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Climategate Science Scandal of the Century

The World's Most Influential Climate Scientists Get Caught "Fudging" the Data

By Matt Sullivan / Rock Creek Free Press

Climategate is shaping up to be the biggest science scandal in a generation. Given that the theory of Anthropogenic Global Warming (AGW) is being used to argue for radical changes in the economic and energy policies of every government on earth, affecting literally trillions of dollars of tax and economic policy, the stakes literally could not be higher. And the scientists involved in the scandal are the world's top climate scientists; the driving forces behind the UN's IPCC (Inter Governmental Panel on Climate change).

In mid-November, someone anonymously uploaded a ZIP file to the internet containing over a thousand e-mails and other data and program source code files totaling over 61MB lifted from the servers of the top British Climate Research Unit (CRU) at the University of East Anglia. It is not clear if the leak is the work of an outside hacker or the work of a whistle-blower from within.

While the leak was immediately a big story on the internet, most corporate-controlled media outlets initially attempted to downplay the controversy. For the first few weeks, the major TV outlets wouldn't even report the story. In fact, the BBC received the leaked documents first in October, but decided to sit on the story. The one outlet that did promote the story was FOX News, probably because the story fit their existing editorial slant and GOP talking points.

Most corporate print and on-line sources, such as TIME, Huffington Post, The Atlantic, and many others have attempted to downplay the controversy, attributing the seemingly damning quotes from the e-mails to "innuendo and smear campaigns" or saying that they were "taken out of context". White House spokesman Gibbs even characterized the flap as "silly".

Unfortunately for them, the archive of over 1000 e-mails provides ample context for the damning quotes and you don't need to be a scientist to recognize when people are discussing the fudging of results, destruction of data and underhanded manipulation of the peer-review process. Also unfortunately for them, the more you do know about the science, the more damning the revelations become. This controversy is not going away.

The senders and recipients of the e-mails and data streams include the top climate scientists in the UK and the US, including researchers at CRU, NASA, and Penn State. They represent almost half of the scientists forming the UN IPCC. Two key figures involved are Dr Michael Mann of Penn State, author of the famed "Hockey Stick" graph (more about that later) and Dr Phil Jones of East Anglia CRU, who holds a key position within the UK Met Office which selects scientists for the UN IPCC.

Other scientists include CRU researcher Keith Briffa; Ben Santer, who was responsible for rewriting key passages in the IPCC's 1995 report; Kevin Trenberth, who pushed the IPCC into scare mongering over hurricane activity (since discredited); and Gavin Schmidt, right-hand man to Al Gore's ally Dr James Hansen, whose own Goddard Institute for Space Studies (GISS) record of surface temperature data is second in importance only to that of the CRU itself.

The e-mails make it clear that the scientists closely coordinate their activities and work together in a

collegial manner. They consider themselves to all be "on the same team" and in fact they refer to themselves as "the Team" or the "Hockey Team".

The Climategate scandal has already ended the careers of at least two top climatologists. The head of the CRU and author of several incriminating e-mails, Phil Jones, has stepped down "temporarily" from his post while the University of East Anglia conducts an investigation. Stateside, Pennsylvania State University announced it would conduct its own investigation of head climatologist Michael Mann. Regardless of the outcome of the investigations, it is unlikely that either man will survive, reputation intact. In fact, they may eventually face criminal charges, but I'm getting ahead of myself.

Background

Unless you've been living under a rock, you know that the world faces imminent disaster. Glaciers are melting, deserts are expanding and soon you'll be able to book a tropical vacation to the North Pole. Not quite, but you get the point. The theory of Anthropogenic Global Warming posits that this is all due to human influence. By burning coal and oil, humans have increased the CO2 concentration in the atmosphere (from about 0.028% centuries ago to about 0.038% today) which has driven up the global temperature due to the "green house effect".

No one disputes that the climate is changing. After all, 10,000 years ago, during the last Ice Age, glaciers as much as a mile thick covered much of North America. About 1,000 years ago, during the Medieval Warm Period (MWP) wine grapes were grown in Europe up to 300 miles farther north than present day, and the Vikings were able to settle and grow crops in Greenland. More recently, the Little Ice Age (LIA) was a period of cooling that lasted several hundred years until the 19th century, when the current period of global warming began. So, there is no dispute that the climate does change and is changing all the time.

There is not even much dispute about the current direction of change; the climate does appear to be getting warmer. While there will inevitably be peaks and valleys along the way, the general temperature trend is slowly up, on the order of 1 degree Centigrade per century. The real question is: how much of the current warming trend is due to human influence, and what, if anything, can or should we do about it?

If climate change is mostly due to man-made CO2 in the atmosphere, then, perhaps, we could do something about it, but if the climate is changing of its own accord, then any effort to curb CO2 would be tragically misdirected. Worse, the fixation on CO2 will have directed attention and resources away from other real issues, like hunger, poverty, healthcare, pollution, (name your cause).

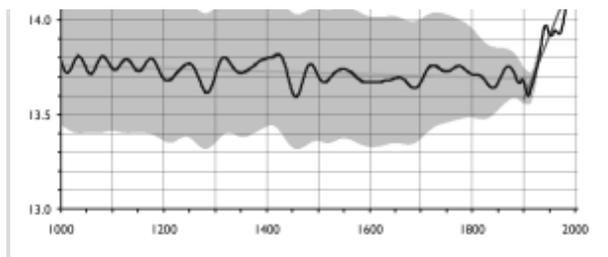
So this is the crucial question: How much of the current global warming is due to increased CO2 and how much is natural and beyond our control?

Back to Climategate

The scientists involved in the Climategate scandal are the very ones who have attempted to prove the link between CO2 and global warming. The main tool they have used to demonstrate a link is a variation on the famous "Hockey Stick" graph that Al Gore made the centerpiece of his movie, "An Inconvenient Truth". The Hockey Stick, created by Dr Mann of Penn State, is a graph of global temperature plotted over the span of the last 1000 years. The graph is very dramatic because it shows past temperatures basically flat until 1900 when the graph takes a turn up, then dramatically higher for the last few decades.



When you compare this climate Hockey Stick graph with a graph of atmospheric CO2 levels, which follows an almost identical pattern, flat for centuries then rising ever steeper after 1900; BINGO! They match! Proof,

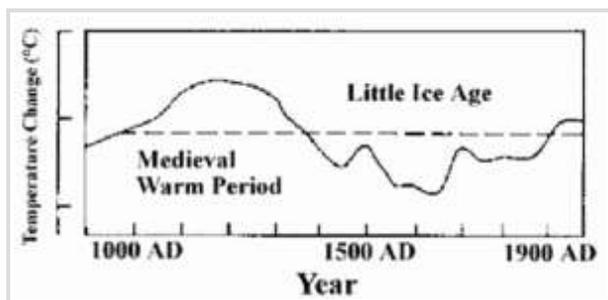


they say, that CO2 is causing the warming.

There is only one problem. The actual record of temperature looks nothing at all like the Hockey Stick suggests. For one thing, the Medieval Warm Period, a thousand years ago, when temperatures were higher than they are today, has been completely eliminated, and the Little Ice Age is also reduced significantly. Even more recent climate anomalies, such as the

extraordinarily warm decade of the 1930s (remember the dustbowl?) have been erased from the data as well. (Actually, as the e-mails show, the 30s "blip" is in the data; it's simply been erased from the graph.)

Here is a graph of what we used to think the temperature record looked like, from the IPCC's own publications in 1990:



The CO2 website, www.co2science.org, lists papers by more than 750 scientists from more than 400 institutions in the peer-reviewed literature that provide hard evidence that the MWP was real, was global, and was warmer than the present.

The scientists, Jones and Mann, contend that they are justified in rewriting the temperature record based on new data gathered from tree rings and other "proxies". The theory is that the growth rings of certain trees can be used to deduce the temperature in the past, i.e. that

tree data can be used as a proxy for temperature.

The idea that temperature can be deduced from tree rings, when tree growth is affected by so many other factors, might seem dubious, but Team members were able to match this tree-ring proxy data to the measured temperature history pretty well, at least for the period where thermometer data is available, up to about 1960... but then there is a problem. After about 1960 the tree-ring predicted temperatures, no longer match the actual measured temperatures and the divergence between the tree-ring predictions and real temperatures continues to increase for more recent measurements.

But wait, if the tree-ring proxy isn't valid after 1960, what makes us think it is a valid proxy for older climates? After all, it is the tree-ring data, primarily, that was used to justify eliminating the MWP from the record. If you can't eliminate the MWP then today's warm temperatures are no longer unprecedented. More than that, the invalidity of the tree-ring data disproves the supposed relationship between CO2 and a warming climate.

The MWP is not the only inconvenient fact of climate history being ignored by the "Team". By concentrating on only the last one or two thousand years, they ignore the fact, well established in the scientific literature, that most of the last 11,000 years since the end of the last Ice Age, have been warmer — often considerably warmer — than the present. The Bronze Age and the Roman era, like the MWP were both warmer than the present. If we look even farther back in time, each of the past four interglacial warm periods was up to 6 C° (11 F°) warmer than the present.

So clearly, the scientists involved in this scandal are crucial to pushing the theory of Man-Made Global Warming. What the leaked e-mails reveal is shocking, and what is revealed in the source code of the leaked computer programs is even more so. First the leaked e-mails.

Leaked e-Mails

The e-mails reveal that the scientists:

- Manipulated the presentation of data in order to suggest a connection between temperature and CO2. An honest presentation would have invalidated the use of tree-ring proxies which purport to show that current temperatures are historically unprecedented.
- Conspired to delete e-mails relating to their role as key contributors to the IPCC's last report.
- Used their influence within the IPCC to prevent dissenting scientific opinion appearing within IPCC reports.
- Conspired, contrary to the rules of open, verifiable science, to conceal and then to destroy computer codes and data that had been legitimately requested by an external researcher.
- Mounted a smear campaign against scientific opponents via a website of their own creation (RealClimate.org) which purported to be a neutral forum for discussion, but in fact, was under their exclusive control.
- Interfered with the process of peer-review itself by leaning on journals to allow their friends rather than independent scientists to review their papers.
- Abused the peer review process to make sure that no dissenting scientific opinion ever saw the light of day. And when a dissenting paper did get published, pressured the journal into firing the responsible editor
- Tampered with their own data to conceal inconsistencies and errors.
- Expressed alarm that, contrary to their predictions, and their public pronouncements, global temperatures had not risen appreciably for 15 years, and had, according to their own data, been falling for nine years.

Excerpts of Troubling e-mails

In an e-mail from 1999, Jones refers to one of Mann's studies from the prominent journal Nature in a discussion of his own data:

"I've just completed Mike's Nature trick of adding in the real temps to each series for the last 20 years (i.e. from 1981 onwards) and from 1961 for Keith's to hide the decline."

If the goal is to prove a relationship between CO2 and temperature, the MWP must be eliminated. Since they used tree-ring data to justify erasing the MWP the validity of using tree rings as a proxy for temperature must be protected. That is what's meant by "hide the decline"; to cover-up the failure of the tree-ring proxy data after 1960.

In this Oct. 2009 message from Kevin Trenberth, head of the Climate Analysis Section, NCAR New Zealand to Michael Mann he expresses doubts about the data.

"The fact is that we can't account for the lack of warming at the moment and it is a travesty that we can't. The CERES data published in the August BAMS 09 supplement on 2008 shows there should be even more warming: but the data are surely wrong. Our observing system is inadequate."

While privately they admit their system is inadequate and their inability to explain lack of warming is "a travesty", publicly they continued to make statements that the present decade is the "warmest ever," and that global warming "science is settled".

They discuss how to manipulate the IPCC process in a July 2004 e-mail, sent to Mann from Jones. The topic is a pair of papers that criticize the case for man-made global warming; Jones wrote that he and his colleagues would be sure to keep the papers out of consideration for the forthcoming climate assessment by the IPCC, "even if we have to re-define what the peer-review literature is."

In this message from Mann to Jones, June 2003, they discuss how to "contain" the Medieval Warm Period.

...“Phil and I have recently submitted a paper using about a dozen NH [northern hemisphere] records that fit this category, and many of which are available nearly 2K back—I think that trying to adopt a timeframe of 2K, rather than the usual 1K, addresses a good earlier point that Peck made w/ regard to the memo, that it would be nice to try to “contain” the putative “MWP”, even if we don’t yet have a hemispheric mean reconstruction available that far back.”

Mann and Jones discuss ways to pressure an academic journal Climate Research to stop publishing submissions from climate skeptics, with Mann suggesting that they consider encouraging colleagues not to submit papers to the journal until it changes its editorial stance.

This message is from Mann to Jones, March 2003:

...“This was the danger of always criticising the skeptics for not publishing in the “peer-reviewed literature”. Obviously, they found a solution to that—take over a journal! So what do we do about this? I think we have to stop considering “Climate Research” as a legitimate peer-reviewed journal. Perhaps we should encourage our colleagues in the climate research community to no longer submit to, or cite papers in, this journal. We would also need to consider what we tell or request of our more reasonable colleagues who currently sit on the editorial board...What do others think?”

“I will be emailing the journal to tell them I’m having nothing more to do with it until they rid themselves of this troublesome editor.”“It results from this journal having a number of editors. The responsible one for this is a well-known skeptic in NZ. He has let a few papers through by Michaels and Gray in the past. I’ve had words with Hans von Storch about this, but got nowhere. Another thing to discuss in Nice!”

Jones also wrote repeatedly about rebuffing requests by climate skeptics for raw temperature data from CRU. In this message he encourages his colleagues to delete e-mails concerning a Freedom of Information (FOI) request for the data.

The following is a May 2008 message from Jones to Mann with the subject “IPCC & FOI”:

Can you delete any emails you may have had with Keith re AR4?
Keith will do likewise. He’s not in at the moment - minor family crisis.
Can you also email Gene and get him to do the same? I don’t have his new email address.
We will be getting Caspar to do likewise.
I see that CA claim they discovered the 1945 problem in the Nature paper!!

Leaked Source Code

Many megabytes of computer source code files were released with the e-mails. They comprise the programs that were used to both “filter” the raw climate data, and then use the processed data to produce charts and graphs, including the Hockey Stick graph and others. Within the source code are many remarks, or notations left by the programmers explaining the purpose of various bits of code.

Quotes from the source code:

“REM Uses ‘corrected’ MXD [proxy data from tree-rings] – but shouldn’t usually plot past 1960 because these will be artificially adjusted to look closer to the real temperatures.

‘In two other programs, briffa_Sep98_d.pro and briffa_Sep98_e.pro, the “correction” is bolder by far. The programmer (Keith Briffa?) entitled the “adjustment” routine “Apply a VERY ARTIFICIAL correction for decline!!”

Here's the "fudge factor" code:

Note that the words "fudge factor" actually appear in the code as released.

```
<'yrloc=[1400,findgen(19)*5.+1904]
'valadj=[0.,0.,0.,0.,0.,-0.1,-0.25,-0.3,0.,-
0.1,0.3,0.8,1.2,1.7,2.5,2.6,2.6,2.6,2.6]*0.75 ; fudge factor
```

These two lines of code effectively create a "fudge factor" table that looks like this:

This fudge factor table serves the dual purpose of reducing the temperature "blip" of the 1930's as well as producing a dramatic "Hockey Stick" out of whatever raw data you feed into it.

Yrloc	valadj	Yrloc	valadj
1400	0	1949	0.3
1904	0	1954	0.8
1909	0	1959	1.2
1914	0	1964	1.7
1919	0	1969	2.5
1924	-0.1	1974	2.6
1929	-0.25	1979	2.6
1934	-0.3	1984	2.6
1939	0	1989	2.6
1944	-0.1	1994	2.6

Conclusion

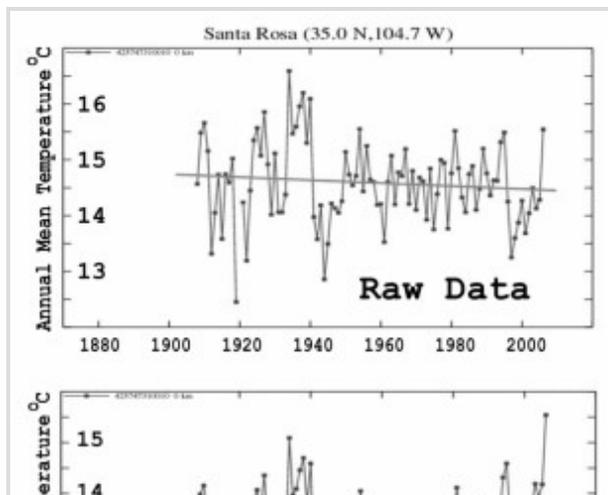
The evidence of misbehavior and scientific fraud by this group of elite climate scientists is plain. There is little chance that these scientists will recover their reputations.

So what? We have a small group of climate scientists caught red-handed falsifying data. Surely that's not enough to throw out the whole Anthropogenic Global Warming theory. Is it?

This is not just some small random group of climatologists. This is "the Team", the top of the heap, the principal researchers at the top institutions proposing and providing evidence for the AGW theory. These are the very people behind the data and graphs used by Al Gore and the IPCC to promote the world-wide carbon trading scheme, carbon taxes and other regulations.

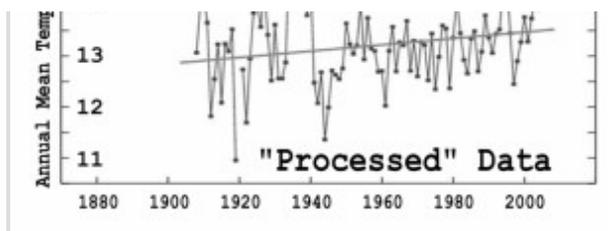
This scandal affects just one set of data. Don't we have other independent data that backs up the AGW claim?

Unfortunately, there are only four global temperature datasets in the world: two from the Earth's surface and two from satellites. The satellite data is not in question, but it goes back only about 35 years. It shows a slow and steady rise in temperature.



The two terrestrial data sets are Professor Jones' dataset from the Climate Research Unit, in collaboration with the Hadley Center for Forecasting at the UK Meteorological Office and Professor James Hansen's dataset at NASA's Goddard Institute for Space Studies (GISS), in collaboration with NOAA.

The leaked e-mail make clear that there is very close collusion between the principal figures at CRU in East Anglia and both NASA and NOAA. The climate researchers at these establishments are all members of the Team. Professor Jones at the Climate Research Unit in the UK, Gavin Schmidt at NASA, and Tom Karl at NOAA are now known, from their e-mail correspondence, to be closely coordinating their results and collaborating to manipulate both the peer review



process and the UN IPCC.

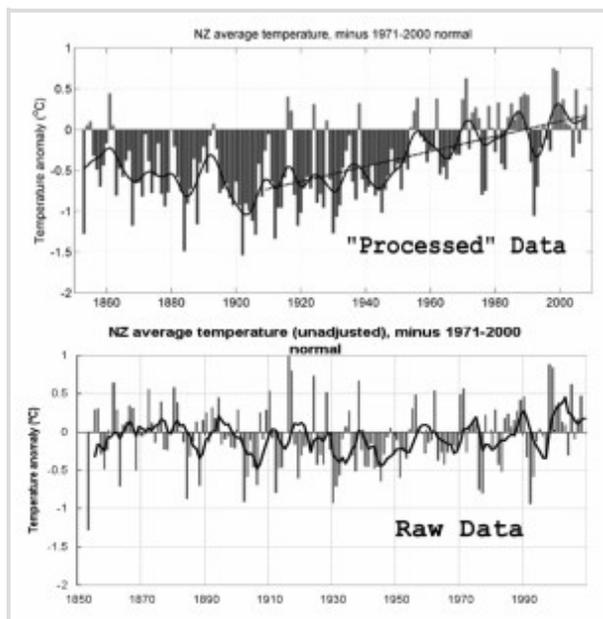
In fact, NASA was particularly embarrassed this summer when they were forced to admit that their temperature data for the US was altered (fudged?) to hide the fact, which they now admit, that 1934 was the hottest year on record in the US, not 1998 as NASA had claimed.

Don't individual countries have their own weather stations and their own independent climatologists? Can't they provide independent verification of the data?

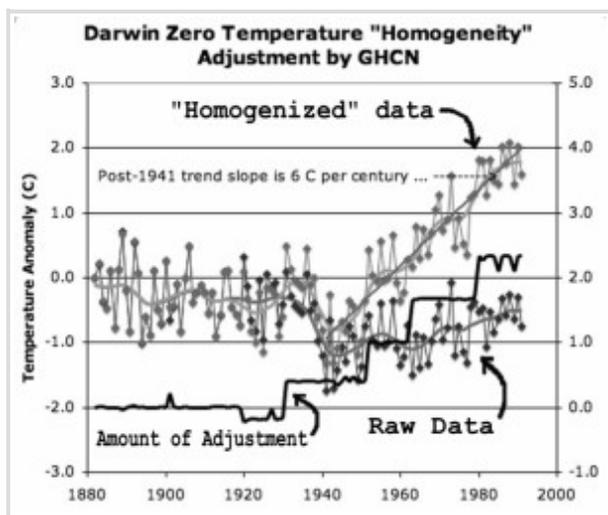
Yes, one would assume that sovereign countries could use their own climate datasets to verify or refute the findings now in question. Unfortunately, there is evidence that even some national data sets have been "fudged" as well.

For example, a citizen researcher in New Zealand, Richard Treadgold of the Climate Conversation Group, used publicly available temperature records to show that, contrary to the claims that NZ has been warming, in fact, NZ temperatures have been surprisingly stable for a century and a half.

An even more remarkable case comes to us from Australia. Climate researcher Willis Eschenbach took a look at the raw data to determine what effect the "homogenization" process at the NOAA's Global Historical Climate Network (GHCN) had on the temperature readings. What he found was remarkable. Decades old temperature data from stations all over Australia had been arbitrarily adjusted to create a warming trend out of thin air.



One



interesting example is weather station Darwin Zero. From the graph below you can see the data both before and after "homogenization". Particularly interesting is the "Amount of Adjustment" line in the graph below. It looks suspiciously like a version of the "fudge factor" we saw in the in the CRU source codes.

But didn't Al Gore say "the science is settled, AGW is a fact!"

That's just not the way science works. No scientific theory is ever "settled". A theory is only viable until it is disproved. You can have a hundred experiments that support a theory, but as soon as one comes along that

disproves it, it's done. Once disproved (falsified it's called) the theory is relegated to the dust bin of history, regardless of how many scientists believed it or how much money was spent on it.

What we witness in these e-mails are the desperate attempts of the East Anglia Climate Group to maintain the pretense that the data continued to support the theory that CO2 was linked to global temperature. But there were too many flaws beginning to show. Too many independent researchers were finding contradictions in the data. They just couldn't hold the theory together any longer.

In the coming months I expect there will be frantic attempts by supporters of AGW to tough it out. There are always true-believers who will never be able to accept that the theory is wrong. And, to complicate matters, the globe will probably continue to warm, just as it has been doing for the last three centuries. But remember, the question is not whether the climate is getting warmer; the AGW theory was that the warming is caused by man-made CO₂. The evidence for that has now been shown to be fraudulent.

For all practical purposes, as a scientific theory, Anthropogenic Global Warming due to man-made CO₂, is dead. But that doesn't mean the controversy is going away, after all there are billions of dollars and even more importantly, major global power structures with vested interests at stake. Now that efforts to regulate CO₂ have been stripped of the patina of scientific legitimacy, we may see the forces behind carbon taxes and carbon trading schemes attempt to force through legislation using raw political power. One sign that this is happening will be if the Climategate investigation is removed from the realm of science and given to yet another Warren Commission, or 9/11 Commission style political cover-up body.

Regardless of how you felt about AGW, there is no doubt that the focus on CO₂ has distracted environmentalists (and I consider myself one) from other pressing issues. Maybe now we can redirect our energies to the issues that have been forgotten in the rush to control CO₂. Issues such as deforestation, habitat destruction, chemical and radiological pollution, mountaintop removal, over-fishing and the many other real issues where we can make a real improvement in our quality of life.

Matt Sullivan has a degree in chemistry and worked in analytical and computational chemistry for ten years before working as a computer programmer and systems analyst for another ten. Matt is the editor and publisher of the Rock Creek Free Press in Washington, DC.

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