Finding Bosworth Field

A multiproxy stratigraphic and palaeoenvironmental assessment of lowland sediments from the proposed site of Bosworth Battlefield, Leicestershire

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by

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Abstract

Following preliminary palaeoenvironmental assessments of the proposed battlefield site on the floodplain between Stoke Golding and Shenton (phase 1) and Shenton and Dadlington (phase 2) in Leicestershire by Birmingham Archaeo-Environmental (BAE) in 2008, further palaeoenvironmental research (phase 3 - Division of Archaeological, Geographical & Environmental Sciences, University of Bradford) was commissioned by The Battlefields Trust. The initial results presented by BAE inferred a later Holocene landscape with organic depositional environments that had the potential to subsume Medieval sediment. This preliminary palynological investigation also indicated that peat accumulation began in the mid-Holocene, and that a dense alder carr prevailed at one location (Fen Meadow) until deforestation during the Romano-British period. These preliminary sedimentary results also revealed a transition from biogenic to minerogenic sediment accumulation that occurred during the Anglo Saxon period, after which a seasonal alluvial environmental persisted until drainage in the late eighteenth century (see Gearey *et al*. 2008; Hill *et al*. n/d).

The aims of the third phase of palaeoenvironmental investigation presented and discussed in this report have two main foci: firstly to examine the nature, extent and chronology of existing peat deposits identified by BAE at Fen Meadow, and secondly to examine a second site (Fen Hole) in an attempt to identify the location of the 'marsh' as described by Polydore Vergil in his sixteenth century account of the battle in 1485. Whilst this later phase of research complements the results of the preliminary investigations conducted by BAE, new data consolidate the local chronology of vegetation, hydrology and sedimentological fluctuations at the site from the Neolithic to the Medieval period. These multiproxy data enable an interpretation of ground conditions at the time of the battle to be inferred which are key to current debate and our understanding of the logistical dynamics and the outcome of this the final battle of the War of the Roses at Bosworth Field.

KEYWORDS: Bosworth, War of the Roses, battlefield, Medieval, palynology, multiproxy, palaeoenvironmental, lithostratigraphy, sedimentary, landscape, archaeology, Leicestershire

Front page: Fen Hole looking north-east towards the Fen Meadow site (December 2008) (Photo: J. Wheeler).

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1. Introduction

Following the two preliminary phases of palaeoenvironmental survey and assessments conducted by Birmingham Archaeo-Environmental (BAE) (Geary *et al.* 2008; Hill *et al.* n/d) during the first half of 2008, further fieldwork and multiproxy analyses were subsequently commissioned by The Battlefields Trust and conducted by Drs Jane Wheeler and Graeme T. Swindles (University of Bradford) from September 2008 to January 2009. The objective of this third phase of research was to consolidate the findings and interpretations presented in the BAE reports, and to attempt to pinpoint the location of the 'marishe' described by Polydore Vergil in his manuscript *The Anglica Historia* (reproduced in Ellis 1844). This source has been repeatedly referenced to provide testimony to the strategy and the eventual outcome of the battle, despite the bias of the record written twenty-seven years after the event by an author patronised by the actual victor of the confrontation - Henry VII (Hay 1959). Consequently, reference to Vergil's 'marsh' in the many histories of the battle has shaped and continues to influence strategic hypotheses and histories of the battle in the absence of any bona fide primary documentary source material or physical evidence. The 'marsh' has therefore been attributed historically as a natural landscape feature which provided a defensive right flank to protect the army of Henry Tudor, and presented ground conditions between the two armies which strategically disadvantaged and impeded the advance of the Yorkist forces and contributed to the Lancastrian victory (Hutton 1788; Brooke 1857; Rowse 1968; Potter 1983; Rees 1985; Foss 1990).

This report details the multiproxy stratigraphic and palaeoenvironmental techniques used to investigate sediments and soil samples taken from transects at specific locations which have been interpreted as being the most likely sites for the 'marsh'. These sites have been pinpointed following a series of landscape and auger surveys, contemporary interpretations of the dynamics and strategy of the battle, and from the scatter of archaeological finds which have a medieval provenance (Glenn Foard (The Battlefields Trust) and Richard Mackinder (Bosworth Battlefield Heritage Centre & Country Park) pers. comm. 2008). The two locations at Fen Hole (field numbers 549, 59 and 226 - central grid reference SP381985) and Fen Meadow to the immediate east (field numbers 98 and 97 – central grid reference SP397982) provide the environmental samples which have been analysed in this attempt to identify and define the extent of deposits which may be representative of the 'marsh' described by Vergil, and thus reveal the palaeoenvironmental history of the site and consolidate our understanding of the locale at the time of the battle in August 1485 (see Figure 1).

2. Aims and objective of the project

The overall aim of this project is to examine the nature, extent and precise chronology of organic deposits at Fen Hole and Fen Meadow using a multiproxy stratigraphic and palaeoenvironmental framework.

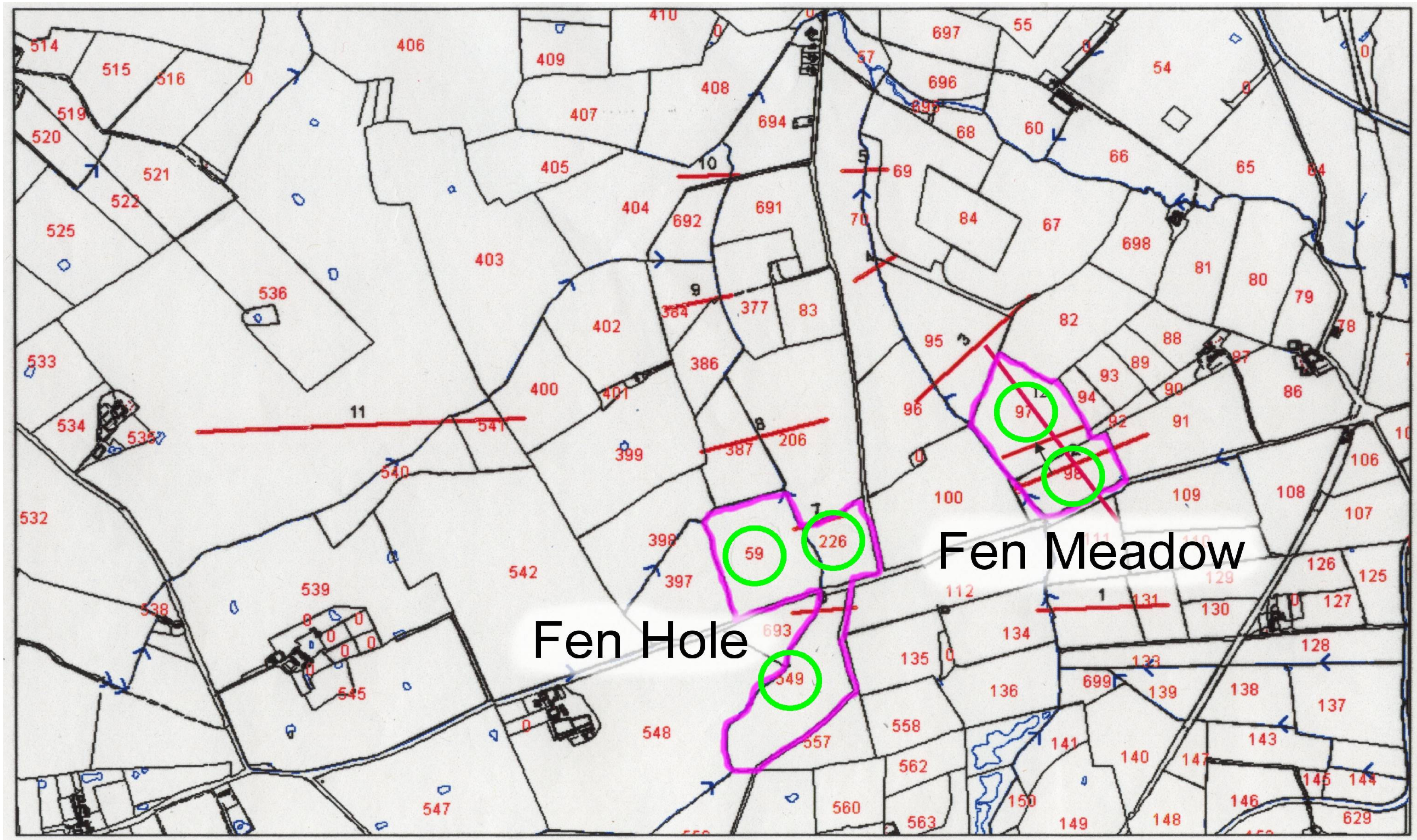


Figure 1. Field survey showing sample locations at Fen Hole (fields 59, 226 and 549) and Fen Meadow (fields 97 and 98). Fen Meadow is 0.6 km north-east of the Fen Hole sample site. Red lines indicate earlier auger transects investigated by BAE.

Specific objectives were to:

i) assess the extent and depth of organic deposits and their relationship to both the underlying and overlying inorganic sediments within the local floodplain environment to understand the depositional sequences and hydrological characteristics at the two sites;

ii) determine the organic content and geochemistry of 22 soil samples from fields 226 and 59 near Fen Hole to categorize the material as a true-peat or a minerogenic deposit;

iii) obtain accurate and precise chronological data using AMS radiocarbon dating to determine the stratigraphic sedimentary sequence and chronologies of sampled deposits at the two sites;

iv) reconstruct palaeoenvironmental conditions to provide a vegetational history of the local landscape specifically focusing on the fifteenth century Medieval environment.

3. Methodology

3.1 Fieldwork

Figure 2. Sampling at Fen Meadow using an Eijelkamp silt shoe auger (Photo: J. Wheeler).

Fieldwalking at Fen Hole and Fen Meadow established the extent of areas with a high water table leading to standing surface water which correlated with two major concentrations of auger surveys undertaken by The Battlefields Trust, Bosworth

Battlefield Heritage Centre, and BAE between 1976 and 2008 in the vicinity of field 549 at Fen Hole and fields 98 and 97 at Fen Meadow. Cross-cutting transects were set up across the Fen Hole and Fen Meadow sites in relation to where previous organic deposits had been found (Gearey *et al.* 2008; Hill *et al.* n/d). The lithostratigraphic survey was carried out using an Eijelkamp silt shoe auger and where suitable records for further analyses were found a Russian chamber corer was used to extract continuous core sequences with minimum contamination (Jowsey 1966). Each core point was levelled to ordnance datum (m OD) and the sediments logged in the field using the Troels-Smith (1955) scheme. Representative cores were wrapped in clingfilm and aluminium foil to minimise contamination. On return to the laboratory they were refrigerated at 4°C until removed for sub-sampling. The 22 surface soil samples from fields 226 and 59 near Fen Hole were collected by hand, placed in ziplock bags, and similarly refrigerated until required for analyses.

Figure 3. Russian chamber corer containing organic and alluvial sediments from Fen Meadow showing the erosive nature of the contact between two facies (Photo. J. Wheeler).

3.2 Laboratory analyses

The cores were sub-sampled at a resolution of 4cm and prepared for pollen analysis using non-acid extraction (after Hunt 1985). A pollen sum of 500 total land pollen grains (TLP) was counted, excluding spores, to assess the representation of sub-fossil pollen at the sites. Rare pollen types are quantified at $\leq$ 2%. Spores (including the *Lycopodium* 'spike' which acts as an indicator to assess sub-fossil pollen preservation ratios) and microscopic charcoal were counted in addition to TLP but not included in the total pollen sum. These data-sets are expressed as percentages of 500. Pollen was identified in accordance with keys in Moore *et al.* (1999), Beug (2004), supported by Reille (1999) and a modern pollen type-slide reference collection. Nomenclature follows Stace (2001). Fungal spores (cf. van Geel *et al.* 2003) and testate amoebae (cf. Charman *et al.* 2000) were also identified and recorded to provide additional environmental information. Data are presented as pollen diagrams in Tilia format (Grimm 2004). Following initial pollen sub-sampling selected samples were carefully extracted from the cores and submitted to the 14Chrono Laboratory (Queen's University Belfast) for AMS radiocarbon dating.

The 22 soil samples were analysed for magnetic susceptibility using a Bartington MS2 meter. Loss-on-ignition (LOI) and water content was determined using standard methods (Schulte 1996). A specific volume of deionised water was added to each soil sample to make a slurry and pH was determined using a standard laboratory probe. Soil samples were also prepared using an aqua regia digestion. Manganese (Mn), lead (Pb), and iron (Fe) concentrations were determined using a Perkin Elmer atomic absorption spectrometer.

4. Results

4.1 Lithostratigraphy

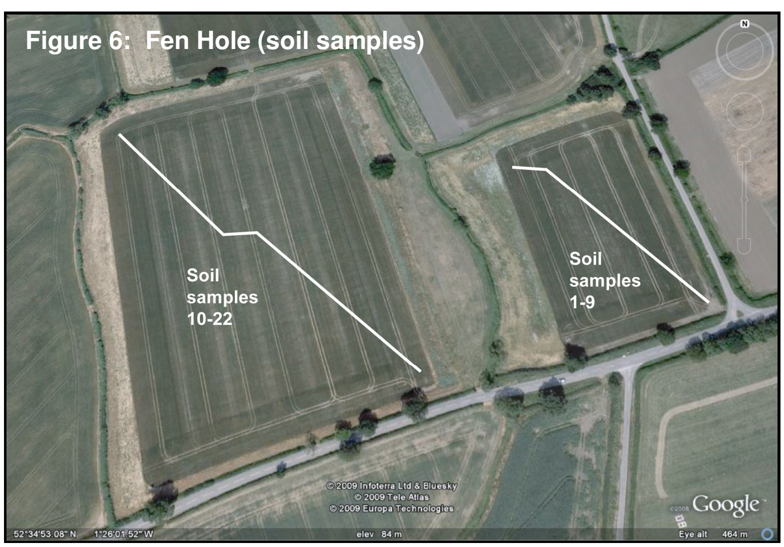
The coring transect lines at Fen Hole, Fen Meadow and the location of the 22 soil samples to the immediate north of Fen Hole are shown in Figures 4-6.

Fen Hole

The Fen Hole lithostratigraphy is characterised by basal sands, clays and some gravel overlain in one small area by a discontinuous silty well-humified herbaceous peat (approximately 40 x 30 m in area). The uppermost facies at this site consists of stiff, slightly organic alluvial silts and clays capped with brown agricultural topsoil. The contacts between the alluvium and the silty peat are mostly very sharp suggesting an erosional interface leading to a stratigraphic non-sequence. The sporadic occurrence of silty peat deposits in neighbouring cores suggests localised erosion of the sequence related to fluvial processes at this location. The silty peat deposits are thickest at the lowest point in this site (auger points 14 and 15) illustrating organic accumulation in a depression due to waterlogging, which explains their very limited extent. The organic deposits at Fen Hole are characteristic of floodplain wetlands and show little similarity to the characteristic peats of true blanket/raised mires or extensive fenland with reedswamp communities. On the day of sampling the ground conditions at Fen Hole were fully saturated close to the location of the well adjacent to the organic deposits at this site. The name 'Fen Hole' infers that the site has traditionally comprised a basin which has contained a wetland environment. The lithostratigraphy is therefore representative of a floodplain mire within a topographic depression that is not consistent with a major true-peat forming environment.

Fen Meadow

The basal lithostratigraphy at Fen Meadow is dominated by sub-angular gravel in a matrix of coarse sand and silt. In places this basal deposit is overlain by a dark brown silty well-humified peat similar to that at Fen Hole. This organic deposit is locally variable in silt content and sometimes contains sand and gravel. In addition, some macrofossil remains are present, including *Eriophorum* (cotton grass), *Phragmites* (reed), wood and twigs, and occasional charcoal fragments. This deposit forms one continuous unit but is again of limited extent (approximately 90 x 25 m in area). In certain areas the uppermost layers of this deposit contain a high proportion of minerogenic material and may be classified as organic-rich silt. The deposits at this site are overlain by alluvial sediments composed of stiff clays and silts, capped by brown agricultural topsoil. Similarly to Fen Hole the contacts between the silty peat and the alluvial deposits are erosive in nature (see Figure 3). The characteristics of the silty peat unit at Fen Meadow and topographic context suggest a small open pocket of floodplain mire. Extensive alluvial deposits with basal sand and fluviatile gravels to the south of the silty peat unit suggests proximity to a former river channel (auger points 1 to 4).



Figures 4-6. Locations of the auger and soil sample transect lines (Source: Google Earth). Red shading on Figures 4 and 5 show the extent of the organic deposits.

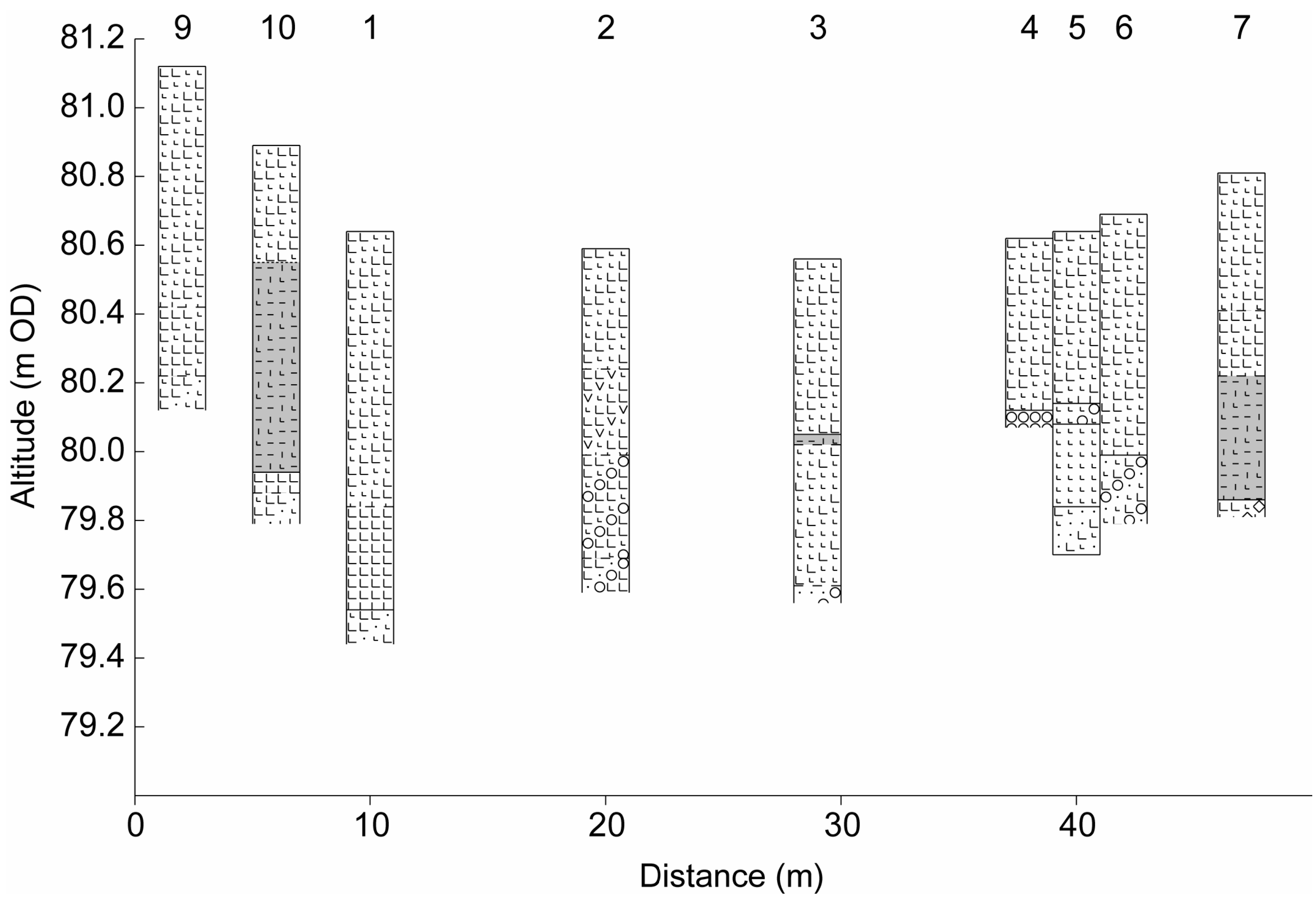


Figure 7. Lithostratigraphy of Fen Hole Transect 1 (T1). The organic deposits are shaded in grey.

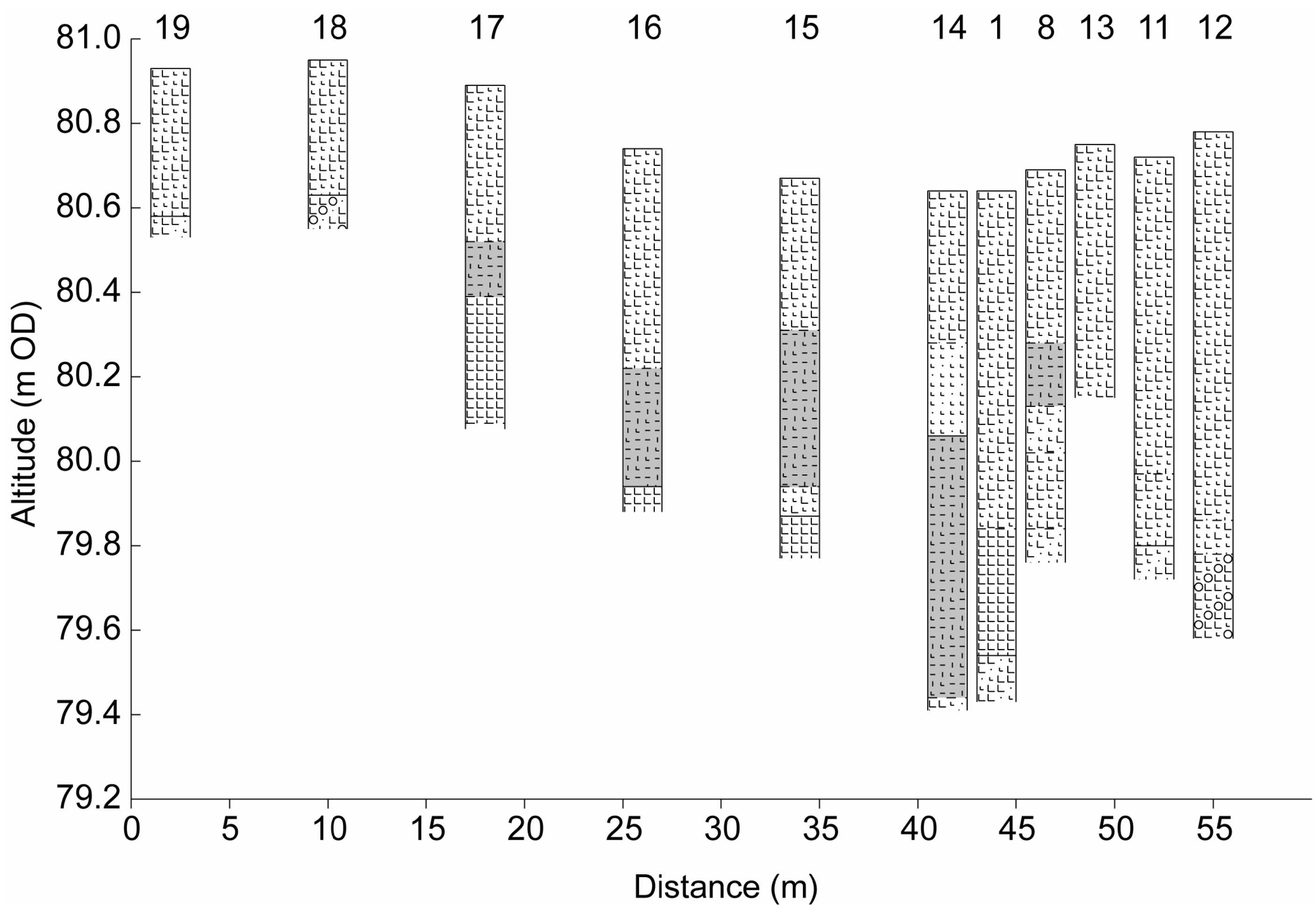


Figure 8. Lithostratigraphy of Fen Hole Transect 2 (T2). The organic deposits are shaded in grey.

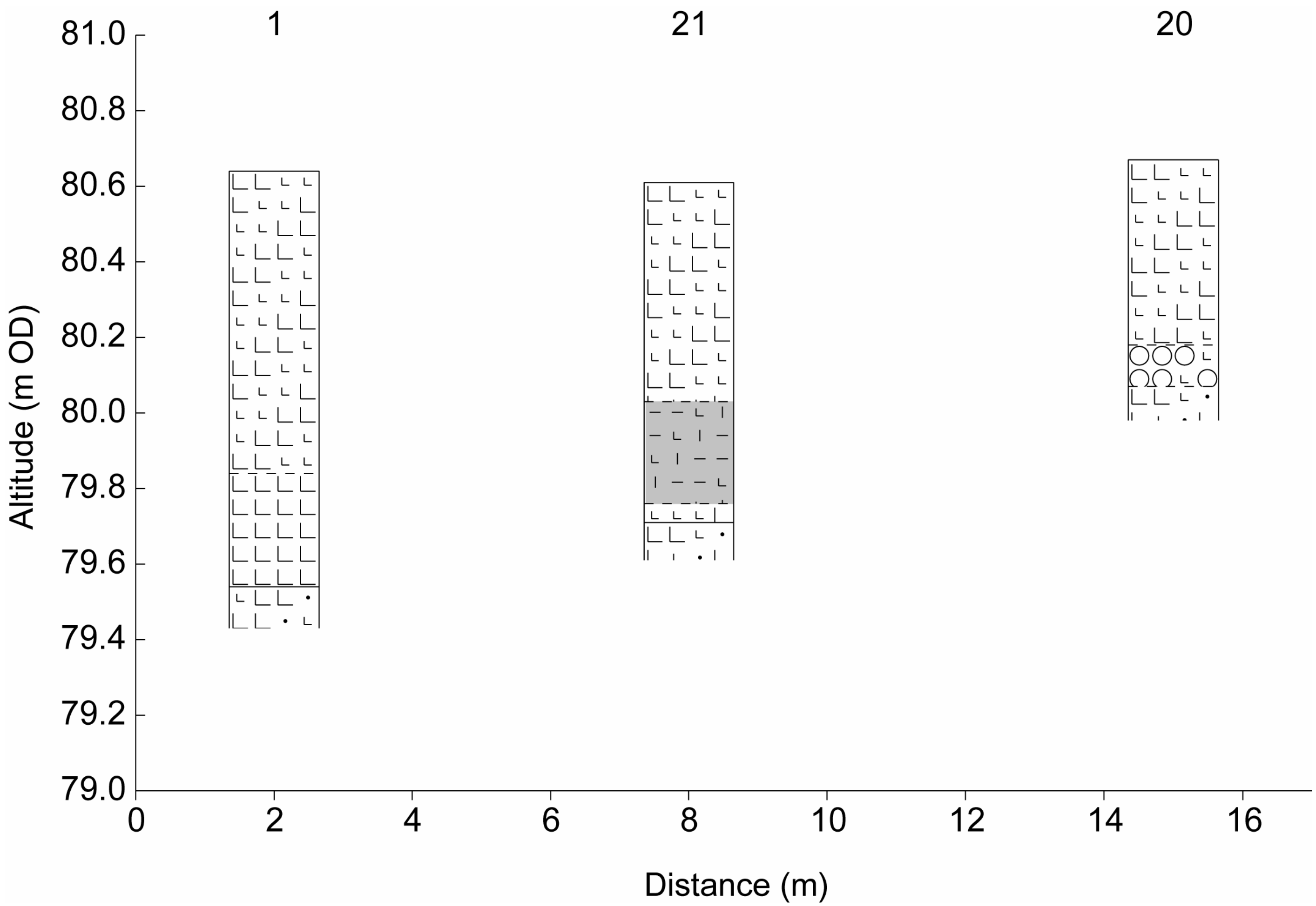


Figure 9. Lithostratigraphy of Fen Hole Transect 3 (T3). The organic deposits are shaded in grey.

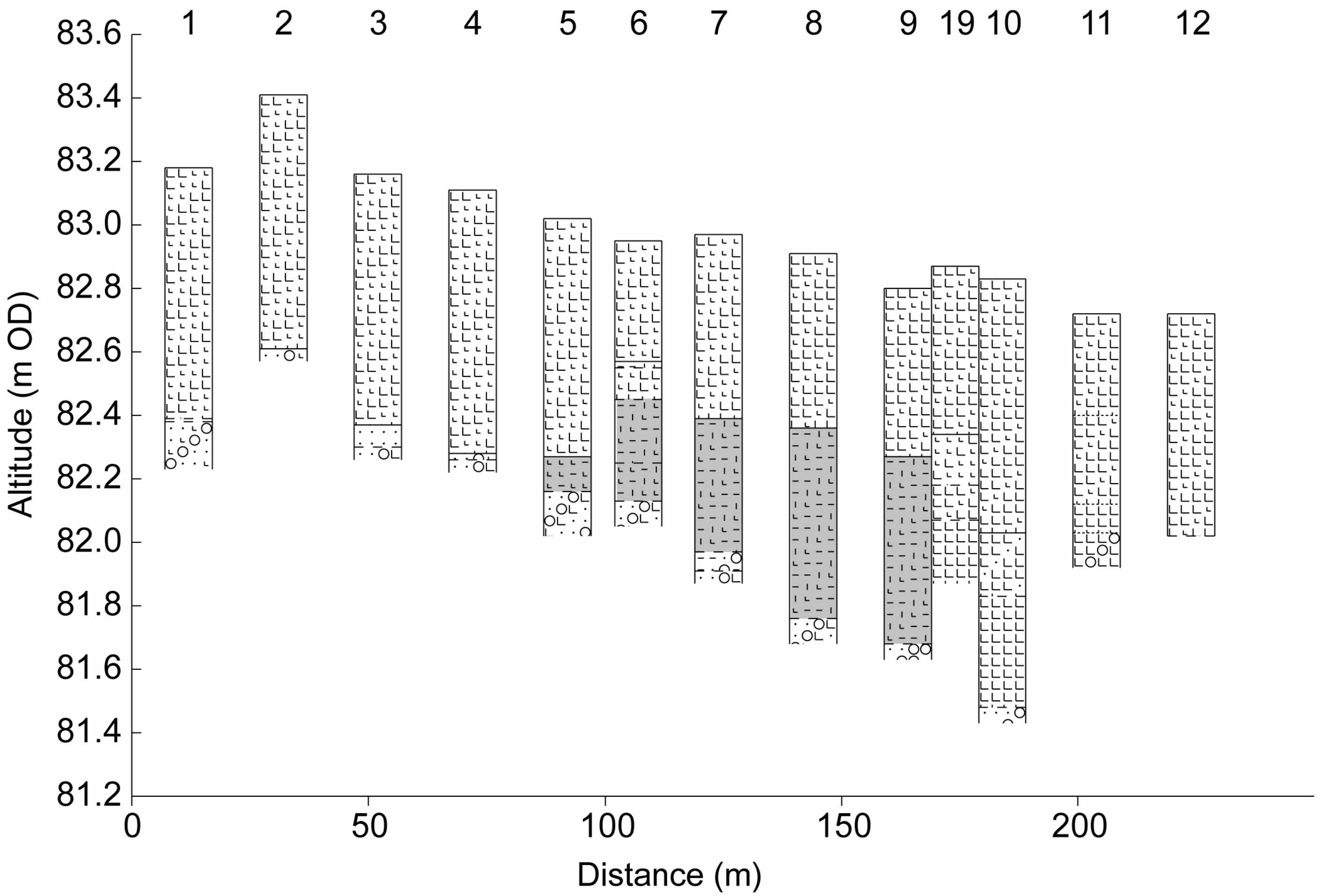


Figure 10. Lithostratigraphy of Fen Meadow Transect 1 (T1). The organic deposits are shaded in grey.

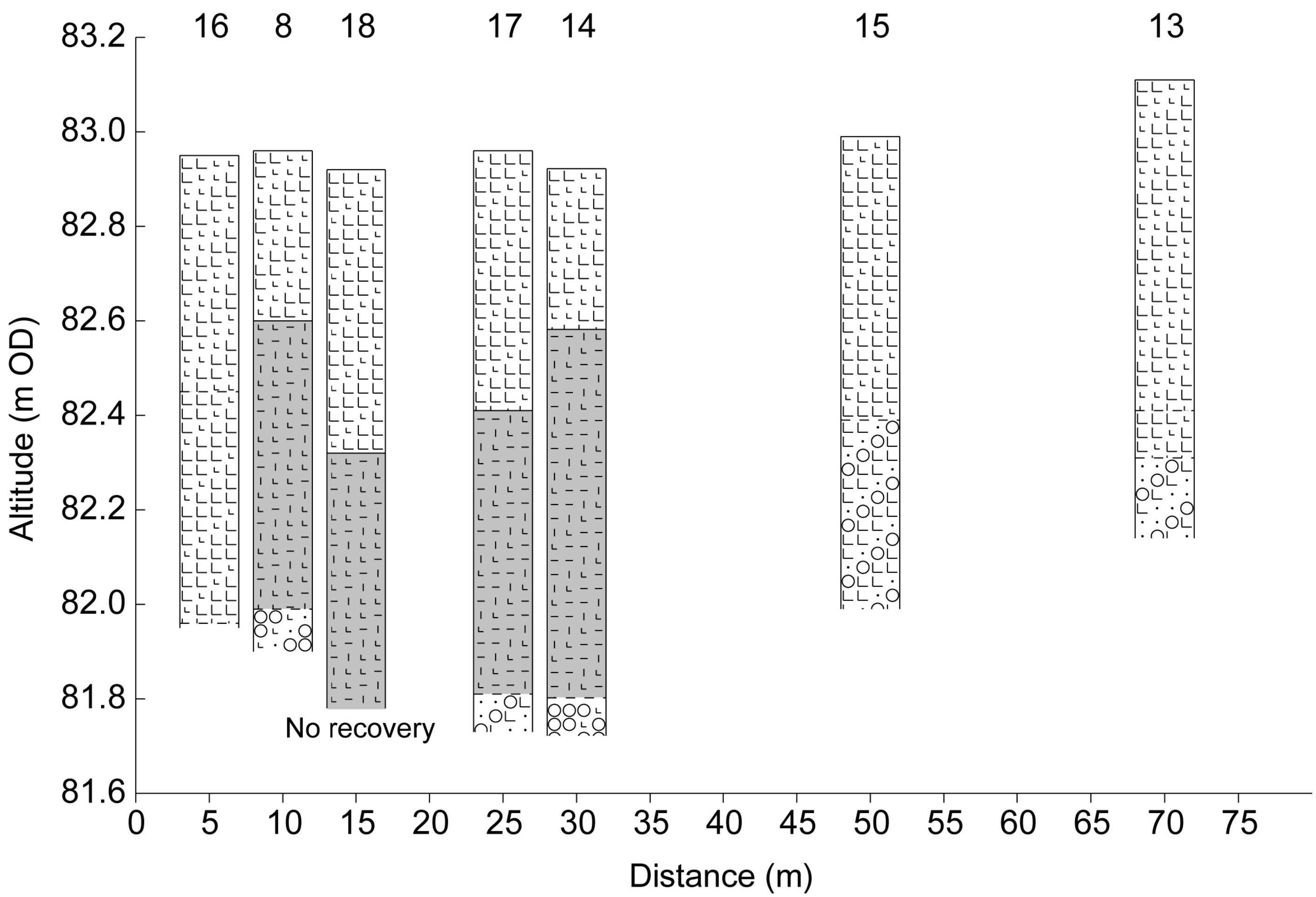


Figure 11. Lithostratigraphy of Fen Meadow Transect 2 (T2). The organic deposits are shaded in grey.

4.2 Chronology

Site	Depth (cm)	UB number	^{14}C age (BP)	δ^{13}C	Calibrated age range (2σ – 95.4%)
Fen Hole	45-47 (Core 8)	10473	1057 ± 22	-30.5	AD 898 - 1024
	27-29 (Core 22)	10474	1880 ± 23	-27.2	AD 71-215
	37-39 (Core 22)	10475	1890 ± 32	-28.1	AD 54-221
	47-49 (Core 22)	10476	2004 ± 23	-27.9	49 BC – AD 56
Fen Meadow	38-40 (Core 1)	10470	2026 ± 23	-25.5	96 BC - AD 51
	70-72 (Core 1)	10471	4436 ± 25	-26.7	3327 - 2933 BC
	104-105 (Core 1)	10472	4962 ± 26	-24.1	3794 – 3661 BC

Table 1. AMS ^{14}C dates calibrated using INTCAL04.

The dates presented in Table 1 show that the organic deposits from Fen Hole span the Dark Ages to the early Medieval period (core 8) and the Late Iron Age and Romano British period (core 22). The Fen Meadow dates (core 1) are representative of the Late Neolithic through to the Early Iron Age/Romano-British periods.

4.3 Pollen analysis

Fen Hole

Two pollen diagrams from the organic sedimentary sequences at Fen Hole are shown in Figures 12 and 13. The diagrams have been zoned visually based on chronology as there is little variability in the pollen assemblage throughout the two profiles. Figure 12 has been divided into two zones FH1 and FH2. Figure 13 comprises zone FH3.

FH1 – Late Iron Age/Romano British transition (See Figure 12)

FH1 represents the Late Iron Age/Romano British transition and shows that the local landscape was cleared of trees by this period and comprised open wet grassland with a major presence of Poaceae (grasses), Cyperaceae and *Carex* (sedges), and herbaceous rare types (≤ 2%) including Ranunculaceae (Buttercups), Chenopodiaceae (Goosefoots), Plantaginaceae (Plantain family) and Lactuceae (Dandelions). Interestingly at 53 cm the first influx of cereal-type pollen is recorded (*Secale cereale* – Rye), albeit as a rare type (≤ 2%). Minor abundances of *Quercus* (oak), *Ulmus* (elm), *Alnus* (Alder) and *Corylus avellana* (Hazel) suggest a minor presence of arboreal and shrub taxa which may represent peripheral woodland or influx from a distant and more regional source. The presence of microscopic charcoal dominated by particles < 20 µm throughout this zone in comparison to much smaller quantities of larger particulates (21-50 µm and > 50 µm) suggests airborne transportation from a regional source as opposed to localised fire activity. The presence of the testate amoeba *Arcella discoides* type suggests standing water conditions. The non pollen palynomorph (NPP) *Glomus* cf. *fasciculatum* chlamydospores indicates unstable conditions and possibly soil erosion at the locale throughout this period, whilst the abundant NPP *Gloeotrichia* type is commonly found in Holocene deposits (van Geel *et al*. 1982/1982, 2003). The *Lycopodium* 'spike' is quantitatively constant throughout the zone (≤ 15%) indicating reasonable levels of pollen preservation across taxa within a relatively stable taphonomic environment.

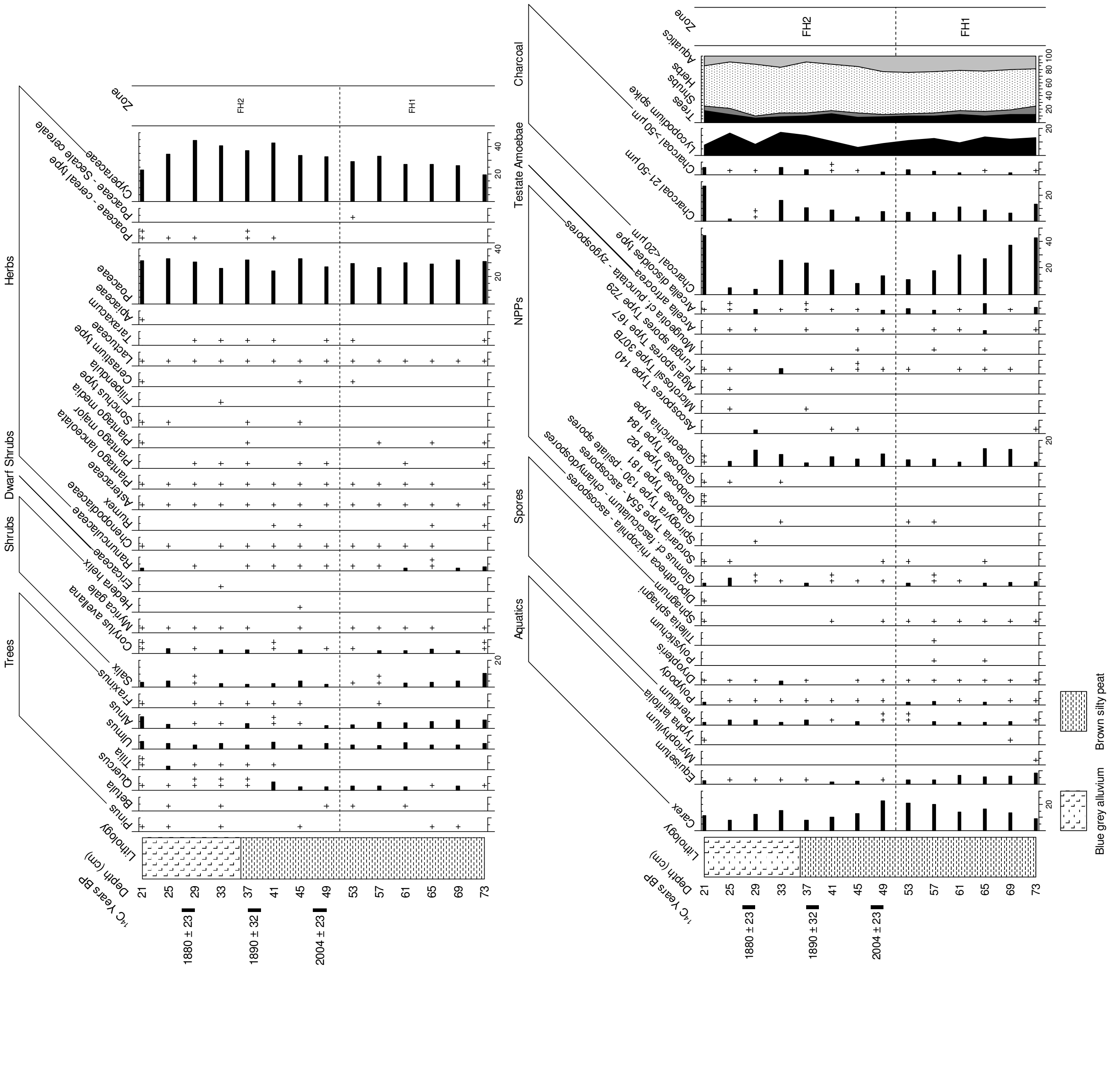


Figure 12. Pollen Diagram (1) - Fen Hole (core 22).

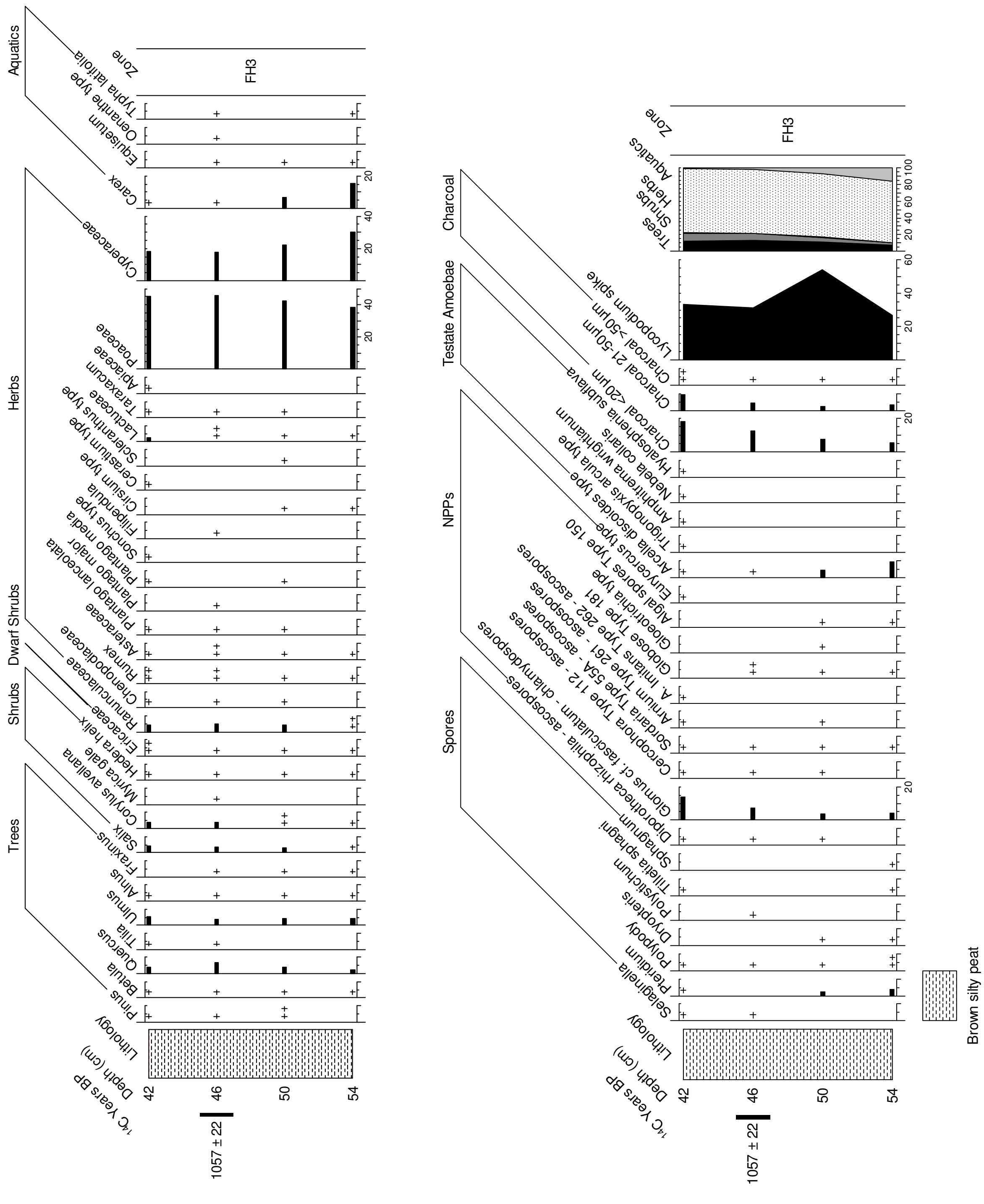


Figure 13. Pollen Diagram (2) - Fen Hole (core 8).

FH2 – Romano-British period (see Figure 12)
Zone FH2 is similar in terms of species composition to the underlying zone FH1. Of particular note is the influx of cereal type grasses at 41 cm, and despite their absence at 33 cm which is most probably associated with the hiatus in the stratigraphy at this point, the pollen type is present throughout this zone. The presence of cereal type pollen corresponds with fluctuations in the presence of sedges and the decline of both *Sphagnum* moss and the testate amoeba *Arcella discoides* type, indicating drier conditions, most probably the result of improved drainage in the Romano-British period. The general fall in microscopic charcoal at 29 cm has no associated impact on the pollen assemblage suggesting that burning occurred off site and was regional in nature. The rise at this point (29 cm) in the testate amoeba *Arcella discoides* type and the non pollen palynomorph (NPP) *Glomus* cf. *fasciculatum* chlamydospores indicate a shift to more unstable conditions and possibly soil erosion which corresponds with alluvial deposition at the site. The peak of the fungal spores Type 729 at 33cm to 3.8% supports this theory, as this particular NPP occurs in shallow stagnant open water - specifically eutrophic conditions (van Geel *et al.* 1982/1983). Pollen preservation throughout the zone is relatively stable although the fluctuations in the *Lycopodium* curve correspond with the deposition of alluvium in the upper half of the zone suggesting better preservation at 29 cm which is probably the result of wetter, i.e. more anaerobic conditions.

FH3 – Medieval period (see Figure 13)
The 12cm pocket of silty peat obtained from Core 8 has a Medieval date which correlates with the late ninth century/early tenth century transition. The pollen assemblage reveals the local landscape what not vegetationally dissimilar to that of the Late Iron Age/Romano British period and comprised open wet grassland. Similarly the NPPs and the testate amoeba *Arcella discoides* type indicate wet conditions with possibly exacerbated soil erosion had begun by the early tenth century. This shift to wetter conditions may explain the absence of cereal pollen in this zone and the abandonment of tillage by this date. The high ratio of *Lycopodium* spike to pollen throughout this zone, particularly the peak at 50 cm (53.8 %), indicates some form of disruption to preservation, most probably intermittent aeration of the soil caused by fluctuating hydrology.

Fen Meadow
The pollen diagram from Fen Meadow has been zoned visually based on major fluctuations in the arboreal pollen assemblage, specifically the representation of *Quercus* (Oak) and *Alnus* (Alder). The dates are therefore incidental in respect of zonation but provide a provenance for the three zones. FM1 has a date of 4962 ± 26 BP which provides a Neolithic date for the basal point. FM2 has a date of 4436 ± 25 BP which places the zone within the Late Neolithic/Early Bronze Age. FM3 has an Iron Age/Romano British date of 2026 ± 23 BP. All three zones are illustrated Figure 14. Noticeable fluctuations in the *Lycopodium* curve throughout the Fen Meadow pollen diagram indicate preservation variables most probably resulting from very localised and cyclical wet and dry phases at the site.

FM1 – Neolithic
Whilst the arboreal presence in this zone is relatively low ≤ 10%, the three major taxa are represented by *Tilia* (Lime), *Ulmus* (Elm), *Alnus* (Alder), and to a lesser degree

Quercus (Oak), suggesting proximate woodland. The presence of *Salix* (Willow) and *Corylus avellana* (Common Hazel) < 10% also indicate a scrubby shrub presence within the landscape. Herbaceous pollen is dominated by Poaceae (grasses) and Cyperaceae and *Carex* (sedges) suggesting open wet grassland. Interestingly the dominance of the spore *Dryopteris* type (Male Fern) supports the hypothesis that woodland may have framed this damp environment. The testate amoeba *Arcella discoides* type is indicative of wet conditions, particularly standing water, whilst greater counts of the NPP *Glomus* cf. *fasciculatum* chlamydospores throughout this zone indicate unstable conditions most possibly reflective of soil erosion. The presence of microscopic charcoal from all fractions implies continuous and gradual increases in episodes of burning in the vicinity of the site but a greater scale of burning from a wider and more regional source. The decline in arboreal pollen in the overlying zone FM2 appears representative of a general response to fire.

<u>FM2 – Late Neolithic/Early Bronze Age</u>
The noticeable influx of alder at 85 cm and the overall decline of lime and elm appear to have a strong correlation with the potential impact of burning and clearance as suggested by the charcoal frequencies throughout zone FM1. The disappearance of *Dryopteris* at this point is also highly indicative of land clearance and appears to be associated with the decline of woodland in the locality most probably as a result of fire. The peak is alder (67%) at 85 cm is particularly interesting as it appears to be a direct response to an earlier phase of burning with the subsequent clearance enabling alder to regenerate within the local landscape, particularly as the taxon once established is resilient to fire (Grau & Veblen 2000) and would have also been able to withstand the wet conditions indicated by the presence of the testate amoeba *Arcella discoides* type and the sedge vegetation. The decline of alder at 81 cm again seems to be associated with the peak in microscopic charcoal which, due to the presence of greater quantities of the larger fractions (21-50µm and > 50µm) strongly suggests more localised burning. The recovery of oak between 81-57 cm is most probably the effect of the decline of shade-loving lime and elm which would have suppressed the oak as opposed to the regeneration or introduction of this particular taxon (Vera 2004). The band of plant matter and charcoal fragments in the stratigraphy at 68-69 cm occurs at the time when burning phases decline, which also coincides with a slight rise in the testate amoeba *Arcella discoides* type to 3.6%. Increases in the variety of herbaceous pollen at 57 cm, particularly the appearance of Plantaginaceae (Plantain family), suggests increased activity and most probably anthropogenic disturbance in the Bronze Age at the time when arboreal and shrub species decline.

<u>FM3 – Iron Age/Romano British period</u>
The basal point of FM3 (51 cm) has been introduced as a response to the quantitative decline of arboreal and shrub pollen and the subsequent stability of the pollen assemblage throughout the zone. The influx of cereal type grass pollen at 49 cm may be representative of tillage, whilst the general raise in grasses, sedges and herbs indicate a gradual expansion of open grassland. The quantitative decline in the presence of the testate amoeba *Arcella discoides* type also implies a drier environment which may explain the influx of cereal pollen and would correspond with improved drainage generally associated with land improvement during the Roman-British period. The influx of *Pteridium* (Bracken) between 49 cm and 54 cm is most probably reflective of the invasive nature of this species. Its decline at 41 cm may be the result of anthropogenic utilisation or deliberate clearance.

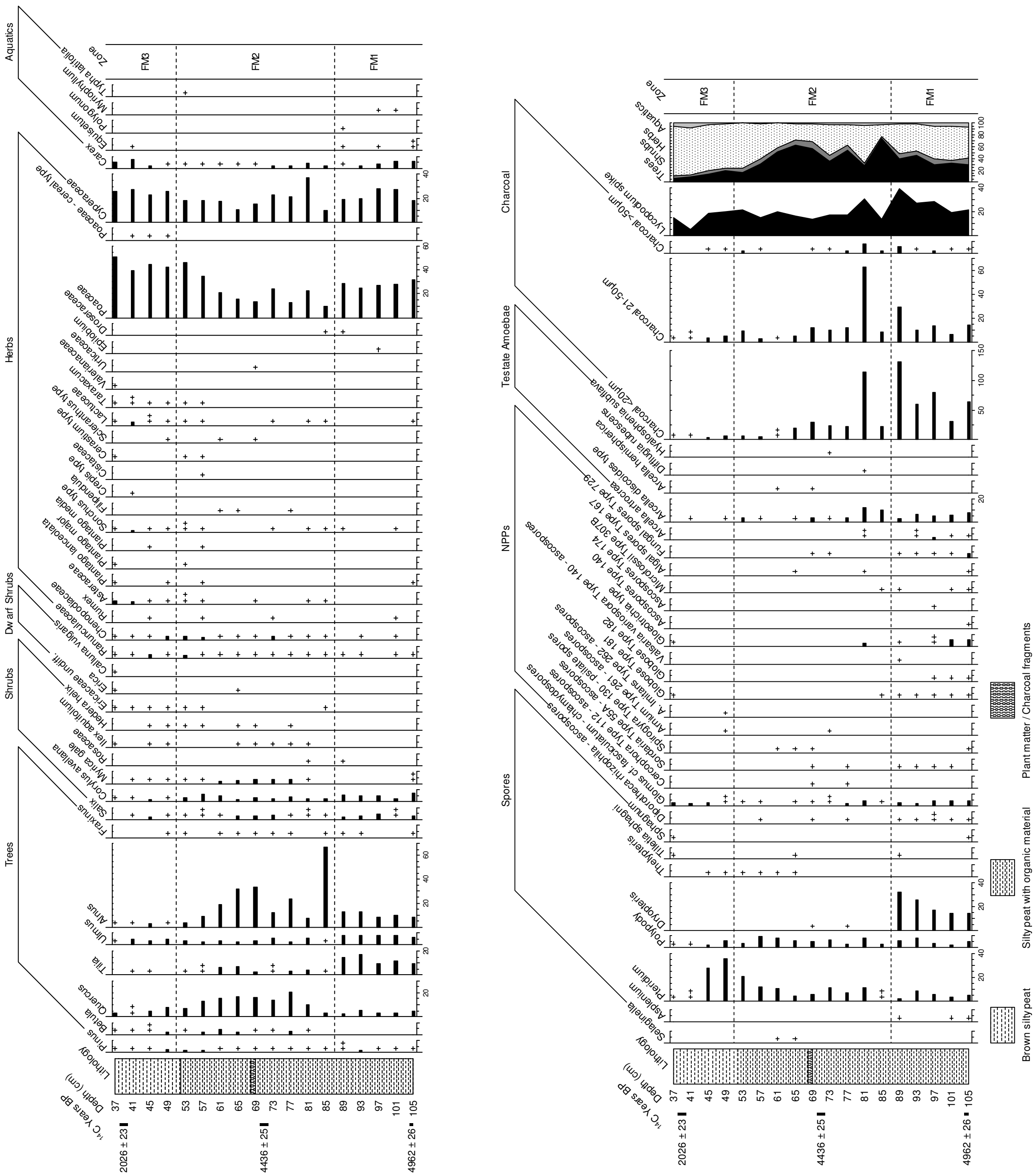


Figure 14. Pollen Diagram - Fen Meadow (core 1).

4.4 Soils

Loss-on-ignition (LOI) analysis of the 22 soil samples from the field to the immediate north of Fen Hole shows that they have a low organic content (between 5% - 14%), suggesting no connection with a peat forming environment. The moisture content of the soils is between 26% and 52% and no major change in colour was observed following drying of the samples at 105°C for twelve hours. The dark colour of the soils is related to the relatively high concentrations of manganese (Mn) and to a lesser extent iron (Fe) and lead (Pb) compounds, which most probably reflect the recent addition of fertilisers, possibly including ground slag. Manganese oxide (MnO_4) in these soil samples is the main cause of their very dark black/brown colour. The data are illustrated in Figure 15 below.

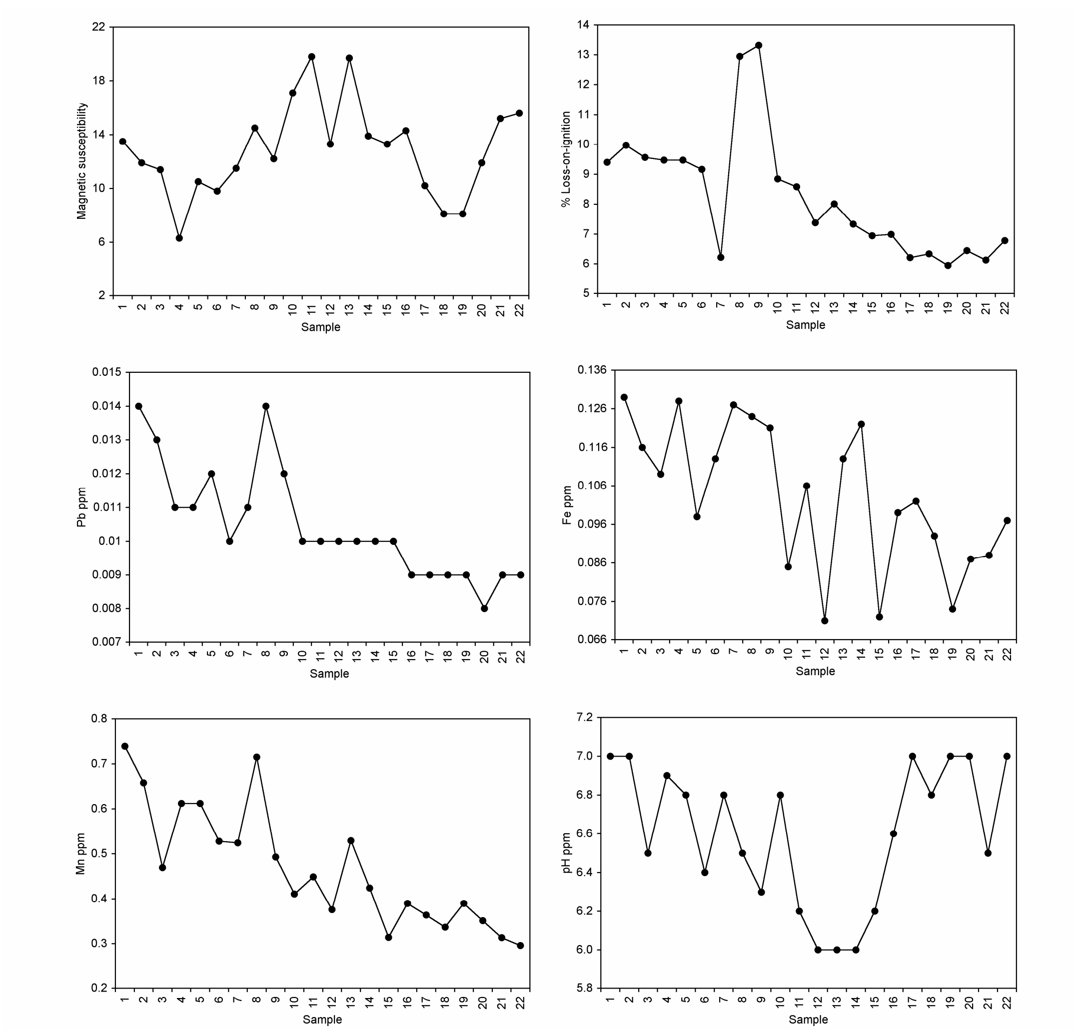


Figure 15. Magnetic susceptibility, loss-on-ignition (LOI), Pb, Fe, Mn and pH data for the 22 soil samples from fields 226 and 59 to the immediate north of Fen Hole.

5. Summary of data and discussion

The palaeoenvironmental data show that there is no evidence for a major peat-forming landscape feature in this floodplain environment which corresponds with Vergil's description of the 'marsh'. This is not an unexpected finding as large bogs/fens are atypical of the Leicestershire lowlands in the present day. However, a floodplain environment was present in the early Medieval period that comprised a seasonally flooded meadow system containing several small mire complexes as represented by the organic deposits identified at Fen Hole and Fen Meadow. The nature of the alluvium in this environment would have led to waterlogging which may have been particularly severe by the fifteenth century as climatic conditions deteriorated, becoming cooler and wetter at the start of the Little Ice Age (Lamb 1977). No deposits have been identified that are contemporaneous with the battle due to truncation of the record by alluvial processes in this highly dynamic environment. This may further support the hypothesis of a shift to increased wetness at this time. The uppermost organic deposits at Fen Meadow were dated in the previous study (Gearey *et al.* 2008) to AD 610-780, but in this investigation they were dated to 96 BC - AD 51, suggesting uneven truncation of the upper surface of the organic deposit. Analysis of the 22 dark-coloured soil samples from the two fields to the north of Fen Hole implies that their colour is the result of high manganese content. The soils of this locale are also relatively high in iron (ferric) oxide (Fe_2O_3) which may explain historical references to the battlefield as 'redemore' (a *red* mor and/or Redmore Plain) (Rees 1985; Foss 1990) as opposed to the term being a descriptive reference to a mor or mire comprising reedswamp (*reed* mor). What is clear is that there is no evidence of there ever being a peat-forming environment at this particular location.

In 1485 the lowland environment in this locality would have consisted of open floodplain meadows characterised by alluvial deposition from seasonal flooding of the River Tweed, which has since been replaced by the Ashby Canal. The construction of the canal in the late eighteenth century and the introduction of modern field drainage have led to major hydrological change in this environment, specifically decreasing levels of soil moisture. Small mire units (possibly supporting reedswamp) would have been characteristic of a frequently waterlogged environment in the fifteenth century. The nature of the heavy alluvial sediments which dominated the floodplain and the mire units would have visibly indicated a waterlogged *marshy* environment. The advantage of higher and drier ground on the gentle slopes above the floodplain would have presented the strategic advantage to the army or battle group that did not need to cross the marsh in order to engage the enemy. Whilst Vergil's description of the 'marsh' is meaningful, it does not refer to one specific peat landform but the complexities of a dynamic floodplain mosaic.

6. Recommendations for future research

Although we have constrained the extent and chronology of organic deposits at Fen Hole and Fen Meadow, further investigations are needed to assess if any other similar organic units are present in the wider floodplain landscape. This detailed investigation would be highly suitable for a doctoral research project over a three year period. As there is a lack of finds from this area with a determined fifteenth century military provenance, a combination of precise artefact discrimination and GIS mapping linked with the proposed geoarchaeological study is the required approach to constrain the extent of the battlefield.

7. Acknowledgments

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8. References

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