

THE DISCLOSURE OF CLIMATE DATA FROM THE CLIMATIC RESEARCH UNIT AT THE UNIVERSITY OF EAST ANGLIA

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Summary

1. Reconstructions of temperature over the past 1000 years have been a highly visible part of IPCC presentations to the public. CRU has been extremely influential in IPCC reconstructions through: coauthorship, the use of CRU chronologies, peer review and IPCC participation. To my knowledge, there are no 1000-year reconstructions which are truly “independent” of CRU influence. In my opinion, CRU has manipulated and/or withheld data with an effect on the research record. The manipulation includes (but is not limited to) arbitrary adjustment (“bodging”), cherry picking and deletion of adverse data. The problem is deeply rooted in the sense that some forms of data manipulation and withholding are so embedded that the practitioners and peer reviewers in the specialty seem either to no longer notice or are unoffended by the practices. Specialists have fiercely resisted efforts by outside statisticians questioning these practices – the resistance being evident in the Climategate letters. These letters are rich in detail of individual incidents. My submission today will not comment on these individual incidents (some of which I’ve commented on already at Climate Audit), but to try to place the incidents into context and show why they matter to the research record. I will not comment in this submission on CRUTEM issues only for space reasons.

Introduction

2. Together with Ross McKittrick, I have published several peer-reviewed articles on 1000-year reconstructions and reconstructions, made invited presentations to a panel of the U.S. National Academy of Sciences, to a subcommittee of the U.S. House Energy and Commerce Committee and a Union Session of the American Geophysical Union and have in-depth personal knowledge of CRU proxy reconstructions. I was a reviewer of the IPCC 2007 Assessment Report. I am the “editor” of a prominent climate blog, www.climateaudit.org, which analyzes proxy reconstructions. I am discussed in many Climategate Letters.

Temperature Reconstructions

3. Keith Briffa was Lead Author of the IPCC 2007 section on “recent” paleoclimatology, the Climategate Letters showing that he worked closely with Mann associate, Eugene Wahl (not a listed IPCC expert reviewer). Mann was Lead Author of the corresponding IPCC 2001 section, with the Climategate Letters showing that he worked closely with Briffa and Jones.
4. Jones, Briffa and Osborn were on the editorial boards of multiple climate journals and participated actively both in peer review and the assignment of peer reviewers.
5. CRU scientists (and Climategate correspondent Michael Mann) were coauthors of all three reconstructions in the IPCC 2001 report and coauthors of six (of ten) multiproxy reconstructions in the IPCC 2007 report.

6. CRU tree ring proxies (in particular, Tornetrask, Yamal/Polar Urals, Taymir) were used in all ten IPCC 2007 multiproxy reconstructions.

“Bodging”

7. One of the underlying problems in trying to use tree ring width/density chronologies for temperature reconstructions is a decline in 20th century values at many sites – Briffa’s 1992 density (MXD) chronology for the influential Tornetrask site is shown at left below. The MXD chronology had a very high correlation to temperature, but went down in the 20th century relative to what it was “expected” to do and relative to the ring width (RW) chronology (which had a lower correlation to temperature.) So Briffa “adjusted” the MXD chronology, by a linear increase to the latter values (middle), thereby reducing the medieval-modern differential. This adjustment was described in private as the “Briffa bodge” (Melvin and Briffa 2008).

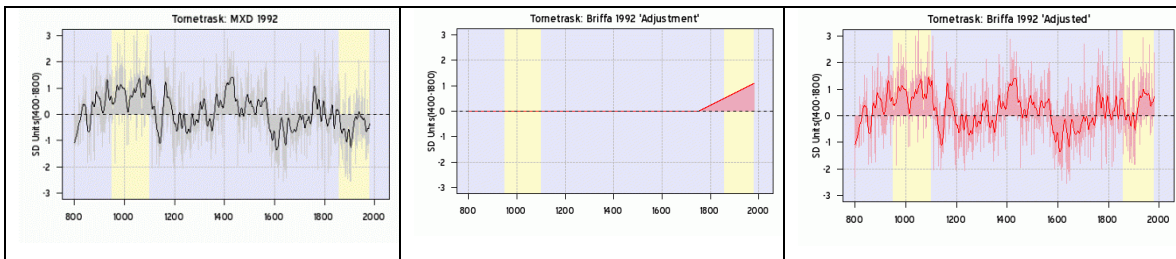


Figure 1. Tornetrask from Briffa (1992). Left – MXD chronology. Middle – “Briffa bodge”; right – Briffa 1992 “adjusted”.

8. Although there was no scientific basis for such an arbitrary adjustment, peer reviewers of Briffa et al (1992) did not object. “Bodging” then seems to have entered into the CRU toolkit to get reconstructions to “look” right, as evidenced by the Climategate documents containing annotations that the method contains “fudge factors” or “very artificial corrections for decline” (e.g. http://di2.nu/foia/harris-tree/briffa_sep98_e.pro)

```
;***** APPLIES A VERY ARTIFICIAL CORRECTION FOR DECLINE*****
valadj=[0.,0.,0.,0.,0.,-0.1,-0.25,-0.3,0.,-0.1,0.3,0.8,1.2,1.7,2.5,2.6,2.6,$
2.6,2.6,2.6]*0.75 ; fudge factor
```

9. Although the bodge was reported in the original article, the bodge was not reported in the numerous multiproxy studies relying on the Tornetrask reconstruction nor in the IPCC reports nor was it considered in calculation of confidence intervals.

Withholding Adverse Data

10. There are many incidents in the Climategate Letters of withholding data. I’ll review one incident which, in my opinion, has a direct impact on the research record.

11. Briffa et al. (1995) produced an influential chronology from the Polar Urals site (Figure 2- left), which combated the idea of a widespread Medieval Warm Period, supposedly showing a very cold 11th century in Siberia, with 1032 supposedly being the coldest year of the millennium. Further measurements (Figure 2- right) yielded a chronology in which the 11th century was warmer than the 20th century. Neither CRU nor any other climate scientist ever published this update. The data at right has never

been publicly archived and was obtained only through quasi-litigation at *Science*. (One of the Climategate Letters expresses regret that the data was made available.)

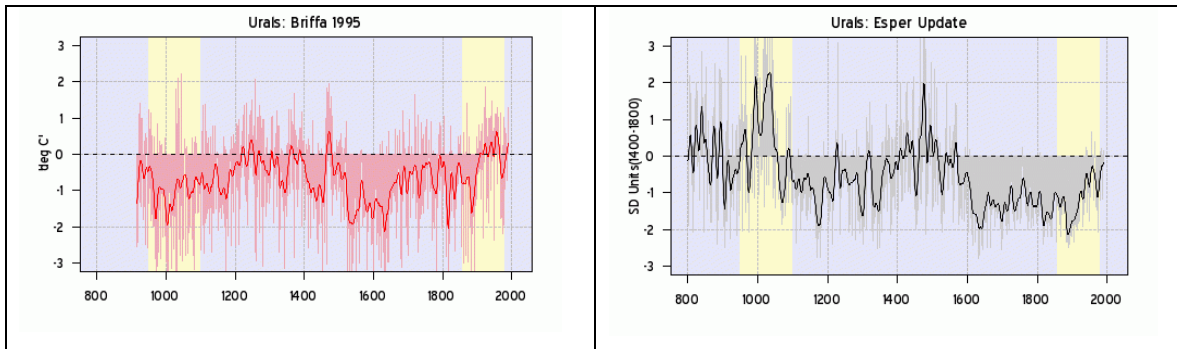


Figure 2. Urals tree ring chronologies. Left – Briffa (1995). Right – updated Polar Urals version used in Esper et al (2002).

12. The failure to publish this data set has two important adverse results. The inconsistency between different tree ring chronologies is disguised. In addition, the data set was unavailable for third parties interested in producing multiproxy reconstructions.

“Cherry-picking”

13. There has been considerable suspicion that CRU cherry-picked the Yamal chronology over the updated Polar Urals chronology or a still unavailable combined chronology attested in Climategate Letter 1146252894.txt.

14. Instead of showing the updated Polar Urals chronology (figure 3-left), Briffa (2000) replaced it without discussion with a chronology from nearby Yamal, one with an extremely pronounced hockey stick shape. This chronology became a mainstay of subsequent multiproxy reconstructions, while the unpublished Polar Urals chronology was ignored. Measurement data for the three Briffa (2000) chronologies - Yamal, Taymir and Tornetrask - was not archived at the international tree ring measurement archive. Briffa resisted requests to archive the measurement data, which was not archived until September 2009 (and then only after Phil Trans B was asked to require its archiving.)

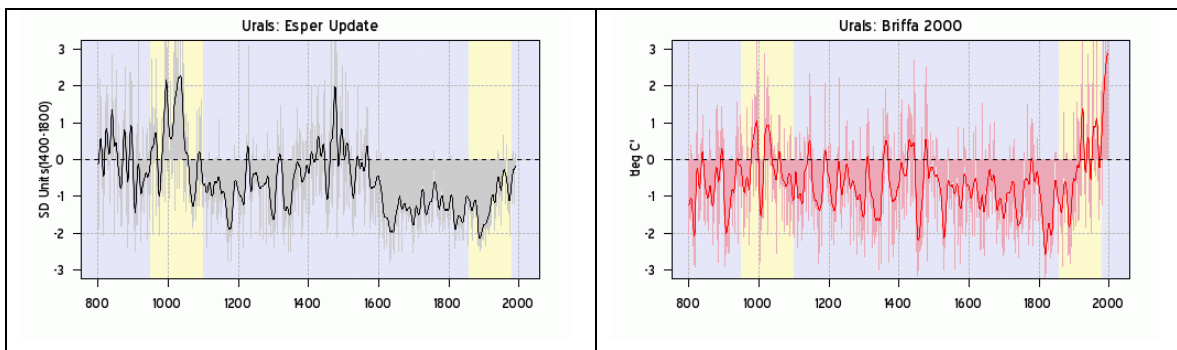


Figure 3. Urals tree ring chronologies. Left – updated Polar Urals version used in Esper et al (2002); right – Yamal from Briffa (2000).

15. Replacement of the Yamal chronology with the Polar Urals chronology alters the ranking of the medieval and modern periods in, for example, the Briffa (2000) composite reconstruction, impacting IPCC assertions in respect to the confidence of their belief in

unprecedented modern warmth. As an IPCC reviewer, I requested that this be disclosed. In his capacity as IPCC Lead Author, Briffa refused. In the absence of any explanation of the substitution, there is reason to be concerned about the reasons for using one series rather than the other.

16. The Yamal chronology was very much in the news just before Climategate broke, with questions being asked at Climate Audit about replication and homogeneity, neither of which had been previously addressed in peer reviewed literature.

17. The Climategate Letters (e.g. 878654527.txt) also show evidence that Briffa's concern over non-linear recent growth – a concern that was not disclosed in Briffa (2000).

18. A similar cherry-picking issue arises with the preferential use in multiproxy studies of the Briffa (2000) Tornetrask version in preference to the Grudd (2006) version, which has a medieval period that is relatively “warmer” than the modern period.

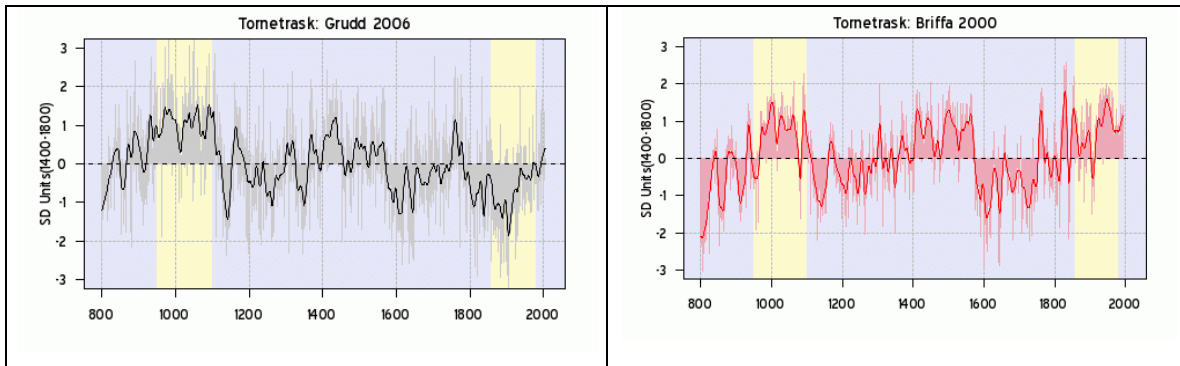


Figure 1. Tornetrask reconstructions. Left – Grudd 2006, 2008; right – Briffa 2000.

Impact on Reconstructions

19. The above examples show influential CRU site chronologies. However, the number of proxies in a typical IPCC multiproxy reconstruction is sufficiently small that the choice between two versions of a single site chronology can impact the overall reconstruction. For example, Figure 5 compares the published Briffa (2000) reconstruction (left) with a version derived merely by substituting the Polar Urals update for Yamal(right). The medieval-modern differential changes with one seemingly inconsequential change of version.

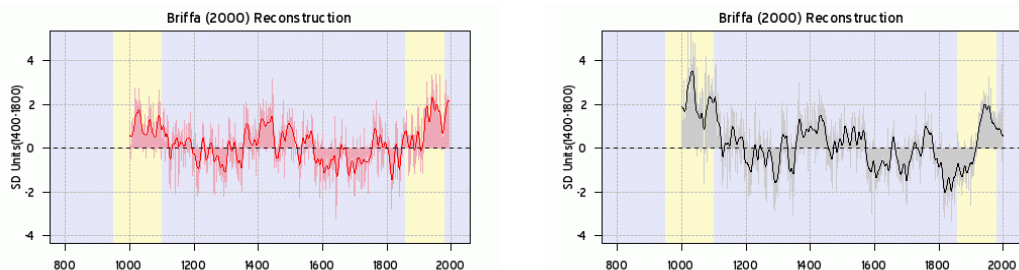


Figure 5. Briffa (2000) Reconstruction (before fitting to temperature). Left – version from Briffa (2000); right – varying the Tornetrask and Urals versions to newer versions.

The “Trick ... to Hide the Decline”

20. Climate scientists have argued that the term “trick” can denote a clever way “to bring two or more different kinds of data sets together in a legitimate fashion by a technique that has been reviewed by a broad array of peers in the field.” (Penn State Inquiry). This is incorrect as applied to representations of the Briffa MXD reconstruction.

21. The “trick” arose in the context of pressure on IPCC 2001 authors to present a “nice tidy story” and to avoid a situation where the Briffa reconstruction “diluted the message” (see <http://climateaudit.org/2009/12/10/ipcc-and-the-trick/>) . Two different variants of the “trick” appear in contemporary graphics.

22. Figure 6 (left) shows the actual Briffa MXD reconstruction (data available for the first time in the Climategate Letters) and (right) the version in IPCC 2001 Fig 2-21 (digitized on right. The IPCC “trick” was not a “clever” mathematical method – it was merely the deletion of inconvenient data after 1960. Post-1960 values were even deleted in the reconstruction archived version at NOAA¹.

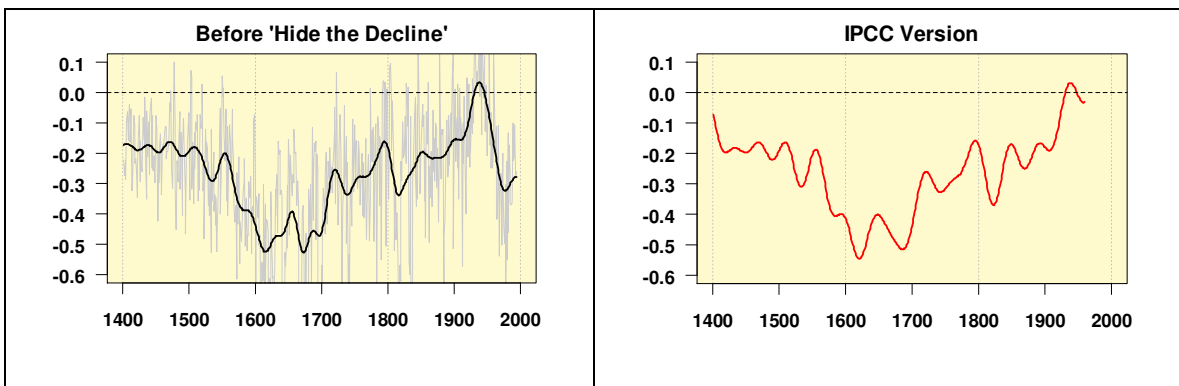


Figure 6. Left – Briffa MXD reconstruction re-scaled to IPCC scale with 40-point Hamming filter smooth. Right – Digitized from IPCC 2001 graphic.

23. The deletion of post-1960 values of the Briffa MXD reconstruction gave the IPCC (2001) temperature reconstructions a rhetorical appearance of consistency that did not exist in the underlying data (as shown below)

¹ ftp://ftp.ncdc.noaa.gov/pub/data/paleo/treering/reconstructions/n_hem_temp/briffa2001jgr3.txt

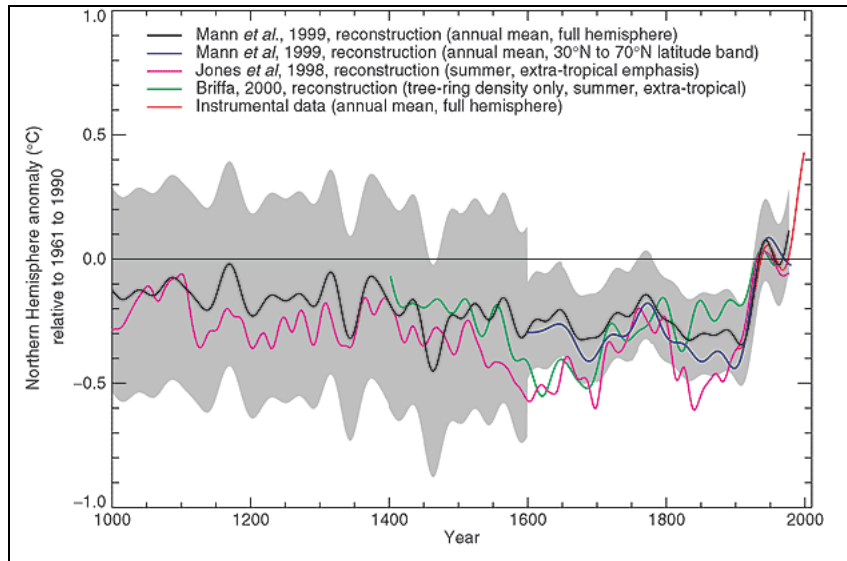


Figure 7. IPCC 2001 Figure 2-21. The Briffa MXD reconstruction (green) terminates in 1960.

24. A somewhat different “trick” was used in the World Meteorological Organization 1999 report (shown in Figure 8 below). Jones substituted instrumental temperatures for MXD reconstruction values after 1960, resulting in an entirely false rhetorical impression of the efficacy of tree ring reconstructions. Far from this technique being “legitimate”, Mann himself at realclimate² had stated precisely the opposite about the splicing of temperatures and reconstructions into a single graft:

No researchers in this field have ever, to our knowledge, “grafted the thermometer record onto” any reconstruction. It is somewhat disappointing to find this specious claim (which we usually find originating from industry-funded climate disinformation websites) appearing in this forum.

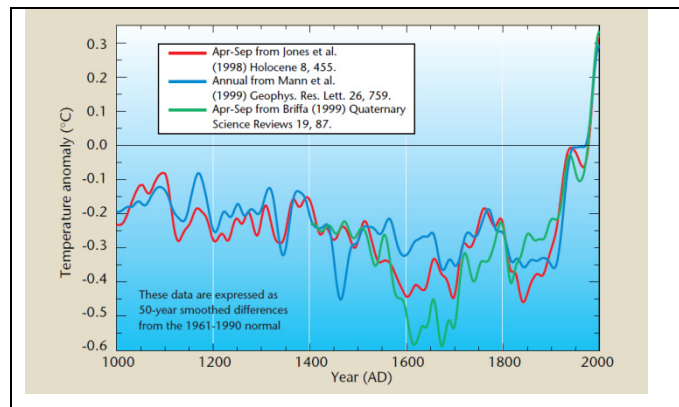


Figure 8. WMO 1999, with the spliced Briffa reconstruction (green).

Conduct

25. The Climategate Letters obviously contain many dispiriting examples of poor conduct, including the following.

² Myth vs. Fact Regarding the “Hockey Stick

26. Withholding of data from potential critics:

Jones: We have 25 or so years invested in the work. Why should I make the data available to you, when your aim is to try and find something wrong with it.³

Osborn to Science: I don't have any core measurement data and therefore have none to give out!⁴ [Climategate Letters and documents show that CRU had the requested measurement data⁵]

Mann to Osborn: I'm providing these [MBH residuals] 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.⁶

27. Use of the peer review process to suppress or delay adverse publications:

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 theoretically⁷

Recently rejected two papers (one for JGR and for GRL) from people saying CRU has it wrong over Siberia. Went to town in both reviews, hopefully successfully. If either appears I will be very surprised⁸

I am really sorry but I have to nag about that review – Confidentially I now need a hard and if required extensive case for rejecting⁹

I can't see either of these papers being in the next IPCC report. Kevin [Trenberth] and I will keep them out somehow – even if we have to redefine what the peer-review literature is !¹⁰

³ <http://climateaudit.org/2005/10/15/we-have-25-years-invested-in-this-work/>

⁴ <http://climateaudit.org/2010/01/04/difference-in-yamal-versions-not-insignificant/>; March 31, 2006: <http://www.eastangliaemails.com/emails.php?eid=680>

⁵ <http://www.climate-gate.org/cru/documents/yamal/> and <http://climateaudit.org/2010/01/04/what-happened-to-polar-urals/>; Apr 28, 2006 <http://www.eastangliaemails.com/emails.php?eid=684>

⁶ <http://www.eastangliaemails.com/emails.php?eid=345&filename=1059664704.txt>

⁷ <http://climateaudit.org/2009/12/16/climategatekeeping/>;

<http://www.eastangliaemails.com/emails.php?eid=321&filename=1054756929.txt>

⁸ <http://climateaudit.org/2009/12/16/climategatekeeping/>;

<http://www.eastangliaemails.com/emails.php?eid=407&filename=1080742144.txt>

⁹ <http://climateaudit.org/2009/12/16/climategatekeeping/>; [1054748574](http://www.eastangliaemails.com/emails.php?eid=1054748574)

¹⁰ Jones successfully kept McKittrick and Michaels (2004) out of the AR4 First and Second Drafts. After Review Comments, Jones reluctantly included a reference together with a dismissive editorial comment that was not based on any eligible peer reviewed literature,

28. Soft reviews of submissions by close associates. The Climategate documents provide multiple examples of soft reviews of submissions by colleagues Mann¹¹, Schmidt¹², Santer¹³ and Wahl and Ammann¹⁴. Presumably there are many others. The review of articles in which a reviewer has a personal relationship is a recognized conflict of interest in medical journals. For example, the World Association of Medical Editors statement¹⁵ says:

a reviewer may have difficulty providing an unbiased review of articles by investigators who have been working colleagues. Similarly, he or she may find it difficult to be unbiased when reviewing the work of competitors

29. The Climategate Letters are replete with examples of unprofessional language, which on occasion rises to defamation:

The important thing is to deny that this has any intellectual credibility whatsoever and, if contacted by any media, to dismiss this for the stunt that it is.¹⁶

If *others* want to say that their actions represent scientific fraud, intellectual dishonesty, etc. (as I think we all suspect they do), lets let *them* make these charges for us!¹⁷

some cool statement can be made saying we believe the “prats have really fucked up someway” – and that the premature publication of their paper is reprehensible.¹⁸

I'm saddened to hear that this bozo is bothering you too, in addition to NCAR, NSF, NAS, IPCC and everyone else. Rest assured that I won't ever respond to McIntyre should he ever contact me, but I will forward you any email he sends related to this. I assume Scott feels the same way..

personally, I don't see why you should make any concessions for this moron.¹⁹

[http://climateaudit.org/2009/12/17/climategatekeeping-2/;](http://climateaudit.org/2009/12/17/climategatekeeping-2/)

<http://www.eastangliaemails.com/emails.php?eid=419&filename=1089318616.txt>

¹¹ <http://climateaudit.org/2009/12/23/climategatekeeping-jones-reviews-mann/>

¹² [http://climateaudit.org/2009/12/22/climategatekeeping-schmidt-2009/;](http://climateaudit.org/2009/12/22/climategatekeeping-schmidt-2009/) http://www.climate-gate.org/cru/documents/review_schmidt.doc

¹³ <http://www.climate-gate.org/cru/documents/Review-Santer-et-al-2008.doc>

¹⁴ <http://www.climate-gate.org/cru/documents/Review%20of%20Wahl&Amman.doc>

¹⁵ <http://www.wame.org/conflict-of-interest-in-peer-reviewed-medical-journals>

¹⁶ [http://climateaudit.org/2010/01/04/back-to-2003/;](http://climateaudit.org/2010/01/04/back-to-2003/)

<http://www.eastangliaemails.com/emails.php?eid=376&filename=1067194064.txt>

¹⁷ [http://climateaudit.org/2010/01/07/team-responses-to-mm2003/;](http://climateaudit.org/2010/01/07/team-responses-to-mm2003/)

<http://www.eastangliaemails.com/emails.php?eid=381&filename=1067596623.txt>

¹⁸ [http://climateaudit.org/2010/01/07/team-responses-to-mm2003/;](http://climateaudit.org/2010/01/07/team-responses-to-mm2003/)

<http://www.eastangliaemails.com/emails.php?eid=380>

¹⁹ <http://www.eastangliaemails.com/emails.php?eid=686&filename=1147435800.txt>

Mr. Fraudit never goes away does he? How often has he been told that we don't have permission? Ho hum. Oh, I heard that fraudit's Santer et al comment got rejected. That'll brighten your day at least a teensy bit?²⁰

I noticed that ClimateFraudit had renewed their interest in you. I was thinking about sending an email of sympathy, but I was busy preparing for a quick trip to Hawaii²¹:

I would immediately delete anything you receive from this fraud.²²

Hi Andy, The McIntyre and McKitrick paper is pure scientific fraud.²³

I've seen this junk already. Look at the co-authors! DeFrietas, Bob Carter: a couple of frauds.²⁴

30. One of the most dispiriting aspects of the Climategate Letters is the evidence of CRU's contribution to the poisoned atmosphere of present climate science. In 2003, CRU criticized us for supposedly not attempting to reconcile differences between our methodology and Mann's methodology. In October 2003, Osborn observed:

The single worst thing about the whole M&M saga is not that they did their study, not that they did things wrong (deliberately or by accident), but that neither they nor the journal took the necessary step of investigating whether the difference between their results and yours could be explained simply by some error or set of errors in their use of the data or in their implementation of your method.²⁵

31. Osborn proposed a draft statement, which, had it been accepted by CRU, would probably have prevented much, if not most, of the following controversy:

... we are withholding further comments until we can - by collaboration with M&M if possible - be certain of exactly what changes to data and method were made by M&M, whether these changes can really explain the differences in the results, and eventually which (if any) of these changes can be justified as equally valid (given the various uncertainties that exist) and which are simply errors that invalidate their results.²⁶

32. In November 2003, I entered into negotiations with CRU, agreeing to their review of our pending follow-up to our 2003 article, on the condition that CRU agreed to issue a short statement if their review confirmed that we had raised valid concerns:

²⁰ <http://www.eastangliaemails.com/emails.php?eid=973&filename=1242132884.txt>

²¹ <http://www.eastangliaemails.com/emails.php?eid=991&filename=1248902393.txt>

²² <http://www.eastangliaemails.com/emails.php?eid=458&filename=1104855751.txt>

²³ <http://www.eastangliaemails.com/emails.php?eid=492&filename=1107899057.txt>

²⁴ <http://www.eastangliaemails.com/emails.php?eid=773&filename=1169050678.txt>

²⁵ <http://www.eastangliaemails.com/emails.php?eid=381&filename=1067596623.txt>

²⁶ <http://www.eastangliaemails.com/emails.php?eid=381&filename=1067596623.txt>

If you identify any flaws in our document, we will rectify them, and you are at liberty to hold us to public account if we fail to do so....

If you find our document raises valid and meritorious concerns, you will give us a short statement to that effect which we are entitled to publish.

33. In a follow-up email, I re-assured CRU that I did not have the faintest interest in publishing results that were at cross-purposes.

We have entered into discussions about a possible review by UEA/CRU in complete good faith. We do not have the slightest interest in presenting incorrect or defective results or to create debate which is merely at cross-purposes.

34. CRU then refused to carry out the review, choosing to attempt to frustrate us in secret behind the scenes. Jones, as a member of the editorial board of *Climatic Change*, actively lobbied so that Mann would not be required to disclose source code and supporting data that would have enabled us to reconcile results. Despite his adverse interest, Jones appears (according to a Climategate Letter) to have acted as a reviewer of our 2004 submission to *Nature*, intervening not to ensure the reconciliation of results proposed by Osborn, but to frustrate any criticism of the Mann reconstruction.

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