

Scientists unravel 8,200-year-old climate riddle

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Palaeoceanographers from the Southampton Oceanography Centre have shed new light on the world's climate behaviour over 8,200 years ago. In an article published this week in *Nature*, they demonstrate that a sudden drop in temperature lasting 200 years cannot be used as a template for the modern day threat of rapid climate change.

Lead author, Professor Eelco Rohling, said: 'This sudden drop in temperature was caused by a flood of fresh water into the Labrador Sea after an ice dam broke. The large influx of fresh surface waters would have slowed the North Atlantic overturning current for about 200 years. Eventually, the current would have re-established to former conditions.

'This was a one-off event that occurred in a longer-term trend of climate variability. Some scientists have inferred that this cold snap would have had an impact of a global nature. Our analysis suggests the flooding of melt-water was important on a regional North Atlantic scale at the time but was not likely to be important on a global scale.'

The overturning current, often referred to as the Gulf Stream, is responsible for keeping western Europe several degrees warmer than countries at similar latitudes. Scientists fear that global warming would lead to a warmer, wetter climate and that extra fresh water inflow into the North Atlantic would act as a brake on the overturning current resulting in a much cooler climate. Elements of this scenario were dramatised in the film, *The Day After Tomorrow*, with a knock-on effect that affected the global climate.

Professor Rohling explained: ‘Many scientists are using this 200-year-old cold snap to validate their computer climate models when, in fact, many of the global climate changes around that time seem related to the “underlying” longer-term variability. This confusion has complicated efforts to unravel a pattern of climate variability.

‘This has also had implications for scientists using this history to predict future scenarios of rapid climate change if there was extra fresh water inflow into the North Atlantic.’

The article 'Centennial-scale climate cooling with a sudden cold event around 8,200 years ago' by Eelco J. Rohling and Heiko Pälike is published in Nature on 21 April 2005 (www.doi.org/10.1038/nature03421).

Source: University of Southampton

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