

# **Clowanstown, Co. Meath: Auger Survey – Interim Report and Statement of Potential**

*By*

*Dr B.R.Gearey MIFA, K.Krawiec and Dr H.Chapman MIFA*

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**Birmingham Archaeo-Environmental,**  
**Institute of Archaeology and Antiquity,**  
**University of Birmingham,**  
**Birmingham B15 2TT**  
**0121 414 5591**  
**B.R.Gearey@Bham.ac.uk**



## 1. Introduction

This report provides an interim statement on the auger survey carried out at Clowanstown, Co. Meath, Ireland between 4<sup>th</sup>-8<sup>th</sup> September 2006. It outlines the results of the survey and presents a statement concerning the potential for more detailed palaeoenvironmental analyses of the deposits.

## 2. Methods

Cores were extracted using a manual gauge 'Eijkelcamp' corer. The lithological characteristics of the sedimentary sequences were recorded, including colour, grain size, presence of organic material and the character of transition between different units. Samples were also recovered from organic sediments for any subsequent laboratory palaeoenvironmental assessment (see below). A total of over 30 cores were excavated in a 'grid' over the site, concentrating on the areas where the greatest thicknesses of organic sediments were identified (see Fig 1). The cores were levelled in following completion of the survey. These data were then processed in a GIS to produce DEMs (digital elevation models) of the deposits.

## 3. Results

The general sequence of deposits identified at Clowanstown is as follows (deepest first):

- Gravels/sands
- Black silt
- Pale grey calcareous silt
- White marl with abundant molluscs and rootlets
- Light brown detrital mud
- Poorly-moderately humified *Sphagnum* peat
- Black, highly humified peaty top soil

The detrital mud and overlying *Sphagnum* deposits are restricted to the eastern side of the study area (see Fig 1). These organic sediments are up to 3.45m thick in the transect on the easternmost edge of the study area, thinning out to less than 1.0m thick in C18 on the edge of the archaeological excavation. Such deposits reflect the presence of a small raised mire in this part of the site, the western edge of which is effectively defined by the burnt mounds. The marl deposits are present across all the study area, underlying the *Sphagnum* deposits to the east and directly beneath the topsoil in the western half of the study area (see Fig 2). Pale grey calcareous silts, trending into black silts, in turn underlie the marl deposits. The basal deposits appear to be sands and gravels, although these were not recovered in the gouge head.

The sedimentary sequence at Clowanstown may be provisionally interpreted as follows: the basal black silts, calcareous silts and marl deposits indicate deposition within an open water body. The marl deposit is composed of calcium carbonate, resulting from biotically induced changes in the carbonate-bicarbonate balance in

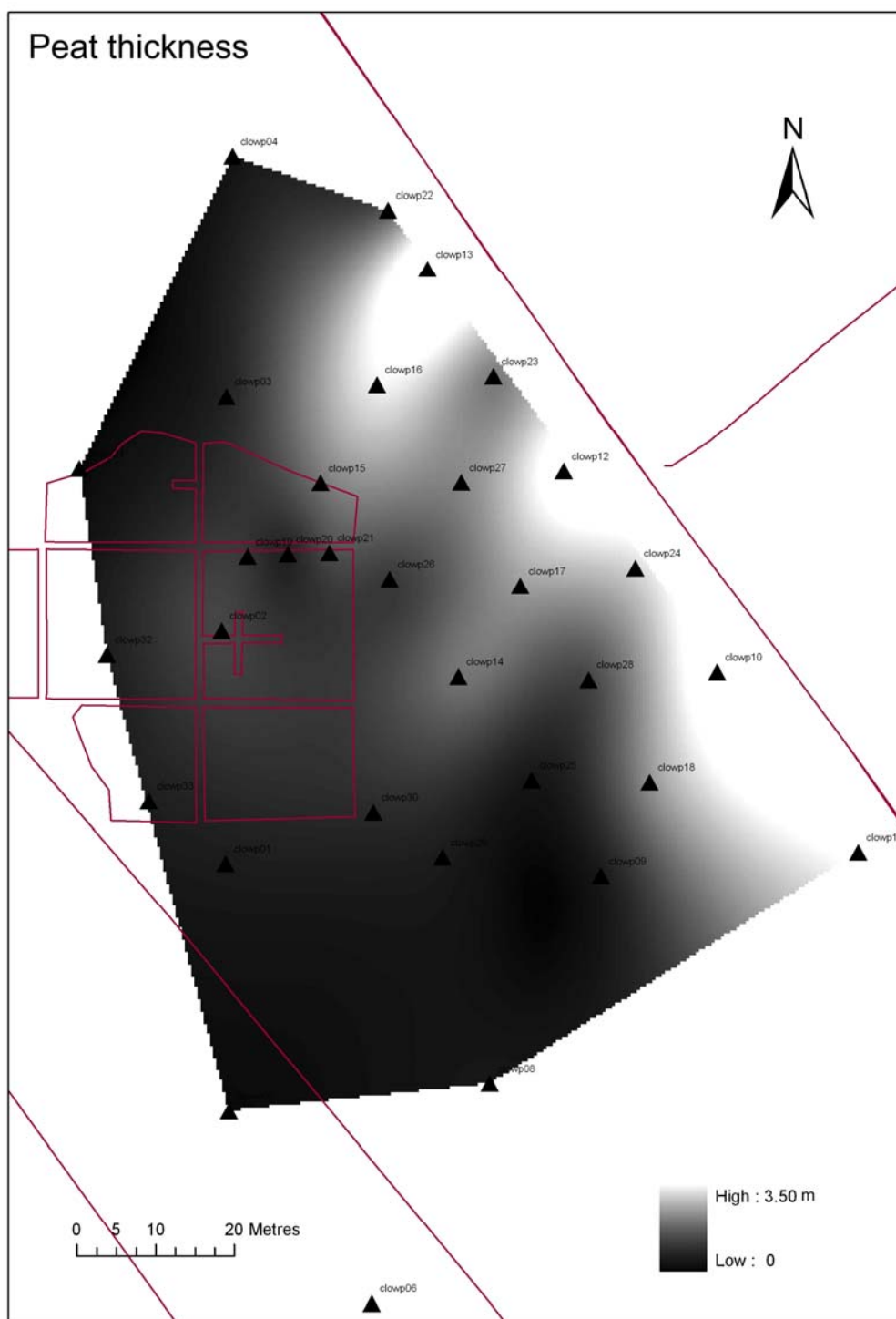
the waterbody. The basin eventually infilled through processes of hydroseral succession, whilst in the latter stages of this, peat accumulation led to the growth of *Sphagnum* raised mire. The chronology of these developments is currently unclear, but the deposition of the basal silts probably commenced reasonably early in the Holocene, with the eventual infilling of the basin sometime before the human activity represented by the burnt mounds began on site.

#### **4. Proposals for further analyses**

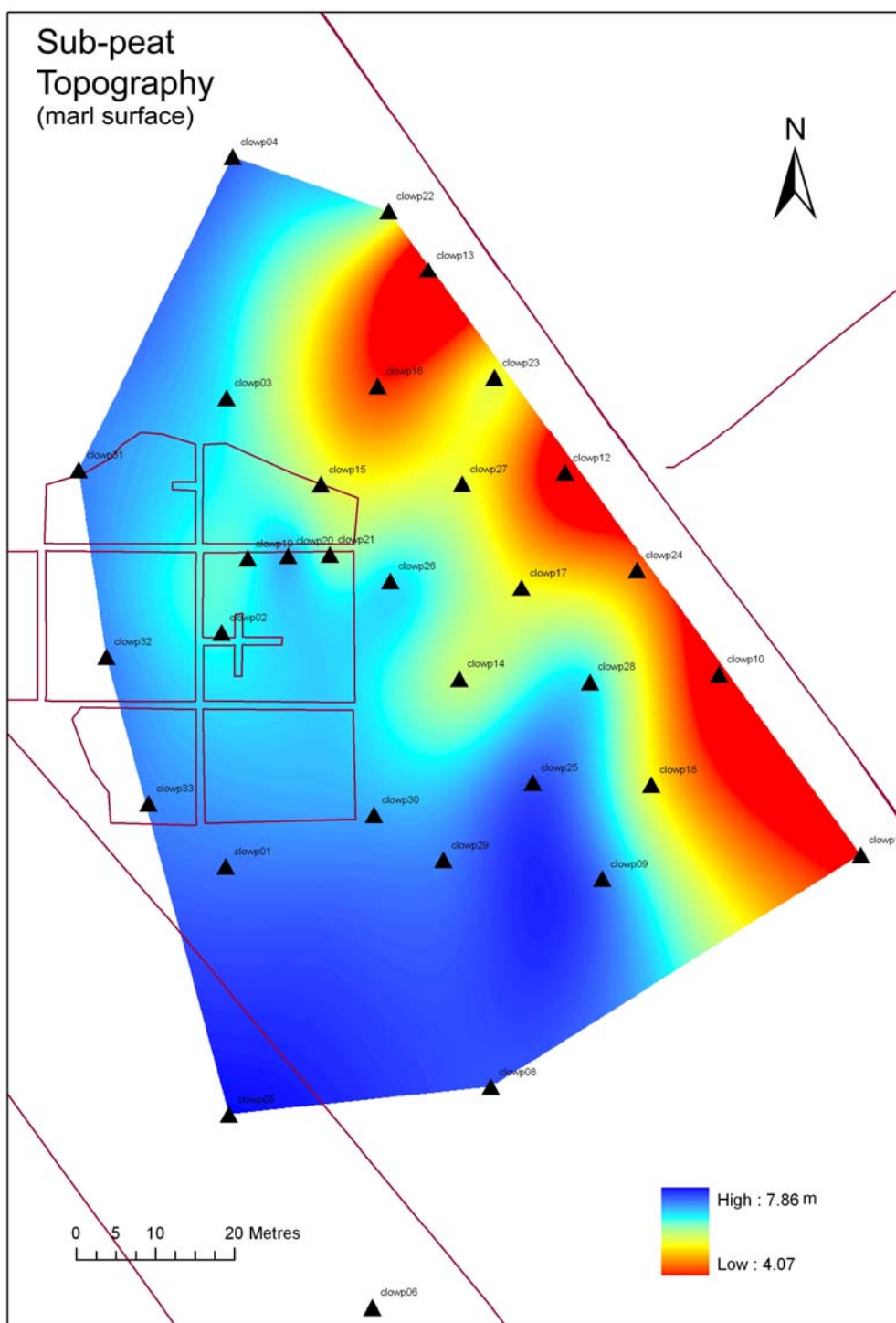
Ten subsamples were collected from C13 and eighteen from C10. It is proposed that palynological assessment of the C10 sequence is carried out to establish:

- The quality of pollen preservation
- The potential of the deposits to provide information regarding vegetation change and human impact

This area of Ireland currently has a dearth of palynological data relating to Holocene landscape change (eg. See O'Connell and Molloy 2001). In addition, it is proposed that the *Sphagnum* rich deposits are assessed for testate amoebae. The analysis of testate amoebae from Clowanstown has the potential to produce palaeohydrological data for this area, which are also currently lacking. As well as providing information regarding palaeoclimate, testate data may assist archaeological interpretation (eg. Gearey and Caseldine 2006). Currently, the timing of sediment deposition at Clowanstown remains speculative, hence it is also suggested that two AMS dates (base and near top) are obtained from the C10 sequence to establish the temporal range of the organic deposits.



**Figure 1:** Clowanstown: DEM of peat thickness



**Figure 2:** Clowanstown: DEM of sub-peat topography – marl surface

## References

Gearey, B.R. and C.J. Caseldine 2006. Archaeological applications of testate amoebae analyses: a case study from Derryville, Co.Tipperary, Ireland. *Journal of Archaeological Science* 33, 49-55.

O'Connell, M. and K. Molloy 2001. Farming and woodland dynamics in Ireland during the Neolithic. *Biology and Environment 1: Proceedings of the Royal Irish Academy 101B*, 99-128.