From: "Michael E. Mann" <mann@virginia.edu>
To: Tom Wigley <wigley@ucar.edu>
Subject: Re: [Fwd: VS: [Climate Sceptics] Mann & Jones on 1800 yrs proxies]
Date: Sat, 23 Aug 2003 04:04:54 -0400
Cc: Phil Jones <p.jones@uea.ac.uk>, Gavin Schmidt <gavin@isis.giss.nasa.gov>, Michael Oppenheimer <omichael@princeton.edu>, Mike MacCracken <mmaccrac@comcast.net>, Tom Crowley <tcrowley@duke.edu>, cfk@lanl.gov, jhansen@giss.nasa.gov, Ellen Mosley-Thompson <thompson.4@osu.edu>, rbradley@geo.umass.edu, mhughes@ltrr.arizona.edu, Keith Briffa <k.briffa@uea.ac.uk>, Kevin Trenberth <trenbert@ucar.edu>, Tim Osborn <t.osborn@uea.ac.uk>, Gabi Hegerl <hegerl@duke.edu>, Stefan Rahmstorf <rahmstorf@pik-potsdam.de>, jto@u.arizona.edu, Eric Steig <steig@ess.washington.edu>, mann@virginia.edu

Thanks Tom,
I agree--the issue is not completely settled, and thanks for the reference (any possibility you can send me a reprint?). The point here of course is that we are talking a potential effect, w/ as you say, at best a weak signal--hardly the dominating overprint that is argued by the Idso brothers! (by the way, weren't they a circus act at one point??),
mike
At 12:48 PM 8/22/2003 -0600, Tom Wigley wrote:

Mike,
Thanks for your clarifications.
With regard to the CO2 fertilization effect on tree ring width, I wrote a paper a number of years ago pointing out that there were signal-to-noise problems in identifying and quantifying such factors.
Wigley, T.M.L., Jones, P.D. and Briffa, K.R., 1987: Detecting the effects of acidic deposition and CO2-fertilization on tree growth. (In) Methods of Dendrochronology. Vol. 1, Proceedings of the Task Force Meeting on Methodology of Dendrochronology: Kraków, Poland, 26 June 1986, (eds. L. Kairiukstis, Z. Bednarz and E. Feliksik), International Institute for Applied Systems Analysis, Agricultural Academy of Kraków, Polish Academy of Science, WOSI Wspólna Sprawa 38/37 no. 20, 239253.
1988.
While I am confident that you are correct, and that this is not a crucial factor, I think one should be careful about denying its existence. There are, furthermore, additional obfuscating factors that make the effects of CO2 fertilization on ring widths hard to identify.
Perhaps more important is the fact that many tree ring based reconstructions use density data, and the jury is still out on whether more CO2 increases or decreases density.
Tom.
++++++++++++++++++++++++++++++++++
Michael E. Mann wrote:

Dear Colleagues,
Several you have inquired about the below claims by the notorious "Idso brothers" which relates to the paper by Mann and Jones that appeared in GRL a couple weeks ago.
Of course, its the usual disinformation we've come to expect from these folks, but a few details on why:
1) The supposed "Co2 fertilization" argument is a ruse. The only evidence that such an effect might actually play some role in tree-growth trends has been found in high elevation sites in western North America (consult Malcolm Hughes for more details). As in Mann et al '99 (GRL), any such effect, to the extent it might exist, has been removed from the relevant series used in the latest (Mann and Jones) paper through the removal of anomalous differences between low-elevation and high-elevation western North American temperature trends during the post 1800 period, prior to use of the data in climate reconstruction.
2) We haven't in the past extended the proxy reconstruction beyond 1980 because many of the proxy data drop out. However, the repeated claim by the contrarians that post-1980 proxy data don't show the warming evident in the instrumental record has finally prompted me to go ahead and perform an additional analysis in which the proxy-reconstruction is extended forward as recently as at all possible (to 1995, for which 3 out of 8 of the NH records are available, and 1 of the 5 SH records are available). The SH and GLB reconstructions are thus obviously tenuous at best, but they do address, to the extent at all possible, the issue as to whether or not the proxy reconstructions show the post-1980 warming--and they do.
See the attached plot which compares the NH (blue), SH (green), and GLB (red) series through 1995. The late 20th century is the nominal maximum for all 3 series *without any consideration of the information in the instrumental mean series*. This thus refutes the 2nd criticism cited by the Idso brothers.
One note about the 40 year smoothing. As in the trends in the instrumental series shown

by Mann and Jones, a boundary constraint on the 40-year smooth has been used that minimizes the 2nd derivative at the boundary--this trends to preserve the trend near the end of the series and has been argued as the optimal constraint in the present of nonstationary behavior near the end of a time series (Park, 1992; Ghil et al, 2002). I favor the use of this constraint in the smoothing of records that exhibit a significant trend as one approaches the end of the available data. This might be worth talking about in the next IPCC when the subject of adopting uniform standards for smoothing data, etc. are discussed...

In retrospect, Phil and I should have included this analysis in the GRL article, but its always hard to know what specifics the contrarians are going to target in their attacks. This analysis however, will be included in a review paper by Jones and Mann on "climate in past millennia" that is presently being finalized for "Reviews of Geophysics".

I hope that helps clarify any questions any of you might have had. Please feel free to pass this information along to anyone who might benefit from it.

Now, back to fighting the "Shaviv and Veizer" propaganda along w/ Ben Santer and David Parker out in Italy...

mike

-------- Original Message --------
Subject: VS: [Climate Sceptics] Mann & Jones on 1800 yrs proxies
Date: Wed, 20 Aug 2003 13:52:40 +0300
From: Timo Hämeranta <timo.hameranta@pp.inet.fi>
To: <climatesceptics@yahoogroups.com>
CC: "Charles F. \"Chick\" Keller" <cfk@lanl.gov>, "Kirill Ya. Kondratyev" <kondratyev@KK10221.spb.edu>, "Michael C. MacCracken" <mmaccrac@comcast.net>, "S. Fred Singer" <singer@sepp.org>, "Sallie Baliunas" <baliunas@cfa.harvard.edu>, "Carl Wunsch" <cwunsch@mit.edu>, "David R. Legates" <legates@udel.edu>, "George Kukla" <kukla@ldeo.columbia.edu>, "James E. Hansen" <jhansen@giss.nasa.gov>, "Tom Wigley" <wigley@meeker.ucar.edu>, "Willie Soon" <wsoon@cfa.harvard.edu>

Dear all,

GRL finally published the study

Mann, Michael E. and Phil D. Jones, 2003. Global surface temperatures over the past two millennia, Geophysical Research Letters Vol. 30, No. 15, 1820, 10.1029/2003GL017814, August 14, 2003

Abstract

[1] We present reconstructions of Northern and Southern Hemisphere mean surface temperature over the past two millennia based on high-resolution ?proxy? temperature data which retain millennial-scale variability. These reconstructions indicate that late 20th century warmth is unprecedented for at least roughly the past two millennia for the Northern Hemisphere. Conclusions for the Southern Hemisphere and global mean temperature are limited by the sparseness of available proxy data in the Southern Hemisphere at present.

We already noticed the study in

Mann, Michael, Caspar Ammann, Kevin Trenberth, Raymond Bradley, Keith Briffa, Philip Jones, Tim Osborn, Tom Crowley, Malcolm Hughes, Michael Oppenheimer, Jonathan Overpeck, Scott Rutherford, and Tom Wigley, 2003. On Past Temperatures and Anomalous Late-20th Century Warmth. Eos, Vol. 84, No. 27, page 256, July 8, 2003

There we found that " .... an extension back through the past 2000 years based on eight long reconstructions [Mann and Jones,2003]."

CO2 Science Magazine today presents the study as follows:

Was Late 20th Century Warming Really Unprecedented Over the Past Two Millennia?

Mann, M.E. and Jones, P.D. 2003. Global surface temperatures over the past two millennia. Geophysical Research Letters 30: 10.1029/2003GL017814.

What was done

Using 23 individual proxy records from 8 distinct regions in the Northern Hemisphere and 5 proxy records from the Southern Hemisphere, the authors constructed Northern and Southern Hemispheric and global mean temperature histories over the period AD 200 to as close as they could get to the present employing a 40-year lowpass filter of the data.

What was learned

Mann and Jones say their temperature reconstructions indicate that "late 20th century warmth is unprecedented for at least roughly the past two millennia for the Northern Hemisphere." They also say their data and analysis "suggest a similar, but less definitive conclusion, for the global mean."

Although we and many others have many bones to pick with many aspects of Mann and Jones' analysis, we will here focus on just a couple of points and temporarily grant them the benefit of the doubt in those other areas. First of all, granting them almost everything they have done, it can readily be seen from their own graph of their own results that the end point of their reconstructed global mean temperature history is not the warmest period of the prior 1800 years. In fact, their treatment of the data depicts three earlier warmer periods: one just prior to AD 700, one just after AD 700 and one just prior to AD 1000 (see figure below).
Reconstructed global temperature anomaly (based on 1961-1990 instrumental reference period) adapted from Mann and Jones (2003).
The globe only becomes warmer in the 20th century when its measured temperatures are substituted for its reconstructed temperatures. This approach is clearly unacceptable; it is like comparing apples and oranges. If one has only reconstructed temperatures from the distant past, one can only validly compare them with reconstructed temperatures from the recent past.
Another important point that is ignored by Mann and Jones is that the last century witnessed a dramatic increase in atmospheric CO2 concentration, which everyone knows is an effective aerial fertilizer. It also witnessed a dramatic increase in atmospheric nitrogen deposition, which further enhances plant growth. Consequently, as tree-ring data comprise the bulk of the proxy temperature information employed by Mann and Jones, their reconstructed global mean temperature history must possess a non-temperature-induced pseudo-warming signal driven by CO2- and nitrogen-induced increases in growth that make 20th century warming appear significantly greater than it really is. Hence, there could well be still other periods of the past 1800 years (in addition to the three we have already noted) when the global mean temperature was also warmer than it was at the end of their reconstructed record in the 20th century.
What it means
Mann and Jones have clearly failed to demonstrate the key point they desired to make in their paper. Their data, however, speak for themselves in clearly demonstrating that late 20th century warmth was not unprecedented over the past two millennia.
????
We have already discussed about this study in July under title ?Empire Strikes back on Soon et al.? ´
All the best
Timo Hämeranta
Moderator, Climatesceptics

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[1]http://www.evsc.virginia.edu/faculty/people/mann.shtml

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[2]http://www.evsc.virginia.edu/faculty/people/mann.shtml

References

1. http://www.evsc.virginia.edu/faculty/people/mann.shtml
2. http://www.evsc.virginia.edu/faculty/people/mann.shtml