

Ancient British bog provides clue to global warming

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Analysis of sediments from a British bog suggest that methane emissions increased due to intense global warming around 55 million years ago.

Dr Richard Pancost from the University of Bristol and colleagues, publishing today in *Nature*, show that carbon isotope values of hopanoids -- compounds made by bacteria -- suddenly decrease in a manner that can only be explained by switching to a diet of methane. This suggests that methane emissions must have increased at that time.

The team from Bristol University, Royal Holloway and other institutions analysed the geochemical composition of sediments taken from the Cobham Lignite wetland in southeast England, revealed when the Channel Tunnel rail link cut through it.

Dr Pancost said: “Fifty-five million years ago, a massive release of carbon into the atmosphere caused significant global warming. It is likely that this warming and associated climate change caused a change in environmental conditions that brought about increased methane emissions. This in turn, may reflect an increase in methane production and subsequent release from the terrestrial biosphere.”

Methane is a very powerful greenhouse gas. So if the processes occurring at Cobham were widespread, then the increase in methane emissions could have caused further warming, amplifying the climate change at this time.

However, as Professor Andrew Scott of Royal Holloway cautions, “We can not use this section as an exact model for interpreting future global warming as the climate 55 million years ago was very much warmer than that of today.”

Dr Pancost added, “Although we must be careful not to over interpret the data obtained from a single site, this does provide insight into how some ecosystems could respond to rapid warming-induced changes in climate, and therefore, how they could respond to warming in the future.”

Source: University of Bristol

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