



New observations on lower than present relative sea-levels since the late Glacial from the British Isles

J. Andrew Cooper (1), Antony Long (2), Ruth Plets (1), Louise Callard (2), Rory Quinn (1), Joseph Kelley (3), Daniel Belknap (3), Derek Jackson (1), Robin Edwards (4), David Long (5), Xavier Monteys (6), and Glenn Milne (7)

(1) University of Ulster, Northern Ireland, (2) Durham University, United Kingdom, (3) University of Maine, Orono, USA, (4) Trinity College, Dublin, Ireland, (5) British Geological Survey, (6) Geological Survey of Ireland, (7) University of Ottawa, Canada

Relative sea-level change around the British Isles shows marked spatial variability in response to ice sheet history and crustal response to loading/offloading. The area thus offers an ideal natural laboratory for the investigation of such interactions and has formed the basis of several models of earth-ice-ocean interaction. RSL data with which to test models is, however, largely restricted to the late Holocene. The paucity of data from much lower than present sea levels is reflected in large (tens of metres) discrepancies between different modelled RSL curves for the late-glacial to early Holocene period.

WE report on two years intensive fieldwork on six sites around the Irish Sea (at Bantry Bay, Waterford, Cardigan Bay, offshore Louth, Isle of Man, and Belfast Lough) on a north-south gradient. These were selected to target lower than present sea-level indicators from ice-proximal to ice-distal locations. The initial investigation using multibeam bathymetry and shallow seismic profiling identified wave-cut platforms and associated cliffs in bedrock, planation surfaces on drumlins, incised valley termini and the seaward limit of the transgressive unconformity. Subsequent coring of seabed targets yielded over 450m of core from 150 sites. Palaeoenvironmental interpretation and radiocarbon dating of material has yielded new observational data on lower than present sea levels that challenge existing model simulations.