

Greenland, Antarctic ice sheets melting faster than predicted

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The Greenland and Antarctic ice sheets are losing mass at an accelerating pace, according to a recent NASA-funded satellite study based on nearly two decades of monthly satellite measurements.¹



Credit: G Chapelle, Alfred Wegener Institute

The study's findings suggest that the ice sheets are becoming the dominant contributor to global sea-level rise, overtaking ice loss from the Earth's mountain glaciers and ice caps. This is happening much sooner than predicted by model forecasts.

In 2006, the Greenland and Antarctic ice sheets lost a combined mass of 475 gigatonnes, enough to raise global sea level by an average of 1.3 millimetres a year, according to the study.

'That ice sheets will dominate future sea-level rise is not surprising – they hold a lot more ice mass than mountain glaciers,' says lead author Eric Rignot from NASA.

'What is surprising is this increased contribution by the ice sheets is already happening. If present trends continue, sea level is likely to be significantly higher than levels projected by the United Nations Intergovernmental Panel on Climate Change in 2007.'

¹ Rignot E, Velicogna I, van den Broeke MR, Monaghan A and Lenaerts J (2011). Acceleration of the contribution of the Greenland and Antarctic ice sheets to sea level rise. *Geophys. Res. Lett* 38, L05503, doi:10.1029/2011GL046583