



Preserved subglacial and ice-marginal systems offshore Anglesey, UK: reconstructing the final deglaciation conditions of the Irish Sea.

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Multibeam echosounder data collected to the north-northwest of Anglesey, UK provides the first submarine geomorphological evidence for a grounded part of the Irish Sea Ice Stream and of enhanced ice stream flow into the deepening central Irish Sea Basin.

The glacial bedforms observed represent both a subglacial and an ice-marginal system during the final phase of deglaciation of the Irish Sea. Analysis of exceptionally well-preserved ribbed moraines, drumlins, flutes, eskers, De Geer moraines and iceberg scour marks allows for reconstructing ice-flow directions and the different deglaciation phases. The surveyed terrains are interpreted to represent the transition zone from cold- to warm-based ice with the onset of basal sliding. With evidence to support the “fracturing” model by Kleman & Hätterstrand (1999), a thawing front is suggested to have migrated over the till-bedrock interface, creating the continuous spectrum of ribbed moraines, drumlins, flutes and eskers. The observed De Geer moraines and iceberg scour marks represent an actively calving water-terminating ice margin. No considerable sediment influx has been able to bury the submarine landscape since and strong present-day tidal currents keep the terrain free from both erosive and depositional processes.

Kleman, J. & Hätterstrand, C. 1999. Frozen-bed Fennoscandian and Laurentide ice sheets during the Last Glacial Maximum. *Nature* 402, 63-66.