



## **Comparison and quantification of marine palaeoclimate trends of the last 2000 years from Arctic Norway.**

**L. J. Wilson** (1), M. Hald (1), K. Husum (1) and G. Salomonsen (2)

(1) Geological Institute, University of Tromsø, Tromsø, Norway, (2) Norconsult, Postboks 110, Horten, 3191, Norway

(Lindsay.Wilson@ig.uit.no / Fax: 77 64 56 00 / Phone: +47 77646885)

The global temperature signal, observed in instrumental records and reconstructed in climate models, indicates an overall warming trend over the latter part of the last century. The scale of this signal is amplified within the northern polar region, however, this has not previously been discussed in the context of bottom water dwelling organisms. This study utilises benthic foraminifera to reconstruct marine bottom water temperatures from a series of oxygen isotope records from the northern Norwegian continental margin and the Barents Sea.

The results are presented from five cores from open ocean (western Barents Sea), shelf sea (Andfjorden) and fjord (Malangen, Vestfjorden and Sagfjorden) settings thus providing a north-to-south transect of palaeoclimate records within this sub Arctic to Arctic region. Radiocarbon and Pb210 dating demonstrate a series of high-resolution (annual to decadal) timescales spanning approximately the last 500 to 2000 years.

Statistical comparisons are made both to corresponding instrumental records and between the cores to quantify the scale and timing of the observed climatic changes. The close relationship between the Northern hemisphere global temperature record, and indeed between the temperature reconstructions of the cores themselves is particularly evident for the last few decades of the 20<sup>th</sup> century (post-1980's) with the onset of a rapid warming period of 1-2°C. Further studies are required to provide a more

detailed quantifiable comparison of the elevated Arctic warming.