

# Watts Up With That?

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## When Results Go Bad ...

Anthony Watts / November 29, 2009

### Guest post by Willis Eschenbach

One of the claims in this hacked CRU email saga goes something like “Well, the scientists acted like jerks, but that doesn’t affect the results, it’s still warming.”

I got intrigued by one of the hacked CRU emails, from the Phil Jones and Kevin Trenberth to Professor Wibjorn Karlen. In it, Professor Karlen asked some very pointed questions about the CRU and IPCC results. He got incomplete, incorrect and very misleading answers. Here’s the story, complete with pictures. I have labeled the text to make it clear who is speaking, including my comments.

From Jones and Trenberth to Wibjorn Karlen, 17 Sep 2008 (email # 1221683947).

“

*[Trenberth]Hi Wibjorn*

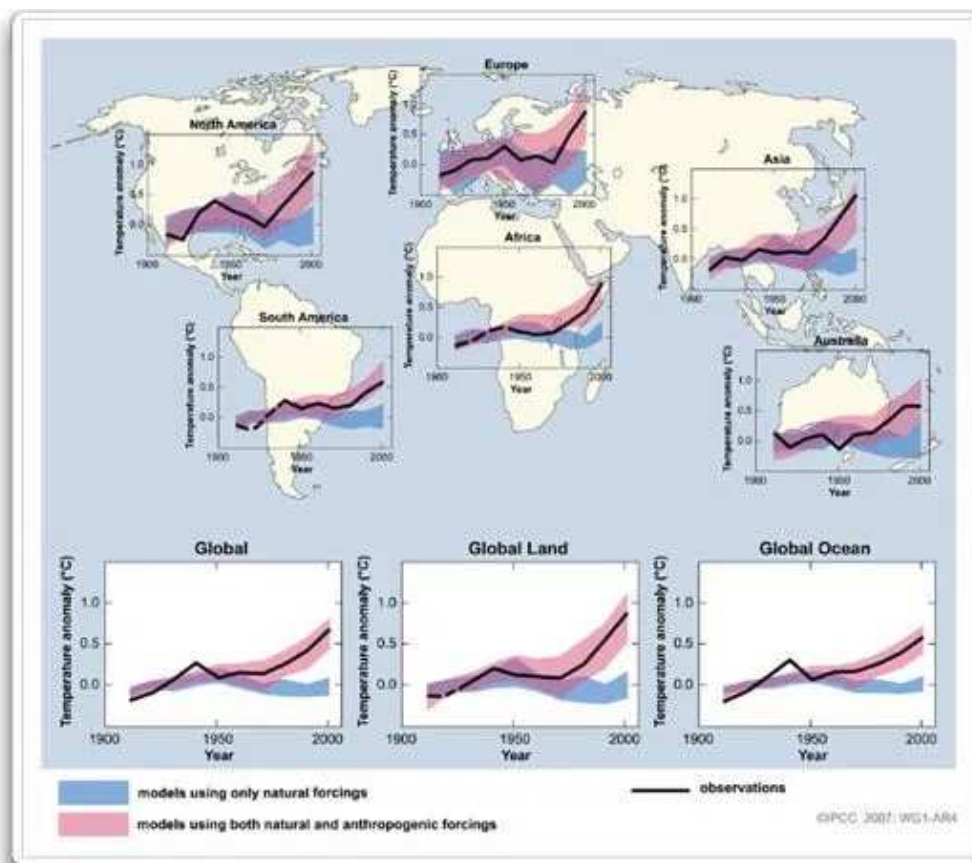
*It appears that your concern is mainly with the surface temperature record, and my co lead author in IPCC, Phil Jones, is best able to address those questions. However the IPCC only uses published data plus their extensions and in our Chapter the sources of the data are well documented, along with their characteristics. I offer a few more comments below (my comments are limited as I am on vacation and away from my office).*

[Karlen to Trenberth]Uppsala 17 September 2008,

Dear Kevin,

In short, the problem is that I cannot find data supporting the temperature curves in IPCC and also published in e.g. Forster, P. et al. 2007: Assessing uncertainty in climate simulation. Nature 4: 63-64.

[My comments] Here is the figure from Nature, Assessing uncertainty in climate simulations, Piers Forster et al., Nature Reports Climate Change , 63 (2007) doi:10.1038/climate.2007.46a



*Original Caption: Figure 1: Comparison of observed continental- and global-scale changes in surface temperature with results simulated by climate models using natural and anthropogenic forcings. Decadal averages of observations are shown for the period 1906 to 2005 (black line) plotted against the centre of the decade and relative to the corresponding average for 1901–1950. Lines are dashed where spatial coverage is less than 50%. Blue shaded bands show the 5–95% range for 19 simulations from five climate models using only the natural forcings due to solar activity and volcanoes. Red*

*shaded bands show the 5–95% range for 58 simulations from 14 climate models using both natural and anthropogenic forcings. SOURCE: <http://www.nature.com/climate/2007/0709/full/climate.2007.46a.html>*

Here is the IPCC figure he is referring to, Fig. 9.12, once again with the black lines showing the instrumentally measured temperatures:

*Original Caption: Figure 9.12. Comparison of multi-model data set 20C3M model simulations containing all forcings (red shaded regions) and containing natural forcings only (blue shaded regions) with observed decadal mean temperature changes (°C) from 1906 to 2005 from the Hadley Centre/Climatic Research Unit gridded surface temperature data set (HadCRUT3; Brohan et al., 2006). The panel labelled GLO shows comparison for global mean; LAN, global land; and OCE, global ocean data. Remaining panels display results for 22 sub-continental scale regions (see the Supplementary Material, Appendix 9.C for a description of the regions)....*

Note that around the globe, temperatures are shown as rising from 1900 to about 1930, falling or staying level until the mid '70s, and then rising sharply

after that.

So these are the curves that Professor Karlen is attempting to reconstruct. Note that the IPCC chapter identifies these as “sub-continental regions” and shows separate data for ocean regions.

“ *[Karlen] In attempts to reconstruct the temperature I find an increase from the early 1900s to ca 1935, a trend down until the mid 1970s and so another increase to about the same temperature level as in the late 1930s.*

*A distinct warming to a temperature about 0.5 deg C above the level 1940 is reported in the IPCC diagrams. I have been searching for this recent increase, which is very important for the discussion about a possible human influence on climate, but I have basically failed to find an increase above the late 1930s.*

*[Trenberth] This region, as I am sure you know, suffers from missing data and large gaps spatially. How one covered both can greatly influence the outcome.*

*In IPCC we produce an Arctic curve and describe its problems and character. In IPCC the result is very conservative owing to lack of inclusion of the Arctic where dramatic decreases in sea ice in recent years have taken place: 2005 was lowest at the time we did our assessment but 2007 is now the record closely followed by 2008.*

*Anomalies of over 5C are evident in some areas in SSTs but the SSTs are not established if there was ice there previously. These and other indicators show that there is no doubt about recent warming; see also chapter 4 of IPCC.*

[My comment] As I will show below, everything he says about the ocean and the sea ice and the sea surface temperatures (SSTs) is meaningless. The IPCC figure is solely for the land.

“ *[Karlen] In my letter to Klass V I included diagram showing the mean annual temperature of the Nordic countries (1890-ca 2001) presented on the net by the database NORDKLIM, a joint project between the meteorological institutes in the Nordic countries. Except for Denmark, the data sets show an increase*

*after the 1970s to the same level as in the late 1930s or lower. None demonstrates the distinct increase IPCC indicates. The trends of these 6 areas are very similar except for a few interesting details.*

*[Trenberth] Results will also depend on the exact region.*

[My comments] I cannot find the NORDKLIM graphic he refers to, so I have calculated it myself. I used the NORDKLIM dataset available at [http://www.smhi.se/hfa\\_coord/nordklim/data/Nordklim\\_data\\_set\\_v1\\_0\\_2002.xls](http://www.smhi.se/hfa_coord/nordklim/data/Nordklim_data_set_v1_0_2002.xls). I removed the one marine record from “Ship M”. To avoid infilling where there are missing records, I took the “first difference” of all of the available records for each year and averaged them. Then I used a running sum to calculate the average anomaly. I did not remove cities or adjust for the Urban Heat Island (UHI) effect. Here is the result:

You can see that, as Professor Karlen said, this does not show what the “Northern Europe” part of the IPCC graph shows. It is exactly as Professor

Karlen stated, in the NORDKLIM data it rises until 1930, there is a drop from 1930 to 1970, followed by an increase after the 1970s to a temperature slightly lower than the 1930s. (In fact, the rise from 1880 until 1930 dwarfs the recent rise since the 1970's). Here, for comparison, is a blowup of the "Northern Europe" graph from Fig. 9.12 above:

This claims that there is a full degree temperature rise from 1970 to 2000, ending way warmer than the 1930s. You can see why Professor Karlen is wondering how the IPCC got such a different answer.

“

*[Karlen] I have in my studies of temperatures also checked a number of areas using data from NASA. One, in my mind interesting study, includes all the 13 stations with long and decent continuously records north of 65 deg N.*

*The pattern is the same as for the Nordic countries. This diagram only shows 11-yr means of individual stations. A few stations such as Verhojans and Svalbard indicate a recent mean 11-year temperature increase up to 0.5 deg C above the late*

*1930s. Verhojansk, shows this increase but the temperature has after the peak temperature decreased with about 0.3 deg C during the last few years. The majority of the stations show that the recent temperatures are similar to the one in the late 1930s.*

*In preparation of some talks I have been invited to give, I have expanded the Nordic area both west and east. The area of similar change in climate is vast. Only a few stations near Bering Strait deviates (e.g. St Paul, Kodiak, Nome, located south of 65 deg. N).*

*My studies include Africa, a study which took me most of a summer because there are a large number of stations in the NASA records. I found 11 stations including data from 1898-1975 and 16 stations including 1950-2003.*

*The data sets could in a convincing way be spliced. However, I noticed that some persons were not familiar with 'splicing' technique so I have accepted to reduce the study to the 7 stations including data from the whole period between 1898-2003. The results are similar as to the spliced data set and also, surprisingly similar to the variability of the Nordic data.*

*Regression indicates a minor (if any) decrease in temperature (I have used all stations independent of location, city location or not).*

[Trenberth] Africa is notorious for missing and inaccurate data and needs careful assessment.

“

*[Karlen] Another example is Australia. NASA only presents 3 stations covering the period 1897-1992. What kind of data is the IPCC Australia diagram based on?*

*If any trend it is a slight cooling. However, if a shorter period (1949-2005) is used, the temperature has increased substantially.*

*The Australians have many stations and have published more detailed maps of changes and trends. There are more examples, but I think this is much enough for my present point:*



*How has the laboratories feeding IPCC with temperature records selected stations?*

*[Trenberth] See our chapter and the appendices.*

*[My comment] I have looked at these. The source for Fig. 9.1.2 is given as “(HadCRUT3; Brohan et al., 2006)”. HadCRUT3 is produced jointly by CRU and the Hadley Centre.*

“  
*[Karlen] I have noticed that major cities often demonstrate a major urban effect (Buenos Aires, Osaka, New York Central Park, etc). Have data from major cities been used by the laboratories sending data to IPCC? Lennart Bengtsson and other claims that the urban effect is accounted for but from what I read, it seems like the technique used has been a simplistic*

*[Trenberth] Major inner cities are excluded: their climate change is real but very local.*

*[My comment] It is true that the IPCC Chapter 3 FAQ says this:*

“  
*Additional warming occurs in cities and urban areas (often referred to as the urban heat island effect), but is confined in spatial extent, and its effects are allowed for both by excluding as many of the affected sites as possible from the global temperature data and by increasing the error range (the blue band in the figure).*

To check this claim, I took the list of temperature stations used by CRU (which I had to use an FOI to get), and checked them against the GISS list. The GISS list categorizes stations as “Urban” or “Rural”. It also uses satellite photos to categorize the amount of light that shows at night, with big cities being brightest. It puts them into three categories, A, B, and C. C is the brightest.

It turns out that there are over 500 cities in the CRU database that the GISS database categorizes as “Urban C”, the brightest of cities. These include, among many others:

*AUCKLAND, NEW ZEALAND*



*BANGKOK METROPOLIS, THAILAND*

*BARCELONA, SPAIN*

*BEIJING, CHINA*

*BRASILIA, BRAZIL*

*BRISBANE, AUSTRALIA*

*BUENOS AIRES, ARGENTINA*

*CHRISTCHURCH, NEW ZEALAND*

*DHAKA, BANGLADESH*

*FLORENCE, ITALY*

*GLASGOW, UK*

*GUATEMALA CITY, GUATEMALA*

*HANNOVER, GERMANY*

*INCHON, KOREA*

*KHARTOUM, SUDAN*

*KYOTO, JAPAN*

*LISBON, PORTUGAL*

*LUXOR, EGYPT*

*MARRAKECH, MOROCCO*

*MOMBASA, KENYA*

*MOSKVA, RUSSIAN FEDERA*

*MOSUL, IRAQ*

*NAGASAKI, JAPAN*

*NAGOYA, JAPAN*

*NICE, FRANCE*

*OSAKA, JAPAN*

*PRETORIA, SOUTH AFRICA*

*RIYADH, SAUDI ARABIA*

*SAO PAULO, BRAZIL*

*SEOUL, KOREA*

*SHANGHAI, CHINA*

*SINGAPORE, SINGAPORE*

*STOCKHOLM, SWEDEN*

*TEGUCIGALPA, HONDURAS*

*TOKYO, JAPAN*

*VALENCIA, SPAIN*

*VOLGOGRAD, USSR*

So the CRU is using Tokyo? Beijing? Seoul? Shanghai? Moscow? Their claim is entirely false. In other words, once again the good folk of the CRU are blowing smoke. I can understand why it took me a Freedom of Information request to get the station list.

“

*[Karlen] Next step has been to compare my results with temperature records in the literature. One interesting figures is published by you in:*

*Trenberth, K., 2005: Uncertainty in Hurricanes and Global Warming. Science 308: 1753-1754.*

*As you obviously know, the recent increase in temperature above the 1940s is minor between 10 deg N and 20 deg N and only slightly larger above the temperature maximum in the early 1950s. Both the increases in temperature in the 1930s and in the 1980s to 1990s is of similar amplitude and similar steepness, if any difference possibly slightly less steep in the northern area than in the southern (the eddies slow down the warm water transport).*

*Your diagram describes a limited area of the North Atlantic because you are primarily interested in hurricanes. The complexity of sea surface temperature increases and decreases is seen in e.g. Cabanes, C, et al 2001 (Science 294: 840-842).*

*[Trenberth] As we discuss, there is a lot of natural variability in the North Atlantic but there is also a common component that relates to global changes. See my GRL article with Shea for more details. Trenberth, K. E., and D. J. Shea, 2006: Atlantic hurricanes and natural variability in 2005. Geophys. Res. Lett., 33, L12704, doi:10.1029/2006GL026894.*

*[Karlen] One example of sea surface temperature is published by:*

*Goldenberg, S.B., Landsea, C.W., Mestas-Nuoez, A.M. and Gray, W.M., 2001: The recent increases in Atlantic hurricane activity: causes and implications. Science 293: 474-479.*

*Again, there is a marked increase in temperature in the 1930s and 1950s (about 1 deg C), a decrease to approximately the level in the 1910s and thereafter a new increase to a temperature slightly below the level in the 1940s.*

*One example of published data not supporting a major temperature increase during recent time is: Polyakov, I.V., Bekryaev, R.V., Alekseev, G.H., Bhatt, U.S., Colony, R.L., Johnson, M.A., Maskhtas, A.P. and Walsh, D., 2003: Variability and Trends of Air Temperature and Pressure in the Maritime Arctic, 1875-2000. Journal of Climate: Vol. 16 (12): 2067-2077.*

*He included many more stations than I did in my calculation of temperatures N 65 N, but the result is similar. It is hard to find evidence of a drastic warming of the Arctic.*

*It is also difficult to find evidence of a drastic warming outside urban areas in a large part of the world outside Europe. However the increase in temperature in Central Europe may be because the whole area is urbanized (see e.g. Bidwell, T., 2004: Scotobiology – the biology of darkness. Global change News Letter No. 58 June, 2004).*

*So, I find it necessary to object to the talk about a scaring temperature increase because of increased human release of*

*CO2. In fact, the warming seems to be limited to densely populated areas. The often mentioned correlation between temperature and CO2 is not convincing. If there is a factor explaining a major part of changes in the temperature, it is solar irradiation. There are numerous studies demonstrating this correlation but papers are not accepted by IPCC. Most likely, any reduction of CO2 release will have no effect whatsoever on the temperature (independent of how expensive).*

*[Trenberth] You can object all you like but you are not looking at the evidence and you need to have a basis, which you have not established. You seem to doubt that CO2 has increased and that it is a greenhouse gas and you are very wrong. But of course there is a lot of variability and looking at one spot narrowly is not the way to see the big picture.*

[My comment] Professor Karlen was quite correct. The claims made by the CRU, and repeated in the IPCC document, were false. Karlen was looking at the evidence.

“  
*[Karlen] In my mind, we have to accept that it is great if we can reduce the release of CO2 because we are using up a resource the earth will be short of in the future, but we are in error if we claims a global warming caused by CO2.*

*[Trenberth] I disagree.*

[My comment] No comment.

“  
*[Karlen] I also think we had to protest when erroneous data like the claim that winter temperature in Abisko increased by 5.5 deg C during the last 100 years. The real increase is 0.4 deg C. The 5.5 deg C figure has been repeated a number of times in TV-programs. This kind of exaggerations is not supporting attempts to save fossil fuel.*

*I have numerous diagrams illustrating the discussion above. I don't include these in an e-mail because my computer can only handle a few at a time. If you would like to see some, I can send them by air mail.*

*I am often asked about why I don't publish about my views. I have. Just one example of among 100 other I could select is: Karlen, W., 2001: Global temperature forces by solar irradiation and greenhouse gases? *Ambio* 30(6): 349-350.*

*Yours sincerely*

*Wibjorn,*

*[Trenberth] I trust that Phil Jones may also respond*

*From: P.Jones*

*To: trenbert*

*Subject: Re: Climate*

*Date: Wed, 17 Sep 2008 16:39:07 +0100 (BST)*

*Cc: Wibjorn Karlen*

*[Jones to Professor Karlen, same email]Wibjorn,*

*I'm in Athens at the moment. Unless you're referring specifically to the Arctic the temperature curves in IPCC Ch 3 all include the oceans.*

[My comment] Absolutely not. The legend for Fig. 9.1.2 (see above) says “(see the Supplementary Material, Appendix 9.C for a description of the regions)” Appendix 9.C in turn describes the calculations:

“  
6. Apply land/ocean mask on observations. Plots describing observed changes in land or ocean areas were based on observed data that was masked to retain land or ocean data only (necessary to remove islands and marine stations not existent in models). This masking was performed as in Step 3, using the land area fraction data from the CCSM3 model.

Note that the ocean is entirely masked out of the observations.

And the regions are described as:

“

### *Note 2: List of Regions*

*The regions are defined as the collection of rectangular boxes listed for each region. The domain of interest (land and ocean, land, or ocean) is also given.*

#### *REGION, DESIGNATOR, COVERAGE, DOMAIN*

*Global, GLO, 180W to 180E, 90S to 90N, land and ocean*

*Global Land, LAN, 180W to 180E, 90S to 90N, land*

*Global Ocean, OCE, 180W to 180E, 90S to 90N, ocean*

*North America, ALA, 170W to 103W, 60N to 72N, land*

*North America, CGI, 103W to 10W, 50N to 85N, land*

*North America, WNA, 130W to 103W, 30N to 60N, land*

*North America, CNA, 103W to 85W, 30N to 50N, land*

*North America, ENA, 85W to 50W, 25N to 50N, land*

*South America, CAM, 116W to 83W, 10N to 30N, land*

*South America, AMZ, 82W to 34W, 20S to 12N, land*

*South America, SSA, 76W to 40W, 56S to 20S, land*

*Europe, NEU, 10W to 40E, 48N to 75N, land*

*Europe, SEU, 10W to 40E, 30N to 48N, land*

*Africa, SAR, 20W to 65E, 18N to 30N, land*

*Africa, WAF, 20W to 22E, 12S to 18N, land*

*Africa, EAF, 22E to 52E, 12S to 18N, land*

*Africa, SAF, 10E to 52E, 35S to 12S, land*

*Asia, NAS, 40E to 180E, 50N to 70N, land*

*Asia, CAS, 40E to 75E, 30N to 50N, land*

*Asia, TIB, 75E to 100E, 30N to 50N, land*

*Asia, EAS, 100E to 145E, 20N to 50N, land*

*Asia, SAS, 65E to 100E, 5N to 30N, land*

*Asia, SEA, 95E to 155E, 11S to 20N, land*

*Australia, NAU, 110E to 155E, 30S to 11S, land*

*Australia, SAU, 110E to 155E, 45S to 30S, land*

So no, that excuse won't wash. Once again Professor Karlan is quite correct. The observations simply don't match the CRU/IPCC claims. Phil Jones' story about the regions including the ocean is false.

“  
*[Jones] Fennoscandia is just a small part of the NH. When I'm back next week, I'll be able to calculate the boxes that encompass Fennoscandia, so you can compare with this region. As you're aware Anders did lots of the update work in 2001-2002 and he included all the NORDKLIM data. I can send you a list of the Fennoscandian data if you want – either the sites used or their data as well.*

*I guess you're attachments are in your direct email, which I come to later.*

*One final thing – we are getting SST data in from some of the new sea-ice free parts of the Arctic. We are not using these as we've yet to figure out how to as we don't have normals for these 'mostly covered by sea ice in the 1961-90' areas.*

*Cheers*

*Phil*

”

[My comments] Now, I have not taken a stand on whether the machinations of the CRU extended to actually altering the global temperature figures. It seems quite clear from Professor Karlan's observations, however, that they have gotten it very wrong in at least the Fennoscandian region. Since this region has very good records and a lot of them, this does not bode well for the rest of the globe ...

My best to everyone,



W.

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Tom Nelson has been busy slogging through the over 500o emails in CG2, kudos to him. Here's what he has collected so far: A list of my January 6, 2012  
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