THE PREHISTORIC SOCIETY
SINCE 1935

INTRODUCTION TO PREHISTORY

METHODS FACTSHEET 4 ENVIRONMENTAL ARCHAEOLOGY

Archaeologists deal with excavated data such as pits, post holes, structures and artefacts, to understand past communities, their activities, settlements, monuments and societies. *Environmental archaeology* however, deals largely with inconspicuous and often microscopic evidence to examine land-use, farming and animal economies and husbandry; the landscape which supported past communities.

As the environment warmed after the last glaciation the vegetation changed though a succession of tundra, savanna grassland, shrubs and changing woodland. This succession comprised Early Mesolithic birch juniper and pine dominated woods; Mesolithic oak forest with hazel and decline of pine; Late Mesolithic climax deciduous woodland with oak, hazel alder etc. and successive clearings and clearance from the Early Neolithic onwards to make way for monuments, settlements and farming. Environmental archaeology, like palaeo-geography can identify these environments and record this sequence. More importantly land-use can mapped – from activities such as clearance of woodland, development of graze, pasture and tillage, and the consequent changes in the soils (depletion or podzolistion), and to the vegetation types they could naturally support. The second thread of environmental archaeology deals with human economy. That is the animals hunted, fished, or farmed and husbanded, and plants foods, collected, farmed and processed (cereals etc.).

An environmental archaeologist calls on biological science, ecology, soil science, botany, land snails, animal bones and marine molluscs. Via archaeological science, the evidence of changing land-use and economies is examined and interpreted.

With the exception of mammal bones and marine shells, most of the environmental evidence is microscopic. Unlike the archaeologist whose finds can be recognised in the field, handled and placed in a finds tray for examination and identification, much of the environmental archaeologists is data is too small and has to be collected in samples of soil. These are carefully collected from dated contexts during excavation or from long sediment (alluvium or hillwash) sequences. Samples are specific to the environmental material we need to retrieve and often requires the specialist to visit the site during excavation.

The range of environmental data is huge but just a few are listed below to give a 'taster'. These are divided into those that mainly provide information about i) the *environment*, landscape and land-use, and ii) *economy.*

Environment

Pollen

Material: subfossil pollen grains and spores (microscopic)

Principal Archaeological aim: to provide a land-use history and vegetation setting of the site and landscape we are studying

Soils

Material: Buried soil under barrows, banks and deposits of sediments

Principal Archaeological aim: to provide an indication of the former landscape, its vegetation potential, and history of activities such as clearance, tillage and archaeological evidence including trampling, burning etc.

Snails

Material: Calcareous shells (often sub microscopic ie, 0.5 mm)

Principal Archaeological aim: where pollen does not survive, such as on the chalklands, to provide information about vegetation character, land-use and history of environmental and land-use change

Economy

Charred plant remains

Material: largely burnt crops, cereals (grain and chaff) and associated weeds

Principal Archaeological aim: examining the farming economy, tillage regimes, soils cultivated, and the processing of crops on site, and whether for storage, for market or for consumption

Animal bone

Material: Mainly farmed and wild mammal bones

Principal Archaeological aim: examining hunted and farmed animals, stocking and herd regimes, nature of herds (dairy or beef), and functions on site, butchery practices

All of these elements together paint a much more detailed picture of life in the past. Whilst an archaeologist dealing with pits and postholes, pots and tools, 'paints' a picture of the site and activities conducted there, the environmental archaeologist paints a picture of the whole landscape, farmed land and wildscape, around that site.

Further Reading

Allen, M.J. (ed.) 2017. *Molluscs in Archaeology; methods, approaches and applications.* Oxford: Oxbow Books
Barker, G. 1985. *Prehistoric farming in Europe.* Cambridge: Cambridge University Press
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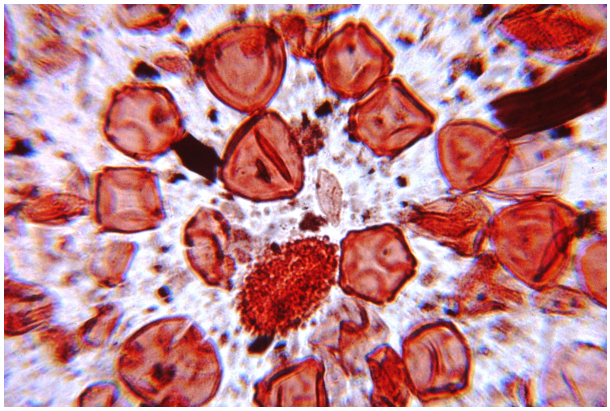
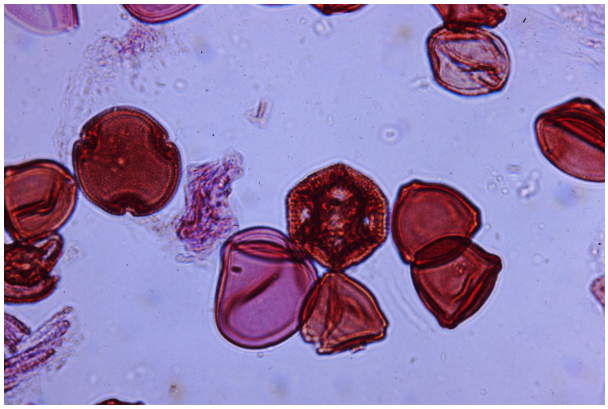
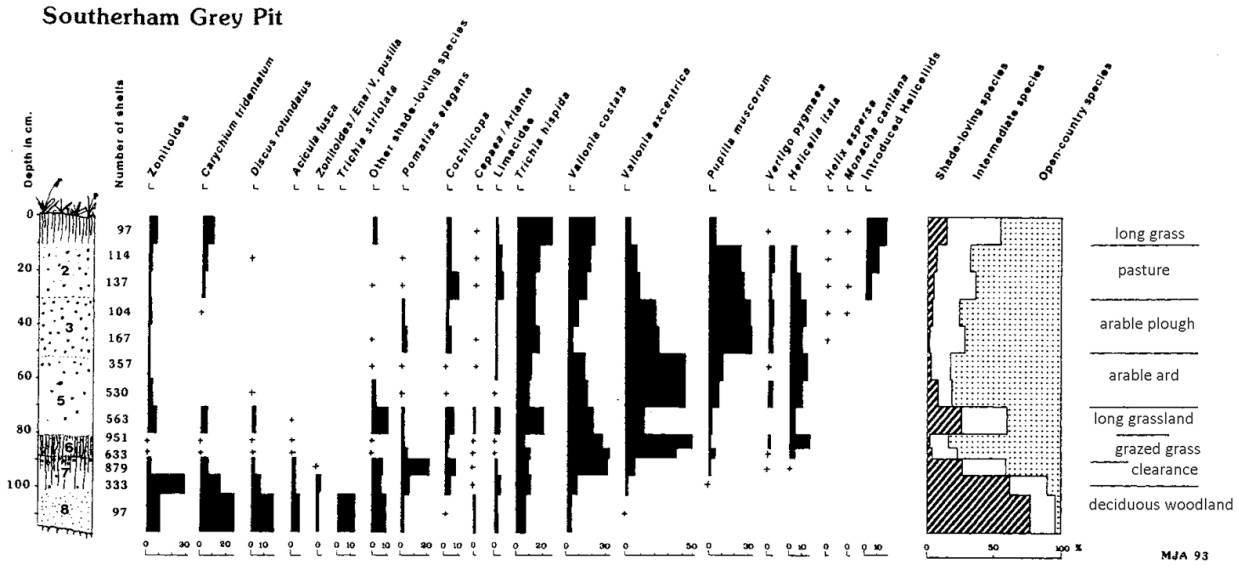
Branch, N., Canti. M., Clark, P. & Turney, C. 2005. *Environmental Archaeology; theoretical and practical approaches.* London: Hodder Arnold
French, C. 2015. *A hand book of geoarchaeological approaches for investigating landscape and settlements sites.* Oxford: Oxbow Books
O'Connor, T. & Evans, J.G. 2005. *Environmental Archaeology; principals and methods.* Stroud: Sutton Publishing
Wilkinson, K. & Stevens, C. 2008. *Environmental archaeology; approaches, techniques and applications.* Stroud: The History Press





Pollen: these robust pollen grains can survive in blanket bogs and peat mires but species pollen analysis (palynologists) can also find recover battered and less-well preserved pollen in archaeological soils and deposits. Illustrated are lime (Tilia spp. and pine (Pinus spp.) and a microscope slide with a typical array of pollen grains © R.G. Scaife 2018

Snails: there are about 118 different species of snail, which vary in size and shape. Their shells survive calcareous soils and deposits and their habitats and food preferences enable us to examine vegetation character and land-use in the past



The analysis of the different snails represented as histograms, show the changing land-use through time

Spelt wheat (Triticum spelta) is one type of wheat, along with einkorn (Triticum monococcum), and emmer (Triticum dicoccum) grown by prehistoric farmer)

This factsheet was prepared for the Prehistoric Society by Mike Allen (AEA Allen Environmental Archaeology)

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