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Appendix D: Response of Keith Briffa to Stephen McIntyre

This appendix is a cached version of the following Web page:

<http://www.cru.uea.ac.uk/cru/people/briffa/yamal2000/>—a snapshot of that page as it appeared on November 5, 2009, at 23:13:40 GMT. The page may have changed since that date. This cached version is available at

<http://74.125.93.132/search?q=cache:shJLWuK7EkcJ:https://www.cru.uea.ac.uk/cru/people/briffa/yamal2000/+%22The+substantive+implication+of+McIntyre%27s+comment%22&hl=en&gl=us&strip=1>.

The Yamal ring-width chronology of Briffa (2000)

My attention has been drawn to a comment by Steve McIntyre on the Climate Audit website relating to the pattern of radial tree growth displayed in the ring-width chronology "Yamal" that I first published in Briffa (2000). The substantive *implication* of McIntyre's comment (made explicitly in subsequent postings by others) is that the recent data that make up this chronology (i.e. the ring-width measurements from living trees) were purposely selected by me from among a larger available data set, specifically because they exhibited recent growth increases.

This is not the case. The Yamal tree-ring chronology (see also Briffa and Osborn 2002, Briffa et al. 2008) was based on the application of a tree-ring processing method applied to the same set of composite sub-fossil and living-tree ring-width measurements provided to me by Rashit Hantemirov and Stepan Shiyatov which forms the basis of a chronology they published (Hantemirov and Shiyatov 2002). In their work they traditionally applied a data processing method (corridor standardisation) that does not preserve evidence of long timescale growth changes. My application of the Regional Curve Standardisation method to these same data was intended to better represent the multi-decadal to centennial growth variations necessary to infer the longer-term variability in average summer temperatures in the Yamal region: to provide a direct comparison with the chronology produced by Hantemirov and Shiyatov.

These authors state that their data (derived mainly from measurements of relic wood dating back over more than 2,000 years) included 17 ring-width series derived from living trees that were between 200-400 years old. These recent data included measurements from at least 3 different locations in the Yamal region. In his piece, McIntyre replaces a number (12) of these original measurement series with more data (34 series) from a single location (not one of the above) within the Yamal region, at which the trees apparently do not show the same overall growth increase registered in our data.

The basis for McIntyre's selection of which of our (i.e. Hantemirov and Shiyatov's) data to exclude and which to use in replacement is not clear but his version of the chronology shows lower relative growth in recent decades than is displayed in my original chronology. He offers no justification for excluding the original data; and in one version of the chronology where he retains them, he appears to give them inappropriate low weights. I note that McIntyre qualifies the presentation of his version(s) of the chronology by reference to a number of valid points that require further investigation. Subsequent postings appear to pay no heed to these caveats. Whether the McIntyre version is any more robust a representation of regional tree growth in Yamal than my original, remains to be established.

My colleagues and I are working to develop methods that are capable of expressing robust evidence of climate changes using tree-ring data. We do not select tree-core samples based on comparison with climate data. Chronologies are constructed independently and are subsequently compared with climate data to measure the association and quantify the reliability of using the tree-ring data as a proxy for temperature variations.

We have not yet had a chance to explore the details of McIntyre's analysis or its implication for temperature reconstruction at Yamal but we have done considerably more analyses exploring chronology production and temperature calibration that have relevance to this issue but they are not yet published. I do not believe that McIntyre's preliminary post provides sufficient evidence to doubt the reality of unusually high summer temperatures in the last decades of the 20th century.

[An expanded comment on the McIntyre posting is now available](#) (27th October 2009).

K.R. Briffa
30 Sept 2009

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