Exploration of submerged Mesolithic landscapes around the Brown Bank, southern North Sea

Merle Muru$^{1,2}$, Rachel Harding$^2$, Simon Fitch$^2$, Tine Missiaen$^3$, and Vince Gaffney$^2$

$^1$Department of Geography, Institute of Ecology and Earth Sciences, University of Tartu, Tartu, Estonia (merle.muru@ut.ee)
$^2$School of Archaeological and Forensic Sciences, University of Bradford, Bradford, United Kingdom
$^3$Flanders Marine Institute (VLIZ), Oostende, Belgium

During the late glacial and early Holocene, vast areas of dry land stretched from the British Isles to continental Europe over what is now the southern part of the North Sea. Whilst it is known that this landscape was inhabited, little is known about the cultures that lived there and the surrounding environment. This study focuses on the Brown Bank area, between the UK and Dutch coasts, with its significant 25 km long and 10-15 m high ridge on the seabed which has provided many Mesolithic ex-situ finds. However, all of these finds have been recovered serendipitously due to commercial fishing and dredging, and thus the landscape and sedimentary context of these archaeological finds is unclear.

The goal of this study is to map the terrestrial features in the Brown Bank area and reconstruct the palaeolandscape and its inundation to determine the potential locations from which this archaeological material derives, and potentially locate Mesolithic settlement sites. The project uses high-resolution parametric echosounder surveys in a dense survey network to record the area and facilitate later targeted dredging and vibro-core sampling.

The seismic surveys revealed a pre-marine inundation landscape with fluvial channels eroded into post glacial sediments. A peat layer was located on the top of the banks of the channels where it continues laterally hundreds of metres. Radiocarbon dating of the top part of the peat layer, just below the transgressive deposits gave ages around 10.2-9.9 cal ka BP. Palaeogeographic reconstructions based on the mapped terrestrial features and the available relative sea level change data suggest that the final inundation of the area happened c. 1000 years later. Where dredging was carried out in areas of interest, primarily where the early Holocene surface outcropped onto the seabed, a large number of blocks of peat with pieces of wood and other macrofossils were recovered, suggesting a good potential for preservation of possible archaeological material and possible locations of origin for the serendipitous finds made by fishermen.

We conclude that this study provides new insights into the palaeogeography and the timing of the inundation of the Brown Bank area and gives the landscape context to the potential Mesolithic habitation of this part of the southern North Sea.