

Ice loss likely to continue in Antarctica

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A new international study led by Monash University climate scientists has revealed that ice loss in Antarctica persisted for many centuries after it was initiated and is expected to continue.

"Our study implies that [ice loss](#) unfolding in Antarctica today is likely to continue unabated for a long time—even if [climate change](#) is brought

under control," said lead study authors Dr. Richard Jones and Dr. Ross Whitmore, from the Monash University School of Earth, Atmosphere and Environment.

The study, published today in *Geology*, outlines a cosmogenic surface-exposure chronology from Mawson Glacier, adjacent to a region of the Ross Sea that underwent dynamic marine-based ice sheet retreat following the Last Glacial Maximum.

The data records at least 220 meters of abrupt ice thinning between 7,500 and 4,500 years ago, followed by more gradual thinning until the last millennium.

The study presents new results of ice sheet thinning in the southwestern Ross Sea. The results show that abrupt ice loss of several hundred meters occurred at a similar rate and duration across multiple outlet glaciers in the Mid-Holocene, despite complex bed topography.

Both outlet glaciers demonstrate that abrupt deglaciation occurred across a broad region in the Mid-Holocene.

When compared to regional sea-level and ocean-temperature changes, the study data indicate that ocean warming most likely drove grounding-line retreat and ice drawdown, which then accelerated as a result of marine ice sheet instability.

"We show that part of the Antarctic Ice Sheet experienced rapid ice loss in the recent geological past," said Professor Andrew Mackintosh, who heads the Monash School of Earth, Atmosphere and Environment.

"This ice loss occurred at a rate similar to that being observed in rapidly changing parts of Antarctica today, and it was caused by the same processes that are considered to cause current and probable future

Antarctic ice [mass loss](#)—ocean warming, amplified by internal feedbacks," he said.

"The retreat persisted for many centuries after it was initiated, which implies that ice loss unfolding in Antarctica today is likely to continue unabated for a long period."

Provided by Monash University

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