

Wheatfen Pollen Survey 2001

Heather Binney, 2002

Modern Pollen/Vegetation Investigation at Wheatfen - Part 2

In the last Newsletter you may remember we reported on a vegetation-pollen survey undertaken at Wheatfen in the summer and early autumn of 2001 (by Martyn Waller, Jane Bunting and Heather Binney).

To re-cap - this project seeks to investigate the relationship between the vegetation and the associated pollen types recorded within fen carr environments such as those found in the wet woodlands at Wheatfen. We also aim to assess the representation within the wet woodlands of pollen derived from species only found in the dry woodland areas. The results from this analysis will help us reconstruct past environments using fossil pollen preserved within fen peat deposits, some of which date back over several thousand years. This research could therefore have wide implications, not only for paleoenvironmental investigations in lowland Britain but in other areas of Northwestern Europe where fen peats are found.

Wheatfen is an interesting site for many reasons, but the major importance for us is that the wet woodlands are subject to tidal influences, making Wheatfen a particularly appropriate analogue for Holocene coastal mires (the Holocene represents the past 11,000 years). Wheatfen is quite a complex site (in comparison to our other site at Calthorpe Broad). The dry woodland areas are dominated by *Quercus* (oak) and have a *Corylus* (hazel) understorey. There are substantial areas of transitional wet woodland with a high proportion of *Fraxinus* (ash) and areas of carr dominated by either *Alnus* (alder) or *Salix* (willow).

We have 86 sampling sites at Wheatfen, each centred on a moss mound (polster) which act as traps for the pollen. In February 2002 we re-visited each sampling site using a sophisticated GPS (global positioning system) which takes readings from a minimum of 8 satellites and then refines the position by receiving radio signals from the navigation beacon at Lowestoft. Using this equipment, we were able to locate the position of each moss polster to within 1m. This is particularly important for this project as we use GIS software (geographical information system) to analyse the spatial relationship between the vegetation and pollen data.

Our results show that the complex nature of the fen carr woodlands is reflected in the pattern of pollen deposition within the carr areas. The pollen representation of *Alnus* (alder) shows a tendency to increase with abundance of alder at a site, though some low values (<10% pollen) are recorded beneath an *Alnus* dominated canopy (>80% canopy cover).

One of the major problems with the analysis of fossil pollen is determining how far the pollen travelled before reaching the site of deposition. The density of sampling sites used in this project allows us to assess this factor within the fen carr woodlands. In general, the representation of pollen from taxa occurring in the adjacent dry woodland areas appears to be confined to within about 50m of the carr/dryland edge.