

Greenland ice cap melting faster than ever

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A glacier off the coast of Greenland. Photo by Jonathan Bamber

Satellite observations and a state-of-the art regional atmospheric model have independently confirmed that the Greenland ice sheet is losing mass at an accelerating rate, reports a new study in *Science*.

This mass loss is equally distributed between increased iceberg production, driven by acceleration of Greenland's fast-flowing outlet glaciers, and increased meltwater production at the ice sheet surface. Recent warm summers further accelerated the mass loss to 273 Gt per year (1 Gt is the mass of 1 cubic kilometre of water), in the period 2006-2008, which represents 0.75 mm of global [sea level](#) rise per year.

Professor Jonathan Bamber from the University of Bristol and an author on the paper said: "It is clear from these results that mass loss from Greenland has been accelerating since the late 1990s and the underlying causes suggest this trend is likely to continue in the near future. We have produced agreement between two totally independent estimates, giving

us a lot of confidence in the numbers and our inferences about the processes".

The Greenland ice sheet contains enough water to cause a global sea level rise of seven metres. Since 2000, the ice sheet has lost about 1500 Gt in total, representing on average a global sea level rise of about half a millimetre per year, or 5 mm since 2000.

At the same time that surface melting started to increase around 1996, snowfall on the ice sheet also increased at approximately the same rate, masking surface mass losses for nearly a decade. Moreover, a significant part of the additional meltwater refroze in the cold snowpack that covers the [ice sheet](#). Without these moderating effects, post-1996 [Greenland](#) mass loss would have been double the amount of mass loss observed now.

Source: University of Bristol ([news](#) : [web](#))

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