Independent Review Team – UEA/CRU
Final

Summary of salient points of interviews with Professors Philip Jones and Keith Briffa, Dr Tim Osborn and Tom Melvin

Interviewers: Professors Geoffrey Boulton & Peter Clarke.

Interview carried out at UEA on 9th April 2010.

The UEA group were asked to verify that this is a correct record of our meeting, and to correct the record where they believe it not to be. These have now been received and are added to this note.

If they wish to make further comments, please send these separately, rather than attempting to amend this record. In addition, we have a number further questions in relation to the IPCC. Two will be sent later, one is included as paragraph 18.

Introduction

1. Professor Boulton set the scene for the interview by indicating that its purpose was to seek reactions to some of the allegations that had been made about CRU behaviour following from submissions to the Panel and as revealed by the improperly released emails that were germane to the remit of the Review. Although the correctness or otherwise of CRU science was not in the remit, it was necessary to probe that science to some extent in order to examine and provide a frame for the allegations. The specific purpose of the interview was to examine and provide background to allegations in relation to the use and interpretation of tree ring data. If time permitted, it was also the intention to explore issues relating to the transmission of honest scientific understanding into the public and policy domain and requests for information about the identity of stations used in the CRUTEM3 analysis.

Tornetrask Tree ring series

2. The panel members had read the relevant paper (Briffa 1992) and the CRU submission in respect of the adjustment made to the Tornetrask series. They nevertheless wanted to cover the arguments again as an opening to the meeting. What was the scientific reasoning that justified the adjustments to the most recent period, and which has been described as a "bodge" in one submission?

   Prof Briffa explained that tree rings responded to a variety of environmental influences, including temperature, precipitation, waterlogging or dessication. Component analyses were required to derive parameters that related tree ring characteristics to environmental variables. The TRW and MXD had proved to be a good proxy for high frequency temperature fluctuations, but the MXD series fell relative to the TRW for low frequency after 1750. The MXD had been adjusted to match the TRW based upon the assumption that the TRW was correct. It had later been found that the effect was due to a bias in the standardization procedure used and hence the ad-hoc adjustment had been

good. It had not been used to argue for a temperature increase over the period. The manipulation had not been hidden, but had been clearly described in the paper.

Yamal Tree ring series

3. Several allegations revolve around the tree series commonly known as the Briffa-Yamal series as referred to in the Briffa-2000 paper (and references contained therein). Arguments put to the panel suggest that this Briffa-Yamal series is flawed in respect of the significance of information it displays for the most recent years. A summary of the allegation is that with this knowledge the Briffa-Yamal series was nevertheless used repeatedly instead of other data known to be better, and to have had undue influence in a majority of subsequent reconstructions used in influential reports read by policy makers, and that this was done to falsely emphasise a rapid rise in recent temperatures compared with those of the past.

   The panel members noted that this series appears as part of an aggregation in the paper and as such would not immediately appear to the lay reader to be a dominant contribution to reconstructions. However the allegations made against you assert otherwise and therefore we wish to explore this sector in detail.

   The panel members also noted that they were fully aware that other more direct evidence for recent warming exists from instrumental data from land, sea and satellite and that this supersedes information from tree reconstructions, but for the purposes of this questioning we ignore that.

   Prof Briffa clarified that CRU had used this chronology in only three publications Briffa 2000, Briffa et al. 2008 and Osborn Briffa 2006.

4. **Limitations of validity of the Briffa-Yamal series**. This first question contains no implication of malpractice, but is to establish the facts concerning the limits of validity of this particular tree series. The panel is aware that the Briffa-Yamal series contained a very low number of cores in the most recent years. Thus the information obtained from these low core counts must be associated with a very large uncertainty. The reader of the paper at that time could not have discovered this as neither the core counts nor associated uncertainty were explicitly given in the paper or in references contained therein.

   Prof Briffa agreed that no indication of the Yamal chronology uncertainty was shown in Briffa 2000 and acknowledged the view of the panel members that this could be considered an omission of the paper at the time. He informed us that the core count information was published in Hantermirov & Shiyatov 2002.

This Briffa-Yamal series happened to display an upturn in reconstructed temperature trend in the very recent years, coincident with the low core count. The panel members were of the opinion that this cannot have constituted significant evidence for recent warming with respect to the past, i.e. the correct associated uncertainty (i.e. error bar if it had been shown) would have encompassed a large range of trends including flat and falling. This assumption is evidenced in submissions which show that by using other tree series one may show flat, and in an extreme, down-turning trend in most recent years. The panel cited (i) "polar urals" which were due to Schweingruber, and those referred to as Esper 2002 in the McIntyre submission (ii) the samples used by Mr McIntyre including the KHAD series.

Prof Briffa stated that he considers the issue of uncertainty associated with the Yamal series to be greatly exaggerated. Prof Briffa drew our attention to the comprehensive submission already made by CRU in response to criticism (posted on climateaudit) of the Yamal series and which presents an updated and more complete analysis which were shown to be consistent with the Briffa 2000 paper. The panel members were aware of this and had read it in detail and were familiar with the arguments it presented. It can be found at http://www.cru.uea.ac.uk/cru/people/briffa/yamal2009/ and is copied in the CRU submission.

5. **The allegation of inappropriately using the Briffa-Yamal series in order to promote the idea of recent global warming**: The allegation is that post-2000 the CRU group knew that additional data existed, and knew that in some sense they were "better and more complete" and that use of this additional data would have resulted in a different reconstruction in which the recent upward trend was less pronounced with respect to earlier times. Nevertheless Prof Briffa continued to use the Briffa-Yamal tree series in his publications up to 2008 knowing it not to be the best representation of reconstructed temperatures. It is alleged that this was done with the intent to promote the idea that recent temperatures are greater than those long ago where these data appear in influential reports.

   In response Prof Briffa denied this accusation completely. He stated that he would never have done as accused and would have in any case had no motive to do so.

   He affirmed that in his opinion the CRU Yamal TRW series provides a far better representation of the region than either the Polar Urals published by CRU in 1995 or the chronology referred to as the "updated Polar Urals" (extracted from data described in Esper et al. 2002).

6. **Undue prominence and influence of the Briffa-Yamal series in IPCC reports.** It is alleged that the Briffa-Yamal series is used in the majority of the reconstructions in the IPCC reports and that it dominates the shape of these reconstructions and hence falsely continues to support the notion that the present is warmer than the past as judged purely from reconstructions. For this allegation above to be meaningful it is implicit in the allegations that:

   - The Briffa-Yamal series dominates the recent upturn in any study which uses it and diminishes the warmth of the MWP with respect to the present.
   - The Briffa-Yamal series is used in many of the reconstructions considered in the IPCC reports (the submission of Mr McIntyre asserts that the Briffa Yamal, Tornetrask and Taymir are used in all 10 in the 4th report).
   - If the Briffa-Yamal series were all substituted by different series then the MWP would appear to be substantially warmer.

   Prof Briffa responded that the Briffa-Yamal series is only used in 4 of 10 reconstructions in the 4th IPCC reports and none in the 3rd. It was further stated that it does not dominate the reconstructions in the way it is said to, i.e. that if removed then it would make no difference. This issue is also explored in great detail at http://www.cru.uea.ac.uk/cru/people/briffa/yamal2009/ .

   Prof Briffa stated that it is well known and openly discussed that reconstructions of ~1000 years ago are subject to significant uncertainties such as shown in the IPCC 4th report figure 6.10. Statements of likely ranking made in IPCC reports follow IPCC published guidelines. The reconstructions used in the IPCC 4th report were not presented in the summary for policy makers, and in any case this summary was written by an independent team drawing upon the relevant chapters as they saw fit. In short the reconstructions shown in the IPCC 4th report figure 6.10 represented an honest aggregation of the situation, with adequate presentation of uncertainty in the third part of the figure and in the text.

7. ***Tree data availability:*** It is alleged that the tree ring data had been inadequately archived and could not be accessed by others, and not until the Royal Society required it to be released as a condition of publication was this done in 2009. This denied others the opportunity to test temperature reconstructions. It was also only at this time that others were able to determine the low number of core counts in the Briffa Yamal series.

   Professor Briffa replied that no tree ring data had been directly collected by CRU. All belonged to other researchers. Most of the data sets for Europe, their originators and characteristics were described in a series of papers in a dedicated issue of the journal *Holocene* (2002). The Fennoscandian and Russian data was owned by researchers in Stockholm, Helsinki, Ekaterinburg and

Krasnoyarsk. The only request for the data was sent by Mr McIntyre. He was directed to the source of the data. The Yamal data, which was supplied to him by Russian colleagues on Feb 2 2004 (we were shown an email attesting to this). The archiving of data on 2009 followed because upon request from the Royal Society Prof Briffa again contacted his Russian colleagues, and at this time they agreed to archive. Prof Briffa stressed that the data was never CRU's to archive, but was obtained from its owners.

Professor Briffa said that the number of core counts was made public in the publication of Hantemirov and Shiyatov in 2002.

An additional claim is that polar Urals data (as distinct from Yamal data) were not available for public examination (Parliamentary Submission, Annex 11). CRU presented evidence to the Review Team in the form of copies of meta-data listings for these data holdings in the ITRDB showing that the data were submitted in 2000 (ftp://ftp.ncdc.noaa.gov/pub/data/paleo/treering/updates/wsl/wsl-site-information.txt).

Information for policy makers

9. The importance of ensuring that material accessible to policymakers included a precise but accessible statement of errors and uncertainties was stressed. The phrase "hide the decline" in an email from Professor Jones (16.11.99) has been taken to imply the intention to disguise the proxy temperature decline created by the "divergence" phenomenon by removing the "tree ring temperatures" after 1960 and replacing them by the instrumental record. Professor Jones commented that he had no recollection of the email. The response documented in the CRU submission to the Review and in 2 articles on the CRU website gives an account of the meaning intended.

10. A diagram appeared on the cover of the 1999 WMO Statement on the Status of the Global Climate for which Professor Jones was author, which showed single line graphs, with no error bars, for proxy temperatures for the last 1000 years. It did not disclose that the apparent convergence of these proxy series in a steeply rising curve were derived from instrumental, not proxy data. This is a "trick" that "hides the decline". Moreover, as this is more likely to reach a non-scientific audience, it is tantamount to withholding uncertainties from public and policymaking audiences. There is no explanation of what has been done in a caption.

    Professor Jones responded that someone at WMO in Geneva just wanted to continue the three curves for the whole millennium to 1999, and that the WMO document would not have circulated amongst the public or policymakers, but was intended for national meteorological services. The uncertainties associated

with this line were given in the document. He contended that it had very little influence on public opinion and had received very little attention between 1999 and the time of the email release.

11. A similar problem occurs in the 2001 IPCC report where a series is truncated at 1960 in a way which is not explained in the text or caption, and is completely hidden by the graphics.

    Professor Briffa commented that he was not member of the writing team, and that others misused his data. He compared this treatment with that of the 2007 AR4 IPCC report, in which he was a lead author, in which the issue of divergence and errors are treated fully. Moreover, Professor Briffa commented that it was his earlier work that had drawn attention to and discussed the "divergence problem" at length. He had also shown his resistance to producing "a nice tidy story" in an email in 1999.

Peer review & alleged improper attempts to influence scientific journals

Climate Research/Soon & Baliunas

12. At this point we were joined by Dr Clare Goodess who had been an editor of *Climate Research* at the time of the Soon and Baliunas affair. Our interest was largely to confirm narratives from other quarters and from published sources. Her narrative is as follows. *Climate Research* at the time had 10 editors with different expertise, and contributors could choose which editor to direct their submissions to. She commented that two reviewers of an earlier paper by another author (for which de Freitas also acted as editor) had complained that they had both recommended rejection, but the paper was published without addressing their comments. It was not the practice to return authors responses to reviewers, but to have a decision about what to do at that stage by the editor involved. The Editor in Chief, Hans von Storch, resigned on being refused by the publisher permission to write an editorial about what he regarded as a failure of the peer review system. There were, also, several emails on 12 March 2003. All of these discuss writing a response to the Climate Research article in EOS, which is what happened. Professor Jones commented that the reaction to the Soon and Baliunas paper was not improper or disproportionate given the self evident errors of the paper, and that his email to Mann on 12.3.03 was entirely appropriate. Dr Goodess left at this point.

Energy & Environment/Dr Boehmer-Christiansen

13. Dr Christiansen had complained that Professor Jones had attempted to undermine her position in the University of Hull because of his dislike of the stance of the journal, *Energy & Environment*, that she edits. Professor Jones commented that he received a copy of an email (1256765544.txt) sent to Stephanie Fergusson at UKCIP by Dr Christiansen (headed: "Please take note of

potentially serious allegations of scientific 'fraud' by CRU and Met Office"), that he regarded as a malicious allegation.

Dear Stephanie
I expect that a great deal of UKCIP work is based on the data provided by CRU (as does the work of the IPCC and of course UK climate policy). Some of this, very fundamentally, would now seem to be open to scientific challenge, and may even face future legal enquiries. It may be in the interest of UKCIP to inform itself in good time and become a little more 'uncertain' about its policy advice.
Perhaps you can comment on the following and pass the allegations made on to the relevant people.
It is beyond my expertise to assess the claims made, but they would fit into my perception of the whole 'man-made global warming' cum energy policy debate. I know several of the people involved personally and have no reason to doubt their sincerity and honour as scientists, though I am also aware of their highly critical (of IPCC science) policy positions.
I could also let you have statements by Steve McIntyre and Ross McKitrick. Ross McKitrick currently teaches at Westminister Business School and who is fully informed about the relevant issues. He recently addressed a meeting of about 50 people in London.
Best wishes Sonja B-C

Prof Jones then sent a letter to Professor Haughton at Hull, bringing this to his attention and to the fact that Dr Christiansen gives Hull University as her affiliation.

Freedom of Information Requests for CRUTEM related information

14. We were joined at this point by Jonathan Colam-French (Director Information Services) and David Palmer (Information Policy and Compliance Manager).

15. Based upon evidence submitted to the panel it understands that on 25 January 2007, the first of a series of FOI requests were logged for identifiers for the stations used in the CRUTEM3 temperature series. These requests initially conflated data and station identification but soon made it clear that they required only the station identification. These requests were rejected, apparently (at least initially) on the grounds that others were the primary data sources. This however was irrelevant to the request for the station identifiers which only CRU can know and which were legitimate information needed to fully understand the CRUTEM3 gridded averages and thus should have been made available. These identifiers were eventually disclosed in September 2007 after several appeals (or if not formal appeals then other communications which the panel had seen copies of), each of which had been at pains to point out that they wanted identifiers and not the data. We asked why this apparent persistent misunderstanding of the request had taken place. The UEA team were unable to

answer in detail at the time as they were not prepared with the details of this case. It was agreed to postpone this issue. UEA would study the file again and respond later.

Issues relating to the IPCC

16. As time had run out, it was agreed that Professor Boulton would later seek written evidence from Professor Jones and Professor Briffa.

17. Such evidence has now been sought and Professor Jones has responded. We expect Professor Briffa's response shortly.

18. As a follow up to Professor Jones response, we have asked *it would be very helpful to know about the circumstances in which the paragraph that claims to refute the work of McItrick and Michaels (2004) came to be introduced into the final draft of chapter 3 of the published version of WG2 in AR4, when any such reference had been absent from earlier drafts. Why was it decided to include it at this stage? Where did the suggestion come from that such comments should be included? Could you confirm whether or not this reference in the final draft was seen and approved by the whole team?*