
Modelling the Mesolithic without people

Philip Murgatroyd^{*1}, Eugene Ch'ng², Tabitha Kabora¹, Micheál Butler¹, and Vincent Gaffney¹

¹University of Bradford (UBrad) – United Kingdom

²University of Nottingham, Ningbo China (UNNC) – China

Abstract

Europe's Lost Frontiers is a 5-year ERC-funded project which uses a variety of techniques, both traditional and innovative, to examine the submerged Holocene landscape of the southern North Sea. These techniques include sedimentary DNA analysis, geochemistry, seismic geophysics and pollen, foram, ostracod and diatom analysis. Computer simulation was intended to act as a hub within which the data from these techniques could be brought together in digital models. These models would serve as hypotheses to be tested in digital sandboxes within which, data from outside the project could be incorporated. The first phase of this programme involved a simulation of the inundation of the landscape that was being mapped by the seismic geophysics specialists. This took data regarding short and long term processes of sea-level change and combined them into a simulation which allowed a simple model of the intertidal zone to be run at a variety of spatial and temporal resolutions. This paper presents the initial results of this simulation with a focus on how this model, without any explicitly modelled human activity, can help understand how humans may have used this landscape. It will highlight some of the questions raised by the simulation and explain how the project will attempt to answer those questions. The submerged landscape under the North Sea was a dynamic environment and, via the project's models, we aim to demonstrate the benefits of using dynamic computer simulations to investigate this type of landscape compared with more traditional technologies.

Keywords: Computer simulation, Doggerland, North Sea, intertidal, sea, level

*Speaker