

Greenland ice loss behind a sixth of sea-level rise

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GREENLAND lost 1500 cubic kilometres of ice between 2000 and 2008, making it responsible for one-sixth of global sea-level rise. Even worse, there are signs that the rate of ice loss is increasing.

Michiel van den Broeke of Utrecht University in the Netherlands and colleagues began by modelling the difference in annual snowfall and snowmelt in Greenland between 2003 and 2008 to reveal the net ice loss for each year. They then compared each year's loss with that calculated from readings by the GRACE satellite, which "weighs" the ice sheet by measuring its gravity.

The team found that results from the two methods roughly matched and showed that Greenland is losing enough ice to contribute on average 0.46 millimetres per year to global sea-level rise. The loss may be accelerating: since 2006, warm summers have caused levels to rise by 0.75 millimetres per year, though van den Broeke says we can't be sure whether this trend will continue (*Science*, [DOI: 10.1126/science.1178176](#)). Sea levels are rising globally by 3 millimetres on average.

Half the ice was lost through melting and half through glaciers sliding faster into the oceans, the team says. "The study gives us a really good handle on how to approximate how much ice Greenland is going to lose in the coming century," says Ted Scambos of the US National Snow and Ice Data Center in Boulder, Colorado.