Geophysical Research Abstracts
Vol. 18, EGU2016-774, 2016
EGU General Assembly 2016

Improved age constraints for the retreat of the Irish Sea Ice Stream

Rachel Smedley (1), Richard Chiverrell (2), Geoff Duller (1), James Scourse (3), David Small (4), Derek Fabel (5), Matthew Burke (2), Chris Clarke (6), Danny McCarroll (7), Stephen McCarron (8), Colm O'Cofaigh (9), David Roberts (9), and the the BRITICE-CHRONO Team

(1) Department of Geography and Earth Sciences, Aberystwyth University, Ceredigion, UK , (2) School of Environmental Sciences, University of Liverpool, Liverpool, UK, (3) School of Ocean Sciences, Bangor University, Menai Bridge, Anglesey, UK, (4) School of Geographical and Earth Sciences, University of Glasgow, UK, (5) Scottish Universities Environmental Research Centre, East Kilbride, UK , (6) Department of Geography, University of Sheffield, UK, (7) Department of Geography, Swansea University, UK, (8) Department of Geography, Maynooth University, Ireland, (9) Department of Geography, University of Durham, UK

BRITICE-CHRONO is a large (> 45 researchers) consortium project working to provide an extensive geochronological dataset constraining the rate of retreat of a number of ice streams of the British-Irish Ice Sheet following the Last Glacial Maximum. When complete, the large empirical dataset produced by BRITICE-CHRONO will be integrated into model simulations to better understand the behaviour of the British-Irish Ice Sheet in response to past climate change, and provide an analogue for contemporary ice sheets.

A major feature of the British-Irish Ice Sheet was the dynamic Irish Sea Ice Stream, which drained a large proportion of the ice sheet and extended to the proposed southern limit of glaciation upon the Isles of Scilly (Scourse, 1991). This study will focus on a large suite of terrestrial samples that were collected along a transect of the Irish Sea basin, covering the line of ice retreat from the Isles of Scilly (50°N) in the south, to the Isle of Man (54°N) in the north; a distance of 500 km. Ages are determined for both the eastern and western margins of the Irish Sea using single-grain luminescence dating (39 samples) and terrestrial cosmogenic nuclide dating (10 samples). A Bayesian sequence model is then used in combination with the prior information determined for deglaciation to integrate the geochronological datasets, and assess retreat rates for the Irish Sea Ice Stream.

Scourse, J.D., 1991. Late Pleistocene stratigraphy and palaeobotany of the Isles of Scilly. Philosophical Transactions of the Royal Society of London B334, 405 – 448.