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Benthic foraminiferal assemblage analysis of a sediment core from North-East Greenland

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Historical records of Arctic ice margin show a general retreat of seasonal ice since the late 19th century, and according to model simulations, the Arctic Ocean may become seasonally ice-free in about 20 years. However, despite the extreme societal and environmental relevance, natural sea-ice variability around Greenland and its linkages with ocean circulation, Greenland ice-sheet dynamics and external forcing is still not well understood. Because of the scarce knowledge about late-Holocene marine environments and corresponding natural sea-ice states around Greenland, it is crucial to develop high-resolution reconstructions extending back in time beyond the instrumental and satellite era. Therefore, a 410 cm long sediment core sampled on the North East Greenland shelf (79°06'N, 11°90'W) was analyzed in order to establish multidecadal to millennial-scale time series of general oceanic conditions and sea ice during the Holocene, with primary focus on the last few millennia. Here the first results are presented, based on a combination of sedimentological and benthic foraminiferal assemblage analyses of the selected core.