

To: Daniel Janzen <djanzen@sas.upenn.edu>  
From: Winnie Hallwachs <whallwac@sas.upenn.edu>  
Subject: Greenland ice caps going far faster  
Date: Fri, 7 Sep 2007 16:50:39 -0400  
X-ELNK-Trace:  
148b8ec7060420151aa676d7e74259b7b3291a7d08dfec790dbe07dfacd7f86bbe98e6232fc1212c350badd9bab72f9c350badd9bab72f9c350badd9bab72f9c  
X-Originating-IP: 68.166.207.90  
X-Loop: djanzen@facstaff.sas.upenn.edu

6.45pm  
Scientists fear ice caps melting faster than predicted

Paul Brown in Ilulissat  
Friday September 7, 2007  
Guardian Unlimited

The Greenland ice cap is melting so quickly that it is triggering earthquakes as pieces of ice several cubic kilometres in size break off.

Scientists monitoring events this summer say the acceleration could be catastrophic in terms of sea-level rise and make predictions this February by the Intergovernmental Panel on Climate Change far too low.

The glacier at Ilulissat, which supposedly spawned the iceberg that sank the Titanic, is now flowing three times faster into the sea than it was 10 years ago.

Robert Correll, chairman of the Arctic Climate Impact Assessment, said in Ilulissat today: "We have seen a massive acceleration of the speed with which these glaciers are moving into the sea. The ice is moving at two metres an hour on a front 5km [3 miles] long and 1,500 metres deep. That means that this one glacier puts enough fresh water into the sea in one year to provide drinking water for a city the size of London for a year."

Prof Correll is visiting Greenland as part of a symposium of religious, scientific, and political leaders to look at the problems of the island, which has an ice cap 3km thick containing enough water to raise worldwide sea levels by seven metres.

Today leaders of Christian, Shia, Sunni, Hindu, Shinto, Buddhist and Jewish religions took a boat to the tongue of the glacier for a silent prayer for the planet. They were invited by Bartholomew I, the spiritual leader of 250 million Orthodox Christians worldwide.

Prof Correll, director of the global change programme at the Heinz Centre in Washington, said the estimates of sea level rise in the IPCC report were conservative and based on data two years old. The predicted rise this century was 20cm to 60cm, but it

would be at the upper end of this range at least, he said, and some believed it could be two metres. This would be catastrophic for European coastlines.

He had flown over the Ilulissat glacier and "seen gigantic holes in it through which swirling masses of melt water were falling. I first looked at this glacier in the 1960s and there were no holes. These so-called moulins, 10 to 15 metres across, have opened up all over the place. There are hundreds of them."

He said ice-penetrating radar showed that this melt water was pouring through to the bottom of the glacier creating a lake 500 metres deep which was causing the glacier "to float on land. These melt-water rivers are lubricating the glacier, like applying oil to a surface and causing it to slide into the sea. It is causing a massive acceleration which could be catastrophic."

The glacier is now moving at 15km a year into the sea although in surges it moves even faster. He measured one surge at 5km in 90 minutes - an extraordinary event.

Veli Kallio, a Finnish scientist, said the quakes were triggered because ice had broken away after being fused to the rock for hundreds of years. The quakes were not vast - on a magnitude of 1 to 3 - but had never happened before in north-west Greenland and showed the potential for the entire ice sheet to collapse.

Prof Correll said: "These earthquakes are not dangerous in themselves but the fact that they are happening shows that events are happening far faster than we ever anticipated."