



## **Decadal to centennial climate variability 8000-1600 cal. years BP inferred from a proxy record in the subarctic Malangen fjord, North Norway.**

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The Malangen fjord, with its deep sill and good hydrological communication with the Norwegian Sea, has been the site for a high resolution paleoclimatic investigation. By using benthic foraminifera and stable isotopes from a marine sediment core, this study will reconstruct the changes in inflow of warm Atlantic Water at a high-latitude setting. Radiocarbon dating has given ages between 8000 – 1600 cal. yrs BP. The sedimentation rate within the sequence varies from 3 to 1000cm/1000yr. The benthic  $\delta^{18}\text{O}$  values increases from 1.8 to 3 permil from 8000 cal. yr BP to ~1600 cal. yr BP. Preliminary results indicate that this isotopic depletion reflects a reduction in bottom water temperature from c. 10°C around 8000 cal. yr BP to 6°C at 1600 cal. yr BP. The latter is approximately 1.5°C colder than the temperature during the last two decades at the location. The study gives evidence for a long-term cooling with rapid changes superimposed on the general trend. The overall cooling trend correlates with the decreasing insolation at 70°N. Several cold events are interpreted as periods with reduced inflow of Atlantic Water, and vice versa for warmer events. This temperature development compares well with SST reconstructions based on diatoms in the eastern Norwegian Sea and planktonic foraminifera in the western Barents Sea.