



Late Glacial and Holocene paleoceanography of the central and northern Greenland Sea based on foraminifera, stable isotopes and sediments

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Micropaleontological, sedimentological and stable isotope studies of four sediment cores from the central and northern Greenland Sea are used to reconstruct the Late Glacial and Holocene paleoceanography. The chronology and correlation of the sediments were based on the absolute radiocarbon ages. The data show a typical transition from the glacial towards the interglacial, with a distinct Holocene Thermal Maximum (HTM), expressed by maximum abundances of total and subpolar foraminifera. In the southernmost record, from the southern slope of the Vesterisbanken Seamount, the HTM is interrupted by two events of significantly lower foraminiferal abundance. The cooling trend after the HTM with >95% polar specimens in the planktic foraminifer associations is reversed in the Late Holocene part of that record, which is unusual, compared to other records from the northern Nordic Seas. Both total and subpolar foraminifer abundances return rapidly to the values comparable with the HTM, which indicates a strong influence of Atlantic Water (AW). This is not observed in the northernmost record from the Greenland Fracture Zone and therefore the AW must have come from a different direction. The Greenland Fracture Zone records reveal a planktic isotope pattern similar to that found on the Western Svalbard Slope indicating a connection between the two sites. The area was strongly influenced by the AW since the Early Holocene. However, around 3 cal. ka BP the inflow of AW was reduced, resulting in a cooling and a stronger stratification of the water column due to the thickening of the cold, low-salinity surface layer.