

Greenland ice tipping point 'further off than thought'

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- [David Adam](#) in Copenhagen
- [guardian.co.uk](#), Tuesday 10 March 2009 16.31 GMT
- [Article history](#)



The vulnerability of Greenland's ice has been overestimated, says a climate expert.
Photograph: Corbis

The [giant Greenland ice sheet](#) may be [more resistant to temperature rise than experts realised](#). The finding gives hope that the worst impacts of global warming, such as the devastating floods depicted in Al Gore's film *An Inconvenient Truth*, could yet be avoided.

Jonathan Bamber, an ice sheet expert at the University of Bristol, told the conference that previous studies had misjudged the so-called [Greenland](#) tipping point, at which the ice sheet is certain to melt completely. "We're talking about the point at which it is 100% doomed. It seems quite an important number to get right." Such catastrophic melting would produce enough [water](#) to raise world sea levels by more than 6m.

"We found that the threshold is about double what was previously published," Bamber told the [Copenhagen Climate Congress, a special three-day summit](#) aimed at updating the latest climate science ahead of global political negotiations in December over a successor

to the Kyoto treaty. It would take an average global temperature rise of 6C to push Greenland into irreversible melting, the new study found.

Previous estimates, including those in the recent reports from the [Intergovernmental Panel on Climate Change](#), said the critical threshold was about 3C – which many climate scientists expect to be reached in the coming decades.

"The threshold temperature has been substantially underestimated in previous studies. Our results have profound implications for predictions of sea level rise from Greenland over the coming century," the scientists said.

Bamber said previous studies used a very simple model to mimic how the Greenland ice will melt as temperatures rise. The new study, conducted jointly with colleagues in the US and Denmark, used a more complex simulation to better recreate the conditions in the real world. "I'm not saying it's definitely right, but more of the physics is in there."

He said evidence from past climates confirmed that Greenland should be able to survive temperature rises higher than 3C. An ice sheet about half the size is known to have persisted there during the Eemian period, about 125,000 years ago, when temperatures were about 5C higher than today.

Bamber said the new study was only concerned with the tipping point at which melting becomes unstoppable. It does not mean that Greenland will not contribute to increased sea level rise if temperatures increase by a few degrees.

"I'm not saying that if you have a temperature rise of 2C then you're not going to lose mass from Greenland, because you are. [You warm the planet, ice melts.](#)" he added.