

Hundreds of Antarctic Peninsula glaciers accelerating as climate warms

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Antarctic glacier. Credit: British Antarctic Survey

Hundreds of glaciers on the Antarctic Peninsula are flowing faster, further adding to sea level rise according to new research published this week in the *Journal of Geophysical Research*. Climate warming, that is already causing Antarctic Peninsula increased summer snow melt and ice shelf retreat, is the most likely cause.

Using radar images acquired by European ERS-1 and -2 satellites, scientists from British Antarctic Survey (BAS) tracked the flow rate of over 300 previously unstudied glaciers. They found a 12% increase in glacier speed from 1993 to 2003. These observations - that echo recent findings from coastal Greenland - indicate that the cause is melting of the lower glaciers, which flow directly into the sea. As they thin, the buoyancy of the ice can lift the glaciers off their rock beds, allowing them to slide faster.

In February this year, the United Nations Intergovernmental Panel on Climate Change (IPCC) reported that they could not provide an upper limit on the rate of sea-level rise from Antarctica in coming centuries because of a lack of understanding of the behaviour of the large ice sheets.

These new results give scientists a clearer picture about the way that climate warming can affect glaciers both in the Arctic and Antarctic. Furthermore, they pave the way for more reliable projections of future sea level rise, and provide a better basis for policy decisions.

Lead author Dr Hamish Pritchard says, "The Antarctic Peninsula has experienced some of the fastest warming on Earth, nearly 3 C over the last half-century. Eighty-seven percent of its glaciers have been retreating during this period and now we see these glaciers are also speeding up. It's important that we use tools such as satellite technology that allow us to monitor changes in remote and inaccessible glaciers on a regional scale. Understanding what's happening now gives us our best chance of predicting what's likely to happen in the future."

Source: British Antarctic Survey

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