

Climate change disasters could be predicted

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Climate change disasters, such as the melting of the Greenland ice sheet, dieback of the Amazon rainforest or collapse of the Atlantic overturning circulation, could be predicted according to University of Exeter research.

Writing in the journal *Nature Climate Change*, Professor Tim Lenton of the University of Exeter shows that the 'tipping points' that trigger these disasters could be anticipated by looking for changes in climate behaviour.

Climate 'tipping points' are small changes that trigger a massive shift in climate systems, with potentially devastating consequences. It is already known that climate change caused by human activity could push several potential hazards past their 'tipping point'. However, it is often assumed that these 'tipping points' are entirely unpredictable.

Professor Lenton argues that a system of forecasting could be developed to enable some forewarning of high-risk tipping points. The approach he outlines involves analysing [observational data](#) to look for signs that a [climate system](#) is slowing down in its response to short-term natural variability (which we experience as the weather). This characteristic behaviour indicates the climate is becoming unstable, and is a common feature of systems approaching critical thresholds known as 'bifurcation points'.

Professor Tim Lenton of the University of Exeter said: "Many people assume that tipping points which could be passed as a result of human-

induced [climate change](#) are essentially unpredictable. Recent research shows that the situation is not as hopeless as it may seem: we have the tools to anticipate thresholds, which means we could give societies valuable time to adapt.

"Although these findings give us hope, we are still a long way from developing rigorous early warning systems for these climate hazards."

More information: Early warning of climate tipping points, Timothy Lenton, *Nature Climate Change* 1 (3) , July 2011; online June 19, 2011.

Provided by University of Exeter

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