

Research suggests climate change target 'not safe'

October 1 2010



This is Professor Chris Turney in the field in Svalbard. Credit: University of Exeter

An analysis of geological records that preserve details of the last known period of global warming has revealed 'startling' results which suggest current targets for limiting climate change are unsafe.

The study by [climate change](#) experts at the University of Exeter has important implications for international negotiators aiming to agree binding targets for future greenhouse gas emission targets.

Professor Chris Turney and Dr Richard Jones, both from the University's Department of Geography, have reported a comprehensive study of the Last Interglacial, a period of warming some 125,000 years

ago, in the latest issue of the *Journal of Quaternary Science*.

The results reveal the European Union target of limiting global temperature rise to less than 2 C above pre-industrial levels shouldn't be considered 'safe'.

From their analysis, the scientists found 263 estimates of the conditions when sediments and ice were laid down during the Last Interglacial, allowing them to reconstruct past temperatures around the globe. To compare the reconstructed estimates with today, they took the Last Interglacial values away from modern temperatures averaged over the period 1961 to 1990.

The results show temperatures appear to have been more than 5 C warmer in polar regions while the tropics only warmed marginally; strikingly similar to recent trends. Not only this, but taken together, the world appears to have been some 1.9°C warmer when compared to preindustrial temperatures. Critically, the warmer temperatures appear to have resulted in global sea levels some 6.6 to 9.4 metres higher than today, with a rate of rise of between 60 to 90 centimetres per decade -- more than double that recently observed.

The higher temperatures seen during the Last Interglacial are comparable to projections for the end of this century under the low emission scenarios contained within the recent Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC).

Professor Turney said: "The results here are quite startling and, importantly, they suggest sea levels will rise significantly higher than anticipated and that stabilizing global average temperatures at 2°C above pre-industrial levels may not be considered a 'safe' target as envisaged by the European Union and others. The inevitable conclusion is emission targets will have to be lowered further still."

More information: The full paper, Does the Agulhas Current amplify global temperatures during super-interglacials?, appears in the latest edition of the *Journal of Quaternary Science*. It can be viewed here: [onlinelibrary.wiley.com/doi/10 ... 02/jqs.1423/abstract](https://onlinelibrary.wiley.com/doi/10.1002/jqs.1423/abstract)

Provided by University of Exeter

Citation: Research suggests climate change target 'not safe' (2010, October 1) retrieved 18 April 2024 from <https://phys.org/news/2010-10-climate-safe.html>

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