



Ice stream dynamics in the northern Irish Sea sector of the British ice sheet during the Last Glacial Maximum

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The Late Devensian glacial sediments and landforms of the Isle of Man record the advance and deglacial signature of the Irish Sea Ice Stream. Evidence from the area, gathered from striae, erratic trains and drift limits, show ice was preferentially routed over and around the island in two flow phases post 36 k yrs BP. In the south of the island, streamlined depositional bedforms with low elongation ratios suggest low ice flow velocities resulting from, i) the up-ice location of the island within a regional on-set zone, ii) flow retardation of ice interacting with the margins of the island and, iii) localised drainage of the deforming bed. The deglacial landform assemblage of lateral marginal sandurs and drainage diversions, coupled with a lack of dead ice features, suggests ice did not downwaste *in situ*, but remained intact along the coastal margins as Upland ice thinned. In the north of the island however, the Bride Moraine complex indicates a change in deglacial ice sheet dynamics with temporary re-advance and marginal oscillation causing proglacial tectonism and thrusting of the glacial sediment pile possibly during the Killard Stadial event (18.8 to 16.4 k cal yrs BP). From a basin-wide perspective, the Irish Sea Basin sector of the British ice sheet had many of the characteristics of an ice stream such as a zone of flow convergence up ice, lateral margins constrained by the topography and bathymetry of the basin, a grounding line in the southern Celtic Sea and recessional limits characterised by proglacially tectonised and thrust dead ice landscapes indicative of a rapidly oscillating ice margin.