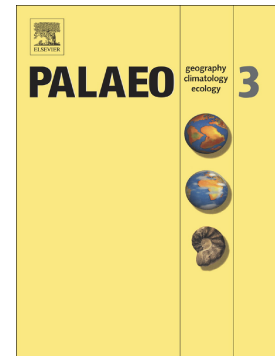


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Meltwater and seasonality influence on Subpolar Gyre circulation during the Holocene.**Nicolas Van Nieuwenhove^{1,2,*}, Christof Pearce², Mads Faurschou Knudsen², Hans Røy³,****Marit-Solveig Seidenkrantz²**

¹Department of Earth Sciences, University of New Brunswick, 2 Bailey Drive, Fredericton NB, Canada.

²Centre for Past Climate Studies, Arctic Research Centre, and iClimate, Department of Geoscience, Aarhus University, Høegh-Guldbergs Gade 2, DK-8000 Aarhus C, Denmark.

³Center for Geomicrobiology, Department of Bioscience, Aarhus University, Ny Munkegade 116 DK-8000 Aarhus C, Denmark.

*corresponding author; nicolas.vannieuwenhove@unb.ca

Abstract

Dinoflagellate cyst assemblages in a marine sediment core from the Iceland Basin were used to carry out qualitative and quantitative assessments of upper ocean conditions in the northern branch of the Subpolar Gyre (SPG) during the Holocene. The data revealed that the early Holocene, i.e. prior to ~6.8 kyr B.P., experienced elevated summer sea surface temperatures (SST). In contrast, winter SST was lower compared to modern conditions. This stronger-than-present seasonality revealed by our data thus shows the influence of the early Holocene insolation forcing. Higher seasonality also dominated the reconstructed sea surface salinity (SSS) in the same period, with lower salinity during both summers and winters. The lower SSS suggests freshwater advection into the SPG, and the dinoflagellate cyst content from this interval indicates a dominant sourcing from

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