

Clue: A major city



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Sea level could rise by 150cm, US scientists warn

James Randerson

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A breaking ice shelf in Antarctica ... many scientists fear the world is close to a tipping point. Jim Elliott/British Antarctic Survey/AP

Sea level rise due to global warming will "substantially exceed" official UN projections and could top 150cm by the end of the century, according to a report from the US Geological Survey on the risks of abrupt [climate change](#). Such a rise would be catastrophic, seeing hundreds of millions of people affected by flooding.

Many scientists now fear the warming world is on the verge of "tipping points", in which climate change and its effects accelerate rapidly. The science is evolving quickly and the new report updates the most recent findings of the UN's Intergovernmental Panel on Climate Change (IPCC), which was released in 2007.

Some observers have called for an update of the science before the UN talks on a global deal on greenhouse gases emissions reach their finale in December 2009. The [US report](#) considers four scenarios for abrupt change, and delivers bad news on two.

On sea level, the report found models used by the IPCC in 2007 do not take into account recent information on how fast glaciers slide into the oceans, particularly from Greenland and the West Antarctic ice sheets. The report says the south western states of the US will enter a "permanent drought state".

But the risk of the ocean circulation in the Atlantic shutting down – freezing the coasts of America and Europe, as in the film *The Day After Tomorrow* – is rated as low by the report. It predicts a slowdown of around 25% to 30%. The chance of a catastrophic release of methane from frozen sub-sea stores at high latitudes is also rated low. The report is part of a series by the US Climate Change Science Program, which collates all US federal research on the subject. It was presented tonight at the American Geophysical Union meeting in San Francisco.

The IPCC predicted that sea level would rise by 28cm to 42cm by the end of the century.
,The authors cite a 2007 study by Prof Stephan Rahmstof at the Potsdam Institute for Climate Change Research which predicted a sea level rise of between 40cm-150cm by 2100. But even this much higher estimate will "likely need to be revised upwards" because it does not fully capture the ice flow processes.

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