United States Senate Report
'Consensus' Exposed: The CRU Controversy

United States Senate Committee on Environment and Public Works

Minority Staff
February 2010

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EXECUTIVE SUMMARY

In this report, Minority Staff of the Senate Committee on Environment and Public Works examine key documents and emails from the University of East Anglia's Climatic Research Unit (CRU). We have concluded:

- ***The emails were written by the world's top climate scientists, who work at the most prestigious and influential climate research institutions in the world.***

- ***Many of them were lead authors and coordinating lead authors of UN's Intergovernmental Panel on Climate Change (IPCC) reports, meaning that they had been intimately involved in writing and editing the IPCC's science assessments. They also helped write reports by the United States Global Change Research Program (USGCRP).***

- ***The CRU controversy and recent revelations about errors in the IPCC's most recent science assessment cast serious doubt on the validity of EPA's endangerment finding for greenhouse gases under the Clean Air Act. The IPCC serves as the primary basis for EPA's endangerment finding for greenhouse gases.***

- ***Instead of moving forward on greenhouse gas regulation, the Agency should fully address the CRU controversy and the IPCC's flawed science.***

The scientists involved in the CRU controversy violated fundamental ethical principles governing taxpayer-funded research and, in some cases, may have violated federal laws. In addition to these findings, we believe the emails and accompanying documents seriously compromise the IPCC-backed "consensus" and its central conclusion that anthropogenic emissions are inexorably leading to environmental catastrophes.

An independent inquiry conducted by the UK's Information Commissioner has already concluded that the scientists employed by the University of East Anglia, and who were at the center of the controversy, violated the UK's Freedom of Information Act.[1] Another independent inquiry, headed by Sir Muir Russell, is investigating allegations that the scientists in the CRU scandal manipulated climate change data.[2]

In our view, the CRU documents and emails reveal, among other things, unethical and potentially illegal behavior by some of the world's preeminent climate scientists.[3]

CRU EMAILS SHOW SCIENTISTS

- *Obstructing release of damaging data and information;*
- *Manipulating data to reach preconceived conclusions;*
- *Colluding to pressure journal editors who published work questioning the climate science "consensus"; and*
- *Assuming activist roles to influence the political process.*

"The truth is that promoting science isn't just about providing resources—it's about protecting free and open inquiry. It's about ensuring that facts and evidence are never twisted or obscured by politics. It's about listening to what our scientists have to say even when it's inconvenient—especially when it's inconvenient." **-- President Barack Obama, December 20, 2008**

"The two MMs have been after the CRU station data for years. If they ever hear there is a Freedom of Information Act now in the UK, I think I'll delete the file rather than send to anyone. Does your similar act in the US force you to respond to enquiries within 20 days? - ours does ! The UK works on precedents, so the first request will test it. We also have a data protection act, which I will hide behind." **-- Phil Jones, former director of the University of East Anglia's Climatic Research Unit, February 2, 2005**

"It's no use pretending that this isn't a major blow. The emails extracted by a hacker from the climatic research unit at the University of East Anglia could scarcely be more damaging. . . . I'm dismayed and deeply shaken by them. . . . I was too trusting of some of those who provided the evidence I championed. I would have been a better journalist if I had investigated their claims more closely." **-- George Monbiot, columnist, The Guardian**

Glossary of Terms

CRU:	**University of East Anglia Climatic Research Unit, United Kingdom**
BBC:	**British Broadcasting Corporation**
IPCC:	**United Nations Intergovernmental Panel on Climate Change**
EPA:	**United States Environmental Protection Agency**
CRS:	**United States Congressional Research Service**
AR4:	**IPCC Fourth Assessment Report**
UN:	**United Nations**
MWP:	**Medieval Warm Period**
UCAR:	**University Corporation for Atmospheric Research**
CLA:	**Coordinating Lead Author**
NASA:	**National Aeronautics and Space Administration**
NOAA:	**National Oceanic and Atmospheric Administration**
DOE:	**United States Department of Energy**
TAR:	**IPCC Third Assessment Report**
NAO:	**North Atlantic Oscillation**
WMO:	**World Meteorological Organization**
UNEP:	**United Nations Environment Programme**
WMS:	**World Meteorological Society**
UNFCC:	**United Nations Framework Convention on Climate Change**
TSU:	**Technical Support Unit**
FOIA:	**Freedom of Information Act**
OSTP:	**Whitehouse Office of Science and Technology Policy**
FCA:	**False Claims Act**
GHG:	**Greenhouse Gas**
USGCRP:	**United States Global Change Research Program**
CCSP:	**United States Climate Change Science Program**
NRC:	**National Research Council**
GHCN:	**Global Historical Climatology Network**
OMB:	**United States Office of Management and Budget**
FOI:	**United Kingdom Freedom of Information Act**
LIA:	**Little Ice Age**
TSD:	**Technical Support Document for the EPA's Endangerment Finding**
GCM:	**Global Climate Model**

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Introduction

Background

On October 12, 2009, email correspondence and other information belonging to the University of East Anglia's Climatic Research Unit (CRU) were given to a reporter with the BBC network.[4] In mid-November, additional emails and documents were posted on a number of file servers, making it available to the broader public.[5] A message accompanying the material read, "We feel that climate science is too important to be kept under wraps. We hereby release a random selection of correspondence, code, and documents. Hopefully it will give some insight into the science and the people behind it."[6]

Thus far, no one has publicly denied the authenticity of the material, including the scientists whose names appear in the emails.[7] Some have alleged that the information was stolen via computer "hacking," yet no convincing evidence has emerged to support that claim.[8] Others have suggested the responsibility lies with an internal CRU source, who, as some have further speculated, was acting as a "whistleblower."[9]

An independent inquiry conducted by the UK's Information Commissioner has already concluded that the scientists employed by the University of East Anglia, and who are at the center of the controversy, violated the UK's Freedom of Information Act.[10] Another independent inquiry, headed by Sir Muir Russell, is investigating allegations that the scientists in the CRU scandal manipulated climate change data.[11]

After an initial review, the Minority Staff of the Senate Committee on Environment and Public Works believe the scientists involved violated fundamental ethical principles governing taxpayer-funded research and, in some cases, may have violated federal laws. Moreover, we believe the emails and accompanying documents seriously compromise the IPCC-based consensus and its central conclusion that anthropogenic emissions are inexorably leading to environmental catastrophes.

This report also provides a fact-based overview of the players and institutions involved in this scandal, as well as some preliminary analysis into whether taxpayer-funded scientists violated the law or traduced basic ethical principles governing taxpayer-funded research. We provide some initial analysis as to how the release of the documents affects domestic climate change policy—specifically, EPA's endangerment finding for greenhouse gases under the Clean Air Act. The report also will serve as the foundation for our continuing investigation into this matter in the weeks and months ahead.

Why this is important

The emails (and the data and computer code released to the public) were written by the world's top climate scientists, many of whom had been lead authors and contributing lead authors of various sections of the IPCC reports and were thus intimately involved in writing and editing the IPCC's science assessments. This is no small matter. As noted science historian Naomi Oreskes wrote, the "scientific consensus" of climate change "is clearly expressed in the reports of the Intergovernmental Panel on Climate Change."[12] According to one top

Obama Administration official, the IPCC is "the gold standard for authoritative scientific information on climate change because of the rigorous way in which they are prepared, reviewed, and approved."[13]

These scientists work at the most prestigious and influential climate research institutions in the world. For example, Dr. Phil Jones was director of the CRU until he was forced to temporarily resign because of his role in the scandal. According to the Congressional Research Service (CRS), CRU is "among the renowned research centers in the world" on key aspects of climate change research. It also has "contributed to the scientific assessments of climate change conducted by the Intergovernmental Panel on Climate Change (IPCC)." CRU's CRUTEM3 is one of the key datasets of surface temperatures utilized by the IPCC in its Fourth Assessment Report.[14]

The IPCC's work serves as the key basis for climate policy decisions made by governments throughout the world, including here in the United States. A notable example is the EPA's endangerment finding for greenhouse gases from mobile sources under the Clean Air Act, issued in December.[15] As the finding states, "it is EPA's view that the scientific assessments" of the IPCC "represent the best reference materials for determining the general state of knowledge on the scientific and technical issues before the agency in making an endangerment decision."[16] In the finding's Technical Support Document (TSD), in the section on "attribution," EPA claims that climate changes are the result of anthropogenic greenhouse gas emissions and not natural forces. In this section, EPA has 67 citations, 47 of which refer to the IPCC.[17] The IPCC's work also provides the scientific basis for cap-and-trade bills considered in the House and now by the Senate. For example, H.R. 2454, the "American Clean Energy and Security Act of 2009," also known as Waxman-Markey, cites the IPCC and its work no fewer than five times to support the bill's various provisions.[18]

In short, the utility and probity of the IPCC process and its results are crucial to policymaking with respect to climate change here in the United States.

What does the material show?

What emerges from review of the emails and documents, which span a 13-year period from 1996 through November 2009, is much more than, as EPA Administrator Lisa Jackson put it, scientists who "lack interpersonal skills."[19] Rather, the emails show the world's leading climate scientists discussing, among other things:

- Obstructing release of damaging data and information;
- Manipulating data and knowingly using flawed climate models to reach preconceived conclusions;
- Colluding to pressure journal editors who published work questioning the climate science "consensus"; and
- Assuming activist roles to influence the political process.

The correspondence also reveals something significantly more nuanced than a "consensus" on the state of climate science. Contrary to repeated public assertions that the "science is settled," the emails show the world's leading climate scientists arguing over critical issues, questioning key methods and statistical techniques, expressing concerns about historical periods (such as whether the Medieval Warm Period [MWP]

was global in extent) and doubting whether there is "consensus" on the causes and the extent of climate change.

Consider, for example, the deputy director of the CRU, who wrote to a colleague warning against "the possibility of expressing an impression of more consensus than might actually exist." Stephen Hayward, Senior Fellow at the American Enterprise Institute, has noted that skepticism and doubt are "typical of what one might expect of an evolving scientific enterprise." Yet in this case, that there is doubt at all is significant because, as Hayward wrote, "these are the selfsame scientists who have insisted most vehemently that there is a settled consensus adhered to by all researchers of repute and that there is nothing left to debate."[20]

Given these facts, former Vice President Al Gore's dismissal of the controversy as "all sound and fury, signifying nothing," is baseless.[21] Observers from across the ideological spectrum recognize that the emails have unveiled a scandal of significant proportions. Even CRU's Phil Jones, a principal figure in the controversy, admitted that the emails "do not read well."

George Monbiot, a columnist for *The Guardian* (UK), and a leading exponent of the catastrophic global warming hypothesis, wrote, "Pretending that this isn't a real crisis isn't going to make it go away." "Nor is an attempt," he wrote further, "to justify the emails with technicalities. We'll be able to get past this only by grasping reality, apologising where appropriate and demonstrating that it cannot happen again."[22] Clive Crook, a senior editor for the *Atlantic*, shared Monbiot's outrage. "The closed-mindedness of these supposed men of science," wrote Crook, "their willingness to go to any lengths to defend a preconceived message, is surprising even to me. The stink of intellectual corruption is overpowering."

"Pretending that this isn't a real crisis isn't going to make it go away." "Nor is an attempt," he wrote further, "to justify the emails with technicalities. We'll be able to get past this only by grasping reality, apologising where appropriate and demonstrating that it cannot happen again."

At a minimum, considering the magnitude of the stakes involved—domestic and international climate policies that will cost consumers trillions of dollars and destroy millions of jobs—the matter is sufficiently serious to warrant closer scrutiny.[23] On this point we are not alone.

As noted earlier, the director of the CRU was forced to temporarily resign pending an internal CRU investigation.[24] Meanwhile, Penn State University is proceeding with an investigation into whether Dr. Michael Mann engaged in, participated in, either directly or indirectly, "any actions that seriously deviated from accepted practices within the academic community for proposing, conducting or reporting research or other scholarly activities" (Penn State cleared Dr. Mann of three other allegations leveled against him).[25] Rajendra Pachauri, chairman of the IPCC, after initially dismissing the seriousness of the emails, pledged that the IPCC would conduct its own investigation.[26]

On December 10, 2009, 27 Republican Senators sent a letter to UN Secretary-General Ban Ki-Moon, urging that the investigation occur independent of the UN and the IPCC.[27]

In addition, members from the House Select Committee on Energy Independence and Global Warming; the House Energy and Commerce Committee; and the Senate Commerce, Science, and Transportation Committee have pressed Congressional leaders and the Obama Administration to investigate the controversy.

SECTION 1: Inside the Email Trail[28]

"The research enterprise has itself been changing as science has become increasingly integrated into everyday life. But the core values on which the enterprise is based—honesty, skepticism, fairness, collegiality, openness—remain unchanged. These values have helped produce a research enterprise of unparalleled productivity and creativity. So long as they remain strong, science—and the society it serves—will prosper." **On Being a Scientist: Responsible Conduct in Research, the National Academy of Sciences, 1988**

As noted, the CRU controversy features emails from the world's leading climate scientists—emails that show behavior contrary to the practice of objective science and potentially federal law. We note at the outset an important distinction between, as Stephen Hayward put it, "utterly politicized scientists," such as those at the center of this controversy, and "more sober scientists" doing important work in the field of climatology. One of the motivations behind the Minority Report is to ensure that the CRU scandal does not "cast a shadow on the entire field," for, as Hayward noted, there are undoubtedly "a lot of unbiased scientists trying to do important and valuable work."

We agree with Hayward that this scandal "may represent a tipping point against the alarmists." And we agree wholeheartedly that the "biggest hazard to serious climate science all along was not so much contrarian arguments from skeptics, but rather the damage that the hyperbole of the environmental community would inflict on their own cause."[29]

The CRU emails portray the work and attitudes of leading climate scientists in a profoundly negative light. As William Anderson, a professor at Harvard University, has observed, these scientists:

"Refused to disclose their original data and their methods of analysis, threatening to destroy data rather than comply with freedom-of-information demands, as required by law. This action constitutes scientific malfeasance of the gravest type. Alone it is sufficient to discredit their entire enterprise."

Political Science, Concealing Data, Undermining Peer Review[30]

> "***I tried hard to balance the needs of the science and the IPCC, which were not always the same.***" Keith Briffa, Deputy Director of the CRU, April 29, 2007

Transparency and openness are essential to producing good science. In 2006, in a report examining the work of Professor Michael Mann, one of the central figures in the CRU controversy, the National Research Council stated:

> "Our view is that all research benefits from full and open access to published datasets and that a clear explanation of analytical methods is mandatory. Peers should have access to the information needed to reproduce published results, so that increased confidence in the outcome

> of the study can be generated inside and outside the scientific community."[31]

This clear and time-honored principle was under attack in the CRU emails. The evidence suggests these scientists had a bias toward concealing data and methods, and preventing scientists with contrary views from publishing their work in peer-reviewed journals. The UK's Chief Scientific Adviser, John Beddington, condemned this behavior, writing that, "I don't think it's healthy to dismiss proper scepticism. Science grows and improves in the light of criticism."[32]

Commenting on the CRU scandal, Ralph Cicerone, President of the National Academy of Sciences, wrote that such behavior "impedes science" and "breeds conflict." Further, he wrote that, "Clarity and transparency must be reinforced to build and maintain trust—internal and external—in science."[33] According to recent polling, the scientists' failure to follow Cicerone's exhortation has significantly eroded public trust in climate change science.[34]

The emails also raise a fundamental question: What, if any, are the boundaries between science and activism? Wherever one draws the line, many scientists confront, and engage in, the political process at some level. As the National Academy of Sciences wrote in "On Being a Scientist: Responsible Conduct in Research," "science and technology have become such integral parts of society that scientists can no longer isolate themselves from societal concerns."[35] We won't delve into this matter here; but we note that scientists who receive taxpayer funds are held to a different legal and ethical standard. For them, political or other sorts of activism are highly circumscribed.

Perhaps the statement that best exemplifies the unusual political tendency among the scientists in the CRU controversy came from Dr. Keith Briffa, the Deputy Director of the CRU, and lead author of the IPCC's Fourth Assessment Report, who wrote in one of the CRU emails, "***I tried hard to balance the needs of the science and the IPCC, which were not always the same.***" [Emphasis added] As one will see, with these scientists, the political needs of the IPCC usually came first.

As one reads through the emails, one can readily identify an effort to keep data and information under wraps. Consider, for example, an exchange between Phil Jones, former director of CRU, to Tom Wigley, of the University Corporation of Atmospheric Research (UCAR).[36] In an email to Wigley (with a cc to Ben Santer of DOE's Lawrence Livermore Laboratory), Jones discussed strategies to conceal data from a Freedom of Information Act request (FOIA), specifically the work of a colleague named 'Sarah':

> "If FOIA does ever get used by anyone, there is also IPR [intellectual property rights] to consider as well. **Data is covered by all the agreements we sign with people, so I will be hiding behind them**."

Wigley responded that 'Sarah' could "claim she had only written one tenth of the code and release every tenth line."

On May 29, 2008, Phil Jones went beyond "hiding behind" data by encouraging colleagues to delete emails related to work produced for the IPCC's Fourth Assessment Report (AR 4). In an email to Dr. Michael Mann, Jones wrote:

> "**Can you delete any emails you may have had with Keith re AR 4? Keith will do likewise…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."

In his reply, Mann wrote, "I'll contact Gene about this ASAP."

In an exchange on March 19, 2009, Jones and Ben Santer expressed outrage over the requirement imposed by the Royal Meteorological Society (RMS) that authors of its journals publicize their data. Santer wrote:

> "If **the RMS is going to require authors to make ALL data available**—raw data PLUS results from all intermediate calculations—**I will not submit any further papers to RMS journals**."

Jones responded with:

> "**I've complained about him to the RMS Chief Exec**. **If I don't get him to back down, I won't be sending any more papers to any RMS journals and I'll be resigning from the RMS**."

Along with apparently hiding data and information, the scientists complained that mainstream scientific journals were publishing work by so-called "skeptics" who disagreed with their views about the causes of climate change. William Anderson, a professor at Harvard University, wrote recently that, "Communications among some of the principal investigators [in the CRU controversy] suggest a conspiracy to prevent the publication of work at variance to their own." In addition, Anderson wrote, "they attempted to take action against editors and journals that published the work of their rivals."

Possibly the most egregious example of such behavior occurred in reaction to a paper published in the journal Climate Research in 2003. The paper posed a serious challenge to the conclusion reached in the so-called "hockey stick" temperature reconstruction by Professors Michael Mann, Raymond Bradley, and Malcolm Hughes. The hockey stick graph, which was featured prominently in the IPCC's Third Assessment Report in 2001, supported the conclusion that the 1990s, and 1998, were likely the warmest decade, and the warmest year, respectively, in at least a millennium. Dr. Sallie Balunias and Dr. Willie Soon, researchers at the Harvard-Smithsonian Center for Astrophysics, contested this conclusion, and many of the scientists in this scandal savaged them for doing so.[37]

Balunias and Soon reviewed more than 200 climate studies and "determined that the 20th century is neither the warmest century nor the century with the most extreme weather of the past 1000 years." Their study "confirmed that the Medieval Warm Period of 800 to 1300 A.D. and the Little Ice Age of 1300 to 1900 A.D. were worldwide phenomena not limited to the European and North American continents. While 20th century temperatures are much higher than in the Little Ice Age period, many parts of the world show the medieval warmth to be greater than that of the 20th century."[38]

The Harvard-Smithsonian study provoked strong criticism from Phil Jones, Michael Mann, and others.[39] In an email on

March 11, 2003, titled "Soon and Baliunas," Jones appears agitated, writing that he and his colleagues "should do something" about the Soon-Baliunas study, the quality of which he found "appalling":

> "**I think the skeptics will use this paper to their own ends and it will set paleo [climatology] back a number of years if it goes unchallenged**."[40]

Jones then went a step further, threatening to shun Climate Research until "they rid themselves of this troublesome editor."

That same day, Mann responded, complaining that the skeptics had "staged a bit of a coup" at Climate Research, implying that scientists who disagree with him could never get published in peer-reviewed literature solely on the merits of their work. Mann echoed Jones's suggestion to punish Climate Research by encouraging "our colleagues in the climate research community to no longer submit to, or cite papers in, this journal":

> "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..."

In April 2003, Timothy Carter with the Finnish Environment Institute suggested changes to the editorial process at Climate Research in an email to Tom Wigley, a scientist formerly with the University Corporation for Atmospheric Research (UCAR).[41] Noting communications with "Mike" (Michael Mann) the previous morning, Carter outlined specific changes and posited a review of the journal's "refereeing policy." He also wondered how to remove "suspect editors," presumably those who approve research by skeptics. In reply, Wigley described a campaign to discredit Climate Research through a letter signed by more than 50 scientists. He also mentioned Mann's approach to "get editorial board members to resign":

> "**One approach is to go direct to the publishers and point out the fact that their journal is perceived as being a medium for disseminating misinformation under the guise of refereed work**. **I use the word 'perceived' here, since whether it is true or not is not what the publishers care about -- it is how the journal is seen by the community that counts**. I think we could get a large group of highly credentialed scientists to sign such a letter -- 50+ people. Note that I am copying this view only to Mike Hulme and Phil Jones. **Mike's idea to get editorial board members to resign will probably not work -- must get rid of von Storch too, otherwise holes will eventually fill up with people like Legates, Balling, Lindzen, Michaels, Singer, etc.** I have heard that the publishers are not happy with von Storch, so the above approach might remove that

hurdle too."

Along with attempting to remove journal editors who held contrary views on climate science, the emails show that the scientists tried to prevent publication of papers they disagreed with. On July 8, 2004, Jones suggested that he and a colleague could keep the work of skeptics from appearing in the IPCC's Fourth Assessment report:

> **"I can't see either of these papers being in the next IPCC report. Kevin and I will keep them out somehow - even if we have to redefine what the peer-review literature is**!"

Even as the scientists attempted to undermine peer-review, they often assumed a "rapid response mode" when they read news reports they found objectionable. The most frenzied response came in reaction to an article by the BBC on October 9, 2009 titled, "What happened to global warming?"[42] In the piece, reporter Paul Hudson wrote: "For the last 11 years we have not observed any increase in global temperatures. And our climate models did not forecast it, even though man-made carbon dioxide, the gas thought to be responsible for warming our planet, has continued to rise."

On October 11, Narsimha Rao, a PhD candidate at Stanford University's Interdisciplinary Program in Environment and Resources, sent an email to Stephen Schneider, professor for Interdisciplinary Environmental Studies at Stanford, with the subject heading of "BBC U-Turn on climate." Given the skepticism highlighted in the BBC piece, Rao asked whether a "response" from "a scientist" is warranted:

> Steve, you may be aware of this already. **Paul Hudson, BBCs reporter on climate change, on Friday wrote that theres been no warming since 1998, and that pacific oscillations will force cooling for the next 20-30 years. It is not outrageously biased in presentation as are other skeptics views. BBC has significant influence on public opinion outside the US. Do you think this merits an op-ed response in the BBC from a scientist?**

The next day, Michael Mann expressed alarm over the BBC piece in an email to a distinguished list of climate scientists, including Tom Wigley (formerly with UCAR), Phil Jones (CRU), Ben Santer, (DOE-Lawrence Livermore), Kevin Trenberth (UCAR), Michael Oppenheimer (Princeton), Gavin Schmidt (NASA), James Hansen (NASA), Tom Karl (NOAA), and Stephen Schneider (Stanford). Describing the story as "extremely disappointing," Mann noted that the BBC correspondent who wrote the piece was "formerly a weather person at the UK Met Office,"[43] and he suggested that the UK's Met Office "have a say about this." Mann then recommended that he contact another BBC environment correspondent to ask "what's up here?":

> **extremely disappointing to see something like this appear on BBC. its particularly odd, since climate is usually Richard Black's beat at BBC (and he does a great job). from what I can tell, this guy was formerly a weather person at the Met Office. We may do something about this on**

> **RealClimate [website], but meanwhile it might be appropriate for the Met Office to have a say about this, I might ask Richard Black what's up here?**

At other times, Mann and his colleagues resembled campaign staffers in a war room. On May 16, 2003, in response to the Harvard-Smithsonian study that debunked the hockey stick graph, Mann grandiosely called on his "community" of fellow scientists to fight "a disinformation campaign" else they lose "this battle" with skeptics:

> **"that it is the responsibility of our entire community to fight this intentional disinformation campaign."**

Rather than accept the study in the open spirit of scientific debate, Mann denounced it as "an affront to everything we do and believe in…"

As the foregoing shows, Mann and his colleagues were not disinterested scientists. They acted more like a priestly caste, viewing substantive challenges to their work as heresy. And rather than welcoming criticism and debate as essential to scientific progress, they launched a campaign of petty invective against scientists who dared question their findings and methods. Mann and his colleagues cast their opponents as industry shills masquerading as scientists, savaging their reputations, while assuaging themselves that they and they alone possessed the truth.

Manipulating Data

"*I am not sure that this unusual warming is so clear in the summer responsive data. I believe that the recent warmth was probably matched about 1000 years ago*." Keith Briffa, Deputy Director, CRU, September 22, 1999

Along with concealing data, personally attacking scientific opponents, and undermining peer review, the scientists in this scandal appear to have manipulated data to fit preconceived conclusions. Perhaps the most infamous example of this comes from the "hide-the-decline" email. This email initially garnered widespread media attention, as well as significant disagreement over what it means. In our view, the email, as well as the contextual history behind it, appears to show several scientists eager to present a particular viewpoint—that anthropogenic emissions are largely responsible for global warming—even when the data showed something different.

Here is the email as written in 1999 by the CRU's Jones:

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

Jones's "trick" arose because of disagreement over the "hockey stick" temperature graph, authored by, among others, Dr. Michael Mann.[44] As is noted elsewhere in this report, the hockey stick showed a relatively straight shaft extending from 1000 AD to 1900, when a blade turns sharply upward, suggesting that warming in the 20th century was unprecedented, and caused by anthropogenic sources. The IPCC imputed great significance to the graph as it was featured on page 1 of the "Summary for

Policymakers" in its Third Assessment Report.

The Jones email has been the subject of competing interpretations. In defending himself, Jones said, "The word 'trick' was used here colloquially as in a clever thing to do. It is ludicrous to suggest that it refers to anything untoward."[45] Similarly, echoing Jones, Dr. John Holdren, President Obama's Science Adviser, asserted that "trick" merely means "a clever way to tackle a problem."[46] Both Holdren's and Jones's explanation of "trick" used in this context has evidentiary support.[47] Unfortunately, neither Jones nor Holdren addressed the "problem" that confronted Jones and his colleagues. The problem in this case is the so called "divergence problem." *The divergence problem is the fact that after 1960, tree ring reconstructions show a marked decline in temperatures, while the land-based, instrumental temperature record shows just the opposite* (more on this below).[48]

For some scientists, the divergence of data was a cause of great concern, but not necessarily for reasons scientific. For instance, IPCC author Chris Folland warned in an email that such evidence "dilutes the message rather significantly" that warming in the late 20th century relative to the last 1,000 years is "unprecedented":

> **A proxy diagram of temperature change is a clear favourite for the Policy Makers summary. But the current diagram with the tree ring only data somewhat contradicts the multiproxy curve and dilutes the message rather significantly**. We want the truth. Mike thinks it lies nearer his result (which seems in accord with what we know about worldwide mountain glaciers and, less clearly, suspect about solar variations). The tree ring results may still suffer from lack of multicentury time scale variance. This is probably the most important issue to resolve in Chapter 2 at present.

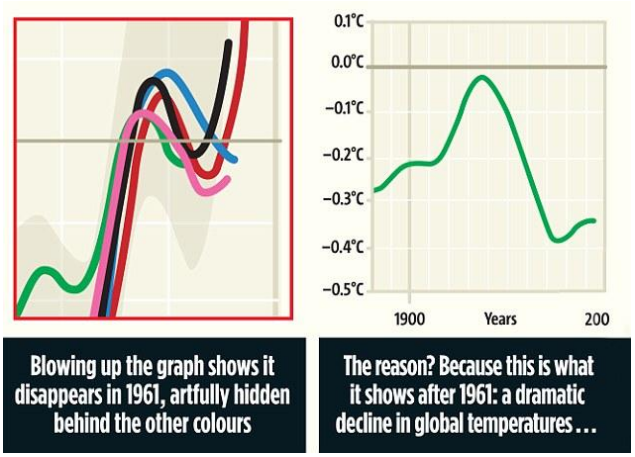
Specifically, Jones et al. expressed concern about a temperature reconstruction authored by Keith Briffa, a senior researcher with CRU. Because reliable thermometer data go back only to the 1850s, scientists use proxy data such as tree rings to reconstruct annual temperatures over long periods (e.g., 1000 years) (it must be noted that proxy reconstructions are rife with uncertainties).[49] Unfortunately for those in the email chain, Briffa's reconstruction relied on tree ring proxies that produced a sharp and steady decline in temperature after 1960. *This conflicted with the instrumental temperature readings that showed a steep rise*. *Briffa's graph was, according to Dr. Michael Mann, a "problem"*:

> Keith's series…differs in large part in exactly the opposite direction that Phil's does from ours. This is the problem we all picked up on (everyone in the room at IPCC was in agreement **that this was a problem and a potential distraction/detraction from the reasonably consensus viewpoint we'd like to show w/ the Jones et al and Mann et al series**.

Briffa later addressed the "pressure to present a nice tidy story" about the "unprecedented" warming in the late 20th century. In his view, "the recent warmth was matched about 1,000 years ago." Here is the email from Briffa in full:

I know there is pressure to present a nice tidy story as regards '**apparent unprecedented warming in a thousand years or more in the proxy data but in reality the situation is not quite so simple**. We don't have a lot of proxies that come right up to date and those that do (at least a significant number of tree proxies) some unexpected changes in response that do not mat

ch the recent warming. I do not think it wise that this issue be ignored in the chapter. For the record, I do believe that the proxy data do show unusually warm conditions in recent decades. **I am not sure that this unusual warming is so clear in the summer responsive data. I believe that the recent warmth was probably matched about 1000 years ago**. I do not believe that global mean annual temperatures have simply cooled progressively over thousands of years as Mike appears to and I contend that that there is strong evidence for major changes in climate over the Holocene (not Milankovich) that require explanation and that could represent part of the current or future background variability of our climate.



Blowing up the graph shows it disappears in 1961, artfully hidden behind the other colours

The reason? Because this is what it shows after 1961: a dramatic decline in global temperatures…

Mann was nervous that "skeptics" would have a "field day" if Briffa's decline was featured in the IPCC's Third Assessment Report. He said "he'd hate to be the one" to give them "fodder." On September 22, 1999, Mann wrote:

> **We would need to put in a few words in this regard. Otherwise, the skeptics have a field day casting doubt on our ability to understand the factors that influence these estimates and, thus, can undermine faith in the paleoestimates.** The best approach here is for us to circulate a paper addressing all the above points. I'll do this as soon as possible. **I don't think that doubt is scientifically justified, and I'd hate to be the one to have to give it fodder**!

Jones proceeded, then, to "hide the decline" with his ready-made "trick." To the left is the graph that was eventually included in the IPCC's Third Assessment Report in 2001. It appears that Jones's trick was successful: Briffa's line in green is cutoff and "hidden" by the other lines. [50]

As UK's Daily Mail reported, "All [Jones] had to do was cut off Briffa's inconvenient data at the point where the decline started, in 1961, and replace it with actual temperature readings, which showed an increase."

So it seems that, rather than employing a "clever way"—or "trick"—to honestly solve the post-1960 decline, Jones was trying to manipulate data to reach a preconceived conclusion. His method has been criticized by fellow scientists. Philip Stott, emeritus professor of biogeography at London's School of Oriental and African Studies, suggested the trick was deceitful. "Any scientist ought to know that you just can't mix and match proxy and actual data. They're apples and oranges. Yet that's exactly what [Jones] did."[51]

As one can see, the "hide-the-decline" story is not an innocent one. Rather, it provides convincing evidence for the view that Jones and his colleagues didn't like the facts as depicted by the data, so they changed them. In short, Briffa, Mann, Jones, and others, were aware of data that suggested that the world was warmer 1000 years ago, and rather than admit that openly, they intentionally hid it from public view. Moreover, they hid it by including temperature records in a dataset composed of tree ring data, which, by itself, is exceedingly questionable.

Questioning the Consensus

"A nice tidy story"

Another theme pervading the emails is a distinct expression of doubt among some scientists about the IPCC-backed consensus. For example, as noted earlier, CRU's Keith Briffa wrote on September 22, 1999 of "pressure to present a nice tidy story as regards 'apparent unprecedented warming in a thousand years or more in the proxy data but in reality the situation is not quite so simple." Briffa was referring to the hockey stick graph mentioned on page 11. Briffa's colleague, Edward Cook of Columbia University, shared Briffa's concerns, writing of the "somewhat biased perspective" of the authors of the hockey stick," and questioning their commitment to being "honest and open about evaluating the evidence." As an aside, Cook wrote, "I have my doubts about MBH [Mann, Bradley, and Hughes]." Cook also referred to the "MBH attack squad" who work in "agenda-filled ways." Further, Cook was skeptical of MBH's obliteration of the Medieval Warm Period (MWP), referring to himself as coming from "the 'cup half-full camp when it comes to the MWP."

The following is an excerpt from Cook's email, dated April 29, 2003:

> **Bradley still regards the MWP as 'mysterious' and "very incoherent" (his latest pronouncement to me) based on the available data. Of course he and other members of the MBH camp have a fundamental dislike for the very concept of the MWP, so I tend to view their evaluations as starting out from a somewhat biased perspective, i.e. the cup is not only "half-empty"; it is demonstrably "broken". I come more from the "cup half-full" camp when it comes to the MWP, maybe yes, maybe no, but it is too early to say what it is. Being a natural skeptic, I guess you might lean more towards the MBH camp, which is fine as long as one is honest and open about evaluating the evidence (I have my doubts about the MBH camp).** We can always politely(?) disagree given the same admittedly equivocal evidence. I should say that Jan should at least be made aware of this reanalysis of

> his data. Admittedly, all of the Schweingruber data are in the public domain I believe, so that should not be an issue with those data. **I just don't want to get into an open critique of the Esper data because it would just add fuel to the MBH attack squad. They tend to work in their own somewhat agenda-filled ways. We should also work on this stuff on our own, but I do not think that we have an agenda per se, other than trying to objectively understand what is going on.**

In a follow-up email, Briffa assured Cook that "I am not in the MBH camp—if that be characterized by an unshakable 'belief' one way or the other, regarding the absolute magnitude of the global MWP." Briffa did write that, even with uncertainties, "I would still come out favoring the 'likely unprecedented warmth' opinion." Yet he also wrote that "our motivation is to further explore the degree of certainty in this belief."

Briffa did, in fact, further explore the substance of the hockey stick graph. In February of 2006, Briffa wrote to Jonathan Overpeck that:

> **there has been a lot of argument re 'hockey stick' and the real independence of the inputs to most subsequent analyses is minimal**.

Briffa is likely referring to the debate that erupted in 2003, when Steve McIntyre, a retired Canadian mining consultant, and Ross McKitrick, professor of economics at the University of Guelph (Ontario), identified serious, and eventually fatal, deficiencies in the hockey stick. In 2006, the National Research Council examined the controversy and concluded that:

> "the substantial uncertainties currently present in the quantitative assessment of large-scale surface temperature changes prior to about A.D. 1600 lower our confidence in this conclusion compared to the high level of confidence we place in the Little Ice Age cooling and 20th century warming. Even less confidence can be placed in the original conclusions by Mann et al. (1999) that 'the 1990s are likely the warmest decade, and 1998 the warmest year, in at least a millennium.'"[52]

In February of 2006, in a notable passage, Briffa suggested language to Jonathan Overpeck for the IPCC's Fourth Assessment Report that seems to contradict the central claim of the hockey stick:[53]

> **I suggest this should be Taken together, the sparse evidence of Southern Hemisphere temperatures prior to the period of instrumental records indicates that overall warming has occurred during the last 350 years, but the even fewer longer regional records indicate earlier periods that are as warm, or warmer than, 20th century means.**

Briffa then appears to anticipate criticism from Overpeck for his suggested language, reminding him of the controversy surrounding the hockey stick:

> Peck, you have to consider that since the TAR [IPCC Third Assessment Report], **there has been a lot of**

> **argument re 'hockey stick' and the real independence of the inputs to most subsequent analyses is minimal. True, there have been many different techniques used to aggregate and scale data - but the efficacy of these is still far from established. We should be careful not to push the conclusions beyond what we can securely justify** - and this is not much other than a confirmation of the general conclusions of the TAR.

Finally, Briffa suggests that he and Overpeck are being pressured for taking a view contrary to Mann and his hockey stick co-authors, including from Mann himself:

> **We must resist being pushed to present the results such that we will be accused of bias - hence no need to attack Moberg .** Just need to show the "most likely" course of temperatures over the last 1300 years - which we do well I think. Strong confirmation of TAR is a good result, given that we discuss uncertainty and base it on more data. **Let us not try to over egg the pudding. For what it worth , the above comments are my (honestly long considered) views - and I would not be happy to go further .** Of course this discussion now needs to go to the wider Chapter authorship, **but do not let Susan [Solomon of NOAA] (or Mike) push you (us) beyond where we know is right.**

These emails do not read as a group of scientists in full agreement about the fundamental issues in paleoclimatology. Rather, they put the lie to the notion that the science is "settled," and that key facets of the climate science debate are no longer in dispute. As one pulls back the veil, and gets beneath the "nice, tidy story," one sees serious disagreement over the extent of 20th century warming and whether it was anomalous over the past millennium. As Phil Jones admitted to the BBC recently, "There is much debate over whether the Medieval Warm Period was global in extent or not." "Of course," he continued, "if the MWP was shown to be global in extent and as warm or warmer than today (based on an equivalent coverage over the NH and SH) then obviously the late-20th century warmth would not be unprecedented."[54]

A Cooling World

"We can't account for the lack of warming at the moment and it is a travesty that we can't." Kevin Trenberth, UCAR, October 12, 2009

(Mojib) Latif predicted that in the next few years a natural cooling trend would dominate over warming caused by humans. The cooling would be down to cyclical changes to ocean currents and temperatures in the North Atlantic, a feature known as the North Atlantic Oscillation (NAO). Breaking with climate-change orthodoxy, he said NAO cycles were probably responsible for some of the strong global warming seen in the past three decades. "But how much? The jury is still out," he told the conference. The NAO is now moving into a colder phase. **"World's climate could cool first, warm later," New Scientist, September 2009[55]**

In the 1970s, global cooling was a phenomenon of great concern to many in the scientific community. "However widely the

weather varies from place to place and time to time," *Time* magazine wrote in 1974, "when meteorologists take an average of temperatures around the globe they find that the atmosphere has been growing gradually cooler for the past three decades." Time noted "Climatological Cassandras" who are "becoming increasingly apprehensive, for the weather aberrations they are studying may be the harbinger of another ice age."[56]

Global cooling has emerged once again as a topic of scientific concern.[57] Professor Mojib Latif, a leading member of the IPCC, recently said, "For the time being, global warming has paused, and there may well be some cooling."[58] (Even Phil Jones admitted in an interview with the BBC on February 13 that there has been "no statistically significant warming" in 15 years.[59]) The scientists in the CRU scandal shared Latif's concern about a "lack of warming," and the possibility that predictions of warming would be proved wrong. In an email dated January 3, 2009,[60] Mike McCracken of the Climate Institute[61] mentioned research suggesting that sulfates were causing global cooling, and that this hypothesis could serve as a "backup" if "your prediction of warming might end up being wrong":

> …**In any case, if the sulfate hypothesis is right, then your prediction of warming might end up being wrong. I think we have been too readily explaining the slow changes over past decade as a result of variability--that explanation is wearing thin. I would just suggest, as a backup to your prediction, that you also do some checking on the sulfate issue, just so you might have a quantified explanation in case the [warming] prediction is wrong. Otherwise, the Skeptics will be all over us--the world is really cooling, the models are no good, etc. And all this just as the US is about ready to get serious on the issue.** We all, and you all in particular, need to be prepared.

Two days later, Tim Johns, from the UK Met Office, emailed Chris Folland and Doug Smith. Johns referenced model runs that "show potential for a distinct lack of warming in the early21st C":

> **Also - relevant to your statement - A1B-AR4 runs show potential for a distinct lack of warming in the early 21st C, which I'm sure skeptics would love to see replicated in the real world...**

Phil Jones intervened and expressed concern about predictions (presumably made by Johns and Smith) of a "lack of warming lasting till about 2020." He also complained about the dire cold weather forecasts from the Met Office as being "a bit over the top":

> **I hope you're not right about the lack of warming lasting till about 2020.** I'd rather hoped to see the earlier Met Office press release with Doug's paper that said something like - half the years to 2014 would exceed the warmest year currently on record, 1998! Still a way to go before 2014. **I seem to be getting an email a week from skeptics saying where's the warming gone. I know the warming is on the decadal scale, but it would be nice to wear their smug grins away. Chris - I presume the Met Office continually monitor the weather**

> **forecasts. Maybe because I'm in my 50s, but the language used in the forecasts seems a bit over the top re the cold. Where I've been for the last 20 days (in Norfolk) it doesn't seem to have been as cold as the forecasts**.

On October 12, 2009, Kevin Trenberth of UCAR sent an email titled "BBC U-turn on climate" to some of the most prestigious names in climatology, including Michael Mann, Phil Jones (CRU), Stephen Schneider (Stanford), Thomas Karl (NOAA), and James Hansen (NASA). Trenberth lamented the fact that:

> **[W]e 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.**

Phil Jones seemed concerned about global cooling long before Trenberth's lament. As he wrote to John Christy of the University of Alabama (Huntsville) on July 5, 2005:

> **The scientific community would come down on me in no uncertain terms if I said the world had cooled from 1998. OK it has but it is only 7 years of data and it isn't statistically significant**.

It's important to note here that on February 13, Jones told the BBC that there has been "no statistically significant warming" over the last 15 years.[62] Yet EPA states in its endangerment finding that warming has continued in recent years, declaring that "eight of the 10 warmest years on record have occurred since 2001."[63] 74 FR 66,517

‘Harry Read Me’ File

“You see how messy it gets when you actually examine the problem?” - ‘Harry Read Me’ file

As noted earlier, CRU compiles the world’s premier temperature datasets, which the IPCC utilizes throughout its Assessment Reports. CRU’s datasets include the “HadCRUT3” dataset[64], which contains combined global historical land and marine surface temperatures; the CRUTEM3 dataset, which contains global historical land surface temperature anomalies; and the CRU TS datasets, which contain up to nine different variables of global historical meteorological data (i.e. temperature, precipitation, cloud cover, etc.) that, among other uses, are utilized by environmental researchers for climate modeling.

Among CRU’s exposed documents is the so-called “HARRY_READ_ME” file, which served as a detailed note keeping file from 2006 through 2009 for CRU researcher and programmer Ian “Harry” Harris. As he worked to update and modify CRU TS2.1 to create the new CRU TS3.1dataset, the HARRY_READ_ME.txt details Harris’s frustration with the dubious nature of CRU’s meteorological datasets. As demonstrated through a handful of excerpts below, the 93,000-word HARRY_READ_ME file raises several serious questions as to the reliability and integrity of CRU’s data compilation and quality assurance protocols

Excerpts:

One thing that's unsettling is that many of the assigned WMo codes for Canadian stations do not return any hits with a web search. Usually the country's met office, or at least the Weather Underground, show up - but for these stations, nothing at all. Makes me wonder if these are long-discontinued, or were even invented somewhere other than Canada!

Here, the expected 1990-2003 period is MISSING - so the correlations aren't so hot! Yet the WMO codes and station names /locations are identical (or close). What the hell is supposed to happen here? Oh yeah - there is no 'supposed', I can make it up. So I have :-)
---

*OH F**K THIS. It's Sunday evening, I've worked all weekend, and just when I thought it was done I'm hitting yet another problem that's based on the hopeless state of our databases. There is no uniform data integrity, it's just a catalogue of issues that continues to grow as they're found.*

You can't imagine what this has cost me - to actually allow the operator to assign false WMO codes!! But what else is there in such situations? Especially when dealing with a 'Master' database of dubious provenance (which, er, they all are and always will be).

So the 'duplicated' figure is slightly lower.. but what's this error with the '.ann' file?! Never seen before. Oh GOD if I could start this project again and actually argue the case for junking the inherited program suite!!

I am seriously close to giving up, again. The history of this is so complex that I can't get far enough into it before by head hurts and I have to stop. Each parameter has a tortuous history of manual and semi-automated interventions that I simply cannot just go back to early versions and run the update prog. I could be throwing away all kinds of corrections - to lat/lons, to WMOs (yes!), and more.

SECTION 2: Inside the IPCC "Consensus"

As noted in the introduction, those who accept the catastrophic global warming hypothesis claim that the IPCC represents the "gold standard" of climate change research. IPCC reports purportedly represent the "consensus" view on global warming. This consensus is frequently invoked to dismiss the CRU controversy as the mere province of a few boorish paleo-climatologists, having no effect on the IPCC and its findings. As Yvo de Boer, Executive Secretary of the UN Framework Convention on Climate Change[65], said recently, "what's happened, it's unfortunate, it's bad, it's wrong, but I don't think it has damaged the basic science." [66] Yet the reality is quite different.

The scientists involved here played key roles in shaping and editing the very IPCC reports adduced as dispositive proof of a scientific consensus on catastrophic global warming. The emails and documents reveal, among other things, an insular world of scientists working within the IPCC to generate reports that reflected their biased conclusions on the causes of climate change.[67] In this section, we describe the IPCC in more detail, and try to explain its somewhat opaque inner workings. We also show the links between this controversy and the IPCC, specifically by identifying the scientists in the CRU scandal who exercised great influence over the IPCC assessment reports.

The IPCC – A Short History

On a sweltering day in the summer of 1988, in a hearing room without air conditioning, Dr. James Hansen of NASA testified before the Senate Energy and Natural Resources Committee.[68] The topic was global warming. As he wiped his brow, Hansen stated that global warming "has reached a level such that we can ascribe with a high degree of confidence a cause and effect relationship between this greenhouse effect and observed warming."[69] Put more simply, Hansen claimed that there is a human influence on the global climate system. "In many ways," according to one observer, "Hansen's testimony…marks the official beginning of the global warming policy debate that continues to this day."[70]

Specifically, Hansen's statements helped launch the IPCC in November of 1988. Organized at the request of the United Nations Environment Program (UNEP) and the World Meteorological Society, the IPCC began with 35 countries (including the U.S.) and was first led by University of Stockholm professor Bert B. Bolin. The IPCC was formed "to address the environmental, economic and social impacts of climate change, and to develop possible international responses."[71] It was designed to provide "scientific technical and socio-economic information in a policy-relevant but policy neutral way to decision makers."

To carry out this mission, the IPCC produces "comprehensive assessment reports" on major aspects of climate change and responses to it. These assessments do not contain original research by the IPCC; rather, the assessments are based mainly on published and peer-reviewed scientific technical literature. The nominal goal of these assessments is to inform international policy and negotiations on climate-related issues.[72] Moreover, when governments accept the IPCC reports and approve their

Summary for Policymakers, "they acknowledge the legitimacy of their scientific content."[73]

Thus far, the IPCC has produced four such reports (with a fifth in the works), each of which has made the scientific case—more definitively over time—for anthropogenic global warming. In 2007, the IPCC's Fourth Assessment Report (AR4) claimed that "warming of the climate system is unequivocal" and that "[m]ost of the observed increase in globally averaged temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic (human) greenhouse gas concentrations."[74]

The IPCC helped to create the United Nations Framework Convention on Climate Change (UNFCCC), an international treaty that the US Senate ratified in 1992.[75] The aim of the UNFCC is to "stabilize greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system."[76] The UNFCC called on participating nations to reduce their greenhouse gases voluntarily below 1990 levels.

Over time, these voluntary measures failed to reduce emissions, so the parties to the UNFCC agreed to the so-called "Berlin Mandate" in 1995. The Berlin Mandate laid the groundwork for the Kyoto Protocol in 1997, which established binding emissions targets for developed countries. The Clinton Administration signed the Kyoto Protocol but it was never submitted to the Senate for ratification. The Senate sent a clear message of opposition to Kyoto in 1997 by voting 95 to 0 for the Byrd-Hagel resolution.[77]

Despite Senate opposition to Kyoto, scientists and experts from the US have played leading roles in developing the IPCC's assessment reports. For example, Dr. Susan Solomon, a NOAA scientist (who is also implicated in the CRU emails), served as the co-chair of a key scientific "work group" in the development of the Fourth Assessment Report published (AR 4) in 2007.[78] Also, the US Global Change Research Program, which coordinates and integrates federal climate change research activities, has "supported research and observational activities in collaboration with several other national and international science programs," including the IPCC.[79]

The CRU-IPCC Connection

The chart below shows that the scientists at the center of the CRU scandal were participants in drafting IPCC assessment reports. Nearly all of the scientists worked at the highest levels of the IPCC, shaping and influencing the content of the assessment reports that form the international global warming "consensus."

The CRU e-mails merely show scientists who "lack interpersonal skills."

EPA Administrator Lisa Jackson, December 2, 2009

CRU - IPCC CONNECTION

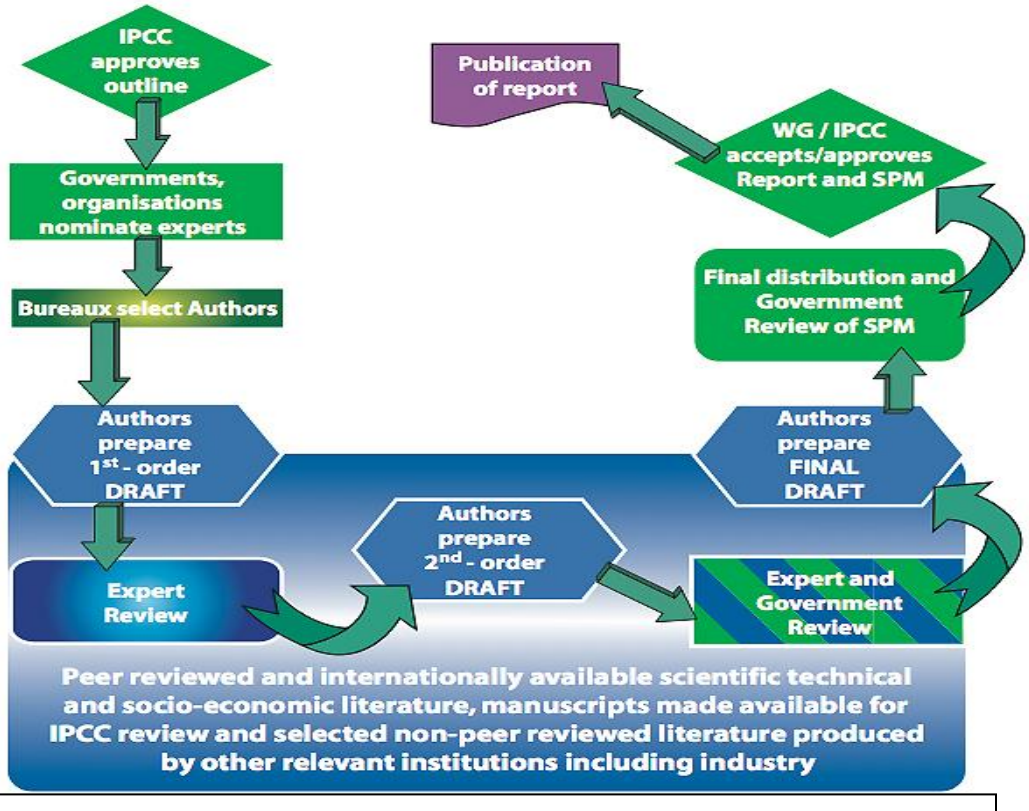
	4th IPCC Report	3rd IPCC Report	2nd IPCC Report
Coordinating/Convening Lead Authors	Susan Solomon Phil Jones John Overpeck Kevin Trenberth	Tom Karl	Timothy Carter Ben Santer Kevin Trenberth
Lead Authors	Keith Briffa M. Oppenheimer Peter Stott	Timothy Carter Tom Karl Michael Mann M. Oppenheimer Kevin Trenbreth	Tom Karl Stephen Schneider Tom Wigley
Contributing Authors	Edward Cook M. Oppenheimer John Overpeck Ben Santer Gavin Schmidt Peter Stott Kevin Trenberth Tom Wigley	Raymond Bradley Keith Briffa Edward Cook Malcolm Hughes Phil Jones Michael Mann M. Oppenheimer John Overpeck Ben Santer Peter Stott Kevin Trenberth Tom Wigley	Raymond Bradley Keith Briffa Edward Cook Tim Johns Phil Jones Tom Karl M. Oppenheimer John Overpeck Ben Santer Kevin Trenberth Tom Wigley
Reviewer	Susan Solomon Timothy Carter Phil Jones Tim Johns Tom Karl Michael Mann M. Oppenheimer John Overpeck Gavin Schmidt Peter Stott Kevin Trenberth	Keith Briffa Timothy Carter Malcolm Hughes Michael Mann M. Oppenheimer Stephen Schneider Peter Stott Kevin Trenberth	
Technical Summary	Susan Solomon		M. Oppenheimer Ben Santer Kevin Trenberth

How the Reports Are Made

The work of the IPCC is divided into three working groups:

- **Working Group I** assesses the scientific aspects of the climate system and climate change;
- **Working Group II** assesses the vulnerability of socioeconomic and natural systems to climate change, negative and positive consequences of climate change, and options for adapting to it; and
- **Working Group III** assesses options for limiting greenhouse gas emissions and otherwise mitigating climate change. A fourth, shorter volume synthesizes the material found in the three working group volumes.

Each of these working groups has two co-chairs—one from a developed country (e.g. Susan Solomon of NOAA was selected for AR4 WG I) and one from a developing country. An additional set of governmental representatives (frequently scientists) are nominated by their countries to serve on the bureau of each working group. Together, the two co-chairs and the bureau members function as an executive committee, while the team of scientists drafting individual chapters of each working group's assessment is sometimes referred to as the "scientific core." Coordinating the efforts of each working group is a technical support unit (TSU) that provides both



Source: IPCC **http://www.ipcc.ch/pdf/ipcc-principles/IPCC%20Procedures.pdf**

technical and administrative support to the bureau and the scientific core.

Documents prepared by working groups are subjected to three levels of endorsements:

Acceptance: Material has not been subject to line-by-line discussion and agreement, but presents a comprehensive, objective, and balanced view of the subject matter.

- Working Groups accept their reports
- Task Force Reports are accepted by the Panel
- Working Group Summaries for Policymakers are accepted by the Panel after group approval

Adoption: Endorsed section by section (not line by line).

- Panel adopts Overview Chapters of Methodology Reports
- Panel adopts IPCC Synthesis Report

Approval: Material has been subjected to detailed, line-by-line discussion and agreement.

- Working Group Summaries for Policymakers are approved by their Working Groups
- Synthesis Report Summary for Policymakers is approved by Panel.

What the Scientists Do

The scientists who participate in the Work Groups assume varying roles and responsibilities in drafting and editing Assessment Reports. The following are short descriptions of those role and responsibilities.

Working Group Chair: Overall responsibility for content and responsible for the Summary for Policymakers.

Coordinating Lead Author: Assumes overall responsibility for coordinating major sections of an assessment report, and plays a leading role in ensuring that any crosscutting scientific or technical issues are addressed in a complete and coherent manner and reflect the latest information available.

Lead Author: Responsible for ensuring work is based on the best scientific, technical and socio-economic information available. Lead authors typically work in small groups which have responsibility for ensuring that the various components of their sections are brought together on time, are of uniformly high quality, and conform to any overall standards of style set for the document as a whole.

Contributing Author: Prepares "technical information in the form of text, graphs or data for assimilation by the Lead Authors into the draft section." Contributions can be solicited by Lead Authors and "should be supported as far as possible with references from the peer reviewed and internationally available literature, and with copies of any unpublished material cited; clear indications of how to access the latter should be included in the contributions."

Expert Reviewer: Comments on "the accuracy and completeness of the scientific/technical/socio-economic content and the overall scientific/technical/socio-economic balance of the drafts." Their comments are based on their own knowledge and experience. They may be nominated by Governments, national and international organizations, lead and contributing authors, and working group/task force bureaus.

SECTION 3: Legal and Policy Issues in the CRU Controversy

The released CRU emails and documents display unethical, and possibly illegal, behavior. The scientists appear to discuss manipulating data to get their preferred results. On several occasions they appear to discuss subverting the scientific peer review process to ensure that skeptical papers had no access to publication. Moreover, there are emails discussing unjustified changes to data by federal employees and federal grantees.

These and other issues raise questions about the lawful use of federal funds and potential ethical misconduct. Discussed below are brief descriptions of the statutes and regulations that the Minority Staff believe are implicated in this scandal. In our investigation, we are examining the emails and documents and determining whether any violations of these federal laws and policies occurred.

Freedom of Information Act [80]

The Freedom of Information Act provides the public access to government information. The Minority Staff is examining emails to determine whether scientists deliberately withheld information to prevent FOIA release. It is worth noting that a federal employee who arbitrarily and capriciously withholds documents which are subject to FOIA release may be subject to disciplinary action.[81]

Shelby Amendment

In 1999, frustration by the private sector and proponents of government transparency over the inaccessibility of data used to support regulations led Congress to pass the Shelby Amendment. This amendment showed Congress' direct intent to allow broader access to federally-funded research data by explicitly bringing it into the purview of the Freedom of Information Act. The act covers research findings both published in peer-reviewed scientific or technical journals, as well as publically and officially sited by federal agencies in support of an agency action that has the force and effect of law.

The Shelby has been codified in federal regulations. [82] The regulations require that all federally-funded institutions be required to comply with the Shelby Amendment. Thus, the failure to comply with an Agency request for raw data produced with federal funds could be deemed a breach of the funding agreement. Consequences of a breach could range from suspension to debarment.

OSTP Policy Directive

On December 12, 2000, the President's Office of Science and Technology Policy issued a "Misconduct in Research" policy applicable government-wide to federal employees, contractors and grantees. Each agency was required to issue its own policy that followed the OSTP directive within a year of the effective date. The policy establishes procedures and interim and final sanctions related to misconduct. The highest penalty, in addition to any criminal liability, is debarment.

President Obama's Transparency and Open Government Policy

On January 21, 2009 President Obama issued a Memorandum to the Executive branch discussing his

requirements for an open government guided by the words "transparency", "participation" and "collaboration".[83] On December 8, 2009, OMB issued a Directive requiring certain implementation steps by government agencies.

The Directive requires adherence to data quality requirements[84] and establishes openness as the policy for freedom of Information Act (FOIA) matters. Thus, long delays in releasing information under the FOIA would appear to violate the President's Transparency and Openness Policy. In addition, as the data quality requirements define "quality" to include "objectivity" and "objectivity" is defined to include unbiased information,[85] the recent questions about the impartiality of the IPCC and EPA's TSD bring into question whether EPA has followed the President's Transparency and Open government policy.

Federal False Statements Act

The Federal False Statement Act applies to anyone who, "in any matter within the jurisdiction of the executive, legislative, or judicial branch of the Government of the United States, knowingly and willfully: (1) falsifies, conceals, or covers up by any trick, scheme, or device a material fact; (2) makes any materially false, fictitious, or fraudulent statement or representation; or (3) makes or uses any false writing or document knowing the same to contain any materially false, fictitious, or fraudulent statement or entry; shall be fined under this title, or imprisoned not more than 5 years…or both."[86]

The false statement must fall within the jurisdiction of the executive, judicial and legislative branches, and covers offenses spanning the previous paragraph's three broad categories.[87] Section 1001 also extends to affirmative acts of concealment with no actual statement being required. [88]

Moreover, as the case may be with some of these emails and their interaction with the IPCC process (and not US government agencies directly), jurisdiction exists regardless of whether the defendant communicated the statement directly to the government, [89]or knew that the government had jurisdiction over the false statement. [90] Similarly, knowingly submitting false data, from whatever source, could be deemed a violation.

The False Claims Act (Criminal)

The False Claims Act (FCA) prohibits certain types of activity generally involving claims for payment of money or receipt of property involving the Federal government. The statute does not require a showing of fraudulently intent or actual knowledge of fraud. The definition of "knowing" is defined as (i) has actual knowledge of the information; (ii) acts in deliberate ignorance of the truth or falsity of the information; or (iii) acts in reckless disregard of the truth or falsity of the information; and requires no proof of specific intent to defraud.

Direct interaction between the actor and the government is not needed to trigger liability of this Act. Creating a tampered data base and them making a claim for payment, e.g. for salaries and expenses, which will be paid, in whole or in part, with Federal funds can raise the prospect for a False Claims Act violation.

Obstruction of Justice: Interference with Congressional Proceedings

There are a number of different Federal statutes concerning obstruction of

justice. Most deal with witness tampering, bribery, threats of violence, or mail and wire fraud. However, Federal statute 18 U.S.C. 1505 concerns obstruction of proceedings before departments, agencies, or committees, which includes Congressional hearings. [91] Thus, providing false or misleading testimony could create liability under this provision.

SECTION 4: Endangerment Finding and EPA Reliance on IPCC Science

As we noted in the introduction, the significance of the CRU scandal potentially affects domestic climate change policy. We are investigating the extent to which the CRU scandal reveals flaws in the IPCC's Assessment Reports, as many of the scientists at the center of this scandal drafted and edited those reports (for more on this point, see Section 2). In turn, we are examining whether flaws in the IPCC's work weaken or undermine EPA's "Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act."

Published on December 15, 2009, EPA's endangerment finding concluded that greenhouse gases (GHGs) endanger public health and welfare, and that the combined emissions of these GHGs from new motor vehicles and new vehicle engines contribute to greenhouse gas air "pollution" which endangers public health and welfare.[92] As EPA repeatedly explains, the finding primarily relies on IPCC science.[93] And on the critical issue of whether anthropogenic GHGs are causing climate change, the Administrator relied nearly exclusively on the work of the IPCC.[94]

On the critical issue of whether anthropogenic GHGs are causing climate change, the Administrator relied nearly exclusively on the work of the IPCC.

We believe EPA's response to the CRU issues is insufficient. EPA addresses the CRU controversy in its "Response to Public Comments Volume 2: Validity of Observed and Measured Data," which accompany the Endangerment Finding. In this volume, the agency largely dismiss the impact of the CRU emails.[95] EPA also dismisses the comments regarding the destruction or inaccessibility of raw data to support such temperature records, arguing "the ability for commenters (or EPA) to reproduce or check raw data is not a requirement before EPA may rely on information, especially information widely accepted in the scientific community."

EPA also clearly rejects every comment requiring a reassessment of the IPCC's scientific conclusions. Without any analysis or discussion, EPA has either discarded the adverse comments or has prejudged the issues by not providing detailed discussion and analysis of the competing comments. EPA's only response is to repeat the mantra that the IPCC, CCSP/USGCRP, and NRC reports have gone through comprehensive review and peer review. [96]

However, this "comprehensive" review failed to uncover key errors in the IPCC reports and their incorporation into the endangerment finding.[97] Over the last several weeks, the media has uncovered significant errors and non peer-reviewed material in the IPCC's Fourth Assessment Report (AR 4). As it turns out, the IPCC mistakenly claimed that global warming would:

- Melt Himalayan glaciers by 2035;
- Endanger 40 percent of Amazon rainforests;
- Melt mountain ice in the Alps, Andes, and Africa;

- Deplete water resources for 4.5 billion people by 2085, neglecting to mention that global warming could also increase water resources for as many as 6 billion people;
- Lead to rapidly increasing costs due to extreme weather-related events; and
- Slash crop production by 50 percent in North Africa by 2020. [98]

In addition, the IPCC:

- Incorrectly stated that 55 percent of the Netherlands lies below sea level;
- Included a diagram used to demonstrate the potential for generating electricity from wave power that has been found to contain numerous errors; and
- Used a biased report by the activist group Defenders of Wildlife to state that salmon in US streams have been affected by rising temperatures.
- Downplayed the increase in sea ice in the Antarctic to dramatize the observed decline in sea ice in the Arctic.

Despite EPA's insistence that the IPCC assessment reports are the world's most comprehensive and accurate assessments of climate change, the flaws in the IPCC reports indicate serious deficiencies in the IPCC's peer-review process. These flaws and deficiencies should prod EPA back to the drawing board, issuing notice and comment on what the mistakes mean and how they affect EPA's conclusion that GHGs endanger public health and welfare.[99]

Conclusion

The scientists involved in the CRU controversy violated fundamental ethical principles governing taxpayer-funded research and, in some cases, may have violated federal laws. The next phase of the Minority's investigation will explore whether any such violations occurred.

An independent inquiry conducted by the UK's Information Commissioner has already concluded that the scientists employed by the University of East Anglia, and who were at the center of the controversy, violated the UK's Freedom of Information Act.[100] Another independent inquiry, headed by Sir Muir Russell, is investigating allegations that the scientists in the CRU scandal manipulated climate change data.[101]

In addition to these findings, we believe the emails and accompanying documents seriously compromise the IPCC-backed "consensus" and its central conclusion that anthropogenic emissions are inexorably leading to environmental catastrophes. Because the EPA's endangerment finding for greenhouse gases rests in large part on the IPCC's science, the endangerment finding should be thrown out. EPA should issue notice and comment on what the mistakes mean and how they affect EPA's conclusion that GHGs endanger public health and welfare.

BIOS OF KEY PLAYERS – CRU CONTROVERSY

Raymond Bradley
Currently a Professor in the Department of Geosciences and Director of the Climate System Research Center at the University of Massachusetts Amherst. Served as a Contributing Author in both the IPCC Third and Second Assessment Report.

Keith Briffa
Currently the Deputy Director of the Climatic Research Unit, University of East Anglia. Served as a Lead Author of the IPCC Fourth Assessment Report, a Contributing Author and Reviewer of the IPCC Third Assessment Report, and a Contributing Author of the IPCC Second Assessment Report.

Timothy Carter
Currently a Research Professor at the Finnish Environment Institute (SYKE), Helsinki, Finland. Served as an Expert Reviewer of the IPCC Fourth Assessment Report, Lead Author and Reviewer of the IPCC Third Assessment Report, and Convening Lead Author of the IPCC Second Assessment Report.

Edward Cook
Currently a Doherty Senior Scholar at the Tree-Ring Laboratory, Lamont-Doherty Earth Observatory, Palisades, New York. Served as a Contributing Author in the IPCC Fourth, Third, and Second Assessment Reports.

Malcolm Hughes
Currently a Regents' Professor in the Laboratory of Tree-Ring Research at the University of Arizona. Served as a Contributing Author and Reviewer of the IPCC Third Assessment Report.

Dr. Phil Jones
Current a Professor at University of East Anglia's CRU. Served as a Coordinating Lead Author in the 2007 IPCC Fourth Assessment Report as well as an Expert Reviewer. Also was a Contributing Author in both the IPCC Third and IPCC Second Assessment Reports. In early December of 2009, Dr. Jones stepped down as Director of CRU pending an independent review of his actions.

Thomas Karl
Current Designated Transitional Director of the NOAA Climate Service. Served as a Review Editor of the IPCC Fourth Assessment Report, Coordinating Lead Author and Lead Author of the IPCC Third Assessment Report, and both Lead and Contributing Author on the IPCC Second Assessment Report. Also has worked on multiple United States Global Change Research Program's (USGCRP) including his work as a Co-Chair and Synthesis Team Member of the USGCRP's 2000 U.S. National Assessment and Co-Chair and one of three Editors in Chief of the USGCRP's 2009 Global Climate Change Impacts in the United States Report. Also served as an Editor, Convening Lead Author, and Author of the USGCRP's 2008 Weather and Climate Extremes in a Changing Climate Report. Was Chief Editor and Federal Executive Team

Member of the United States Climate Change Science Program's 2006 Temperature Trends in the Lower Atmosphere report.

Dr. Michael Mann
Current Professor and Director of Pennsylvania State University's Earth System Science Center. Served as an Expert Reviewer of the IPCC Fourth Assessment Report as well as a Lead Author, Contributing Author, and Reviewer of the IPCC Third Assessment Report. Dr. Mann is currently under investigation by Pennsylvania State University which is looking into whether he engaged in, participated in, either directly or indirectly, "any actions that seriously deviated from accepted practices within the academic community for proposing, conducting or reporting research or other scholarly activities."

Dr. Michael Oppenheimer
Current Albert G. Milbank Professor of Geosciences and International Affairs in the Woodrow Wilson School and the Department of Geosciences at Princeton University. Also is the Director of the Program in Science, Technology and Environmental Policy (STEP) at the Woodrow Wilson School and Faculty Associate of the Atmospheric and Ocean Sciences Program, Princeton Environmental Institute, and the Princeton Institute for International and Regional Studies. Served as a Lead Author, Contributing Author, and Expert Reviewer of the IPCC Fourth Report; Lead Author, Contributing Author, and reviewer of the IPCC Third Assessment Report; and Contributing Author and Technical Summary Author of the IPCC Second Assessment Report.

Dr. Jonathan Overpeck
Current Co-Director of the Institute of the Environment as well as a Professor in the Department of Geosciences and the Department of Atmospheric Sciences at the University of Arizona. Served as a Coordinating Lead Author, Contributing Author, and Expert Reviewer of the IPCC Fourth Assessment Report; and Contributing Author of the IPCC Third and Second Assessment Reports.

Dr. Benjamin Santer
Current Research Scientist for the Program for Climate Model Diagnosis and Intercomparison at the Lawrence Livermore National Laboratory. Served as a Contributing Author in both the IPCC Fourth and Third Assessment Reports as well as Convening Lead Author, Technical Summary and Contributing Author of the IPCC Second Assessment Report. Also served as a Convening Lead Author, Lead Author, and Contributing Author in the US CCSP's 2006 Temperature Trends in the Lower Atmosphere report and Author of the USGCRP's 2009 Global Climate Change Impacts in the United States report.

Gavin Schmidt
Currently working at NASA's Goddard Institute for Space Studies. Served as a Contributing Author and Expert Reviewer for the IPCC Fourth Assessment Report.

Dr. Stephen Schneider

Current Melvin and Joan Lane Professor for Interdisciplinary Environmental Studies, Professor of Biological Sciences, Professor (by courtesy) of Civil and Environmental Engineering, and a Senior Fellow in the Woods Institute for the Environment at Stanford University. Served as a Reviewer of the IPCC Third Assessment Report and a Lead Author of the IPCC Second Assessment Report.

Dr. Susan Solomon
Current Senior Scientist at the Chemical Sciences Division (CSD) Earth System Research Laboratory (ESRL), NOAA. Served as a Co-Chair of the IPCC Working Group I, Contributing Author of the IPCC Fourth Assessment Report, and a Lead Author of the IPCC Third Assessment Report.

Peter Stott
Current Climate Monitoring Expert and Head of Climate Monitoring and Attribution at the Met Office Hadley Centre. Served as a Lead Author, Contributing Author, and Expert Reviewer of the IPCC Fourth Assessment Report and as a Contributing Author and Reviewer of the IPCC Third Assessment Report.

Dr. Kevin Trenberth
Current Senior Scientist and Head of the Climate Analysis Section at the National Center for Atmospheric Research. Served as a Coordinating Lead Author, Contributing Author, and Expert Reviewer of the IPCC Fourth Assessment Report; Lead Author, Contributing Author, and Reviewer of the IPCC Third Assessment Report; and Convening Lead Author, Technical Summary Author, and Contributing Author of the IPCC Second Assessment Report.

Dr. Thomas Wigley
Current Senior Scientist in the Climate and Global Dynamics Division, University Corporation for Atmospheric Research. Served as a Contributing Author of the IPCC Fourth and Third Assessment Reports as well as a Lead Author and Contributing Author of the IPCC Second Assessment Report. Also was a Convening Lead Author and Contributing Author of US CCSP's 2006 Temperature Trends in the Lower Atmosphere report.

APPENDIX A

A Sampling of Emails and Documents

Minority Staff has identified a preliminary sampling of CRU emails and documents which seriously compromise the IPCC-backed "consensus" and its central conclusion that anthropogenic emissions are inexorably leading to environmental catastrophes, and which represent unethical and possibly illegal conduct by top IPCC scientists, among others. In the interest of brevity, many of the emails are not reproduced in their entirety. Therefore, the reader is encouraged to seek outside sources for broader review and context of the exposed emails and documents. Email and document text is shown in blue italics. The emails are reproduced in chronological order from oldest to newest under each sub-heading.

Concealing Data

From: Michael E. Mann [University of Virginia]
To: Tim Osborn [CRU]
July 31, 2003
Subject: Re: reconstruction errors
Tim,
Attached are the calibration residual series for experiments based on available networks back to:
AD 1000
AD 1400
AD 1600
I can't find the one for the network back to 1820! But basically, you'll see that the residuals are pretty red for the first 2 cases, and then not significantly red for the 3rd case--its even a bit better for the AD 1700 and 1820 cases, but I can't seem to dig them up. . . . ***p.s. I know I probably don't need to mention this, but just to insure absolutely clarify on this, I'm providing these for your own personal use, since you're a trusted colleague. So please don't pass this along to others without checking w/ me first. This is the sort of "dirty laundry" one doesn't want to fall into the hands of those who might potentially try to distort things...***

From: Phil Jones [CRU]
To: Michael E. Mann [University of Virginia]
January 16, 2004
Subject: CLIMATIC CHANGE needs your advice - YOUR EYES ONLY !!!!!
Mike,
This is for YOURS EYES ONLY. Delete after reading - please ! *I'm trying to redress the balance. One reply from Pfister said you should make all available !! Pot calling the kettle black - Christian doesn't make his methods available. I replied to the wrong Christian message so you don't get to see what he said. Probably best.* ***Told Steve separately and to get more advice from a few others as well as Kluwer and legal. PLEASE DELETE - just for you, not even Ray and Malcolm***

From: Phil Jones
To: Tas van Ommen [University of Tasmania, Australia]
Cc: Michael E. Mann [University of Virginia]
February 9, 2004
Subject: Re: FW: Law Dome O18
Dear Tas,
Thanks for the email. Steve McIntyre hasn't contacted me directly about Law Dome (yet), nor about any of the series used in the 1998 Holocene paper or the 2003 GRL one with Mike. I suspect (hope) that he won't. I had some emails with him a few years ago when he wanted to get all the station temperature data we use here in CRU. ***I hid behind the fact that some of the data had been received from individuals and not directly from Met Services through the Global Telecommunications Service (GTS) or through GCOS.*** *I've cc'd Mike on this, just for info. Emails have also been sent to some other paleo people asking for datasets used in 1998 or 2003. Keith Briffa here got one, for example. Here, they have also been in contact with some of Keith's Russian contacts. All seem to relate to trying to get series we've used.*

From: Michael E. Mann [University of Virginia]
To: Phil Jones [CRU]; Gabi Hergerl [Duke University]
August ??, 2004
[Subject: Mann and Jones (2003)]
Dear Phil and Gabi,
I've attached a cleaned-up and commented version of the matlab code that I wrote for doing the Mann and Jones (2003) composites. ***I did this knowing that Phil and I are likely to have to respond to more crap criticisms from the idiots in the near future, so best to clean up the code and provide to some of my close colleagues in case they want to test it, etc. Please feel free to use this code for your own internal purposes, but don't pass it along where it may get into the hands of the wrong people. . . .***

From: Tom Wigley [University Corporation of Atmospheric Research]
To: Phil Jones [CRU]
January 21, 2005
Phil,
Thanks for the quick reply. The leaflet appeared so general, but it was prepared by UEA so they may have simplified things. ***From their wording, computer code would be covered by the FOIA. My concern was if Sarah is/was still employed by UEA. I guess she could claim that she had only written one tenth of the code and release every tenth line.*** *Sorry I won't see you, but I will not come up to Norwich until Monday.*

From: Phil Jones [CRU]
To: Tom Wigley [University Corporation of Atmospheric Research]
Cc: Ben Santer [Lawrence Livermore National Laboratory]
January 21st, 2005
Subject: Re: FOIA
Tom,

. . . *As for FOIA Sarah isn't technically employed by UEA* [University of East Anglia] *and she will likely be paid by Manchester Metropolitan University. I wouldn't worry about the code.* ***If FOIA does ever get used by anyone, there is also IPR*** [intellectual property rights] ***to consider as well. Data is covered by all the agreements we sign with people, so I will be hiding behind them****. I'll be passing any requests onto the person at UEA who has been given a post to deal with them.*

From: Phil Jones [CRU]
To: Michael E. Mann [University of Virginia]
February 2, 2005
[Subject: For your eyes only]
Mike,
I presume congratulations are in order - so congrats etc ! Just sent loads of station data to Scott. ***Make sure he documents everything better this time ! And don't leave stuff lying around on ftp*** [file transfer protocol] ***sites - you never know who is trawling them. The two MMs have been after the CRU station data for years. If they ever hear there is a Freedom of Information Act now in the UK, I think I'll delete the file rather than send to anyone.*** *Does your similar act in the US force you to respond to enquiries within 20 days? - our does ! The UK works on precedents, so the first request will test it.* ***We also have a data protection act, which I will hide behind. Tom Wigley has sent me a worried email when he heard about it - thought people could ask him for his model code. He has retired officially from UEA so he can hide behind that. IPR*** [intellectual property rights] ***should be relevant here, but I can see me getting into an argument with someone at UEA who'll say we must adhere to it !***

From: Michael E. Mann [University of Virginia]
To: Phil Jones [CRU]
February 2, 2005
Thanks Phil,
Yes, we've learned out lesson about FTP. We're going to be very careful in the future what gets put there. Scott really screwed up big time when he established that directory so that Tim could access the data. Yeah, there is a freedom of information act in the U.S., and the contrarians are going to try to use it for all its worth. But there are also intellectual property rights issues, so it isn't clear how these sorts of things will play out ultimately in the U.S. *I saw the paleo draft (actually I saw an early version, and sent Keith some minor comments). It looks very good at present--will be interesting to see how they deal w/ the contrarian criticisms--there will be many. I'm hoping they'll stand firm (I believe they will--I think the chapter has the right sort of personalities for that)...*

From: Phil Jones [CRU]
To: Michael E. Mann [University of Virginia]
Cc: Raymond Bradley [University of Massachusetts, Amherst]; Malcolm Hughes [University of Arizona]
February 21, 2005
Subject: Fwd: CCNet: PRESSURE GROWING ON CONTROVERSIAL RESEARCHER TO DISCLOSE SECRET DATA

Mike, Ray and Malcolm,
The skeptics seem to be building up a head of steam here ! *Maybe we can use this to our advantage to get the series updated ! Odd idea to update the proxies with satellite estimates of the lower troposphere rather than surface data !. Odder still that they don't realise that Moberg et al used the Jones and Moberg updated series ! Francis Zwiers is till onside.* ***He said that PC1s produce hockey sticks.*** *He stressed that the late 20th century is the warmest of the millennium, but Regaldo didn't bother with that. Also ignored Francis' comment about all the other series looking similar to MBH* [Mann Bradley Hughes]. ***The IPCC comes in for a lot of stick. Leave it to you to delete as appropriate****!*
Cheers
Phil
PS I'm getting hassled by a couple of people to release the CRU station temperature data. Don't any of you three tell anybody that the UK has a Freedom of Information Act !

From: Phil Jones [CRU]
To: Eugene R. Wahl [Alfred University]; Caspar Ammann [University Corporation of Atmospheric Research]
September 12, 2007
Subject: Wahl/Ammann
Gene/Caspar,
Good to see these two out. Wahl/Ammann doesn't appear to be in CC's online first, but comes up if you search. ***You likely know that McIntyre will check this one to make sure it hasn't changed since the IPCC close-off date July 2006!*** *Hard copies of the WG1 report from CUP have arrived here today.* ***Ammann/Wahl - try and change the Received date! Don't give those skeptics something to amuse themselves with.***

From: Phil Jones [CRU]
To: Michael E. Mann [Penn State University]
May 29, 2008
Subject: IPCC & FOI
Mike,
Can you delete any emails you may have had with Keith re AR4 [IPCC Fourth Assessment Report]***? 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* [Climate Audit website] *claim they discovered the 1945 problem in the Nature paper!!*
Cheers
Phil

> From: Michael E. Mann [Penn State University]
> To: Phil Jones [CRU]
> May 29, 2008
> ***Subject: Re: IPCC & FOI***
> *Hi Phil,*

laughable that CA [Climate Audit] *would claim to have discovered the problem. They would have run off to the Wall Street Journal for an exclusive were that to have been true.* ***I'll contact Gene about this*** [deleting emails] ***ASAP.*** *His new email is:* . . .
talk to you later,
mike

From: Phil Jones [CRU]
To: Gavin Schmidt [NASA Goddard Institute for Space Studies]
Cc: Michael E. Mann [Penn State University]
August 20, 2008
Gavin,
. . . *Thinking about the final bit for the Appendix. Keith should be in later, so I'll check with him - and look at that vineyard book. I did rephrase the bit about the 'evidence' as Lamb refers to it. I wanted to use his phrasing – he used this word several times in these various papers. What he means is his mind and its inherent bias(es). Your final sentence though about improvements in reviewing and traceability is a bit of a hostage to fortune.* ***The skeptics will try to hang on to something, but I don't want to give them something clearly tangible. Keith/Tim still getting FOI requests as well as MOHC*** [Meteorological Office Hadley Center] ***and Reading. All our FOI officers have been in discussions and are now using the same exceptions not to respond - advice they got from the Information Commissioner****.* . . . ***The FOI line we're all using is this. IPCC is exempt from any countries FOI - the skeptics have been told this. Even though we (MOHC, CRU/UEA) possibly hold relevant info the IPCC is not part our remit (mission statement, aims etc) therefore we don't have an obligation to pass it on.***

Undermining Peer Review

From: Phil Jones [CRU]
To: Unknown list
March 10, 2003
[Subject: Soon & Baliunas]
Dear all,
Tim Osborn has just come across this. Best to ignore probably, so don't let it spoil your day. I've not looked at it yet. ***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 !***
Cheers
Phil

From: Phil Jones
To: Raymond Bradley [University of Massachusetts, Amherst]; Malcolm Hughes [University of Arizona]; Scott Rutherford [University of Rhode Island]; Michael E. Mann [University of Virginia]; Tom Crowley [Duke University]
Cc: Keith Briffa [CRU]; Jonathan Overpeck [University of Arizona]; Edward Cook [Columbia University]; Keith Alverson [IGBP-PAGES]

March 11, 2003
Subject: Fwd: Soon & Baliunas
Dear All,
Apologies for sending this again. I was expecting a stack of emails this morning in response, but I inadvertently left Mike off (mistake in pasting) and picked up Tom's old address. Tom is busy though with another offspring ! I looked briefly at the paper last night and it is appalling - worst word I can think of today without the mood pepper appearing on the email ! I'll have time to read more at the weekend as I'm coming to the US for the DoE CCPP meeting at Charleston. Added Ed, Peck and Keith A. onto this list as well. I would like to have time to rise to the bait, but I have so much else on at the moment. As a few of us will be at the EGS/AGU meet in Nice, we should consider what to do there. The phrasing of the questions at the start of the paper determine the answer they get. They have no idea what multiproxy averaging does. By their logic, I could argue 1998 wasn't the warmest year globally, because it wasn't the warmest everywhere. With their LIA [Little Ice Age] *being 1300-1900 and their MWP* [Medieval Warm Period] *800-1300, there appears (at my quick first reading) no discussion of synchroneity of the cool/warm periods. Even with the instrumental record, the early and late 20th century warming periods are only significant locally at between 10-20% of grid boxes.* ***Writing this I am becoming more convinced we should do something - even if this is just to state once and for all what we mean by the LIA and MWP. I think the skeptics will use this paper to their own ends and it will set paleo***[climatology] ***back a number of years if it goes unchallenged. 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. A CRU person is on the editorial board, but papers get dealt with by the editor assigned by Hans von Storch.***
Cheers
Phil

From: Michael E. Mann [University of Virginia]
To: Phil Jones [CRU]; Raymond Bradley [University of Massachusetts, Amherst]; Malcolm Hughes [University of Arizona]; Scott Rutherford [University of Rhode Island]; Tom Crowley [Duke University]
Cc: Keith Briffa [CRU]; Jonathan Overpeck [University of Arizona]; Edward Cook [Columbia University]; Keith Alverson [IGBP-PAGES]; Mike MacCracken [Climate Institute]
March 11, 2003
Subject: Re: Fwd: Soon & Baliunas
Thanks Phil,
(Tom: Congrats again!)
The Soon & Baliunas paper couldn't have cleared a 'legitimate' peer review process anywhere. ***That leaves only one possibility--that the peer-review process at Climate Research has been hijacked by a few skeptics on the editorial board. And it isn't just De Frietas, unfortunately I think this group also includes a member of my own department... The skeptics appear to have staged a 'coup' at "Climate Research"*** *(it was a mediocre journal to begin with, but now its a mediocre journal with a definite 'purpose'). Folks might want to check out the editors and review editors: [1]http://www.int-res.com/journals/cr/crEditors.html In fact, Mike McCracken first pointed out this article to me, and he and I have discussed this a bit. I've cc'd Mike in on this as well, and I've included Peck too.* ***I told Mike that I believed our only choice was to ignore this***

paper. They've already achieved what they wanted--the claim of a peer-reviewed paper. There is nothing we can do about that now, but the last thing we want to do is bring attention to this paper, which will be ignored by the community on the whole... It is pretty clear that thee skeptics here have staged a bit of a coup, even in the presence of a number of reasonable folks on the editorial board (Whetton, Goodess, ...). My guess is that Von Storch is actually with them (frankly, he's an odd individual, and I'm not sure he isn't himself somewhat of a skeptic himself), and without Von Storch on their side, they would have a very forceful personality promoting their new vision. There have been several papers by Pat Michaels, as well as the Soon & Baliunas paper, that couldn't get published in a reputable journal. 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?
mike

From: Michael E. Mann [University of Virginia]
To: Malcolm Hughes [University of Arizona]
March 11, 2003
HI Malcolm,
*Thanks for the feedback--I largely concur. I do, though, think there is a particular problem with "Climate Research". This is where my colleague Pat Michaels now publishes exclusively, and his two closest colleagues are on the editorial board and review editor board. So I promise you, we'll see more of this there, and I personally think there *is* a bigger problem with the "messenger" in this case...* . . .

From: Phil Jones [CRU]
To: Unknown List
March 12, 2003
Dear All,
I agree with all the points being made and the multi-authored article would be a good idea, but how do we go about not letting it get buried somewhere. ***Can we not address the misconceptions by finally coming up with definitive dates for the LIA and MWP and redefining what we think the terms really mean? With all of us and more on the paper, it should carry a lot of weight. In a way we will be setting the agenda for what should be being done over the next few years.*** . . .

From: Tom Wigley [University Corporation of Atmospheric Research]
To: Phil Jones [CRU]; Keith Briffa [CRU]; James Hansen [NASA Goddard Institute for Space Studies]; Michael E. Mann [University of Virginia]; Ben Santer [Lawrence Livermore National Laboratory]; Thomas R Karl [NOAA]; Mark Eakin [NOAA]; et al.
April 23, 2003
Subject: My turn

. . . *This second case gets to the crux of the matter. I suspect that deFreitas deliberately chose other referees who are members of the skeptics camp. I also suspect that he has done this on other occasions.* ***How to deal with this is unclear, since there are a number of individuals with bona fide scientific credentials who could be used by an unscrupulous editor to ensure that 'anti-greenhouse' science can get through the peer review process (Legates, Balling, Lindzen, Baliunas, Soon, and so on). The peer review process is being abused, but proving this would be difficult.*** *The best response is, I strongly believe, to rebut the bad science that does get through. Jim Salinger raises the more personal issue of deFreitas. He is clearly giving good science a bad name, but I do not think a barrage of ad hominem attacks or letters is the best way to counter this. If Jim wishes to write a letter with multiple authors, I may be willing to sign it, but I would not write such a letter myself. In this case, deFreitas is such a poor scientist that he may simply disappear. I saw some work from his PhD, and it was awful (Pat Michaels' PhD is at the same level).*
Best wishes to all,
Tom.

From: Mark Eakin [NOAA]
To: Michael E. Mann [University of Virginia]; et al.
April 24th, 2003
[Subject: My turn]
. . . *A letter to OSTP* [White House Office of Science and Technology Policy] *is probably in order here. Since the White House has shown interest in this paper, OSTP really does need to receive a measured, critical discussion of flaws in Soon and Baliunas' methods. I agree with Tom that a noted group from the detection and attribution effort such as Mann, Crowley, Briffa, Bradley, Jones and Hughes should spearhead such a letter. Many others of us could sign on in support.* ***This would provide Dave Halpern with the ammunition he needs to provide the White House with the needed documentation that hopefully will dismiss this paper for the slipshod work that it is. Such a letter could be developed in parallel with a rebuttal article.*** . . .

From: Timothy Carter [Finnish Environment Institute]
To: Tom Wigley [University Corporation of Atmospheric Research]
April ??, 2003
[Subject: Java climate model]
. . . *P.S. On the CR* [Climate Research] *issue, I agree that a rebuttal seems to be the only method of addressing the problem (I communicated this to Mike yesterday morning),* ***and I wonder if a review of the refereeing policy is in order. The only way I can think of would be for all papers to go through two Editors rather than one, the former to have overall responsibility, the latter to provide a second opinion on a paper and reviewers' comments prior to publication. A General Editor would be needed to adjudicate in the event of disagreement.*** *Of course, this could then slow down the review process enormously.* ***However, without an editorial board to vote someone off, how can suspect Editors be removed except by the Publisher (in this case, Inter-Research).***

From: Tom Wigley [University Corporation of Atmospheric Research]

To: Timothy Carter [Finnish Environment Institute]
Cc: Mike Hulme [CRU]; Phil Jones [CRU]
April 24, 2003
Subject: Re: Java climate model
. . . *PS Re CR, I do not know the best way to handle the specifics of the editoring. Hans von Storch is partly to blame -- he encourages the publication of crap science 'in order to stimulate debate'.* ***One approach is to go direct to the publishers and point out the fact that their journal is perceived as being a medium for disseminating misinformation under the guise of refereed work. I use the word 'perceived' here, since whether it is true or not is not what the publishers care about -- it is how the journal is seen by the community that counts. I think we could get a large group of highly credentialed scientists to sign such a letter -- 50+ people. Note that I am copying this view only to Mike Hulme and Phil Jones. Mike's idea to get editorial board members to resign will probably not work -- must get rid of von Storch too****, otherwise holes will eventually fill up with people like Legates, Balling, Lindzen, Michaels, Singer, etc. I have heard that the publishers are not happy with von Storch, so the above approach might remove that hurdle too.***

From: Edward Cook [Columbia University]
To: Keith Briffa [CRU]
June 4, 2003
[Subject: Review- confidential REALLY URGENT]
Hi Keith,
Okay, today. Promise! Now something to ask from you. Actually somewhat important too. I got a paper to review (submitted to the Journal of Agricultural, Biological, and Environmental Sciences), written by a Korean guy and someone from Berkeley, ***that claims that the method of reconstruction that we use in dendroclimatology (reverse regression) is wrong, biased, lousy, horrible, etc****. They use your Tornetrask recon as the main whipping boy.* . . . *I would like to play with it in an effort to refute their claims.* ***If published as is, this paper could really do some damage.*** *It is also an ugly paper to review because it is rather mathematical, with a lot of Box-Jenkins stuff in it. It won't be easy to dismiss out of hand as the math appears to be correct theoretically but it suffers from the classic problem of pointing out theoretical deficiencies* . . . ***I am really sorry but I have to nag about that review - Confidentially I now need a hard and if required extensive case for rejecting*** *- to support Dave Stahle's and really as soon as you can.*

From: Andrew Comrie [University of Arizona]
To: Phil Jones [CRU]
May, 2004
[Subject: IJOC040512 review]
Dear Prof. Jones,
IJOC040512 *"A Socioeconomic Fingerprint on the Spatial Distribution of Surface Air Temperature Trends"*
Authors: ***RR McKitrick & PJ Michaels***
Target review date: July 5, 2004
I know you are very busy, but ***do you have the time to review the above manuscript*** [from skeptics McKitrick and Michaels] ***for the International Journal of Climatology?*** *If yes, can you*

complete the review within about five to six weeks, say by the target review date listed above? I will send the manuscript electronically. ***If no, can you recommend someone who you think might be a good choice to review this paper?*** . . .
[Note: In the peer review process, reviewer's names are kept anonymous.]

From: Phil Jones [CRU]
To: Andrew Comrie [University of Arizona]
May 24, 2004
Subject: RE: IJOC040512 review
Andrew,
I can do this. *I am in France this week but back in the UK all June. So send and it will be waiting my return.*
Phil

From: Phil Jones [CRU]
To: Michael E. Mann [University of Virginia]
August 13, 2004
Subject: Fwd: RE: IJOC040512 review
Mike,
The paper ! Now to find my review. I did suggest to Andrew to find 3 reviewers.
Phil

From: Michael E. Mann [University of Virginia]
To: Phil Jones [CRU]
August 13, 2004
[Subject: IJOC040512 review]
Thanks a bunch Phil,
Along lines as my other email, ***would it be (?) for me to forward this to the chair of our commitee confidentially, and for his internal purposes only, to help bolster the case against MM*** [skeptics McKitrick and Michaels]***??*** *let me know...*
thanks,
mike

From: Phil Jones [CRU]
To: Michael E. Mann [University of Virginia]
August 13, 2004
Subject: Re: Fwd: RE: ***IJOC040512 review***
Mike,
I'd rather you didn't. I think it should be sufficient to forward the para from Andrew Conrie's email that says ***the paper has been rejected by all 3 reviewers.*** *You can say that the paper was an extended and updated version of that which appeared in CR.* ***Obviously, under no circumstances should any of this get back to Pielke.***
Cheers
Phil

From: Phil Jones [CRU]
To: Michael E. Mann [University of Virginia]
July 8, 2004
Subject: HIGHLY CONFIDENTIAL
Mike,
Only have it in the pdf form. FYI ONLY - don't pass on. Relevant paras are the last 2 in section 4 on p13. As I said it is worded carefully due to Adrian knowing Eugenia for years. He knows the're wrong, but he succumbed to her almost pleading with him to tone it down as it might affect her proposals in the future ! I didn't say any of this, so be careful how you use it - if at all. Keep quiet also that you have the pdf. The attachment is a very good paper - I've been pushing Adrian over the last weeks to get it submitted to JGR [Journal of Geophysical Research] *or J. Climate* [Journal of Climate]. *The main results are great for CRU and also for ERA-40. The basic message is clear - you have to put enough surface and sonde obs into a model to produce Reanalyses. The jumps when the data input change stand out so clearly. NCEP does many odd things also around sea ice and over snow and ice. . . . The other paper by MM is just garbage - as you knew. De Freitas again. Pielke is also losing all credibility as well by replying to the mad Finn as well - frequently as I see it.* ***I can't see either of these papers being in the next IPCC report. Kevin and I will keep them out somehow - even if we have to redefine what the peer-review literature is****!*
Cheers
Phil

Mike,
*For your interest, there is an ECMWF ERA-40 Report coming out soon, which shows that Kalnay and Cai are wrong. It isn't that strongly worded as the first author is a personal friend of Eugenia. The result is rather hidden in the middle of the report**.** It isn't peer review, but a slimmed down version will go to a journal. KC are wrong because the difference between NCEP and real surface temps (CRU) over eastern N. America doesn't happen with ERA-40. ERA-40 assimilates surface temps (which NCEP didn't) and doing this makes the agreement with CRU better. Also ERA-40's trends in the lower atmosphere are all physically consistent where NCEP's are not - over eastern US. I can send if you want, but it won't be out as a report for a couple of months.*
Cheers
Phil

From: Stephen Mackwell [Universities Space Research Association]
To: Michael E. Mann [University of Virginia]
Cc: Chris Reason [University of Cape Town]; James Saiers [Yale University]
January 20, 2005
Subject: Your concerns with 2004GL021750 McIntyre
Dear Prof. Mann
In your recent email to Chris Reason, you laid out your concerns that I presume were the reason for your phone call to me last week. I have reviewed the manuscript by McIntyre, as well as the reviews. The editor in this case was Prof. James Saiers. ***He did note initially that the manuscript did challenge published work, and so felt the need for an extensive and thorough review. For that reason, he requested reviews from 3 knowledgable scientists. All three reviews***

recommended publication. While I do agree that this manuscript does challenge (somewhat aggresively) some of your past work, I do not feel that it takes a particularly harsh tone. *On the other hand, I can understand your reaction. As this manuscript was not written as a Comment, but rather as a full-up scientific manuscript, you would not in general be asked to look it over.* ***And I am satisfied by the credentials of the reviewers. Thus, I do not feel that we have sufficient reason to interfere in the timely publication of this work.*** *However, you are perfectly in your rights to write a Comment, in which you challenge the authors' arguments and assertions. Should you elect to do this, your Comment would be provided to them and they would be offered the chance to write a Reply. Both Comment and Reply would then be reviewed and published together (if they survived the review process). Comments are limited to the equivalent of 2 journal pages.*
Regards
Steve Mackwell
Editor in Chief, GRL [Geophysical Research Letters]

From: Michael E. Mann [University of Virginia]
The following individuals may have been recipients: Tom Wigley [University Corporation of Atmospheric Research]; Raymond Bradley [University of Massachusetts, Amherst]; Tom Osborn [CRU]; Phil Jones [CRU]; Keith Briffa [CRU]; Gavin Schmidt [NASA Goddard Institute for Space Studies]; Malcolm Hughes [University of Arizona];
[Subject: Your concerns with 2004GL021750 McIntyre]
January 20, 2005
Dear All,
Just a heads up. Apparently, the contrarians now have an "in" with GRL [Geophysical Research Letters]. ***This guy Saiers has a prior connection w/ the University of Virginia Dept. of Environmental Sciences that causes me some unease. I think we now know how the various Douglass et al papers w/ Michaels and Singer, the Soon et al paper, and now this one have gotten published in GRL,***
Mike

From: Tom Wigley [University Corporation of Atmospheric Research]
To: Michael E. Mann [University of Virginia]
The following individuals may also have been recipients: Raymond Bradley [University of Massachusetts, Amherst]; Tom Osborn [CRU]; Phil Jones [CRU]; Keith Briffa [CRU]; Gavin Schmidt [NASA Goddard Institute for Space Studies]; Malcolm Hughes [University of Arizona];
January 20, 2005
[Subject: Your concerns with 2004GL021750 McIntyre]
Mike,
This is truly awful. GRL [Geophysical Research Letters] *has gone downhill rapidly in recent years. I think the decline began before Saiers. I have had some unhelpful dealings with him recently with regard to a paper Sarah and I have on glaciers -- it was well received by the referees, and so is in the publication pipeline. However, I got the impression that Saiers was trying to keep it from being published. Proving bad behavior here is very difficult.* ***If you think that Saiers is in the greenhouse skeptics camp, then, if we can find documentary evidence of***

this, we could go through official AGU [American Geophysical Union] ***channels to get him ousted.***

From: Michael E. Mann [University of Virginia]
To: Tom Wigley [University Corporation of Atmospheric Research]
The following individuals may also have been recipients: Raymond Bradley [University of Massachusetts, Amherst]; Tom Osborn [CRU]; Phil Jones [CRU]; Keith Briffa [CRU]; Gavin Schmidt [NASA Goddard Institute for Space Studies]; Malcolm Hughes [University of Arizona];
January 20, 2005
[Subject: Your concerns with 2004GL021750 McIntyre]
Thanks Tom,
Yeah, basically this is just a heads up to people that something might be up here. What a shame that would be. ***It's one thing to lose "Climate Research". We can't afford to lose GRL*** [Geophysical Research Letters]***. I think it would be useful if people begin to record their experiences w/ both Saiers and potentially Mackwell (I don't know him--he would seem to be complicit w/ what is going on here). If there is a clear body of evidence that something is amiss, it could be taken through the proper channels. I don't that the entire AGU*** [American Geophysical Union] ***hierarchy has yet been compromised!*** *The GRL article simply parrots the rejected Nature comment--little substantial difference that I can see at all. Will keep you all posted of any relevant developments,*
Mike

From: Michael E. Mann [University of Virginia]
To: Malcolm Hughes [University of Arizona]
The following individuals may also have been recipients: Tom Wigley [University Corporation of Atmospheric Research]; Raymond Bradley [University of Massachusetts, Amherst]; Tom Osborn [CRU]; Phil Jones [CRU]; Keith Briffa [CRU]; Gavin Schmidt [NASA Goddard Institute for Space Studies]; Malcolm Hughes [University of Arizona];
January 20 or 21, 2005
[Subject: Your concerns with 2004GL021750 McIntyre]
Hi Malcolm,
This assumes that the editor/s in question would act in good faith. I'm not convinced of this. I don't believe a response in GRL is warranted in any case. The MM claims in question are debunked in other papers that are in press and in review elsewhere. ***I'm not sure that GRL can be seen as an honest broker in these debates anymore, and it is probably best to do an end run around GRL now where possible. They have published far too many deeply flawed contrarian papers in the past year or so. There is no possible excuse for them publishing all 3 Douglass papers and the Soon et al paper. These were all pure crap. There appears to be a more fundamental problem w/ GRL now, unfortunately...***
Mike

From: Ben Santer [Lawrence Livermore National Laboratory]
To: Phil Jones [CRU]
March 19, 2009

[Subject: See the link below]
. . . ***If the RMS*** [Royal Meteorological Society] ***is going to require authors to make ALL data available*** *- raw data PLUS results from all intermediate calculations -* ***I will not submit any further papers to RMS journals.***
Cheers,
Ben

From: Phil Jones [CRU]
To: Ben Santer [Lawrence Livermore National Laboratory]
March 19, 2009
Subject: Re: See the link below
. . . *I'm having a dispute with the new editor of Weather.* ***I've complained about him to the RMS Chief Exec. If I don't get him to back down, I won't be sending any more papers to any RMS journals and I'll be resigning from the RMS.***

From: Kevin Trenberth [University Corporation of Atmospheric Research]
To: Michael E. Mann [Penn State University]
Cc: Grant Foster; Phil Jones [CRU]; Gavin Schmidt [NASA Goddard Institute for Space Studies]; et al.
July 29, 2009
Subject: Re: ENSO blamed over warming - paper in JGR
Hi all
Wow this is a nice analysis by Grant et al. What we should do is turn this into a learning experience for everyone: there is often misuse of filtering. ***Obviously the editor and reviewers need to to also be taken to task here.*** *I agree with Mike Mann that a couple of other key points deserve to be made wrt this paper.* . . .

Manipulating Data

From: Keith Briffa [CRU]
To: Chris Folland [UK Met Office]; Phil Jones [CRU]; Michael E. Mann [University of Virginia]
Cc: Tom Karl [National Climatic Data Center – NOAA]
September 22, 1999
Subject: RE: IPCC revisions
. . . ***I know there is pressure to present a nice tidy story as regards 'apparent unprecedented warming in a thousand years or more in the proxy data' but in reality the situation is not quite so simple.*** *We don't have a lot of proxies that come right up to date and those that do (at least a significant number of tree proxies)* ***some unexpected changes in response that do not match the recent warming.*** . . .

From: Phil Jones [CRU]
To: Ray Bradley [University of Massachusetts, Amherst]; Michael E. Mann [University of Virginia]; Malcolm Hughes [University of Arizona]
Cc: Keith Briffa [CRU]; Tom Osborn [CRU]

November 16, 1999
Subject: Diagram for WMO [World Meteorological Organization] *Statement*
Dear Ray, Mike and Malcolm,
Once Tim's got a diagram here we'll send that either later today or first thing tomorrow. ***I've just completed Mike's Nature trick of adding in the real temps to each series for the last 20 years (ie from 1981 onwards) amd from 1961 for Keith's to hide the decline.*** *Mike's series got the annual land and marine values while the other two got April-Sept for NH* [Northern Hemisphere] *land N of 20N. The latter two are real for 1999, while the estimate for 1999 for NH combined is +0.44C wrt 61-90. The Global estimate for 1999 with data through Oct is +0.35C cf. 0.57 for 1998. Thanks for the comments, Ray.*
Cheers
Phil

From: Giorgi Filippo [International Centre for Theoretical Physics]
To: *Chapter 10 LAs*
September 11, 2000
Subject: On "what to do?"
*Given this, I would like to add my own opinion developed through the weekend. First let me say that in general, as my own opinion**, I feel rather unconfortable about using not only unpublished but also un reviewed material as the backbone of our conclusions (or any conclusions)**. I realize that chapter 9 is including SRES stuff, and thus we can and need to do that too, **but the fact is that in doing so the rules of IPCC have been softened to the point that in this way the IPCC is not any more an assessment of published science (which is its proclaimed goal) but production of results.** The softened condition that the models themself have to be published does not even apply because the Japanese model for example is very different from the published one which gave results not even close to the actual outlier version (in the old dataset the CCC model was the outlier). **Essentially, I feel that at this point there are very little rules and almost anything goes. I think this will set a dangerous precedent which might mine the IPCC credibility, and I am a bit uncomfortable that now nearly everybody seems to think that it is just ok to do this.** Anyways, this is only my opinion for what it is worth.*

From: Michael E. Mann [University of Virginia]
To: Phil Jones [CRU]; et al.
June 4, 2003
Subject: Re: Prospective Eos piece?
*. . . Phil and I have recently submitted a paper using about a dozen NH 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** [Phil and I have one in review--not sure it is kosher to show that yet though--I've put in an inquiry to Judy Jacobs at AGU about this]*. . . .

From: David Rind [NASA Goddard Institute for Space Studies]
To: Jonathan Overpeck [University of Arizona]

January 4, 2005
[Subject: IPCC last 2000 years data]
. . . *In addition, some of the comments are probably wrong - the warm-season bias (p.12) should if anything produce less variability, since warm seasons (at least in GCMs) feature smaller climate changes than cold seasons. The discussion of uncertainties in tree ring reconstructions should be direct, not referred to other references - it's important for this document. How the long-term growth is factored in/out should be mentioned as a prime problem. The lack of tropical data - a few corals prior to 1700 - has got to be discussed.* ***The primary criticism of McIntyre and McKitrick, which has gotten a lot of play on the Internet, is that Mann et al. transformed each tree ring prior to calculating PCs by subtracting the 1902-1980 mean, rather than using the length of the full time series (e.g., 1400-1980), as is generally done. M&M claim that when they used that procedure with a red noise spectrum, it always resulted in a 'hockey stick'. Is this true? If so, it constitutes a devastating criticism of the approach; if not, it should be refuted. While IPCC cannot be expected to respond to every criticism a priori, this one has gotten such publicity it would be foolhardy to avoid it.*** . . .

From: Jonathan Overpeck [University of Arizona]
To: Keith Briffa [CRU]; Eystein Jansen [Bjerknes Centre for Climate Research]; Tom Crowley [Duke University]
July ??, 2005
ANOTHER THING THAT IS A REAL ISSUE IS SHOWING SOME OF THE TREE-RING DATA FOR THE PERIOD AFTER 1950. BASED ON THE LITERATURE, WE KNOW THESE ARE BIASED - RIGHT? SO SHOULD WE SAY THAT'S THE REASON THEY ARE NOT SHOWN? OF COURSE, IF WE ONLY PLOT THE FIG FROM CA 800 TO 1400 AD, IT WOULD DO WHAT WE WANT, FOCUS ON THE MWP ONLY - THE TOPIC OF THE BOX – AND SHOW THAT THERE WERE NOT ANY PERIODS WHEN ALL THE RECORDS ALL SHOWED WARMTH *- I.E., OF THE KIND WE'RE EXPERIENCING NOW. TWO CENTS WORTH*

From: Michael E. Mann [Penn State University]
To: Tim Osborn [CRU]; Keith Briffa [CRU]
Cc: Gavin Schmidt [NASA Goddard Institute for Space Studies]
February 9, 2006
guys, I see that Science has already gone online w/ the new issue, so we put up the RC [Real Climate website] *post. By now, you've probably read that nasty McIntyre thing. Apparently, he violated the embargo on his website (I don't go there personally, but so I'm informed). Anyway, I wanted you guys to know that you're free to use RC in any way you think would be helpful.* ***Gavin and I are going to be careful about what comments we screen through, and we'll be very careful to answer any questions that come up to any extent we can. On the other hand, you might want to visit the thread and post replies yourself. We can hold comments up in the queue and contact you about whether or not you think they should be screened through or not, and if so, any comments you'd like us to include****. You're also welcome to do a followup guest post, etc. think of RC as a resource that is at your disposal to combat any disinformation put forward by the McIntyres of the world. Just let us know****. We'll use our best discretion to make sure the skeptics dont'get to use the RC comments as a megaphone...***

From: Keith Briffa [CRU]
To: Martin Juckes [???]; et al.
November 16, 2006
Subject: Re: Mitrie: Bristlecones
. . . *I still believe that it would be wise to involve Malcolm Hughes in this discussion - though I recognise the point of view that says we might like to appear (and be) independent of the original Mann, Bradley and Hughes team to avoid the appearance of collusion. In my opinion (as someone how has worked with the Bristlecone data hardly at all!) there are undoubtedly problems in their use that go beyond the strip bark problem (that I will come back to later).* . . . ***Another serious issue to be considered relates to the fact that the PC1 time series in the Mann et al. analysis was adjusted to reduce the positive slope in the last 150 years*** *(on the assumption - following an earlier paper by Lamarche et al. - that this incressing growth was evidence of carbon dioxide fertilization) , by differencing the data from another record produced by other workers in northern Alaska and Canada (which incidentally was standardised in a totally different way).* ***This last adjustment obviously will have a large influence on the quantification of the link between these Western US trees and N.Hemisphere temperatures. At this point, it is fair to say that this adjustment was arbitrary and the link between Bristlecone pine growth and CO2 is , at the very least, arguable.***

From: Tom Wigley [University Corporation of Atmospheric Research]
To: Phil Jones [CRU]
Cc: Ben Santer [Lawrence Livermore National Laboratory]
September 27, 2009
Subject: 1940s
Phil,
Here are some speculations on correcting SSTs [Sea Surface Temperatures] ***to partly explain the 1940s warming blip.*** *If you look at the attached plot you will see that the land also shows the 1940s blip (as I'm sure you know).* ***So, if we could reduce the ocean blip by, say, 0.15 degC, then this would be significant for the global mean – but we'd still have to explain the land blip. I've chosen 0.15 here deliberately. This still leaves an ocean blip, and i think one needs to have some form of ocean blip to explain the land blip*** *(via either some common forcing, or ocean forcing land, or vice versa, or all of these). When you look at other blips, the land blips are 1.5 to 2 times (roughly) the ocean blips -- higher sensitivity plus thermal inertia effects. My 0.15 adjustment leaves things consistent with this, so you can see where I am coming from.* . . .

From: Tom Wigley [University Corporation of Atmospheric Research]
To: Phil Jones [CRU]
October 5, 2009
[Subject: A Scientific Scandal Unfolds]
Phil,
It is distressing to read that American Stinker item [Oct. 5th article from the American Thinker which highlights Stephen McIntyre's discovery that Keith Briffa apparently cherry picked data regarding tree-rings from Yamal]. ***But Keith does seem to have got himself into a mess.*** *As I pointed out in emails, Yamal is insignificant. And you say that (contrary to what M&M say)*

*Yamal is *not* used in MBH, etc. So these facts alone are enough to shoot down M&M is a few sentences (which surely is the only way to go -- complex and wordy responses will be counter productive).* ***But, more generally, (even if it *is* irrelevant) how does Keith explain the McIntyre plot that compares Yamal-12 with Yamal-all? And how does he explain the apparent "selection" of the less well-replicated chronology rather that the later (better replicated) chronology? Of course, I don't know how often Yamal-12 has really been used in recent, post-1995, work. I suspect from what you say it is much less often that M&M say -- but where did they get their information?*** *I presume they went thru papers to see if Yamal was cited, a pretty foolproof method if you ask me. Perhaps these things can be explained clearly and concisely -- but I am not sure Keith is able to do this as he is too close to the issue and probably quite pissed of.* ***And the issue of with-holding data is still a hot potato, one that affects both you and Keith (and Mann). Yes, there are reasons – but many *good* scientists appear to be unsympathetic to these. The trouble here is that with-holding data looks like hiding something, and hiding means (in some eyes) that it is bogus science that is being hidden.*** *I think Keith needs to be very, very careful in how he handles this. I'd be willing to check over anything he puts together. Tom.*

From: Phil Jones [CRU]
To: John Mitchell [Director of Climate Science – UK Met Office]
October 28, 2009
Subject: Yamal response from Keith
John,
. . . *This went up last night about 5pm. There is a lot to read at various levels. If you get time just the top level is necessary.* ***There is also a bit from Tim Osborn showing that Yamal was used in 3 of the 12 millennial reconstructions used in Ch 6*** [of IPCC Fourth Assessment Report]**.** *Also McIntyre had the Yamal data in Feb 2004 - although he seems to have forgotten this. Keith succeeding in being very restrained in his response.* ***McIntyre knew what he was doing when he replaced some of the trees with those from another site.***
Cheers
Phil

From: Phil Jones [CRU]
To: Keith Briffa [CRU]
October 28, 2009
Subject: FW: Yamal and paleoclimatology
Keith,
There is a lot more there on CA [Climate Audit website] *now.* ***I would be very wary about responding to this person now having seen what McIntyre has put up.*** *You and Tim talked about Yamal. Why have the bristlecones come in now.* . . . *This is what happens - they just keep moving the goalposts. Maybe get Tim to redo OB2006 without a few more series.*
Cheers
Phil . . .
Dear Professor Briffa, I am pleased to hear that you appear to have recovered from your recent illness sufficiently to post a response to the controversy surrounding the use of the Yamal chronology; and the chronology itself; Unfortunately I find your explanations lacking in

scientific rigour and I am more inclined to believe the analysis of McIntyre[.] *Can I have a straightforward answer to the following questions 1) Are the reconstructions sensitive to the removal of either the Yamal data and Strip pine bristlecones, either when present singly or in combination? 2) Why these series, when incorporated with white noise as a background, can still produce a Hockey-Stick shaped graph if they have, as you suggest, a low individual weighting? And once you have done this, please do me the courtesy of answering my initial email.*
Dr. D.R. Keiller

Questioning the Consensus?

From: Keith Briffa [CRU]
To: Chris Folland [UK Met Office]; Phil Jones [CRU]; Michael E. Mann [University of Virginia]
Cc: Tom Karl [National Climatic Data Center – NOAA]
September 22, 1999
Subject: RE: IPCC revisions
. . . ***I know there is pressure to present a nice tidy story as regards 'apparent unprecedented warming in a thousand years or more in the proxy data' but in reality the situation is not quite so simple.*** *We don't have a lot of proxies that come right up to date and those that do (at least a significant number of tree proxies)* ***some unexpected changes in response that do not match the recent warming.*** . . .

From: Edward Cook [Columbia University]
To: Keith Briffa [CRU]
April 29, 2003
[Subject: Review- confidential]
Hi Keith,
I will start out by sending you the chronologies that I sent Bradley, i.e. all but Mongolia. If you can talk Gordon out of the latter, you'll be the first from outside this lab. The chronologies are in tabbed column format and Tucson index format. The latter have sample size included. ***It doesn't take a rocket scientist (or even Bradley after I warned him about small sample size problems) to realize that some of the chronologies are down to only 1 series in their earliest parts. Perhaps I should have truncated them before using them, but I just took what Jan gave me and worked with the chronologies as best I could.*** *My suspicion is that most of the pre-1200 divergence is due to low replication and a reduced number of available chronologies. I should also say that the column data have had their means normalized to approximately 1.0, which is not the case for the chronologies straight out of ARSTAN. That is because the site-level RCS-detrended data were simply averaged to produce these chronologies, without concern for their long-term means. Hence the "RAW" tag at the end of each line of indices.* ***Bradley still regards the MWP*** [Medieval Warm Period] ***as "mysterious" and "very incoherent" (his latest pronouncement to me) based on the available data. Of course he and other members of the MBH*** [Mann Bradley Hughes] ***camp have a fundamental dislike for the very concept of the MWP, so I tend to view their evaluations as starting out from a somewhat biased perspective, i.e. the cup is not only "half-empty"; it is demonstrably "broken". I come more from the "cup half-full" camp when it comes to the MWP, maybe yes, maybe no, but it is too early to say***

what it is. Being a natural skeptic, I guess you might lean more towards the MBH camp, which is fine as long as one is honest and open about evaluating the evidence (I have my doubts about the MBH camp). We can always politely(?) disagree given the same admittedly equivocal evidence. *I should say that Jan should at least be made aware of this reanalysis of his data. Admittedly, all of the Schweingruber data are in the public domain I believe, so that should not be an issue with those data.* ***I just don't want to get into an open critique of the Esper data because it would just add fuel to the MBH attack squad. They tend to work in their own somewhat agenda-filled ways. We should also work on this stuff on our own, but I do not think that we have an agenda per se, other than trying to objectively understand what is going on.***
Cheers,
Ed

From: Keith Briffa [CRU]
To: Edward Cook [Columbia University]
April 29, 2003
Subject: Re: Review- confidential
Thanks Ed
Can I just say that I am not in the MBH [Mann Bradley Hughes] ***camp - if that be characterized by an unshakable "belief" one way or the other , regarding the absolute magnitude of the global MWP*** [Medieval Warm Period]***. I certainly believe the " medieval" period was warmer than the 18th century - the equivalence of the warmth in the post 1900 period, and the post 1980s ,compared to the circa Medieval times is very much still an area for much better resolution.*** *I think that the geographic / seasonal biases and dating/response time issues still cloud the picture of when and how warm the Medieval period was . On present evidence , even with such uncertainties I would still come out favouring the "likely unprecedented recent warmth" opinion - but our motivation is to further explore the degree of certainty in this belief - based on the realistic interpretation of available data. Point re Jan well taken and I will inform him*

From: Keith Briffa [CRU]
To: Michael E. Mann [University of Virginia]; Tom Wigley [University Corporation of Atmospheric Research]; Phil Jones [CRU]; Raymond Bradley [University of Massachusetts, Amherst]
Cc: Jerry Meehl [University Corporation of Atmospheric Research]; Caspar Ammann [University Corporation of Atmospheric Research]
May 20, 2003
Subject: Re: Soon et al. paper
Mike and Tom and others
. . . *As Tom W. states ,* ***there are uncertainties and "difficulties" with our current knowledge of Hemispheric temperature histories and valid criticisms or shortcomings in much of our work. This is the nature of the beast - and I have been loathe to become embroiled in polarised debates that force too simplistic a presentation of the state of the art or "consensus view".*** . . .
The one additional point I would make that seems to have been overlooked in the discussions up to now , is the invalidity of assuming that the existence of a global Medieval Warm period , even

if shown to be as warm as the current climate , somehow negates the possibility of enhanced greenhouse warming. . . . ***The various papers apparently in production, regardless of their individual emphasis or approaches, will find their way in to the literature and the next IPCC can sift and present their message(s) as it wishes.,*** *but in the meantime , why not a simple statement of the shortcomings of the BS paper as they have been listed in these messages and why not in Climate Research?*
Keith

From: Tom Wigley [University Corporation of Atmospheric Research]
To: Phil Jones [CRU]
Note: Ben Santer [Lawrence Livermore National Laboratory] may have been Cc'd.
October 21, 2004
[Subject: MBH]
Phil,
I have just read the M&M stuff critcizing MBH [Mann Bradley Hughes]. ***A lot of it seems valid to me. At the very least MBH is a very sloppy piece of work -- an opinion I have held for some time. Presumably what you have done with Keith is better? -- or is it? I get asked about this a lot.*** *Can you give me a brief heads up?* ***Mike is too deep into this to be helpful.***
Tom.

From: Phil Jones [CRU]
To: Tom Wigley [University Corporation of Atmospheric Research]
Cc: Ben Santer [Lawrence Livermore National Laboratory]
October 22, 2004
Subject: Re: MBH
Tom,
. . . *A lot of people criticise MBH* [Mann Bradley Hughes] *and other papers Mike has been involved in, but how many people read them fully - or just read bits like the attached. The attached is a complete distortion of the facts. M&M are completely wrong in virtually everything they say or do.* . . . *Mike's may have slightly less variability on decadal scales than the others (especially cf Esper et al), but he is using a lot more data than the others.* ***I reckon they are all biased a little to the summer and none are truly annual*** *- I say all this in the Reviews of Geophysics paper !* ***Bottom line - their is no way the MWP*** [Medieval Warm Period] ***(whenever it was) was as warm globally as the last 20 years. There is also no way a whole decade in the LIA*** [Little Ice Age] ***period was more than 1 deg C on a global basis cooler than the 1961-90 mean. This is all gut feeling, no science, but years of experience of dealing with global scales and varaibility.*** *Must got to Florence now. Back in Nov 1.*
Cheers
Phil

From: Phil Jones [CRU]
To: Kevin Trenberth [University Corporation of Atmospheric Research]; et al.
December 20, 2004
*Subject: Re: [Fwd: Re: [Fwd: Re: "**Model Mean Climate" for AR4*** [IPCC Fourth Assessment Report] *]]*

. . . *I would like to stick with 1961-90. I don't want to change this until 1981-2010 is complete, for 3 reasons : 1) We need 30 years and 81-10 will get all the MSU in nicely, and* ***2) I will be near retirement !! 3) is one of perception.*** *As climatologists we are often changing base periods and have done for years. I remember getting a number of comments when I changed from 1951-80 to 1961-90.* ***If we go to a more recent one the anomalies will seem less warm - I know this makes no sense scientifically, but it gives the skeptics something to go on about !*** *If we do the simple way, they will say we aren't doing it properly.* . . .

From: Keith Briffa [CRU]
To: Jonathan Overpeck [University of Arizona]
February ??, 2006
[Subject: bullet debate #3]
Third
I suggest this should be[:]
Taken together , the sparse evidence of Southern Hemisphere temperatures prior to the period of instrumental records indicates that overall warming has occurred during the last 350 years, but the even fewer longer regional records indicate earlier periods that are as warm, or warmer than, 20th century means.
. . . *Peck, you have to consider that since the TAR* [IPCC Third Assessment Report] *,* ***there has been a lot of argument re "hockey stick" and the real independence of the inputs to most subsequent analyses is minimal. True, there have been many different techniques used to aggregate and scale data - but the efficacy of these is still far from established. We should be careful not to push the conclusions beyond what we can securely justify*** *- and this is not much other than a confirmation of the general conclusions of the TAR .* ***We must resist being pushed to present the results such that we will be accused of bias - hence no need to attack Moberg .*** *Just need to show the "most likely"course of temperatures over the last 1300 years - which we do well I think. Strong confirmation of TAR is a good result, given that we discuss uncertainty and base it on more data.* ***Let us not try to over egg the pudding. For what it worth , the above comments are my (honestly long considered) views - and I would not be happy to go further .*** *Of course this discussion now needs to go to the wider Chapter authorship,* ***but do not let Susan*** [Solomon of NOAA] ***(or Mike*** [Michael Mann]***) push you (us) beyond where we know is right.***

From: Jonathan Overpeck [University of Arizona]
To: Keith Briffa [CRU]
September 13, 2006
. . . *I think the second sentence could be more controversial -* ***I don't think our team feels it is valid to say, as they did in TAR*** [IPCC Third Assessment Report]***, that "It is also likely that, in the Northern Hemisphere,... 1998 was the warmest year" in the last 1000 years. But, it you think about it for a while, Keith has come up with a clever 2nd sentence (when you insert "Northern Hemisphere" language as I suggest below). At first, my reaction was leave it out, but it grows on you, especially if you acknowledge that many readers will want more explicit prose on the 1998 (2005) issue.*** **. . .**

From: David Rind [NASA Goddard Institute for Space Studies]
To: Jonathan Overpeck [University of Arizona]

Cc: Keith Briffa [CRU]; et al.
September 13, 2006
Now getting back to the resolution issue: ***given what we know about the ability to reconstruct global or NH temperatures in the past - could we really in good conscience say we have the precision from tree rings and the very sparse other data to make any definitive statement of this nature (let alone accuracy)? While I appreciate the cleverness of the second sentence, the problem is everybody will recognize that we are 'being clever' – at what point does one come out looking aggressively defensive?*** *I agree that leaving the first sentence as the only sentence suggests that one is somehow doubting the significance of the recent warm years, which is probably not something we want to do.*

A Cooling World

From: Jonathan Overpeck [University of Arizona]
To: Keith Briffa [CRU]
Cc: Eystein Jansen [Bjerknes Centre for Climate Research]
January 5, 2005
Subject: Fwd: Re: the Arctic paper and IPCC
. . . *I'm still not convinced about the AO recon* [Arctic Oscillation reconstruction]*,* ***and am worried about the late 20th century "coolness" in the proxy recon that's not in the instrumental****, but it's a nice piece of work in any case.* . . .

From: David Parker [UK Met Office]
To: Neil Plummer [Bureau of Meteorology, Australia]
January 5, 2005
Neil
There is a preference in the atmospheric observations chapter of IPCC AR4 [IPCC Fourth Assessment Report] *to stay with the 1961-1990 normals. This is partly because a change of normals confuses users, e.g.* ***anomalies will seem less positive than before if we change to newer normals, so the impression of global warming will be muted.*** . . .

From: David Rind [NASA Goddard Institute for Space Studies]
To: Keith Briffa [CRU]
January 10, 2005
. . . *Well, yes and no. If the mismatch between suggested forcing, model sensitivity, and suggested response for the LIA suggests the forcing is overestimated (in particular the solar forcing), then it makes an earlier warm period less likely, with little implication for future warming. If it suggests climate sensitivity is really much lower, then it says nothing about the earlier warm period (could still have been driven by solar forcing), but suggests future warming is overestimated. If however it implies the reconstructions are underestimating past climate changes, then it suggests the earlier warm period may well have been warmer than indicated (driven by variability, if nothing else) while suggesting future climate changes will be large. This is the essence of the problem.*
David

From: Phil Jones [CRU]
To: John Christy [University of Alabama, Huntsville]
July 5, 2005
Subject: This and that
John,
There has been some email traffic in the last few days to a week – quite a bit really, only a small part about MSU. The main part has been one of your House subcommittees wanting Mike Mann and others and IPCC to respond on how they produced their reconstructions and how IPCC produced their report. In case you want to look at this see later in the email ! ***Also this load of rubbish ! This is from an Australian at BMRC*** [Bureau of Meteorology Research Centre] ***(not Neville Nicholls). It began from the attached article. What an idiot. The scientific community would come down on me in no uncertain terms if I said the world had cooled from 1998. OK it has but it is only 7 years of data and it isn't statistically significant.***

. . . *The Hadley Centre are working on the day/night issue with sondes, but there are a lot of problems as there are very few sites in the tropics with both and where both can be distinguished.* ***My own view if that the sondes are overdoing the cooling*** *wrt MSU4 in the lower stratosphere,* ***and some of this likely (IPCC definition) affects the upper troposphere as well. Sondes are a mess and the fact you get agreement with some of them is miraculous. Have you looked at individual sondes, rather than averages - particularly tropical ones?*** *LKS is good, but the RATPAC update less so.*

. . . *What will be interesting is to see how IPCC pans out, as we've been told we can't use any article that hasn't been submitted by May 31. This date isn't binding, but Aug 12 is a little more as this is when we must submit our next draft - the one everybody will be able to get access to and comment upon. The science isn't going to stop from now until AR4* [IPCC Fourth Assessment Report] *comes out in early 2007, so we are going to have to add in relevant new and important papers.* ***I hope it is up to us to decide what is important and new. So, unless you get something to me soon, it won't be in this version.*** *It shouldn't matter though, as it will be ridiculous to keep later drafts without it.* ***We will be open to criticism though with what we do add in subsequent drafts.*** *Someone is going to check the final version and the Aug 12 draft. This is partly why I've sent you the rest of this email.* ***IPCC, me and whoever will get accused of being political, whatever we do. As you know, I'm not political. If anything, I would like to see the climate change happen, so the science could be proved right, regardless of the consequences. This isn't being political, it is being selfish.***
Cheers
Phil

From: Phil Jones [CRU]
To: Neville Nichols [Bureau of Meteorology, Australia]
July 6, 2005
Subject: Fwd: Misc
Neville,
*Here's an email from John, with the trend from his latest version in. Also has trends for RATPAC and HadAT2****. If you can stress in your talks that it is more likely the sondes are wrong - at least***

as a group. *Some may be OK individually. The tropical ones are the key, but it is these that least is know about except for a few regions.* ***The sondes clearly show too much cooling in the stratosphere (when compared to MSU4), and I reckon this must also affect their upper troposphere trends as well. So, John may be putting too much faith in them wrt agreement with UAH.*** *Happy for you to use the figure, if you don't pass on to anyone else. Watch out for Science though and the Mears/Wentz paper if it ever comes out.* ***Also, do point out that looking at surface trends from 1998 isn't very clever.***
Cheers
Phil

From: Neville Nichols [Bureau of Meteorology, Australia]
To: Phil Jones [CRU]
July 6, 2005
[Subject: RE: Misc]
. . . *I thought Mike Mann's draft response was pretty good - I had expected something more vigorous, but I think he has got the "tone" pretty right. Do you expect to get a call from Congress?*
Neville Nicholls

From: Phil Jones [CRU]
To: Neville Nichols [Bureau of Meteorology, Australia]
July 6th, 2005
Subject: RE: Misc
Neville,
Mike's response could do with a little work, but as you say he's got the tone almost dead on. I hope I don't get a call from congress ! ***I'm hoping that no-one there realizes I have a US DoE grant and have had this (with Tom W.) for the last 25 years.*** *I'll send on one other email received for interest.*
Cheers
Phil

From: Mike MacCracken [Climate Institute]
To: Phil Jones [CRU]; Chris Folland [UK Met Office]
Cc: John Holdren; Rosina Bierbaum
January 3, 2009
Subject: ***Temperatures in 2009***
Dear Phil and Chris--
. . . *In any case, if the sulfate hypothesis is right, then your prediction of warming might end up being wrong.* ***I think we have been too readily explaining the slow changes over past decade as a result of variability--that explanation is wearing thin. I would just suggest, as a backup to your prediction, that you also do some checking on the sulfate issue, just so you might have a quantified explanation in case the*** [warming] ***prediction is wrong. Otherwise, the Skeptics will be all over us--the world is really cooling, the models are no good, etc. And all this just as the US is about ready to get serious on the issue.*** *We all, and you all in particular, need to be prepared.*

Best, Mike MacCracken

From: Tim Johns [UK Met Office]
To: Chris Folland [CRU]
Cc: Doug Smith [UK Met Office]
January 5, 2009
. . . ***The impact of the two alternative SO2 emissions trajectories is quite marked though in terms of global temperature response in the first few decades of the 21st C*** *(at least in our HadGEM2-AO simulations, reflecting actual aerosol forcings in that model plus some divergence in GHG forcing). Ironically, the E1-IMAGE scenario runs, although much cooler in the long term of course, are considerably warmer than A1B-AR4 for several decades!* ***Also - relevant to your statement - A1B-AR4 runs show potential for a distinct lack of warming in the early 21st C, which I'm sure skeptics would love to see replicated in the real world...*** *(See the attached plot for illustration but please don't circulate this any further as these are results in progress, not yet shared with other ENSEMBLES partners let alone published).* ***We think the different short term warming responses are largely attributable to the different SO2 emissions trajectories.*** . . .

From: Phil Jones [CRU]
To: Tim Johns [UK Met Office]; Chris Folland [UK Met Office]
Cc: Doug Smith [UK Met Office]
January 5, 2009
Subject: Re: FW: ***Temperatures in 2009***
Tim, Chris,
I hope you're not right about the lack of warming lasting till about 2020. I'd rather hoped to see the earlier Met Office press release with Doug's paper that said something like - half the years to 2014 would exceed the warmest year currently on record, 1998! *Still a way to go before 2014. I seem to be getting an email a week from skeptics saying where's the warming gone****. I know the warming is on the decadal scale, but it would be nice to wear their smug grins away.*** *Chris - I presume the Met Office continually monitor the weather forecasts.* ***Maybe because I'm in my 50s, but the language used in the forecasts seems a bit over the top re the cold. Where I've been for the last 20 days (in Norfolk) it doesn't seem to have been as cold as the forecasts.*** . . .

From: Kevin Trenberth [University Corporation of Atmospheric Research]
To: Michael Mann [Penn State University]
Cc: Stephen Schneider [Stanford University]; Myles Allen [University of Oxford]; Peter Stott [UK Met Office]; Phil Jones [CRU]; Ben Santer [Lawrence Livermore National Laboratory]; Tom Wigley [University Corporation of Atmospheric Research]; Thomas R Karl [NOAA]; Gavin Schmidt [NASA Goddard Institute for Space Studies]; James Hansen [NASA Goddard Institute for Space Studies]; Michael Oppenheimer [Princeton University]
October 12, 2009
Subject: Re: BBC U-turn on climate
Hi all. Well I have my own article on where the heck is global warming? We are asking that here in Boulder where we have broken records the past two days for the coldest days on record. We

had 4 inches of snow. The high the last 2 days was below 30F and the normal is 69F, and it smashed the previous records for these days by 10F. The low was about 18F and also a record low, well below the previous record low. This is January weather (see the Rockies baseball playoff game was canceled on saturday and then played last night in below freezing weather). ***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.*** . . .

From: Tom Wigley [University Corporation of Atmospheric Research]
To: Phil Jones [CRU]
November 6, 2009
Subject: LAND vs OCEAN
We probably need to say more about this. ***Land warming since 1980 has been twice the ocean warming — and skeptics might claim that this proves that urban warming is real and important.*** *See attached note.*
Comments?
Tom

Political Science

From: Michael E. Mann [University of Virginia]
To: Keith Briffa [CRU]; Tom Wigley [University Corporation of Atmospheric Research]; Phil Jones [CRU]; Raymond Bradley [University of Massachusetts, Amherst]
May 16, 2003
[Subject: Soon et al. paper]
Tom,
Thanks for your response, which I will maintain as confidential within the small group of the original recipients (other than Ray whom I've included in as well), given the sensitivity of some of the comments made. . . . ***In my view, it is the responsibility of our entire community to fight this intentional disinformation campaign, which represents an affront to everything we do and believe in. I'm doing everything I can to do so, but I can't do it alone--and if I'm left to, we'll lose this battle,***
mike

From: Michael E. Mann [University of Virginia]
To: Phil Jones [CRU]; Raymond Bradley [University of Massachusetts, Amherst]; Tom Wigley [University Corporation of Atmospheric Research]; Tom Crowley [Duke University]; Keith Briffa [CRU]; Kevin Trenberth [University Corporation of Atmospheric Research]; Michael Oppenheimer [Princeton University]; Jonathan Overpeck [University of Arizona]
Cc: Scott Rutherford [University of Rhode Island]
June 3, 2003
[Subject: Prospective Eos piece?]
Dear Colleagues,

. . . *Phil, Ray, and Peck have already indicated tentative interest in being co-authors. I'm sending this to the rest of you (Tom C, Keith, Tom W, Kevin) in the hopes of broadening the list of co-authors.* ***I strongly believe that a piece of this sort co-authored by 9 or so prominent members of the climate research community (with background and/or interest in paleoclimate) will go a long way ih helping to counter these attacks, which are being used, in turn, to launch attacks against IPCC.*** . . .

From: Michael E. Mann [University of Virginia]
To: Phil Jones [CRU]; et al.
June 4, 2003
Subject: Re: Prospective Eos piece?
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* [2 thousand years] *back--**I think that trying to adopt a timeframe of 2K, rather than the usual 1K, addresses a good earlier point that Peck*** [Jonathan Overpeck – University of Arizona] ***made w/ regard to the memo, that it would be nice to try to "contain" the putative "MWP"*** [Medieval Warm Period]***, even if we don't yet have a hemispheric mean reconstruction available that far back*** *[Phil and I have one in review--not sure it is kosher to show that yet though--I've put in an inquiry to Judy Jacobs at AGU about this]*. . . .

> From: Phil Jones [CRU]
> To: Michael E. Mann [University of Virginia]
> June 4, 2003
> [Subject: Prospective Eos piece?]

. . . *EOS would get to most fellow scientists. As I said to you the other day, it is amazing how far and wide the SB pieces have managed to percolate.* ***When it comes out I would hope that AGU/EOS 'publicity machine' will shout the message from rooftops everywhere.*** *As many of us need to be available when it comes out. There is still no firm news on what Climate Research will do, although they will likely have two editors for potentially controversial papers, and the editors will consult when papers get different reviews. All standard practice I'd have thought.* ***At present the editors get no guidance whatsoever. It would seem that if they don't know what standard practice is then they shouldn't be doing the job !***
Cheers
Phil

From: Phil Jones [CRU]
To: Janice Lough [Australian Institute of Marine Science]
August 6th, 2004
Subject: Re: liked the paper
. . . *PS* ***Do you want to get involved in IPCC this time? I'm the CLA*** [Coordinating Lead Author] ***of the atmospheric obs.*** [observations] ***chapter with Kevin Trenberth and we'll be looking for Contributing Authors to help the Lead Authors we have. Paleo***[climatology] ***is in a different section this time led by Peck and Eystein Janssen. Keith is a lead author as well.***

From: Phil Jones [CRU]

To: Michael E. Mann [Penn State University]
May 19, 2009
[Subject: nomination: materials needed!]
. . . *Apart from my meetings* ***I have skeptics on my back - still, can't seem to get rid of them. Also the new UK climate scenarios are giving govt ministers the jitters as they don't want to appear stupid when they introduce them (late June?).*** . . .

From: Narsimha D. Rao [Stanford University]
To: Stephen H. Schneider [Stanford University]
October 11, 2009
Subject: BBC U-turn on climate
Steve, You may be aware of this already. Paul Hudson, BBCs reporter on climate change, on Friday wrote that theres been no warming since 1998, and that pacific oscillations will force cooling for the next 20-30 years. ***It is not outrageously biased in presentation as are other skeptics views.*** . . . ***BBC has significant influence on public opinion outside the US. Do you think this merits an op-ed response in the BBC from a scientist?***

From: Michael E. Mann [Penn State University]
To: Stephen H. Schneider [Stanford University]
Cc: Myles Allen [University of Oxford]; Peter Stott [UK Met Office]; Phil Jones [CRU]; Ben Santer [Lawrence Livermore National Laboratory]; Tom Wigley [University Corporation of Atmospheric Research]; Thomas R Karl [NOAA]; Gavin Schmidt [NASA Goddard Institute for Space Studies]; James Hansen [NASA Goddard Institute for Space Studies]; Kevin Trenberth [University Corporation of Atmospheric Research]; Michael Oppenheimer [Princeton University]
October 12, 2009
Subject: Re: BBC U-turn on climate
extremely disappointing to see something like this appear on BBC. its particularly odd, since climate is usually Richard Black's beat at BBC (and he does a great job). from what I can tell, this guy was formerly a weather person at the Met Office. We may do something about this on RealClimate [website], ***but meanwhile it might be appropriate for the Met Office*** [UK's National Weather Service] ***to have a say about this, I might ask Richard Black*** [BBC environment correspondent] ***what's up here?***

From: Phil Jones [CRU]
To: Gavin Schmidt [NASA Goddard Institute for Space Studies]; Michael E. Mann [Penn State University]; Andy Revkin [New York Times]
October 27, 2009
[Subject: The web page is up about the Yamal tree-ring chronology]
Gavin, Mike, Andy,
It has taken Keith longer than he would have liked, but it is up. There is a lot to read and understand. It is structured for different levels. The link goes to the top level. There is more detail below this and then there are the data below that. . . . *I'll let you make up you own minds! It seems to me as though McIntyre cherry picked for effect. There is an additional part that*

shows how many series from Ch 6 of AR4 [IPCC Fourth Assessment Report] *used Yamal - most didn't!*

From: Michael E. Mann [Penn State University]
To: Phil Jones [CRU]
Note: Gavin Schmidt [NASA Goddard Institute for Space Studies] may have been cc'd.
October 27, 2009
[Subject: The web page is up about the Yamal tree-ring chronology]
thanks Phil,
Perhaps we'll do a simple update to the Yamal post, e.g. linking Keith/s new page--Gavin t? As to the issues of robustness, particularly w.r.t. inclusion of the Yamal series, we actually emphasized that (including the Osborn and Briffa '06 sensitivity test) in our original post! ***As we all know, this isn't about truth at all, its about plausibly deniable accusations,***
m

From: Michael E. Mann [Penn State University]
To: Phil Jones [CRU]
Note: Gavin Schmidt [NASA Goddard Institute for Space Studies] may have been cc'd.
October 27, 2009
[Subject: The web page is up about the Yamal tree-ring chronology]
Hi Phil,
Thanks--we know that. The point is simply that if we want to talk about about a meaningful "2009" anomaly, every additional month that is available from which to calculate an annual mean makes the number more credible. We already have this for GISTEMP, but have been awaiting HadCRU to be able to do a more decisive update of the status of the disingenuous "globe is cooling" contrarian talking point,
mike
p.s. be a bit careful about what information you send to Andy [Revkin with the New York Times] ***and what emails you copy him in on. He's not as predictable as we'd like***

'Harry Read Me' File

Among CRU's exposed documents is the so-called "HARRY_READ_ME" file, which served as a detailed note keeping file from 2006 through 2009 for CRU researcher and programmer Ian "Harry" Harris. As he worked to update and modify CRU TS2.1 to create the new CRU TS3.1dataset, the HARRY_READ_ME.txt details Harris's frustration with the dubious nature of CRU's meteorological datasets. As demonstrated through a handful of excerpts below, the 93,000-word HARRY_READ_ME file raises several serious questions as to the reliability and integrity of CRU's data compilation and quality assurance protocols.

I am very sorry to report that the rest of the databases seem to be in nearly as poor a state as Australia was. There are hundreds if not thousands of pairs of dummy stations, one with no WMO and one with, usually overlapping and with the same station name and very similar coordinates. I know it could be old and new stations, but why such large overlaps if that's the case? Aarrggghhh! There truly is no end in sight.

One thing that's unsettling is that many of the assigned WMo codes for Canadian stations do not return any hits with a web search. Usually the country's met office, or at least the Weather Underground, show up - but for these stations, nothing at all. Makes me wonder if these are long-discontinued, or were even invented somewhere other than Canada!
-----

*OH F**K THIS. It's Sunday evening, I've worked all weekend, and just when I thought it was done I'm hitting yet another problem that's based on the hopeless state of our databases. There is no uniform*
data integrity, it's just a catalogue of issues that continues to grow as they're found.

Here, the expected 1990-2003 period is MISSING - so the correlations aren't so hot! Yet the WMO codes and station names /locations are identical (or close). What the hell is supposed to happen here? Oh yeah - there is no 'supposed', I can make it up. So I have :-)

You can't imagine what this has cost me - to actually allow the operator to assign false WMO codes!! But what else is there in such situations? Especially when dealing with a 'Master' database of dubious provenance (which, er, they all are and always will be).

False codes will be obtained by multiplying the legitimate code (5 digits) by 100, then adding 1 at a time until a number is found with no matches in the database. THIS IS NOT PERFECT but as there is no central repository for WMO codes - especially made-up ones - we'll have to chance duplicating one that's present in one of the other databases. In any case, anyone comparing WMO codes between databases - something I've studiously avoided doing except for tmin/tmax where I had to - will be treating the false codes with suspicion anyway. Hopefully.

Of course, option 3 cannot be offered for CLIMAT bulletins, there being no metadata with which to form a new station.

This still meant an awful lot of encounters with naughty Master stations, when really I suspect nobody else gives a hoot about. So with a somewhat cynical shrug, I added the nuclear option - to match every WMO possible, and turn the rest into new stations (er, CLIMAT excepted). In other words, what CRU usually do. It will allow bad databases to pass unnoticed, and good databases to become bad, but I really don't think people care enough to fix 'em, and it's the main reason the project is nearly a year late.

This whole project is SUCH A MESS. No wonder I needed therapy!!

So.. we don't have the coefficients files (just .eps plots of something). But what are all those monthly files? DON'T KNOW, UNDOCUMENTED. Wherever I look, there are data files, no info about what they are other than their names. And that's useless.. take the above example, the filenames in the _mon and _ann directories are identical, but the contents are not. And the only difference is that one directory is apparently 'monthly' and the other 'annual' – yet both contain monthly files.

I find that they are broadly similar, except the normals lines (which both start with '6190') are very different. I was expecting that maybe the latter contained 94-00 normals, what I wasn't expecting was that
thet are in % x10 not %! Unbelievable - even here the conventions have not been followed. It's botch after botch after botch. Modified the conversion program to process either kind of normals line.

The biggest immediate problem was the loss of an hour's edits to the program, when the network died.. no explanations from anyone, I hope it's not a return to last year's troubles.

(some weeks later)

well, it compiles OK, and even runs enthusiastically. However there are loads of bugs that I now have to fix. Eeeeek. Timesrunningouttimesrunningout.

(even later)

Getting there.. still ironing out glitches and poor programming.

25. Wahey! It's halfway through April and I'm still working on it. This surely is the worst project I've ever attempted. Eeeek.

So the 'duplicated' figure is slightly lower.. but what's this error with the '.ann' file?! Never seen before. Oh GOD if I could start this project again and actually argue the case for junking the inherited program suite!!

Wrote 'makedtr.for' to tackle the thorny problem of the tmin and tmax databases not being kept in step. Sounds familiar, if worrying. am I the first person to attempt to get the CRU databases in working order?!! The program pulls no punches.

Back to the gridding. I am seriously worried that our flagship gridded data product is produced by Delaunay triangulation - apparently linear as well. As far as I can see, this renders the station counts totally meaningless. It also means that we cannot say exactly how the gridded data is arrived at from a statistical perspective - since we're using an off-the-shelf product that isn't documented sufficiently to say that. Why this wasn't coded up in Fortran I don't know - time pressures perhaps? Was too much effort expended on homogenisation, that there wasn't enough time to write a gridding procedure? Of course, it's too late for me to fix it too. Meh.

Now looking at the dates.. something bad has happened, hasn't it. COBAR AIRPORT AWS cannot start in 1962, it didn't open until 1993! Looking at the data - the COBAR station 1962-2004 seems to be an exact copy of the COBAR AIRPORT AWS station 1962-2004, except that the latter has more missing
values. Now, COBAR AIRPORT AWS has 15 months of missing value codes beginning Oct 1993.. coincidence?

I am seriously close to giving up, again. The history of this is so complex that I can't get far enough into it before by head hurts and I have to stop. Each parameter has a tortuous history of manual and semi-automated interventions that I simply cannot just go back to early versions and run the update prog. I could be throwing away all kinds of corrections - to lat/lons, to WMOs (yes!), and more.

So what the hell can I do about all these duplicate stations? Well, how about fixdupes.for? That would be perfect - except that I never finished it, I was diverted off to fight some other fire. Aarrgghhh.

I - need - a - database - cleaner.

*What about the ones I used for the CRUTEM3 work with Phil Brohan? Can't find the bugger!! Looked everywhere, Matlab scripts aplenty but not the one that produced the plots I used in my CRU presentation in 2005. Oh, F**K IT. Sorry. I will have to WRITE a program to find potential duplicates. It can show me pairs of headers, and correlations between the data, and I can say*

*'yay' or 'nay'. There is the finddupes.for program, though I think the comment for *this* program sums it up nicely:*

```
'      program postprocdupes2
c Further post-processing of the duplicates file - just to show how crap the
c program that produced it was! Well - not so much that but that once it was
c running, it took 2 days to finish so I couldn't really reset it to improve
c things. Anyway, *this* version does the following useful stuff:
c (1) Removes and squirrels away all segments where dates don't match;
c (2) Marks segments >5 where dates don't match;
c (3) Groups segments from the same pair of stations;
c (4) Sorts based on total segment length for each station pair'
```

You see how messy it gets when you actually examine the problem?

Well, dtr2cld is not the world's most complicated program. Wheras cloudreg is, and I immediately found a mistake! Scanning forward to 1951 was done with a loop that, for completely unfathomable reasons, didn't include months! So we read 50 grids instead of 600!!! That may have had something to do with it. I also noticed, as I was correcting THAT, that I reopened the DTR and CLD data files when I should have been opening the bloody station files!! I can only assume that I was being interrupted continually when I was writing this thing. Running with those bits fixed improved matters somewhat, though now there's a problem in that one 5-degree band (10S to 5S) has no stations! This will be due to low station counts in that region, plus removal of duplicate values.

APPENDIX B

The Temperature Data Sets

EPA and the IPCC relied upon three global temperature data sets. The temperature data are the most critical information to the attribution of emissions of greenhouse gases to anthropogenic global warming. While EPA and IPCC argue that there are other factors supporting the existence of anthropogenic global warming or climate change, we believe that without a trend of increasing temperature, which is unprecedented relative to historical trends, one cannot properly demonstrate the establishment of human induced warming.[102]

EPA maintains that each data set was based on different procedures to adjust the data for various anomalies, such as the heat island effect. With three different datasets using three different procedures arriving at similar conclusions, e.g., closely related graphs of historical temperature, EPA's conclusion is that the temperature trend has been validated. Therefore, they conclude, regardless of the problems with the CRU dataset, there is no need for other scientists to attempt to replicate the data sets from the raw data.[103]

We believe that there is sufficient information to support a conclusion that the three data sets—NASA, NOAA, and CRU—all have significant problems. Moreover, because all datasets use the Global Historical Climatology Network (GHCN) data, there is at least a 95 percent overlap between the US data sets and the CRU.

Aside from the fact that replication is a basic feature of good science, if, as the leaked CRU emails seem to indicate, the CRU data have been corrupted, then after correction there would be two similar and one dissimilar datasets. We maintain that good science requires a close examination and peer review of the data sets, which EPA has not done.

EPA's reliance on the IPCC assessment reports, which used the CRU data, means that EPA also relied on the CRU data, in addition to the NOAA and NASA data. If the three data sets are linked, they would all overlap and suffer similar problems as the CRU data set. Therefore, EPA's reliance on the IPCC reports would require a reassessment of the temperature records in order to make an endangerment finding.

We also note that historical temperature data are used to validate Global Climate Models (GCM). If the temperature data sets falsely show increasing temperatures, then the GCM projections are in error; as well as any use of the GCM's to attribute global warming to human activity. Many of the e-mails involve problems with the GCMs and we will discuss this in a later report.

APPENDIX C

What is peer review?

Peer review is a documented critical review of a specific Agency scientific and/or technical work product. Peer review is conducted by qualified individuals (or organizations) that are independent of those who performed the work, and who are collectively equivalent in technical expertise (i.e., peers) to those who performed the original work. Peer review is conducted to ensure that activities are technically supportable, competently performed, properly documented, and consistent with established quality criteria. Peer review is an in-depth assessment of the assumptions, calculations, extrapolations, alternate interpretations, methodology, acceptance criteria, and conclusions pertaining to the specific major scientific and/or technical work product and of the documentation that supports them. Peer review may provide an evaluation of a subject where quantitative methods of analysis or measures of success are unavailable or undefined such as research and development.[104]

In its endangerment finding, EPA extensively relies on the fact that the finding and the scientific conclusions were subject to public comment. [105] Peer review and public comment, however, are not the same. Public comment solicited from the general public through the *Federal Register* or by other means is often required by the Administrative Procedure Act, other relevant statutes, or both. The critical distinction is that public comment does not necessarily draw the kind of independent, expert information and in-depth analyses expected from the peer review process. And public comment does not substitute for peer review.

A regulation itself is not subject to the Peer Review Policy. However, if a regulation is supported by influential scientific information or a highly influential scientific assessment, the underlying work product should be peer reviewed before EPA issues the proposed regulation.[106] The principle underlying the Peer Review Policy is that all influential scientific and technical work products used in decision making will be peer reviewed.

As an EPA developed document, the TSD should have gone through peer review. EPA's explanation that the document was sent around to other government scientists seems to indicate more of a peer comment process and not full and complete peer review.

Further, because these principal IPCC scientists whose papers are relied upon for much of the basis of the IPCC Assessment Reports have refused to release their raw data or to describe in detail the adjustments made to historical temperature data, the scientific method of replication and verification could not take place.[107] This later point strikes at the heart of peer review.

EPA's continued use of the statement about the IPCC reports representing the "consensus" of scientific opinion is misleading and incorrect. Science is not based on "consensus". It is based on the scientific method, and the peer reviewed journal literature.

[1] Climate e-mails row university 'breach', BBC News, Jan. 22, 2010, (**http://news.bbc.co.uk/2/hi/8484385.stm**).

[2] "Senior civil servant to investigate leaked emails between climate scientists," by Adam Vaughn, The Guardian, 3 December 2009 (**http://www.guardian.co.uk/environment/2009/dec/03/leaked-email-uea-inquiry**).

[3] We stress that this is a preliminary list of the leaked material, as there are thousands of pages of emails, along with computer code and other documents, which have yet to be analyzed.

[4] "Climate Change scandal deepens as BBC expert claims he was sent emails six weeks ago," by Carol Driver, Mail Online, 26 November 2009 (**http://www.dailymail.co.uk/news/article-1230943/Climate-change-scandal-BBC-expert-sent-cover-emails-month-public.html**).

[5] As best as we can decipher, here is a timeline of the information flow: On October 12, 2009 Paul Hudson, BBC weather presenter and climate change expert, was forwarded a chain of the emails; on November 17,2009, the RealClimate website was breached, using a computer in Turkey to upload a zip file containing all 4,000 emails and documents; on November 19, 2009, using a computer in Saudi Arabia, a link to the emails was posted on "The Air Vent" that sent users to a copy of the zip file stored on a Russian server.

[6] "Were Russian security services behind the leak of 'Climategate' emails?" Will Stewart and Martin Delgado, Mail Online (**http://www.dailymail.co.uk/news/article-1233562/Emails-rocked-climate-change-campaign-leaked-Siberian-closed-city-university-built-KGB.html**)

[7] The Guardian, "Climate scientist at the centre of leaked email row dismisses conspiracy claims," 24 November 2009 (**http://www.guardian.co.uk/environment/2009/nov/24/climate-professor-leaked-emails-uea**).

[8] In fact, as the Guardian reported on 1 February 2010: "There has been a marked change of emphasis on the part of police and information commissioner investigators since the leak occurred last November. The university, which had called in the police, talked about illegal hacking and "theft of data." Police said they were investigating "criminal offences in relation to a data breach." But the most recent statement from the Information Commissioner's Office, which said the University of East Anglia had flouted Freedom of Information regulations in its handling of requests for data from climate sceptics, uses much more cautious phrasing, leaving open the possibility that no crime has actually occurred. It merely says: "Norfolk police are investigating how private emails have become public."

[9] Scientists Behaving Badly: A corrupt cabal of global warming alarmists are exposed by a massive document leak," by Steven F. Hayward, the Weekly Standard, 14 December 2009 (**http://www.weeklystandard.com/Content/Public/Articles/000/000/017/300ubchn.asp**).

[10] "Scientists broke the law by hiding climate change data: But legal loophole means they won't be prosecuted," David Derbyshire, Mail Online, 28 January 2010 (**http://www.dailymail.co.uk/news/article-1246661/New-scandal-Climate-Gate-scientists-accused-hiding-data-global-warming-sceptics.html**).

[11] "Senior civil servant to investigate leaked emails between climate scientists," by Adam Vaughn, The Guardian, 3 December 2009 (**http://www.guardian.co.uk/environment/2009/dec/03/leaked-email-uea-inquiry**).

[12] Naomi Oreskes, "Beyond the Ivory Tower: The Scientific Consensus of Climate Change," Science, 3 December 2004 (**http://www.sciencemag.org/cgi/content/full/306/5702/1686**).

[13] Written testimony of Dr. Jane Lubchenko, Undersecretary of Commerce for Oceans and Atmosphere, and Administrator, National Oceanic and Atmospheric Administration, U.S. Department of Commerce, before the House Select Committee on Energy Independence and Global Warming, December 2, 2009 (**http://globalwarming.house.gov/tools/3q08materials/files/lubchenco.pdf**).

[14] Congressional Research Service, Memorandum, "The Climatic Research Unit at the University of East Anglia," by Jane Leggett, CRS Specialist in Environmental and Energy Policy, 1 December 2009.

[15] "Endangerment and Cause or Contribute Finding For Greenhouse Gases under Section 202(a) under the Clean Air Act," 15 December 2009 (**http://www.epa.gov/climatechange/endangerment/downloads/Federal_Register-EPA-HQ-OAR-2009-0171-Dec.15-09.pdf**).

[16] Ibid, p. 6651

[17] Technical Support Document, Endangerment and Cause or Contribute Finding for Greenhouse Gases. Pages 47 to 52.

[18] H.R. 2454, American Clean Energy and Security Act (**http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=111_cong_bills&docid=f:h2454pcs.txt.pdf**).

[19] Lisa Lehrer, "GOP Pushes on 'Climategate,'" Politico, 6 December 2009 (**http://news.yahoo.com/s/politico/20091206/pl_politico/30172**).

[20] Ibid at 4.

[21] Interview with Al Gore, "What in the Hell Do They Think Is Causing It?" Slate, 8 December 2009 (**http://www.slate.com/id/2237789/**)

[22] George Monbiot, "Pretending the climate email leak isn't a crisis won't make it go away," George Monbiot's blog, 25 November 2009 (**http://www.guardian.co.uk/environment/georgemonbiot/2009/nov/25/monbiot-climate-leak-crisis-response**).

[23] "Time for a Smarter Approach to Global Warming," by Bjorn Lomborg, op-ed in the Wall Street Journal, 15 December 2009: "The most efficient global carbon cuts designed to keep average global temperatures from rising any higher than two degrees Celsius above pre-industrial levels (a plan proposed by the industrialized G-8 nations) would cost the world **$40 trillion a year** in lost economic growth by 2100…" (**http://online.wsj.com/article/SB10001424052748704517504574589952331068322.html**).

[24] "Climate head steps down over e-mail leak," CNN, 3 December 2009 (**http://www.cnn.com/2009/WORLD/europe/12/02/climate.stolen.emails/index.html**).

[25] "RA-10 Inquiry Report: Concerning the Allegations of Research Misconduct Against Dr. Michael E. Mann, Department of Meteorology, College of Earth and Mineral Sciences, Penn State University," (**http://www.research.psu.edu/orp/Findings_Mann_Inquiry.pdf**).

[26] "Climategate: UN panel on climate change to investigate claims," The Telegraph, 4 December 2009 (**http://www.telegraph.co.uk/earth/earthnews/6724249/Climategate-UN-panel-on-climate-change-to-investigate-claims.html**).

[27] Letter to Ban Ki-Moon, 10 December 2009, available at (**http://epw.senate.gov/public/index.cfm?FuseAction=PressRoom.PressReleases&ContentRecord_id=7A95C7C2-802A-23AD-4754-D43002001493**).

[28] We reprinted the emails exactly as they were written, including grammatical and syntactical errors.

[29] Ibid at 4.

[30]Peer Review Handbook 3d edition, Section 1.2.3: Peer review is a documented critical review of a specific Agency scientific and/or technical work product. Peer review is conducted by qualified individuals (or organizations) who are independent of those who performed the work, and who are collectively equivalent in technical expertise (i.e., peers) to those who performed the original work. Peer review is conducted to ensure that activities are technically supportable, competently performed, properly documented, and consistent with established quality criteria.

[31] National Research Council, "Surface Temperature Reconstructions for the Last 2,000 Years," Committee on Surface Temperature for the Last 2,000 Years, 22 June 2006 (**http://books.nap.edu/openbook.php?record_id=11676&page=R1**). The NRC Committee was convened at behest of Congress to study the controversy surrounding the so-called "hockey stick" temperature reconstruction, which was a temperature reconstruction of the last 1,000 years by Professors Michael Mann, Raymond Bradley, and Malcolm Hughes (MBH). The upshot of the graph, which was featured prominently in the IPCC's Third Assessment Report, was that the 1990s, and 1998, were likely the warmest decade, and the warmest year, respectively, "in at least in a millennium." While the NRC said the hockey stick reconstruction was a "plausible" depiction of 20th Century Warming, it also found that "the substantial uncertainties currently present in the quantitative assessment of large-scale surface temperature changes prior to about A.D. 1600 lower our confidence in this conclusion compared to the high level of confidence we place in the Little Ice Age cooling and 20th century warming. *Even less confidence can be placed in the original conclusions by Mann et al. (1999) that 'the 1990s are likely the warmest decade, and 1998 the warmest year, in at least a millennium.'"*[Emphasis added.]

[32] "Science chief John Beddington calls for honesty on climate change," by Ben Webster, the Times Online, 27 January 2010 (**http://www.timesonline.co.uk/tol/news/environment/article7003622.ece**).

[33] "Ensuring Integrity in Science," by Ralph Cicerone, Science, 5 February 2010 (**http://www.climateaudit.info/pdf/news/cicerone.2010.pdf**).

[34] "Americans Skeptical of the Science Behind Global Warming," Rasmussen poll, 3 December 2009 (**http://www.rasmussenreports.com/public_content/politics/current_events/environment_energy/americans_skeptical_of_science_behind_global_warming**); "Climate skepticism 'on the rise', BBC poll shows," BBC News, 5 February 2010 (**http://climategate.tv/?p=817**).

[35] On Being a Scientist: Responsible Conduct in Research, the National Academy of Sciences, 1995 edition (**http://www.nap.edu/openbook.php?record_id=4917&page=R1**).

[36] Tom Wigley concluded in an article in Geophysical Research Letters "that the impact on projected temperature increases, with all countries doing only what is required under Kyoto and then continuing with business as usual, would be a scant 0.06 to 0.11°C (0.11 to 0.20°F) shaved off the total warming, roughly a 3% reduction" (**http://www.ucar.edu/news/record/**).

[37] The Senate Committee on Environment and Public Works, Full committee hearing. Climate history, science, and health effect s of mercury emissions, Jul. 29, 2003, **http://epw.senate.gov/public/index.cfm?FuseAction=Hearings.Hearing&Hearing_ID=e02dfeca-802a-23ad-4738-62182d959660**.

[38] "20th Century Climate Not So Hot," Press Release, Harvard-Smithsonian Center for Astrophysics, 31 March 2003 (**http://www.cfa.harvard.edu/news/archive/pr0310.html**).

[39] Jones has backed off support for the hockey stick, as he recently admitted to the BBC that the question of whether a Medieval Warm Period was global in nature is still in dispute. See "Q&A: Professor Phil Jones," 13 February 2010 (**http://news.bbc.co.uk/2/hi/science/nature/8511670.stm**).

[40] This raises a fundamental question: Why would the scientists fear that a single paper could undermine the entire field of paleoclimatology?

[41] The Finnish Environment Institute, also known as SYKE (after the Institute's Finnish acronym), "is both a research institute, and a centre for environmental expertise. SYKE's research focuses on changes in the environment, and seeks ways to control these changes." Its expertise is based on long-term environmental monitoring, wide-ranging research results, and the Institute's highly-qualified staff." (**http://www.ymparisto.fi/default.asp?node=6278&lan=EN**). UCAR is "a nonprofit consortium of universities that grant Ph.D.s in fields related to atmospheric science. UCAR's primary activity is managing the National Center for Atmospheric Research" (**http://www2.ucar.edu/about-us/quick-facts#short**). UCAR also provides services to support, enhance, and extend the capabilities of the universities through its community programs and by advocating for strong federal science budgets on behalf of the geosciences community.

[42] "What happened to global warming?" Paul Hudson, BBC News, 9 October 2009 (**http://news.bbc.co.uk/2/hi/8299079.stm**).

[43] The UK Met Office is the UK equivalent of the National Weather Service.

[44] The other authors of the hockey stick are Raymond Bradley, University Distinguished Professor in the Department of Geosciences and Director of the Climate Research Center, University of Massachusetts (**http://www.geo.umass.edu/faculty/bradley/**) and Malcolm Hughes, Regents' Professor, The Laboratory of Tree Ring Research, University of Arizona (**http://www.ltrr.arizona.edu/people.html**). Bradley's work is "supported by grants from NSF, NOAA, and the Department of Energy."

[45] "CRU Update Number 1," by Phil Jones, 23 November 2009 (**http://www.uea.ac.uk/mac/comm/media/press/2009/nov/CRU-update**).

[46] Dr. John Holdren, hearing, House Select Committee on Energy Independence and Global Warming, 2 December 2009 (**http://www.noaanews.noaa.gov/stories2009/pdfs/cqtranscript_dec2houseclimatehearing.pdf**).

[47] See, for example, "Tricks of the Trade: How to Think about Your Research While Doing It," by Howard S. Becker. Excerpt: "The social sciences, no less than plumbing or carpentry, have their tricks." (**http://www.press.uchicago.edu/Misc/Chicago/041247.html**).

[48] For greater detail on the divergence problem, see: (**http://www.theclimateconspiracy.com/?p=354**).

[49] See National Research Council, "Surface Temperature Reconstructions for the Last 2,000 Years," Committee on Surface Temperature for the Last 2,000 Years, 22 June 2006. For example: "... the coarse spatial sampling limits our confidence in hemispheric mean or global mean temperature estimates prior to A.D. 1600 and makes it very difficult to generate meaningful quantitative estimates of global temperature variations prior to about A.D. 900. Moreover, the instrumental record is shorter than some of the features of interest in the preindustrial period (i.e., the extended period of sporadic warmth from A.D. 800 to 1300 and the subsequent Little Ice Age), so there are very few statistically independent pieces of information in the instrumental record for calibrating and validating long-term temperature reconstructions. ... Thus, the reconstruction of century-long trends has substantial uncertainty when it is based on data that exhibit year-to-year variability."

[50] Courtesy of Steve McIntyre. (**http://climateaudit.org/**).

[51] Ibid at 26.

[52] Refer to footnote 23 for more discussion of the NRC report.

[53] Jonathan Overpeck is Director of the Environmental Studies Laboratory, Department of Geosciences, University of Arizona. (**http://www.geo.arizona.edu/dgesl/about/people/jonathanoverpeck/jonathanoverpeck.htm**).

[54] "Q&A: Professor Phil Jones," 13 February 2010 (**http://news.bbc.co.uk/2/hi/science/nature/8511670.stm**). Jones also said, "On the other hand, if the MWP was global, but was less warm that today, then current warmth would be unprecedented."

[55](**http://www.newscientist.com/article/dn17742-worlds-climate-could-cool-first-warm-later.html?DCMP=OTC-rss&nsref=online-news**).

[56] "Science: Another Ice Age?", Time Magazine, 24 June 1974.

[57] "What Happened to Global Warming," by Paul Hudson, BBC, 9 October 2009 (**http://news.bbc.co.uk/2/hi/8299079.stm**).

[58] The mini ice age starts here," by David Rose, The Mail Online, 10 January 2010 (**http://www.dailymail.co.uk/sciencetech/article-1242011/DAVID-ROSE-The-mini-ice-age-starts-here.html**).

[59] Q & A: Professor Phil Jones, the BBC, 13 February 2010 (**http://news.bbc.co.uk/2/hi/science/nature/8511670.stm**).

[60] The date on this email disproves Al Gore's dismissive assertion about the CRU controversy that "the most recent [email] is more than ten years old." Salon, interview with Al Gore, 8 December 2009 (**http://www.slate.com/id/2237789/**).

[61] The Climate Institute is a non-profit 501(c)3, the mission of which is to "[c]atalyze innovative and practical solutions for climate change adaptation, mitigation, and climate stabilization, contribute to scientific research and communicate the results of that research in an accurate and comprehensive manner" (**http://www.climate.org/about/mission.html**).

[62] BBC News, *Q&A: Professor Phil Jones,* 13 February 2010 (http://news.bbc.co.uk/2/hi/science/nature/8511670.stm).

[63] See 74 FR 66,517.

[64] HadCRUT3 is jointly compiled with the UK's Hadley Centre. The Hadley Centre is part of the UK's Met Office, which, as noted earlier, is the UK equivalent of the National Weather Service in the U.S. For more information on the Hadley Centre, go to (**http://www.metoffice.gov.uk/climatechange/science/hadleycentre/**).

[65] Yvo de Boer recently announced he will be stepping down as Executive Secretary in July 1, 2010 (**http://www.metoffice.gov.uk/climatechange/science/hadleycentre/**).

[66] Or consider the following from EPA in its "Response to Public Comments, Volume 11: Miscellaneous, Legal, Procedural, and Other Comments": "The disclosure of the private communications of a few individual scientists, among the hundreds of scientists that have participated in the development of the IPCC reports and the thousands that have developed the literature that was assessed, provides no evidence that contradicts the key conclusions and basic science underlying climate change." (**http://www.epa.gov/climatechange/endangerment/downloads/RTC%20Volume%2011.pdf**).

[67] "A rejected paper that you spent months writing is fine if the research is bad," Auffhammer said at UC Berkeley's Haas School of Business earlier this week. "But it seems to be an insular, small, contained set of individuals that kept this paper from being published and making it into the IPCC's Fourth Assessment Report." Greenwire, "Climategate resonates in bid to delay Calif.'s climate law," 1 February 2010.

[68] As it turned out, the faulty air conditioning was not a random occurrence. According to former Sen. Tim Wirth (D-Colo.), in an interview with the PBS program 'Frontline,' "We called the Weather Bureau and found out what historically was the hottest day of the summer. Well, it was June 6th or June 9th or whatever it was. So we scheduled the hearing that day, and bingo, it was the hottest day on record in Washington, or close to it." When asked by Frontline whether he "altered the temperature in the hearing room," Wirth said, "What we did is that we went in the night before and opened all the windows, I will admit, so that the air conditioning wasn't working inside the room. And so …when the hearing occurred, there was not only bliss, which is television cameras and double figures, but it was really hot…The wonderful Jim Hansen was wiping his brow at the table at the hearing, at the witness table, and giving his remarkable testimony." (http://planetgore.nationalreview.com/post/?q=MmIyM2VmYmVhNGU1NTJlZWI1ZTE0ZGIzZTIxOTkzMjE=).

[69] Testimony of Dr. James Hansen, U.S. Senate Committee on Energy and Natural Resources, June 23, 1988 (**http://image.guardian.co.uk/sys-files/Environment/documents/2008/06/23/ClimateChangeHearing1988.pdf**).

[70] "The Hansen-Michaels Global Warming Debate," by Timothy O'Donnell, University of Pittsburgh. (**http://www.pitt.edu/~gordonm/Pubdeb/O'Donnell.pdf**).

[71] "IPCC Gets To Work," Global Climate Change Digest, Vol. 2, No. 3, March 1989 (**http://www.gcrio.org/gccd/gcc-digest/1989/d89mar1.htm**).

[72] (**http://www.ucsusa.org/global_warming/science_and_impacts/science/ipcc-backgrounder.html**).

[73] Intergovernmental Panel on Climate Change, "About the IPCC." (**http://www1.ipcc.ch/about/index.htm**).

[74] IPCC Fourth Assessment Report, Climate Change 2007: Synthesis Report (**http://www.ipcc.ch/publications_and_data/ar4/syr/en/spms1.html**).

[75] IPCC, 16 Years of Scientific Assessment in Support of the Climate Convention: "In fact, it was the First Assessment Report of the IPCC that was used by the Intergovernmental Negotiating Committee (INC) as the scientific basis for arriving at the Framework Convention on Climate Change" (**http://www1.ipcc.ch/pdf/10th-anniversary/anniversary-brochure.pdf**).

[76] Article 2, United National Framework Convention on Climate Change (**http://unfccc.int/essential_background/convention/background/items/1353.php**).

[77] Byrd-Hagel, S. Res 98, **http://www.nationalcenter.org/KyotoSenate.html**.

[78] Department of Energy Fact Sheet: "U.S. Plays A Leading Role In Advancing Climate Science And Addressing The Issue Of Global Climate Change" (**http://www.energy.gov/media/FactSheetOnGlobalClimateChange.pdf**).

[79] United States Global Change Research Program, "Program Overview" (**http://www.globalchange.gov/about/overview**).

[80] 5 U.S.C.552 et seq.

[81] (5 U.SC Sec. 552 (a)(4)(F), "Department of Justice Guide to the Freedom of Information Act", "Litigation Considerations", p.711 n. 9.)

[82] 2 CFR Part 215.

[83] January 21, 2009, Presidential
Memorandum to the Heads of Executive
Departments and Agencies, dated January 21, 2009, published 74 Fed.Reg. FR 4685, (January 26, 2009),

[84] Information Quality Act, Pub. L. No. 106-554, section 515; see also, "Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies" (67 FR 8452) and each agency's Information Quality Act guidelines

[85]. [4] The Federal Government has defined quality and objectivity in, "Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by Federal Agencies" (67 FR 8452). Quality is "…the encompassing term, of which 'utility,' 'objectivity,' and 'integrity' are the constituents." "'Objectivity' focuses on whether the disseminated information is being presented in an accurate, clear, complete, and unbiased manner, and as a matter of substance, is accurate, reliable, and unbiased."

[86] 18 U.S.C. 1001

[87] Knowing and willful intent are high hurdles to overcome in establishing a violation of the False Statements Act. The intent to deceive, to mislead, or to cause on to belief in false information is sufficient to demonstrate intent. The intent to "manipulate and pervert" a government agency's function satisfies the intent requirement even when there is no intent to deceive in a subjective or literal sense. However, the statute does not require the intent to defraud.

[88] See United States v. Curran, 20 F.3d 560, 566 (3d Cir. 1994) (noting [section] 100 encompasses both statements and concealments and different proof is required to convict under each); United States v. Shannon, 836 F.2d. 1125, 1129-30 (8th Cir. 1988) (explaining that to establish concealment violation of [section] 1001, government must show affirmative act by which material fact is actively concealed). Affirmative acts include both nondisclosures and misrepresentations of material facts. See United States v. Seay, 718 F.2d 1729, 1284 (4th Cir. 1983); see also United States v. Leal, 30 F.3d 577, 585 (5th Cir. 1994) (holding silence may constitute false and fraudulent representation under [section] 1001). Concealing information with intent to deceive the government is covered by the statute, as is concealing information with the intent to cause another to violate his duty to disclose. See United States v. Goldberger & Dubin, 935 F.2d 501, 506 (2d Cir. 1991) (applying [section] 1001 to attorney client relationship); United States v. Irwin, 654 F.2d 671, 676 (10th Cir. 1981) (holding that blank response can be false statement where duty to answer exists), overruled on other grounds by United States v. Daily, 921 F.2d 999, 1003 (10th Cir. 1990). But see United States v. Anzalone, 766 F.2d 473, 475 (10th Cir. 1983) (finding defendant's compelled responses in judgment debtor examination could not trigger [section] 1001 violation related to prior interview with IRS in which he had said nothing because silence cannot be contradicted). Also *See* Buckhannon Bd. and Care Home, Inc. v. West Virginia Dept. of Health and Human Resources, 532 U.S. 598, 629 (2001) (adopting a "natural, non-technical" definition of the word jurisdiction for purposes of § 1001 and declining to confine the definition to narrow, technical meaning).

[89] *See* United States v. Blankenship, 382 F.3d 1110, 1136-37 (4th Cir. 2004) (finding an agency's jurisdiction--and therefore authority, is typically limited to those who are the recipients of that agency's federal funds).

[90] 63 n79 *See* United States v. Yermian, 468 U.S. 63, 75 (1984) (holding that "proof of actual knowledge of federal agency jurisdiction is not required under § 1001"); United States v. Tatoyan, 474 F.3d 1174, 1182 n.11 (9th Cir. 2007) (explaining that government need not prove defendants knew United States government had jurisdiction over false statement).

[91] Whoever corruptly, or by threats or force, or by any threatening letter or communication influences, obstructs, or impedes or endeavors to influence, obstruct, or impede the due and proper administration of the law under which any pending proceeding is being had before any department or agency of the United States, or the due and proper exercise of the power of inquiry under which any inquiry or investigation is being had by either House, or any committee of either House or any joint committee of the Congress—Shall be fined under this title, imprisoned not more than 5 years or, if the offense involves international or domestic terrorism (as defined in section 2331), imprisoned not more than 8 years, or both. 18 U.S.C. 1505

[92] The Administrator also defined the air pollutant that contributes to climate change under the Clean Air Act as the aggregate emissions of six well-mixed greenhouse gases: Carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

[93] It also draws upon the work of the United States Global Change Research Program (USGCRP), the United States Climate Change Science Program (CCSP), and the National Research Council (NRC). In the TSD, EPA cites the IPCC 396 times without a critical or negative comment. The TSD also has the CCSP cited 169 times, but mostly in conjunction with the IPCC Assessments. In the TSD, the USGCRP is cited 26 times, 8 times by itself to add a new study to conclusions made by IPCC. NRC is cited 64 times, but mostly as support for IPCC conclusions.

[94] Technical Support Document, Endangerment and Cause or Contribute Finding for Greenhouse Gases. Pages 47 to 52.

[95] See For Example, Response to Public Comments Volume 2: Validity of Observed and Measured Data, Response (2-39).

[96] 74 Fed.Reg.66496, 66511 col. 1 " . . . [T]hese assessment reports undergo a rigorous and exacting standard of peer review by the expert community, as well as rigorous levels of U.S. government review and acceptance. . . . The review processes of the IPCC, USGCRP, and NRC . . .provide EPA with strong assurance that this material has been well vetted by both the climate change research Community and by the U.S. government.

[97] See, Section 2 in this report.

[98] See, for example, The Washington Post, "Series of Missteps by Climate Scientists Threatens Climate Change Agenda," by Juliet Eilperin and David Fahrenthold, February 10th, 2010 (**http://www.washingtonpost.com/wp-dyn/content/article/2010/02/14/AR2010021404283.html?nav=emailpage**), "Africagate: top British scientist says IPCC losing credibility," by Jonathan Leake, the Sunday Times, 7 February 2010 (**http://www.timesonline.co.uk/tol/news/environment/article7017907.ece**), "IPCC Statement on Trends in Disaster Losses," Roger Pielke Jr.'s Blog (**http://rogerpielkejr.blogspot.com/2010/01/ipcc-statement-on-trends-in-disaster.html**). Notably, some of these findings were included in Table 16:1 on page 162 of the TSD. Thus it appears that non-peer reviewed literature was used in a number of instances, and was not vetted through the detailed requirements for incorporating un-published works.

[99] There are 16 "petitions for reconsideration" seeking EPA to reconsider the endangerment finding. "16 'Endangerment' Lawsuits Filed Against EPA Before Deadline," by Robin Bravender, Greenwire, 17 February 2010 (**http://www.nytimes.com/gwire/2010/02/17/17greenwire-16-endangerment-lawsuits-filed-against-epa-bef-74640.html**).

[100] Climate e-mails row university 'breach', BBC News, Jan. 22, 2010, (**http://news.bbc.co.uk/2/hi/8484385.stm**).

[101] "Senior civil servant to investigate leaked emails between climate scientists," by Adam Vaughn, The Guardian, 3 December 2009 (**http://www.guardian.co.uk/environment/2009/dec/03/leaked-email-uea-inquiry**).

[102] "The widespread change detected in temperature observations of the surface (Sections 9.4.1, 9.4.2, 9.4.3), free atmosphere (Section 9.4.4) and ocean (Section 9.5.1), together with consistent evidence of change in other parts of the climate system (Section 9.5), strengthens the conclusion that greenhouse gas forcing is the dominant cause of warming during the past several decades. This combined evidence, which is summarised in Table 9.4, is substantially stronger than the evidence that is available from observed changes in global surface temperature alone (Figure 3.6). IPCC AR4 Volume, Section 9.7.

[103] Contrary to EPA's statements about the raw data being available, IPCC has discarded their raw data, and GISS has refused to release their raw data under FOIA equest (Cite to CEI lawsuit).

[104] Peer Review Handbook 3d edition, Section 1.2.3.

[105] Federal Register Notice on Final Endangerment Finding, EPA mentions peer review 7 times and only in the context of demonstrating the validity of the scientific assessments by IPCC, USGCRP, and NRC. In contrast, 'public comment" is mentioned as being considered in every discussion of scientific conclusions. The problem with EPA's approach is that the Agency's conclusions about public comment are not subject to peer review.

[106] Peer Review handbook, 3rd ed., section 1.2.10.

[107] See, Joseph D'Aleo and Anthony Watson, Surface Temperature Records: Policy Driven Deception?, January 29, 2010. The raw data, explanations of station drops, explanation of adjustments suitable for replication and

evaluation is not available. EPA merely sides with the assessment reports and offers no analysis of competing views. For example see Responses to Comment Volume 2, Responses 2-27, 12-28, 2-36, 2-37. (**http://scienceandpublicpolicy.org/images/stories/papers/originals/surface_temp.pdf**).