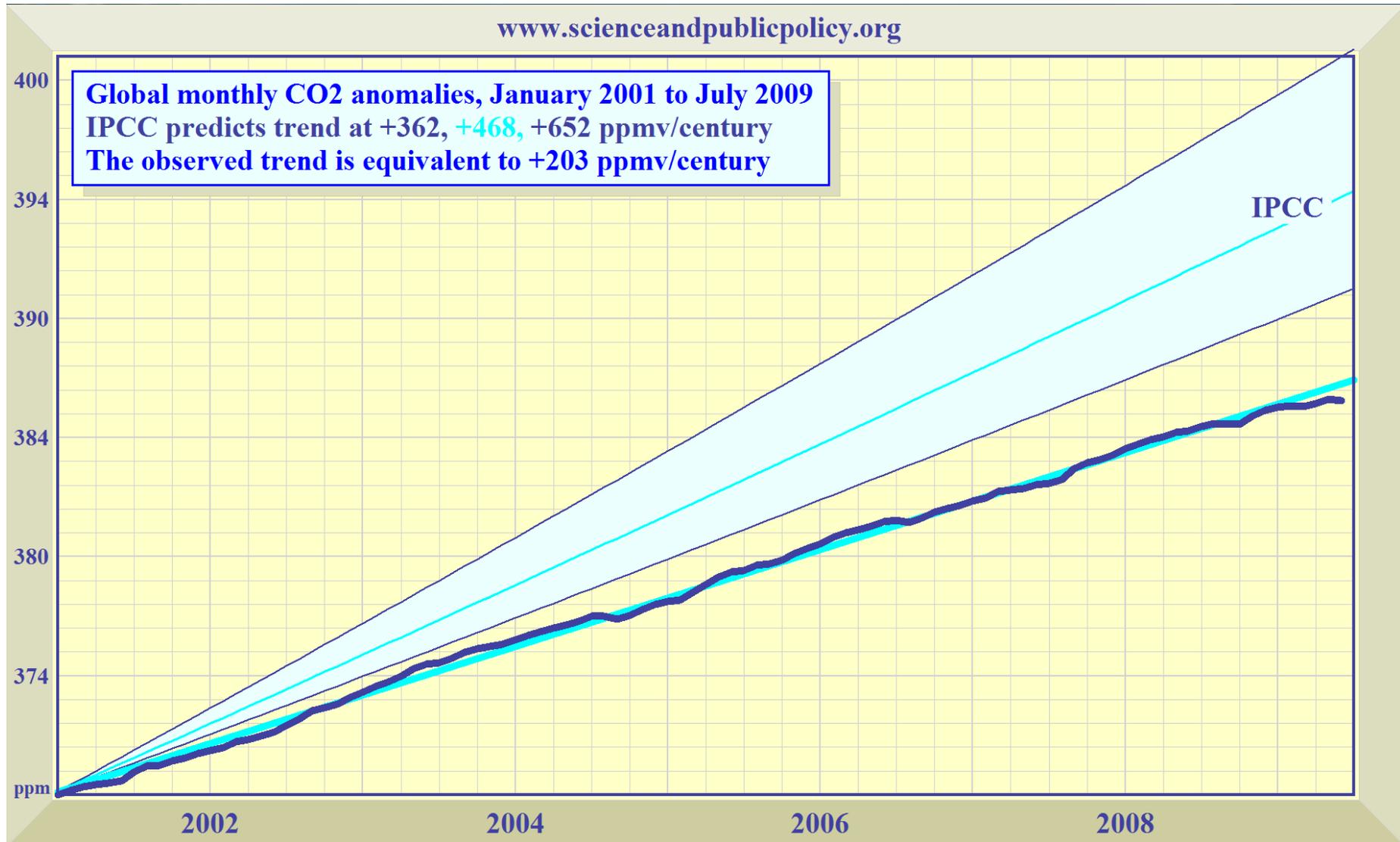
Search for a shorter, climatically more favorable route went on. Long pondered by explorers like Ross, Franklin and Amundsen were the possibilities of Bellot Strait, named in 1852 after its discoverer Joseph Rene Bellot, French naval lieutenant. This lies at the extreme northerly point of North America's mainland, 2,000 miles directly above Minneapolis, and separates Boothia Peninsula from Somerset Island. (Barrow Strait, 150 miles further north, separates Somerset Island from Cornwallis Island.)

Bellot Strait, situated on the 72nd parallel 400 miles inside the Arctic Circle, is also just 150 miles north of the North Magnetic Pole—so close that ships' compasses are useless. Explorers have known that if it were used it would cut 100 mi. from the Baffin Bay-Barrow Strait passage, save 400 miles if the still untraversed Fury and Hecla Strait were navigable. In 1858, after his fifth attempt, Captain Leopold McClintock claimed that he "steamed through the clear water of Bellot Strait this morning and made fast to the ice across its western outlet." Though many small trade-ships may have used its 30 tortuous miles in the past 80 years, on the record it has remained uncharted, impassable.

Last week this new, shorter Northwest Passage's navigability was dramatically demonstrated as Hudson Bay Company's Eastern Arctic Patrol Nascopie sounded her way through Bellot Strait. Snow shrouded the Arctic dusk as head on through the haze came the bow of another ship. Nascopie's Captain Thomas Smellie's incredulous hail got a booming reply from veteran Arctic Trader Patsy Klingenberg, from the deck of the Schooner Aklavik, eastbound to Baffin Island, and astonished Eskimo cheers from both crews echoed through the rock-bound channel. That night captains of both vessels described from their anchorages to Canadian Broadcasting Co. and NBC audiences their historic meeting. Hopeful for the growing trade of the North were residents and sponsors of Churchill that somehow Northwest Passage II would bring business, help redeem millions of dollars sunk in Canada's most northerly port.

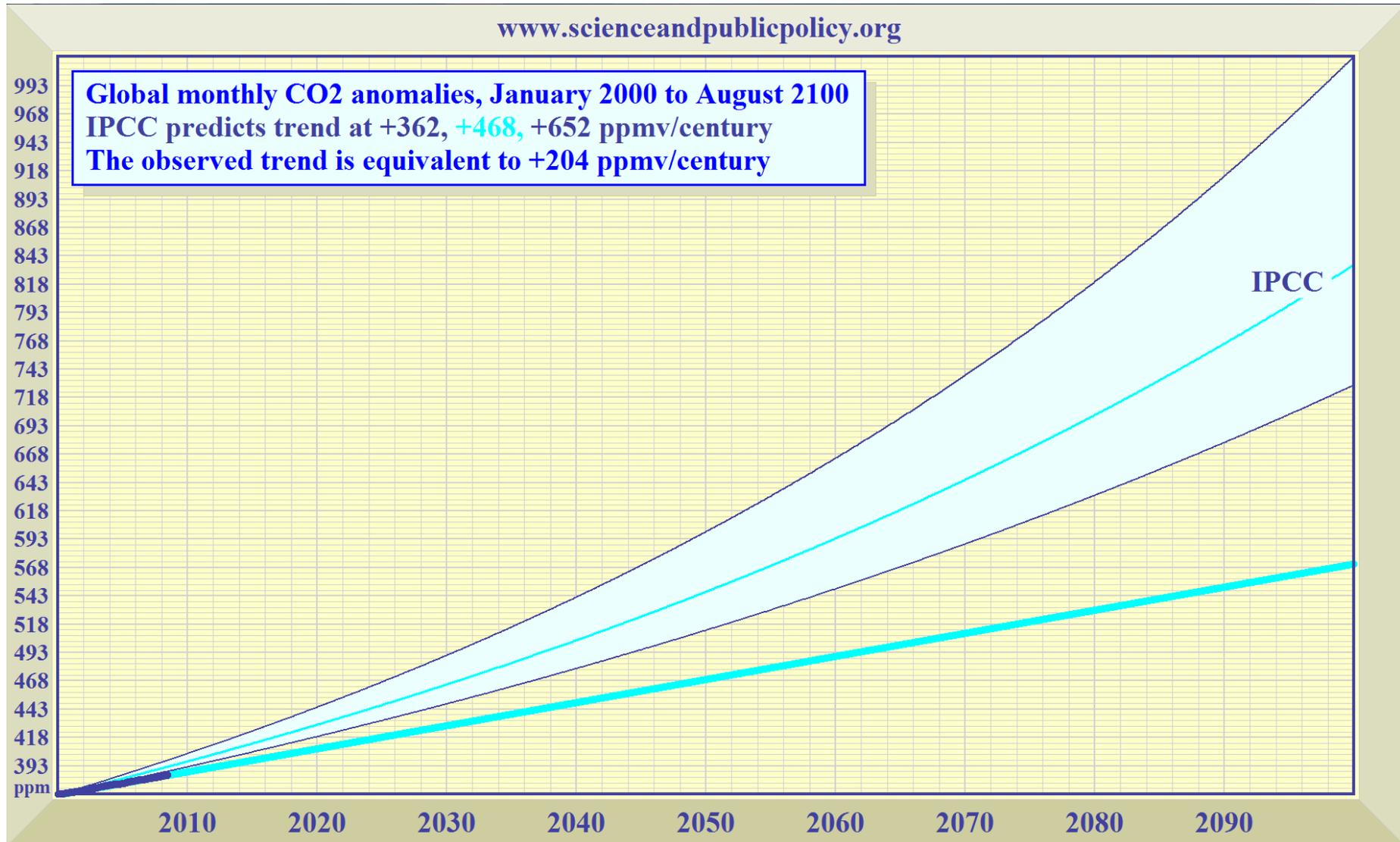
**Across the Pole is the Northeast Passage to China along the top of Norway to Russia. Sebastian Cabot initiated its search in 1553. Henry Hudson twice attempted a passage, but it was not until 1879 that the route was navigated. Now Russia currently operates 160 freighters on summer schedules in the Northeast Passage's more open but colder waters.**

# CO<sub>2</sub> concentration is rising, but the influence of recession is visible



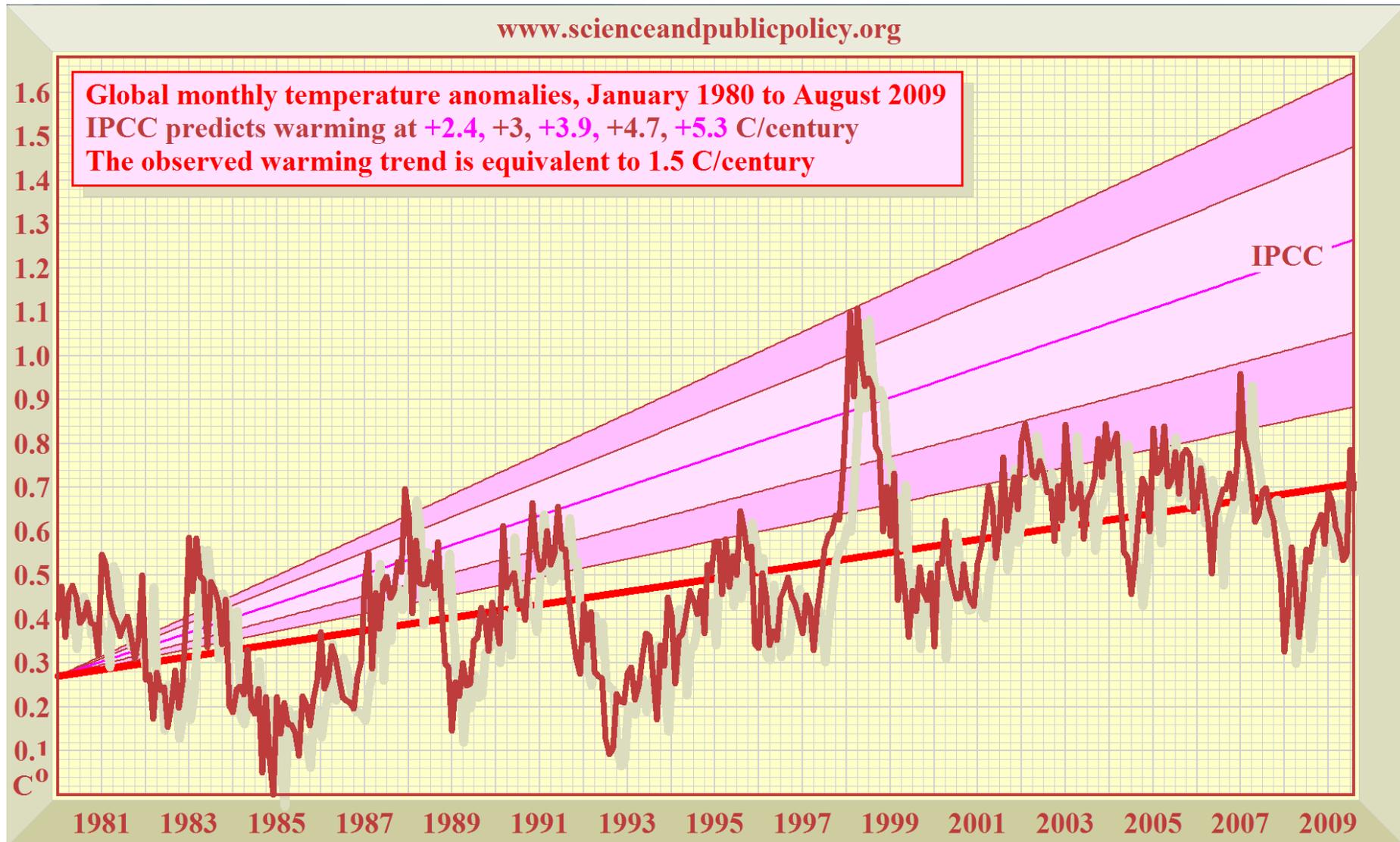
CO<sub>2</sub> is rising in a straight line, well below the IPCC's projected range (pale blue region). The deseasonalized real-world data are shown as a thick, dark-blue line overlaid on the least-squares linear-regression trend. There is no sign of the exponential growth the IPCC predicts. Indeed, in recent months the effects of worldwide recession appear to be evident in the data. **Data source:** NOAA.

# IPCC predicts rapid, exponential CO<sub>2</sub> growth that is not occurring



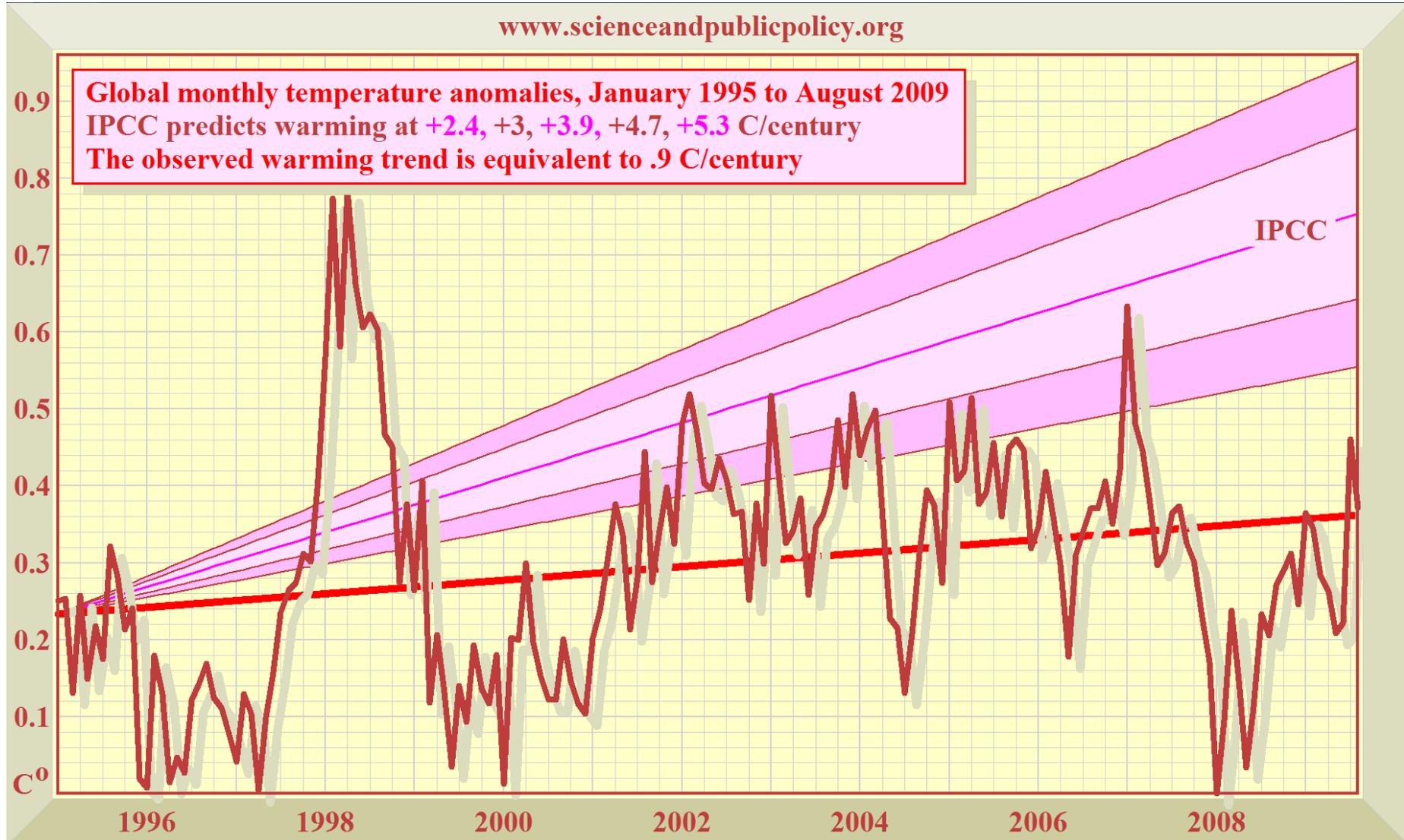
*Observed CO<sub>2</sub> growth is linear, and is also well below the exponential-growth curves (bounding the pale blue region) predicted by the IPCC in its 2007 report. If CO<sub>2</sub> continues on its present path, the IPCC's central temperature projection for the year 2100 must be halved. Data source: NOAA.*

# The 29-year global warming trend is just 2.5 °F (1.5 °C) per century



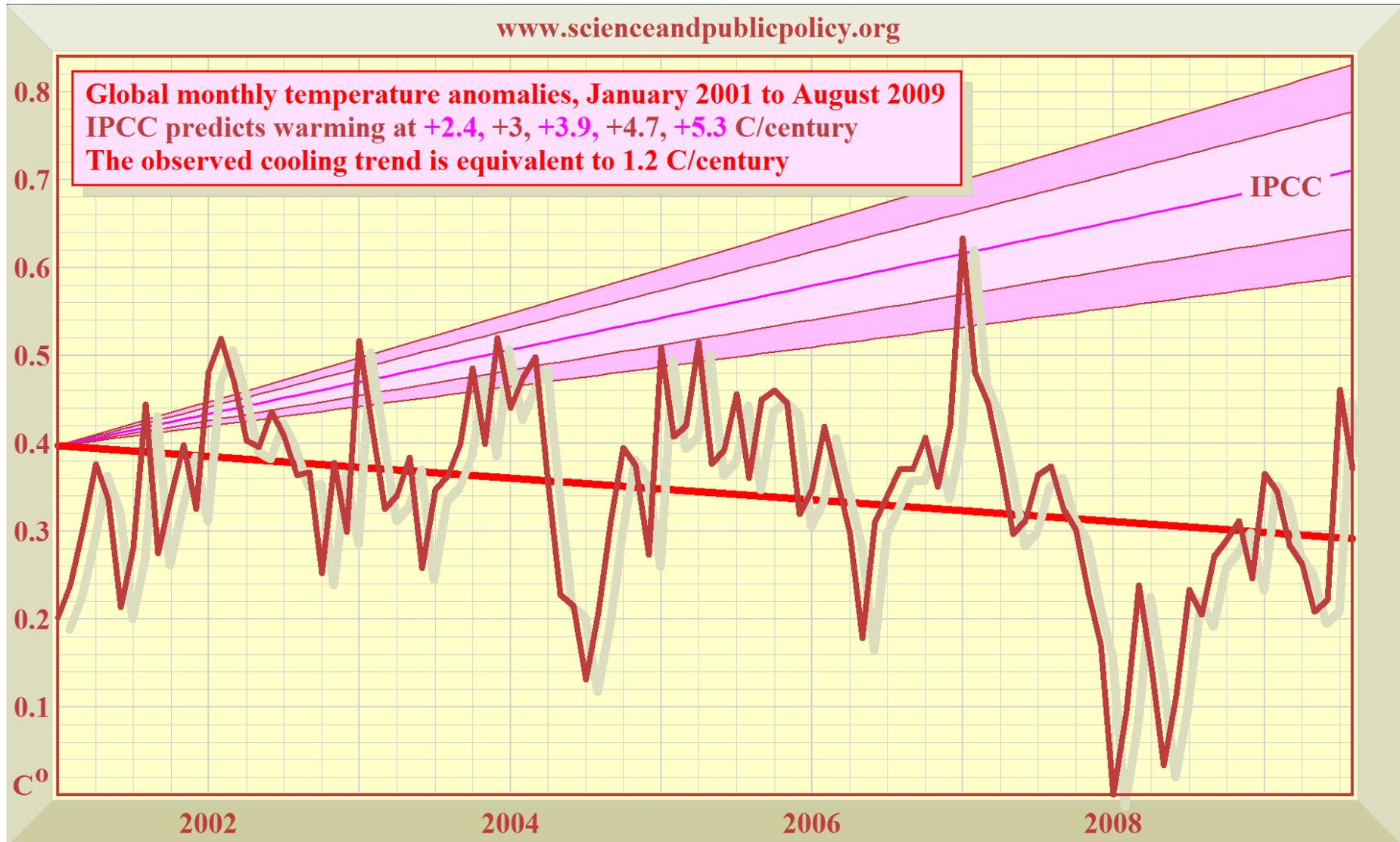
*Global temperature* for the past 29 full years has been undershooting the IPCC's currently-predicted warming rates (pink region). The warming trend (thick red line) has been rising at well below half of the IPCC's central estimate. **Data source:** SPPI index, compiled from HadCRUt3, RSS, and UAH.

# Almost a decade and a half with no statistically-significant warming



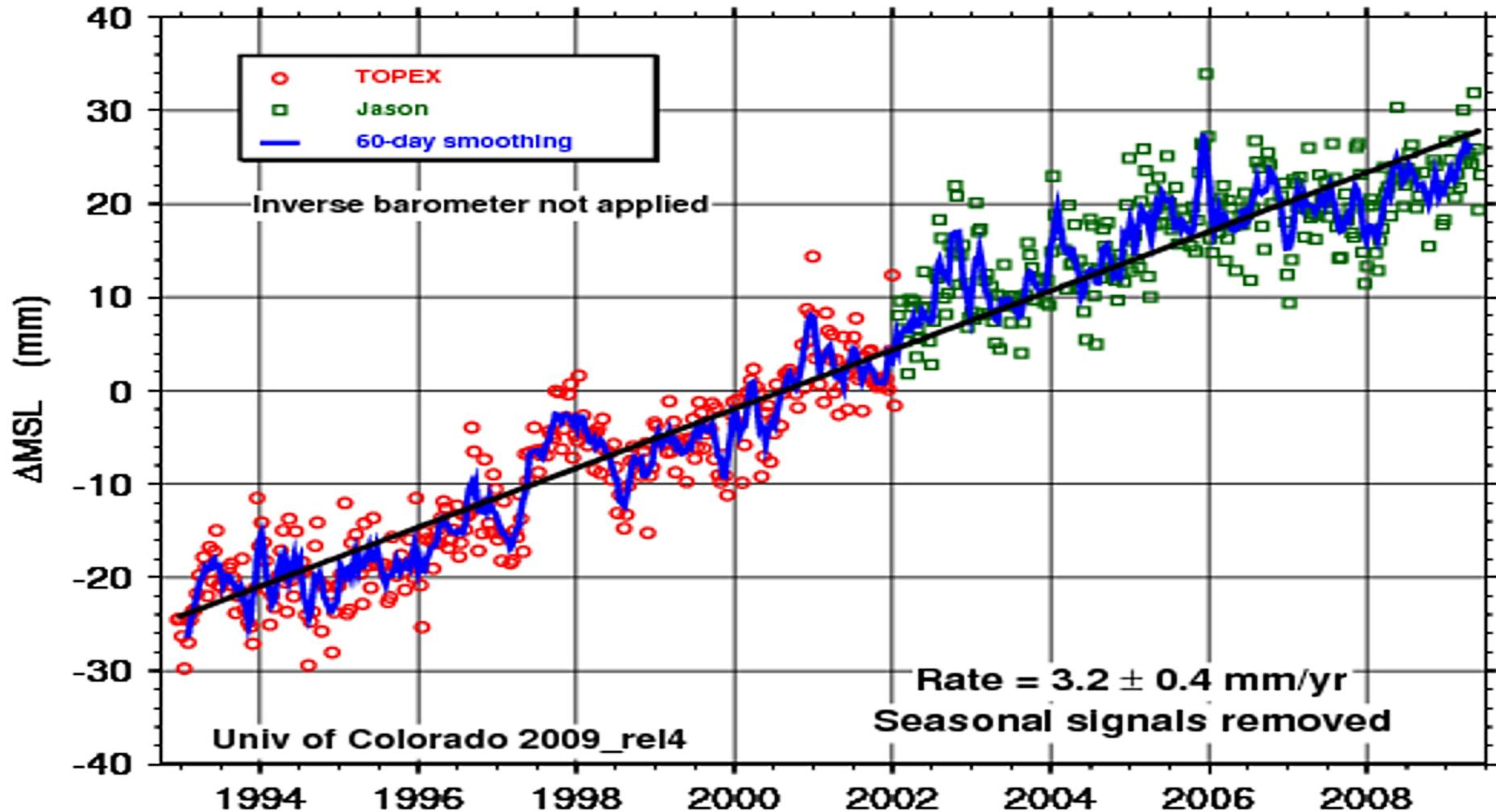
*Since the beginning of 1995, there has been no statistically-significant “global warming”. The warming over this period would only be significant if the temperature at the end of the period were high enough to be clear of the “error-bars” (not shown in this graph) that reflect the uncertainty in measuring global mean surface temperature accurate. Source: SPPI global temperature index.*

# Almost nine years' global cooling at 2.2 F° (1.2 C°) / century



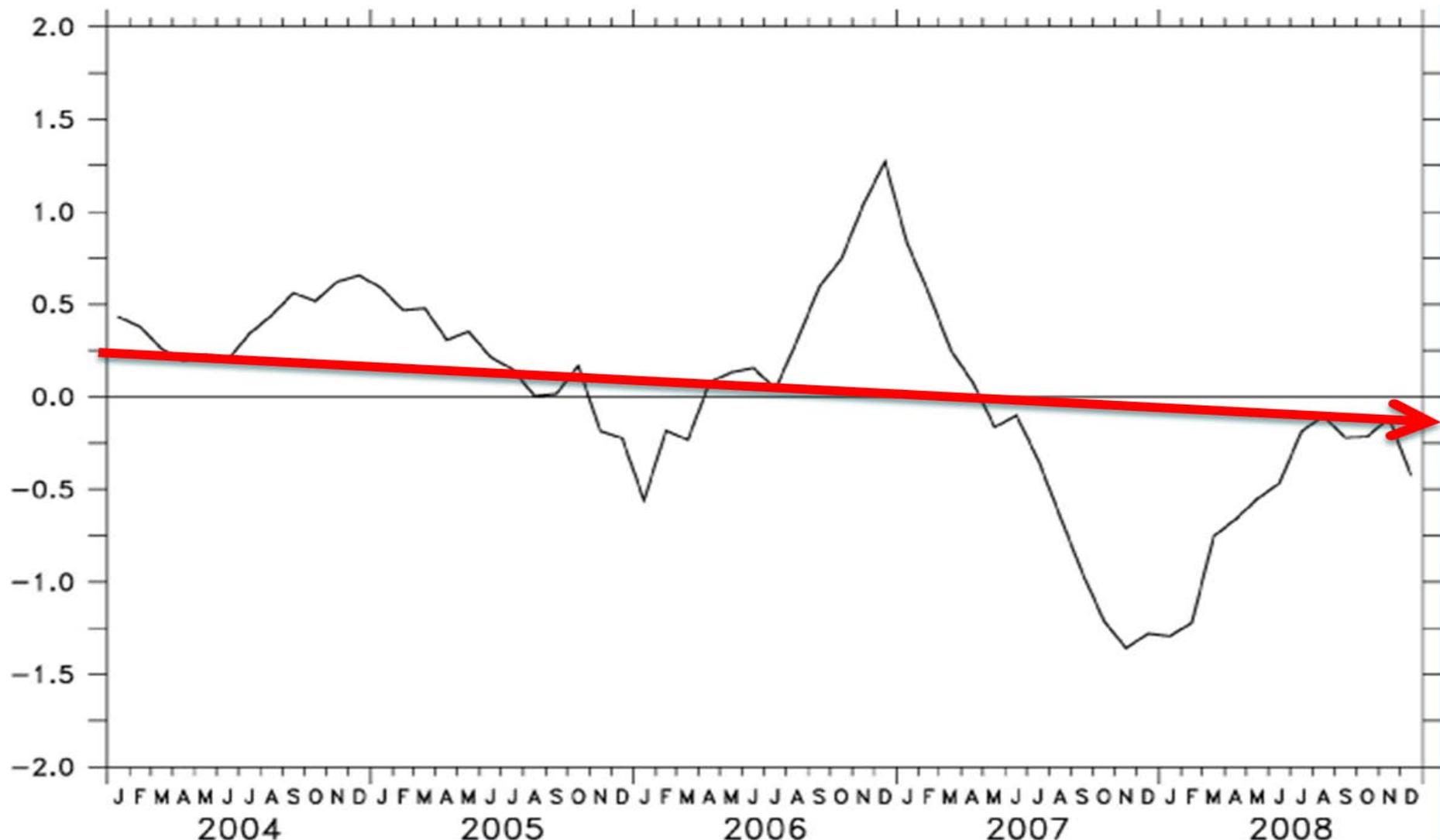
*For almost nine years, global temperatures have been falling rapidly. The IPCC's predicted warming path (pink region) bears no relation to the global cooling that has been observed in the 21<sup>st</sup> century to date. Source: SPPI global temperature index.*

# Sea level has not risen significantly in the past four years



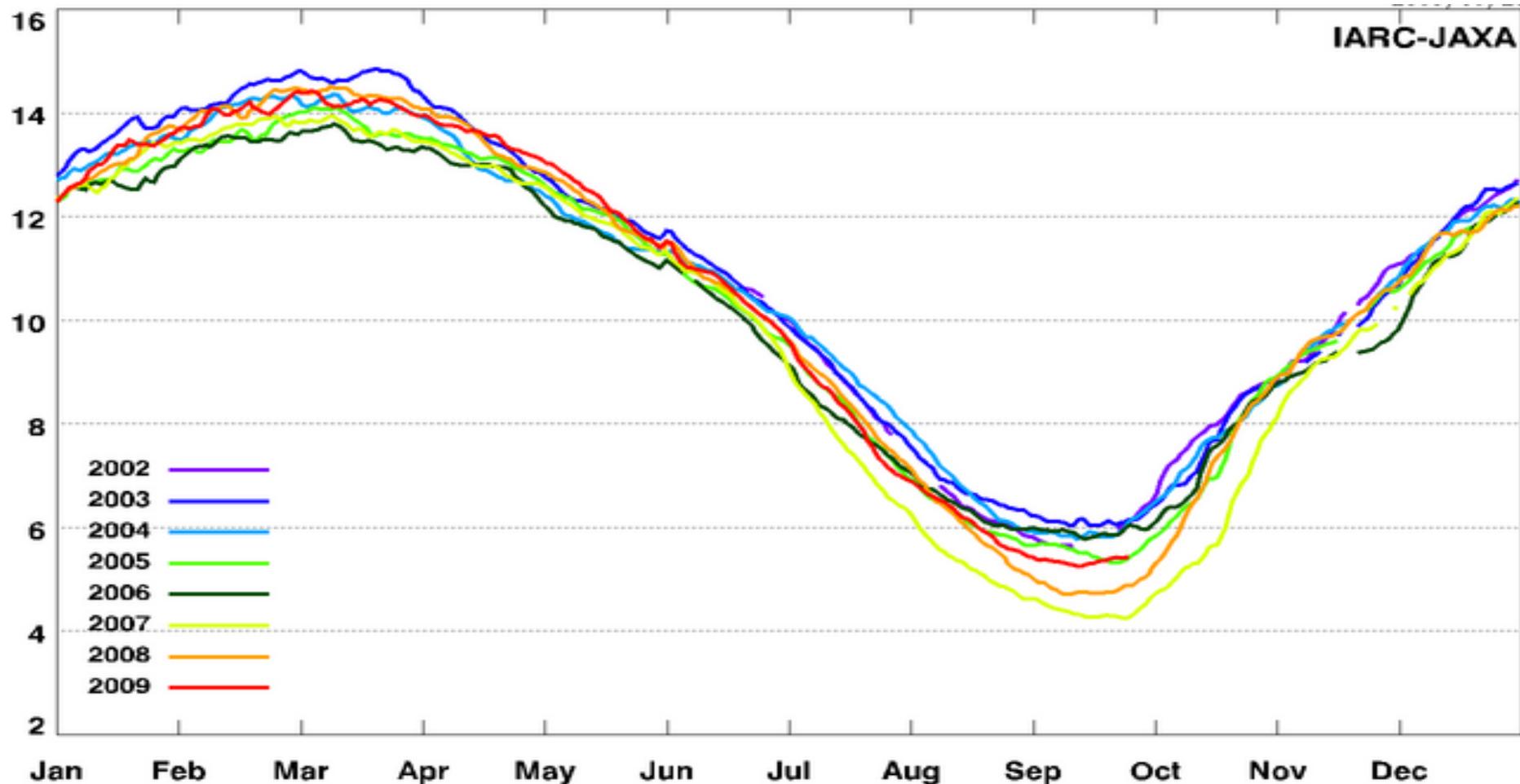
*Sea level (anomaly in millimetres) is scarcely rising:* The average rise in sea level over the past 10,000 years was 4 feet/century. During the 20<sup>th</sup> century it was 8 inches. In the past four years, sea level has scarcely risen at all. As recently as 2001, the IPCC had predicted that sea level might rise as much as 3 ft in the 21<sup>st</sup> century. However, this maximum was cut by more than one-third to less than 2 feet in the IPCC's 2007 report. Moerner (2004) says sea level will rise about 8 inches in the 21<sup>st</sup> century. Mr. Justice Burton, in the UK High Court, bluntly commented on Al Gore's predicted 20ft sea-level rise as follows: "The Armageddon scenario that he depicts is not based on any scientific view." *A fortiori*, James Hansen's prediction of a 246ft sea-level rise is mere rodomontade. Sea-level rise since the beginning of 2006 has been negligible. **Source:** University of Colorado, 2009, release 4.

## Hard evidence disproves theory: the ocean is not warming



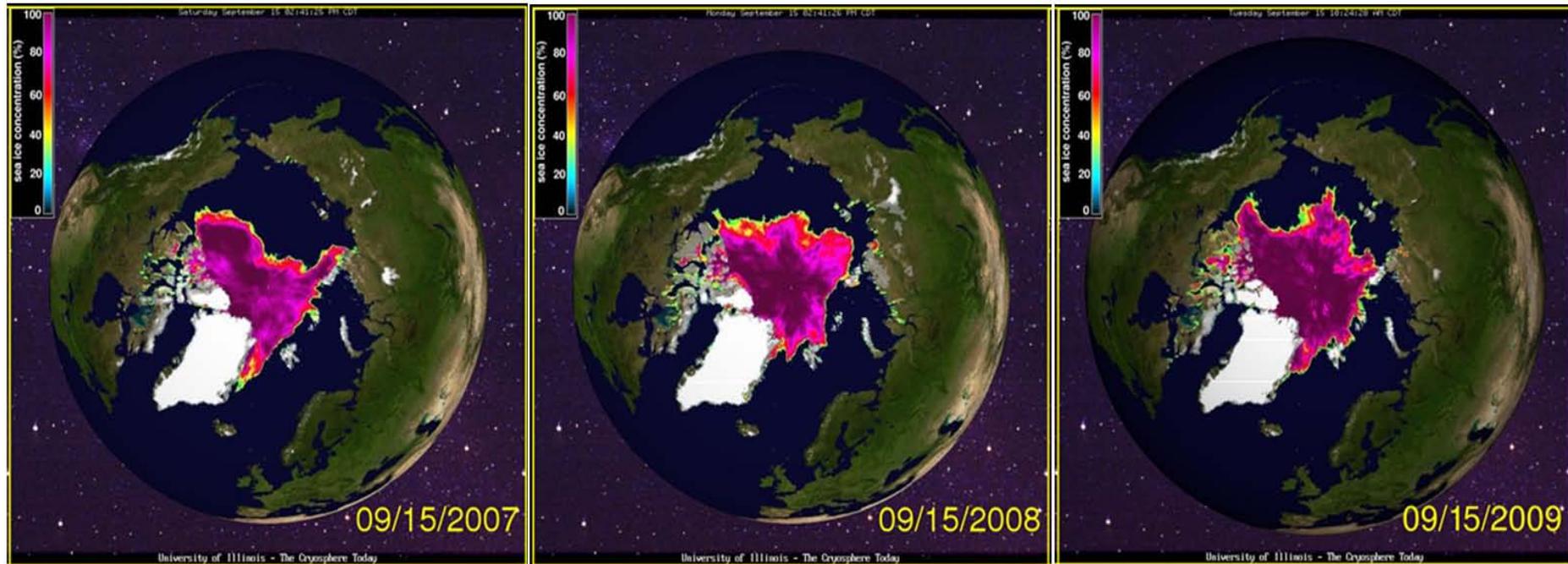
*The 3300 Argo bathythermograph buoys deployed throughout the world's oceans since late in 2003 have shown a slight cooling of the oceans (anomaly in Celsius degrees: left scale) over the past five years, directly contrary to the official theory that any "global warming" not showing in the atmosphere would definitely show up in the first 400 fathoms of the world's oceans, where at least 80% of any surplus heat would be stored. Source: ARGO project, June 2009.*

## Arctic sea-ice extent remains within the 10-year normal range ...



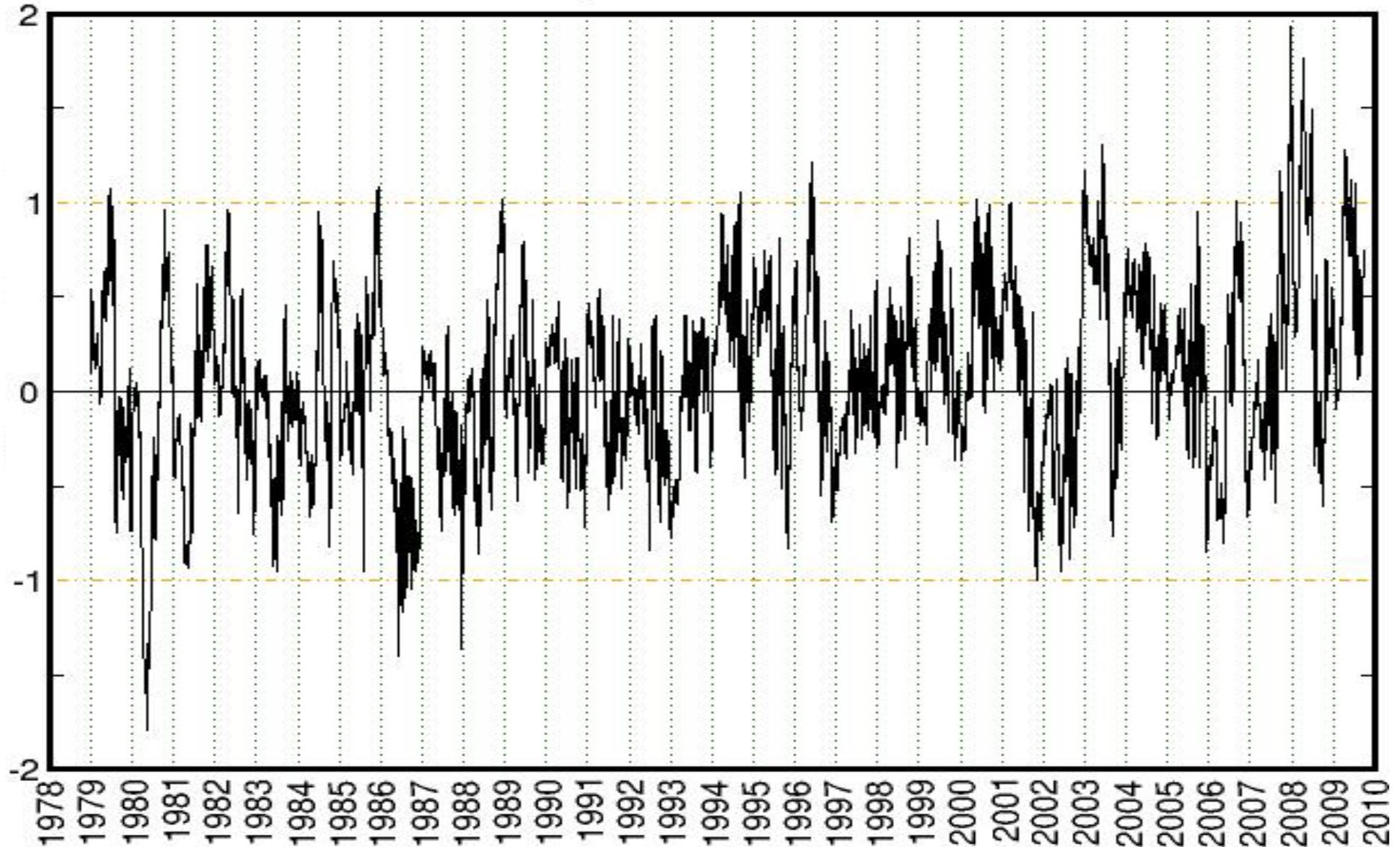
*Arctic sea ice extent (millions of square kilometers: left scale): The red curve shows that the extent of sea ice in the Arctic is now comfortably within the range that has been normal over the past decade. In 2005, 2007, and 2008, sea-ice extent during the September low season was below the 30-year minimum. However, the presence of more multi-year ice this year may prevent sea ice from declining as far this year. Arctic summer sea ice covered its least extent in 30 years during the late summer of 2007. However, NASA has attributed that sudden decline to unusual poleward movements of heat transported by currents and winds: the Arctic climate has long been known to be volatile. The decline cannot have been caused by “global warming”, because, as the SPPI Global Temperature Index shows, there has been a rapid cooling globally during the past seven and a half years – a cooling that applies to the oceans as well as to the atmosphere. At almost the same moment as summer sea-ice extent reached its 30-year minimum in the Arctic, sea-ice extent in the Antarctic reached its 30-year maximum, though the latter event was very much less widely reported in the media than the former. Source: IARC JAXA, Japan, September 2009.*

## ... and summer minimum sea-ice extent has grown 24% in 2 years



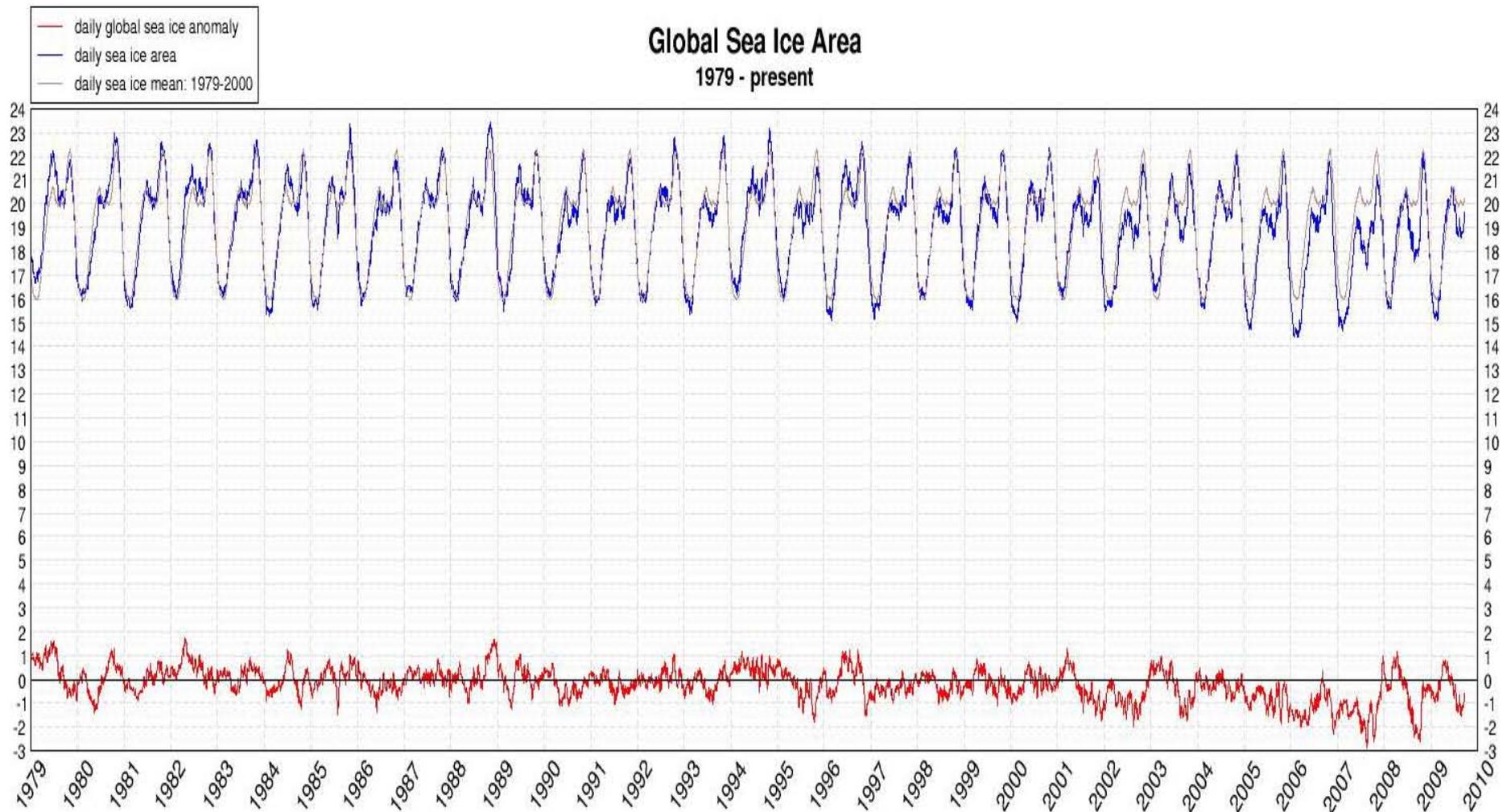
*Arctic summer sea-ice extent (purple) has increased in each of the past two years, and is very close to the mean for the past decade. Since there has been no statistically-significant “global warming” since 1995, and since the decline in summer sea-ice extent has occurred only in the past five years, the decline that occurred in 2007 cannot be attributed to “global warming”. A paper by NASA in 2008 attributed the 2007 summer sea-ice minimum to unusual poleward winds and currents bringing warm weather up from the tropics. A few weeks after the Arctic sea-ice minimum, there extent of Antarctic sea ice reached a 30-year maximum. The Arctic was in fact 2-3 F° warmer in the 1930s and early 1940s than it is today. A recent paper suggesting that the Arctic is now warmer than at any time for 2000 years is based on the same defective data, and is by the same authors, as the UN’s attempt to abolish the medieval warm period in its 2001 report. In fact, for most of the past 10,000 years the world – and by implication the Arctic – was appreciably warmer than it is today. One of the authors of that report had previously told a fellow-researcher, “We have to abolish the medieval warm period.” However, papers by more than 700 scientists from more than 400 institutions in more than 40 countries over more than 20 years establish that the medieval warm period was real, was global, and was warmer than the present. **Source:** University of Illinois, 15 September 2009.*

## Antarctic sea-ice extent has been rising gently for 30 years



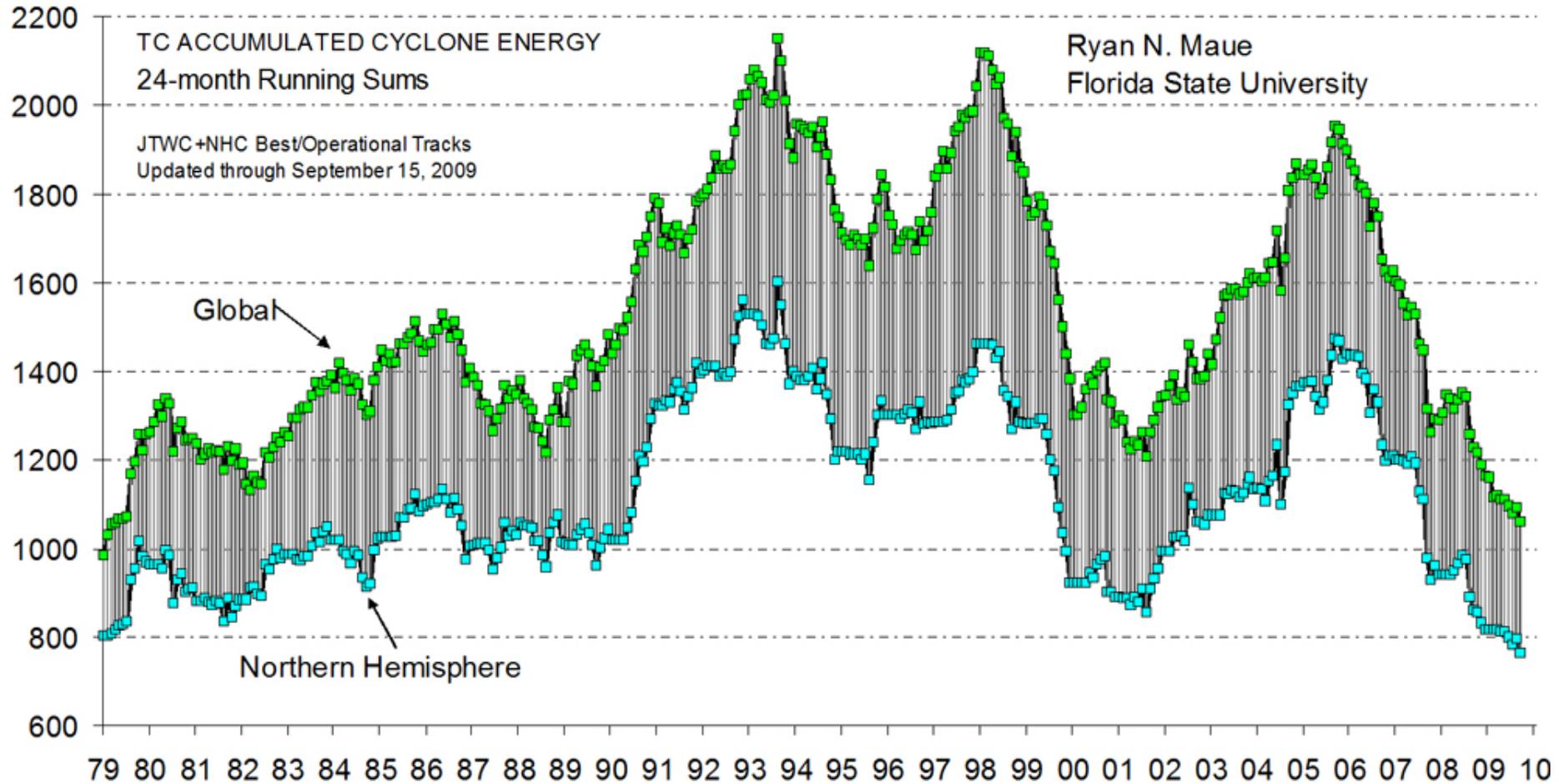
*Antarctic sea-ice extent (anomaly from 1979-2000 mean, millions of km<sup>2</sup>: left scale) shows a gentle but definite uptrend over the past 30 years. The peak extent, which occurred late in 2007, followed shortly after the decline in Arctic sea ice in late summer that year. Source: University of Illinois, September 2009.*

# The regular “heartbeat” of global sea-ice extent: steady for 30 years



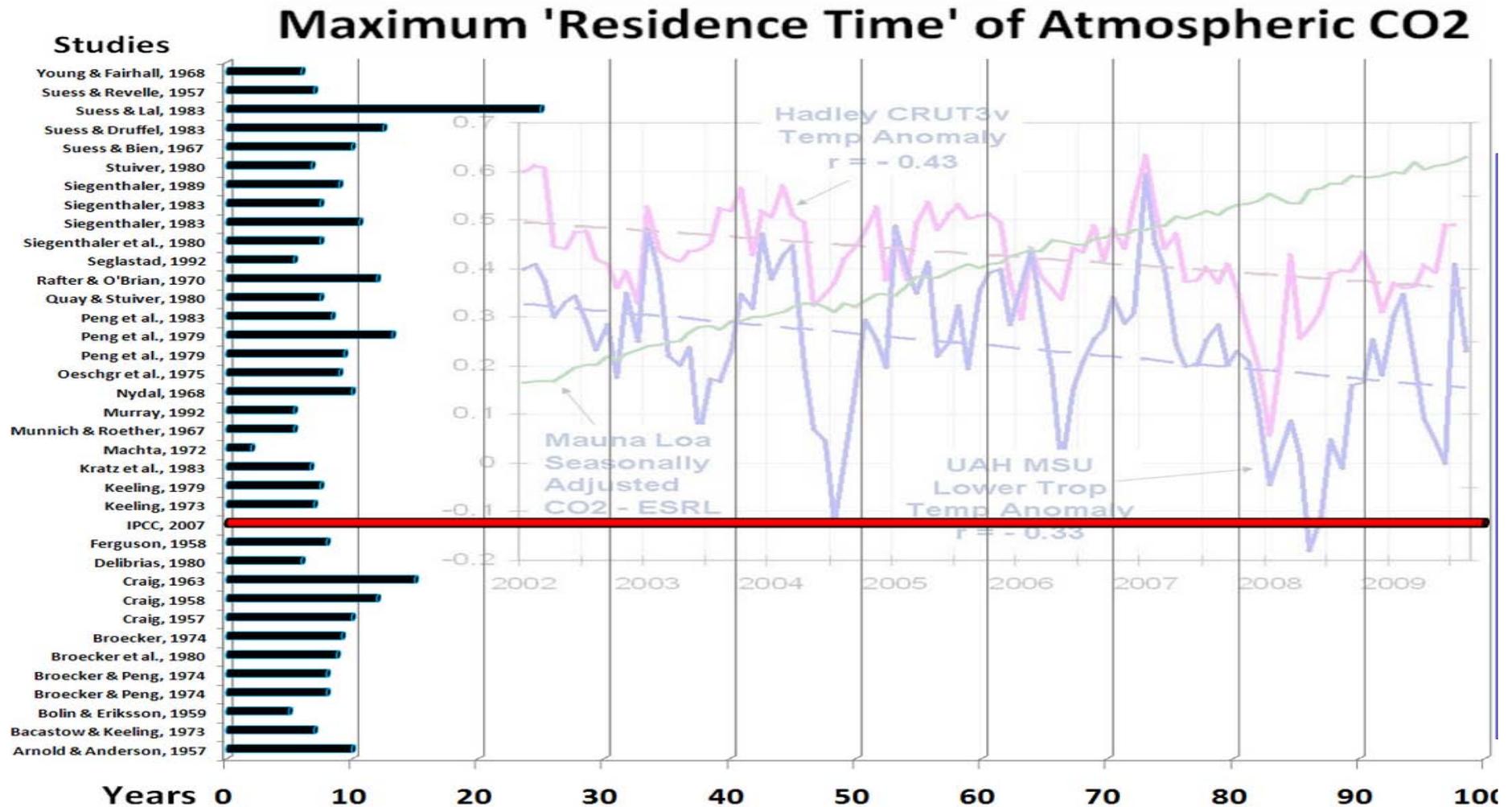
**Planetary cardiogram showing global sea-ice area (millions of square kilometers: left scale):** There has been a very slight decline in the trend (red) of global sea-ice extent over the decades, chiefly attributable to loss of sea ice in the Arctic during the summer, which was well below the mean in 2007, with some recovery in 2008 and a further recovery in 2009. However, the 2008 peak sea-ice extent was exactly on the 1979-2000 mean, and current sea-ice extent is a fraction below the 1979-2000 mean. The decline in summer sea-ice extent in the Arctic, reflected in the global sea-ice anomalies over most of the past eight years, runs counter to the pronounced global atmospheric cooling trend over the same period, suggesting that the cause of the regional sea-ice loss cannot have been “global warming”. Seabed volcanic activity recently reported in the Greenland/Iceland gap, with seabed temperatures of up to 574 °F, may have contributed to the loss of Arctic sea-ice. **Source:** University of Illinois, September 2009.

# Hurricane activity is at its lowest since satellite monitoring began



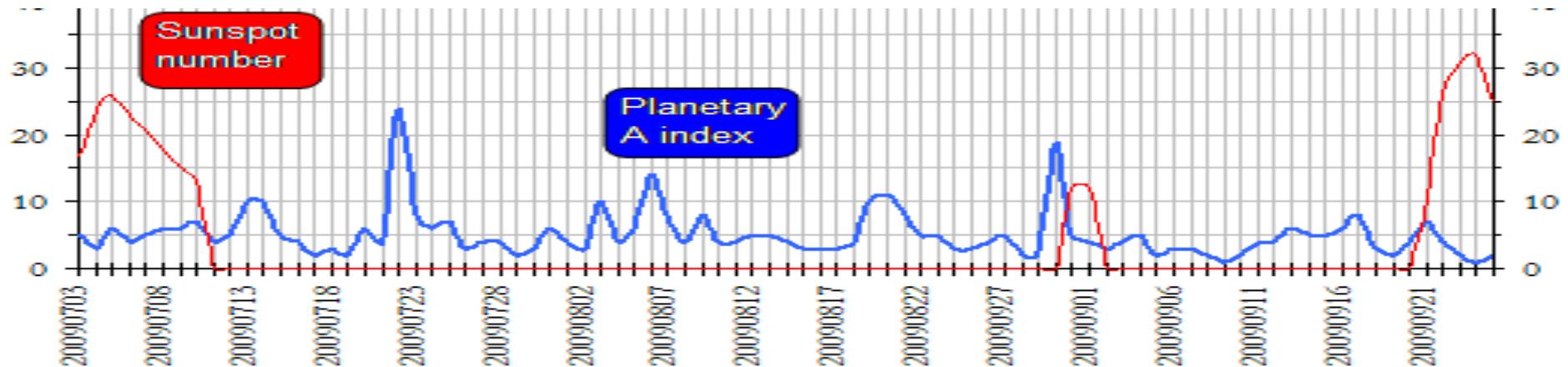
“Urrricanes ’ardly hever ’appen”, as Eliza Doolittle sang in “My Fair Lady”. Hurricanes, typhoons, and other tropical cyclones have declined recently. Global activity of intense tropical storms is measured using a two-year running sum, the Accumulated Cyclone Energy Index, now standing at almost its least value in 30 years in the Northern Hemisphere, and also globally. The graph shows the 24-month running sum of tropical-cyclone energy for the entire globe (top) and the Northern Hemisphere only (green). The difference between the two time series is the Southern Hemisphere total. Data are shown from June 1979 to May 2009. Intensity estimates of southern-hemisphere cyclones are often missing before the graph’s start-date. **Source:** Ryan Maue, September 2009.

# How long does CO<sub>2</sub> remain in the atmosphere? Answer: 7 years

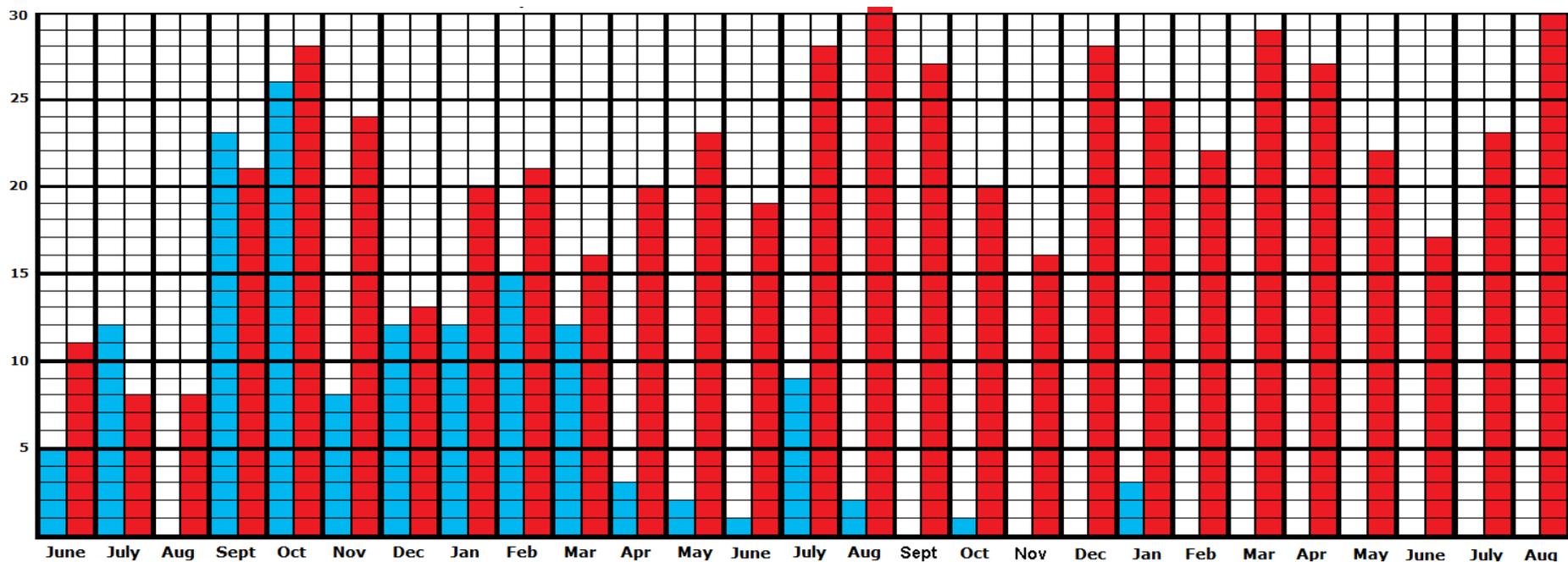


*The peer-reviewed literature is unanimous in finding that the residence-time of CO<sub>2</sub> in the atmosphere is about 7 years. The UN's climate panel, however, chooses a complex and unsatisfactory definition of residence-time that allows it to pretend that the residence time is in fact 100 years. This is one of many respects in which the climate panel, while claiming to represent the "consensus" of scientific opinion, is in fact entirely at odds with the peer-reviewed literature.*

## Solar activity at the end of September, after a long sleep



**Upper panel:** Sunspot numbers (red), 3 July to 25 September 2009. Sunspot activity has been less than for 100 years. **Lower panel:** Number of days without any visible sunspots during the previous solar minimum (blue) and the present solar minimum (red). During the last ~11-year solar minimum, in September/October 1996, the longest period without sunspots was 37 days, compared with 44 days in March/April 2009 and 51 days in July/August 2009. **Source:** Jan Alvestad, September 2009.

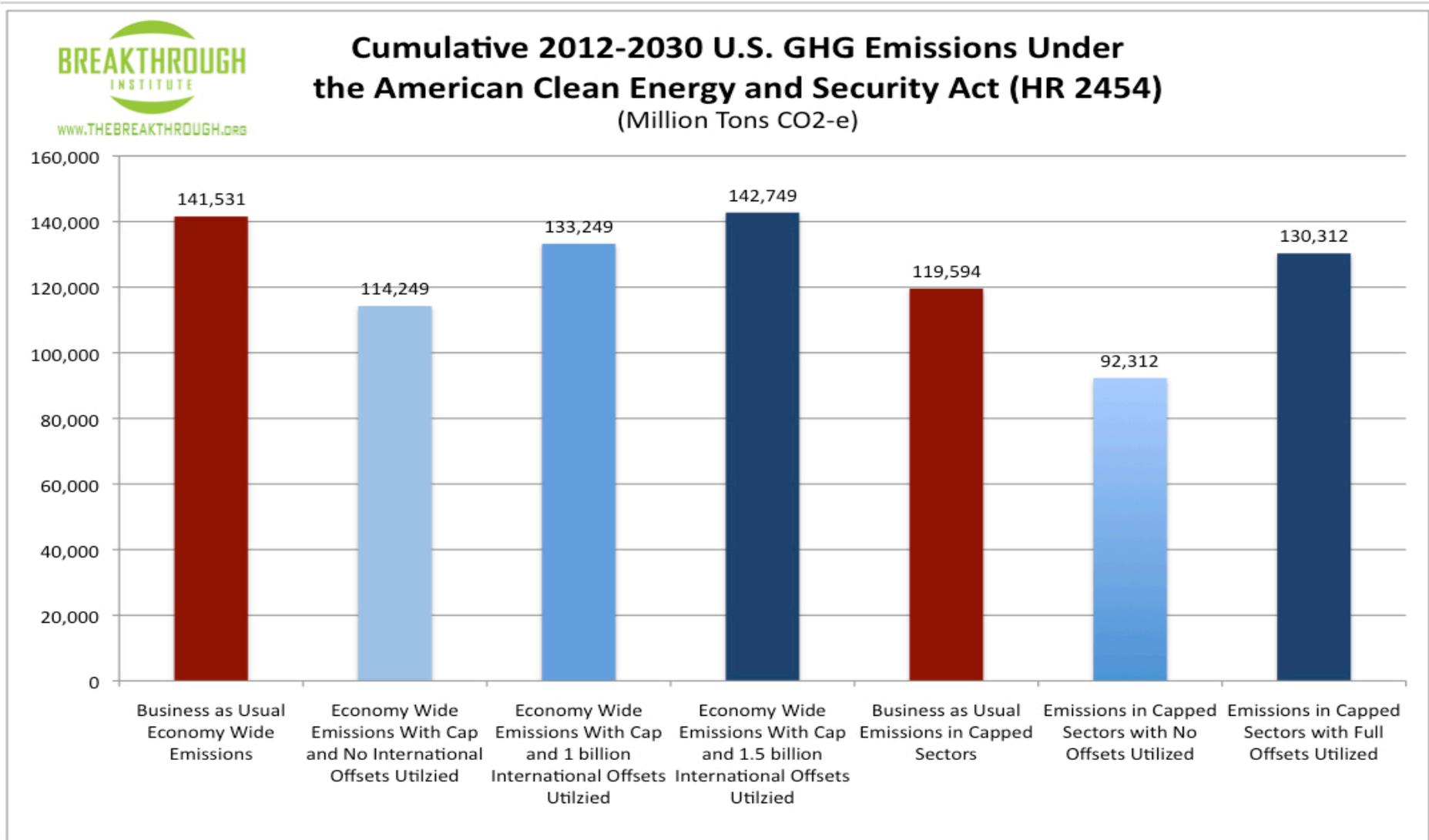


## The stupefying cost of the Waxman/Markey Climate Bill

Waxman/Markey Climate Bill	The facts and figures
<b>CO<sub>2</sub> concentration in 2100 [A2]</b>	<b>836 ppmv</b>
<b>– CO<sub>2</sub> concentration in 2000</b>	<b>368 ppmv</b>
<b>= 21<sup>st</sup>-century CO<sub>2</sub> increase</b>	<b>468 ppmv</b>
<b>/ 21<sup>st</sup>-century warming [A2]</b>	<b>3.4 C°</b>
<b>= Concentration increase per C°</b>	<b>140 ppmv/C°</b>
<b>x CO<sub>2</sub> emissions per ppmv</b>	<b>14,150 million tons CO<sub>2</sub></b>
<b>= Emissions cuts for 1 C° cooling</b>	<b>2 trillion tons CO<sub>2</sub></b>
<b>/ WaxKey emissions cuts/year</b>	<b>5 billion tons CO<sub>2</sub>/year</b>
<b>= Years to prevent 1 C° warming</b>	<b>400 years</b>
<b>x 100 years' warming [A2]</b>	<b>3.4 C°</b>
<b>= Years to stop 100 years' warming</b>	<b>1360 years</b>
<b>x \$180 billion/year WaxKey cost</b>	<b>\$250 trillion</b>

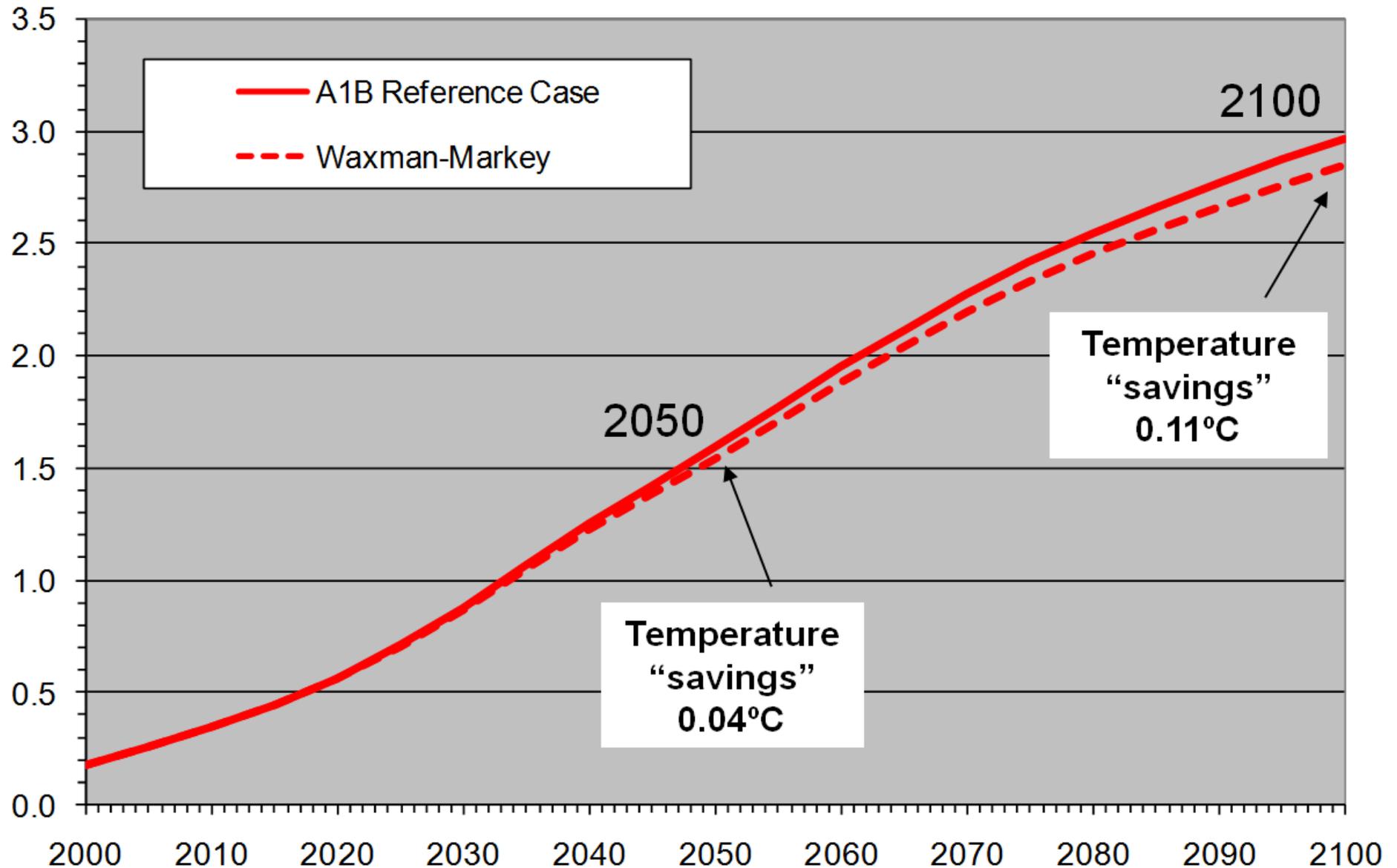
**This postcard** has all the key figures on the Waxman/Markey climate Bill in one place. Bottom line: to prevent the 3.4 C warming projected by the UN for this century under the A2 carbon emissions scenario would take 1360 years even if the Bill were fully implemented, and would cost \$250 trillion. **Source:** SPPI calculations.

# Why ‘Taxman/Malarkey’ won’t change the global climate one iota



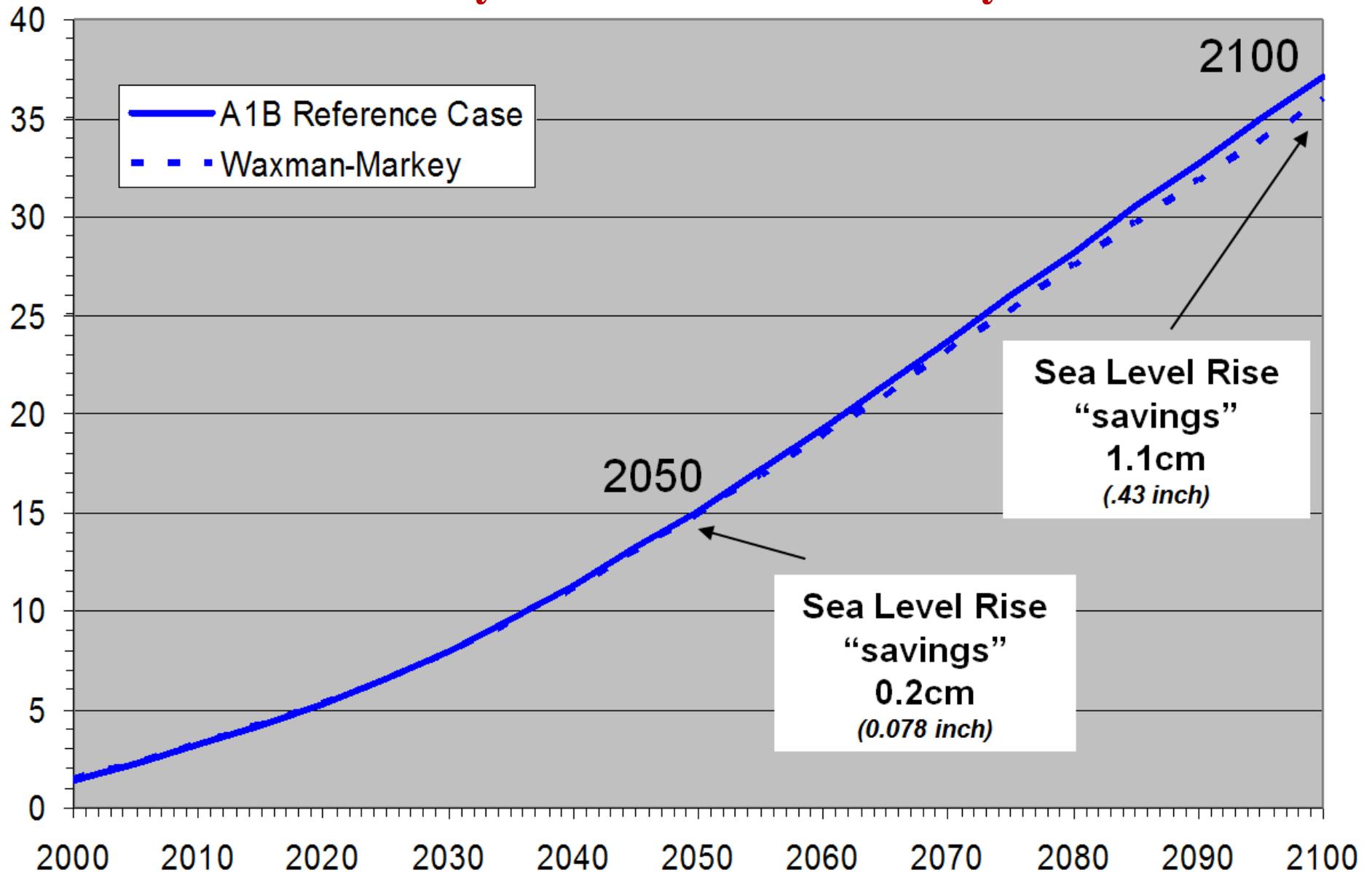
*A pointless Bill: The Waxman/Markey Bill will cost billions to implement, but will reduce US carbon emissions hardly at all, unless the numerous exceptions in the Bill are implemented, in which event it will not reduce US carbon emissions at all. Source: [www.breakthrough.org](http://www.breakthrough.org).*

# The Waxman/Markey Climate Bill will scarcely affect temperatures



*Temperature change predicted by the UN, and (dotted line) adjusted to reflect the negligible impact of the Waxman/Markey Climate Bill, which might cut temperatures by 0.2-0.02 F by 2100, at a cost of \$18 trillion. Source: Chip Knappenberger: cost estimates \$180 bn/year from the White House.*

# The Waxman/Markey Climate Bill will scarcely affect sea level



Sea-level change predicted by the UN, and (dotted line) adjusted to reflect the negligible impact of the Waxman/Markey Climate Bill, which might cut sea-level by less than half an in by 2100, at a cost of \$18 trillion. **Source:** Chip Knappenberger: cost estimates \$180 bn/year from the White House.

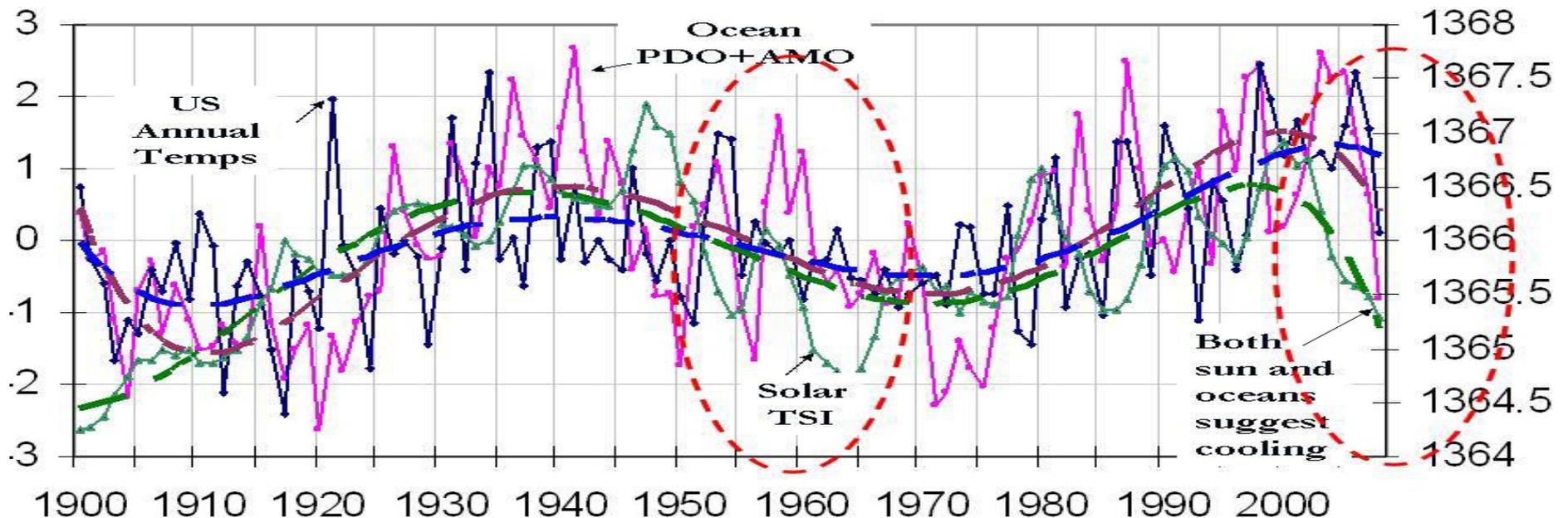
# SPPI MONTHLY CO<sub>2</sub> REPORT :: SCIENCE FOCUS

## A MORE ACCURATE GLOBAL TEMPERATURE HISTORY

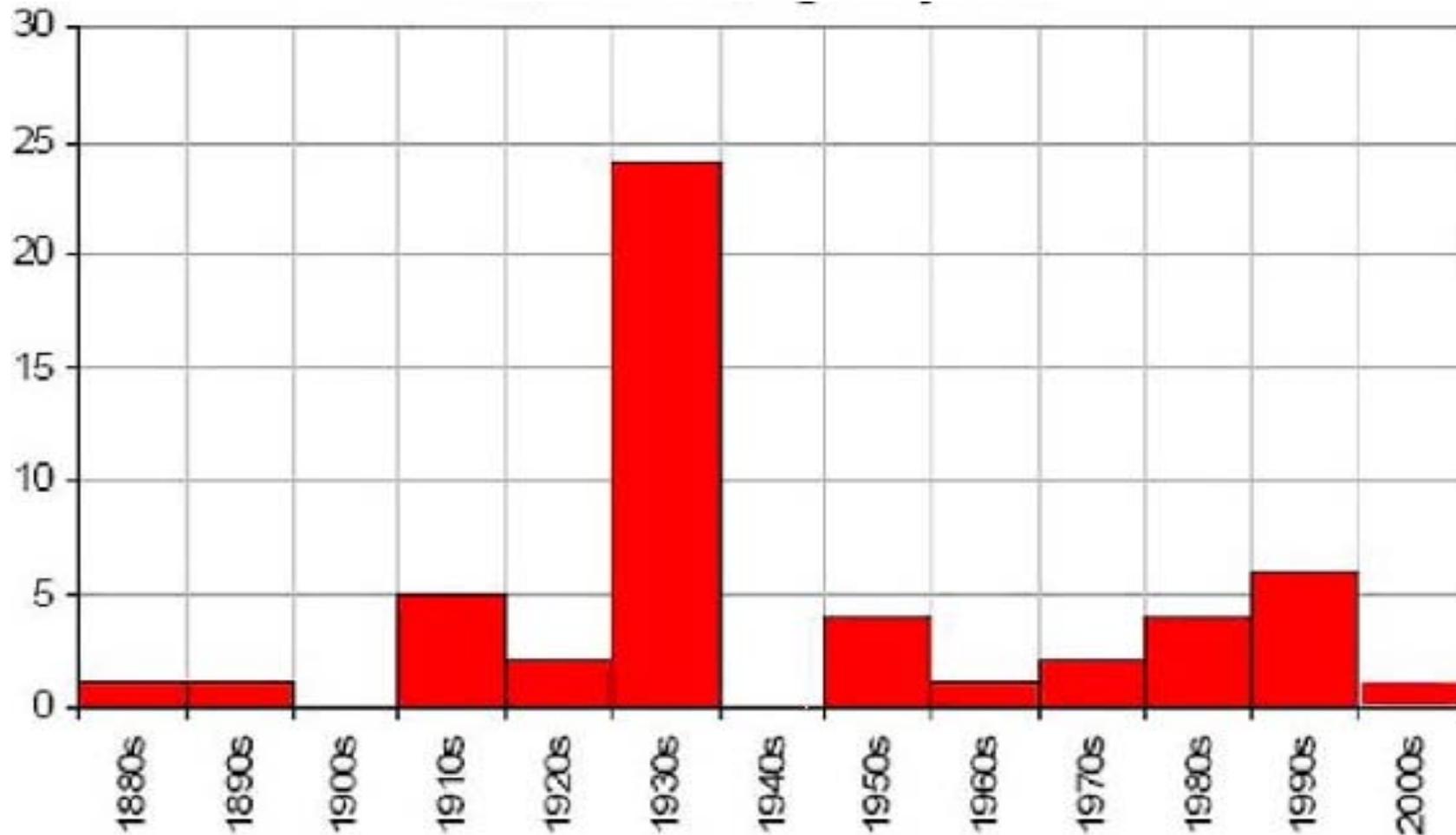
*By Joseph D'Aleo, Fellow of the American Meteorological Society*

Many peer-reviewed papers show that long-term global temperature trends have been exaggerated by 30-50% and sometimes much more. Urbanization, land-use changes, bad siting, bad instrumentation, and changes in ocean measurement techniques have adversely affected temperature measurement worldwide. NOAA has made matters worse by abandoning satellite ocean temperature measurement, which provided more complete coverage and was largely free from regional distortions. It is only because of these methodological errors that NOAA and other “global-warming” profiteers have been able to claim that we are in the warmest decade in 100 or even 1000 years or more.

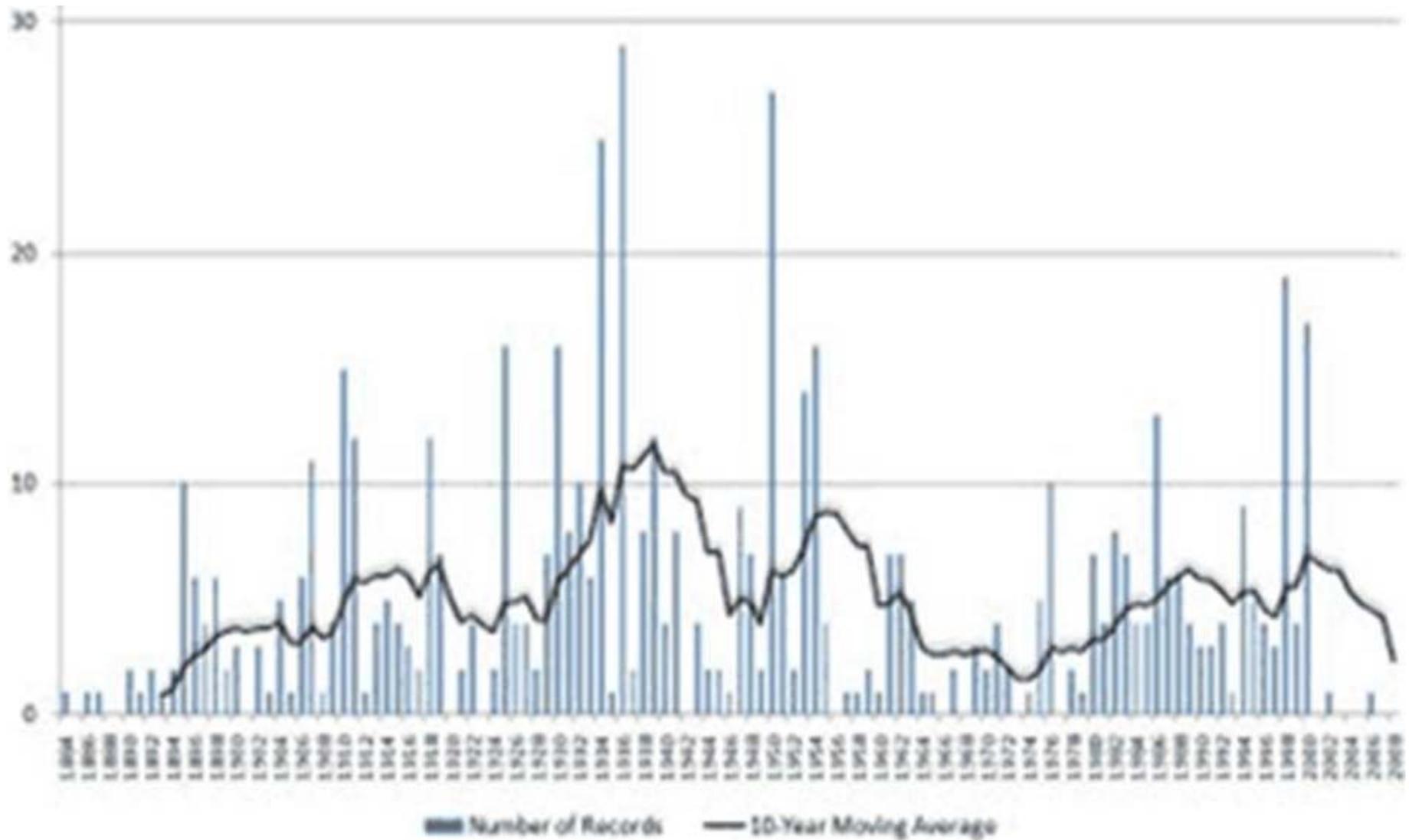
The 60-70 year cycles of warming evident below are in lock-step with cyclical changes in ocean temperature and solar irradiance. The annual mean temperatures in the US Historical Climate Network (**dark blue**) are shown below, with annual total solar irradiance (**turquoise**) and the combined influence of the Pacific and Atlantic oscillations (**magenta**).



One needs simply to look at the record highs for the United States and globe to see that the warmest years are not all in the last two decades (although some were to be expected given it is one of two peaks in the cycles). The first image below shows decadal record all-time highs by State. The 1930s still clearly dominate, with 24 state all time records). In the 2000s, only one state (South Dakota) tied with its 1930s all-time temperature record.



The following histogram showing when record-high temperatures occurred in all 50 States shows the record monthly high temperatures by individual year. Note how the 1930s and 1950s predominate. The present decade shows fewer record highs than any decade since the 1800s.



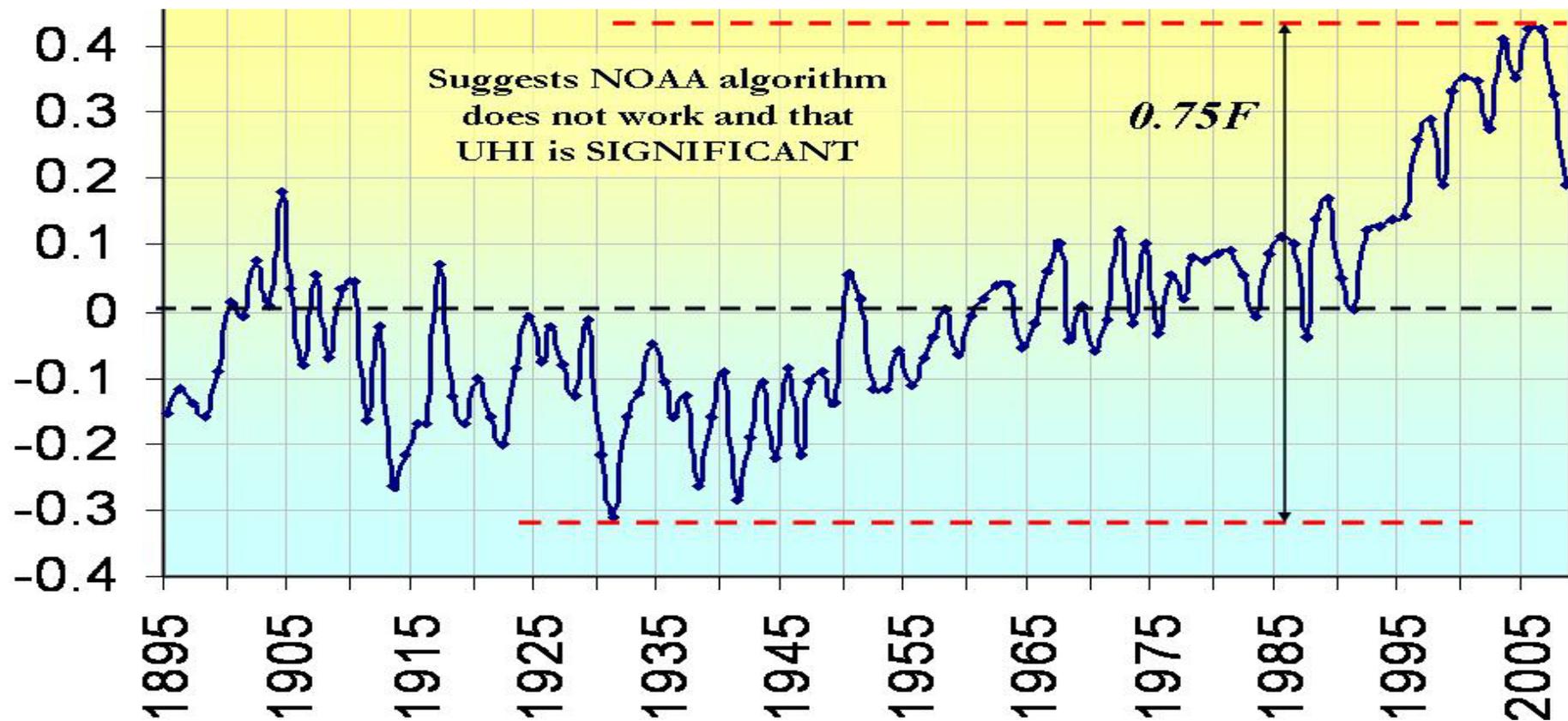
Here is the US National Climatic Data Center's compilation of the all-time high temperature records for every continent on Earth. For all of the populated continents, the records were in the 1800s and early 1900s. The most recent high-temperature record was set in Antarctica in 1974, some 35 years ago: and Antarctica has in fact cooled somewhat since then.

Continent	High	Location	Year	Date
Africa	<b>136 °F</b>	<b>El Azizia, Libya</b>	<b>1922</b>	<b>September 13</b>
North America	<b>134 °F</b>	<b>Death Valley, CA</b>	<b>1913</b>	<b>July 10</b>
Asia	<b>129 °F</b>	<b>Tirat Tsvi, Israel</b>	<b>1942</b>	<b>June 22</b>
Australia	<b>128 °F</b>	<b>Cloncurry, QD</b>	<b>1889</b>	<b>January 16</b>
Europe	<b>122 °F</b>	<b>Seville, Spain</b>	<b>1881</b>	<b>August 4</b>
South America	<b>120 °F</b>	<b>Rivadavia, Argentina</b>	<b>1905</b>	<b>December 11</b>
Oceania	<b>108 °F</b>	<b>Tuguegarao, Philippines</b>	<b>1912</b>	<b>April 29</b>
Antarctica	<b>59 °F</b>	<b>Vanda Station, Scott Coast</b>	<b>1974</b>	<b>January 5</b>

How, then, can we correct for the inadequacies in measurement that have been reported and quantified in the peer-reviewed literature?

- **The National Climatic Data** Center removed the urban heat-island effect for the US in 2007 in version 2 of the US Historical Climatology Network dataset.
- **The Goddard Institute for Space Studies** maintains its own version of an urban heat-island adjustment of the same dataset using satellite night-lights.

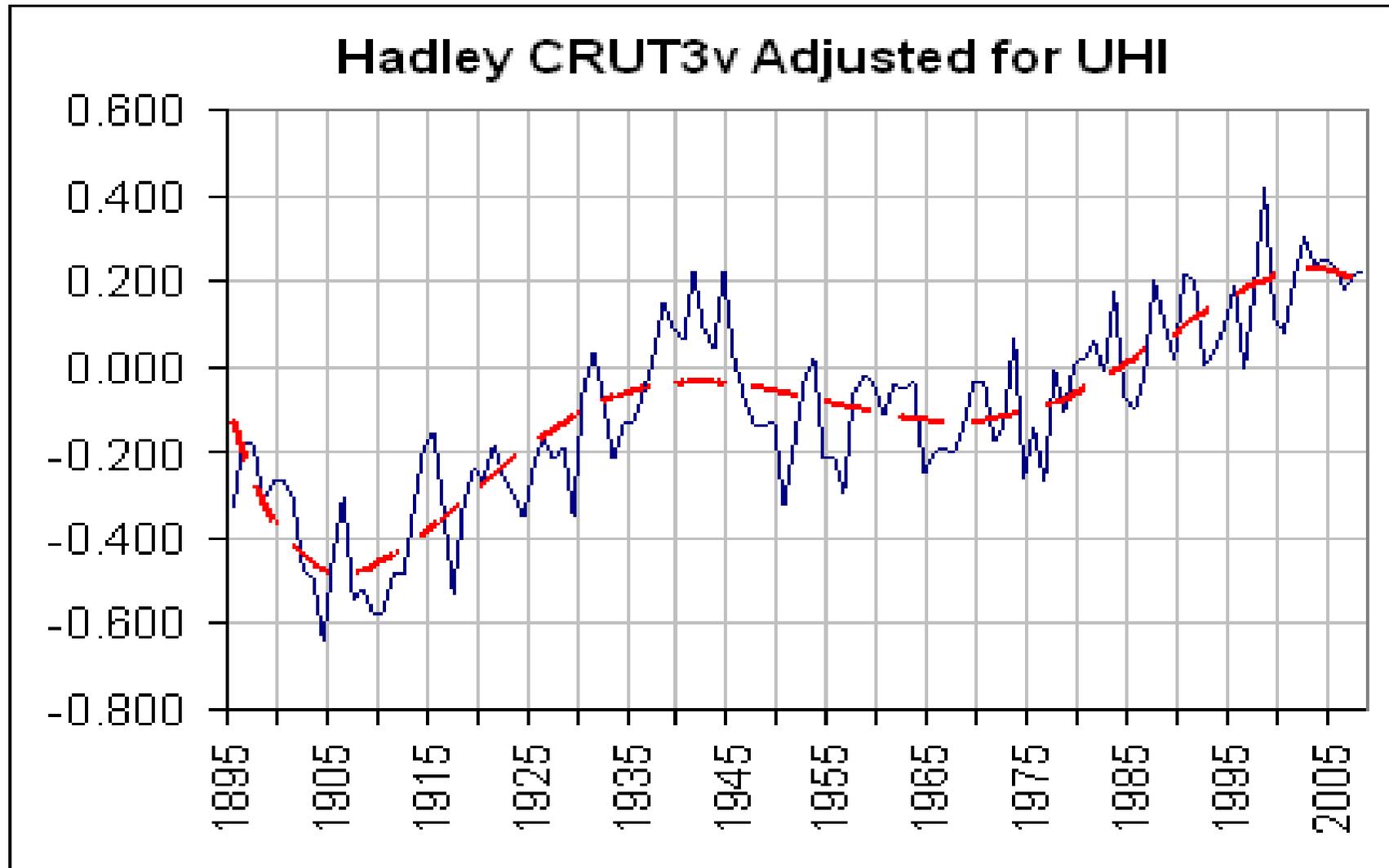
By taking the difference between the two, I found the following:



The graph shows an artificial warming of 0.75 F° in the NOAA data which must be removed to make proper adjustment for urbanization. Phil Jones of the Hadley Centre in the UK co-authored a paper that showed that the urban heat-island contamination of the Chinese instrumental temperature record was 1 Ce (1.8 F°) for the century, so this degree of contamination in the NOAA dataset appears not to be unprecedented.

Unfortunately satellite night-lights were not used globally. Steve McIntyre, a Canadian researcher, has shown the NASA adjustments for the urban heat-island effect are as often downward as upward – a result that can scarcely be plausible.

The Hadley Center's dataset as used by the UN's climate panel, makes no attempt to adjust for the urban heat-island effect. I took that urban heat-island adjustment for the United States and subtracted it from the annual Hadley/Climate Research Unit global temperatures (version 3v). Hadley's global data is mainly land-based, with ocean temperature data from ships chiefly in heavily-traveled northern-hemispheric route. By adjusting the Hadley/CRU data for the urban heat-island effect, I obtained the following result:



This gives a much more believable view of the past century's global temperatures, consistent with the natural forcings and records shown. It shows what GISS showed for the United States, warmest years dominated by the 1930s and 1940s and again the 1980s and 1990s. It suggests there is no need to take any action whatsoever in Copenhagen to mitigate "global warming", which is minimal and cyclical.

# SPPI MONTHLY CO<sub>2</sub> REPORT :: A PUZZLE

**“AH JES’ DONE MADE IT ALL UP!”**



**Spot the bogosity in this PR poster for a certain sci-fi comedy horror movie. Answer in next month's *CO2 Report***

# SPPI MONTHLY CO<sub>2</sub> REPORT :: YOUR ZONE

HOW TO CALCULATE THE EFFECT OF CO<sub>2</sub> ON TEMPERATURE FOR YOURSELF

## Your ‘global-warming’ ready reckoner

Here is a step-by-step, do-it-yourself ready-reckoner which will let you use a pocket calculator to make your own instant estimate of global temperature change in response to increases in atmospheric CO<sub>2</sub> concentration.

- ✚ **STEP 1:** Decide how far into the future you want your forecast to go, and estimate how much CO<sub>2</sub> will be in the atmosphere at that date. *Example:* Let us do a forecast to 2100. The **MONTHLY CO<sub>2</sub> REPORT** charts show CO<sub>2</sub> rising to  $C = 575$  parts per million by the end of the century, compared with  $B = 385$  parts per million in late 2008.
- ✚ **STEP 2:** Next, work out the *proportionate increase*  $C/B$  in CO<sub>2</sub> concentration. In our example,  $C/B = 575/385 = 1.49$ .
- ✚ **STEP 3:** Take the *natural logarithm*  $\ln(C/B)$  of the proportionate increase. If you have a scientific calculator, find the natural logarithm directly using the “ln” button. If not, look up the logarithm in the table below. In our example,  $\ln 1.49 = 0.40$ .

<i>n</i>	1.05	1.10	1.15	1.20	1.25	1.30	1.35	1.40	1.45	1.50	1.55	1.60	1.65	1.70	1.75	1.80	1.85	1.90	1.95	2.00
<i>ln</i>	0.05	0.10	0.14	0.18	0.22	0.26	0.30	0.34	0.37	0.41	0.44	0.47	0.50	0.53	0.56	0.59	0.62	0.64	0.67	0.69
<i>n</i>	2.05	2.10	2.15	2.20	2.25	2.30	2.35	2.40	2.45	2.50	2.55	2.60	2.65	2.70	2.75	2.80	2.85	2.90	2.95	3.00
<i>ln</i>	0.72	0.74	0.77	0.79	0.81	0.83	0.85	0.88	0.90	0.92	0.94	0.96	0.97	0.99	1.01	1.03	1.05	1.06	1.08	1.10

- ✚ **STEP 4:** Choose a *climate sensitivity coefficient*  $c$  from the table below –

Coefficient $c$ ...	SPPI minimum	SPPI central	SPPI maximum	IPCC minimum	IPCC central	IPCC maximum
... for C°	0.7	1.4	2.1	2.9	4.7	6.5
... for F°	1.25	2.50	3.75	5.25	8.5	11.75

- ✚ **STEP 5:** Find the *temperature change*  $\Delta T$  by multiplying the natural logarithm of the proportionate increase in CO<sub>2</sub> concentration by your climate sensitivity coefficient. In our example, we’ll chose the SPPI central estimate  $c = 2.50$  F. Then –

$$\Delta T = c \ln(C/B) = 2.50 \times 0.40 = 1.0 \text{ F}^\circ, \text{ your predicted manmade warming to 2100. It's as simple as that!}$$

# SPPI MONTHLY CO<sub>2</sub> REPORT :: NEW SCIENCE

BREAKING NEWS IN THE JOURNALS, FROM [WWW.CO2SCIENCE.ORG](http://www.co2science.org)

- The *Monthly CO<sub>2</sub> Report* summarizes key recent scientific papers, selected from those featured weekly at [www.co2science.org](http://www.co2science.org), that significantly add to our understanding of the climate question. This month we review papers about climate models, ocean heat content, corals and macroalgae, and plant responses to recent warming. Our final paper gives evidence that the Middle Ages were warmer than today.

## Thirty-Second Summary

- **Past model performance is no guarantee for the success of future model predictions.**
- **Ocean heat content data match perfectly with atmospheric data between 2003 and 2006, demonstrating that the cessation of global warming, which has held sway for the past decade, appears to apply to both land and sea.**
- **Coral reef ecosystems appear to be more resistant to macroalgal blooms than assumed.**
- **Plant responses to recent warming in the Southern Alps reveal a considerable increase in species richness.**
- **Was there a Medieval Warm Period? YES, according to data published by 735 individual scientists from 431 separate research institutions in 41 different countries in the CO2Science Medieval Warm Period Project database ... and counting! View an interactive map here: <http://www.co2science.org/data/timemap/mwpmmap.html>.**

## The Relative Merit of Multiple Climate Models

- Reifen, C. and Toumi, R. 2009. Climate projections: Past performance no guarantee of future skill? *Geophysical Research Letters* **36**: 10.1029/2009GL038082.

Reifen and Toumi (2009) note that “with the ever increasing number of models, the question arises of how to make a best estimate prediction of future temperature change.” Which model should one use? They say, “One key assumption, on which the principle of performance-based selection rests, is that a model which performs better in one time period will continue to perform better in the future.” In other words, if a model predicts *past* climate fairly well, it should predict *future* climate fairly well. The principle sounds reasonable enough; but is it really true?

Reifen and Toumi examined this question “in an observational context ... for the first time”. Working with the 17 climate models employed by the IPCC (2007) in its Fourth Assessment Report, they determined how accurately individual models, as well as various subsets of the 17

models, simulated the temperature history of Europe, Siberia and the entire globe over a *selection* period (such as 1900-1919) and a subsequent *test* period (such as 1920-1939), asking the question: are the results of the test period as good as those of the selection period? They followed this procedure while working their way through the entire 20th century at one-year time-steps for not only 20-year selection and test intervals but for 10- and 30-year intervals as well. Upon completion of their analysis, **the two researchers state that they could find “no evidence of future prediction skill delivered by past performance-based model selection”, noting that “there seems to be little persistence in relative model skill”**. As for *why* this was so, they speculated that “the cause of this behavior is the non-stationarity of climate feedback strengths”, which they explain by stating that “models that respond accurately in one period are likely to have the correct feedback strength at that time”, but that “the feedback strength and forcing is not stationary, favoring no particular model or groups of models consistently”. Based upon these results, the UK physicists conclude that “the common investment advice that ‘past performance is no guarantee of future returns’ and to ‘own a portfolio’ appears also to be relevant to climate projections.” Or as it might put it in more simple terms, “There's strength in numbers.” Even then, however, there is *still* no guarantee of success, as has been demonstrated by the recent meltdown of the *global* economy. All can be wrong together.

## The Status of Earth's Ocean Heat Content

- Willis, J.K., Lyman, J.M., Johnson, G.C. and Gilson, J. 2009. In situ data biases and recent ocean heat content variability. *Journal of Atmospheric and Oceanic Technology* **26**: 846-852.

Willis *et al.* (2009) write that “as the Earth warms due to the buildup of greenhouse gases in the atmosphere, the vast majority of the excess heat is expected to go toward warming the oceans (Levitus *et al.*, 2005; Hansen *et al.*, 2005)”, but they note that “a large and apparently significant cooling in ocean heat-content anomaly between 2003 and 2005 was reported by Lyman *et al.* (2006)”, casting doubt on the *theory* in some people's minds and doubts on the *measurements* in other people's minds. To help resolve this important issue, Willis *et al.* analyzed potential biases in expendable bathythermograph (XBT) data, as well as data obtained from the Argo array of profiling floats, which were used in making the ocean heat-content anomaly calculations.

Results indicated, in the words of the four researchers, that “the cooling reported by Lyman *et al.* (2006) is shown to be an artefact caused by both [an] XBT warm bias and [a] cold bias in the Argo data”, with the end result that “ocean heat-content anomaly does not appear to exhibit significant warming or cooling between 2003 and 2006”. Willis *et al.* further state that the ocean cooling reported by Lyman *et al.* (2006) “would have implied a very rapid increase in the rate of ice-melt in order to account for the fairly steady increase in global mean sea level rise observed by satellite altimeters over the past several years”.

They also note that the absence of a significant cooling signal in their adjusted ocean heat-content anomaly results “brings estimates of upper-ocean thermosteric sea level variability into closer agreement with altimeter-derived measurements of global mean sea level rise”. And *we* note, last of all, that **the lack of either a warming or a cooling trend in the ocean heat-content anomaly data matches perfectly with the fact that there was no warming or cooling of the atmosphere between 2003 and 2006 either, so that the cessation of global warming, which has held sway for the past decade, appears to apply to both land and sea.**

## Corals vs. Macroalgae in a CO<sub>2</sub>-Enriched and Warmer World

- Bruno, J.F., Sweatman, H., Precht, W.F., Selig, E.R. and Schutte, V.G.W. 2009. Assessing evidence of phase shifts from coral to macroalgal dominance on coral reefs. *Ecology* **90**: 1478-1484.

Bruno *et al.* (2009) write that one of the great concerns of marine scientists is that “coral reefs are moving toward or are locked into a seaweed-dominated state”, based on observations of what occurred on several Jamaican reefs during the 1980s. Such concerns are often parroted by climate alarmists such as Al Gore (*An Inconvenient Truth*) and Michael Mann and Lee Kump (*Dire Predictions*). To assess the generality of these claims, Bruno *et al.* “analyzed 3,581 quantitative surveys of 1,851 reefs performed between 1996 and 2006 to determine the frequency, geographical extent, and degree of macroalgal dominance of coral reefs and of coral to macroalgal phase shifts around the world”.

According to the five marine researchers, results indicated that “the replacement of corals by macroalgae as the dominant benthic functional group is less common and less geographically extensive than assumed”. They say, “Only 4% of reefs were dominated by macroalgae (i.e., >50% cover).” In fact, across the Indo-Pacific, where regional averages of macroalgal cover were 9-12%, they found that “macroalgae only dominated 1% of the surveyed reefs”. In addition, they learned that “between 1996 and 2006, phase-shift severity decreased in the Caribbean, did not change in the Florida Keys and Indo-Pacific, and increased slightly on the Great Barrier Reef”. Commenting on these findings, Bruno *et al.* state that “**coral reef ecosystems appear to be more resistant to macroalgal blooms than assumed**”, and that “the mismatch between descriptions of reef degradation in the literature and patterns in nature was caused by the generalization of a relatively small number of examples”, concluding that their analysis suggests that “**the macroalgae problem has been exaggerated**” and that there has been “**no general recent trend (i.e., post-1995) toward macroalgal dominance**”. In fact, they say that “macroalgal cover may currently be close to the historical baseline across most of the world”.

## Plant Responses to Recent Warming in the Southern Alps

- Erschbamer, B., Kiebacher, T., Mallaun, M. and Unterluggauer, P. 2009. Short-term signals of climate change along an altitudinal gradient in the South Alps. *Plant Ecology* **202**: 79-89.

Erschbamer *et al.* (2009) write that one of the predicted consequences of rising temperatures “is the migration of plant species from lower altitudes to higher elevations, provoking consecutive displacements of alpine and nival plant species (i.e. ‘biodiversity disasters’)”. In examining this claim, the authors documented and analyzed changes (from 2001 to 2006) in plant species number, frequency and composition along an altitudinal gradient crossing four summits from the treeline ecotone to the subnival zone in the South Alps (Dolomites, Italy), where minimum temperatures increased by 1.1-2.0°C during the past century, with a marked rise over the last decades.

Results indicated that “after five years, **a re-visitation of the summit areas revealed a considerable increase of species richness at the upper alpine and subnival zone (10% and 9%, respectively) and relatively modest increases at the lower alpine zone and the treeline ecotone (3% and 1%, respectively)**”. In addition, with respect to threats of extinction, they report that “during the last five years, the endemic species of

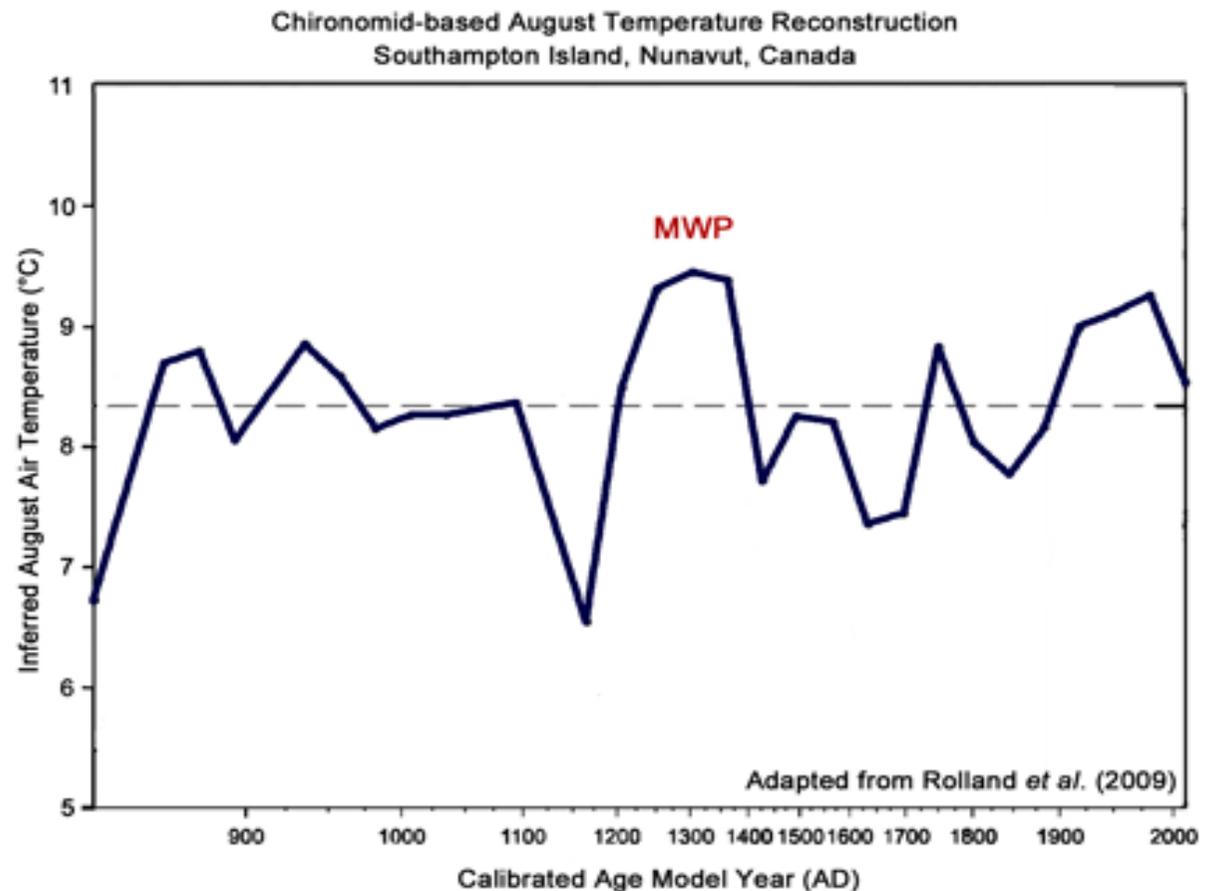
the research area were hardly affected”, while “at the highest summit, one endemic species was even among the newcomers”. Based on these findings, the Austrian scientists conclude that “at least in short to medium time scales, the southern alpine endemics of the study area should not be seriously endangered”. Moreover, “the three higher summits of the study area have a pronounced relief providing potential surrogate habitats for these species”. They add that “recently published monitoring data from high altitudes indicate a consistent increase of species richness in the Alps”, citing the work of Pauli *et al.* (2007) and Holzinger *et al.* (2008).

## The Middle Ages were warmer than today: Southampton Island, Nunavut, Canada

- Rolland, N., Larocque, I., Francus, P., Pienitz, R. and Laperriere, L. 2009. Evidence for a warmer period during the 12th and 13th centuries AD from chironomid assemblages in Southampton Island, Nunavut, Canada. *Quaternary Research* 72: 27-37.

Working in Nunavut, Canada, Rolland *et al.* developed a 1200-year history of August air temperature above a lake on Southampton Island by analyzing fossil chironomid distributions and X-ray fluorescence, grain size and C/N ratios of sediments obtained from a gravity core retrieved from the lake's deepest point.

This work revealed that (1) “higher temperatures were recorded from calendar year AD 1160 to AD 1360, which may correspond to the Medieval Warm Period”, and that (2) “between calendar year AD 1360 and AD 1700, lower temperatures were probably related to a Little Ice Age event” with a minimum August temperature that was “about 2 C° colder than the maximum observed during the Medieval Warm Period”. Also of note, as can be seen from the attached figure, **the most recent August temperature (which occurs at the end of the record at about AD 2008) is approximately 0.9 C° less than the maximum August temperature of the Medieval Warm Period.**



# Letting the real-world data speak out

**B**EFORE we began producing the *Monthly CO<sub>2</sub> Reports*, it was easy for “global warming” profiteers to pretend, and repeatedly to state, that “global warming” is “getting worse”, and that the climate is changing “faster than expected”. Now they are unable to get away with such falsehoods as easily as before.

The centerpieces of our monthly series of graphs showing what is happening in the real world are our CO<sub>2</sub> and temperature graphs, now regarded as the definitive standard worldwide.

**Our CO<sub>2</sub> concentration graphs** show changes in real-world CO<sub>2</sub> concentration as measured by monitoring stations worldwide and compiled by NOAA. We also calculate and display the least-squares linear-regression trend on the real-world data. Because this trend has been very close to a straight line since late 2001, it is the best guide to future CO<sub>2</sub> concentration. We also display the range of UN projections for CO<sub>2</sub> concentration, based on its A2 “business as usual” scenario – the one that comes closest to reality at present. The one difference is that, for clarity, we zero the UN’s projections to the start-point of the linear regression trend on the real-world data.

The UN predicts that, this century, CO<sub>2</sub> concentration will rise exponentially – at an ever-increasing rate – towards **836** [730, 1020] parts per million by volume in 2100. In reality, however, for eight years CO<sub>2</sub> concentration has been trending in a straight line towards just **575 ppmv** by 2100. If this linear trend continues, all of the UN’s predictions for 21<sup>st</sup>-century warming will have to be halved.

**Our global-temperature graphs** show changes in real-world temperature at or near the Earth’s surface. Each temperature graph represents the mean of one surface and two satellite datasets: the monthly surface temperature anomalies from the Hadley Center in the UK, and the lower-troposphere anomalies from the satellites of Remote Sensing Systems, Inc., and of the University of Alabama at Huntsville. We do not use the NCDC/GISS datasets.

On each graph, the anomalies are zeroed to the least element in the dataset. For clarity, the IPCC’s range of predictions is zeroed to the start-point of the least-squares linear-regression trend on the real-world data. Since late 2001, global temperature has been falling fast.

To preserve consistency with the IPCC’s published formulae for evaluating climate sensitivity to atmospheric CO<sub>2</sub> enrichment, the IPCC’s projections are evaluated directly from its projected *exponential* growth in CO<sub>2</sub> concentration using the IPCC’s own *logarithmic* formula for equilibrium temperature change, yielding a *net-linear* range of projections.

*Equilibrium* change – final temperature response when the climate has settled down after an external perturbation – is greater than the *transient* change predicted by the UN. However, on the A2 scenario that we use, the difference by 2100 is just 0.5 C° (0.9 F°). Therefore, when “global-warming” profiteers say warming “in the pipeline” will go on for “thousands of years”, 0.5 C° of additional warming is all that they are talking about. **Monckton of Brencley**