

## TRACKING THE LOST ICE

**'In just 12 years, the Greenland ice sheet has shrunk with a seventh of its total area, corresponding to 300,000 km<sup>2</sup>'. This is what a press release from the publishers of the Times Comprehensive Atlas of the World, HarperCollins, stated on 15 September 2011.**

The news was released just before the publication of the new 13th edition of the Times Atlas. The press release described the drastic changes that the cartographers had observed since the last revision of the map of Greenland in 1999. Picked up first by the Guardian in England, the news travelled around the world in no time. It made the headlines as the most striking proof of Climate Change, so far. From Europe to the USA and Asia, people woke up to this alarming news, which immediately was sent into orbit in the blogosphere and the social media.

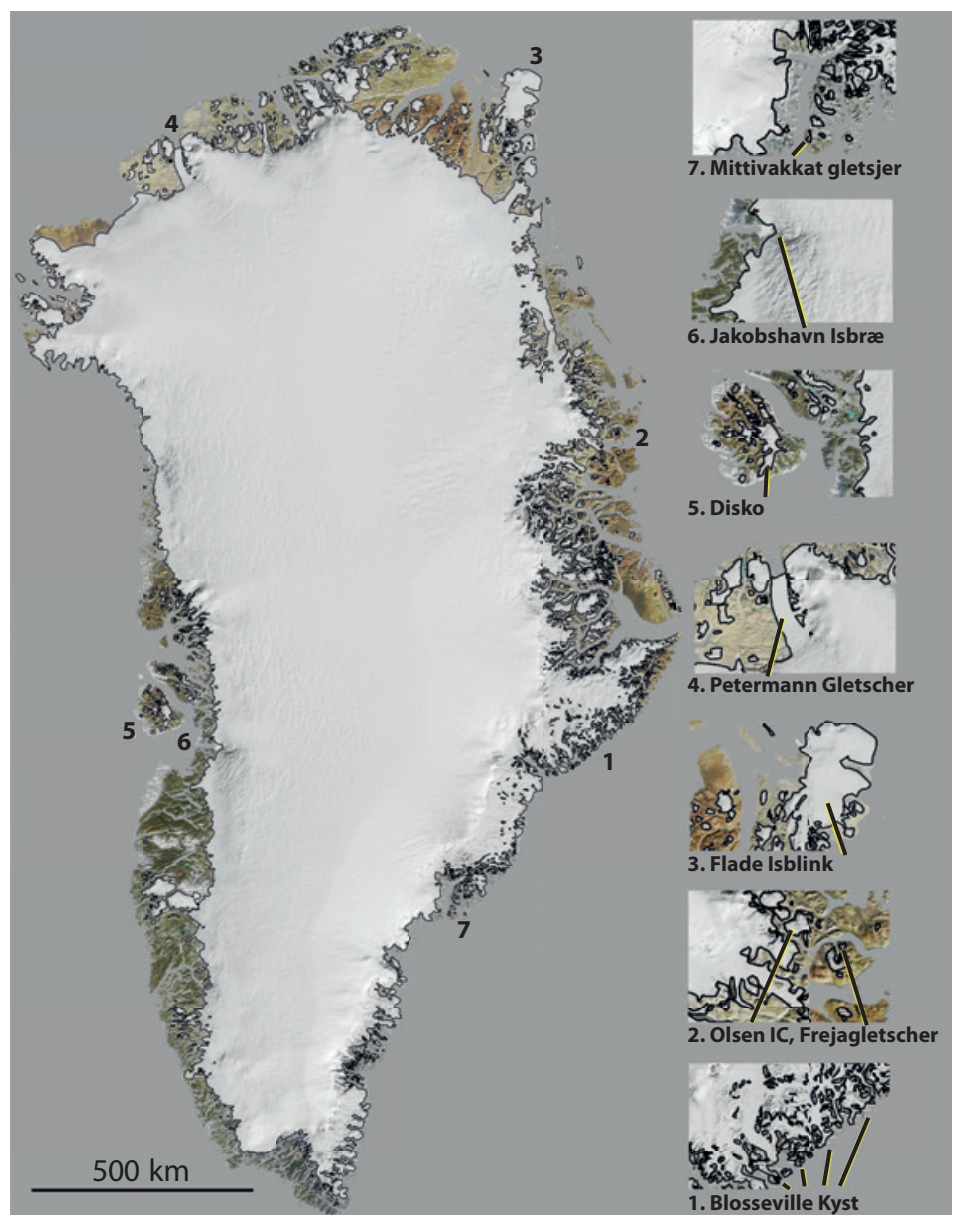
But the real news was that the freshly printed atlas included a grave mistake, made by the otherwise well-reputed publishers of the world's perhaps most well-respected Atlas.

A few hours after the misleading news had begun its world tour, the scientific community was on the alert. The 'news' reached the PROMICE team at the Geological Survey of Denmark and Greenland (GEUS) via Cryolist.org, a global list server, used by glaciologists to share information. At GEUS, the scientists' immediate reaction was to shake their heads in disbelief. As responsible for Denmark's and Greenland's official monitoring programme, the team had for a long time worked on an accurate estimate of the changes in the mass balance of the Greenland ice sheet, so HarperCollins' statements were so far-fetched that, at first, it was assumed that they would be quickly dismissed as an obvious mistake. Any schoolgirl or boy could access

Google Earth and see for her- or himself that the alleged loss of ice was set way too high.

But there were no alert schoolboys or girls that day, so instead of being dismissed, the

news grew by the hour, potentially harming the communication of the actual evidences of Climate Change.



*The new ice-margin data from PROMICE are shown as black lines, which have been placed over a mosaic compiled from cloud-free satellite images from 2009– to 2011 (see the reference on the back of this newsletter). The insets are enlargements of some of the areas, shown on the big map, where the glaciologists work at the moment.*

Through Cryolist.org, glaciologists now started to work methodically to organise a coordinated reply. The glaciologists reacted fast and unanimously, taught by experience from the devastating Himalaya-gate story, in which a simple mix-up of digits in a year had made it unnoticed into the authoritative IPCC's climate report, playing havoc with the communication of climate research. An official letter from Scott Polar Research Institute contradicting the statements was published in the Guardian. Likewise, glaciologists all over the world approached the major media, such as CNN, New York Times and BBC. The quick response paid off: before the end of the second day, the news had changed from being an erroneous reporting that the Greenland ice sheet had lost 15% of its ice mass into being the scientists' contradiction of the original statement from no other than the Times Comprehensive Atlas of the World.

Five days later, HarperCollins openly backtracked their dramatic statement, and two days after that they went all the way to acknowledge their mistake, promising to correct the atlas in cooperation with relevant scientists. Together with an international team of glaciologists, the PROMICE team had contacted HarperCollins offering to assist in the correction, and sent their

newest map data, seen on the front of this newsletter. This process resulted in the publication in January 2012 of a very detailed supplementary map of Greenland, which is now attached to all editions of the atlas, with an in-depth explanation of the mistake and a note on how the ice-margin changes are detected from satellite photos.

On the new map from the Times Atlas, it now says: "Ice extent data: © Geological Survey of Denmark and Greenland (GEUS). Ice margins produced by PROMICE – Programme for Monitoring of the Greenland Ice Sheet, updated to 2011 based on MODIS imagery from NASA". In the text box on the map sheet, it says: "This map uses data supplied by the Geological Survey of Denmark and Greenland, who track the changes in the ice extent using the latest satellite imagery."

The complete high-resolution dataset from PROMICE of the Greenland ice margin will soon be published. And what emerged from the scientists' input and the publishers' corrections can be seen in the links in the box below.

## REFERENCES

The scientific publication about the correction work with the Times Atlas:

Kargel, J.S., Ahlstrøm, A.P., Alley, R.B., Bamber, J.L., Benham, T.J., Box, J.E., Chen, C., Christoffersen, P., Citterio, M., Cogley, J.G., Jiskoot, H., Leonard, G.J., Morin, P., Scambos, T., Sheldon T. and Willis, I. 2012: Brief Communication: Greenland's shrinking ice cover: "fast times" but not that fast, *The Cryosphere* 6, 533–537.

The publication is open access and can be read here:

<http://www.the-cryosphere.net/6/533/2012/tc-6-533-2012.html>

The explanation from the publisher of the new map of Greenland can be read here:

<http://www.timesatlas.com/News/Pages/Home.aspx?BlogID=63>

The new map can be downloaded from the Times Atlas' website:

<http://www.timesatlas.com/Documents/Greenland%20Insert%20HIGH%20RESOLUTION%20DOWNLOAD%20FOR%20PRINTING.pdf> (pdf file approx. 14 Mb)



# PROMICE

PROMICE is financed by the Ministry of Climate, Energy and Building through the climate support programme DANCEA (Danish Cooperation for Environment in the Arctic), which is managed by the Danish Energy Agency.

- The purpose of PROMICE is to monitor the mass loss of the Greenland ice sheet, both the melting on the surface and the volume of icebergs calved.

- PROMICE is headed by GEUS in cooperation with DTU Space and Asiaq. Furthermore the programme collaborates with the Danish Meteorological Institute and foreign universities and authorities.

- Read more about PROMICE on [www.promice.dk](http://www.promice.dk), where you can find photos and videos, get direct access to measuring data from the ice sheet and the PROMICE outreach material. On the website you can also subscribe to our newsletter.

#### Authors

Andreas P. Ahlstrøm, Senior Researcher, GEUS.  
Michele Citterio, Senior Researcher, GEUS.

#### Editor

Andreas P. Ahlstrøm, Senior Researcher, GEUS.

#### Layout

Carsten Egestal Thuesen, GEUS.



Geological Survey of Denmark and Greenland  
Øster voldgade 10  
DK-1350 Copenhagen K  
Denmark



Technical University of Denmark  
Anker Engelunds Vej 1, 101A  
DK-2800 Kgs. Lyngby  
Denmark



Asiaq  
Qatserisut 8, P.O. Box 1003  
3900 Nuuk  
Greenland



Ministry of Climate, Energy and Building  
Stormgade 10–12  
DK-1470 Copenhagen K  
Denmark



Danish Energy Agency  
Amaliegade 44  
DK-1256 Copenhagen K  
Denmark