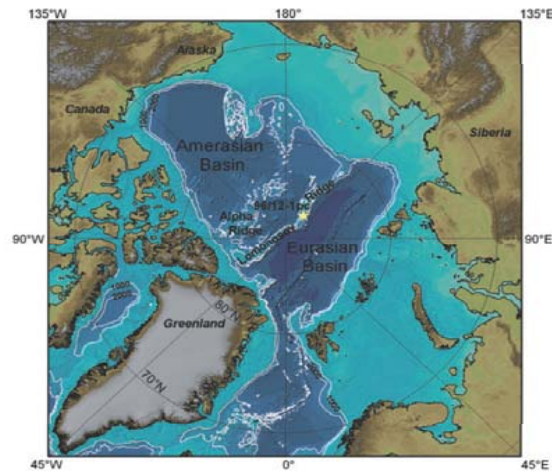


Arctic Ocean paleoclimate



Cyclic variations in colour of sediments from the central Arctic Oceans has been interpreted to represent climate controlled changes in the input of manganese and/or variations in the ventilations of the arctic basins. L.Löwemark and co-workers have been investigating cores from the central arctic ocean with high-resolution XRF scanning, and they could verify that these colour cycles are indeed connected to variations in manganese concentrations. The manganese cycle showed no correlation to any other element measured. The decoupling of manganese to the sediment bulk chemistry is taken to indicate that the cycles observed are caused by variation in the water column ventilation and riverine input, rather than sediment diagenesis. The conclusion therefore is that manganese maxima represents warm periods with large ventilation and riverine input.

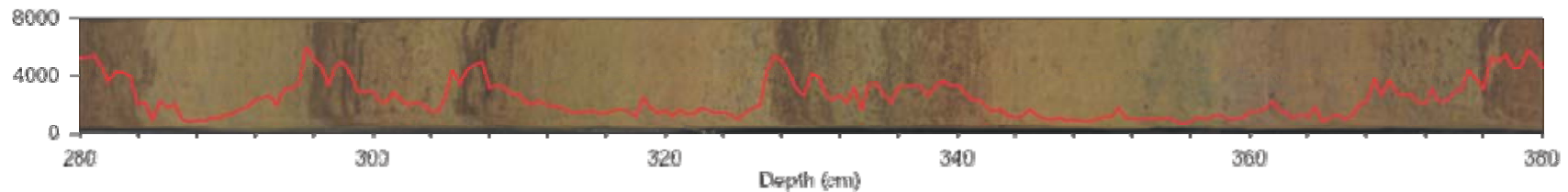


Fig. 4 Digital photograph of a core section from core 96/12-pc showing distinct colour cycles. The red curve shows the variations in Mn measured by the Itrax XRF scanner. Maxima in Mn clearly correspond to brown, bioturbated layers.

Read more: Arctic Ocean Manganese content and sediment colour cycles. Ludvig Löwemark, Martin Jakobsson, Magnus Mörth, Jan Backman Polar Research 27 2008 105–113 © 2008