

Swindle and the IPCC TAR Spaghetti Graph

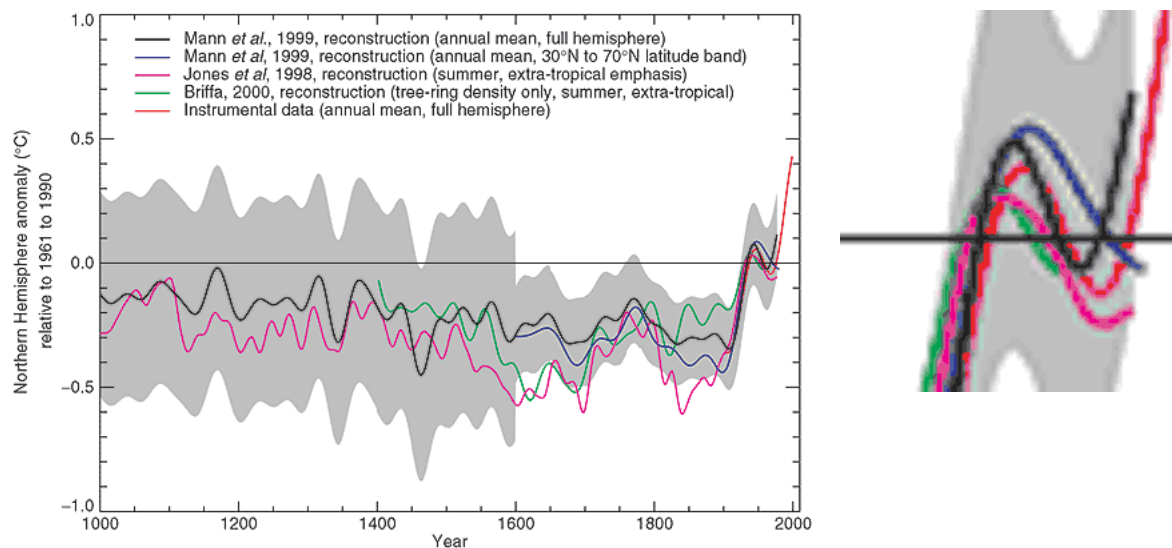
by Steve McIntyre, *Climate Audit Blog*, May 15th, 2007

Our text for today remains:

If a practising scientist selected a 1987 data set over more recent versions, failed to cite it correctly, altered the appearance of the data without a clear explanation and didn't include the data from the last 20 years then I think we would all be asking serious questions about their professionalism.

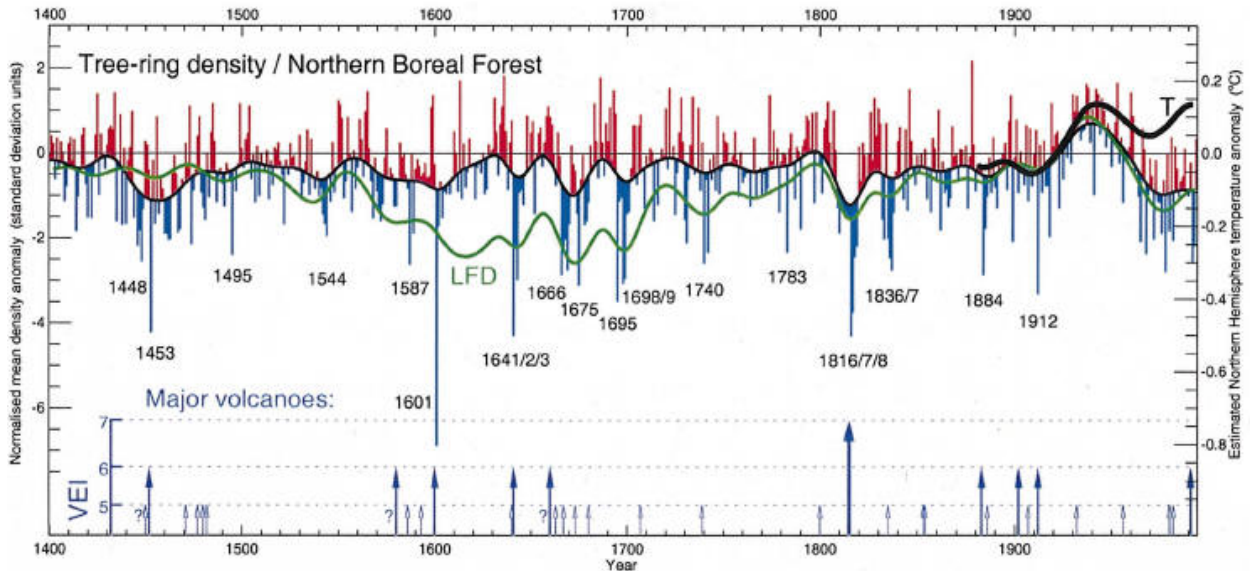
This was, of course, put forward in the context of Swindle, but surely IPCC is a bigger fish to fry. Let's apply these principles to IPCC.

Let me refresh by showing the IPCC spaghetti graph one more time. It purports to show the MBH99 reconstruction, the Jones et al 1998 reconstruction, the Briffa et al 2000 reconstruction and the CRU temperature history, against a background of MBH confidence intervals. The detail shows the truncation of the Briffa MXD series, which is hard to spot in the spaghetti graph.



IPCC TAR Figure 2-21 with blowup.

Let's suppose a diligent reader or reviewer consulted the reference Briffa et al (QSR 2000). He would have observed the following reconstruction. The NHD1 reconstruction (archived at WDCP) has negligible centennial variability and is not the source of the IPCC graphic. The green LFD reconstruction shown in the Figure is nowhere archived, the calculation is not explained here and, in any case, differs from the IPCC version - most notably, the data for the last 34 years is **is not deleted** as in the TAR figure.



Briffa 2000 Fig. 5. An indication of growing season temperature changes across the whole of the northern boreal forest. The histogram indicates yearly averages of maximum ring density at nearly 400 sites around the globe, with the upper curve highlighting multidecadal temperature changes. Extreme low density values frequently coincide with the occurrence of large explosive volcanic eruptions, i.e. large values of the Volcanic Explosivity Index (VEI) shown here as arrows (see Briffa et al., 1998a). The LFD curve indicates low-frequency density changes produced by processing the original data in a manner designed to preserve long-timescale temperature signals (Briffa et al., 1998c). Note the recent disparity in density and measured temperatures (Δ) discussed in Briffa et al., 1998a, 1999b). Note that the right hand axis scale refers only to the high-frequency density data.

Briffa et al (JGR 2001) presents another version of the reconstruction in their Figure 4 as shown below. Again, this is **not truncated**. The reconstruction diagram shows a bewildering spaghetti graph merely from MXD alternatives. I do not understand how a scientist can present a diagram like this and, in the next breath, report confidence intervals that are anything other than an envelope so wide as to be meaningless, but that's a story for another day.

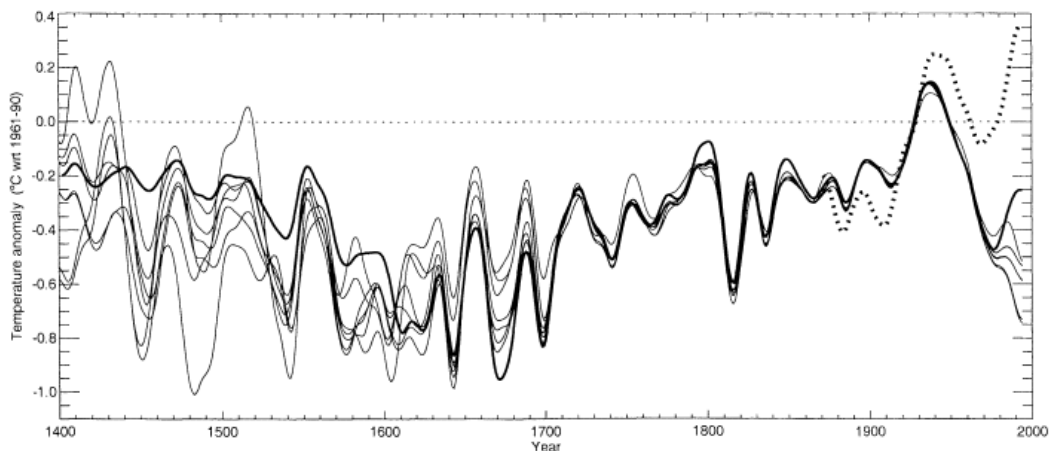
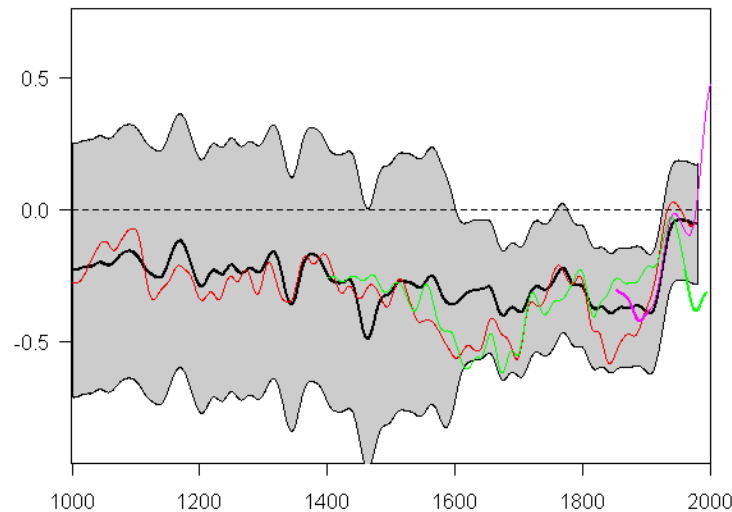


Figure 4. Eight alternative reconstructions of the mean temperature over all land north of 20°N (observations shown by dotted line for 1871-1994). All curves are smoothed with a 25-year filter. See text for explanation of the eight reconstruction methods. The preferred reconstruction based on principal components regression is shown by the thick line for 1402-1994.

In the spaghetti graph for Briffa et al 2001, the inconvenient divergence is deleted for the first time. In the archived information for Briffa et al 2001, the inconvenient divergence is deleted. What happens to the IPCC spaghetti graph if

the deleted data is restored? Because there is no archived version of the deleted data, it has been a time-consuming job to emulate the Briffa reconstruction sufficiently to make a precise replication of the IPCC spaghetti graph. (I tried a couple of years ago and made a pretty good estimate, but this one is more precise.) My emulation is below.

The restoration of the excised Briffa data is shown in green. In my opinion, the difference between the appearance of the altered and unaltered data is "substantial". The alteration of the data makes the proxy reconstructions appear far more uniform than they really were. Not only was there no "clear explanation" of the alteration of the data, but the citation was to a reference where the data had not been altered. Can you imagine the hysterics if Durkin had done this?



A Redone IPCC TAR Spaghetti Graph.

This is not the only puzzling aspect to the data. The 1960-1990 level in this graphic requires an adjustment to the MBH99 data which has a 1902-1980 level. In this replication, I've adjusted by the difference between the CRU NH temperature in 1961-190 and 1902-1980. This results in a noticeably different level for the MBH graphic. How was the MBH99 series re-leveled? There is no explanation and, at this point, I have no idea. As previously noted, the Swindlesque S-curve in the MBH99 smoothed version cannot be replicated using the stated smoothing filter. How was it done? I have no idea. The end-period padding for the Briffa series appears almost certainly to have used the end-period mean rather than the known divergent values. This leads to a slight difference over and above the truncation. The temperature series only goes from 1902 on (as in the MBH99 archive), with 19th century values not being shown in the original version (but are shown here). Why were these excluded? Hard to say.

The deletion of inconvenient post-1960 values has also been done in AR4, not simply with the Briffa et al 2001 version, but also with the Rutherford Mann 2005 reconstruction and the Hegerl et al 2006 reconstruction. As a reviewer, I requested in the strongest possible terms that the untruncated data be shown. This request was ignored. (Of course the lead author was Keith Briffa, who with Michael Mann, was the architect of the original deletion of post-1960 data.)

In AR4, there is an allusion to the deletion of the post-1960 data (as opposed to TAR where it was concealed), but it is merely a pretext and does not justify the removal of pertinent data. I notice that I've been criticized recently for being suspicious of adjustments to the temperature record. In the case of CRU, these adjustments are carried out by one of the coauthors of Briffa et al 2001. Based on examples like this, of course, I'm going to be suspicious of their adjustments. (This does not mean that the adjustments are invalid, only that they need to be examined in very close detail.)

As for this particular case, I submit that the deletion of values of the Briffa MXD reconstruction from 1961 to 1994 meets all of the criteria set out by Paul H above: removal of data which alters the appearance of the graphic without a

clear (or any) explanation by IPCC and with an incorrect citation. In IPCC, no questions are asked about the professionalism of the authors. Briffa was appointed lead author of the section in AR4.

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