

In search of seismic and sedimentary evidence for proglacial North Sea lakes: Insights into their distribution and role during the Elsterian and Saalian glaciations

PRESENTED BY

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ABSTRACT

During the Middle and Late Pleistocene, ice sheets occupied parts of the North Sea during three major glaciations, the Elsterian (MIS 12), the Saalian (MIS 10-6) and the Weichselian (MIS 4-2). The exact limits of these expanded ice sheets and the dynamics and chronology of the expansions are, however, still a point of discussion. Nevertheless, most offshore studies support the idea of the presence of proglacial lakes in some form and at some point in time in front of these ice sheets. Solid geomorphological and sedimentological indications for the presence of these lakes are, however, scarce and evidence is mostly circumstantial. The existence of an Elsterian proglacial lake is e.g. used in the argument that glacial outburst floods created the erosional features preserved in the Dover Strait.

As part of the WALDO project ("Where are All the (proglacial) Lake seDiments in the NOrth Sea Basin?"), this project aims to test the hypothesis that proglacial lakes were important landscape features in the southern North Sea during the Elsterian, Saalian and Weichselian glacial periods, based on the analysis and interpretation of marine geophysical and geological data. In the framework of this project, two surveys with RV Belgica have been conducted, during which high-resolution geophysical data (multibeam bathymetry and backscatter, acoustic and seismic data) have been acquired in parts of the southern North Sea where proglacial lakes have been inferred to have existed in previous studies. The first data presented here are retrieved from the Southern Bight area and are used to update the lithostratigraphic framework and regional palaeogeography, in order to gain a better understanding of the landscape evolution during the Elsterian and Saalian glacial periods.

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