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## **The 8200 cal. year BP event reflected in the Arctic fjord Van Mijenfjorden, Svalbard.**

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Detailed stratigraphic investigations of a high resolution sediment core from the Arctic fjord, Van Mijenfjorden, Svalbard, reveal significant reductions in benthic foraminiferal  $\delta^{18}\text{O}$  of 0.4 ‰, and 0.2-0.3 ‰, dated to respectively ca. 8200 and 8450 cal. yr BP. These reductions, combined with changes in the benthic foraminiferal fauna and IRD, indicate substantial changes in the hydrography of the fjord such as freshening of the bottom water, enhanced sea ice distribution and reduced biogenic production. The age and duration ( $\sim 100$  years) of the youngest event is directly in phase with the 8200 cal. anomaly in the  $\delta^{18}\text{O}$  record GISP2 and NGRIP of the Greenland Ice Sheet. The changes around 8450 cal. yr BP compares well to the timing of the initial freshwater drainage of the proglacial Lake Agassiz. Therefore the proxy record of Van Mijenfjorden lends support to the theory, explaining the 8,200 cal. yr event as a cumulative response to a freshwater forced reduction in the meridional overturning circulation in the North Atlantic. A reduction in the MOC may have changed the oceanic inflow to the fjord towards reduced influence of Atlantic Water and increased dominance of fresher Arctic Water.