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Greenland melt 'speeding up'

The meltdown of Greenland's ice sheet is speeding up, satellite measurements show.

Data from a US space agency (Nasa) satellite show that the melting rate has accelerated since 2004.

If the ice cap were to completely disappear, global sea levels would rise by 6.5m (21 feet).

Most of the ice is being lost from eastern Greenland, a US team writes in Science journal.

Jianli Chen of the University of Texas at Austin and colleagues studied monthly changes in the Earth's gravity between April 2002 and November 2005.

These measurements came from the US space agency's Grace (Gravity Recovery and Climate Experiment) satellite, launched in 2002.

From these data, they were able to estimate changes in the mass of Greenland's ice sheet.

A number of factors contribute to fluctuations in the Earth's gravity field.

But once the influence of the atmosphere and the oceans is removed, the variations mostly reflect changes in the mass of ice sheets and of water stored in the ground.

Estimated monthly changes in the mass of Greenland's ice sheet suggest it is melting at a rate of about 239 cubic kilometres (57.3 cubic miles) per year.

This figure is about three times higher than an earlier estimate of the mass loss from Greenland made using the first two years of Grace measurements.

Satellite data

Dr Chen and colleagues partly attribute this to increased melting in the past one-and-a-half years and partly to better processing of the data.

"Acceleration of mass loss over Greenland, if confirmed,



This Greenland glacier is now one of the fastest moving in the world

“ Acceleration of mass loss over Greenland, if confirmed, would be consistent with proposed increased global warming in recent years ”

Dr Chen and colleagues

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would be consistent with proposed increased global warming in recent years," the authors wrote in Science.

This would amount to a contribution to global sea level rise from Greenland of about half a millimetre (0.02 inches) each year.

The group's findings agree remarkably well with a study released earlier this year that used data from other satellites to estimate mass changes in the Greenland ice.

Grace also appears to have detected a loss of ice from Arctic glaciers that were omitted from this study and are separate from the main Greenland ice sheet.

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