

## **Late Cenozoic glacial history of Shackleton Glacier, Antarctica**

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The extent and volume of the Antarctic ice sheet at the Last Glacial Maximum (LGM), as well as the timing of subsequent deglaciation, remains poorly known. However, it is important to constrain these factors in order to understand better the dynamics of the ice sheet and therefore the potential for catastrophic ice-sheet collapse and future sea-level rise. We focus here on the ice sheet that filled the Ross Sea Embayment during the LGM. Drifts alongside outlet glaciers that extend through the Transantarctic Mountains (TAM), from the East Antarctic Ice Sheet to the Ross Sea, record changes in ice elevation and can be used to improve our understanding of the dynamics of the Ross Sea ice sheet at and since the LGM. Fieldwork in the central TAM at Shackleton Glacier, including the mapping and dating of Late Quaternary ice extents, revealed that ice midway up glacier remained close to the LGM limit until at least 10,500 to 9,000 cal yr BP. These preliminary ages suggest that most ice thinning occurred during the Holocene, a result consistent with a reconstruction of Ross Sea ice-sheet retreat (Conway et al., 1999). When complete, the chronology of ice fluctuations at Shackleton Glacier will improve our understanding of Ross Sea ice-sheet behavior, which in turn will help in interpretations of Antarctica's contribution to deglacial meltwater pulses, such as Meltwater Pulse 1A.